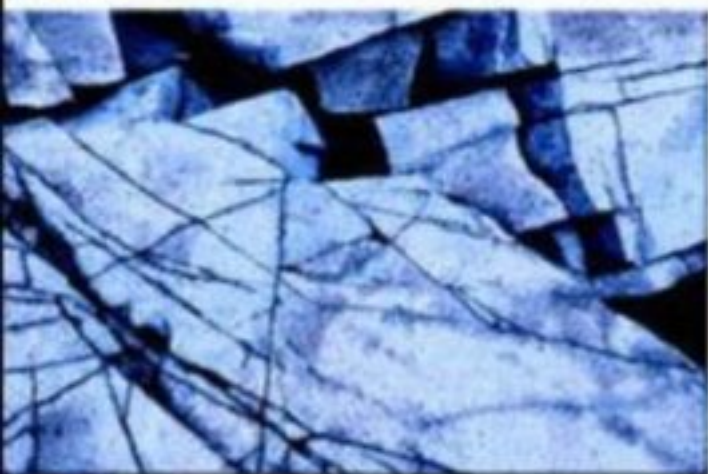


McGRAW-HILL

SECOND
EDITION

DICTIONARY OF
**GEOLOGY &
MINERALOGY**



MORE THAN 9,000 ESSENTIAL TERMS

COVERS EVERY DISCIPLINE OF GEOLOGY & MINERALOGY

PROVIDES SYNONYMS, ACRONYMS, AND ABBREVIATIONS

McGraw-Hill

**Dictionary of
Geology and
Mineralogy**

**Second
Edition**

McGraw-Hill

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The College of New Jersey

Trenton, New Jersey

How to Use the Dictionary

ALPHABETIZATION. The terms in the *McGraw-Hill Dictionary of Geology and Mineralogy*, Second Edition, are alphabetized on a letter-by-letter basis; word spacing, hyphen, comma, solidus, and apostrophe in a term are ignored in the sequencing. For example, an ordering of terms would be:

abnormal fold	acre-yield
a-b plane	Agassiz orogeny
ACF diagram	Age of Fishes

FORMAT. The basic format for a defining entry provides the term in boldface, the field is small capitals, and the single definition in lightface:

term [FIELD] Definition.

A field may be followed by multiple definitions, each introduced by a bold-face number:

term [FIELD] **1.** Definition. **2.** Definition. **3.** Definition.

A simple cross-reference entry appears as:

term *See* another term.

A cross reference may also appear in combination with definitions:

term [FIELD] **1.** Definition. **2.** *See* another term.

CROSS REFERENCING. A cross-reference entry directs the user to the defining entry. For example, the user looking up “abyssal” finds:

abyssal *See* plutonic.

The user then turns to the “P” terms for the definition. Cross references are also made from variant spellings, acronyms, abbreviations, and symbols.

aenigmatite *See* enigmatite.

aggradation *See* accretion.

barkhan *See* barchan.

ALSO KNOWN AS . . . , etc. A definition may conclude with a mention of a synonym of the term, a variant spelling, an abbreviation for the term, or other such information, introduced by “Also known as . . .,” “Also spelled . . .,” “Abbreviated . . .,” “Symbolized . . .,” “Derived from . . .” When a term has

more than one definition, the positioning of any of these phrases conveys the extent of applicability. For example:

term [FIELD] **1.** Definition. Also known as synonym. **2.** Definition.
Symbolized T.

In the above arrangement, “Also known as . . .” applies only to the first definition; “Symbolized . . .” applies only to the second definition.

term [FIELD] Also known as synonym. **1.** Definition. **2.** Definition.

In the above arrangement, “Also known as . . .” applies to both definitions.

MINERAL FORMULAS. Mineral definitions may include a formula indicating the composition.

Fields and Their Scope

[GEOCHEM] **geochemistry**—The field that encompasses the investigation of the chemical composition of the earth, other planets, and the solar system and universe as a whole, as well as the chemical processes that occur within them.

[GEOL] **geology**—The study or science of earth, its history, and its life as recorded in the rocks; includes the study of the geologic features of an area, such as the geometry of rock formations, weathering and erosion, and sedimentation.

[GEOPHYS] **geophysics**—The branch of geology in which the principles and practices of physics are used to study the earth and its environment, that is, earth, air, and (by extension) space.

[MINERAL] **mineralogy**—The study of naturally occurring inorganic substances, called minerals, whether of terrestrial or extraterrestrial origin.

[PALEOBOT] **paleobotany**—The study of fossil plants and vegetation of the geologic past.

[PALEON] **paleontology**—The study of life in the geologic past as recorded by fossil remains.

[PETR] **petrology**—The branch of geology dealing with the origin, occurrence, structure, and history of rocks, especially igneous and metamorphic rocks.

Pronunciation Key

Vowels

a	as in bat , that
ā	as in bait , crate
ä	as in bother , father
e	as in bet , net
ē	as in beet , treat
i	as in bit , skit
ī	as in bite , light
ō	as in boat , note
ó	as in bought , taut
ú	as in book , pull
ü	as in boot , pool
ə	as in but , sofa
aú	as in crowd , power
ói	as in boil , spoil
yə	as in formula , spectacular
yü	as in fuel , mule

Semivowels/Semiconsonants

w	as in wind , twin
y	as in yet , onion

Stress (Accent)

'	precedes syllable with primary stress
,	precedes syllable with secondary stress
	precedes syllable with variable or indeterminate primary/secondary stress

Consonants

b	as in bib , dribble
ch	as in charge , stretch
d	as in dog , bad
f	as in fix , safe
g	as in good , signal
h	as in hand , behind
j	as in joint , digit
k	as in cast , brick
<u>k</u>	as in Bach (used rarely)
l	as in loud , bell
m	as in mild , summer
n	as in new , dent
<u>n</u>	indicates nasalization of preceding vowel
ŋ	as in ring , single
p	as in pier , slip
r	as in red , scar
s	as in sign , post
sh	as in sugar , shoe
t	as in timid , cat
th	as in thin , breath
<u>th</u>	as in then , breathe
v	as in veil , weave
z	as in zoo , cruise
zh	as in beige , treasure

Syllabication

- Indicates syllable boundary when following syllable is unstressed

Preface

The *McGraw-Hill Dictionary of Geology and Mineralogy* provides a compendium of more than 9000 terms that are central to a broad range of geological sciences and related fields. The coverage in this Second Edition is focused on the areas of geochemistry, geology, geophysics, mineralogy, paleobotany, paleontology, and petrology, with new terms added and others revised as necessary.

Geology deals with the solid earth and the processes that formed and modified it as it evolved. Related disciplines include the study of the physics of the earth (geophysics); earth chemistry, composition, and chemical changes (geochemistry); the composition, properties, and structure of minerals (mineralogy); the description, classification, origin, and evolution of rocks (petrology); and the study of ancient life (paleontology).

All of the definitions are drawn from the *McGraw-Hill Dictionary of Scientific and Technical Terms*, Sixth Edition (2003). Each definition is classified according to the field with which it is primarily associated; if it is used in more than one area; it is identified by the general label [GEOLOGY]. The pronunciation of each term is provided along with synonyms, acronyms, and abbreviations where appropriate. A guide to the use of the Dictionary appears on pages vii-viii, explaining the alphabetical organization of terms, the format of the book, cross referencing, and how synonyms, variant spellings, abbreviations, mineral formulas, and similar information are handled. The Pronunciation Key is provided on page x. The Appendix provides conversion tables for commonly used scientific units as well as revised geologic time scale, periodic table, historical information, and useful listings of geological and mineralogical data.

It is the editors' hope that the Second Edition of the *McGraw-Hill Dictionary of Geology and Mineralogy* will serve the needs of scientists, engineers, students, teachers, librarians, and writers for high-quality information, and that it will contribute to scientific literacy and communication.

Mark D. Licker
Publisher

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A

- aa channel** [GEOL] A narrow, sinuous channel in which a lava river moves down and away from a central vent to feed an aa lava flow. { ä'ä 'chan·əl }
- aa lava** See block lava. { ä'ä 'lä·və }
- Aalenian** [GEOL] Lowermost Middle or uppermost Lower Jurassic geologic time. { ö'læn·ē,ən }
- a axis** [GEOL] The direction of movement or transport in a tectonite. { ä 'ak,sis }
- abandoned channel** See oxbow. { ə'ban·dənd 'chan·əl }
- ABC system** [GEOPHYS] A procedure in seismic surveying to determine the effect of irregular weathering thickness. { 'ä'bē'sē 'sis·təm }
- ablation** [GEOL] The wearing away of rocks, as by erosion or weathering. { ə'blā·shən }
- ablation moraine** [GEOL] **1.** A layer of rock particles overlying ice in the ablation of a glacier. **2.** Drift deposited from a superglacial position through the melting of underlying stagnant ice. { ə'blā·shən mə'rān }
- abnormal anticlinorium** [GEOL] An anticlinorium with axial planes of subsidiary folds diverging upward. { əb'nór·mə'l |ən·tə·kli'nó·rē·əm }
- abnormal fold** [GEOL] An anticlinorium in which there is an upward convergence of the axial surfaces of the subsidiary folds. { əb'nór·mə'l 'föld }
- abnormal magnetic variation** [GEOPHYS] The anomalous value in magnetic compass readings made in some local areas containing unknown sources that deflect the compass needle from the magnetic meridian. { əb'nór·mə'l mag'ned·ik ve·rē'ä·shən }
- abnormal synclinorium** [GEOL] A synclinorium with axial planes of subsidiary folds converging downward. { əb'nór·mə'l |sɪn·kli'nó·rē·əm }
- a-b plane** [GEOL] The surface along which differential movement takes place. { ä'bē ,plān }
- abrade** [GEOL] To wear away by abrasion or friction. { ə'brād }
- abrasion** [GEOL] Wearing away of sedimentary rock chiefly by currents of water laden with sand and other rock debris and by glaciers. { ə'brā·zhən }
- abrasion platform** [GEOL] An uplifted marine peneplain or plain, according to the smoothness of the surface produced by wave erosion, which is of large area. { ə'brā·zhən 'plat·förm }
- abrasive** [GEOL] A small, hard, sharp-cornered rock fragment, used by natural agents in abrading rock material or land surfaces. Also known as abrasive ground. { ə'brās·əv }
- absarokite** [PETR] An alkalic basalt of about equal portions of olivine, augite, labradorite, and sanidine with accessory biotite, apatite, and opaque oxides; leucite is occasionally present in small amounts. { əb'sä·rə·kīt }
- absolute age** [GEOL] The geologic age of a fossil, or a geologic event or structure expressed in units of time, usually years. Also known as actual age. { 'əb·sə,lüt 'āj }
- absolute geopotential topography** See geopotential topography. { 'əb·sə,lüt |jē·ō·pə'ten·shəl tə'päg·rə·fē }
- absolute time** [GEOL] Geologic time measured in years, as determined by radioactive decay of elements. { 'əb·sə,lüt 'tīm }
- Abukuma-type facies** [PETR] A type of dynathermal regional metamorphism characterized by low pressure. { əb·ə'kü·mə ,tɪp 'fā·shēz }

abundance

- abundance** [GEOCHEM] The relative amount of a given element among other elements. { ə'bən·dəns }
- abyssal** See plutonic. { ə'bis·əl }
- abyssal cave** See submarine fan. { ə'bis·əl 'kāv }
- abyssal fan** See submarine fan. { ə'bis·əl 'fan }
- abyssal floor** [GEOLOGY] The ocean floor, or bottom of the abyssal zone. { ə'bis·əl 'flôr }
- abyssal gap** [GEOLOGY] A gap in a sill, ridge, or rise that lies between two abyssal plains. { ə'bis·əl 'gap }
- abyssal hill** [GEOLOGY] A hill 2000 to 3000 feet (600 to 900 meters) high and a few miles wide within the deep ocean. { ə'bis·əl 'hil }
- abyssal injection** [GEOLOGY] The process of driving magmas, originating at considerable depths, up through deep-seated contraction fissures in the earth's crust. { ə'bis·əl in'jek·shən }
- abyssal plain** [GEOLOGY] A flat, almost level area occupying the deepest parts of many of the ocean basins. { ə'bis·əl 'plān }
- abyssal rock** [GEOLOGY] Plutonic, or deep-seated, igneous rocks. { ə'bis·əl 'rāk }
- abyssal theory** [GEOLOGY] A theory of the origin of ores involving the separation of ore silicates from the liquid stage during the cooling of the earth. { ə'bis·əl 'thē·ə·rē }
- abyssolith** [GEOLOGY] A molten mass of eruptive material passing up without a break from the zone of permanently molten rock within the earth. { ə'bis·əl·lith }
- Acadian orogeny** [GEOLOGY] The period of formation accompanied by igneous intrusion that took place during the Middle and Late Devonian in the Appalachian Mountains. { ə'kād·ē·ən ör'aj·ə·nē }
- acanthite** [MINERAL] Ag₂S A blackish to lead-gray silver sulfide mineral, crystallizing in the orthorhombic system. { ə'kan·thīt }
- Acanthodes** [PALEONTOLOGY] A genus of Carboniferous and Lower Permian eel-like acanthodian fishes of the family Acanthodidae. { ə,kan'thō·dēz }
- Acanthodidae** [PALEONTOLOGY] A family of extinct acanthodian fishes in the order Acanthodiformes. { ə,kan'thō·dā,dē }
- Acanthodiformes** [PALEONTOLOGY] An order of extinct fishes in the class Acanthodii having scales of acellular bone and dentine, one dorsal fin, and no teeth. { ə,kan'thō·dā'fôr,mēz }
- Acanthodii** [PALEONTOLOGY] A class of extinct fusiform fishes, the first jaw-bearing vertebrates in the fossil record. { ə,kan'thō·dē,ī }
- acanthopore** [PALEONTOLOGY] A tubular spine in some fossil bryozoans. { ə'kan·thə,pôr }
- acaustobiolith** [PETROLOGY] A noncombustible organic rock, or one formed by organic accumulation of minerals. { |ə,kôs·tə'bī·ə·lith }
- acaustophytolith** [PETROLOGY] An acaustobiolith resulting from plant activity, such as a pelagic ooze that contains diatoms. { |ə,kôs·tə'fid·ə·lith }
- accelerated erosion** [GEOLOGY] Soil erosion that occurs more rapidly than soil horizons can form from the parent regolith. { ək'sel·ər,ā·dəd i'rō·zhən }
- acceptable risk** [GEOPHYSICS] In seismology, that level of earthquake effects which is judged to be of sufficiently low social and economic consequence, and which is useful for determining design requirements in structures or for taking certain actions. { ək'sep·tə'bəl 'risk }
- accessory ejecta** [GEOLOGY] Pyroclastic material formed from solidified volcanic rocks that are from the same volcano as the ejecta. { ək'ses·ə·rē i'jek·tə }
- accessory element** See trace element. { ək'ses·ə·rē 'el·ə·mənt }
- accessory mineral** [MINERALOGY] A minor mineral in an igneous rock that does not affect its general character. { ək'ses·ə·rē ,min·rəl }
- accidental ejecta** [GEOLOGY] Pyroclastic rock formed from preexisting nonvolcanic rocks or from volcanic rocks unrelated to the erupting volcano. { |ək·sə'den·təl i'jek·tə }
- accidental inclusion** See xenolith. { |ək·sə'den·təl in'klü·zhən }
- accident block** [GEOLOGY] A solid chip of rock broken off from the subvolcanic basement and ejected from a volcano. { |ək·sə'dent ,blāk }
- acclivity** [GEOLOGY] A slope that is ascending from a reference point. { ə'kliv·əd·ē }

aclinic line

- accordant** [GEOL] Pertaining to topographic features that have nearly the same elevation. { ə'kɔrd·ənt }
- accordant fold** [GEOL] One of several folds that are similarly oriented. { ə'kɔrd·ənt ,fɔld }
- accordant summit level** [GEOL] A hypothetical horizontal plane that can be drawn over a broad region connecting mountain summits of similar elevation. { ə'kɔrd·ənt 'səm·ət ,lev·əl }
- accretion** [GEOL] **1.** Gradual buildup of land on a shore due to wave action, tides, currents, airborne material, or alluvial deposits. **2.** The process whereby stones or other inorganic masses add to their bulk by adding particles to their surfaces. Also known as aggradation. **3.** See accretion tectonics. { ə'krē·shən }
- accretionary lapilli** See mud ball. { ə'krē·shən,er·ē lə'pi·lē }
- accretionary lava ball** [GEOL] A rounded ball of lava that occurs on the surface of an aa lava flow. { ə'krē·shən,er·ē 'lā·və ,bɔl }
- accretionary limestone** [PETR] A type of limestone formed by the slow accumulation of organic remains. { ə'krē·shən,er·ē 'lɪm·stɔn }
- accretionary ridge** [GEOL] A beach ridge located inland from the modern beach, indicating that the coast has been built seaward. { ə'krē·shən,er·ē ,rɪdʒ }
- accretion tectonics** [GEOL] The bringing together, or suturing, of terranes; regarded by many geologists as an important mechanism of continental growth. Also known as accretion. { ə'krē·shən tek'tən·iks }
- accretion topography** [GEOL] Topographic features built by accumulation of sediment. { ə'krē·shən tə'pɑg·rə·fē }
- accretion vein** [GEOL] A type of vein formed by the repeated filling of channels followed by their opening because of the development of fractures in the zone undergoing mineralization. { ə'krē·shən ,vān }
- accretion zone** [GEOL] Any beach area undergoing accretion. { ə'krē·shən ,zɔn }
- accumulation zone** [GEOL] The area where the bulk of the snow contributing to an avalanche was originally deposited. { ə·kyü·myə'lā·shən ,zɔn }
- ACF diagram** [PETR] A triangular diagram showing the chemical character of a metamorphic rock; the three components plotted are $A = Al_2O_3 + Fe_2O_3 - (Na_2O + K_2O)$, $C = CaO$, $F = FeO + MgO + MnO$. { ,ā,sē'ef 'dɪ·ə,grəm }
- a-c girdle** [GEOL] A girdle of points in a petrofabric diagram that have a trend parallel with the plane of the a and c fabric axes. { 'a'sē 'gɜrd·əl }
- Achaenodontidae** [PALEON] A family of Eocene dichobunoids, piglike mammals belonging to the suborder Palaeodonta. { ə,kēn·ə'dän·tə·dē }
- achondrite** [GEOL] A stony meteorite that contains no chondrules. { 'ā'kän,drit }
- achroite** [MINERAL] A colorless variety of tourmalines found in Malagasy. { 'ak·rɔ,ɪt }
- acid clay** [GEOL] A type of clay that gives off hydrogen ions when it dissolves in water. { 'as·əd 'klā }
- acidic lava** [GEOL] Extruded felsic igneous magma which is rich in silica (SiO₂ content exceeds 65). { ə'sid·ik 'lā·və }
- acidic rock** [PETR] Igneous rock containing more than 66% SiO₂, making it silicic. { ə'sid·ik 'ræk }
- acidity coefficient** [GEOCHEM] The ratio of the oxygen content of the bases in a rock to the oxygen content in the silica. Also known as oxygen ratio. { ə'sid·ə·tē ,kɔ·ə'fɪsh·ənt }
- acid soil** [GEOL] A soil with pH less than 7; results from presence of exchangeable hydrogen and aluminum ions. { 'as·əd 'sɔil }
- acid spar** [MINERAL] A grade of fluor spar containing over 98% CaF₂ and no more than 1% SiO₂; produced by flotation; used for the production of hydrofluoric acid. { 'as·əd ,spär }
- acinal** [GEOL] Without dip; horizontal. { 'ā'klɪn·əl }
- aclinic** [GEOPHYS] Referring to a situation where a freely suspended magnetic needle remains in a horizontal position. { a'klin·ik }
- aclinic line** See magnetic equator. { a'klin·ik 'lɪn }

acme

- acme** [PALEON] The time of largest abundance or variety of a fossil taxon; the taxon may be either general or local. { 'ak·mē }
- acmite** [MINERAL] $\text{NaFeSi}_2\text{O}_6$ A brown or green silicate mineral of the pyroxene group, often in long, pointed prismatic crystals; hardness is 6–6.5 on Mohs scale, and specific gravity is 3.50–3.55; found in igneous and metamorphic rocks. { 'ak,mīt }
- acre-yield** [GEOL] The average amount of oil, gas, or water taken from one acre of a reservoir. { 'ā·kər ʔjeld }
- acritarch** [PALEON] A unicellular microfossil of unknown or uncertain biological origin that occurs abundantly in strata from the Precambrian and Paleozoic. { 'ak·rə,tark }
- acrobatholithic** [GEOL] A stage in batholithic erosion where summits of cupolas and stocks are exposed without any exposure of the surface separating the barren interior of the batholith from the mineralized upper part. { ,ak·rə|bath·ə|lith·ik }
- acromorph** [GEOL] A salt dome. { 'ak·rō,mórf }
- Acrosaleniidæ** [PALEON] A family of Jurassic and Cretaceous echinoderms in the order Salenoida. { 'ak·rō,sal·ə'nī·ə·dē }
- Acrotretacea** [PALEON] A family of Cambrian and Ordovician inarticulate brachiopods of the suborder Acrotretidina. { ,ak·rō·tre'tās·ē·ə }
- acrozone** *See* range zone. { 'ak·rō,zōn }
- actinolite** [MINERAL] $\text{Ca}_2(\text{Mg,Fe})_5\text{Si}_8\text{O}_{22}(\text{OH})_2$ A green, monoclinic rock-forming amphibole; a variety of asbestos occurring in needlelike crystals and in fibrous or columnar forms; specific gravity 3–3.2. { ,ak'tin·ə,līt }
- Actinostromariidæ** [PALEON] A sphaeractinoid family of extinct marine hydrozoans. { ,ak·tə·nō,strō·mə'rī·ə·dē }
- active layer** [GEOL] That part of the soil which is within the suprapermafrost layer and which usually freezes in winter and thaws in summer. Also known as frost zone. { 'ak·tiv 'lā·ər }
- active margin** [GEOL] A continental margin that is characterized by earthquakes, volcanic activity, and orogeny resulting from movement of tectonic plates. { 'ak·təv 'mār·jən }
- active permafrost** [GEOL] Permanently frozen ground (permafrost) which, after thawing by artificial or unusual natural means, reverts to permafrost under normal climatic conditions. { 'ak·tiv 'pər·mə·frōst }
- active volcano** [GEOL] A volcano capable of venting lava, pyroclastic material, or gases. { 'ak·tiv ,vəl'kā·nō }
- activity ratio** [GEOL] The ratio of plasticity index to percentage of clay-sized minerals in sediment. { ,ak'tiv·əd·ē ,rā·shō }
- actual age** *See* absolute age. { 'ak·chə·wəl āj }
- actualism** *See* uniformitarianism. { 'ak·chū·ə,liz·əm }
- actual relative movement** *See* slip. { 'ak·chə·wəl 'rel·ə·tiv 'müv·mənt }
- acute angle block** [GEOL] A fault block in which the strike of strata on the down-dip side meets a diagonal fault at an acute angle. { ə'kyüt ʔaŋ·gəl 'bläk }
- acute bisectrix** [MINERAL] A bisecting line of the acute angle of the optic axes of biaxial minerals. { ə'kyüt ,bī'sek·triks }
- adakites** [GEOL] Rocks formed from lavas that melted from subducting slabs associated with either volcanic arcs or arc/continent collision zones; they were first described from Adak Island in the Aleutians. { 'a·də,kīts }
- adamantine spar** [MINERAL] A silky brown variety of corundum. { ,ad·ə'man,tən 'spär }
- adamellite** *See* quartz monzonite. { ə'dam·ə,līt }
- adamite** [MINERAL] $\text{Zn}_2(\text{AsO}_4)(\text{OH})$ A colorless, white, or yellow mineral consisting of basic zinc arsenate, crystallizing in the orthorhombic system; hardness is 3.5 on Mohs scale, and specific gravity is 4.34–4.35. { 'ad·ə,mīt }
- adamsite** [MINERAL] Greenish-black mica. { 'a·dəm,zīt }
- adcumulus** [PETR] Pertaining to the growth of a cumulus crystal so as to exclude the growth of other phases; results in a monomineralic rock. { ad'kyü·myə·ləs }
- adelite** [MINERAL] $\text{CaMg}(\text{AsO}_4)(\text{OH},\text{F})$ A colorless to gray, bluish-gray, yellowish-gray,

aerosiderite

- yellow, or light green orthorhombic mineral consisting of a basic arsenate of calcium and magnesium; usually occurs in massive form. { 'ad·əl,īt }
- ader wax** See ozocerite. { 'äd·ər ,waks }
- adiagnostic** [PETR] Pertaining to a rock texture in which identification of individual components is not possible macroscopically or microscopically; applied especially to igneous rock. { 'ä,dī·əg'näs·tik }
- adinole** [GEOL] An argillaceous sediment that has undergone albitization at the margin of a basic intrusion. { 'ad·ən,öl }
- adipocerite** See hatchettite. { ,ad·ə'päs·ə,rit }
- adipocire** See hatchettite. { ,ad·ə'pä,sir }
- admixture** [GEOL] One of the lesser or subordinate grades of sediment. { 'äd,miks·chər }
- adobe** [GEOL] Heavy-textured clay soil found in the southwestern United States and in Mexico. { ə'dō·bē }
- adobe flats** [GEOL] Broad flats that are floored with sandy clay and have been formed from sheet floods. { ə'dō·bē 'flats }
- adolescence** [GEOL] Stage in the cycle of erosion following youth and preceding maturity. { ,ad·əl'es·əns }
- adolescent coast** [GEOL] A type of shoreline characterized by low but nearly continuous sea cliffs. { ,ad·əl'es·ənt ,kōst }
- adularia** [MINERAL] A weakly triclinic form of the mineral orthoclase occurring in transparent, colorless to milky-white pseudo-orthorhombic crystals. { ,aj·ə'la·rē·ə }
- adularization** [GEOL] Replacement by or introduction of the mineral adularia. { ə,jül·ə·rə'zā·shən }
- advance** [GEOL] **1.** A continuing movement of a shoreline toward the sea. **2.** A net movement over a specified period of time of a shoreline toward the sea. { əd'vans }
- advective cone** [GEOL] A volcanic cone that is on the flank of and subsidiary to a larger volcano. Also known as lateral cone; parasitic cone. { əd'ven·tiv 'kōn }
- advective crater** [GEOL] A crater opened on the flank of a large volcanic cone. { əd'ven·tiv 'krät·ər }
- Aechminidae** [PALEON] A family of extinct ostracodes in the order Paleocopa in which the hollow central spine is larger than the valve. { äk'min·ə,dē }
- Aeduellidae** [PALEON] A family of Lower Permian palaeoniscoid fishes in the order Palaeonisciformes. { ,ē·dü'el·ə,dī }
- aegirine** [MINERAL] $\text{NaFe}(\text{SiO}_3)_2$ A brown or green clinopyroxene occurring in alkali-rich igneous rocks. Also known as aegirite. { 'ä·gə,rēn }
- aegirite** See aegirine. { 'ä·gə,rit }
- Aegyptopithecus** [PALEON] A primitive primate that is thought to represent the common ancestor of both the human and ape families. { ə,jip·tō'pith·e,kəs }
- aenigmatite** See enigmatite. { ə'nig·mə,tīt }
- Aepyornis** [PALEON] A genus of extinct ratite birds representing the family Aepyornithidae. { ,ē·pē'örn·əs }
- Aepyornithidae** [PALEON] The single family of the extinct avian order Aepyornithiformes. { ,ē·pē,ör'nith·ə,dē }
- Aepyornithiformes** [PALEON] The elephant birds, an extinct order of ratite birds in the superorder Neognathae. { ,ē·pē,ör'nith·ə'fór,mēz }
- aerogeology** [GEOL] The geologic study of earth features by means of aerial observations and aerial photography. { ,e·rō·jē'äl·ə·jē }
- aerohydrous mineral** [MINERAL] A mineral containing water in small cavities. { ,e·rō'hī·drəs 'min·rəl }
- aerolite** See stony meteorite. { 'e·rō,līt }
- aeromagnetic surveying** [GEOPHYS] The mapping of the magnetic field of the earth through the use of electronic magnetometers suspended from aircraft. { ,e·rō·mag'nēd·ik sərv·vā·īŋ }
- aeropalynology** [PALEOBOT] A branch of palynology that focuses on the study of pollen grains and spores that are dispersed into the atmosphere. { ,er·ō,pal·ə'näl·ə·jē }
- aerosiderite** [GEOL] A meteorite composed principally of iron. { ,e·rō'sīd·ə,rit }

affine deformation

- affine deformation** [GEOL] A type of deformation in which very thin layers slip against each other so that each moves equally with respect to its neighbors; generally does not result in folding. { ə'fɪn ,dē'fɔr'mā'shən }
- affine strain** [GEOPHYS] A strain in the earth that does not differ from place to place. { ə'fɪn 'strān }
- African superplume** [GEOPHYS] A large, discrete, slowly rising plume of heated material in the earth's mantle, beneath southern Africa, believed by some to contribute to the movement of tectonic plates. { 'af-ri-kən 'sü·pər,plüm }
- aftershock** [GEOPHYS] A small earthquake following a larger earthquake and originating at or near the larger earthquake's epicenter. { 'af-tər,shək }
- Aftonian interglacial** [GEOL] Post-Nebraska interglacial geologic time. { ,af'ton-ē-ən ,in-tər'glā-shəl }
- afwillite** [MINERAL] $\text{Ca}_3\text{Si}_2\text{O}_4(\text{OH})_6$ A colorless mineral consisting of a hydrous calcium silicate and occurring in monoclinic crystals; specific gravity is 2.6. { 'af-wəl,ɪt }
- agalite** [MINERAL] A mineral with the same composition as talc but with a less soapy feel; used as a filler in writing paper. { 'a-gəl,ɪt }
- agalmatolite** [GEOL] A soft, waxy, gray, green, yellow, or brown mineral or stone, such as pinite and steatite; used by the Chinese for carving images. Also known as figure stone; lardite; pagodite. { ,a-gəl'mad-əl,ɪt }
- agaric mineral** See rock milk. { ə'gar-ik 'mɪn-rəl }
- Agassiz orogeny** [GEOL] A phase of diastrophism confined to North America Cordillera occurring at the boundary between the Middle and Late Jurassic. { 'ag-ə-sē ó'rāj-ə-nē }
- Agassiz Valleys** [GEOL] Undersea valleys in the Gulf of Mexico between Cuba and Key West. { 'ag-ə-sē 'val-ēz }
- agate** [MINERAL] SiO_2 A fine-grained, fibrous variety of chalcedony with color banding or irregular clouding. { 'ag-ət }
- agate jasper** [MINERAL] An impure variety of quartz consisting of jasper and agate. Also known as jaspagate. { 'ag-ət 'jas-pər }
- agatized wood** See silicified wood. { 'ag-ə-tɪzd 'wʊd }
- age** [GEOL] **1.** Any one of the named epochs in the history of the earth marked by specific phases of physical conditions or organic evolution, such as the Age of Mammals. **2.** One of the smaller subdivisions of the epoch as geologic time, corresponding to the stage or the formation, such as the Lockport Age in the Niagara Epoch. { əj }
- aged** [GEOL] Of a ground configuration, having been reduced to base level. { 'ā-jəd }
- age determination** [GEOL] Identification of the geologic age of a biological or geological specimen by using the methods of dendrochronology or radiometric dating. { 'āj di,tər-mə'nā-shən }
- aged shore** [GEOL] A shore long established at a constant level and adjusted to the waves and currents of the sea. { 'ā-jəd 'shɔr }
- Age of Fishes** [GEOL] An informal designation of the Silurian and Devonian periods of geologic time. { 'āj əv 'fɪsh-əz }
- Age of Mammals** [GEOL] An informal designation of the Cenozoic era of geologic time. { 'āj əv 'mam-əlz }
- Age of Man** [GEOL] An informal designation of the Quaternary period of geologic time. { 'āj əv 'mæn }
- age ratio** [GEOL] The ratio of the amount of daughter to parent isotope in a mineral being dated radiometrically. { 'āj ,rā-shō }
- agglomerate** [GEOL] A pyroclastic rock composed of angular rock fragments in a matrix of volcanic ash; typically occurs in volcanic vents. { ə'gläm-ə-rət }
- agglutinate cone** See spatter cone. { ə'glüt-ən,āt ,kɔn }
- aggradation** See accretion. { ,ag-rə'dā-shən }
- aggradation recrystallization** [GEOL] Recrystallization resulting in the enlargement of crystals. { ,ag-rə'dā-shən rē,kris-tə-lə'zā-shən }
- aggraded valley floor** [GEOL] The surface of a flat deposit of alluvium which is thicker

Aistopoda

- than the stream channel's depth and is formed where a stream has aggraded its valley. { ə'grād·əd 'val·ē 'flór }
- aggraded valley plain** See alluvial plain. { ə'grād·əd 'val·ē 'plān }
- aggregate** [GEOL] A collection of soil grains or particles gathered into a mass. { 'ag·rə·gət }
- aggregate structure** [GEOL] A mass composed of separate small crystals, scales, and grains that, under a microscope, extinguish at different intervals during the rotation of the stage. { 'ag·rə·gət 'strək·chər }
- aggressive magma** [GEOL] A magma that forces itself into place. { ə'gres·iv 'mag·mə }
- Aglaspida** [PALEON] An order of Cambrian and Ordovician merostome arthropods in the subclass Xiphosurida characterized by a phosphatic exoskeleton and vaguely trilobed body form. { ə'glas·pə·də }
- agmatite** [PETR] **1.** A migmatite that contains xenoliths. **2.** Fragmental plutonic rock with granitic cement. { 'ag·mə,tīt }
- agonic line** [GEOPHYS] The imaginary line through all points on the earth's surface at which the magnetic declination is zero; that is, the locus of all points at which magnetic north and true north coincide. { ə'gän·ik līn }
- agravic** [GEOPHYS] Of or pertaining to a condition of no gravitation. { ,ə'grav·ik }
- agpaitite** [PETR] A group of igneous rocks containing feldspathoids; includes naujaite, lujavrite, and kakortokite. { 'ag·pə,tīt }
- agricere** [GEOL] A waxy or resinous organic coating on soil particles. { 'ag·rə,sir }
- agricolite** See eulytite. { ə'grik·ə,līt }
- agricultural geology** [GEOL] A branch of geology that deals with the nature and distribution of soils, the occurrence of mineral fertilizers, and the behavior of underground water. { 'ag·rə'kəl·chə·rəl jē'äl·ə·jē }
- Agrichoeridae** [PALEON] A family of extinct tylopod ruminants in the superfamily Merycoidodontoidea. { ,ag·rē·ō'kir·ə,dē }
- aguilarite** [MINERAL] Ag₄SeS An iron-black mineral associated with argentite and silver in Mexico. { ,äg·ə'lä,rīt }
- ahlfeldite** [MINERAL] (Ni,Co)SeO₃·2H₂O A triclinic mineral identified as green to yellow crystals with a reddish-brown coating, consisting of a hydrous selenite of nickel. { ä'l'fel,dīt }
- aguille** [GEOL] The needle-top of the summit of certain glaciated mountains, such as near Mont Blanc. { ,ä'gwəl }
- aikinite** [MINERAL] PbCuBiS₃ A mineral crystallizing in the orthorhombic system and occurring massive and in gray needle-shaped crystals; hardness is 2 on Mohs scale, and specific gravity is 7.07. Also known as needle ore. { 'ä·kə,nīt }
- ailsyte** [PETR] An alkalic microgranite containing a considerable amount of riebeckite. Also known as paisanite. { 'äl,sīt }
- air current** [GEOPHYS] See air-earth conduction current. { 'er ,kər·ənt }
- air gap** See wind gap. { 'er ,gəp }
- air heave** [GEOL] Deformation of plastic sediments on a tidal flat as a result of the growth of air pockets in them; the growth occurs by accretion of smaller air bubbles oozing through the sediment. { 'er ,hēv }
- air sac** See vesicle. { 'er ,sək }
- air shooting** [GEOPHYS] In seismic prospecting, the technique of applying a seismic pulse to the earth by detonating a charge or charges in the air. { 'er ,shüd·iŋ }
- air volcano** [GEOL] An eruptive opening in the earth from which large volumes of gas emanate, in addition to mud and stones; a variety of mud volcano. { 'er ,vä'l'kə·nō }
- Airy isostasy** [GEOPHYS] A theory of hydrostatic equilibrium of the earth's surface which contends that mountains are floating on a fluid lava of higher density, and that higher mountains have a greater mass and deeper roots. { 'er·ē i'säs·tə·sē }
- Aistopoda** [PALEON] An order of Upper Carboniferous amphibians in the subclass Lepospondyli characterized by reduced or absent limbs and an elongate, snakelike body. { ,ä·ə'stöp·ə·də }

akaganeite

- akaganeite** [MINERAL] β -FeO(OH) A mineral found in meteorites and considered to be formed in flight or by alteration. { ,a-kə'gan-ē,īt }
- akenobeite** [PETR] A form of aplite composed of orthoclase and oligoclase with quartz in the interstices. { ,a-kə'nōb-ē,it }
- akerite** [PETR] A rock composed of quartz syenite containing soda microcline, oligoclase, and augite. { 'ō-kə,rīt }
- akermanite** [MINERAL] $\text{Ca}_2\text{MgSi}_2\text{O}_7$ Anhydrous calcium-magnesium silicate found in igneous rocks; a melilite. { 'ō-kər-mə,nīt }
- AKF diagram** [PETR] A triangular diagram showing the chemical character of a metamorphic rock in which the three components plotted are $\text{A} = \text{Al}_2\text{O}_3 + \text{Fe}_2\text{O}_3 + (\text{CaO} + \text{Na}_2\text{O})$, $\text{K} = \text{K}_2\text{O}$, and $\text{F} = \text{FeO} + \text{MgO} + \text{MnO}$. { ,jā|kə|f 'dī-ə,gram }
- akrochordite** [MINERAL] $\text{Mn}_4\text{Mg}(\text{AsO}_4)_2(\text{OH})_4 \cdot 4\text{H}_2\text{O}$ Mineral consisting of a hydrous basic manganese magnesium arsenate and occurring in reddish-brown rounded aggregates; hardness is 3 on Mohs scale, and specific gravity is 3.2. { ,ak-rō'kōr,dit }
- aktological** [GEOL] Nearshore shallow-water areas, conditions, sediments, or life. { ,ak-tə'lāj-ə-kəl }
- alabandite** [MINERAL] MnS A complex sulfide mineral that is a component of meteorites and usually occurs in iron-black massive or granular form. Also known as manganblende. { ,al-ə'ban,dīt }
- alabaster** [MINERAL] **1.** $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$ A fine-grained, colorless gypsum. **2.** See onyx marble. { 'al-ə,bas-tər }
- alamosite** [MINERAL] PbSiO_3 A white or colorless monoclinic mineral consisting of lead silicate and occurring in radiating fibers; hardness is 4.5 on Mohs scale, and specific gravity is 6.5. { ,al-ə'mō,sīt }
- alaskaite** [MINERAL] A light lead-gray sulfide mineral consisting of a mixture of lead, silver, copper, and bismuth. { ə'las-kə,īt }
- alaskite** [PETR] A granitic rock composed mainly of quartz and alkali feldspar, with few dark mineral components. { ə'las,kīt }
- albafite** [MINERAL] Greenish to brownish bitumen which becomes white when exposed to air; contains up to 15% oxygen; fusible; insoluble in organic solvents; varies from soft to hard, porous to compact; atomic ratio H/C 1.75–2.25. { 'al-bə,fit }
- albanite** [PETR] A melanocratic leucitite found near Rome, Italy. { 'al-bə,nīt }
- albertite** [MINERAL] Jet-black, brittle natural hydrocarbon with conchoidal fracture, hardness of 1–2, and specific gravity of approximately 1.1. Also known as asphaltite coal. { 'al-bər,īt }
- Albertosaurus** [PALEON] A carnivorous theropod dinosaur, 30 feet (9 meters) long, from the Late Cretaceous Period that had long muscular hindlimbs, comparatively weak forelimbs (with two-fingered hands), and powerful jaws lined with sharp teeth; related to Tyrannosaurus. { al,bər-də'sór-əs }
- Albian** [GEOL] Uppermost Lower Cretaceous geologic time. { 'al-bē-ən }
- albic horizon** [GEOL] A soil horizon from which clay and free iron oxides have been removed or in which the iron oxides have been segregated. { 'al-bik hə'rīz-ən }
- Albionian** [GEOL] Lower Silurian geologic time. { ,al-bē'ōn-ē-ən }
- albite** [MINERAL] $\text{NaAlSi}_3\text{O}_8$ A colorless or milky-white variety of plagioclase of the feldspar group found in granite and various igneous and metamorphic rocks. Also known as sodalclase; sodium feldspar; white feldspar; white schorl. { 'al,bīt }
- albite-epidote-amphibolite facies** [PETR] Rocks of metamorphic type formed under intermediate temperature and pressure conditions by regional metamorphism or in the outer contact metamorphic zone. { 'al,bīt 'ep-ə,dōt ,am'fib-ə,lt 'fā,shēz }
- albitite** [PETR] A porphyritic dike rock that is coarse-grained and composed almost wholly of albite; common accessory minerals are muscovite, garnet, apatite, quartz, and opaque oxides. { 'al-bə,īt }
- albitization** [PETR] The formation of albite in a rock as a secondary mineral. { ,al-bəd-ə'zā-shən }
- albitophyre** [PETR] A porphyritic rock that contains albite phenocrysts in a groundmass composed mostly of albite. { al'bid-ə,fīr }

alkali feldspar

- Alboll** [GEOL] A suborder of the soil order Mollisol with distinct horizons, wet for some part of the year; occurs mostly on upland flats and in shallow depressions. { 'al,ból }
- alboranite** [PETR] Olivine-free hypersthene basalt. { ,al·bə'ra,nīt }
- alcove** [GEOL] A large niche formed by a stream in a face of horizontal strata. { 'al,kōv }
- alcove lands** [GEOL] Terrain where the mud rocks or sandy clays and shales that compose the hills (badlands) are interstratified by occasional harder beds; the slopes are terraced. { 'al,kōv ,lanz }
- alee basin** [GEOL] A basin formed in the deep sea by turbidity currents aggrading courses where the currents were deflected around a submarine ridge. { ə'lē,bās·ən }
- aleishtite** [GEOL] A bluish or greenish mixture of dickite and other clay minerals. { ə'lē·ish,tīt }
- Alexandrian** [GEOL] Lower Silurian geologic time. { ,al·ig'zan·dre·ən }
- alexandrite** [MINERAL] A gem variety of chrysoberyl; emerald green in natural light but red in transmitted or artificial light. { ,al·ig'zan,drīt }
- Alfisol** [GEOL] An order of soils with gray to brown surface horizons, a medium-to-high base supply, and horizons of clay accumulation. { 'al·fə,sōl }
- algal** [GEOL] Formed from or by algae. { 'al·gəl }
- algal biscuit** [GEOL] A disk-shaped or spherical mass, up to 20 centimeters in diameter, made up of carbonate that is probably the result of precipitation by algae. { |al·gəl ,bis·kət }
- algal coal** [GEOL] Coal formed mainly from algal remains. { 'al·gəl ,kōl }
- algal limestone** [PETR] A type of limestone either formed from the remains of calcium-secreting algae or formed when algae bind together the fragments of other lime-secreting organisms. { 'al·gəl 'līm,stōn }
- algal pit** [GEOL] An ablation depression that is small and contains algae. { 'al·gəl ,pit }
- algal reef** [GEOL] An organic reef which has been formed largely of algal remains and in which algae are or were the main lime-secreting organisms. { 'al·gəl ,rēf }
- algal ridge** [GEOL] Elevated margin of a windward coral reef built by actively growing calcareous algae. { 'al·gəl ,rij }
- algal rim** [GEOL] Low rim built by actively growing calcareous algae on the lagoonal side of a leeward reef or on the windward side of a patch reef in a lagoon. { 'al·gəl ,rim }
- algal structure** [GEOL] A deposit, most frequently calcareous, with banding, irregular concentric structures, crusts, and pseudo-pisolites or pseudo-concretionary forms resulting from organic, colonial secretion and precipitation. { |al·gəl |strək·chər }
- Algerian onyx** See onyx marble. { al'jer·ē·ən 'än·iks }
- alginite** See algite. { 'al·jə,nīt }
- algite** [PETR] The petrological unit that constitutes algal material present in considerable amounts in algal or boghead coal. Also known as alginite. { 'al,jīt }
- algodonite** [MINERAL] Cu₆As A steel gray to silver white mineral consisting of copper arsenide and occurring as minute hexagonal crystals or in massive and granular form. { al'gäd·ə,nīt }
- Algomian orogeny** [GEOL] Orogenic episode affecting Archean rocks of Canada about 2.4 billion years ago. Also known as Kenoran orogeny. { al'gōm·ən ò'räj·ə·nē }
- Algonkian** See Proterozoic. { al'gäj·kē·ən }
- alkali** See alkalic. { 'al·kə,lī }
- alkalic** Also known as alkali. [PETR] **1.** Of igneous rock, containing more than average alkali (K₂O and Na₂O) for that clan in which they are found. **2.** Of igneous rock, having feldspathoids or other minerals, such as acmite, so that the molecular ratio of alkali to silica is greater than 1:6. **3.** Of igneous rock, having a low alkali-lime index (51 or less). { ,al'kal·ik }
- alkali-calcic series** [PETR] The series of igneous rocks with weight percentage of silica in the range 51–55, and weight percentages of CaO and K₂O + Na₂O equal. { |al·kə,lī ,kal,sik ,sir·ēz }
- alkali emission** [GEOPHYS] Light emission from free lithium, potassium, and especially sodium in the upper atmosphere. { 'al·kə,lī i'mish·ən }
- alkali feldspar** [MINERAL] A feldspar composed of potassium feldspar and sodium

alkali flat

feldspar, such as orthoclase, microcline, albite, and anorthoclase; all are considered alkali-rich. { 'al·kə,lī 'feld,spar }

alkali flat [GEOL.] A level lakelike plain formed by the evaporation of water in a depression and deposition of its fine sediment and dissolved minerals. { 'al·kə,lī ,flat }

alkali-lime index [PETR] The percentage by weight of silica in a sequence of igneous rocks on a variation diagram where the weight percentages of CaO and of K₂O and Na₂O are equal. { 'al·kə,lī 'līm ,in·deks }

alkaline soil [GEOL.] Soil containing soluble salts of magnesium, sodium, or the like, and having a pH value between 7.3 and 8.5. { 'al·kə,līn 'sōil }

alkali soil [GEOL.] A soil, with salts injurious to plant life, having a pH value of 8.5 or higher. { 'al·kə,lī ,sōil }

alkenones [GEOL.] Long-chain (37–39 carbon atoms) di-, tri-, and tetraunsaturated methyl and ethyl ketones produced by certain phytoplankton (coccolithophorids), which biosynthetically control the degree of unsaturation (number of carbon-carbon double bonds) in response to the water temperature; the survival of this temperature signal in marine sediment sequences provides a temporal record of sea surface temperatures that reflect past climates. { 'al·kə,nōnz }

allactite [MINERAL] Mn₇(AsO₄)₂(OH)₈ A brownish-red mineral consisting of a basic manganese arsenate. { ə'lak,tīt }

allanite [PETR] An altered gabbro with original texture and euhedral pseudomorphs. { ə'lal·ə,nīt }

allanite [MINERAL] (Ca,Ce,La,Y)₂(Al,Fe)₃Si₃O₁₂(OH) Monoclinic mineral distinguished from all other members of the epidote group of silicates by a relatively high content of rare earths. Also known as bucklandite; cerine; orthite; treanorite. { 'al·ə,nīt }

alcharite [MINERAL] A lead gray mineral, supposed to be a lead arsenic sulfide and known only crystallographically as orthorhombic crystals. { 'əl·kə,rīt }

alleg hanyite [MINERAL] Mn₅(SiO₄)₂(OH)₂ A pink mineral consisting of basic manganese silicate. { 'al·ə'gā·nē,tīt }

Alleghenian [GEOL.] Lower Middle Pennsylvanian geologic time. { 'al·ə'gān·ē·ən }

Alleghenian orogeny [GEOL.] Pennsylvanian and Early Permian orogenic episode which deformed the rocks of the Appalachian Valley and the Ridge and Plateau provinces. { 'al·ə'gān·ē·ən ə'rāj·ə·nē }

allemontite [MINERAL] AsSb Rhombohedral, gray or reddish, native antimony arsenide occurring in reniform masses. Also known as arsenical antimony. { ,al·ə'män,tīt }

Allende meteorite [GEOL.] A meteorite that fell in Mexico in 1969 and contains inclusions that have been radiometrically dated at 4.56×10^9 years, the oldest found so far, presumably indicating the time of formation of the first solid bodies in the solar system. { əl'yen·de 'mēd·ē·ə,rīt }

alleverdite See rectorite. { ,al·ə'vār,dīt }

allivalite [PETR] A form of gabbro composed of anorthite and olivine; accessories are augite, apatite, and opaque iron oxides. { 'al·ə'və,līt }

allochem [GEOL.] Sediment formed by chemical or biochemical precipitation within a depositional basin; includes intraclasts, oolites, fossils, and pellets. { 'a-lō,kem }

allochemical metamorphism [PETR] Metamorphism accompanied by addition or removal of material so that the bulk chemical composition of the rock is changed. { ,a-lō'kem·ə·kəl ,med·ə'mör,fiz·əm }

allochete [PETR] A porphyritic igneous rock composed of phenocrysts of labradorite, orthoclase, titanaugite, nepheline, magnetite, and apatite in a groundmass of augite, biotite, magnetite, hornblende, nepheline, and orthoclase. { ,a-lō'ked,tīt }

allochthon [GEOL.] A rock that was transported a great distance from its original deposition by some tectonic process, generally related to overthrusting, recumbent folding, or gravity sliding. { ə'lāk·thən }

allochthonous [PETR] Of rocks whose primary constituents have not been formed in situ. { ə'lāk·thə·nəs }

allochthonous coal [GEOL.] A type of coal arising from accumulations of plant debris moved from their place of growth and deposited elsewhere. { ə'lāk·thə·nəs ,kōl }

alluvion

- allogene** [GEOL] A mineral or rock that has been moved to the site of deposition. Also known as allothigene; allothogene. { 'a·lə,jēn }
- allogenic** See allothogenic. { 'a·lə,jen·ik }
- allomorphism** See paramorphism. { ,a·lə'mòr,fiz·əm }
- allomorphite** [MINERAL] A mineral consisting of barite that is pseudomorphous after anhydrite. { ,a·lə'mòr,fīt }
- allophane** [GEOL] $Al_2O_3 \cdot SiO_2 \cdot nH_2O$ A clay mineral composed of hydrated aluminosilicate gel of variable composition; P_2O_5 may be present in appreciable quantity. { 'a·lə,fān }
- Allosaurus** [PALEON] A carnivorous theropod dinosaur, 40 feet (12 meters) long, and weighing 1.5 tons, from the Late Jurassic Period that had muscular hindlimbs, small forelimbs (with three-fingered hands), and sharp teeth; similar to but smaller than Tyrannosaurus. { ,al·ə'sòr·əs }
- Allotheria** [PALEON] A subclass of Mammalia that appeared in the Upper Jurassic and became extinct in the Cenozoic. { ,a·lə'thir·ē·ə }
- allothigene** See allogene. { ə'lāth·ə,jēn }
- allothimorph** [GEOL] A metamorphic rock constituent which retains its original crystal outlines in the new rock. { ə'lāth·ə,mòrf }
- allothogene** See allogene. { ə'lāth·ə,jēn }
- allothogenic** [GEOL] Formed from preexisting rocks which have been transported from another location. Also known as allogenic. { ə'lāth·ə,jen·ik }
- alotrioblast** See xenoblast. { ,a·lə'trē·ə,blast }
- alotriomorphic** [MINERAL] Of minerals in igneous rock not bounded by their own crystal faces but having their outlines impressed on them by the adjacent minerals. Also known as anhedral; xenomorphic. { ə'lā·trē·ə'mòr·fik }
- alluvial** [GEOL] **1.** Of a placer, or its associated valuable mineral, formed by the action of running water. **2.** Pertaining to or consisting of alluvium, or deposited by running water. { ə'lüv·ē·əl }
- alluvial cone** [GEOL] An alluvial fan with steep slopes formed of loose material washed down the slopes of mountains by ephemeral streams and deposited as a conical mass of low slope at the mouth of a gorge. Also known as cone delta; cone of dejection; cone of detritus; debris cone; dry delta; hemicone; wash. { ə'lüv·ē·əl 'kɔn }
- alluvial dam** [GEOL] A sedimentary deposit which is built by an overloaded stream and dams its channel; especially characteristic of distributaries on alluvial fans. { ə'lüv·ē·əl 'dam }
- alluvial deposit** See alluvium. { ə'lüv·ē·əl di'pāz·ət }
- alluvial fan** [GEOL] A fan-shaped deposit formed by a stream either where it issues from a narrow mountain valley onto a plain or broad valley, or where a tributary stream joins a main stream. { ə'lüv·ē·əl 'fan }
- alluvial flat** [GEOL] A small alluvial plain having a slope of about 5 to 20 feet per mile (1.5 to 6 meters per 1600 meters) and built of fine sandy clay or adobe deposited during flood. { ə'lüv·ē·əl 'flat }
- alluvial ore deposit** [GEOL] A deposit in which the valuable mineral particles have been transported and left by a stream. { ə'lüv·ē·əl 'ɔr di'pāz·ət }
- alluvial plain** [GEOL] A plain formed from the deposition of alluvium usually adjacent to a river that periodically overflows. Also known as aggraded valley plain; river plain; wash plain; waste plain. { ə'lüv·ē·əl 'plān }
- alluvial slope** [GEOL] A surface of alluvium which slopes down from mountainsides and merges with the plain or broad valley floor. { ə'lüv·ē·əl 'slɔp }
- alluvial soil** [GEOL] A soil deposit developed on floodplain and delta deposits. { ə'lüv·ē·əl 'sɔil }
- alluvial terrace** [GEOL] A terraced embankment of loose material adjacent to the sides of a river valley. Also known as built terrace; drift terrace; fill terrace; stream-built terrace; wave-built platform; wave-built terrace. { ə'lüv·ē·əl 'ter·əs }
- alluvial valley** [GEOL] A valley filled with a stream deposit. { ə'lüv·ē·əl 'val·ē }
- alluviation** [GEOL] The deposition of sediment by a river. { ə,lüv·ē'ā·shən }
- alluvion** See alluvium. { ə'lüv·ē·ən }

alluvium

- alluvium** [GEOL] The detrital materials that are eroded, transported, and deposited by streams; an important constituent of shelf deposits. Also known as alluvial deposit; alluvion. { ə'liv·ē·əm }
- almandine** [MINERAL] $\text{Fe}_3\text{Al}_2(\text{SiO}_4)_3$ A variety of garnet, deep red to brownish red, found in igneous and metamorphic rocks in many parts of world; used as a gemstone and an abrasive. Also known as almandite. { 'al·mən,dēn }
- almandite** See almandine. { 'al·mən,dīt }
- almeriite** See natroalunite. { ,al·mə'rē,īt }
- alnoite** [PETR] A variety of biotite lamprophyres characterized by lepidomelane phenocrysts; it is feldspar-free but contains melittite, perovskite, olivine, and carbonate in the matrix. { 'al·nə,wit }
- aloisite** [MINERAL] A brown to violet mineral consisting of a hydrous subsilicate of calcium, iron, magnesium, and sodium, and occurring in amorphous masses. { ,ə·lə'wis·ē,īt }
- Alpides** [GEOL] Great east-west structural belt including the Alps of Europe and the Himalayas and related mountains of Asia; mostly folded in Tertiary times. { 'al·pə,dēz }
- alpine** [GEOL] Similar to or characteristic of a lofty mountain or mountain system. { 'al,pīn }
- Alpine orogeny** [GEOL] Jurassic through Tertiary orogeny which affected the Alpides. { 'al,pīn ə'rāj·ə·nē }
- alpine-type facies** [PETR] High-pressure, low-temperature (150–400°C) dynamothermal metamorphism characterized by the presence of the pumpellyite and glaucophane schist facies. { ,al,pīn,īp 'fā,shēz }
- alpinotype tectonics** [GEOL] Tectonics of the alpine-type geosynclinal mountain belts characterized by deep-seated plastic folding, plutonism, and lateral thrusting. { al'pē·nō,īp ,tek'tän·iks }
- alsbachite** [PETR] A plutonic rock of sodic plagioclase, quartz, and subordinate orthoclase and accessory garnet, biotite, and muscovite; a variety of porphyritic granodiorite. { 'əlz·bā,kīt }
- alstonite** See bromlite. { 'əlz·tə,nīt }
- Altaid orogeny** [GEOL] Mountain building in Central Europe and Asia that occurred from the late Carboniferous to the Permian. { ,al,tād ə'rāj·ə·nē }
- altaite** [MINERAL] PbTe A tin-white lead-tellurium mineral occurring as isometric crystals with tin ores in central Asia. { al'tā,īt }
- alteration** [PETR] A change in a rock's mineral composition. { ,əl·tə'rā·shən }
- altiplanation** [GEOL] A phase of solifluction that may be seen as terracelike forms, flattened summits, and passes that are mainly accumulations of loose rock. { ,al·tə·plā'nā·shən }
- altiplanation surface** [GEOL] A flat area fronted by scarps a few to hundreds of feet in height; the area ranges from several square rods to hundreds of acres. Also known as altiplanation terrace. { ,al·tə·plā'nā·shən ,sər·fəs }
- altiplanation terrace** See altiplanation surface. { ,al·tə·plā'nā·shən ,ter·əs }
- altithermal** [GEOPHYS] Period of high temperature, particularly the postglacial thermal optimum. { ,al·tə'thər·məł }
- Altithermal** [GEOL] A dry postglacial interval centered about 5500 years ago during which temperatures were warmer than at present. Also known as Hypsithermal. { ,al·tə'thər·məł }
- altithermal soil** [GEOL] Soil recording a period of rising or high temperature. { ,al·tə'thər·məł 'sōil }
- alum** [MINERAL] $\text{KAl}(\text{SO}_4)_2 \cdot 12\text{H}_2\text{O}$ A colorless, white, astringent-tasting evaporite mineral. { 'al·əm }
- alum coal** [GEOL] Argillaceous brown coal rich in pyrite in which alum is formed on weathering. { 'al·əm ,kōl }
- aluminite** [MINERAL] $\text{Al}_2(\text{SO}_4)(\text{OH})_4 \cdot 7\text{H}_2\text{O}$ Native monoclinic hydrous aluminum sulfate; used in tanning, papermaking, and water purification. Also known as websterite. { ə'lüm·ə,nīt }

American jade

- aluminum ore** [GEOL] A natural material from which aluminum may be economically extracted. { ə'lyŋm·ə·nəm 'ɔr }
- alumite** *See* alunite. { 'al·ə,mɪt }
- alum rock** *See* alunite. { 'al·əm ,ræk }
- alum schist** *See* alum shale. { 'al·əm ,shɪst }
- alum shale** [PETR] A shale containing pyrite that is decomposed by weathering to form sulfuric acid, which acts on potash and alumina constituents to form alum. Also known as alum schist; alum slate. { 'al·əm ,ʃəl }
- alum slate** *See* alum shale. { 'al·əm ,slæt }
- alumstone** *See* alunite. { 'al·əm,stɔn }
- alunite** [MINERAL] $KAl_3(SO_4)_2(OH)_6$ A mineral composed of a basic potassium aluminum sulfate; it occurs as a hydrothermal-alteration product in feldspathic igneous rocks and is used in the manufacture of alum. Also known as alumite; alum rock; alumstone. { 'al·yə,nɪt }
- alunitization** [GEOL] Introduction of or replacement by alunite. { ,al·yə·nə·tə'zə·ʃən }
- alunogen** [MINERAL] $Al_2(SO_4)_3 \cdot 18H_2O$ A white mineral occurring as a fibrous incrustation of hydrated aluminum sulfate by volcanic action or decomposition of pyrite. Also known as feather alum; hair salt. { ə'lyŋ·ə·jən }
- alurgite** [MINERAL] A purple manganiferous variety of muscovite mica. { 'a·lyŋ,jɪt }
- alylphite** [GEOL] Bitumen that yields a high percentage of open-chain aliphatic hydrocarbons upon distillation. { 'al·ə,flɪt }
- amalgam** [MINERAL] A silver mercury alloy occurring in nature. { ə'mal·gəm }
- amarantite** [MINERAL] $Fe(SO_4)(OH) \cdot 3H_2O$ An amaranth red to brownish- or orange-red triclinic mineral consisting of a hydrated basic sulfate of ferric iron. { ,ə·mə'ran,tɪt }
- amarillite** [MINERAL] $NaFe(SO_4)_2 \cdot 6H_2O$ A pale greenish-yellow mineral consisting of a hydrous sodium ferric sulfate. { ,ə·mə'rɪ,lɪt }
- amazonite** [MINERAL] An apple-green, bright-green, or blue-green variety of microcline found in the United States and the former Soviet Union; sometimes used as a gemstone. Also known as amazon stone. { ,ə·mə'zɔ,nɪt }
- amazon stone** *See* amazonite. { 'ə·mə·zən ,stɔn }
- ambatoarinite** [MINERAL] A mineral consisting of a carbonate of cerium metals and strontium. { ,əm·bə,tə'rɪ·rə,nɪt }
- amber** [MINERAL] A transparent yellow, orange, or reddish-brown fossil resin derived from a coniferous tree; used for ornamental purposes; it is amorphous, has a specific gravity of 1.05–1.10, and a hardness of 2–2.5 on Mohs scale. { 'əm·bər }
- amberoid** [MINERAL] A gem-quality mineral composed of small fragments of amber that have been reunited by heat or pressure. { 'əm·bə,rɔɪd }
- ambient stress field** [GEOPHYS] The distribution and numerical value of the stresses present in a rock environment prior to its disturbance by man. Also known as in-place stress field; primary stress field; residual stress field. { 'əm·bē·ənt 'stres ,fɛld }
- amblygonite** [MINERAL] $(Li,Na)AlPO_4(F,OH)$ A mineral occurring in white or greenish cleavable masses and found in the United States and Europe; important ore of lithium. { əm'bli·gə,nɪt }
- ambonite** [PETR] Any of a group of hornblende-biotite andesites and dacites containing cordierite. { 'əm·bə,nɪt }
- ambrite** [MINERAL] A yellow-gray, semitransparent fossil resin resembling amber; found in large masses in New Zealand coal fields and regarded as a semiprecious stone. { 'əm,bɪrt }
- ambrosine** [MINERAL] A yellowish to clove-brown variety of amber rich in succinic acid; occurs as rounded masses in phosphate beds near Charleston, South Carolina. { 'əm·brə,zēn }
- Amebelodontinae** [PALEON] A subfamily of extinct elephantoid proboscideans in the family Gomphotheriidae. { ,ə·mə,bel·ə'dän·tə,nē }
- amemolite** [GEOL] A stalactite with one or more changes in its axis of growth. { ə'mem·ə,lɪt }
- American jade** *See* californite. { ə'mer·ə·kən 'jæd }

amesite

- amesite** [MINERAL] (Mg,Fe)₄Al₄Si₂O₁₀(OH)₈ An apple-green phyllosilicate mineral occurring in foliated hexagonal plates. { 'ām,zīt }
- amethyst** [MINERAL] The transparent purple to violet variety of the mineral quartz; used as a jeweler's stone. { 'am·ə,θɪst }
- amherstite** [PETR] A syenodiorite containing andesine and antiperthite. { 'a·mər,sɪt }
- amianthus** [MINERAL] A fine, silky variety of asbestos, such as chrysotile. { ,a·mē'an·thəs }
- amino acid dating** [GEOCHEM] Relative or absolute age determination of materials by measuring the degree of racemization of certain amino acids, which generally increases with geologic age. { ə,mē·nō 'as·əd 'dā·dɪŋ }
- Ammanian** [GEOL] Middle Upper Cretaceous geologic time. { ,ä'man·ē·ən }
- ammonioborite** [MINERAL] (NH₄)₂B₁₀O₁₆·5H₂O A white mineral consisting of a hydrous ammonium borite and occurring as aggregates of minute plates. { ə,mōn·ē·ō'bōr,ɪt }
- ammoniojarosite** [MINERAL] (NH₄)Fe₃(SO₄)₂(OH)₆ Pale-yellow mineral consisting of basic ferric ammonium sulfate. { ə,mōn·ē·ō·jə'rō,sɪt }
- ammonite** [PALEON] A fossil shell of the cephalopod order Ammonoidea. { 'a·mə,nɪt }
- ammonoid** [PALEON] A cephalopod of the order Ammonoidea. { 'a·mə,nɔɪd }
- Ammonoidea** [PALEON] An order of extinct cephalopod mollusks in the subclass Tetra-branchia; important as index fossils. { ,a·mə'nɔɪd·ē·ə }
- amoeboïd fold** [GEOL] A fold or structure, such as an anticline, having no prevailing trend or definite shape. { ə'mē,bɔɪd 'fōld }
- amorphous mineral** [MINERAL] A mineral without definite crystalline structure. { ə'mór·fəs 'mɪn·rəl }
- amorphous peat** [GEOL] Peat composed of fine grains of organic matter; it is plastic like wet, heavy soil, with all original plant structures destroyed by decomposition of cellulosic matter. { ə'mór·fəs 'pēt }
- amosite** [MINERAL] A monoclinic amphibole form of asbestos having long fibers and a high iron content; used in insulation. { 'am·ə,zɪt }
- ampangabeite** *See* samarskite. { ,äm,päng'gä·bē,ɪt }
- ampelite** [PETR] A graphite schist containing silica, alumina, and sulfur; used as a refractory. { 'am·pə,lɪt }
- amphibole** [MINERAL] Any of a group of rock-forming, ferromagnesian silicate minerals commonly found in igneous and metamorphic rocks; includes hornblende, anthophyllite, tremolite, and actinolite (asbestos minerals). { 'am·fə,bōl }
- amphibolite** [PETR] A crystalloblastic metamorphic rock composed mainly of amphibole and plagioclase; quartz may be present in small quantities. { am'fɪb·ə,lɪt }
- amphibolite facies** [PETR] Rocks produced by medium- to high-grade regional metamorphism. { am'fɪb·ə,lɪt 'fä,ʃhēz }
- amphibolization** [PETR] Formation of amphibole in a rock as a secondary mineral. { am,ɪb·ə·lə'zä·ʃən }
- Amphichelydia** [PALEON] A suborder of Triassic to Eocene anapsid reptiles in the order Chelonia; these turtles did not have a retractable neck. { ,am·fə·kə'lɪd·ē·ə }
- Amphicyonidae** [PALEON] A family of extinct giant predatory carnivores placed in the infraorder Miacoidea by some authorities. { ,am·fə·sɪ'jən·ə,dē }
- amphigene** *See* leucite. { 'am·fə,jēn }
- Amphilestidae** [PALEON] A family of Jurassic triconodont mammals whose subclass is uncertain. { ,am·fə'les·tə,dē }
- Amphimerycidae** [PALEON] A family of late Eocene to early Oligocene tylopod ruminants in the superfamily Amphimerycoidea. { ,am·fə·mə'ris·ə,dē }
- Amphimerycoidea** [PALEON] A superfamily of extinct ruminant artiodactyls in the infraorder Tylopoda. { ,am·fə,mɪr·ə'kɔɪd·ē·ə }
- amphimorphic** [GEOL] A rock or mineral formed by two geologic processes. { ,am·fə'mór·fɪk }
- amphisapropel** [GEOL] Cellulosic ooze containing coarse plant debris. { ,am'fɪz·ə'prō,pel }
- Amphissitidae** [PALEON] A family of extinct ostracods in the suborder Beyrichicopina. { ,am·fə'sɪd·ə,dē }

Anaspida

- Amphitheriidae** [PALEON] A family of Jurassic therian mammals in the infraclass Panthotheria. { ,am·fə·thə'ri·ə,dē }
- amphoterite** [GEOL] A stony meteorite containing bronzite and olivine with some oligoclase and nickel-rich iron. { am'fäd·ə,rīt }
- amygdaloid** [GEOL] Lava rock containing amygdules. Also known as amygdaloidal lava. { ə'mig·də,löid }
- amygdaloidal lava** See amygdaloid. { ə'mig·də,löid·əl'läv·ə }
- amygdule** [GEOL] **1.** A mineral filling formed in vesicles (cavities) of lava flows; it may be chalcedony, opal, calcite, chlorite, or prehnite. **2.** An agate pebble. { ə'mig,dyül }
- Amyndontidae** [PALEON] A family of extinct hippopotamuslike perissodactyl mammals in the superfamily Rhinoceroidea. { ,a·mə·nə'dän·tə,dē }
- anabohitsite** [PETR] A variety of olivine-pyroxenite containing hornblende and hypersthene and a high proportion (about 30%) of magnetite and ilmenite. { ,an·ə·bō'hit,sīt }
- anaclinal** [GEOL] Having a downward inclination opposite to that of a stratum. { ,an·ə'klīn·əl }
- anaerobic sediment** [GEOL] A highly organic sediment formed in the absence or near absence of oxygen in water that is rich in hydrogen sulfide. { ,an·ə'rōb·ik 'sed·ə·mənt }
- analbite** [MINERAL] A triclinic albite which is not stable and becomes monoclinic at about 700°C. { ə'nal,bīt }
- analcime** [MINERAL] $\text{NaAlSi}_3\text{O}_6 \cdot \text{H}_2\text{O}$ A white or slightly colored isometric zeolite found in diabase and in alkali-rich basalts. Also known as analcite. { ə'nal,sēm }
- analcimite** [PETR] An extrusive or hypabyssal rock that consists primarily of pyroxene and analcime. { ə'nal·sə,mīt }
- analcimization** [GEOL] The replacement in igneous rock of feldspars or feldspathoids by analcime. { ə'nal·sə·mə'zā·shən }
- analcite** See analcime. { ə'nal,sīt }
- analytical geomorphology** See dynamic geomorphology. { ,an·əl'id·ə·kəl ,jē·ō,mōr'fäl·ə·jē }
- anamigmatism** [GEOL] A process of high-temperature, high-pressure remelting of sediment to yield magma. { ,an·ə'mig·mə,tiz·əm }
- anamorphic zone** [GEOL] The zone of rock flow, as indicated by reactions that may involve decarbonation, dehydration, and deoxidation; silicates are built up, and the formation of denser minerals and of compact crystalline structure takes place. { ,an·ə'mōr·fik 'zōn }
- anamorphism** [GEOL] A kind of metamorphism at considerable depth in the earth's crust and under great pressure, resulting in the formation of complex minerals from simple ones. { ,an·ə'mōr·fiz·əm }
- Anancinae** [PALEON] A subfamily of extinct proboscidean placental mammals in the family Gomphotheriidae. { ə'nän·sə,nē }
- anapaite** [MINERAL] $\text{Ca}_2\text{Fe}(\text{PO}_4)_2 \cdot 4\text{H}_2\text{O}$ A pale-green or greenish-white triclinic mineral consisting of a ferrous iron hydrous phosphate and occurring in crystals and massive forms; hardness is 3–4 on Mohs scale, and specific gravity is 3.81. { ə'nəp·ə,tīt }
- anapeirean** See Pacific suite. { ,an·ə'pir·ē·ən }
- Anaplotheriidae** [PALEON] A family of extinct tylopod ruminants in the superfamily Anaplotherioidea. { ,an·ə,pläth·ə'ri·ə,dē }
- Anaplotherioidea** [PALEON] A superfamily of extinct ruminant artiodactyls in the infraorder Tylopoda. { ,an·ə,pläth·ə,rē'öid·ē·ə }
- Anasca** [PALEON] A suborder of extinct bryozoans in the order Cheilostomata. { ə'nəs·kə }
- anaseism** [GEOPHYS] Movement of the earth in a direction away from the focus of an earthquake. { ,an·ə'stız·əm }
- Anaspida** [PALEON] An order of extinct fresh- or brackish-water vertebrates in the class Agnatha. { ə'nəs·pə·də }

anatase

- anatase** [MINERAL] The brown, dark-blue, or black tetragonal crystalline form of titanium dioxide, TiO_2 ; used to make a white pigment. Also known as octahedrite. { 'an·ə,tās }
- anatexis** [GEOL] A high-temperature process of metamorphosis by which plutonic rock in the lowest levels of the crust is melted and regenerated as a magma. { ,an·ə'tek·səs }
- anathermal** [GEOL] A period of time between the age of other strata or units of reference in which the temperature is increasing. { ,an·ə'thər·məł }
- anauxite** [MINERAL] $\text{Al}_2(\text{SiO}_7)(\text{OH})_4$ A clay mineral that is a mixture of kaolinite and quartz. Also known as ionite. { ə'nòk,sıt }
- anchieutectic** [GEOL] A type of magma which is incapable of undergoing further notable main-stage differentiation because its mineral composition is practically in eutectic proportions. { ,aŋ·kē·yü'tek·tik }
- anchimonomineralic** [PETR] Of rock composed mostly of one kind of mineral. { ,aŋ·kē,män·ō,min·ə'ral·ik }
- anchored dune** [GEOL] A sand dune stabilized by growth of vegetation. { 'aŋ·kərd 'dün }
- anchorite** [PETR] A variety of diorite having nodules of mafic minerals and veins of felsic minerals. { 'aŋ·kə,rıt }
- anchor stone** [GEOL] A rock or pebble that has marine plants attached to it. { 'aŋ·kər ,stön }
- ancylite** [MINERAL] $\text{SrCe}(\text{CO}_3)_2(\text{OH})\cdot\text{H}_2\text{O}$ A mineral consisting of hydrous basic carbonate of cerium and strontium. { 'an·sə,lıt }
- ancylopoda** [PALEON] A suborder of extinct herbivorous mammals in the order Perissodactyla. { ,an·sə'lä·pə·də }
- andalusite** [MINERAL] Al_2SiO_5 A brown, yellow, green, red, or gray neosilicate mineral crystallizing in the orthorhombic system, usually found in metamorphic rocks. { ,an·də'lü,sıt }
- Andean-type continental margin** [GEOL] A continental margin, as along the Pacific coast of South America, where oceanic lithosphere descends beneath an adjacent continent producing andesitic continental margin volcanism. { 'an·də·ən ,tıp ,kánt·ən'ent·əl 'mär·jən }
- Andept** [GEOL] A suborder of the soil order Inceptisol, formed chiefly in volcanic ash or in regoliths with high components of ash. { ,an'dept }
- andersonite** [MINERAL] $\text{Na}_2\text{Ca}(\text{UO}_2)(\text{CO}_3)_3\cdot 6\text{H}_2\text{O}$ Bright yellow-green secondary mineral consisting of a hydrous sodium calcium uranium carbonate. { 'an·də'r·sən,lıt }
- andesine** [MINERAL] A plagioclase feldspar with a composition ranging from $\text{Ab}_{70}\text{An}_{30}$ to $\text{Ab}_{50}\text{An}_{50}$, where $\text{Ab} = \text{NaAlSi}_3\text{O}_8$ and $\text{An} = \text{CaAl}_2\text{Si}_2\text{O}_8$; it is a primary constituent of intermediate igneous rocks, such as andesites. { 'an·də,zēn }
- andesite** [PETR] Very finely crystalline extrusive rock of volcanic origin composed largely of plagioclase feldspar (oligoclase or andesine) with smaller amounts of dark-colored mineral (hornblende, biotite, or pyroxene), the extrusive equivalent of diorite. { 'an·də,zıt }
- andesite line** [GEOL] The postulated geographic and petrographic boundary between the andesite-dacite-rhyolite rock association of the margin of the Pacific Ocean and the olivine-basalt-trachyte rock association of the Pacific Ocean basin. { 'an·də,zıt ,līn }
- andesitic glass** [GEOL] A natural glass that is chemically equivalent to andesite. { 'an·də,zıt·ik ,glas }
- andorite** [MINERAL] $\text{AgPbSb}_3\text{S}_6$ A dark-gray or black orthorhombic mineral. Also known as sundtite. { 'an·də,rıt }
- andradite** [MINERAL] The calcium-iron end member of the garnet group. { an'drā,dīt }
- andrewsite** [MINERAL] $(\text{Cu},\text{Fe}^{2+})\text{Fe}_3^{3+}(\text{PO}_4)_3(\text{OH})_2$ A bluish-green mineral consisting of a basic phosphate of iron and copper. { 'an·drü,zıt }
- andrite** [GEOL] A meteorite composed principally of augite with some olivine and troilite. { 'an,drīt }

annual magnetic change

- anemoclast** [GEOL] A clastic rock that was fragmented and rounded by wind. { 'a-nə-mō'klast }
- anemoclastic** [GEOL] Referring to rock that was broken by wind erosion and rounded by wind action. { 'a-nə-mō'klas-tik }
- angaralite** [MINERAL] $Mg_2(Al,Fe)_{10}Si_6O_{29}$ A mineral of the chlorite group, occurring in thin black plates. { an'gar-ə,līt }
- Angara Shield** [GEOL] A shield area of crystalline rock in Siberia. { ,əŋ-gə'rä ,shēld }
- angle of dip** *See* dip. { 'əŋ-gəl əv 'dip }
- angle of shear** [GEOL] The angle between the planes of maximum shear which is bisected by the axis of greatest compression. { 'əŋ-gəl əv 'shēr }
- anglesite** [MINERAL] $PbSO_4$ A mineral occurring in white or gray, tabular or prismatic orthorhombic crystals or compact masses. Also known as lead spar; lead vitriol. { 'əŋ-glə,sīt }
- Angoumian** [GEOL] Upper middle Upper Cretaceous (Upper Turonian) geologic time. { ,än'güm-ē-ən }
- angrite** [GEOL] An achondrite stony meteorite composed principally of augite with a little olivine and troilite. { 'əŋ,grīt }
- anguclast** [GEOL] An angular phenoclast. { 'əŋ-gyü,klast }
- angular unconformity** [GEOL] An unconformity in which the older strata dip at a different angle (usually steeper) than the younger strata. { 'əŋ-gyü-lər ,ən-kən'förm-əd-ē }
- anhedral** *See* allotriomorphic. { an'hēd-rəl }
- anhedron** [PETR] Rock that has the organized internal structure of a crystal without the external geometric form of a crystal. { an'hēd-rən }
- anhydrite** [MINERAL] $CaSO_4$ A mineral that represents gypsum without its water of crystallization, occurring commonly in white and grayish granular to compact masses; the hardness is 3–3.5 on Mohs scale, and specific gravity is 2.90–2.99. Also known as cube spar. { an'hī,drīt }
- anhydrite evaporite** [PETR] $CuSO_4$ A sedimentary rock composed chiefly of copper sulfate in compact granular form deposited by evaporation of water; resembles marble and differs from gypsum in lack of water of hydration and hardness. { an'hī,drīt i'vap-ə,rīt }
- anhydrock** [PETR] A sedimentary rock chiefly made of anhydrite. { an'hī,dräk }
- Animikean** [GEOL] The middle subdivision of Proterozoic geologic time. Also known as Penokean; Upper Huronian. { ə'nim-ə'kē-ən }
- animikite** [GEOL] An ore of silver, composed of a mixture of sulfides, arsenides, and antimonides, and containing nickel and lead; occurs in white or gray granular masses. { ə'nim-ə,kīt }
- Anisian** [GEOL] Lower Middle Triassic geologic time. { ə'nis-ē-ən }
- anisodesmic** [MINERAL] Pertaining to crystals or compounds in which the ionic bonds are unequal in strength. { 'a,nis-ə'dez-mik }
- ankaramite** [PETR] A mafic olivine basalt primarily composed of pyroxene with smaller amounts of olivine and plagioclase and accessory biotite, apatite, and opaque oxides. { 'əŋ-kə'rä,mīt }
- ankararite** *See* olivine nephelinite. { ,əŋ-kə'rä,trīt }
- ankerite** [MINERAL] $Ca(Fe,Mg,Mn)(CO_3)_2$ A white, red, or gray iron-rich carbonate mineral associated with iron ores and found in thin veins in coal seams; specific gravity is 2.95–3.1. Also known as cleat spar. { 'əŋ-kə,rīt }
- Ankylosauria** [PALEON] A suborder of Cretaceous dinosaurs in the reptilian order Ornithischia characterized by short legs and flattened, heavily armored bodies. { 'əŋ-kə-lə'sör-ē-ə }
- annabergite** [MINERAL] $(Ni,Co)_3(AsO_4)_2 \cdot 8H_2O$ A monoclinic mineral usually found as apple-green incrustations as an alteration product of nickel arsenides; it is isomorphous with erythrite. Also known as nickel bloom; nickel ocher. { 'a-nə,bər,gīt }
- annual layer** [GEOL] **1.** A sedimentary layer deposited, or presumed to have been deposited, during the course of a year; for example, a glacial varve. **2.** A dark layer in a stratified salt deposit containing disseminated anhydrite. { 'an-yə-wəl 'lä-ər }
- annual magnetic change** *See* magnetic annual change. { 'an-yə-wəl ,mag'ned-ik 'chānj }

annual magnetic variation

annual magnetic variation See magnetic annual variation. { 'an·yə·wəl ,mag'ned·ik ver·ē'ā·shən }

annual variation [GEOPHYS] A component in the change with time in the earth's magnetic field at a specified location that has a period of 1 year. { 'an·yə·wəl ver·ē'ā·shən }

anomalous magma [GEOLOGY] Magma formed or obviously changed by assimilation. { ə'nām·ə·ləs 'mag·mə }

anomaly [GEOLOGY] A local deviation from the general geological properties of a region. { ə'nām·ə·lē }

anomite [MINERAL] A variety of biotite different only in optical orientation. { 'an·ə,mīt }

Anomphalacea [PALEONTOLOGY] A superfamily of extinct gastropod mollusks in the order Aspidobranchia. { ə,nām·fə' lāsh·ə }

anorogenic [GEOLOGY] Of a feature, forming during tectonic quiescence between orogenic periods, that is, lacking in tectonic disturbance. { ,a,nō·rō'jen·ik }

anorogenic time [GEOLOGY] Geologic time when no significant deformation of the crust occurred. { ,a,nō·rō'jen·ik 'tīm }

anorthite [MINERAL] The white, grayish, or reddish calcium-rich end member of the plagioclase feldspar series; composition ranges from Ab₁₀An₉₀ to Ab₀An₁₀₀, where Ab = NaAlSi₃O₈ and An = CaAl₂Si₂O₈. Also known as calcicase; calcium feldspar. { ə'nór,thīt }

anorthite-basalt [PETROLOGY] A rock composed of a basic variety of basalt with anorthite instead of labradorite. { ə'nór,thīt bə'sólt }

anorthoclase [MINERAL] A triclinic alkali feldspar having a chemical composition ranging from Or₄₀Ab₆₀ to Or₁₀Ab₉₀ to about 20 mole % An, where Or = KAlSi₃O₈, Ab = NaAlSi₃O₈, and An = CaAl₂Si₂O₈. Also known as anorthose; soda microcline. { ə'nór·thə,klās }

anorthose See anorthoclase. { ə'nór,thōs }

anorthosite [PETROLOGY] A visibly crystalline plutonic rock composed almost entirely of plagioclase feldspar (andesine to anorthite) with minor amounts of pyroxene and olivine. { ə'nór·thə,sīt }

anorthositization [GEOLOGY] A process of anorthosite formation by replacement or metasomatism. { ə'nór·thə,sid·ə'zā·shən }

antecedent platform [GEOLOGY] A submarine platform 165 feet (50 meters) or more below sea level from which barrier reefs and atolls are postulated to grow toward the water's surface. { ,ant·ə'sēd·ənt 'plat,fōrm }

antecedent valley [GEOLOGY] A stream valley that existed before uplift, faulting, or folding occurred and which has maintained itself during and after these events. { ,ant·ə'sēd·ənt 'val·ē }

antediluvial [GEOLOGY] Formerly referred to time or deposits antedating Noah's flood. { ,an·tē·də'lúv·ē·əl }

antetheca [PALEONTOLOGY] The last or exposed septum at any stage of fusulinid growth. { ,an·tē'thek·ə }

Anthocyatha [PALEONTOLOGY] A class of extinct marine organisms in the phylum Archaeocyatha characterized by skeletal tissue in the central cavity. { ,an·thə,sī'ā·thē·ə }

anthodite [GEOLOGY] Gypsum or aragonite growing in clumps of long needle- or hairlike crystals on the roof or wall of a cave. { 'an·thə,dīt }

anthoinite [MINERAL] Al₂W₂O₉·3H₂O A white mineral consisting of a hydrous basic aluminum tungstate. { ,an'thói,nīt }

anthophyllite [MINERAL] A clove-brown orthorhombic mineral of the amphibole group, a variety of asbestos occurring as lamellae, radiations, fibers, or massive in metamorphic rocks. Also known as bidalotite. { ,an·thō'fī,līt }

anthracite [MINERAL] A high-grade metamorphic coal having a semimetallic luster, high content of fixed carbon, and high density, and burning with a short blue flame and little smoke or odor. Also known as hard coal; Kilkenny coal; stone coal. { 'an·thrə,sīt }

antistress mineral

- anthracitization** [GEOCHEM] The natural process by which bituminous coal is transformed into anthracite coal. { ,an·thrə·sɪd·ə'zā·shən }
- Anthracosauria** [PALEON] An order of Carboniferous and Permian labyrinthodont amphibians that includes the ancestors of living reptiles. { ,an·thrə·kə'sór·ē·ə }
- Anthracotheriidae** [PALEON] A family of middle Eocene and early Pleistocene artiodactyl mammals in the superfamily Anthracotherioidea. { ,an·thrə·kə·thə'rɪ·ə,dē }
- Anthracotherioidea** [PALEON] A superfamily of extinct artiodactyl mammals in the suborder Paleodonta. { 'an·thrə·kə·thə,rɪ'oid·ē·ə }
- anthracoxene** [GEOLOGY] A brownish resin that occurs in brown coal; in ether it dissolves into an insoluble portion, anthrocoxenite, and a soluble portion, schlanite. { ,an·thrə'kək,sən }
- anthraxolite** [GEOLOGY] Anthracite-like asphaltic material occurring in veins in Precambrian slate of Sudbury District, Ontario. { an'thrak·sə,lɪt }
- anthraxylon** [GEOLOGY] The vitreous-appearing components of coal that are derived from the woody tissues of plants. { an'thrak·sə,län }
- Antiarchi** [PALEON] A division of highly specialized placoderms restricted to freshwater sediments of the Middle and Upper Devonian. { ,an·tē'är,kɪ }
- anticenter** [GEOLOGY] The point on the surface of the earth that is diametrically opposite the epicenter of an earthquake. Also known as antiepicenter. { ,an·tē'sent·ər }
- anticlinal** [GEOLOGY] Folded as in an anticline. { ,an·tē'klɪn·əl }
- anticlinal axis** [GEOLOGY] The median line of a folded structure from which the strata dip on either side. { ,an·tē'klɪn·əl 'ak·səs }
- anticlinal bend** [GEOLOGY] An upwardly convex flexure of rock strata in which one limb dips gently toward the apex of the strata and the other dips steeply away from it. { ,an·tē'klɪn·əl 'bend }
- anticlinal mountain** [GEOLOGY] Ridges formed by a convex flexure of the strata. { ,an·tē'klɪn·əl 'maʊn·tən }
- anticlinal theory** [GEOLOGY] A theory relating trapped underground oil accumulation to anticlinal structures. { ,an·tē'klɪn·əl 'thē·ə·rē }
- anticlinal trap** [GEOLOGY] A formation in the top of an anticline in which petroleum has accumulated. { ,an·tē'klɪn·əl 'trap }
- anticlinal valley** [GEOLOGY] A valley that follows an anticlinal axis. { ,an·tē'klɪn·əl 'val·ē }
- anticline** [GEOLOGY] A fold in which layered strata are inclined down and away from the axes. { 'an·ti,klɪn }
- anticlinorium** [GEOLOGY] A series of anticlines and synclines that form a general arch or anticline. { ,an·ti,klɪ'nor·ē·əm }
- antidune** [GEOLOGY] A temporary form of ripple on a stream bed analogous to a sand dune but migrating upcurrent. { 'an·tē,dʌn }
- antiepicenter** See anticenter. { ,an·tē'ep·i,sent·ər }
- antiform** [GEOLOGY] An anticline-like structure whose stratigraphic sequence is not known. { 'an·tē,fɔrm }
- antigorite** [MINERAL] $Mg_3Si_2O_5(OH)_4$ Brownish-green variety of the mineral serpentine. Also known as baltimorite; picrolite. { an'tig·ə,rɪt }
- antimonite** [MINERAL] Sb_2S_3 A lead-gray antimony sulfide mineral, the primary source of antimony; sometimes contains gold or silver; has a brilliant metallic luster, and occurs as prismatic orthorhombic crystals in massive forms. Also known as antimony glance; gray antimony; stibium; stibnite. { 'an·tə·mə,nɪt }
- antimony** [MINERAL] A very brittle, tin-white, hexagonal mineral, the native form of the element. { 'an·tə,mō·nē }
- antimony blende** See kermesite. { 'an·tə,mō·nē 'blend }
- antimony glance** See antimonite. { 'an·tə,mō·nē 'glans }
- antiperthite** [GEOLOGY] Natural intergrowth of feldspars formed by separation of sodium feldspar (albite) and potassium feldspar (orthoclase) during slow cooling of molten mixtures; the potassium-rich phase is evolved in a plagioclase host, exactly the inverse of perthite. { ,an·ti'pər,θɪt }
- antistress mineral** [MINERAL] Minerals such as leucite, nepheline, alkalic feldspar, andalusite, and cordierite which cannot form or are unstable in an environment of

antlerite

high shearing stress, and hence are not found in highly deformed rocks. { 'an-tē'stres ,min-ə-rəl }

antlerite [MINERAL] $\text{Cu}_2\text{SO}_4(\text{OH})_4$ Emerald- to blackish-green mineral occurring in aggregates of needlelike crystals; an ore of copper. Also known as vernadskite. { 'ant-lər ,rit }

Antler orogeny [GEOLOGY] Late Devonian and Early Mississippian orogeny in Nevada, resulting in the structural emplacement of eugeosynclinal rocks over microgeosynclinal rocks. { 'ant-lər ɔ'rəj-ən }

Ao horizon [GEOLOGY] That portion of the A horizon of a soil profile which is composed of pure humus. { 'ā'ō hə'rīz-ən }

Aoo horizon [GEOLOGY] Uppermost portion of the A horizon of a soil profile which consists of undecomposed vegetable litter. { 'ā'ōō hə'rīz-ən }

Apatemyidae [PALEONTOLOGY] A family of extinct rodentlike insectivorous mammals belonging to the Proteutheria. { ə,pad-ə'mī-ə,dē }

apachite [PETROLOGY] A phonolite consisting of enigmatite and hornblende in about the same quantity as the pyroxene, but of a later crystallization phase. { ə'pa,čit }

Apathornithidae [PALEONTOLOGY] A family of Cretaceous birds, with two species, belonging to the order Ichthyornithiformes. { ,ə-pə,thōr'nith-ə,dē }

apatite [MINERAL] A group of phosphate minerals that includes 10 mineral species and has the general formula $\text{X}_2(\text{YO}_4)_2\text{Z}$, where X is usually Ca^{2+} or Pb^{2+} , Y is P^{5+} or As^{5+} , and Z is F^- , Cl^- , or OH^- . { 'ap-ə,tīt }

Apatosaurus [PALEONTOLOGY] A herbivorous sauropod dinosaur, approximately 70 feet (21 meters) long and weighing 30 tons, from the Jurassic Period that had much longer hindlimbs than forelimbs. Also known as Brontosaurus. { ə,pad-ə'sōr-əs }

apex [GEOLOGY] The part of a mineral vein nearest the surface of the earth. { 'ā,peks }

aphaniphryic [PETROLOGY] Denoting a texture of porphyritic rocks with microaphanitic groundmasses. Also known as felsophyric. { ,əf-ən-ə'frī-ik }

aphanite [PETROLOGY] **1.** A general term applied to dense, homogeneous rocks whose constituents are too small to be distinguished by the unaided eye. **2.** A rock having aphanitic texture. { 'əf-ənīt }

aphanitic [PETROLOGY] Referring to the texture of an igneous rock in which the crystalline components are not distinguishable by the unaided eye. { ,əf-ən-īd-īk }

Aphrosalpingoidea [PALEONTOLOGY] A group of middle Paleozoic invertebrates classified with the calcareous sponges. { 'əf-rō,sal,pɪŋ'gōid-ē-ə }

aphrosiderite See ripidolite. { ,əf-rō'sīd-ə,rīt }

aphthitalite [MINERAL] $(\text{K},\text{Na})_2\text{Na}(\text{SO}_4)_2$ A white mineral crystallizing in the rhombohedral system and occurring massively or in crystals. { ,əf'thīd-əl,tīt }

aphyric [PETROLOGY] Of the texture of fine-grained igneous rocks, showing two generations of the same mineral but without phenocrysts. { ə'fir-īk }

apjohnite [MINERAL] $\text{MnAl}_2(\text{SO}_4)_4 \cdot 22\text{H}_2\text{O}$ A white, rose-green, or yellow mineral containing water and occurring in crusts, fibrous masses, or efflorescences. { 'ap,jā,nīt }

aplite [PETROLOGY] Fine-grained granitic dike rock made up of light-colored mineral constituents, mostly quartz and feldspar; used to manufacture glass and enamel. { 'a,plīt }

apophyllite [MINERAL] A hydrous calcium potassium silicate containing fluorine and occurring as a secondary mineral with zeolites with geodes and other igneous rocks; the composition is variable but approximates $\text{KFCa}_4(\text{Si}_2\text{O}_5)_4 \cdot 8\text{H}_2\text{O}$. Also known as fish-eye stone. { ə'pəf-əl,tīt }

Appalachia [GEOLOGY] Proposed borderland along the southeastern side of North America, seaward of the Appalachian geosyncline in Paleozoic time. { 'əp-ə'lā-čə }

Appalachian orogeny [GEOLOGY] An obsolete term referring to Late Paleozoic diastrophism beginning perhaps in the Late Devonian and continuing until the end of the Permian; now replaced by Alleghenian orogeny. { 'əp-ə'lā-čən ɔ'rəj-ən }

apparent cohesion [GEOLOGY] In soil mechanics, the resistance of particles to being pulled apart due to the surface tension of the moisture film surrounding each particle. Also known as film cohesion. { ə'pə-rənt ,kō'hē-zhən }

apparent dip [GEOLOGY] Dip of a rock layer as it is exposed in any section not at a right angle to the strike. { ə'pə-rənt 'dip }

- apparent movement of faults** [GEOL] The apparent motion observed to have occurred in any change section across a fault. { ə'pɑ-rənt ɪ'mjuv-mənt əv ʃ'fɔlts }
- apparent plunge** [GEOL] Inclination of a normal projection of lineation in the plane of a vertical cross section. { ə'pɑ-rənt 'plənj }
- apparent precession** See apparent wander. { ə'pɑ-rənt pri'sesh-ən }
- apparent vertical** [GEOPHYS] The direction of the resultant of gravitational and all other accelerations. Also known as dynamic vertical. { ə'pɑ-rənt 'verd-ə-kəl }
- apparent wander** [GEOPHYS] Apparent change in the direction of the axis of rotation of a spinning body, such as a gyroscope, due to rotation of the earth. Also known as apparent precession; wander. { ə'pɑ-rənt 'wæn-dər }
- appinite** [PETR] Hornblende-rich plutonic rock with high feldspar content. { 'ap-ə-nīt }
- apple coal** [GEOL] Easily mined soft coal that breaks into small pieces the size of apples. { 'ap-əl ,kɔl }
- apportion beach** [GEOL] One of a series of parallel beaches formed on the seaward side of an older beach. { ,ap-ə'zish-ən ,bɛch }
- apportion fabric** [PETR] A primary orientation of the elements of a sedimentary rock that is developed or formed at time of deposition of the material; fabrics of most sedimentary rocks belong to this type. Also known as primary fabric. { ,ap-ə'zish-ən ,fab-rik }
- apron** See outwash plain. { 'ā-prən }
- Aprian** [GEOL] Lower Cretaceous geologic time, between Barremian and Albian. Also known as Vectian. { 'ap-tē-ən }
- aquagene tuff** See hyaloclastite. { 'ak-wə,jēn 'tɒf }
- aqualf** [GEOL] A suborder of the soil order Alfisol, seasonally wet and marked by gray or mottled colors; occurs in depressions or on wide flats in local landscapes. { 'ak-wəlf }
- aquamarine** [MINERAL] A pale-blue or greenish-blue transparent gem variety of the mineral beryl. { ,ak-wə-mə'ren }
- Aquent** [GEOL] A suborder of the soil order Entisol, bluish gray or greenish gray in color; under water until very recent times; located at the margins of oceans, lakes, or seas. { 'ā-kwənt }
- aqueous lava** [GEOL] Mud lava produced by the mixing of volcanic ash with condensing volcanic vapor or other water. { 'ak-wē-əs 'lāv-ə }
- aqueous rock** [PETR] A sedimentary rock deposited by or in water. Also known as hydrogenic rock. { 'āk-wē-əs 'ræk }
- Aquept** [GEOL] A suborder of the soil order Inceptisol, wet or drained, which lacks silicate clay accumulation in the soil profiles; surface horizon varies in thickness. { 'ak-wəpt }
- aquiclude** [GEOL] A porous formation that absorbs water slowly but will not transmit it fast enough to furnish an appreciable supply for a well or spring. { 'ak-wə,klüd }
- aquifer** [GEOL] A permeable body of rock capable of yielding quantities of groundwater to wells and springs. { 'ak-wə-fər }
- aquifuge** [GEOL] An impermeable body of rock which contains no interconnected openings or interstices and therefore neither absorbs nor transmits water. { 'ak-wə,fyüj }
- Aquitanian** [GEOL] Lower lower Miocene or uppermost Oligocene geologic time. { ,ak-wə'tān-ē-ən }
- aquitard** [GEOL] A bed of low permeability adjacent to an aquifer; may serve as a storage unit for groundwater, although it does not yield water readily. { 'ak-wə,tärd }
- Aquod** [GEOL] A suborder of the soil order Spodosol, with a black or dark brown horizon just below the surface horizon; seasonally wet, it occupies depressions or wide flats from which water cannot escape easily. { 'ak-wəd }
- Aquoll** [GEOL] A suborder of the soil order Mollisol, with thick surface horizons; formed under wet conditions, it may be under water at times, but is seasonally rather than continually wet. { 'ak-wɔl }
- Aquox** [GEOL] A suborder of the soil order Oxisol, seasonally wet, found chiefly in shallow depressions; deeper soil profiles are predominantly gray, sometimes mottled, and contain nodules or sheets of iron and aluminum oxides. { 'ak-wəks }

Aquult

- Aquult** [GEOL] A suborder of the soil order Ultisol; seasonally wet, it is saturated with water a significant part of the year unless drained; surface horizon of the soil profile is dark and varies in thickness, grading to gray in the deeper portions; it occurs in depressions or on wide upland flats from which water drains very slowly. { 'ak·wəlt }
- Araeoscelidia** [PALEON] A provisional order of extinct reptiles in the subclass Euryapsida. { ə'ri·ə·sə'lid·ē·ə }
- aragonite** [MINERAL] CaCO_3 A white, yellowish, or gray orthorhombic mineral species of calcium carbonate but with a crystal structure different from those of vaterite and calcite, the other two polymorphs of the same composition. Also known as Aragon spar. { ə'ræg·ə,nīt }
- Aragon spar** See aragonite. { 'ar·ə,gän ,spär }
- aramayoite** [MINERAL] $\text{Ag}(\text{Sb,Bi})\text{S}_2$ An iron-black mineral consisting of silver antimony bismuth sulfide. { ,ar·ə'mī·ə,wīt }
- araphite** [PETR] A dark-colored, porous, fine-grained basic basalt consisting of magnetite, bytownite, and augite. { ə'rap·ə,hīt }
- Arbuckle orogeny** [GEOL] Mid-Pennsylvanian episode of diastrophism in the Wichita and Arbuckle Mountains of Oklahoma. { 'är·bək·əl o'räj·ə·nē }
- arc** [GEOL] A geologic or topographic feature that is repeated along a curved line on the surface of the earth. { ärk }
- arcanite** [MINERAL] K_2SO_4 A colorless, vitreous orthorhombic sulfate mineral. Also known as glaserite. { 'är·kə,nīt }
- Archaeoceti** [PALEON] The Zeuglodonts, a suborder of aquatic Eocene mammals in the order Cetacea; the oldest known cetaceans. { ,ärk·ē·ə'sē,tī }
- Archaeocidaridae** [PALEON] A family of Carboniferous echinoderms in the order Cidaroida characterized by a flexible test and more than two columns of interambulacral plates. { ,ärk·ē·ə,sə'dar·ə,dē }
- Archaeocopida** [PALEON] An order of Cambrian crustaceans in the subclass Ostracoda characterized by only slight calcification of the carapace. { ,ärk·ē·ə'kəp·ə·də }
- Archaeopteridales** [PALEOBOT] An order of Upper Devonian sporebearing plants in the class Polyodiopsida characterized by woody trunks and simple leaves. { ,ärk·ē·əp·tə'rīd·ə·lēz }
- Archaeopteris** [PALEOBOT] A genus of fossil plants in the order Archaeopteridales; used sometimes as an index fossil of the Upper Devonian. { ,ärk·ē·əp·tə'rəs }
- Archaeopterygiformes** [PALEON] The single order of the extinct avian subclass Archaeornithes. { ,ärk·ē·əp·tə'rj·ə'fór,mēz }
- Archaeopteryx** [PALEON] The earliest known bird; a genus of fossil birds in the order Archaeopterygiformes characterized by flight feathers like those of modern birds. { ,ärk·ē·əp·tə'riks }
- Archaeornithes** [PALEON] A subclass of Upper Jurassic birds comprising the oldest fossil birds. { ,ärk·ē'ör·nə,thēz }
- Archanthropinae** [PALEON] A subfamily of the Hominidae, set up by F. Weidenreich, which is no longer used. { ,ärk·ən'thräp·ə,nē }
- Archean** [GEOL] A term, meaning ancient, which has been applied to the oldest rocks of the Precambrian; as more physical measurements of geologic time are made, the usage is changing; the term Early Precambrian is preferred. { ä'r'kē·ən }
- archeomagnetic dating** [GEOPHYS] An absolute dating method based on the earth's shifting magnetic poles. When clays and other rock and soil materials are fired to approximately 1300°F (700°C) and allowed to cool in the earth's magnetic field, they retain a weak magnetism which is aligned with the position of the poles at the time of firing. This allows for dating, for example, of when a fire pit was used, based on the reconstruction of pole position for earlier times. { ,är·kē·ə,mag'nəd·ik 'dä·dīŋ }
- Archeozoic** [GEOL] **1.** The era during which, or during the latter part of which, the oldest system of rocks was made. **2.** The last of three subdivisions of Archean time, when the lowest forms of life probably existed; as more physical measurements of geologic time are made, the usage is changing; it is now considered part of the Early Precambrian. { ,är·kē·ə'zō·ik }

argentite

- Archeria** [PALEON] Genus of amphibians, order Embolomeri, in early Permian in Texas; fish eaters. { ,är'kir·ē·ə }
- arching** [GEOL] The folding of schists, gneisses, or sediments into anticlines. { 'ärch·iŋ }
- archipelagic apron** [GEOL] A fan-shaped slope around an oceanic island differing from deep-sea fans in having little, if any, sediment cover. { ,är·kə·pə'laj·ik 'ä·prən }
- architectonic** [GEOL] Of forces that determine structure. { ,är·kə'tek'tän·ik }
- Arctic suite** [PETR] A group of basic igneous rocks intermediate in composition between Atlantic and Pacific suites. { 'ärd·ik 'swēt }
- Arctocyonidae** [PALEON] A family of extinct carnivore-like mammals in the order Condylarthra. { 'ärk·tō,sī'an·ə,dē }
- Arctolepiformes** [PALEON] A group of the extinct joint-necked fishes belonging to the Arthrodira. { ,ärk·tō,lep·ə'fór,mēz }
- arcuate delta** [GEOL] A bowed or curved delta with the convex margin facing the body of water. Also known as fan-shaped delta. { 'ärk·yə·wət 'del·tə }
- arcuation** [GEOL] Production of an arc, as in rock flowage where movement proceeded in a fanlike manner. { ,ärk·yə'wā·shən }
- Arctocyonidae** [PALEON] A family of Devonian paleocopan ostracods in the superfamily Kirkbyacea characterized by valves with a large central pit. { ,är,sī'zän·ə,dē }
- ardealite** [MINERAL] $\text{Ca}_2(\text{HPO}_4)(\text{SO}_4)\cdot 4\text{H}_2\text{O}$ A white or light-yellow mineral consisting of a hydrous acid calcium phosphate-sulfate. { ,är·dē'ä,līt }
- Ardennian orogeny** [GEOL] A short-lived orogeny during the Ludlovian stage of the Silurian period of geologic time. { ä'r'den·ē·ən ó'räj·ə·nē }
- ardennite** [MINERAL] $\text{Mn}_5\text{Al}_5(\text{VO}_4)(\text{SiO}_4)_5(\text{OH})_2\cdot 2\text{H}_2\text{O}$ A yellow to yellowish-brown mineral consisting of a hydrous silicate vanadate and arsenate of manganese and aluminum. { ä'r'den,līt }
- arduinite** See mordenite. { ä'r'dwin,tīt }
- areal eruption** [GEOL] Volcanic eruption resulting from collapse of the roof of a batholith; the volcanic rocks grade into parent plutonic rocks. { 'er·e·əl i'rəp·shən }
- areal geology** [GEOL] Distribution and form of rocks or geologic units of any relatively large area of the earth's surface. { 'er·e·əl jē'al·ə·jē }
- arenaceous** [GEOL] Of sediment or sedimentary rocks that have been derived from sand or that contain sand. Also known as arenarious; psammitic; sabulous. { ,ä·rə'nāsh·əs }
- arenarious** See arenaceous. { ,ä·rə'ner·ē·əs }
- arendalite** [MINERAL] A dark-green variety of epidote found in Arendal, Norway. { ə'rend·əl,tīt }
- arenicolite** [GEOL] A hole, groove, or other mark in a sedimentary rock, generally sandstone, interpreted as a burrow made by an arenicolous marine worm or a trail of a mollusk or crustacean. { ,ä·rə'nik·ə,līt }
- Arenigian** [GEOL] A European stage including Lower Ordovician geologic time (above Tremadocian, below Llanvirnian). Also known as Skiddavian. { ,ä·rə'ni·j·ē·ən }
- arenite** [PETR] Consolidated sand-texture sedimentary rock of any composition. Also known as arenyte; psammite. { 'ä·rə,nīt }
- Arent** [GEOL] A suborder of the soil order Entisol, consisting of soils formerly of other classifications that have been severely disturbed, completely disrupting the sequence of horizons. { 'ä·rənt }
- arenyte** See arenite. { 'ä·rə,nīt }
- arête** [GEOL] Narrow, jagged ridge produced by the merging of glacial cirques. Also known as arris; crib; serrate ridge. { 'ä·rät }
- arfvedsonite** [MINERAL] A black monoclinic amphibole, containing sodium and silicon trioxide with occluded water and some calcium. Also known as soda hornblende. { 'är·vəd·sə,nīt }
- argentite** [MINERAL] Ag_2S A lustrous, lead-gray ore of silver; it is a monoclinic mineral and is dimorphous with acanthite. Also known as argyrite; silver glance; vitreous silver. { 'är·jən,tīt }

argentojarosite

- argentojarosite** [MINERAL] $\text{AgFe}_3(\text{SO}_4)_2(\text{OH})_6$ A yellow or brownish mineral consisting of basic silver ferric sulfate. { ăr,jen-tō'jār-ə,sīt }
- Argid** [GEOL] A suborder of the soil order Aridisol, well drained, having a characteristically brown or red color and a silicate accumulation below the surface horizon; occupies older land surfaces in deserts. { 'ār-jəd }
- argillaceous** [GEOL] Of rocks or sediments made of or largely composed of clay-size particles or clay minerals. { ,ār-jə'lā-shəs }
- argillation** [GEOL] Development of clay minerals by weathering of aluminum silicates. { ,ār-jə'lā-shən }
- argillic alteration** [GEOL] A rock alteration in which certain minerals are converted to minerals of the clay group. { ăr'jil-ik ,ōl-tə'rā-shən }
- argilliferous** [GEOL] Abounding in or producing clay. { ,ār-jə'lif-ə-rəs }
- argillite** [PETR] A compact rock formed from siltstone, shale, or claystone but intermediate in degree of induration and structure between them and slate; argillite is more indurated than mudstone but lacks the fissility of shale. { 'ār-jə,līt }
- Argovian** [GEOL] Upper Jurassic (lower Lusitanian), a substage of geologic time in Great Britain. { ăr'gōv-ē-ən }
- argyrite** *See* argentite. { ăr'jir,īt }
- argyrodite** [MINERAL] Ag_8GeS_6 A steel-gray mineral, one of two germanium minerals and a source for germanium; crystallizes in the isometric system and is isomorphous with canfieldite. { ăr'jir-ə,dīt }
- arid erosion** [GEOL] Erosion or wearing away of rock that occurs in arid regions, due largely to the wind. { 'ar-əd i'rō-zhən }
- Aridisol** [GEOL] A soil order characterized by pedogenic horizons; low in organic matter and nitrogen and high in calcium, magnesium, and more soluble elements; usually dry. { a'rid-ə,sól }
- riegite** [PETR] A group of pyroxenites composed principally of clinopyroxene, orthopyroxene, and spinel. { ,ar-ē'ā,zhīt }
- Arikareean** [GEOL] Lower Miocene geologic time. { ə,rik-ə'rē-ən }
- Arizona ruby** [MINERAL] A ruby-red pyrope garnet of igneous origin found in the southwestern United States. { ,ār-ə'zōn-ə 'rū-bē }
- arizonite** [MINERAL] $\text{Fe}_2\text{Ti}_3\text{O}_9$ A steel-gray mineral containing iron and titanium and found in irregular masses in pegmatite. [PETR] A dike rock composed of mostly quartz, some orthoclase, and accessory mica and apatite. { ,ar-ə'zō,nīt }
- Arkansas stone** [PETR] A variety of novaculite quarried in Arkansas. { 'ār-kən,sō ,stōn }
- arkite** [PETR] A feldspathoid-rich rock consisting largely of pseudoleucite and nepheline, subordinate melanite and pyroxene, and accessory orthoclase, apatite, and sphene. { 'ār,kīt }
- arkose** [PETR] A sedimentary rock composed of sand-size fragments that contain a high proportion of feldspar in addition to quartz and other detrital minerals. { 'ār,kōs }
- arkose quartzite** *See* arkosite. { 'ār,kōs 'kwört,sīt }
- arkosic** [PETR] Having wholly or partly the character of arkose. { ăr'kōs-ik }
- arkosic bentonite** [PETR] Bentonite derived from volcanic ash which contains 25–75% sandy impurities and whose detrital crystalline grains remain essentially unaltered. Also known as sandy bentonite. { ăr'kōs-ik 'ben-tə,nīt }
- arkosic limestone** [PETR] An impure clastic limestone composed of a relatively high proportion of grains or crystals of feldspar. { ăr'kōs-ik 'līm,stōn }
- arkosic sandstone** [PETR] A sandstone in which much feldspar is present, ranging from unsorted products of granular disintegration of granite to partly sorted river-laid or even marine deposits. { ăr'kōs-ik 'san,stōn }
- arkosic wacke** *See* feldspathic graywacke. { ăr'kōs-ik'wak-ə }
- arkosite** [PETR] A quartzite with a high proportion of feldspar. Also known as arkose quartzite. { ăr'kō,sīt }
- arksutite** *See* chiolite. { ăr'ksü,tīt }
- arm** [GEOL] A ridge or a spur that extends from a mountain. { ăr }

arteritic migmatite

- armangite** [MINERAL] $Mn_3(AsO_3)_2$ A black mineral crystallizing in the rhombohedral system and consisting of manganese arsenite. { ă'rman,ġit }
- arinite** [MINERAL] $BaCa_2Al_6Si_8O_{28} \cdot 2H_2O$ Mineral composed of a hydrous calcium barium aluminosilicate. { ă'r'mē,nīt }
- armored mud ball** [GEOL] A large (0.4–20 inches or 1–50 centimeters in diameter) subspherical mass of silt or clay coated with coarse sand and fine gravel. Also known as pudding ball. { ă'r-mərd 'məd ,bɔl }
- Armorican orogeny** [GEOL] Little-used term, now replaced by Hercynian or Variscan orogeny. { ă'r'mòr-ə-kən ó'răj-ə-nē }
- arnimite** [MINERAL] $Cu_5(SO_4)_2(OH)_6 \cdot 3H_2O$ Mineral consisting of a hydrous copper sulfate. { ă'rn-ə,mīt }
- arquerite** [MINERAL] A mineral consisting of a soft, malleable, silver-rich variety of amalgam, containing about 87% silver and 13% mercury. { ă'r'kē,rīt }
- arrested decay** [GEOL] A stage in coal formation where biochemical action ceases. { ə'res-təd di'kă }
- arrhenite** [MINERAL] A variety of fergusonite. { ə'rā,nīt }
- arris** See arête. { ă'r-əs }
- arrival time** [GEOPHYS] In seismological measurements, the time at which a given wave phase is detected by a seismic recorder. { ə'rī-vəl ,tīm }
- arrojadite** [MINERAL] $Na_2(Fe,Mn)_5(PO_4)_4$ Dark-green mineral crystallizing in the monoclinic system, being isostructural with dickinsonite and occurring in masses. { ,ar-ə'jă,dīt }
- arroyo** [GEOL] Small, deep gully produced by flash flooding in arid and semiarid regions of the southwestern United State. { ə'rói-ō }
- arsenic** [MINERAL] A brittle, steel-gray hexagonal mineral, the native form of the element. { ă'rs-ən-ik }
- arsenic antimony** See allemontite. { ă'rsen-ə-kəl 'ant-ə,mō-nē }
- arsenical nickel** See niccolite. { ă'rsen-ə-kəl 'nik-əl }
- arsenic bloom** See arsenolite. { ă'rs-ən-ik ,blüm }
- arseniopleite** [MINERAL] A reddish-brown mineral consisting of a basic arsenate of manganese, calcium, iron, lead, and magnesium and occurring in cleavable masses. { ă'r'sēn-ē-ō'plē,īt }
- arseniosiderite** [MINERAL] $Ca_3Fe_4(AsO_4)_4(OH)_4 \cdot 4H_2O$ A yellowish-brown mineral consisting of a basic iron calcium arsenate and occurring as concretions. { ă'r'sēn-ē-ō'sid-ə,rīt }
- arsenobismite** [MINERAL] $Bi_2(AsO_4)(OH)_3$ A yellowish-green mineral consisting of a basic bismuth arsenate and occurring in aggregates. { ,ărs-ən-ō'biz,mīt }
- arsenoclasite** [MINERAL] $Mn_5(AsO_4)_2(OH)_4$ A red mineral consisting of a basic manganese arsenate. Also spelled arsenoklasite. { ,ărs-ən-ō'klă,sīt }
- arsenoklasite** See arsenoclasite. { ,ărs-ən-ō'klă,sīt }
- arsenolamprite** [MINERAL] $FeAsS$ A lead gray mineral consisting of nearly pure arsenic; occurs in masses with a fibrous foliated structure. { ,ărs-ən-ō'lam,přit }
- arsenolite** [MINERAL] As_2O_3 A mineral crystallizing in the isometric system and usually occurring as a white bloom or crust. Also known as arsenic bloom. { ă'rsen-əl,īt }
- arsenopyrite** [MINERAL] $FeAsS$ A white to steel-gray mineral crystallizing in the monoclinic system with pseudo-orthorhombic symmetry because of twinning; occurs in crystalline rock and is the principal ore of arsenic. Also known as mispickel. { ,ărs-ən-ō'přī,rīt }
- arsoite** [PETR] An olivine-bearing diopside trachyte. { ă'r-sō,īt }
- arterite** [PETR] **1.** A migmatite produced as a result of regional contact metamorphism during which residual magmas were injected into the host rock. **2.** Gneisses characterized by veins formed from the solution given off by deep-seated intrusions of molten granite. **3.** A veined gneiss in which the vein material was injected from a magma. { ă'r'tir,īt }
- arteritic migmatite** [GEOL] Injection gneiss supposedly produced by introduction of pegmatite, granite, or aplite into schist parallel to the foliation. { ,ărd-ə'řid-ik 'mig-mə,tīt }

Arthrodira

- Arthrodira** [PALEON] The joint-necked fishes, an Upper Silurian and Devonian order of the Placodermi. { ˈɑr·θrōˈdɪrə }
- articulite** *See* itacolomite. { ərˈtɪk·yə,lɪt }
- artinite** [MINERAL] $Mg_2CO_3(OH)_2 \cdot 3H_2O$ A snow-white mineral crystallizing in the orthorhombic system and occurring in crystals or fibrous aggregates. { ərˈtɪnɪt }
- Artinskian** [GEOL] A European stage of geologic time including Lower Permian (above Sakmarian, below Kungurian). { ərˈtɪn·skē·ən }
- arznite** [MINERAL] A bluish-green mineral consisting of a basic copper sulfate with copper chloride and lead, and occurring as incrustations. { ərzˈrɪnɪt }
- asar** *See* esker. { ˈɑ·sər }
- asbestos** [MINERAL] A general name for the useful, fibrous varieties of a number of rock-forming silicate minerals that are heat-resistant and chemically inert; two varieties exist: amphibole asbestos, the best grade of which approaches the composition $Ca_2Mg_5(OH)_2Si_8O_{22}$ (tremolite), and serpentine asbestos, usually chrysotile, $Mg_3Si_2(OH)_4O_5$. { əsˈbes·təs }
- asbolane** *See* asbolite. { ˈɑz·bələn }
- asbolite** [MINERAL] A black, earthy mineral aggregate containing hydrated oxides of manganese and cobalt. Also known as asbolane; black cobalt; earthy cobalt. { ˈɑz·bəlɪt }
- aschistic** [GEOL] Pertaining to rocks of minor igneous intrusions that have not been differentiated into light and dark portions but that have essentially the same composition as the larger intrusions with which they are associated. { əˈskɪs·tɪk }
- aseismic** [GEOPHYS] Not subject to the occurrence or destructive effects of earthquakes. { əˈsɪz·mɪk }
- ash** [GEOL] Volcanic dust and particles less than 4 millimeters in diameter. { ɑʃ }
- Ashby** [GEOL] A North American stage of Middle Ordovician geologic time, forming the upper subdivision of Chazyan, and lying above Marmor and below Porterfield. { ˈɑʃ·bē }
- ash cone** [GEOL] A volcanic cone built primarily of unconsolidated ash and generally shaped somewhat like a saucer, with a rim in the form of a wide circle and a broad central depression often nearly at the same elevation as the surrounding country. { ˈɑʃ ,kōn }
- ash fall** [GEOL] **1.** A fall of airborne volcanic ash from an eruption cloud; characteristic of Vulcanian eruptions. Also known as ash shower. **2.** Volcanic ash resulting from an ash fall and lying on the ground surface. { ˈɑʃ ,fɔl }
- ash field** [GEOL] A thick, extensive deposit of volcanic ash. Also known as ash plain. { ˈɑʃ ,fɛld }
- ash flow** [GEOL] **1.** An avalanche of volcanic ash, generally a highly heated mixture of volcanic gases and ash, traveling down the flanks of a volcano or along the surface of the ground. Also known as glowing avalanche; incandescent tuff flow. **2.** A deposit of volcanic ash and other debris resulting from such a flow and lying on the surface of the ground. { ˈɑʃ ,flō }
- ash-flow tuff** *See* ignimbrite. { ˈɑʃ ,flō ,tʌf }
- ash fusibility** [GEOL] The gradual softening and melting of coal ash that takes place with increase in temperature as a result of the melting of the constituents and chemical reactions. { ˈɑʃ ,fyüz·əˈbɪl·əd·e }
- Ashgillian** [GEOL] A European stage of geologic time in the Upper Ordovician (above Upper Caradocian, below Llandoveryan of Silurian). { ɑʃˈgɪl·yən }
- ash plain** *See* ash field. { ˈɑʃ ,plæn }
- ash rock** [GEOL] The material of arenaceous texture produced by volcanic explosions. { ˈɑʃ ,ræk }
- ash shower** *See* ash fall. { ˈɑʃ ,ʃaʊ·ər }
- ashstone** [PETR] A rock composed of fine volcanic ash; particles are less than 0.06 millimeter in diameter. { ˈɑʃ ,stōn }
- ashtonite** *See* mordenite. { ˈɑʃ·tənɪt }
- ash viscosity** [GEOL] The ratio of shearing stress to velocity gradient of molten ash;

- indicates the suitability of a coal ash for use in a slag-tap-type boiler furnace. { 'ash vis'käs·əd·ē }
- ashy grit** [GEOL] **1.** Pyroclastic material of sand and smaller size. **2.** Mixture of ordinary sand and volcanic ash. { 'ash·ē 'grit }
- asiderite** See stony meteorite. { ə'sid·ə,rit }
- Aso lava** [GEOL] A type of indurated pyroclastic deposit produced during the explosive eruptions that formed the Aso Caldera of Kyushu, Japan. { 'äs·ō 'läv·ə }
- asparagolite** See asparagus stone. { ,as·pə'rag·ə,līt }
- asparagus stone** [MINERAL] A yellow-green variety of apatite occurring in crystals. Also known as asparagolite. { ə'spar·ə·gəs ,stōn }
- aspect** [GEOL] **1.** The general appearance of a specific geologic entity or fossil assemblage as considered more or less apart from relations in time and space. **2.** The direction toward which a valley side or slope faces with respect to the compass or rays of the sun. { 'a,spekt }
- aspect angle** [GEOL] The angle between the aspect of a slope and the geographic south (Northern Hemisphere) or the geographic north (Southern Hemisphere). { 'a,spekt ,aŋ·gəl }
- asperity** [GEOL] A type of surface roughness appearing along the interface of two faults. { a'sper·ə·dē }
- asphaltic sand** [GEOL] Deposits of sand grains cemented together with soft, natural asphalt. { a'sfölt·ik 'sand }
- asphaltite** [GEOL] Any of the dark-colored, solid, naturally occurring bitumens that are insoluble in water, but more or less completely soluble in carbon disulfide, benzol, and so on, with melting points between 250 and 600°F (121 and 316°C); examples are gilsonite and grahamite. { a'sfölt,tīt }
- asphaltite coal** See albertite. { a'sfölt,tīt ,kōl }
- asphalt rock** [GEOL] Natural asphalt-containing sandstone or dolomite. Also known as asphalt stone; bituminous rock; rock asphalt. { 'a,sfölt 'räk }
- asphalt stone** See asphalt rock. { 'a,sfölt 'stōn }
- Aspidorhynchidae** [PALEON] The single family of the Aspidorhynchiformes, an extinct order of holostean fishes. { 'as·pə,dō'riŋ·kə,dē }
- Aspidorhynchiformes** [PALEON] A small, extinct order of specialized holostean fishes. { 'as·pə,dō,riŋk·ə'fōr,mēz }
- Aspinothoracida** [PALEON] The equivalent name for Brachythoraci. { a,spīn·ō·thə'ras·əd·ə }
- aspite** [GEOL] A cratered volcano with the base wide in relation to the height; for example, Mauna Loa. { 'as,pīt }
- assemblage** [GEOL] **1.** A group of fossils that, appearing together, characterize a particular stratum. **2.** A group of minerals that compose a rock. [PALEON] A group of fossils occurring together at one stratigraphic level. { ə'sem·blij }
- assemblage zone** [PALEON] A biotstratigraphic unit defined and identified by a group of associated fossils rather than by a single index fossil. { ə'sem·bliz ,zōn }
- assimilation** [GEOL] Incorporation of solid or fluid material that was originally in the rock wall into a magma. { ə,sim·ə'lā·shən }
- assyntite** [PETR] A plutonic rock consisting largely of orthoclase and pyroxene, lesser amounts of sodalite and nepheline, and accessory biotite, sphene, apatite, and opaque oxides. { ə'sin,tīt }
- Astartian** See Sequanian. { ə'stär·shən }
- asthenolith** [GEOL] A body of magma locally melted at any time within any solid portion of the earth. { as'then·ə,lith }
- asthenosphere** [GEOL] That portion of the upper mantle beneath the rigid lithosphere which is plastic enough for rock flowage to occur; extends from a depth of 30–60 miles (50–100 kilometers) to about 240 miles (400 kilometers) and is seismically equivalent to the low velocity zone. { as'then·ə,sfir }
- Astian** [GEOL] A European stage of geologic time: upper Pliocene, above Plaisancian, below the Pleistocene stage known as Villafranchian, Calabrian, or Günz. { 'as·tē·ən }

astrakanite

astrakanite *See* bloedite. { 'as·trə·kə,nīt }

Astrapotheria [PALEON] A relatively small order of large, extinct South American mammals in the infraclass Eutheria. { ,as·trə·pə'thɪr·ē·ə }

Astrapotheroidea [PALEON] A suborder of extinct mammals in the order Astrapotheria, ranging from early Eocene to late Miocene. { ,as·trə·pə·thə'roid·ē·ə }

astrobleme [GEOL] A circular-shaped depression on the earth's surface produced by the impact of a cosmic body. { 'as·trɔ,blēmə }

astrochanite *See* bloedite. { ə'stræk·ə,nīt }

astrophyllite [MINERAL] $(K,Na)_3(Fe,Mn)_7Ti_2Si_8O_{24}(O,OH)_7$ A mineral composed of a basic silicate of potassium or sodium, iron or manganese, and titanium. { ,as·trə'fɪ,līt }

Asturian orogeny [GEOL] Mid-Upper Carboniferous diastrophism. { ə'stʊr·ē·ən ðə'rɛj·ə·nē }

asymmetrical bedding [GEOL] An order in which lithologic types or facies follow one another in a circuitous arrangement so that, for example, the sequence of types 1-2-3-1-2-3-1-2-3 indicates asymmetry (while the sequence 1-2-3-2-1-2-3-2-1 indicates symmetrical bedding). { |ä·sə'me·tri·kəl 'bed·ɪŋ }

asymmetrical fold [GEOL] A fold in which one limb dips more steeply than the other. { |ä·sə'me·tri·kəl 'fɔld }

asymmetrical laccolith [GEOL] A laccolith in which the beds dip at conspicuously different angles in different sectors. { |ä·sə'me·tri·kəl 'lak·ə,lɪθ }

asymmetrical ripple mark [GEOL] The normal form of ripple mark, with short downstream slopes and comparatively long, gentle upstream slopes. { |ä·sə'me·tri·kəl 'rɪp·əl ,mɑrk }

asymmetrical vein [GEOL] A crustified vein of geologic material with unlike layers on each side. { |ä·sə'me·tri·kəl 'væn }

atacamite [MINERAL] $Cu_2Cl(OH)_3$ Native, green hydrous copper oxychloride crystallizing in the orthorhombic system. { ,ad·ə'kam,ɪt }

ataxic [GEOL] Pertaining to unstratified ore deposits. { ə'tak·sɪk }

ataxite [GEOL] An iron meteorite that lacks the structure of either hexahedrite or octahedrite and contains more than 10% nickel. [PETR] A taxitic rock whose components are arranged in a breccialike manner, that is, there is no specific arrangement. { ə'tak,sɪt }

atectonic [GEOL] Of an event that occurs when orogeny is not taking place. { |ä·tek'tän·ɪk }

atectonic pluton [GEOL] A pluton that is emplaced when orogeny is not occurring. { |ä·tek'tän·ɪk 'plʊ,tən }

atelestite [MINERAL] $Bi_3(AsO_4)_3O_5(OH)_5$ A yellow mineral consisting of basic bismuth arsenate and occurring in minute crystals; specific gravity is 6.82. { ,ad·əl'e,stɪt }

athrogenic [PETR] Of or pertaining to pyroclastics. { |ath·rəj'en·ɪk }

Athyrididina [PALEON] A suborder of fossil articulate brachiopods in the order Spiriferida characterized by laterally or, more rarely, ventrally directed spires. { ,ath·ə·rə'də'dɪ·nə }

Atlantic series [PETR] A great group of igneous rocks, based on tectonic setting, found in nonorogenic areas, often associated with block sinking and great crustal instability, and erupted along faults and fissures or through explosion vents. Also known as Atlantic suite. { ə'tlan·tɪk 'sɪr·ēz }

Atlantic suite *See* Atlantic series. { ə'tlan·tɪk 'swēt }

Atlantic-type continental margin [GEOL] A continental margin typified by that of the Atlantic which is aseismic because oceanic and continental lithospheres are coupled. { ə'tlan·tɪk ,tɪp ,kænt·ən'ent·əl 'mɑr·jən }

atlantite [PETR] An olivine-bearing nepheline tephrite. { ə'tlan,tɪt }

atmoclast [GEOL] A fragment of rock broken off in place by atmospheric weathering. { 'at·mə,klast }

atmoclastic [PETR] Of a clastic rock, composed of atmoclasts that have been recemented without rearrangement. { |at·mə'klas·tɪk }

atmogenic [GEOL] Of rocks, minerals, and other deposits derived directly from the

augite

- atmosphere by condensation, wind action, or deposition from volcanic vapors; for example, snow. { 'at·mə|jen·ik }
- atmolith** [GEOL] A rock precipitated from the atmosphere, that is, an atmogenic rock. { 'at·mə,lith }
- Atokan** [GEOL] A North American provincial series in lower Middle Pennsylvanian geologic time, above Morrowan, below Desmoinesian. { ə'tō·kən }
- atoll texture** [GEOL] The surrounding of a ring of one mineral with another mineral, or minerals, within and without the ring. Also known as core texture. { 'a,tól ,teks·chər }
- atopite** [MINERAL] A yellow or brown variety of romeite that contains fluorine. { 'ad·ə,pīt }
- Atrypidina** [PALEON] A suborder of fossil articulate brachiopods in the order Spiriferida. { a·trī'pid·ə·nə }
- attached dune** [GEOL] A dune that has formed around a rock or other geological feature in the path of windblown sand. { ə'tacht 'dün }
- attapulgit** [MINERAL] (Mg,Al)₂Si₄O₁₀(OH)·4H₂O A clay mineral with a needlelike shape from Georgia and Florida; active ingredient in most fuller's earth, and used as a suspending agent, as an oil well drilling fluid, and as a thickener in latex paint. { ,ad·ə'pəl,jīt }
- Atterberg scale** [GEOL] A geometric and decimal grade scale for classification of particles in sediments based on the unit value of 2 millimeters and involving a fixed ratio of 10 for each successive grade; subdivisions are geometric means of the limits of each grade. { 'at·ər,bərg ,skāl }
- Attican orogeny** [GEOL] Late Miocene diastrophism. { 'ad·ə·kən ó'räj·ə·nē }
- attitude** [GEOL] The position of a structural surface feature in relation to the horizontal. { 'ad·ə,tüd }
- atrital coal** [GEOL] A bright coal composed of anthraxylon and of attritus in which the translucent cell-wall degradation matter or translucent humic matter predominates, with the ratio of anthraxylon to attritus being less than 1:3. { ə'trīd·əl 'kōl }
- attrition** [GEOL] The act of wearing and smoothing of rock surfaces by the flow of water charged with sand and gravel, by the passage of sand drifts, or by the movement of glaciers. { ə'trīsh·ən }
- attritus** [GEOL] **1.** Visible-to-ultramicroscopic particles of vegetable matter produced by microscopic and other organisms in vegetable deposits, particularly in swamps and bogs. **2.** The dull gray to nearly black, frequently striped portion of material that makes up the bulk of some coals and alternate bands of bright anthraxylon in well-banded coals. { ə'trīd·əs }
- aubrite** [GEOL] An enstatite achondrite (meteorite) consisting almost wholly of crystal-line-granular enstatite (and clinoenstatite) poor in lime and practically free from ferrous oxide, with accessory oligoclase. Also known as bustite. { 'ò,brit }
- auganite** [PETR] An olivine-free basalt (calcic plagioclase and augite are the essential mineral components) or an augite-bearing andesite. { 'òg·ə,nīt }
- augelite** [MINERAL] Natural, basic aluminum phosphate. { 'òj·ə,līt }
- augen** [PETR] Large, lenticular eye-shaped mineral grain or mineral aggregate visible in some metamorphic rocks. { 'òg·ən or 'aü·gən }
- augen kohle** See eye coal. { 'aü·gən ,kōl·ə }
- augen schist** [PETR] A mylonitic rock characterized by the presence of recrystallization. { 'aü·gən ,shist }
- augen structure** [PETR] A structure found in some gneisses and granites in which certain of the constituents are squeezed into elliptical or lens-shaped forms and, especially if surrounded by parallel flakes of mica, resemble eyes. { 'aü·gən ,strək·chər }
- augite** [MINERAL] (Ca,Mg,Fe)(Mg,Fe,Al)(Al,Si)₂O₆ A general name for the monoclinic pyroxenes; occurs as dark green to black, short, stubby, prismatic crystals, often of octagonal outline. { 'ò,jīt }
- augitite** [PETR] A volcanic rock consisting of abundant phenocrysts of augite in a

augitophyre

glassy groundmass containing microlites of nepheline and plagioclase, with accessory biotite, apatite, and opaque oxides. { 'ò·jə,tɪt }

augitophyre [PETR] A porphyritic rock in which the phenocrysts are augite and the groundmass is potash feldspar. { ó'jid·ə,ft·ər }

aulacogen [GEOL] A major fault-bounded trough considered to be one part of a three-rayed fault system on the domes above mantle hot spots; the other two rays open as proto-ocean basins. { ,aú'lák·ə·jən }

Aulolepidae [PALEON] A family of marine fossil teleostean fishes in the order Ctenothrissiformes. { ,ól·ə'lɛp·ə,dē }

Auloporidae [PALEON] A family of Paleozoic corals in the order Tabulata. { ,ól·ə'pór·ə,dē }

aureole [GEOL] A ring-shaped contact zone surrounding an igneous intrusion. Also known as contact aureole; contact zone; exomorph zone; metamorphic aureole; metamorphic zone; thermal aureole. { 'òr·ē,ól }

aurichalcite [MINERAL] $(Zn,Cu)_5(CO_3)_2(OH)_6$ Pale-green or pale-blue mineral consisting of a basic copper zinc carbonate and occurring in crystalline incrustations. Also known as brass ore. { ,òr·ə'kal,sīt }

auriferous [GEOL] Of a substance, especially a mineral deposit, bearing gold. { ó'rif·ə·rəs }

aurora [GEOPHYS] The most intense of the several lights emitted by the earth's upper atmosphere, seen most often along the outer realms of the Arctic and Antarctic, where it is called the aurora borealis and aurora australis, respectively; excited by charged particles from space. { ə'ròr·ə }

aurosiridium [MINERAL] A brittle, silver-white, isometric mineral consisting of a solid solution of gold and osmium in iridium. { 'òr·ð·smə'rid·ē·əm }

austinite [MINERAL] $CaZnAsO_4(OH)$ A colorless or yellowish mineral crystallizing in the orthorhombic system; consists of a basic calcium zinc arsenate; hardness is 4.5 on Mohs scale, and specific gravity is 4.13. { 'òs·tə,nīt }

austral axis pole [GEOPHYS] The southern intersection of the geomagnetic axis with the earth's surface. { 'òs·trəl 'ak·səs ,pól }

australite [GEOL] A tektite found in southern Australia, occurring as glass balls and spheroidal dumbbell forms of green and black, similar to obsidian and probably of cosmic origin. { 'òs·trəl,īt }

Australopithecinae [PALEON] The near-men, a subfamily of the family Hominidae composed of the single genus *Australopithecus*. { ó,strā·lò,pith·ə'sī·nē }

Australopithecus [PALEON] A genus of near-men in the subfamily Australopithecinae representing a side branch of human evolution. { ó,strā·lò'pith·ə·kəs }

Austrian orogeny [GEOL] A short-lived orogeny during the end of the Early Cretaceous. { 'òs·trē·ən ó'rāj·ə·nē }

autalotriomorphic [PETR] Pertaining to an aplitic texture in which all mineral constituents crystallized simultaneously, preventing the development of euhedral crystals. { ,aud·ə'lā·trē·ə'mòr·fik }

authigene [MINERAL] A mineral which has not been transported but has been formed in place. Also known as authigenic mineral. { 'ò·thə,jən }

authigenic [GEOL] Of constituents that came into existence with or after the formation of the rock of which they constitute a part; for example, the primary and secondary minerals of igneous rocks. { 'ò·thə'jɛn·ik }

authigenic mineral See authigene. { 'ò·thə'jɛn·ik 'min·rəl }

authigenic sediment [GEOL] Sediment occurring in the place where it was originally formed. { 'ò·thə'jɛn·ik 'sed·ə·mənt }

autobrecciation [GEOL] The process whereby portions of the first consolidated crust of a lava flow are incorporated into the still-fluid portion. { 'òd·ð,brech·ē'ā·shən }

autochthon [GEOL] A succession of rock beds that have been moved comparatively little from their original site of formation, although they may be folded and faulted extensively. [PALEON] A fossil occurring where the organism once lived. { ó'tāk·thən }

- autochthonous** [GEOL] Having been formed or occurring in the place where found. { ó'täk-thə·nas }
- autochthonous coal** [GEOL] Coal believed to have originated from accumulations of plant debris at the place where the plants grew. Also known as indigenous coal. { ó'täk-thə·nas 'köl }
- autochthonous sediment** [GEOL] A residual soil deposit formed in place through decomposition. { ó'täk-thə·nas 'sed·ə·mənt }
- autoclastic** [GEOL] Of rock, fragmented in place by folding due to orogenic forces when the rock is not so heavily loaded as to render it plastic. { 'öd-ö'klas-tik }
- autoclastic schist** [GEOL] Schist formed in place from massive rocks by crushing and squeezing. { 'öd-ö'klas-tik 'shist }
- autogenetic topography** [GEOL] Conformation of land due to the physical action of rain and streams. { 'öd-ö·jə'ned-ik tə'päg·rə·fē }
- autogeosyncline** [GEOL] A parageosyncline that subsides as an elliptical basin or trough nearly without associated highlands. Also known as intracratonic basin. { 'öd-ö'jē-ö'sin,klīn }
- autoinjection** *See* autointrusion. { 'öd-ö,in'jek·shən }
- autointrusion** [GEOL] A process wherein the residual liquid of a differentiating magma is drawn into rifts formed in the crystal mesh at a late stage by deformation of unspecified origin. Also known as autoinjection. { 'öd-ö,in'trū·zhən }
- autolith** [PETR] **1.** A fragment of igneous rock enclosed in another igneous rock of later consolidation, each being regarded as a derivative from a common parent magma. **2.** A round, oval, or elongated accumulation of iron-magnesium minerals of uncertain origin in granitoid rock. { 'öd-ö,lith }
- autolysis** [GEOCHEM] Return of a substance to solution, as of phosphate removed from seawater by plankton and returned when these organisms die and decay. { ó'täl·ə·səs }
- autometamorphism** [PETR] Metamorphism of an igneous rock by the action of its own volatile fluids. Also known as autometasomatism. { 'öd-ö,med·ə'mör,fiz·əm }
- autometasomatism** *See* autometamorphism. { 'öd-ö,med·ə'sö·mə,tiz·əm }
- automorphic** [PETR] Of minerals in igneous rock bounded by their own crystal faces. Also known as euhedral; idiomorphic. { 'öd-ö'mör·fik }
- automorphosis** [PETR] Metamorphosis of solidified igneous rock by solutions from its heated interior. { 'öd-ö'mör·fə·səs }
- autophytograph** [GEOL] An imprint on a rock surface made by chemical activity of a plant or plant part. { 'öd-ö'fd·ə·graf }
- autopneumatolysis** [GEOL] The occurrence of metamorphic changes at the pneumatolytic stage of a cooling magma when temperatures are approximately 400–600°C. { 'öd-ö,nü·mə'täl·ə·səs }
- Autunian** [GEOL] A European stage of Lower Permian geologic time, above the Stephanian of the Carboniferous and below the Saxonian. { ,ö'tün·ē·ən }
- autunite** [MINERAL] $\text{Ca}(\text{UO}_2)_2(\text{PO}_4)_2 \cdot 10\text{H}_2\text{O}$ A common fluorescent mineral that occurs as yellow tetragonal plates in uranium deposits; minor ore of uranium. { ö'tə,nīt }
- Auversian** *See* Ledian. { ,ö'vərzh·ən }
- auxiliary fault** [GEOL] A branch fault; a minor fault ending against a major one. { ög'zil·yə·rē 'fölt }
- auxiliary mineral** [MINERAL] A light-colored, relatively rare or unimportant mineral in an igneous rock; examples are apatite, muscovite, corundrum, fluorite, and topaz. { ög'zil·yə·rē 'min·rəl }
- auxiliary plane** [GEOL] A plane at right angles to the net slip on a fault plane as determined from analysis of seismic data for an earthquake. { ög'zil·yə·rē 'plān }
- available relief** [GEOL] The vertical distance after uplift between the altitude of the original surface and the level at which grade is first attained. { ə'väl·ə·bəl ri'lef }
- aven** *See* pothole. { 'av·ən }
- aventurine** [MINERAL] **1.** A glass or mineral containing sparkling gold-colored particles, usually copper or chromic oxide. **2.** A shiny red or green translucent quartz having

average igneous rock

small, but microscopically visible, exsolved hematite or included mica particles. { ə'vench·ə,rēn }

average igneous rock [PETR] A hypothetical rock whose composition is thought to be similar to the average chemical composition of the outermost 10-mile (16-kilometer) shell of the earth. { 'av·rij 'ig·nē·əs 'rāk }

aviolite [PETR] A mica-cordierite-hornfels. { ə'vɪ·ə,lɪt }

avogadrite [MINERAL] (K,Cs)BF₄ An orthorhombic fluoborate mineral occurring in small crystals on Vesuvian lava. { ə·və'gād,rɪt }

Avonian See Dinantian. { ə'vɔn·ē·ən }

awaruite [MINERAL] Native nickel-iron alloy containing 57.7% nickel. { ə·wä'rü,lɪt }

axial compression [GEOL] A compression applied parallel with the cylinder axis in experimental work involving rock cylinders. { 'ak·sē·əl kəm'presh·ən }

axial culmination [GEOL] Distortion of the fold axis upward in a form similar to an anticline. { 'ak·sē·əl ,kəl·mə'nā·shən }

axial dipole field [GEOPHYS] A postulated magnetic field for the earth, consisting of a dipolar field centered at the earth's center, with its axis coincident with the earth's rotational axis. { 'ak·sē·əl 'di,pɔl ,fēld }

axial plane [GEOL] A plane that intersects the crest or trough in such a manner that the limbs or sides of the fold are more or less symmetrically arranged with reference to it. Also known as axial surface. { 'ak·sē·əl 'plān }

axial-plane cleavage [GEOL] Rock cleavage essentially parallel to the axial plane of a fold. { 'ak·sē·əl 'plān ,klē·vij }

axial-plane foliation [GEOL] Foliation developed in rocks parallel to the axial plane of a fold and perpendicular to the chief deformational pressure. { 'ak·sē·əl 'plān ,fɔ·lē'ā·shən }

axial-plane schistosity [GEOL] Schistosity developed parallel to the axial planes of folds. { 'ak·sē·əl 'plān ,shis'täs·əd·ē }

axial-plane separation [GEOL] The distance between axial planes of adjacent anticline and syncline. { 'ak·sē·əl 'plān sep·ə'rā·shən }

axial surface See axial plane. { 'ak·sē·əl 'sær·fəs }

axial trace [GEOL] The intersection of the axial plane of a fold with the surface of the earth or any other specified surface; sometimes such a line is loosely and incorrectly called the axis. { 'ak·sē·əl 'trās }

axial trough [GEOL] Distortion of a fold axis downward into a form similar to a syncline. { 'ak·sē·əl 'trɔf }

axinite [MINERAL] H₂(Ca,Fe,Mn)₄(BO)Al₂(SiO₄)₅ Brown, blue, green, gray, or purplish gem mineral that commonly forms glassy triclinic crystals. Also known as glass schorl. { 'ak·sə,nɪt }

axinitization [GEOL] The replacement of rocks by axinite, as in the border zones of some granites. { ək,zɪn·ə'tə'zā·shən }

axiolite [MINERAL] A variety of elongated spherulite in which there is an aggregation of minute acicular crystals arranged at right angles to a central axis. { 'ak·sē·ə,lɪt }

axis [GEOL] **1.** A line where a folded bed has maximum curvature. **2.** The central portion of a mountain chain. { 'ak·səs }

Azoic [GEOL] That portion of the earlier Precambrian time in which there is no trace of life. { ə'zɔ·ɪk }

azonal soil [GEOL] Any group of soils without well-developed profile characteristics, owing to their youth, conditions of parent material, or relief that prevents development of normal soil-profile characteristics. Also known as immature soil. { 'ə,zɔn·əl 'sɔɪl }

azulite [MINERAL] A translucent pale-blue variety of smithsonite found in large masses in Arizona and Greece. { 'əzh·ə,lɪt }

azurite [MINERAL] Cu₃(CO₃)₂(OH)₂ A blue monoclinic mineral consisting of a basic carbonate of copper; an ore of copper. Also known as blue copper ore; blue malachite; chessylite. { 'əzh·ə,rɪt }

azurmalachite [MINERAL] A mixture of azurite and malachite, usually occurring massive with concentric banding; used as an ornamental stone. { 'əzər'mal·ə,kɪt }

B

- back-arc basin** [GEOL] The region (small ocean basin) between an island arc and the continental mainland formed during oceanic plate subduction, containing sediment eroded from both. { 'bak, ɑrk ,bās·ən }
- back beach** *See* backshore. { 'bak ,bēch }
- backbone** [GEOL] **1.** A ridge forming the principal axis of a mountain. **2.** The principal mountain ridge, range, or system of a region. { 'bak,bɔn }
- backdeep** [GEOL] An epieugeosynclinal basin; a nonvolcanic postorogenic geosynclinal basin whose sediments are derived from an uplifted eugeosyncline. { 'bak,dēp }
- backfolding** [GEOL] Process in mountain forming in which the folds are overturned toward the interior of an orogenic belt. Also known as backward folding. { 'bak ,fɔld·iŋ }
- backlands** [GEOL] A section of a river floodplain lying behind a natural levee. { 'bak,lanz }
- backlimb** [GEOL] Of the two limbs of an asymmetrical anticline, the one that is more gently dipping. { 'bak,lim }
- back-set bed** [GEOL] Cross bedding that dips in a direction against the flow of a depositing current. { 'bak ,set ,bed }
- backshore** [GEOL] The upper shore zone that is beyond the advance of the usual waves and tides. Also known as back beach; backshore beach. { 'bak,ʃɔr }
- backshore beach** *See* backshore. { 'bak,ʃɔr ,bēch }
- backshore terrace** *See* berm. { 'bak,ʃɔr 'ter·əs }
- back slope** *See* dip slope. { 'bak ,slɔp }
- backswamp** [GEOL] Swampy depressed area of a floodplain between the natural levees and the edge of the floodplain. { 'bak,swamp }
- backthrusting** [GEOL] The thrusting in the direction of the interior of an orogenic belt, opposite the general structural trend. { 'bak,θrəst·iŋ }
- backward folding** *See* backfolding. { 'bak·wərd 'fɔld·iŋ }
- backwash mark** [GEOL] A crisscross ridge pattern in beach sand, caused by backwash. { 'bak,wəʃ ,mɑrk }
- backwash ripple mark** [GEOL] Ripple marks that are broad and flat and parallel to the shoreline, with narrow, shallow troughs and crests about 30 centimeters apart; formed by backwash above the maximum wave retreat level. { 'bak,wəʃ 'rip·əl ,mɑrk }
- baconite** [GEOL] A crystallite that looks like a dark rod. { 'bak·yə,lɪt }
- baddeleyite** [MINERAL] ZrO₂ A colorless, yellow, brown, or black monoclinic zirconium oxide mineral found in Brazil and Ceylon; used as heat- and corrosion-resistant linings for furnaces and muffles. { 'bad·əl·ē,ɪt }
- bahada** *See* bajada. { bə'hād·ə }
- bahamite** [PETR] A consolidated limestone formed of sediment similar to a type currently found accumulating in the Bahamas. { bə'hɑm,ɪt }
- bahiaite** [PETR] Holocrystalline igneous rock formed mainly of hypersthene with subordinate hornblende and sometimes minor amounts of other minerals. { bə'hɪ·yɑ,ɪt }
- baikerite** [MINERAL] A waxlike mineral from the vicinity of Lake Baikal, Siberia; apparently about 60% ozocerite with other tarry, waxy, and resinous hydrocarbons. { 'bi·kɑ,ɪt }

bajada

- bajada** [GEOL] An alluvial plain formed as a result of lateral growth of adjacent alluvial fans until they finally coalesce to form a continuous inclined deposit along a mountain front. Also spelled bahada. { bə'häd·ə }
- bajada breccia** [PETR] An imperfectly stratified accumulation of coarse, angular rock fragments mixed with mud that formed in arid climates and results from a mudflow containing considerable water. { bə'häd·ə 'brech·ə }
- Bajocian** [GEOL] A European stage: the middle Middle or lower Middle Jurassic geologic time; above Toarcian, below Bathonian. { bə'jō·shən }
- bakerite** [MINERAL] $8\text{CaO} \cdot 5\text{B}_2\text{O}_3 \cdot 6\text{SiO}_2 \cdot 6\text{H}_2\text{O}$ White mineral, occurring in fine-grained, nodular masses, resembling marble and unglazed porcelain, and consisting of hydrous calcium borosilicate. { 'bāk·ə,rīt }
- balanced rock** See perched block. { 'bal·ənst ,rāk }
- baldheaded anticline** [GEOL] An upfold with a crest that has been deeply eroded before later deposition. { 'böld,hed·əd 'an·ti,kli:n }
- ball** [GEOL] **1.** A low sand ridge, underwater by high tide, which extends generally parallel with the shoreline; usually separated by an intervening trough from the beach. **2.** A spheroidal mass of sedimentary material. **3.** Common name for a nodule, especially of ironstone. { 'böl }
- ball-and-socket joint** [GEOL] See cup-and-ball joint. { 'böl ən 'säk·ət ,jōint }
- ballas** [MINERAL] A spherical aggregate of small diamond crystals; used in diamond drill bits and other diamond tools. { 'bal·əs }
- ball coal** [GEOL] A variety of coal occurring in spheroidal masses. { 'böl ,köl }
- ballstone** [GEOL] **1.** Large mass or concretion of fine, unstratified limestone resulting from growth of coral colonies. **2.** A nodule of rock, especially ironstone, in a stratified unit. { 'böl,stön }
- balm** [GEOL] A concave cliff or precipice that forms a shelter. { bäm }
- banakite** [PETR] An alkalic basalt made up of plagioclase, sanidine, and biotite, with small quantities of analcime, augite, and olivine; quartz or leucite may be present. { 'ban·ə,kīt }
- band** [GEOL] A thin layer or stratum of rock that is noticeable because its color is different from the colors of adjacent layers. { band }
- bandaite** [PETR] A dacite type of extrusive rock composed of hypersthene and labradorite. { 'ban·də,īt }
- banded** [PETR] Pertaining to the appearance of rocks that have thin and nearly parallel bands of different textures, colors, and minerals. { 'ban·dəd }
- banded coal** [GEOL] A variety of bituminous and subbituminous coal made up of a sequence of thin lenses of highly lustrous coalified wood or bark interspersed with layers of more or less striated bright or dull coal. { 'ban·dəd 'köl }
- banded differentiate** [PETR] A type of igneous rock made up of bands of different composition, frequently alternating between two varieties as in a layered intrusion. { 'ban·dəd ,dif·ə'ren·chē,ät }
- banded iron formation** [GEOL] A sedimentary mineral deposit consisting of alternate silica-rich (chert or quartz) and iron-rich layers formed 2.5–3.5 billion years ago; the major source of iron ore. { 'band·əd 't·ərn fōr,mā·shən }
- banded ore** [GEOL] Ore made up of layered bands composed either of the same minerals that differ from band to band in color or textures or proportion, or of different minerals. { 'ban·dəd 'ōr }
- banded peat** [GEOL] Peat formed of alternate layers of vegetable debris. { 'ban·dəd 'pēt }
- banded structure** [PETR] An outcrop feature in igneous and metamorphic rocks due to alternation of layers, stripes, flat lenses, or streaks that obviously differ in mineral composition or texture. { 'ban·dəd 'strək·chər }
- banded vein** [GEOL] A vein composed of layers of different minerals that lie parallel to the walls. Also known as ribbon vein. { 'ban·dəd 'vān }
- banding** [PETR] **1.** The series of layers occurring in a banded structure. **2.** In sedimentary rocks, the thin bedding of alternate layers of different materials. { 'band·iŋ }

Barremian

- bandylite** [MINERAL] $\text{CuB}_2\text{O}_4 \cdot \text{CuCl}_2 \cdot 4\text{H}_2\text{O}$ A tetragonal mineral that is deep blue with greenish lights and consists of a hydrated copper borate-chloride. { 'ban·dɔ,lit }
- bank** [GEOL] **1.** The edge of a waterway. **2.** The rising ground bordering a body of water. **3.** A steep slope or face, generally consisting of unconsolidated material. { baŋk }
- bank deposit** [GEOL] Mounds, ridges, and terraces of sediment rising above and about the surrounding sea bottom. { 'baŋk di'pəz·ət }
- banket** [GEOL] A conglomerate containing valuable metal to be exploited. { baŋ'ket }
- bank-inset reef** [GEOL] A coral reef situated on island or continental shelves well inside the outer edges. { 'baŋk 'in,set ,rēf }
- bank reef** [GEOL] A reef which rises at a distance back from the outer margin of rimless shoals. { 'baŋk ,rēf }
- bank-run gravel** [GEOL] A natural deposit comprising gravel or sand. { 'baŋk ,rən 'grav·əl }
- bank sand** [GEOL] Deposits occurring in banks or pits and containing a low percentage of clay; used in core making. { 'baŋk ,sand }
- bar** [GEOL] **1.** Any of the various submerged or partially submerged ridges, banks, or mounds of sand, gravel, or other unconsolidated sediment built up by waves or currents within stream channels, at estuary mouths, and along coasts. **2.** Any band of hard rock, for example, a vein or dike, that extends across a lode. { bār }
- baraboo** [GEOL] A monadnock buried by a series of strata and then reexposed by the partial erosion of these younger strata. { 'bār·ə,bü }
- bararite** [MINERAL] $(\text{NH}_4)_2\text{SiF}_6$ A white, hexagonal mineral consisting of ammonium silicon fluoride; occurs in tabular, arborescent, and mammillary forms. { bə'rā,rīt }
- Barbados earth** [GEOL] A deposit of fossil radiolarians. { bar'bā·dəs ,ərth }
- bar beach** [GEOL] A straight beach of offshore bars that are separated by shallow bodies of water from the mainland. { 'bār ,bēch }
- barbertonite** [MINERAL] $\text{Mg}_6\text{Cr}_2(\text{OH})_{16}\text{CO}_3 \cdot 4\text{H}_2\text{O}$ A lilac to rose pink, hexagonal mineral consisting of a hydrated carbonate-hydroxide of magnesium and chromium; occurs in massive form or in masses of fibers or plates. { 'bār·bər·tə,nīt }
- barbierite** [MINERAL] $\text{NaAlSi}_3\text{IO}_8$ A hypothetical soda feldspar thought to be isomorphous with orthoclase. { bar'bi,rīt }
- barchan** [GEOL] A crescent-shaped dune or drift of windblown sand or snow, the arms of which point downwind; formed by winds of almost constant direction and of moderate speeds. Also known as barchane; barkhan; crescentic dune. { bār'kän }
- barchane** See barchan. { bār'kän }
- bar finger sand** [GEOL] An elongated lenticular sand body that lies beneath a distributary in a birdfoot delta. { 'bār 'fiŋ·gər ,sand }
- baring** See overburden. { 'ba·riŋ }
- barite** [MINERAL] BaSO_4 A white, yellow, or colorless orthorhombic mineral occurring in tabular crystals, granules, or compact masses; specific gravity is 4.5; used in paints and drilling muds and as a source of barium chemicals; the principal ore of barium. Also known as baryte; barytine; cawk; heavy spar. { 'ba,rīt }
- barite dollar** [MINERAL] Barite in the form of rounded disk-shaped masses; formed in a sandstone or sandy shale. { 'ba,rīt ,däl·ər }
- barkevikite** [MINERAL] A brown or black member of the amphibole mineral group; looks like basaltic hornblende but differs from it in its iron concentration. { 'bār·kə,vī,kīt }
- barkhan** See barchan. { bār'kän }
- bar plain** [GEOL] A plain formed by a stream without a low-water channel or an alluvial cover. { 'bār ,plān }
- barranca** [GEOL] A hole or deep break made by heavy rain; a ravine. { bə'raŋ·kə }
- barred basin** See restricted basin. { 'bārd 'bās·ən }
- barred beach sequence** [GEOL] A sequence comprising longshore bars, barrier beaches, and lagoons that develop when, under low-energy conditions, waves cross a broad continental shelf before impinging on a shoreline where sand-sized sediments are abundant. { 'bārd 'bēch 'sē·kwəns }
- Barremian** [GEOL] Lower Cretaceous geologic age, between Hauterivian and Aptian. { bə'rām·ē·ən }

barrier bar

- barrier bar** [GEOL] Ridges whose crests are parallel to the shore and which are usually made up of water-worn gravel put down by currents in shallow water at some distance from the shore. { 'bar·ē·ər ,bār }
- barrier basin** [GEOL] A basin formed by natural damming, for example, by landslides or moraines. { 'bar·ē·ər ,bās·ən }
- barrier beach** [GEOL] A single, long, narrow ridge of sand which rises slightly above the level of high tide and lies parallel to the shore, from which it is separated by a lagoon. Also known as offshore beach. { 'bar·ē·ər ,bēč }
- barrier chain** [GEOL] A series of barrier spits, barrier islands, and barrier beaches extending along a coastline. { 'bar·ē·ər ,čhān }
- barrier flat** [GEOL] An area which is relatively flat and frequently occupied by pools of water that separate the seaward edge of the barrier from a lagoon on the landward side. { 'bar·ē·ər ,flat }
- barrier island** [GEOL] An elongate accumulation of sediment formed in the shallow coastal zone and separated from the mainland by some combination of coastal bays and their associated marshes and tidal flats; barrier islands are typically several times longer than their width and are interrupted by tidal inlets. { 'bar·ē·ər ,ī·lənd }
- barrier reef** [GEOL] A coral reef that runs parallel to the coast of an island or continent, from which it is separated by a lagoon. { 'bar·ē·ər ,rēf }
- barrier spit** [GEOL] A barrier of sand joined at one of its ends to the mainland. { 'bar·ē·ər ,spit }
- Barrovian metamorphism** [GEOL] A regional metamorphism that can be zoned into facies that are metamorphic. { bə'rov·ē·ən ,med·ə'mɔr,fiz·əm }
- Barstovian** [GEOL] Upper Miocene geologic time. { ,bär'stöv·ē·ən }
- bar theory** [GEOL] A theory that accounts for thick deposits of salt, gypsum, and other evaporites in terms of increased salinity of a solution in a lagoon caused by evaporation. { 'bär 'thē·ə·rē }
- Bartonian** [GEOL] A European stage: Eocene geologic time above Auversian, below Ludian. Also known as Marinesian. { bär'tön·ē·ən }
- Barychiliniidae** [PALEON] A family of Paleozoic crustaceans in the suborder Platycopa. { ,bar·ə·kə'lin·ə,dē }
- Barylambdidae** [PALEON] A family of late Paleocene and early Eocene aquatic mammals in the order Pantodonta. { ,bar·ə'lam·də,dē }
- barysphere** See centrosphere. { 'bar·ə ,sfir }
- baryta feldspar** See hyalophane. { bə'rīd·ə 'fel ,spär }
- baryte** See barite. { 'ba ,rīt }
- Barytheriidae** [PALEON] A family of extinct proboscidean mammals in the suborder Barytherioidea. { ,bar·ə·thə'rī·ə,dē }
- Barytherioidea** [PALEON] A suborder of extinct mammals of the order Proboscidea, in some systems of classification. { ,bar·ə ,thir·ē'oid·ē·ə }
- barytine** See barite. { 'bar·ə ,tēn }
- barytocalcite** [MINERAL] $\text{CaBa}(\text{CO}_3)_2$ A colorless to white, grayish, greenish, or yellowish monoclinic mineral consisting of calcium and barium carbonate. { bə'rīd·ə'kal ,st }
- basal arkose** [PETR] Partially reworked feldspathic residuum in the lower section of a sandstone that overlies granitic rock. { 'bā·səl 'är ,kös }
- basal complex** See basement. { 'bā·səl 'käm ,pleks }
- basal conglomerate** [GEOL] A coarse gravelly sandstone or conglomerate forming the lowest member of a series of related strata which lie unconformably on older rocks; records the encroachment of the seabeach on dry land. { 'bā·səl kən'gläm·ə·rət }
- basalt** [PETR] An aphanitic crystalline rock of volcanic origin, composed largely of plagioclase feldspar (labradorite or bytownite) and dark minerals such as pyroxene and olivine; the extrusive equivalent of gabbro. { bə'sölt }
- basalt glass** See tachylite. { bə'sölt ,glas }
- basaltic dome** See shield volcano. { bə'söl·tik 'döm }
- basaltic hornblende** [PETR] A black or brown variety of hornblende rich in ferric iron

basining

- and occurring in basalts and other iron-rich basic igneous rocks. Also known as basaltine; lamprobolite; oxyhornblende. { bə'sól·tik 'hörn,blend }
- basaltic lava** [PETR] A volcanic fluid rock of basaltic composition. { bə'sól·tik 'lav·ə }
- basaltic magma** [GEOL] Mobile rock material of basaltic composition. { bə'sól·tik 'mag·mə }
- basaltic rock** [PETR] Igneous rock that is fine-grained and contains basalt, diabase, and dolerite; if andesite is included the rock is dark in color. { bə'sól·tik 'rāk }
- basaltic shell** [GEOL] The lower crystal layer of basalt underlying the oceans and beneath the sialic layer of continents. { bə'sól·tik 'shel }
- basaltiform** [GEOL] Similar to basalt in form. { bə'sól·tə,fórm }
- basaltine** *See* basaltic hornblende. { bə'sól,tēn }
- basalt obsidian** *See* tachylite. { bə'sólt əb'sid·ē·ən }
- basaluminite** [MINERAL] $Al_4(SO_4)(OH)_{10} \cdot 5H_2O$ A white mineral consisting of hydrated basic aluminum sulfate; occurs in compact masses. { 'bās·ə'lūm·ə,nīt }
- basanite** [PETR] A basaltic extrusive rock closely allied to chert, jasper, or flint. Also known as Lydian stone; lydite. { 'bas·ə,nīt }
- basculating fault** *See* wrench fault. { 'ba·skyə,lād·iŋ 'fólt }
- base exchange** [GEOCHEM] Replacement of certain ions by others in clay. { 'bās iks'chānj }
- base level** [GEOL] That critical plane of erosion and deposition represented by river level on continents and by wave or current base in the sea. { 'bās ,lev·əl }
- base-leveled plain** [GEOL] Any land surface changed almost to a plain by subaerial erosion. Also known as peneplain. { 'bās ,lev·əld 'plān }
- base-leveling epoch** *See* gradation period. { 'bās ,lev·əl·iŋ 'ep·ək }
- basement** [GEOL] **1.** A complex, usually of igneous and metamorphic rocks, that is overlain unconformably by sedimentary strata. Also known as basement rock. **2.** A crustal layer beneath a sedimentary one and above the Mohorovičić discontinuity. **3.** The ancient continental igneous rock base that lies beneath Precambrian rocks. Also known as basal complex; basement complex. { 'bās·mənt }
- basement complex** *See* basement. { 'bās·mənt 'käm,pleks }
- basement rock** *See* basement. { 'bās·mənt ,rāk }
- basic** [PETR] Of igneous rocks, having low silica content (generally less than 54%) and usually being rich in iron, magnesium, or calcium. { 'bā·sik }
- basic front** [GEOL] An advancing zone of granitization enriched in calcium, magnesium, and iron. { 'bā·sik 'frənt }
- basic hornfels** [PETR] A type of hornfels derived from a basic igneous rock. { 'bā·sik 'hörn,felz }
- basic rock** [PETR] An igneous rock with a relatively low silica content, and rich in iron, magnesium, or calcium. { 'bā·sik 'rāk }
- basic schist** [PETR] A schistose rock that forms from the metamorphism of a basic igneous rock. { 'bā·sik 'shist }
- basification** [GEOL] Development of a more basic rock, usually with more hornblende, biotite, and oligoclase, by contamination of a granitic magma in the assimilation of country rock. { ,bās·ə·fə'kā·shən }
- basimesostasis** [GEOL] A process of the partial or entire enclosure of plagioclase crystals in a diabase by augite. { 'bā·zē,məz·ə'stā·səs }
- basin** [GEOL] **1.** A low-lying area, wholly or largely surrounded by higher land, that varies from a small, nearly enclosed valley to an extensive, mountain-rimmed depression. **2.** An entire area drained by a given stream and its tributaries. **3.** An area in which the rock strata are inclined downward from all sides toward the center. **4.** An area in which sediments accumulate. { 'bās·ən }
- basin-and-range structure** [GEOL] Regional structure dominated by fault-block mountains separated by basins filled with sediment. { 'bās·ən ən 'ranj ,strək·chər }
- basin fold** [GEOL] Synclinal and anticlinal folds in structural basins. { 'bās·ən ,fóld }
- basining** [GEOL] A settlement of earth in the form of basins due to the solution and transportation of underground deposits of salt and gypsum. { 'bās·ən·iŋ }

basin length

- basin length** [GEOL] Length in a straight line from the mouth of a stream to the farthest point on the drainage divide of its basin. { 'bās-ən ,lɛŋkθ }
- basin order** [GEOL] A classification of basins according to stream drainage; for example, a first-order basin contains all of the drainage area of a first-order stream. { 'bās-ən ,ɔrd-ər }
- basin peat** *See* local peat. { 'bās-ən ,pēt }
- basin range** [GEOL] A mountain range characteristic of the Great Basin in the western United States and formed by a faulted and tilted block of strata. { 'bās-ən ,rāŋj }
- basin valley** [GEOL] The filled-in depression of large intermountain areas; an example is Salt Lake Valley in Utah. { 'bās-ən ,val-ē }
- bassanite** [MINERAL] A white mineral consisting of hydrated calcium sulfate; a pseudomorph of gypsum. { bə'sā,nīt }
- basset** [GEOL] The outcropping edge of a layer of rock exposed to the surface. { 'bas-ət }
- bassetite** [MINERAL] A transparent, yellow, monoclinic mineral presumably consisting of a hydrated uranium phosphate containing divalent iron; occurs in groups of thin tablets. { 'bas-əd,īt }
- bastion** [GEOL] A prominent aggregation of bedrock extending from the mouth of a hanging glacial trough and reaching well into the main glacial valley. { 'bas-çən }
- bastite** [MINERAL] A hydrated magnesium silicate, a variety of serpentine occurring from the alteration of orthorhombic pyroxenes such as enstatite. { 'ba,stīt }
- bastnaesite** [MINERAL] (Ce,La)CO₃(F,OH) A greasy yellow to reddish-brown fluorocarbonate rare-earth metal mineral; source of rare earths, for example, cerium and lanthanum. { 'bast-nə,sīt }
- batholite** [GEOL] An older massive protrusion of magma that solidifies as coarse crystalline rock in the deep horizons of the earth's crust. { 'bath-ə,līt }
- batholith** [GEOL] A body of igneous rock, 40 square miles (100 square kilometers) or more in area, emplaced at great or intermediate depth in the earth's crust. { 'bath-ə,līθ }
- Bathonian** [GEOL] A European stage of geologic time: Middle Jurassic, below Callovian, above Bajocian. Also known as Bathian. { bə'thɔn-ē-ən }
- Bathornithidae** [PALEON] A family of Oligocene birds in the order Gruiformes. { ,bath-ɔr'nīθ-ə,dē }
- bathwillite** [MINERAL] An oxygenated hydrocarbon mineral, found in Tortane Hill, Scotland, that is amorphous, fawn-brown, opaque, and quite friable. { 'bath-və,līt }
- bathymetric biofacies** [GEOL] The lateral distribution and character of underwater sedimentary strata. { 'bath-ə'me-trik 'bī-ɔ'fā-shēz }
- battery reefs** *See* Kimberley reefs. { 'bad-ə-rē ,rēfs }
- batture** [GEOL] An elevation of the bed of a river under the surface of the water; sometimes used to signify the same elevation when it has risen above the surface. { ba'ttúr }
- baumhauerite** [MINERAL] Pb₄As₆S₁₃ A lead to steel gray, monoclinic mineral consisting of lead arsenic sulfide. { baú'mau-ə,rīt }
- bauxite** [PETR] A whitish, grayish, brown, yellow, or reddish-brown rock composed of hydrous aluminum oxides and aluminum hydroxides and containing impurities such as free silica, silt, iron hydroxides, and clay minerals; the principal commercial source of aluminum. { 'bók,sīt }
- bauxitization** [GEOL] Bauxite development from either primary aluminum silicates or secondary clay minerals. { 'bók-sə-də'zā-shən }
- bavenite** *See* duplexite. { bə've, nīt }
- b axis** [PETR] A direction in the plane of movement that is at a right angle to the tectonic transport direction. { 'bē ,ak-səs }
- bay** [GEOPHYS] A simple transient magnetic disturbance, usually an hour in duration, whose appearance on a magnetic record has the shape of a V or a bay of the sea. { bā }
- bay bar** *See* baymouth bar. { 'bā ,bār }
- bay barrier** [GEOL] A narrow shoal or small point of land projecting from the shore

- across the mouth of a bay and severing the bay's connection with the main body of water. { 'bā ,bar·ē·ər }
- bay delta** [GEOL] A usually triangular alluvial deposit formed at the point where the mouth of a stream enters the head of a drowned valley. { 'bā ,del·tə }
- bay head** [GEOL] A swampy region at the head of a bay. { 'bā ,hed }
- bay-head bar** [GEOL] A bar formed a short distance from the shore at the head of a bay. { 'bā ,hed ,bär }
- bay-head beach** [GEOL] A beach formed around a bay head by storm waves; layers of sediment cover the bay floor and bare rock benches front the headland cliffs. { 'bā ,hed ,bēch }
- bay-head delta** [GEOL] A delta at the head of an estuary or a bay into which a river discharges because of the margin of the land's late partial submergence. { 'bā ,hed ,del·tə }
- bayldonite** [MINERAL] $\text{Cu}_3(\text{AsO}_4)_2(\text{OH})_2$ An apple green to yellowish-green monoclinic mineral consisting of a basic arsenate of copper and lead; occurs in minute mammillary concretions, in massive form, and as crusts. { 'bāl·dɔ̄,nīt }
- bayleyite** [MINERAL] $\text{Mg}_2(\text{UO}_2)(\text{CO}_3)_3 \cdot 18\text{H}_2\text{O}$ A sulfur yellow monoclinic mineral consisting of a hydrated carbonate of magnesium and uranium; occurs as minute, short-prismatic crystals. { 'bā·lē,īt }
- baymouth bar** [GEOL] A bar extending entirely or partially across the mouth of a bay. Also known as bay bar. { 'bā,məʊθ ,bär }
- bayside beach** [GEOL] A beach formed at the side of a bay by materials eroded from nearby headlands and deposited by longshore currents. { 'bā,sīd ,bēch }
- bazzite** [MINERAL] $\text{Sc}_2\text{Be}_3\text{Si}_6\text{O}_{18}$ An azure-blue mineral that crystallizes in the hexagonal system; the rare scandium analog of beryl. { 'bā,zīt }
- b-c fracture** [GEOL] A tension fracture parallel with the fabric plane and normal to the *a* axis. { 'bē'sē 'frak·chər }
- b-c plane** [GEOL] A plane that is perpendicular to the plane of movement and parallel to the *b* direction in that plane. { 'bē'sē ,plān }
- beach** [GEOL] The zone of unconsolidated material that extends landward from the low-water line to where there is marked change in material or physiographic form or to the line of permanent vegetation. (bēch)
- beach cusp** *See* cusp. { bēch ,kəsp }
- beach cycle** [GEOL] Periodic retreat and outbuilding of beaches resulting from waves and tides. { bēch ,sī·kəl }
- beach drift** [GEOL] The material transported by drifting of beach. { bēch ,drift }
- beach face** *See* foreshore. { bēch ,fās }
- beach gravel** [GEOL] Gravels in which most of the particles cluster about one size. { bēch ,grav·əl }
- beach plain** [GEOL] Embankments of wave-deposited material added to a prograding shoreline. { 'bēch ,plān }
- beach platform** *See* wave-cut bench. { 'bēch ,plat,fōrm }
- beach profile** [GEOL] Intersection of a beach's ground surface with a vertical plane perpendicular to the shoreline. { 'bēch 'prō,fil }
- beach ridge** [GEOL] A continuous mound of beach material behind the beach that was heaped up by waves or other action. { 'bēch ,rīd }
- beachrock** [PETR] A friable to well-cemented rock made of calcareous skeletal debris that is cemented together by calcium carbonate. { 'bēch,räk }
- beach scarp** [GEOL] A nearly vertical slope along the beach caused by wave erosion. { 'bēch ,skärp }
- bean ore** [GEOL] A lenticular, pisolitic aggregate of limonite. { 'bēn ,ör }
- beaverite** [MINERAL] $\text{Pb}(\text{Cu},\text{Fe},\text{Al})_3(\text{SO}_4)_2(\text{OH})_6$ A canary yellow, hexagonal mineral consisting of a basic sulfate of lead, copper, iron, and aluminum. { 'bē·və,rīt }
- Becke test** [MINERAL] A microscope test in which indices of refraction are compared for minerals; the Becke line appears to move toward the material of higher refractivity as the tube of the microscope is raised. { 'bek·ə ,tɛst }

beckerite

- beckerite** [MINERAL] A brown variety of the fossil resin retinite with a very high oxygen content. { 'bek·ə,rɪt }
- becquerelite** [MINERAL] $\text{CaU}_6\text{O}_{19}\cdot 11\text{H}_2\text{O}$ An orthorhombic mineral consisting of a hydrated oxide of uranium; occurs in tabular, elongated, striated, and massive form. { be'kre,lɪt }
- bed** [GEOL] **1.** The smallest division of a stratified rock series, marked by a well-defined divisional plane from its neighbors above and below. **2.** An ore deposit, parallel to the stratification, constituting a regular member of the series of formations; not an intrusion. { bed }
- bedded** [GEOL] Pertaining to rocks exhibiting depositional layering or bedding formed from consolidated sediments. { 'bed·əd }
- bedded chert** [PETR] Chert of brittle, close-jointed, rhythmically layered character found over large areas in thick deposits, the usually even-bedded layers separated by partings of dark siliceous shale or by siderite layers. { 'bed·əd ,çərt }
- bedded vein** [GEOL] A lode occupying the position of a bed that is parallel with the enclosing rock stratification. { 'bed·əd ,vān }
- bedding** [GEOL] Condition where planes divide sedimentary rocks of the same or different lithology. { 'bed·ɪŋ }
- bedding cleavage** [GEOL] Cleavage parallel to the rock bedding. { 'bed·ɪŋ ,klēv·ɪj }
- bedding fault** [GEOL] A fault whose fault surface is parallel to the bedding plane of the constituent rocks. Also known as bedding-plane fault. { 'bed·ɪŋ ,fəlt }
- bedding fissility** [GEOL] Primary foliation parallel to the bedding of sedimentary rocks. { 'bed·ɪŋ fi'sil·əd·ē }
- bedding joint** [GEOL] A joint parallel to the rock bedding. { 'bed·ɪŋ ,jɔɪnt }
- bedding plane** [GEOL] Any of the division planes which separate the individual strata or beds in sedimentary or stratified rock. { 'bed·ɪŋ ,plān }
- bedding-plane fault** See bedding fault. { 'bed·ɪŋ ,plān ,fəlt }
- bedding-plane slip** See flexural slip. { 'bed·ɪŋ ,plān ,slɪp }
- bedding schistosity** [GEOL] Schistosity that is parallel to the rock bedding. { 'bed·ɪŋ ,ʃɪs'täs·əd·ē }
- bedding thrust** [GEOL] A thrust fault parallel to bedding. { 'bed·ɪŋ ,θrəst }
- bedding void** [GEOL] A void formed between successive batches of lava that are discharged in a single short activity of a volcano, as well as between flows made a long time apart. { 'bed·ɪŋ ,vɔɪd }
- Bedford limestone** See spergenite. { 'bed·fərd 'lɪm,stɒn }
- bediasite** [GEOL] A black to brown tektite found in Texas. { bē'dɪ·ə,zɪt }
- bed load** [GEOL] Particles of sand, gravel, or soil carried by the natural flow of a stream on or immediately above its bed. Also known as bottom load. { 'bed ,ləd }
- Bedoulian** [GEOL] Lower Cretaceous (lower Aptian) geologic time in Switzerland. { bə'dūl·ē·ən }
- bedrock** [GEOL] General term applied to the solid rock underlying soil or any other unconsolidated surficial cover. { 'bed,ræk }
- beegerite** [MINERAL] $\text{Pb}_6\text{Bi}_2\text{S}_9$ A light to dark gray mineral consisting of lead bismuth sulfide; usually occurs in granular to dense massive form. { 'be·gə,rɪt }
- beekite** [MINERAL] **1.** A concretionary form of calcite or silica that occurs in small rings on the surface of a fossil shell which has weathered out of its matrix. **2.** White, opaque accretions of silica found on silicified fossils or along joint surfaces as a replacement of organic matter. { 'bē,kɪt }
- beerbachite** [PETR] A hornfels with large poikiloblastic crystals of olivine. { 'bir·bə,kɪt }
- beetle stone** See septarium. { 'bēd·əl ,stɒn }
- beidellite** [MINERAL] A clay mineral of the montmorillonite group in which Si^{4+} has been replaced by Al^{3+} and in which there is virtual absence of Mg or Fe replacing Al. { bɪ'de,lɪt }
- Belemnoidea** [PALEON] An order of extinct dibranchiate mollusks in the class Cephalopoda. { ,bə'ləm'nɔɪd·ē·ə }

berg till

- Belinuracea** [PALEON] An extinct group of horseshoe crabs; arthropods belonging to the Limulida. { 'bel·ə·nū'rās·ē·ə }
- bellite** See larnite. { 'bē,līt }
- Bellerophontacea** [PALEON] A superfamily of extinct gastropod mollusks in the order Aspidobranchia. { bə,ler·ə,fän'tās·ē·ə }
- bellingrite** [MINERAL] $3\text{Cu}(\text{IO}_3)_2 \cdot 2\text{H}_2\text{O}$ A light green triclinic mineral consisting of hydrated copper iodate. { bə'liŋ·ə,rīt }
- bell-metal ore** See stannite. { 'bel ,med·əl ,ôr }
- belonite** [GEOL] A rod- or club-shaped microscopic embryonic crystal in a glassy rock. { 'bel·ə,nīt }
- belted plain** [GEOL] A plain whose surface has been slowly worn down and sculptured into bands or belts of different levels. { 'bel·təd ,plān }
- belteroporic** [GEOL] Of crystals in rocks whose growth was determined by the direction of easiest growth. { ,bel'ter·ə'pôr-ik }
- belt of cementation** See zone of cementation. { ,belt əv ,si·men'tā·shən }
- belt of soil moisture** See belt of soil water. { ,belt əv 'sɔil ,mɔis·chər }
- belt of soil water** [GEOL] The upper subdivision of the zone of aeration limited above by the land surface and below by the intermediate belt; this zone contains plant roots and water available for plant growth. Also known as belt of soil moisture; discrete film zone; soil-water belt; soil-water zone; zone of soil water. { ,belt əv 'sɔil ,wɔd·ər }
- bench** [GEOL] A terrace of level earth or rock that is raised and narrow and that breaks the continuity of a declivity. { bench }
- bench gravel** [GEOL] Gravel beds found on the sides of valleys above the present stream bottoms, representing parts of the bed of the stream when it was at a higher level. { 'bench ,grav·əl }
- bench lava** [GEOL] Semiconsolidated, crusted basaltic lava forming raised platforms and crags about the edges of lava lakes. Also known as bench magma. { 'bench ,la·və }
- bench magma** See bench lava. { 'bench ,mag·mə }
- bench placer** [GEOL] A placer in ancient stream deposits from 50 to 300 feet (15 to 90 meters) above present streams. { 'bench ,plās·ər }
- bend** [GEOL] **1.** A curve or turn occurring in a stream course, bed, or channel which has not yet become a meander. **2.** The land area partly encircled by a bend or meander. { bend }
- Benioff zone** [GEOPHYS] A zone of earthquake hypocenters distributed on well-defined planes that dips from a shallow depth into the earth's mantle to depths as great as 420 miles (700 kilometers). Also known as Benioff-Wadati zone; Wadati-Benioff zone. { 'ben·ē·óf ,zɔn }
- Benioff-Wadati zone** See Benioff zone. { ,ben·ē,óf wə'dā·tē ,zɔn }
- benitoite** [MINERAL] $\text{BaTi}(\text{SiO}_3)_3$ A blue to violet barium-titanium silicate mineral; at one time it was cut and sold as sapphire. { bə'nēd·ə,wīt }
- benjaminite** [MINERAL] $\text{Pb}_2(\text{Cu},\text{Ag})_2\text{Bi}_4\text{S}_9$ A gray mineral occurring in granular massive form. { 'ben·jə·mə,nīt }
- Bennettiales** [PALEOBOT] An equivalent name for the Cycadeoidales. { bə,ned·ə'tā,lēz }
- Bennettitaceae** [PALEOBOT] A class of fossil gymnosperms in the order Cycadeoidales. { be,ned·ə'tā,dē }
- ben-tonite** [GEOL] A clay formed from volcanic ash decomposition and largely composed of montmorillonite and beidellite. Also known as taylorite. { 'bent·ən,īt }
- beraunite** [MINERAL] $\text{Fe}^{2+}\text{Fe}^{3+}(\text{PO}_4)_3(\text{OH})_5 \cdot 3\text{H}_2\text{O}$ A reddish-brown to blood red, monoclinic mineral consisting of hydrated basic phosphate of ferric and ferrous iron. { bə'raú,nīt }
- beresorite** See phoenicochroite. { bə'res·ə,rīt }
- berg crystal** See rock crystal. { 'bɜrg ,kris·təl }
- bergmehl** See rock milk. { 'bɜrk,mel }
- berg till** See floe till. { 'bɜrg ,til }

berkeyite

berkeyite *See* lazulite. { 'bærk·ē,īt }

berlinite [MINERAL] $\text{Al}(\text{PO}_4)$ A colorless to gray or pale rose, hexagonal mineral consisting of aluminum orthophosphate; occurs in massive form. { 'bær·lən,īt }

berm [GEOL] **1.** A narrow terrace which originates from the interruption of an erosion cycle with rejuvenation of a stream in the mature stage of its development and renewed dissection. **2.** A horizontal portion of a beach or backshore formed by deposit of material as a result of wave action. Also known as backshore terrace; coastal berm. { bərm }

bermanite [MINERAL] $\text{Mn}^{2+}\text{Mn}_2^{3+}(\text{PO}_4)_2(\text{OH})_2 \cdot 4\text{H}_2\text{O}$ A reddish-brown, orthorhombic mineral consisting of a hydrated basic phosphate of manganese; occurs in crystal aggregates and as lamellar masses. { 'bær·mə,nīt }

berm crest [GEOL] The seaward limit and usually the highest spot on a coastal berm. Also known as berm edge. { 'bərm ,krest }

berm edge *See* berm crest. { 'bərm ,ej }

bernalite [MINERAL] $\text{Fe}(\text{OH})_3$ An iron hydroxide, yellow-green or dark green in color. { 'bær·ə,līt }

Berriasian [GEOL] Part of or the underlying stage of the Valanginian at the base of the Cretaceous. { ,ber·ē'ā·zhən }

berthierite [MINERAL] FeSb_2S_4 A dark steel gray, orthorhombic mineral consisting of iron antimony sulfide. { 'bær·thē·ə,rīt }

berthonite *See* bournonite. { 'bær·thə,nīt }

bertrandite [MINERAL] $\text{Be}_4\text{Si}_2\text{O}_7(\text{OH})_2$ A colorless or pale-yellow mineral consisting of a beryllium silicate occurring in prismatic crystals; hardness is 6–7 on Mohs scale, and specific gravity is 2.59–2.60. { 'bær·trən,dīt }

beryllonite [MINERAL] $\text{NaBe}(\text{PO}_4)$ A colorless or yellow mineral occurring in short, prismatic or tabular, monoclinic crystals with two good pinacoidal cleavages at right angles; hardness is 5.5–6 on Mohs scale, and specific gravity is 2.85. { bə'ril·ə,nīt }

berzelianite [MINERAL] Cu_2Se A silver-white mineral composed of copper selenide and found in igneous rock; specific gravity is 4.03. { ,bær'zēl·yə,nīt }

beta chalcocite *See* chalcocite. { 'bäd·ə 'chal·kə,sīt }

betafite *See* ellsworthite. { 'bed·ə,fit }

beta plane [GEOPHYS] The model, introduced by C.G. Rossby, of the spherical earth as a plane whose rate of rotation (corresponding to the Coriolis parameter) varies linearly with the north-south direction. { 'bäd·ə ,plān }

betrunken river [GEOL] A river that is shorn of its lower course as a result of submergence of the land margin by the sea. { bē'træŋkt 'riv·ər }

betwixt mountains *See* median mass. { bə'twɪkst ,maunt·ənz }

beudantite [MINERAL] $\text{PbFe}_3(\text{AsO}_4)(\text{SO}_4)(\text{OH})_6$ A black, dark green, or brown, hexagonal mineral consisting of a basic sulfate-arsenate of lead and ferric iron; occurs as rhombohedral crystals. { 'byüd·ən,īt }

beveling [GEOL] Planing by erosion of the outcropping edges of strata. { 'bev·ə·lɪŋ }

beyerite [MINERAL] $(\text{Ca,Pb})\text{Bi}_2(\text{CO}_3)_2\text{O}_2$ A bright yellow to lemon yellow, tetragonal mineral consisting of bismuth and calcium carbonate; occurs as thin plates and compact earthy masses. { 'bī·ə,rīt }

Beyrichacea [PALEON] A superfamily of extinct ostracodes in the suborder Beyrichicopina. { ,bī·rə'kās·ē·ə }

Beyrichicopina [PALEON] A suborder of extinct ostracodes in the order Paleocopa. { ,bī·rə·kə,kō'pī·nə }

Beyrichiidae [PALEON] A family of extinct ostracodes in the superfamily Beyrichacea. { ,bī·rə'kī·ə,dē }

B girdle [PETR] A circular pattern in petrofabric diagrams that indicates a B axis. { 'bē ,gərd·əl }

B horizon [GEOL] The zone of accumulation in soil below the A horizon (zone of leaching). Also known as illuvial horizon; subsoil; zone of accumulation; zone of illuviation. { 'bē hə'rɪz·ən }

bianchite [MINERAL] $(\text{Fe,Zn})\text{SO}_4 \cdot 6\text{H}_2\text{O}$ A white, monoclinic mineral consisting of iron and zinc sulfate hexahydrate; occurs in crusts of indistinct crystals. { bē'ɑŋ,kīt }

biohermal limestone

- bidalotite** See anophyllite. { bə'däl·ə,tīt }
- iberite** [MINERAL] $\text{CoSO}_4 \cdot 7\text{H}_2\text{O}$ A rose red or flesh red, monoclinic mineral consisting of cobalt sulfate heptahydrate; occurs as crusts and stalactites. { 'bē·bā,rīt }
- bight** [GEOL] **1.** A long, gradual bend or recess in the coastline which forms a large, open receding bay. **2.** A bend in a river or mountain range. { bīt }
- bigwoodite** [PETR] A medium-grained plutonic rock consisting of microcline, microcline-micropertite, sodic plagioclase, and hornblende, aegirine-augite, or biotite. { big'wú,dīt }
- binilite** [MINERAL] $\text{Fe}^{2+}\text{Fe}^{3+}(\text{SO}_4)_4 \cdot 22\text{H}_2\text{O}$ A white to yellowish mineral consisting of a hydrated sulfate of divalent and trivalent iron; occurs in radial-fibrous aggregates. { 'bil·ə,nīt }
- Billingsellacea** [PALEON] A group of extinct articulate brachiopods in the order Orthida. { ,bil·iŋ·sə'lās·ē·ə }
- bimaceral** [GEOL] A coal microlithotype that consists of a mixture of two macerals. { bī'mas·ə·rəl }
- binary granite** [PETR] **1.** A granite made up of quartz and feldspar. **2.** A granite containing muscovite mica and biotite. { 'bīn·ə·rē 'gran·ət }
- bindheimite** [MINERAL] $\text{Pb}_2\text{Sb}_2\text{O}_6(\text{O},\text{OH})$ A hydrous lead antimonate mineral produced from natural oxidation of jamesonite; found in Nevada. { 'bīnt,hī,mīt }
- binding coal** See caking coal. { 'bīn·diŋ ,kəl }
- bio ore** [GEOL] The purest lead ore, with the largest crystals of galena. { 'biŋ ,òr }
- biochemical deposit** [GEOL] A precipitated deposit formed directly or indirectly from vital activities of organisms, such as bacterial iron ore and limestone. { 'bi·ə'kem·ə·kəl di'pāz·ət }
- biochemical rock** [PETR] A type of sedimentary rock primarily comprising deposits resulting directly or indirectly from processes and activities of living organisms. { 'bi·ə'kem·i·kəl 'rāk }
- biochron** [PALEON] A fossil of relatively short range of time. { 'bī·ō,krän }
- biochronology** [GEOL] The relative age dating of rock units based on their fossil content. { ,bī·ō·krə'näl·ə·jē }
- bioclastic rock** [PETR] Rock formed from material broken or arranged by animals, humans, or sometimes plants; a rock composed of broken calcareous remains of organisms. { 'bi·ə'klas·tik 'rāk }
- biofacies** [GEOL] **1.** A rock unit differing in biologic aspect from laterally equivalent biotic groups. **2.** Lateral variation in the biologic aspect of a stratigraphic unit. { 'bī·ō,fā·shēz }
- biogenic chert** [PETR] Chert derived from the tests of pelagic silica-secreting organisms, particularly diatoms and radiolarians. { 'bi·ə'jēn·ik 'chərt }
- biogenic mineral** [MINERAL] A mineral in sediments or sedimentary rock which represents the hard parts of dead organisms. { 'bi·ə'jēn·ik 'min·rəl }
- biogenic reef** [GEOL] A mass consisting of the hard parts of organisms, or of a biogenically constructed frame enclosing detrital particles, in a body of water; most biogenic reefs are made of corals or associated organisms. { 'bi·ə'jēn·ik 'rēf }
- biogenic sediment** [GEOL] A deposit resulting from the physiological activities of organisms. { 'bi·ə'jēn·ik 'sed·ə·mənt }
- biogeochemical cycle** [GEOCHEM] The chemical interactions that exist between the atmosphere, hydrosphere, lithosphere, and biosphere. { ,bī·ō,jē·ō'kem·ə·kəl 'sīkəl }
- biogeochemical prospecting** [GEOCHEM] A prospecting technique for subsurface ore deposits based on interpretation of the growth of certain plants which reflect subsoil concentrations of some elements. { ,bī·ō,jē·ō'kem·ə·kəl 'prās,pek·tiŋ }
- biogeochemistry** [GEOCHEM] A branch of geochemistry that is concerned with biologic materials and their relation to earth chemicals in an area. { ,bī·ō,jē·ō'kem·ə·strē }
- bioherm** [GEOL] A circumscribed mass of rock exclusively or mainly constructed by marine sedimentary organisms such as corals, algae, and stromatoporoids. Also known as organic mound. { 'bī·ō,hərm }
- biohermal limestone** [PETR] Reefs or reeflike mounds of carbonate that accumulated

biohermite

much in the same fashion as modern reefs and atolls of the Pacific Ocean. { ʔbī-ō'hər-məl 'līm,stōn }

biohermite [PETR] Limestone formed of debris from a bioherm. { ʔbī-ō'hər,mīt }

biolite [GEOL] A concretion formed of concentric layers through the action of living organisms. [PETR] See biolith. { 'bī-ō,līt }

biolith [PETR] A rock formed from or by organic material. Also known as biolite. { 'bī-ō,lith }

biolithite [PETR] An inclusive category for all organic limestone. { ,bī-ō'lith,īt }

biologic weathering See organic weathering. { ʔbī-ə'lāj-ik 'weth-ə-riŋ }

biomarkers [GEOL] Complex organic compounds found in oil, bitumen, rocks, and sediments that are linked with and distinctive of a particular source (such as algae, bacteria, or vascular plants); they are useful dating indicators in stratigraphy and molecular paleontology. Also known as chemical fossils; molecular fossils. { 'bī-ō,mär-kərz }

biomicrite [PETR] A limestone resembling biosparite except that the microcrystalline calcite matrix exceeds calcite cement. { ,bī-ə'mī,krit }

biomicrosparite [PETR] **1.** Biomicrite in which the micrite groundmass has recrystallized to microspar. **2.** Microsparite containing fossil fragments or fossils. { ,bī-ō,mī-krō'spär,īt }

biomicrudite [PETR] Biomicrite with fossil fragments or fossils greater than 1 millimeter in diameter. { ,bī-ō'mī-krō,dīt }

biopelite See black shale. { bī'äp-ə,līt }

biopelmicrite [PETR] A limestone similar to biopelsparite but with a microcrystalline matrix that exceeds calcite cement. { bī-ə'pel-mə,krit }

biopelsparite [PETR] A limestone similar to biosparite but with the ratio of fossils and fossil fragments to pellets between 3:1 and 1:3. { bī-ə'pel-spə,rīt }

biopyribole [MINERAL] **1.** A collective term for the rock-forming minerals pyroxene, amphibole, and mica. **2.** A chemically diverse but structurally related group of minerals that constitute substantial fractions of both the earth's crust and upper mantle; they exhibit single-chain, double-chain, triple-chain, and sheet silicate structures. { ,bī-ō'pir-ə,böl }

biosparite [PETR] A limestone made up of less than 25% oolites and less than 25% intraclasts, with the ratio by volume of fossils and fragments to pellets being more than 3:1 and the calcite cement content being greater than the microcrystalline calcite content. { bī'äs-pə,rīt }

biostratigraphic unit [GEOL] A stratum or body of strata that is defined and identified by one or more distinctive fossil species or genera without regard to lithologic or other physical features or relations. { ʔbī-ō,stad-ə'graf-ik 'yü-nät }

biostratigraphy [PALEON] A part of paleontology concerned with the study of the conditions and deposition order of sedimentary rocks. { ʔbī-ō-strə'tig-rə-fē }

biostromal limestone [GEOL] Biogenic carbonate accumulations that are laterally uniform in thickness, in contrast to the moundlike nature of bioherms. { ʔbī-ə'strō-məl 'līm,stōn }

biostrome [GEOL] A bedded structure or layer (bioclastic stratum) composed of calcite and dolomitized calcarenitic fossil fragments distributed over the sea bottom as fine lentils, independent of or in association with bioherms or other areas of organic growth. { 'bī-ə,ström }

biotite [MINERAL] A black, brown, or dark green, abundant and widely distributed species of rock-forming mineral in the mica group; its chemical composition is variable: $K_2[Fe(II),Mg]_{6-4}[Fe(III),Al,Ti]_{0-2}(Si_{6-5},Al_{2,3})O_{20-22}(OH,F)_{4-2}$. Also known as black mica; iron mica; magnesia mica; magnesium-iron mica. { 'bī-ə,tīt }

biotite schist [PETR] A schist composed of biotite. { 'bī-ə,tīt 'shist }

bioturbation [GEOL] The disruption of marine sedimentary structures by the activities of benthic organisms. { ʔbī-ō-tər'bā-shən }

biozone [PALEON] The range of a single taxonomic entity in geologic time as reflected by its occurrence in fossiliferous rocks. { 'bī-ō,zōn }

black cotton soil

- bipedal dinosaur** [PALEON] A dinosaur having two long, stout hindlimbs for walking and two relatively short forelimbs. { bī'ped·əl 'dīn·ə,sōr }
- bird-hipped dinosaur** [PALEON] Any member of the order Ornithischia, distinguished by the birdlike arrangement of their hipbones. { 'bɔrd ,hipt 'dīn·ə,sōr }
- bird's-foot delta** [GEOL] A delta with long, projecting distributary channels that branch outward like the toes or claws of a bird. { 'bɔrdz ,fūt 'del·tə }
- birnessite** [MINERAL] A manganese oxide mineral often found as a primary constituent of manganese nodules or crusts. { bə'rnes·it }
- bischofite** [MINERAL] $MgCl_2 \cdot 6H_2O$ A colorless to white, monoclinic mineral consisting of magnesium chloride hexahydrate. { 'bish·ə,fit }
- bisilicate** [MINERAL] See metasilicate. { ,bī'sil·ə·kət }
- bismite** [MINERAL] Bi_2O_3 A monoclinic mineral composed of bismuth trioxide; native bismuth ore, occurring as a yellow earth. Also known as bismuth ochre. { 'biz,mīt }
- bismuth** [MINERAL] The brittle, rhombohedral mineral form of the native element bismuth. { 'biz·məθ }
- bismuth blende** See eulytite. { 'biz·məθ 'blend }
- bismuth glance** See bismuthinite. { 'biz·məθ 'glans }
- bismuthinite** [MINERAL] Bi_2S_3 A mineral consisting of bismuth trisulfide, which has an orthorhombic structure and is usually found in fibrous or leafy masses that are lead gray with a yellowish tarnish and a metallic luster. Also known as bismuth glance. { 'biz·məθ·ə,nīt }
- bismuth ochre** See bismite. { 'biz·məθ 'ō·kər }
- bismuth spar** See bismutite. { 'biz·məθ 'spär }
- bismutite** [MINERAL] $(BiO)_2CO_3$ A dull-white, yellowish, or gray, earthy, amorphous mineral consisting of basic bismuth carbonate. Also known as bismuth spar. { 'biz·məd,īt }
- bismutotantalite** [MINERAL] $Bi(Ta,Nb)O_4$ A pitch black, orthorhombic mineral consisting of an oxide of bismuth and tantalum and occurring in crystals. { ,biz·məd·ə'tan·tə,līt }
- bitumenite** See torbanite. { bī'tü·mə,nīt }
- bituminization** See coalification. { bī,tü·mə·nə'zā·shən }
- bituminous** [MINERAL] Of a mineral, having the odor of bitumen. { bī'tü·mə·nəs }
- bituminous coal** [GEOL] A dark brown to black coal that is high in carbonaceous matter and has 15–50% volatile matter. Also known as soft coal. { bī'tü·mə·nəs 'kōl }
- bituminous lignite** [GEOL] A brittle, lustrous bituminous coal. Also known as pitch coal. { bī'tü·mə·nəs 'lig,nīt }
- bituminous rock** See asphalt rock. { bī'tü·mə·nəs 'rāk }
- bituminous sand** [GEOL] Sand containing bituminous-like material, such as the tar sands at Athabasca, Canada, from which oil is extracted commercially. { bī'tü·mə·nəs 'sand }
- bituminous sandstone** [PETR] A sandstone containing bituminous matter. { bī'tü·mə·nəs 'sand,stōn }
- bituminous shale** [PETR] A shale containing bituminous material. { bī'tü·mə·nəs 'shāl }
- bituminous wood** [GEOL] A variety of brown coal having the fibrous structure of wood. Also known as board coal; wood coal; woody lignite; xyloid coal; xyloid lignite. { bī'tü·mə·nəs 'wūd }
- bixbyite** [MINERAL] $(Mn,Fe)_2O_3$ A manganese-iron oxide mineral; black cubic crystals found in cavities in rhyolite. Also known as partridgeite; sitaparite. { 'biks·bē,īt }
- black alkali** [GEOL] A deposit of sodium carbonate that has formed on or near the surface in arid to semiarid areas. { 'blak 'al·kə,lī }
- black amber** See jet coal. { 'blak 'am·bər }
- blackband** [GEOL] An earthy carbonate of iron that is present with coal beds. { 'blak,band }
- black coal** See natural coke. { 'blak 'kōl }
- black cobalt** See asbolite. { 'blak 'kō·bōlt }
- black cotton soil** See regur. { 'blak ,kət·ən 'sōil }

black diamond

- black diamond** See carbonado. { 'blak 'dī·mænd }
- black durain** [GEOL] A durain that has high hydrogen content and volatile matter, many microspores, and some vitrain fragments. { 'blak 'dū·ræn }
- black granite** See diorite. { 'blak 'gran·ət }
- black lead** See graphite. { 'blak 'led }
- black lignite** [GEOL] A lignite with a fixed carbon content of 35–60% and a total carbon content of 73.6–76.2% that contains between 6300 and 8300 Btu per pound; higher in rank than brown lignite. Also known as lignite A. { 'blak 'lig,nīt }
- black mica** See biotite. { 'blak 'mī·kə }
- black mud** [GEOL] A mud formed where there is poor circulation or weak tides, such as in lagoons, sounds, or bays; the color is due to iron sulfides and organic matter. { 'blak 'məd }
- black ocher** See wad. { 'blak 'ō·kər }
- black opal** [MINERAL] A variety of gem-quality opal displaying internal reflections against a dark background. { 'blak 'ō·pəl }
- black sand** [GEOL] Heavy, dark, sandlike minerals found on beaches and in stream beds; usually magnetite and ilmenite and sometimes gold, platinum, and monazite are present. { 'blak 'sand }
- black shale** [PETR] Very thinly bedded shale rich in sulfides such as pyrite and organic material deposited under barred basin conditions so that there was an anaerobic accumulation. Also known as biopelite. { 'blak 'shāl }
- black silver** See stephanite. { 'blak 'sil·vər }
- black tellurium** See nagyagite. { 'blak ta'lūr·ē·əm }
- bladder** See vesicle. { 'blad·ər }
- Blaine formation** [GEOL] A Permian red bed formation containing red shale and gypsum beds of marine origin in Oklahoma, Texas, and Kansas. { 'blān fōr'mā·shən }
- blairmorite** [PETR] A porphyritic extrusive rock consisting mainly of analcite phenocrysts in a groundmass of sanidine, analcite, and alkalic pyroxene, with accessory sphene, melanite, and nepheline. { 'bler·mō,rīt }
- blakeite** [MINERAL] A deep reddish-brown to deep brown mineral consisting of anhydrous ferric tellurite; occurs in massive form, as microcrystalline crusts. { 'blā,kīt }
- Blancan** [GEOL] Upper Pliocene or lowermost Pleistocene geologic time. { 'blāŋ·kən }
- blanket deposit** [GEOL] A flat deposit of ore; its length and width are relatively great compared with its thickness. { 'blaŋ·kət di'pāz·ət }
- blanket sand** [GEOL] A relatively thin body of sand or sandstone covering a large area. Also known as sheet sand. { 'blaŋ·kət ,sand }
- blastic deformation** [GEOL] Rock deformation involving recrystallization in which space lattices are destroyed or replaced. { 'blas·tik ,dē,fōr'mā·shən }
- blasting** [GEOL] Abrasion caused by movement of fine particles against a stationary fragment. { 'blas·tiŋ }
- blasto-** [PETR] A prefix indicating the presence in a rock of residual structures somewhat modified by metamorphism. { 'blas·tō }
- blastogranitic rock** [PETR] A metamorphic granitic rock which still has parts of the original granitic texture. { 'blas·tō·grə'nid·ik 'rək }
- Blastoidea** [PALEON] A class of extinct pelmatozoan echinoderms in the subphylum Crinozoa. { bla'stōid·ē·ə }
- blastomylonite** [PETR] Rock which has recrystallized after granulation. { ,blas·tə'mī·lə,nīt }
- blastopelitic** [PETR] Descriptive of the structure of metamorphosed argillaceous rocks. { 'blas·tō·pə'lid·ik }
- blastophitic** [PETR] A metamorphosed rock which once contained lath-shaped crystals partly or wholly enclosed in augite and in which part of the original texture remains. { 'blas·tō'fid·ik }
- blastoporphyratic** [PETR] Applied to the textures of metamorphic rocks that are derived from porphyritic rocks; the porphyritic character still remains as a relict feature. { 'blas·tō'pōr·fə'rid·ik }

blue copper ore

- blastopsammite** [GEOL] A relict fragment of sandstone that is contained in a metamorphosed conglomerate. { bla'stāp·sə,mīt }
- blastopsephitic** [GEOL] Descriptive of the structure of metamorphosed conglomerate or breccia. { bla'stāp·sə'fid·ik }
- bleach spot** [GEOL] A green or yellow area in red rocks formed by reduction of ferric oxide around an organic particle. Also known as deoxidation sphere. { 'blēch ,spāt }
- bleb** [PETR] A small, usually spherical inclusion in a rock mass. { bleb }
- blende** See sphalerite. { blend }
- blended unconformity** [GEOL] An unconformity that is not sharp because the original erosion surface was covered by a thick residual soil that graded downward into the underlying rock. { 'blen·dəd ,ən·kən'fɔr·məd·ē }
- blind** [GEOL] Referring to a mineral deposit with no surface outcrop. { blīnd }
- blind coal** See natural coke. { 'blīnd 'kɔl }
- blind valley** [GEOL] A valley that has been made by a spring from an underground channel which emerged to form a surface stream, and that is enclosed at the head of the stream by steep walls. { 'blīnd 'val·ē }
- blister** [GEOL] A domelike protuberance caused by the buckling of the cooling crust of a molten lava before the flowing mass has stopped. { 'blis·tər }
- blister hypothesis** [GEOL] A theory of the formation of compressional mountains by a process in which radiogenic heat expands and melts a portion of the earth's crust and subcrust, causing a domed regional uplift (blister) on a foundation of molten material that has no permanent strength. { 'blis·tər hɪ'pəθ·ə·səs }
- block clay** See mélange. { 'blāk ,klā }
- block faulting** [GEOL] A type of faulting in which fault blocks are displaced at different orientations and elevations. { 'blāk ,fɔl·tɪŋ }
- block glide** [GEOL] A translational landslide in which the slide mass moves outward and downward as an intact unit. { 'blāk ,glīd }
- block lava** [GEOL] Lava flows which occur as a tumultuous assemblage of angular blocks. Also known as aa lava. { 'blāk ,ləv·ə }
- block mountain** [GEOL] A mountain formed by the combined processes of uplifting, faulting, and tilting. Also known as fault-block mountain. { 'blāk ,maʊn·tən }
- blödite** See bloedite. { 'blɔ,dīt }
- bloedite** [MINERAL] $MgSO_4 \cdot Na_2SO_4 \cdot 4H_2O$ A white or colorless monoclinic mineral consisting of magnesium sodium sulfate. Also spelled blödite. Also known as astrakanite; astrochanite. { 'blɔ,dīt }
- blomstrandine** See priorte. { ,blɔm'stran,dēn }
- bloodstone** [MINERAL] **1.** A form of deep green chalcedony flecked with red jasper. Also known as heliotrope; oriental jasper. **2.** See hematite. { 'blɔd ,stɔn }
- bloom** See blossom; efflorescence. { blūm }
- blossom** [GEOL] The oxidized or decomposed outcrop of a vein or coal bed. Also known as bloom. { 'blās·əm }
- blowhole** [GEOL] A longitudinal tunnel opening in a sea cliff, on the upland side away from shore; columns of sea spray are thrown up through the opening, usually during storms. { 'blɔ,hɔl }
- blowing cave** [GEOL] A cave with an alternating air movement. Also known as breathing cave. { 'blɔ·ɪŋ 'kæv }
- blowout** [GEOL] Any of the various trough-, saucer-, or cuplike hollows formed by wind erosion on a dune or other sand deposit. { 'blɔ,əʊt }
- blowout dune** See parabolic dune. { 'blɔ,əʊt ,dʌn }
- blue asbestos** See crocidolite. { 'blü as'bes·təs }
- blue band** [GEOL] **1.** A layer of bubble-free, dense ice found in a glacier. **2.** A bluish clay found as a thin, persistent bed near the base of No. 6 coal everywhere in the Illinois-Indiana coal basin. { 'blü 'band }
- blue copper ore** See azurite. { 'blü 'kæp·ər 'ɔr }

blue ground

- blue ground** [GEOL] **1.** The decomposed peridotite or kimberlite that carries the diamonds in the South African mines. **2.** Strata of the coal measures, consisting principally of beds of hard clay or shale. { 'blü ,graund }
- blue iron earth** See vivianite. { 'blü 'i·ərn 'əρθ }
- blue lead** See galena. { 'blü 'led }
- blue magnetism** [GEOPHYS] The magnetism displayed by the south-seeking end of a freely suspended magnet; this is the magnetism of the earth's north magnetic pole. { 'blü 'mag·nə,tiz·əm }
- blue malachite** See azurite. { 'blü 'mal·ə,kīt }
- blue metal** [GEOL] The common fine-grained blue-gray mudstone which is part of many of the coal beds of England. { 'blü ,med·əl }
- blue mud** [GEOL] A combination of terrigenous and deep-sea sediments having a bluish gray color due to the presence of organic matter and finely divided iron sulfides. { 'blü ,məd }
- blue ocher** See vivianite. { 'blü 'ō·kər }
- blueschist facies** [PETR] High-pressure, low-temperature metamorphism associated with subduction zones which produces a broad mineral association including glaucophane, actinolite, jadeite, aegirine, lawsonite, and pumpellyite. { 'blü,shist 'fā,shēz }
- blue spar** See lazulite. { 'blü ,spär }
- bluestone** [MINERAL] See chalcantinite. [PETR] **1.** A sandstone that is highly argillaceous and of even texture and bedding. **2.** The commercial name for a feldspathic sandstone that is dark bluish gray; it is easily split into thin slabs and used as flagstone. { 'blü,stōn }
- blue vitriol** [MINERAL] See chalcantinite. { 'blü 'vit·rē,ōl }
- board coal** See bituminous wood. { 'bōrd ,kōl }
- boart** See bort. { bōrt }
- Bobasatrania** [PALEON] A family of extinct palaeonisciform fishes in the suborder Platysozoidei. { bə,bas·ə'tran·ə,dē }
- bobierite** [MINERAL] $Mg_3(PO_4)_2 \cdot 8H_2O$ A transparent, colorless or white, monoclinic mineral consisting of octahydrated magnesium phosphate. { 'bō·bē·ə,rīt }
- bodenite** [MINERAL] A metallic, steel-gray mineral consisting of cobalt, nickel, iron, arsenic, and bismuth; occurs in granular to fibrous masses. { 'bōd·ən,īt }
- bodily tide** See earth tide. { 'bād·əl·ē 'tīd }
- body** [GEOL] An ore body, or pocket of mineral deposit. { 'bād·ē }
- body wave** [GEOPHYS] A seismic wave that travels within the earth, as distinguished from one that travels along the surface. { 'bād·ē ,wāv }
- boehmite** [MINERAL] $AlO(OH)$ Gray, brown, or red orthorhombic mineral that is a major constituent of some bauxites. { 'bā,mīt }
- boehm lamellae** [GEOL] Lines or bands with dusty inclusions that are subparallel to the basal plane of quartz. { 'bāmlə'mel·ē }
- bogen structure** [GEOL] The structure of vitric tuffs composed largely of shards of glass. { 'bō·gən ,strək·chər }
- boghead cannel shale** [GEOL] A coaly shale that contains much waxy or fatty algae. { 'bäg,hed 'kan·əl ,shāl }
- boghead coal** [GEOL] Bituminous or subbituminous coal containing a large proportion of algal remains and volatile matter; similar to cannel coal in appearance and combustion. { 'bäg,hed ,kōl }
- bog iron ore** [MINERAL] A soft, spongy, porous deposit of impure hydrous iron oxides formed in bogs, marshes, swamps, peat mosses, and shallow lakes by precipitation from iron-bearing waters and by the oxidation action of algae, iron bacteria, or the atmosphere. Also known as lake ore; limnite; marsh ore; meadow ore; morass ore; swamp ore. { 'bäg 'i·ərn ,ōr }
- bog manganese** See wad. { 'bäg 'maŋ·gə,nēs }
- bog-mine ore** See bog ore. { 'bäg ,mīn ,ōr }
- bog ore** [MINERAL] A poorly stratified accumulation of earthy metallic mineral substances, consisting mainly of oxides, that are formed in bogs, marshes, swamps, and other low-lying moist places. Also known as bog-mine ore. { 'bäg ,ōr }

borderland slope

- Bohemian ruby** See rose quartz. { bō'hēm·ē·ən |rū·bē }
- Bohemian topaz** See citrine. { bō'hēm·ē·ən |tō,paz }
- boiler plate** [GEOL] A fairly smooth surface on a cliff, consisting of flush or overlapping slabs of rock, having little or no foothold. { 'bōil·ər ,plāt }
- bojite** [PETR] **1.** A gabbro with primary hornblende substituting for augite. **2.** Hornblende diorite. { 'bōj,īt }
- bole** [GEOL] Any of various red, yellow, or brown earthy clays consisting chiefly of hydrous aluminum silicates. Also known as bolus; terra miraculosa. { bōl }
- boleite** [MINERAL] A deep Prussian blue, tetragonal mineral consisting of a hydroxide-chloride of lead, copper, and silver. { bō'lā,īt }
- bolson** [GEOG] In the southwestern United States, a basin or valley having no outlet. { bōl,sən }
- boltwoodite** [MINERAL] $K_2(UO_2)_2(SiO_3)_2(OH)_2 \cdot 5H_2O$ Yellow mineral consisting of hydrous potassium uranyl silicate. { 'bōlt·wə,dīt }
- bolus** See bole. { 'bō·ləs }
- bolus alba** See kaolin. { |bō·ləs 'äl·bə }
- bomb** [GEOG] Any large (greater than 64 millimeters) pyroclast ejected while viscous. { bām }
- bombicite** See hartite. { bām'bē,chīt }
- bomb sag** [GEOG] Depressed and deranged laminae mainly found in beds of fine-grained ash or tuff around an included volcanic bomb or block which fell on and became buried in the deposit. { 'bām ,sag }
- bone bed** [GEOG] Several thin strata or layers with many fragments of fossil bones, scales, teeth, and also organic remains. { 'bōn ,bed }
- bone chert** [PETR] A weathered residual chert that appears chalky and porous with a white color but may be stained red or other colors. { 'bōn ,chert }
- bone coal** [GEOG] Argillaceous coal or carbonaceous shale that is found in coal seams. { 'bōn ,kōl }
- boninite** [PETR] An andesitic rock that contains much glass and abundant phenocrysts of bronzite and less of olivine and augite. { 'bän·ə,nīt }
- Bononian** [GEOG] Upper Jurassic (lower Portlandian) geologic time. { bə'nōn·ē·ən }
- book** See mica book. { bük }
- book structure** [GEOG] A rock structure of numerous parallel sheets of slate alternating with quartz. { 'bük ,strək·chər }
- boothite** [MINERAL] $CuSO_4 \cdot 7H_2O$ A blue, monoclinic mineral consisting of copper sulfate heptahydrate; usually occurs in massive or fibrous form. { 'bü,thīt }
- boracite** [MINERAL] $Mg_3B_7O_{13}Cl$ A white, yellow, green, or blue orthorhombic borate mineral occurring in crystals which appear isometric in external form; it is strongly pyroelectric, has a hardness of 7 on Mohs scale, and a specific gravity of 2.9. { 'bör·ə,sīt }
- Boralf** [GEOG] A suborder of the soil order Alfisol, dull brown or yellowish brown in color; occurs in cool or cold regions, chiefly at high latitudes or high altitudes. { 'bör,alf }
- borate mineral** [MINERAL] Any of the large and complex group of naturally occurring crystalline solids in which boron occurs in chemical combination with oxygen. { 'bō,rāt 'min·rəl }
- borax** [MINERAL] $Na_2B_4O_7 \cdot 10H_2O$ A white, yellow, blue, green, or gray borate mineral that is an ore of boron and occurs as an efflorescence or in monoclinic crystals; when pure it is used as a cleaning agent, antiseptic, and flux. Also known as diborate; pyroborate; sodium (1:2) borate; sodium tetraborate; tincal. { 'bō,raks }
- border facies** [GEOG] The outer portion of an igneous intrusion which differs in composition and texture from the main body. { 'börd·ər ,fā·shēz }
- borderland** [GEOG] One of the crystalline, continental landmasses postulated to have existed on the exterior (oceanward) side of geosynclines. { 'börd·ər,land }
- borderland slope** [GEOG] A declivity which indicates the inner margin of the borderland of a continent. { 'börd·ər,land 'slōp }

borickite

- borickite** [MINERAL] $\text{CaFe}_5(\text{PO}_4)_2(\text{OH})_{11}\cdot 3\text{H}_2\text{O}$ Reddish-brown, isotropic mineral consisting of a hydrated basic phosphate of calcium and iron; occurs in compact reniform masses. { 'bór-ə,kīt }
- bornhardt** [GEOL] A large dome-shaped granite-gneiss outcrop having the characteristics of an inselberg. { 'börn,härt }
- bornite** [MINERAL] Cu_5FeS_4 A primary mineral in many copper ore deposits; specific gravity 5.07; the metallic and brassy color of a fresh surface rapidly tarnishes upon exposure to air to an iridescent purple. { 'bór,nīt }
- boroarsenate** [MINERAL] One of a group of borate minerals containing arsenic; caninite is an example. { 'bór-ō'ar-sə,nāt }
- borolanite** [PETR] A hypabyssal rock that is essentially orthoclase and melanite with subordinate nepheline, biotite, and pyroxene. { bə'räl-ə,nīt }
- Boroll** [GEOL] A suborder of the soil order Mollisol, characterized by a mean annual soil temperature of less than 8°C and by never being dry for 60 consecutive days during the 90-day period following the summer solstice. { 'bó,ról }
- boronatrocalcite** *See* ulexite. { 'bór-ō'na-trō'kal,sīt }
- borosilicate** [MINERAL] A salt of boric and silicic acids which occurs in the natural minerals tourmaline, datolite, and dumortierite. { 'bór-ō'sil-i-kət }
- bort** [MINERAL] Imperfectly crystallized diamond material unsuitable for gems because of its shape, size, or color and because of flaws or inclusions; used for abrasive and cutting purposes. Also spelled boart. { bört }
- Boryhaenid** [PALEON] A carnivorous marsupial from the Miocene Epoch that resembled the wolf. { ,bór-ē'han-əd }
- boss** [GEOL] A large, irregular mass of crystalline igneous rock that formed some distance below the surface but is now exposed by denudation. { bós }
- bostonite** [PETR] A rock with coarse trachytic texture formed almost wholly of albite and microcline and with accessory pyroxene. { 'bós-tə,nīt }
- botallackite** [MINERAL] $\text{Cu}_2(\text{OH})_3\text{Cl}\cdot 3\text{H}_2\text{O}$ A pale bluish-green to green, orthorhombic mineral consisting of a basic copper chloride; occurs as crusts of crystals. { bə'tal-ə,kīt }
- Bothriocidaroida** [PALEON] An order of extinct echinoderms in the subclass Perischoechinoidea in which the ambulacra consist of two columns of plates, the interambulacra of one column, and the madreporite is placed radially. { ,bā-thrē-ō,sik-ə'roid-ē-ə }
- botryogen** [MINERAL] $\text{MgFe}(\text{SO}_4)_2(\text{OH})\cdot 7\text{H}_2\text{O}$ Orange-red, monoclinic mineral consisting of a hydrated basic sulfate of magnesium and trivalent iron. { 'bā-trē-ə,jen }
- botryoid** [GEOL] **1.** A mineral formation shaped like a bunch of grapes. **2.** Specifically, such a formation of calcium carbonate occurring in a cave. Also known as clusterite. { 'bā-trē,oid }
- bottom** [GEOL] **1.** The bed of a body of running or still water. **2.** *See* root. { 'bäd-əm }
- bottomland** [GEOL] A lowland formed by alluvial deposit about a lake basin or a stream. { 'bäd-əm,länd }
- bottom load** *See* bed load. { 'bäd-əm ,löd }
- bottom moraine** *See* ground moraine. { 'bäd-əm mə'rān }
- bottomset beds** [GEOL] Horizontal or gently inclined layers of finer material carried out and deposited on the bottom of a lake or sea in front of a delta. { 'bäd-əm,set ,bedz }
- bottom terrace** [GEOL] A landform deposited by streams with moderate or small bottom loads of coarse sand and gravel, and characterized by a broad, sloping surface in the direction of flow and a steep escarpment facing downstream. { 'bäd-əm ,ter-əs }
- boudin** [GEOL] One of a series of sausage-shaped segments found in a boudinage. { bü'dän }
- boudinage** [GEOL] A structure in which beds set in a softer matrix are divided by cross fractures into segments resembling pillows. { 'büd-ən'äzh }
- Bouguer correction** *See* Bouguer reduction. { bü'ger kə'rek-shən }
- Bouguer gravity anomaly** [GEOPHYS] A value that corrects the observed gravity for

brackebuschite

- latitude and elevation variations, as in the free-air gravity anomaly, plus the mass of material above some datum (usually sea level) within the earth and topography. { bû'ger 'grav-əd-ē ə'nām-ə-lē }
- Bouguer reduction** [GEOL] A correction made in gravity work to take account of the station's altitude and the rock between the station and sea level. Also known as Bouguer correction. { bû'ger ri'dək-shən }
- boulangerite** [MINERAL] $Pb_5Sb_4S_{11}$ A bluish-lead-gray, monoclinic mineral consisting of lead antimony sulfide. { bû'lan-jə,rīt }
- boulder** [GEOL] A worn rock with a diameter exceeding 256 millimeters. Also spelled bowlder. { 'bōl-dər }
- boulder barricade** [GEOL] An accumulation of large boulders that is visible along a coast between low and half tide. { 'bōl-dər ,bar-ə,kād }
- boulder belt** [GEOL] A long, narrow accumulation of boulders elongately transverse to the direction of glacier movement. { 'bōl-dər ,bɛlt }
- boulder clay** See till. { 'bōl-dər ,klā }
- boulder pavement** [GEOL] A surface of till with boulders; the till has been abraded to flatness by glacier movement. { 'bōl-dər ,pāv-mənt }
- boulder train** [GEOL] Glacial boulders derived from one locality and arranged in a right-angled line or lines leading off in the direction in which the drift agency operated. { 'bōl-dər ,trān }
- bounce cast** [GEOL] A short ridge underneath a stratum fading out gradually in both directions. { 'baũns ,kast }
- boundary** [GEOL] A line between areas occupied by rocks or formations of different type and age. { 'baũn-drē }
- boundary wave** [GEOPHYS] A seismic wave that propagates along a free surface or an interface between defined layers. { 'baũn-drē ,wāv }
- bournonite** [MINERAL] $PbCuSbS_3$ Steel-gray to black orthorhombic crystals; mined as an ore of copper, lead, and antimony. Also known as berthomite; cogwheel ore. { 'būr-nə,nīt }
- boussingaultite** [MINERAL] $(NH_4)_2Mg(SO_4)_2 \cdot 6H_2O$ A colorless to yellowish-pink, monoclinic mineral consisting of a hydrated sulfate of ammonium and magnesium; usually occurs in massive form, as crusts or stalactites. { ,būs-ən'gól,tīt }
- Bowen reaction series** [MINERAL] A series of minerals wherein any early-formed phase will react with the melt later in the differentiation to yield a new mineral further in the series. { 'bō-ən rē'ak-shən ,sir-ēz }
- Bowie formula** [GEOPHYS] A correction used for calculation of the local gravity anomaly on earth. { 'bō-ē ,fōrm-yə-lə }
- bowlder** See boulder. { 'bōl-dər }
- bowlingite** See saponite. { 'bō-liŋ,gīt }
- box fold** [GEOL] A fold in which the broad, flat top of an anticline or the broad, flat bottom of a syncline is bordered by steeply dipping limbs. { 'bäks ,fōld }
- Box Hole** [GEOL] A meteorite crater in central Australia, 575 feet (175 meters) in diameter. { 'bäks ,hōl }
- boxwork** [GEOL] Limonite and other minerals which formed at one time as blades or plates along cleavage or fracture planes, after which the intervening material dissolved, leaving the intersecting blades or plates as a network. { 'bäks,wɜrk }
- Brachiosaurus** [PALEON] A herbivorous sauropod dinosaur, 90 feet (27 meters) long and weighing 85–110 tons, from the Late Jurassic that had a very long neck. { ,brä-kē-ə'sōr-əs }
- brachypinacoid** [GEOL] A pinacoid parallel to the vertical and the shorter lateral axis. { ,brak-i'pin-ə,kōid }
- brachysyncline** [GEOL] A broad, short syncline. { ,brak-i'sin,klɪn }
- Brachythoraci** [PALEON] An order of the joint-neckfishes, now extinct. { ,brak-i'thōr-ə-sɪ }
- brackebuschite** [MINERAL] $Pb_4MnFe(VO_4)_4 \cdot 2H_2O$ Dark brown to black, monoclinic mineral consisting of a hydrated vanadate of lead, manganese, and iron. { 'brä-kə,bü,shīt }

Bradfordian

- Bradfordian** [GEOL] Uppermost Devonian geologic time. { ,brəd'förd·ē·ən }
- bradleyite** [MINERAL] $\text{Na}_3\text{Mg}(\text{PO}_4)(\text{CO}_3)$ A light gray mineral consisting of a phosphate-carbonate of sodium and magnesium; occurs as fine-grained masses. { 'brəd·lē,īt }
- Bradyodonti** [PALEON] An order of Paleozoic cartilaginous fishes (Chondrichthyes), presumably derived from primitive sharks. { ,brā·dē·ō'dän,tī }
- braggite** [MINERAL] PtS A steel-gray platinum sulfide mineral with tetragonal crystals. { 'brə,gīt }
- brammalite** [MINERAL] A mica-type clay mineral that is different from illite because it has soda instead of potash; it is the sodium analog of illite. Also known as sodium illite. { 'brəm·ə,līt }
- branchite** See hartite. { 'brən,çīt }
- brandtite** [MINERAL] $\text{Ca}_2\text{Mn}(\text{AsO}_4)_2 \cdot 2\text{H}_2\text{O}$ A colorless to white, monoclinic mineral consisting of a hydrated arsenate of calcium and manganese. { 'brənt,īt }
- brannerite** [MINERAL] A complex, black, opaque titanite of uranium and other elements in which the weight of uranium exceeds the weight of titanium; monoclinic and possibly (U,Ca,Fe,Y,Th)₃Ti₅O₆. { 'brən·ə,rīt }
- brass** [GEOL] A British term for sulfides of iron (pyrites) in coal. Also known as brasses. { bras }
- brasses** See brass. { 'bras·əz }
- brass ore** See aurichalcite. { 'bras,ör }
- braunite** [MINERAL] $3\text{Mn}_2\text{O}_3 \cdot \text{MnSiO}_3$ Brittle mineral that forms tetragonal crystals; commonly found as steel-gray or brown-black masses in the United States, Europe, and South America; it is an ore of manganese. { 'bräu,nīt }
- bravoite** [MINERAL] (Ni,Fe)S₂ A yellow sulfide ore of nickel containing iron. { 'brä,vō,īt }
- brazilianite** [MINERAL] $\text{NaAl}_3(\text{PO}_4)_2(\text{OH})_4$ A chartreuse yellow to pale yellow, monoclinic mineral consisting of a basic phosphate of sodium and aluminum. { brə'zil·yə,nīt }
- breached anticline** [GEOL] An anticline that has been more deeply eroded in the center. Also known as scalped anticline. { ,brēçt 'an·ti,klīn }
- breached cone** [GEOL] A cinder cone in which lava has broken through the sides and broken material has been carried away. { 'brēçt ,kōn }
- breadcrust** [GEOL] A surficial structure resembling a crust of bread, as the concretions formed by evaporation of salt water. { 'bred,krəst }
- breadcrust bomb** [GEOL] A volcanic bomb with a cracked exterior. { 'bred,krəst ,bäm }
- break** [GEOL] See knickpoint. { brāk }
- breaker terrace** [GEOL] A type of shore found in lakes in glacial drift; the terrace is formed from stones deposited by waves. { 'brā·kər ,ter·əs }
- break thrust** [GEOL] A thrust fault cutting across one limb of a fold. { 'brāk ,θrəst }
- breathing cave** See blowing cave. { 'brēth·īŋ ,kāv }
- breccia** [PETR] A rock made up of very angular coarse fragments; may be sedimentary or may be formed by grinding or crushing along faults. { 'breç·ə }
- breccia dike** [GEOL] A dike formed of breccia injected into the country rock. { 'breç·ə ,dīk }
- breccia marble** [PETR] Any marble containing angular fragments. { 'breç·ə ,märbəl }
- breccia pipe** See pipe. { 'breç·ə ,pīp }
- breithauptite** [MINERAL] NiSb A light copper red mineral consisting of nickel antimonide; commonly occurs in association with silver minerals. { 'brīt,haüp,tīt }
- Bretonian orogeny** [GEOL] Post-Devonian diastrophism that is found in Nova Scotia. { bre'tōn·ē·ən ó'räj·ə·nē }
- Bretonian strata** [GEOL] Upper Cambrian strata in Cape Breton, Nova Scotia. { bre'tōn·ē·ən 'strəd·ə }
- breunnerite** [MINERAL] (Mg,Fe,Mn)CO₃ A carbonate mineral consisting of an isomorphous system of the metallic components. { 'bröin·ə,rīt }
- brewsterite** [MINERAL] $\text{Sr}(\text{Al}_2\text{Si}_6\text{O}_{18}) \cdot 5\text{H}_2\text{O}$ A member of the zeolite family of minerals; crystallizes in the monoclinic system and usually contains some calcium. { 'brü·stə,rīt }

- bright-banded coal** See bright coal. { 'brīt ,ban·dəd }kōl }
- bright coal** [GEOL] A jet-black, pitchlike type of banded coal that is more compact than dull coal and breaks with a shell-shaped fracture; microscopic examination shows a consistency of more than 5% anthraxyllon and less than 20% opaque matter. Also known as bright-banded coal; brights. { 'brīt ,kōl }
- bright** See bright coal. { brīts }
- brimstone** [MINERAL] A common or commercial name for native sulfur. { 'brim,stōn }
- britholite** [MINERAL] $(\text{Na,Ce,Ca})_5(\text{OH})(\text{P,Si})\text{O}_4$ A rare-earth phosphate found in carbonatites in Kola Peninsula, former Soviet Union. { 'brith·ə,līt }
- brittle mica** [MINERAL] Hydrous sodium, calcium, magnesium, and aluminum silicates; a group of more or less related minerals that resemble true micas but cleave to brittle flakes and contain calcium as the essential constituent. { 'brid·əl 'mī·kə }
- brittle silver ore** See stephanite. { 'brid·əl 'sil·vər ,ōr }
- brochantite** See brochantite. { brō'shān,tīt }
- brochantite** See brochantite. { brō'shān,tīt }
- brochantite** [MINERAL] $\text{Cu}_4(\text{SO}_4)(\text{OH})_6$ A monoclinic copper mineral, emerald to dark green, commonly found with copper sulfide deposits; a minor copper ore. Also known as brochanite; brochanthite; warringtonite. { brō'shān,tīt }
- bromellite** [MINERAL] BeO A white hexagonal mineral consisting of beryllium oxide; it is harder than zincite. { brō'me,līt }
- bromlite** [MINERAL] $\text{BaCa}(\text{CO}_3)_2$ An orthorhombic mineral composed of a carbonate of barium and calcium. Also known as alstonite. { 'brōm,līt }
- bromyrite** [MINERAL] AgBr A secondary ore of silver that occurs in the oxidized zone of silver deposits; exists in crusts and coatings resembling a wax. { 'brō·mə,rīt }
- brontides** [GEOPHYS] Low, rumbling, thunderlike sounds of short duration, most frequently heard in active seismic regions and believed to be of seismic origin. { 'brän,tīdz }
- Brontosaurus** See Apatosaurus. { ,brän·tə'sōr·əs }
- Brontotheriidae** [PALEON] The single family of the extinct mammalian superfamily Brontotherioidea. { 'brän·tō·thə'rī·ə,dē }
- Brontotherioidea** [PALEON] The titanotheres, a superfamily of large, extinct perissodactyl mammals in the suborder Hippomorpha. { 'brän·tō,the·rē'ōid·ē·ə }
- bronze mica** See phlogopite. { 'bränz 'mī·kə }
- bronze mica** [MINERAL] $(\text{Mg,Fe})(\text{SiO}_3)$ An orthopyroxene mineral that forms metallic green orthorhombic crystals; a form of the enstatite-hypersthene series. { 'brän,zīt }
- bronzifels** See bronzitite. { 'brän·zət,felz }
- bronzitite** [PETR] A pyroxenite that is composed almost entirely of bronzite. Also known as bronzifels. { 'brän·zə,tīt }
- brookite** [MINERAL] TiO_2 A brown, reddish, or black orthorhombic mineral; it is trimorphous with rutile and anatase, has hardness of 5.5–6 on Mohs scale, and a specific gravity of 3.87–4.08. Also known as pyromelane. { 'brū,kīt }
- brown clay** See red clay. { 'braūn 'klā }
- brown clay ironstone** [GEOL] Limonite in the form of concrete masses, often in concretionary nodules. { 'braūn ,klā 'ī·ərn,stōn }
- brown coal** See lignite. { 'braūn 'kōl }
- brown hematite** See limonite. { 'braūn 'hem·ə,tīt }
- brown iron ore** See limonite. { 'braūn 'ī·ərn ,ōr }
- brown lignite** [GEOL] A type of lignite with a fixed carbon content ranging from 30 to 55% and total carbon from 65 to 73.6; contains 6300 Btu per pound (14.65 megajoules per kilogram). Also known as lignite B. { 'braūn 'lig,nīt }
- brown mica** See phlogopite. { 'braūn 'mī·kə }
- brown soil** [GEOL] Any of a zonal group of soils, with a brown surface horizon which grades into a lighter-colored soil and then into a layer of carbonate accumulation. { 'braūn 'sōil }
- brown spar** [GEOL] Any light-colored crystalline carbonate that contains iron, such as ankerite or dolomite, and is therefore brown. { 'braūn ,spär }
- brucite** [MINERAL] $\text{Mg}(\text{OH})_2$ A hexagonal mineral; native magnesium hydroxide that

brownstone

appears gray and occurs in serpentines and impure limestones; hardness is 2.5 on Mohs scale, and specific gravity is 2.38–2.40. { 'brü,sīt }

brownstone [PETR] Ferruginous sandstone with its grains coated with iron oxide. { 'braün,stōn }

brugnatellite [MINERAL] $Mg_6Fe(OH)_{13}CO_3 \cdot 4H_2O$ A flesh pink to yellowish- or brownish-white, hexagonal mineral consisting of a hydrated carbonate-hydroxide of magnesium and ferric iron; occurs in massive form. { ,brü·nyə'te,līt }

brushite [MINERAL] $CaHPO_4 \cdot 2H_2O$ A nearly colorless mineral that is a constituent of rock phosphates that crystallizes in slender or massive crystals. { 'brə,ʃhīt }

Bruxellian [GEOL] Lower middle Eocene geologic time. { brü'sel·yən }

B tectonite [PETR] Tectonite with a fabric dominated by linear elements indicating an axial direction rather than a slip surface. { 'bē 'tek·tə,nīt }

bubble pulse [GEOPHYS] An extraneous effect during a seismic survey caused by a bubble formed by a seismic charge, explosion, or spark fired in a body of water. { 'bəb·əl ,pəls }

bubble train [GEOL] A string or strings of vesicles in lava, indicating the path of rising gas escaping a flow of lava. { 'bəb·əl ,trān }

bubble wall fragment [GEOL] A glassy volcanic shard revealing part of a vesicle surface which may be curved or flat. { 'bəb·əl ,wól ,frəg·mənt }

bucaramangite [MINERAL] A pale yellow variety of retinite that looks like amber but is insoluble in alcohol. { ,byü·kə·rə'maŋ,gīt }

buchite [PETR] A partially vitrified inclusion of sandstone in basalt. { 'bü,kīt }

buchonite [PETR] An extrusive rock formed of labradorite, titanaugite, and titaniferous hornblende, with nepheline and sodic sanidine and accessory biotite, apatite, and opaque oxides. { 'bü·kə,nīt }

bucklandite See allanite. { 'bək·lən,dīt }

buckle fold [GEOL] A double flexure of rock beds formed by compression acting in the plane of the folded beds. { 'bək·əl ,föld }

buckwheat coal [GEOL] An anthracite coal that passes through 9/16-inch (14-millimeter) holes and over 5/16-inch (8-millimeter) holes in a screen. { 'bək,wēt ,kōl }

buetschliite [MINERAL] $K_2Ca_2(CO_3)_5 \cdot 6H_2O$ A mineral that is probably hexagonal and consists of a hydrated carbonate of potassium and calcium. { 'büch·lē,īt }

bughole See vug. { 'bæg,hōl }

buhrstone [PETR] A silicified fossiliferous limestone with abundant cavities previously occupied by fossil shells. Also known as millstone. { 'bər,stōn }

built terrace See alluvial terrace. { 'bilt ,ter·əs }

bunsenite [MINERAL] NiO A pistachio-green mineral consisting of nickel monoxide and occurring as octahedral crystals. { 'bən·sə,nīt }

Bunter [GEOL] Lower Triassic geologic time. Also known as Buntsandstein. { 'bün·tər }

Buntsandstein See Bunter. { 'bünt·sən,shtīn }

burden [GEOL] All types of rock or earthy materials overlying bedrock. { 'bärd·ən }

Burdigalian [GEOL] Upper lower Miocene geologic time. { ,bärd·i'gāl·yən }

Burgess Shale [GEOL] A fossil deposit in the Canadian Rockies, British Columbia, consisting of a diverse fauna that accumulated in a clay and silt sequence during the Cambrian. { 'bər·jəs 'ʃhāl }

burial metamorphism [GEOL] A kind of regional metamorphism which affects sediments and interbedded volcanic rocks in a geosyncline without the factors of orogenesis or magmatic intrusions. { 'ber·ē·əl med·ə'mör,fiz·əm }

buried hill [GEOL] A hill of resistant older rock over which later sediments are deposited. { 'ber·ēd 'hil }

buried placer [GEOL] Old deposit of a placer which has been buried beneath lava flows or other strata. { 'ber·ēd 'pläs·ər }

buried river [GEOL] A river bed which has become buried beneath streams of alluvial drifts or basalt. { 'ber·ēd 'riv·ər }

buried soil See paleosol. { 'ber·ēd 'sōil }

bytownite

- burkeite** [MINERAL] $\text{Na}_6(\text{CO}_3)(\text{SO}_4)_2$ A white to pale buff or gray mineral consisting of a carbonate-sulfate of sodium. { 'bər,kīt }
- Bushveld Complex** [GEOL] In South Africa, an enormous layered intrusion, containing over half the world's platinum, chromium, vanadium, and refractory minerals. { 'būsh,veld 'käm,pleks }
- bustite** See aubrite. { 'bäs,tīt }
- butlerite** [MINERAL] $\text{Fe}(\text{SO}_4)(\text{OH})\cdot 2\text{H}_2\text{O}$ A deep orange, monoclinic mineral consisting of a hydrated basic ferric sulfate. Also known as parabutlerite. { 'bət·lə,rīt }
- butter rock** See halotrichite. { 'bəd·ər ,rāk }
- buttgenbachite** [MINERAL] $\text{Cu}_{19}(\text{NO}_3)_2\text{Cl}_4(\text{OH})_{32}\cdot 3\text{H}_2\text{O}$ An azure blue, hexagonal mineral consisting of a hydrated basic chloride-sulfate-nitrate of copper. { 'bət·gən,bä,kīt }
- buttress** [PALEON] A ridge on the inner surface of a pelecypod valve which acts as a support for part of the hinge. { 'bə·trəs }
- buttress sands** [GEOL] Sandstone bodies deposited above an unconformity; the upper portion rests upon the surface of the unconformity. { 'bə·trəs ,sanz }
- byerite** [GEOL] Bituminous coal that does not crack in fire and melts and enlarges upon heating. { 'bī·ə,rīt }
- byon** [GEOL] Gem-bearing gravel, particularly that with brownish-yellow clay in which corundum, rubies, sapphires, and so forth occur. { 'bī,än }
- bysmalith** [GEOL] A body of igneous rock that is more or less vertical and cylindrical; it crosscuts adjacent sediments. { 'biz·mə,lith }
- bytownite** [MINERAL] A plagioclase feldspar with a composition ranging from $\text{Ab}_{30}\text{An}_{70}$ to $\text{Ab}_{10}\text{An}_{90}$, where $\text{Ab} = \text{NaAlSi}_3\text{O}_8$ and $\text{An} = \text{CaAl}_2\text{Si}_2\text{O}_8$; occurs in basic and ultrabasic igneous rock. { 'bī·täü,nīt }

C

- cacoxenite** [MINERAL] $\text{Fe}_4(\text{PO}_4)_3(\text{OH})_3 \cdot 12\text{H}_2\text{O}$ Yellow or brownish mineral consisting of a hydrous basic iron phosphate occurring in radiated tufts. { kə'kāk-sə,nīt }
- cadmium blende** *See* greenockite. { 'kad·mē·əm ,blend }
- cadmium ochre** *See* greenockite. { 'kad·mē·əm 'ō·kər }
- cadwaladerite** [MINERAL] $\text{Al}(\text{OH})_2\text{Cl} \cdot 4\text{H}_2\text{O}$ A mineral consisting of a hydrous basic aluminum chloride. { kad'wāl·ə·dā,rīt }
- Caenolestidae** [PALEON] A family of extinct insectivorous mammals in the order Marsupialia. { ,sē·nə'les·tə,dē }
- cahnite** [MINERAL] $\text{Ca}_2\text{B}(\text{OH})_4(\text{AsO}_4)$ A tetragonal borate mineral occurring in white, sphenoidal crystals. { 'kā,nīt }
- Cainotheriidae** [PALEON] The single family of the extinct artiodactyl superfamily Cainotherioidea. { ,kān·ə·thə'rī·ə,dē }
- Cainotherioidea** [PALEON] A superfamily of extinct, rabbit-sized tylopod ruminants in the mammalian order Artiodactyla. { ,kān·ə·ther·ē'oid·ē·ə }
- Cainozoic** *See* Cenozoic. { ,kān·ə'zō·ik }
- cairn gorm** *See* smoky quartz. { 'kern,görm }
- caking coal** [GEOL] A type of coal which agglomerates and softens upon heating; after volatile material has been expelled at high temperature, a hard, gray cellular mass of coke remains. Also known as binding coal. { 'kāk·iŋ ,kōl }
- Calabrian** [GEOL] Lower Pleistocene geologic time. { kə'lāb·rē·ən }
- calaité** *See* turquoise. { kə'lā,īt }
- calamine** *See* hemimorphite; smithsonite. { 'kal·ə,mīn }
- Calamitales** [PALEOBOT] An extinct group of reedlike plants of the subphylum Sphenopsida characterized by horizontal rhizomes and tall, upright, grooved, articulated stems. { kə,lam·ə'tā·lēz }
- calaverite** [MINERAL] AuTe_2 A yellowish or tin-white, monoclinic mineral commonly containing gold telluride and minor amounts of silver. { kə'lav·ə,rīt }
- calc-alkalic series** [PETR] Series of igneous rocks in which the weight percentage of silica is 55–61. { 'kalk ,al'kal·ik ,sir·ēz }
- calcareenite** [PETR] A type of limestone or dolomite composed of coral or shell sand or of sand formed by erosion of older limestones, with particle size ranging from 1/16 to 2 millimeters. { kal·kə'rē,nīt }
- calcareous crust** *See* caliche. { kal'ker·ē·əs 'krəst }
- calcareous duricrust** *See* caliche. { kal'ker·ē·əs 'dūr·i,krəst }
- calcareous ooze** [GEOL] A fine-grained pelagic sediment containing undissolved sand- or silt-sized calcareous skeletal remains of small marine organisms mixed with amorphous clay-sized material. { kal'ker·ē·əs 'ūz }
- calcareous schist** [PETR] A coarse-grained metamorphic rock derived from impure calcareous sediment. { kal'ker·ē·əs 'shist }
- calcareous sinter** *See* tufa. { kal'ker·ē·əs 'sin·tər }
- calcareous soil** [GEOL] A soil containing accumulations of calcium and magnesium carbonate. { kal'ker·ē·əs 'sōil }
- calcareous tufa** *See* tufa. { kal'ker·ē·əs 'tū·fə }
- calclastic** [PETR] Pertaining to calcium carbonate-containing rock eroded from a

calcification

- preexisting source, transported some distance, and then redeposited; for example, calciclastic limestone. { ,kal·sə'klas·tik }
- calcification** [GEOCHEM] Any process of soil formation in which the soil colloids are saturated to a high degree with exchangeable calcium, thus rendering them relatively immobile and nearly neutral in reaction. { ,kal·sə·fə'kā·shən }
- calcilutite** [PETR] **1.** A dolomite or limestone formed of calcareous rock flour that is typically nonsiliceous. **2.** A rock of calcium carbonate formed of grains or crystals with average diameter less than 1/16 millimeter. { ,kal·sə'lü,tit }
- calcioarnotite** See tyuyamunite. { ,kal·sē·ō'kär·nə,tit }
- calcioferrite** [MINERAL] $\text{Ca}_2\text{Fe}_2(\text{PO}_4)\text{OH}\cdot 7\text{H}_2\text{O}$ A yellow or green mineral consisting of a hydrous basic calcium iron phosphate and occurring in nodular masses. { 'kal·sē·ō'fe,rīt }
- calciovolborthite** [MINERAL] $\text{CaCu}(\text{VO}_4)(\text{OH})$ Green, yellow, or gray mineral consisting of a basic vanadate of calcium and copper. Also known as tangeite. { ,kal·sē·ō'völ,bör,thit }
- calcirudite** [PETR] Dolomite or limestone formed of worn or broken pieces of coral or shells or of limestone fragments coarser than sand; the interstices are filled with sand, calcite, or mud, the whole bound together with a calcareous cement. { kal'sir·ə,dit }
- calcite** [MINERAL] CaCO_3 One of the commonest minerals, the principal constituent of limestone; hexagonal-rhombohedral crystal structure, dimorphous with aragonite. Also known as calcspar. { 'kal,sit }
- calcite compensation depth** [GEOL] The depth in the ocean (about 5000 meters) below which solution of calcium carbonate occurs at a faster rate than its deposition. Abbreviated CCD. { 'kal,sit kām·pən'sä·shən ,depth }
- calcite dolomite** [PETR] A carbonate rock with a composition of 10–50% calcite and 90–50% dolomite. { 'kal,sit 'döl·ə,mīt }
- calclacite** [MINERAL] $\text{CaCl}_2\text{Ca}(\text{C}_2\text{H}_3\text{O}_2)\cdot 10\text{H}_2\text{O}$ A white mineral consisting of a hydrated chloride-acetate of calcium; occurs as hairlike efflorescences. { 'kal·klə,sit }
- Calclamnidae** [PALEON] A family of Paleozoic echinoderms of the order Dendrochirotrida. { kal'klam·nä,dē }
- calclithite** [PETR] Limestone with 50% or more fragments of older limestone that was redeposited after being eroded from the land. { 'kal·klə,thit }
- calcrete** [GEOL] A conglomerate of surficial gravel and sand cemented by calcium carbonate. { ,kal'krēt }
- calc-silicate** [GEOL] Referring to a metamorphic rock consisting mainly of calcite and calcium-bearing silicates. { 'kalk 'sil·ə·kät }
- calc-silicate hornfels** [PETR] A metamorphic rock with a fine grain of calcium silicate minerals. { ,kalk 'sil·ə,kät 'hörn,felz }
- calc-silicate marble** [PETR] Marble having conspicuous calcium silicate or magnesium silicate minerals. { ,kalk 'sil·ə,kät 'mär·bəl }
- calcspar** See calcite. { 'kalk,spär }
- calcsparite** See sparry calcite. { kalk'spä,rīt }
- caldera** [GEOL] A large collapse depression at a volcano summit that is typically circular to slightly elongate in shape, with dimensions many times greater than any included vent. It ranges from a few miles to 37 miles (60 kilometers) in diameter. It may resemble a volcanic crater in form, but differs in that it is a collapse rather than a constructional feature. { kal'der·ə }
- Caledonian orogeny** [GEOL] Deformation of the crust of the earth by a series of diastrophic movements beginning perhaps in Early Ordovician and continuing through Silurian, extending from Great Britain through Scandinavia. { ,kal·ə'dön·ē·ən ə'räj·ə·nē }
- Caledonides** [GEOL] A mountain system formed in Late Silurian to Early Devonian time in Scotland, Ireland, and Scandinavia. { ,kal·ə'dä,nīdz }
- caledonite** [MINERAL] $\text{Cu}_2\text{Pb}_5(\text{SO}_4)_3\text{CO}_3(\text{OH})_6$ A mineral occurring as green, orthorhombic crystals composed of basic copper lead sulfate; found in copper-lead deposits. { ,kal·ə'dä,nīt }
- caliche** [GEOL] **1.** Conglomerate of gravel, rock, soil, or alluvium cemented with sodium

cannel shale

- salts in Chilean and Peruvian nitrate deposits; contains sodium nitrate, potassium nitrate, sodium iodate, sodium chloride, sodium sulfate, and sodium borate. **2.** A thin layer of clayey soil capping auriferous veins (Peruvian usage). **3.** Whitish clay in the selvage of veins (Chilean usage). **4.** A recently discovered mineral vein. **5.** A secondary accumulation of opaque, reddish brown to buff or white calcareous material occurring in layers on or near the surface of stony soils in arid and semiarid regions of the southwestern United States; called hardpan, calcareous duricrust, and kanker in different geographic regions. Also known as calcareous crust; croute calcaire; nari; sabach; tepetate. { kə'lē·chē }
- californite** [MINERAL] $\text{Ca}_{10}\text{Al}_4(\text{Mg},\text{Fe})_2\text{Si}_9\text{O}_{34}(\text{OH},\text{F})_4$ A variety of vesuvianite resembling jade; it is dark-, yellowish-, olive-, or grass-green and occurs in translucent to opaque compact or massive form. Also known as American jade. { ,kal·ə'fōr,nīt }
- callenia** See stromatolite. { kə'lēn·yə }
- Callovian** [GEOL] A stage in uppermost Middle or lowermost Upper Jurassic which marks a return to clayey sedimentation. { kə'lōv·ē·ən }
- calomel** [MINERAL] Hg_2Cl_2 A colorless, white, grayish, yellowish, or brown secondary, sectile, tetragonal mineral; used as a cathartic, insecticide, and fungicide. Also known as calomelene; calomelite; horn quicksilver; mercurial horn ore. { 'kal·ə·məl }
- calomelene** See calomel. { kə'lām·ə,lēn }
- calomelite** See calomel. { ,kal·ə'mē,līt }
- calving** [GEOL] The breaking off of a mass of ice from its parent glacier, iceberg, or ice shelf. Also known as ice calving. { 'kav·iŋ }
- Camarasaurus** [PALEON] A herbivorous sauropod dinosaur, 60-feet (18 meters) long and weighing 20 tons, from the Late Jurassic Period that had a very long neck and tail. { ,ka·mə·rə'sōr·əs }
- camber** [GEOL] **1.** A terminal, convex shoulder of the continental shelf. **2.** A structural feature that is caused by plastic clay beneath a bed flowing toward a valley so that the bed sags downward and seems to be draped over the sides of the valley. { 'kam·bər }
- Cambrian** [GEOL] The lowest geologic system that contains abundant fossils of animals, and the first (earliest) geologic period of the Paleozoic era from 570 to 500 million years ago. { 'kam·brē·ən }
- Camerata** [PALEON] A subclass of extinct stalked echinoderms of the class Crinoidea. { ,kam·ə'räd·ə }
- Campanian** [GEOL] European stage of Upper Cretaceous. { kam'pan·ē·ən }
- camptonite** [PETR] A lamprophyre containing pyroxene, sodic hornblende, and olivine as dark constituents and labradorite as the light constituent; sodic orthoclase may be present. { 'kam·tə,nīt }
- Canadian Shield** See Laurentian Shield. { kə'nād·ē·ən 'shēld }
- Canastotan** [GEOL] Lower Upper Silurian geologic time. { kə'nas·tə'tən }
- cancrinite** [MINERAL] $\text{Na}_3\text{CaAl}_3\text{Si}_3\text{O}_{12}\text{CO}_3(\text{OH})_2$ A feldspathoid tectosilicate occurring in hexagonal crystals in nepheline syenites, usually in compact or disseminated masses. { 'kəŋ·krə,nīt }
- candite** See ceylonite. { 'kan,dīt }
- canfieldite** [MINERAL] Ag_8SnS_6 A black mineral of the argyrodite series consisting of silver thioostannate, with a specific gravity of 6.28; found in Germany and Bolivia. { 'kan,fēl,dīt }
- cannel coal** [GEOL] A fine-textured, highly volatile bituminous coal distinguished by a greasy luster and blocky, conchoidal fracture; burns with a steady luminous flame. Also known as cannelite. { 'kan·əl ,kəl }
- cannelite** See cannel coal. { 'kan·əl,līt }
- canneloid** [GEOL] **1.** Coal that resembles cannel coal. **2.** Coal intermediate between bituminous and cannel. **3.** Durain laminae in banded coal. **4.** Cannel coal of anthracite or semianthracite rank. { 'kan·əl,ōid }
- cannel shale** [GEOL] A black shale formed by the accumulation of an aquatic ooze rich in bituminous organic matter in association with inorganic materials such as silt and clay. { 'kan·əl ,shāl }

canyon bench

- canyon bench** [GEOL] A steplike level of hard strata in the walls of deep valleys in regions of horizontal strata. { 'kan·yən ,bench }
- canyon fill** [GEOL] Loose, unconsolidated material which fills a canyon to a depth of 50 feet (15 meters) or more during periods between great floods. { 'kan·yən ,fil }
- capacity of the wind** [GEOL] The total weight of airborne particles (soil and rock) of given size, shape, and specific gravity, which can be carried in 1 cubic mile (4.17 cubic kilometers) of wind blowing at a given speed. { kə'pas·əd·ē əv ðə 'wind }
- capillary** [GEOL] A fissure or a crack in a formation which provides a route for flow of water or hydrocarbons. { 'kap·ə,ler·ē }
- capillary ejecta** See Pele's hair. { 'kap·ə,ler·ē i'jek·tə }
- capillary pyrites** See millerite. { 'kap·ə,ler·ē 'pī,rīts }
- cappelenite** [MINERAL] (Ba,Ca,Na)(Y,La)₆B₆Si₁₃(O,OH)₂₇ A greenish-brown hexagonal mineral consisting of a rare yttrium-barium borosilicate occurring in crystals. { 'kap·lə,nīt }
- capping** [GEOL] **1.** Consolidated barren rock overlying a mineral or ore deposit. **2.** See gossan. { 'kap·iŋ }
- cap rock** [GEOL] **1.** An overlying, generally impervious layer or stratum of rock that overlies an oil- or gas-bearing rock. **2.** Barren vein matter, or a pinch in a vein, supposed to overlie ore. **3.** A hard layer of rock, usually sandstone, a short distance above a coal seam. **4.** An impervious body of anhydrite and gypsum in a salt dome. { 'kap ,rāk }
- Captorhinomorpha** [PALEON] An extinct subclass of primitive lizardlike reptiles in the order Cotylosauria. { ,kap·tə'rī·nə'mòr·fə }
- capture** [GEOCHEM] In a crystal structure, the substitution of a trace element for a lower-valence common element. { 'kap·chər }
- caracolite** [MINERAL] A rare, colorless mineral occurring as crystalline incrustations, and consisting of a sulfate and chloride of sodium and lead. { ,kar·ə'kò,līt }
- Caradocian** [GEOL] Lower Upper Ordovician geologic time. { kar·ə'dò·shən }
- carapace** [GEOL] The upper normal limb of a fold having an almost horizontal axial plane. { 'kar·ə,pās }
- carbohumic** See ulmin. { ,kär·bò'hyü·mən }
- carbonaceous chondrite** [GEOL] A chondritic meteorite that contains a relatively large amount of carbon and has a resulting dark color. Also known as carbonaceous meteorite. { ,kär·bə'nā·shəs 'kän,drīt }
- carbonaceous meteorite** See carbonaceous chondrite. { kär·bə'nā·shəs 'mēd·ē·ə,rīt }
- carbonaceous rock** [PETR] Rock with carbonaceous material included. { kär·bə'nā·shəs 'rāk }
- carbonaceous sandstone** [PETR] Sandstone rich in carbon. { kär·bə'nā·shəs 'san,stōn }
- carbonaceous shale** [GEOL] Shale rich in carbon. { kär·bə'nā·shəs 'shāl }
- carbonado** [MINERAL] A dark-colored, fine-grained diamond aggregate; valuable for toughness and absence of cleavage planes. Also known as black diamond; carbon diamond. { kär·bə'nā·dò }
- carbonate cycle** [GEOCHEM] The biogeochemical carbonate pathways, involving the conversion of carbonate to CO₂ and HCO₃, the solution and deposition of carbonate, and the metabolism and regeneration of it in biological systems. { 'kär·bə·nət ,sī·kəl }
- carbonate mineral** [MINERAL] A mineral containing considerable amounts of carbonates. { 'kär·bə·nət 'min·rəl }
- carbonate reservoir** [GEOL] An underground oil or gas trap formed in reefs, clastic limestones, chemical limestones, or dolomite. { 'kär·bə·nət 'rez·əv,wär }
- carbonate rock** [PETR] A rock composed principally of carbonates, especially if at least 50% by weight. { 'kär·bə·nət 'rāk }
- carbonation** [GEOCHEM] A process of chemical weathering whereby minerals that contain soda, lime, potash, or basic oxides are changed to carbonates by the carbonic acid in air or water. { ,kär·bə'nā·shən }

Carrara marble

- carbonatite** [PETR] **1.** Intrusive carbonate rock associated with alkaline igneous intrusive activity. **2.** A sedimentary rock that is composed of at least 80% calcium or magnesium. { kār'bān·ə,tīt }
- carbon cycle** [GEOCHEM] The cycle of carbon in the biosphere, in which plants convert carbon dioxide to organic compounds that are consumed by plants and animals, and the carbon is returned to the biosphere in the form of inorganic compounds by processes of respiration and decay. { 'kār·bən ,sī·kəl }
- carbon diamond** See carbonado. { 'kār·bən 'dī·mənd }
- Carboniferous** [GEOLOG] A division of late Paleozoic rocks and geologic time including the Mississippian and Pennsylvanian periods. { ,kār·bə'nif·ə·rəs }
- carbonification** See coalification. { kār,bān·ə·fə'kā·shən }
- carbon isotope ratio** [GEOLOG] Ratio of carbon-12 to either of the less common isotopes, carbon-13 or carbon-14, or the reciprocal of one of these ratios; if not specified, the ratio refers to carbon-12/carbon-13. Also known as carbon ratio. { 'kar·bən 'is·ə,tōp ,rā·shō }
- carbonite** See natural coke. { 'kār·bə,nīt }
- carbonization** [GEOCHEM] **1.** In the coalification process, the accumulation of residual carbon by changes in organic material and their decomposition products. **2.** Deposition of a thin film of carbon by slow decay of organic matter underwater. **3.** A process of converting a carbonaceous material to carbon by removal of other components. { ,kār·bə·nə'zā·shən }
- carbon pool** [GEOCHEM] A reservoir with the capacity to store and release carbon, such as soil, terrestrial vegetation, the ocean, and the atmosphere. { 'kār·bən ,pūl }
- carbon ratio** [GEOLOG] **1.** The ratio of fixed carbon to fixed carbon plus volatile hydrocarbons in a coal. **2.** See carbon isotope ratio. { 'kār·bən ,rā·shō }
- carbon-ratio theory** [GEOLOG] The theory that the gravity of oil in any area is inversely proportional to the carbon ratio of the coal. { 'kār·bən ,rā·shō ,thē·ə·rē }
- carbon sequestration** [GEOCHEM] The uptake and storage of atmospheric carbon in, for example, soil and vegetation. { ,kār·bən ,sē·kwes'trā·shən }
- carbon sink** [GEOCHEM] A reservoir that absorbs or takes up atmospheric carbon; for example, a forest or an ocean. { 'kār·bən ,sɪŋk }
- carminite** [MINERAL] $\text{PbFe}_2(\text{AsO}_4)_2(\text{OH})_2$ A carmine to tile-red mineral consisting of a basic arsenate of lead and iron. { 'kār·mə,nīt }
- carallite** [MINERAL] $\text{KMgCl}_3 \cdot 6\text{H}_2\text{O}$ A milky-white or reddish mineral that crystallizes in the orthorhombic system and occurs in deliquescent masses; it is valuable as an ore of potassium. { 'kār·əl,tīt }
- carnegeite** [MINERAL] NaAlSiO_4 An artificial mineral similar to feldspar; it is triclinic at low temperatures, isometric at elevated temperatures. { 'kār·nə·gē,tīt }
- Carnian** [GEOLOG] Lower Upper Triassic geologic time. Also spelled Karnian. { 'kār·nē·ən }
- Carnosauria** [PALEON] A group of large, predacious saurischian dinosaurs in the suborder Theropoda having short necks and large heads. { ,kār·nə'sōr·ē·ə }
- carnotite** [MINERAL] $\text{K}(\text{UO}_2)_2(\text{VO}_4)_2 \cdot n\text{H}_2\text{O}$ A canary-yellow, fine-grained hydrous vanadate of potassium and uranium having monoclinic microcrystals; an ore of radium and uranium. { 'kār·nə,tīt }
- carpholite** [MINERAL] $\text{MnAl}_2\text{Si}_2\text{O}_6(\text{OH})_4$ A straw-yellow fibrous mineral consisting of a hydrous aluminum manganese silicate occurring in tufts; specific gravity is 2.93. { 'kār·fə,līt }
- carphosiderite** [MINERAL] A yellow mineral consisting of a basic hydrous iron sulfate occurring in masses and crusts. { ,kār·fō'sīd·ə·rīt }
- Carpoidea** [PALEON] Former designation for a class of extinct homalozoan echinoderms. { kār'pōid·ē·ə }
- carpoids** [PALEON] An assemblage of three classes of enigmatic, rare Paleozoic echinoderms formerly grouped together as the class Carpoidea. { 'kār,pōidz }
- Carrara marble** [PETR] All marble quarried near Carrara, Italy, having a prevailing white to bluish color, or white with blue veins. { kə'rā·rə 'mār·bəl }

caryinite

- caryinite** [MINERAL] $(\text{Ca,Pb,Na})_5(\text{Mn,Mg})_4(\text{AsO}_4)_5$ A mineral consisting chiefly of a calcium manganese arsenate. { 'kar·ē·ə,nīt }
- cascade** [GEOL] A landform structure formed by gravity collapse, consisting of a bed that buckles into a series of folds as it slides down the flanks of an anticline. { ka'skād }
- Cascadian orogeny** [GEOL] Post-Tertiary deformation of the crust of the earth in western North America. { ka'skād·ē·ən ó'rāj·ə·nē }
- case hardening** [GEOL] Formation of a mineral coating on the surface of porous rock by evaporation of a mineral-bearing solution. { 'kās ,hārd·ən·iŋ }
- Cassadagan** [GEOL] Middle Upper Devonian geologic time, above Chemungian. { kə'sad·ə·gən }
- Casselian** See Chattian. { ka'sel·yən }
- Cassiar orogeny** [GEOL] Orogenic episode in the Canadian Cordillera during late Paleozoic time. { 'kas·ē·ər ó'rāj·ə·nē }
- cassidyite** [MINERAL] $\text{Ca}_2(\text{Ni,Mg})(\text{PO}_4)_2 \cdot 2\text{H}_2\text{O}$ A mineral found in meteorites. { kə'sid·ē,īt }
- cassiterite** [MINERAL] SnO_2 A yellow, black, or brown mineral that crystallizes in the tetragonal system in prisms terminated by dipyramids; the most important ore of tin. Also known as tin stone. { kə'sid·ə,rīt }
- cast** [PALEON] A fossil reproduction of a natural object formed by infiltration of a mold of the object by waterborne minerals. { kast }
- castings** See fecal pellets. { 'kast·iŋz }
- castorite** [MINERAL] A transparent variety of petalite occurring in crystals. { 'kas·tə,rīt }
- catachosis** [GEOL] Fracturing or crushing of rock during metamorphism. { ,kad·ə'kō·səs }
- cataclasis** [GEOL] Deformation of rock by fracture and rotation of aggregates or mineral grains. { ,kad·ə'klā·səs }
- cataclastite** See cataclastic rock. { ,kad·ə'klā,sīt }
- cataclastic metamorphism** [PETR] Local metamorphism restricted to a region of faults and overthrusts involving purely mechanical forces resulting in cataclasis. { 'kad·ə'klas·tik ,med·ə'mór,fiz·əm }
- cataclastic rock** [PETR] Rock containing angular fragments formed by cataclasis. Also known as cataclastite. { 'kad·ə'klas·tik 'rāk }
- cataclastic structure** See mortar structure. { 'kad·ə'klas·tik 'strək·chər }
- catapleite** [MINERAL] $(\text{Na}_2,\text{Ca})\text{ZrSi}_3\text{O}_9 \cdot 2\text{H}_2\text{O}$ A yellow or yellowish-brown mineral crystallizing in the hexagonal system, consisting of a hydrous silicate of sodium, calcium, and zirconium, and occurring in thin tabular crystals; hardness is 6 on Mohs scale, and specific gravity is 2.8. { ,kad·ə'plī,īt }
- catastrophism** [GEOL] The theory that most features in the earth were produced by the occurrence of sudden, short-lived, worldwide events. [PALEON] The theory that the differences between fossils in successive stratigraphic horizons resulted from a general catastrophe followed by creation of the different organisms found in the next-younger beds. { kə'tas·trə,fiz·əm }
- catazone** [GEOL] The deepest zone of rock metamorphism where high temperatures and pressures prevail. { 'kad·ə,zōn }
- catena** [GEOL] A group of soils derived from uniform or similar parent material which nonetheless show variations in type because of differences in topography or drainage. { kə'tē·nə }
- catoptrite** [MINERAL] An iron black to jet black, monoclinic mineral consisting of a silicoantimonate of aluminum and divalent manganese. Also spelled katoptrite. { kə'təp,t'rīt }
- cauldron subsidence** [GEOL] **1.** A structure formed by the lowering along a steep ring fracture of a more or less cylindrical block, usually 1 to 10 miles (1.6 to 16 kilometers) in diameter, into a magma chamber. **2.** The process of forming such a structure. { 'kól·drən səb'sī·dəns }

cement rock

- caustobiolith** [GEOL] Combustible organic rock formed by direct accumulation of plant materials; includes coal peat. { 'kò,stò'bt·ə,lith }
- cave** [GEOL] A natural, hollow chamber or series of chambers and galleries beneath the earth's surface, or in the side of a mountain or hill, with an opening to the surface. { kāv }
- cave breccia** [GEOL] Sharp fragments of limestone debris deposited on the floor of a cave. { 'kāv 'brech·ə }
- cave formation** See speleothem. { 'kāv fòr'mā·shən }
- Cavellinidae** [PALEON] A family of Paleozoic ostracodes in the suborder Platycopoda. { ,kav·ə'lin·ə,dē }
- cave pearl** [GEOL] A small, smooth, rounded concretion of calcite or aragonite, formed by concentric precipitation about a nucleus and usually found in limestone caves. { 'kāv ,pərl }
- cavern** [GEOL] An underground chamber or series of chambers of indefinite extent carved out by rock springs in limestone. { 'kav·ərn }
- cavernous** [GEOL] **1.** Having many caverns or cavities. **2.** Producing caverns. **3.** Of or pertaining to a cavern, that is, suggesting vastness. { 'kav·ə'r·nəs }
- c axis** [GEOL] The reference axis perpendicular to the plane of movement of rock or mineral strata. { 'sē ,ak·səs }
- cay** [GEOL] **1.** A flat coral island. **2.** A flat mound of sand built up on a reef slightly above high tide. **3.** A small, low coastal islet or emergent reef composed largely of sand or coral. { kā }
- cay sandstone** [GEOL] Firmly cemented or friable coral sand formed near the base of coral reef cays. { 'kā 'san,stōn }
- Caytoniales** [PALEOBOT] An order of Mesozoic plants. { ,kā·tān·ē'ā,lēz }
- Cayugan** [GEOL] Upper Silurian geologic time. { kī'yū·gən }
- Cazenovian** [GEOL] Lower Middle Devonian geologic time. { kaz·ə'nōv·ē·ən }
- CCD** See calcite compensation depth.
- Cebochoeridae** [PALEON] A family of extinct palaeodont artiodactyls in the superfamily Entelodontoidae. { 'seb·ə,kō'er·ə,dē }
- cebolite** [MINERAL] $H_2Ca_4Al_2Si_3O_{16}$ A greenish to white mineral consisting of hydrous calcium aluminum silicate occurring in fibrous aggregates; hardness is 5 on Mohs scale, and specific gravity is 3. { 'seb·ə,līt }
- cecilite** [PETR] A basaltic rock having few phenocrysts and consisting of at least 50% leucite with augite, melilite, nepheline, olivine, anorthite, magnetite, and apatite. { 'ses·əl,īt }
- cedricite** [MINERAL] A variety of lamproite composed principally of diopside, leucite, and phlogopite and usually containing crystals of serpentine. { 'sed·rə,stīt }
- celadonite** [MINERAL] A soft, green variety of mica having high iron content and containing silicates of magnesium and potassium. { 'sel·ə·də,nīt }
- celestine** See celestite. { 'sel·ə,stēn }
- celestite** [MINERAL] $SrSO_4$ A colorless or sky-blue mineral occurring in orthorhombic, tabular crystals and in compact forms; fracture is uneven and luster is vitreous; principal ore of strontium. Also known as celestine. { 'sel·ə,stīt }
- cellular** [PETR] Pertaining to igneous rock having a porous texture, usually with the cavities larger than pore size and smaller than caverns. { 'sel·yə·lər }
- cellular soil** See polygonal ground. { 'sel·yə·lər 'söil }
- celsian** [MINERAL] $BaAl_2Si_2O_8$ Colorless, monoclinic mineral consisting of barium feldspar. { 'sel·sē,an }
- cement** [GEOL] Any chemically precipitated material, such as carbonates, gypsum, and barite, occurring in the interstices of clastic rocks. { si'ment }
- cementation** [GEOL] The precipitation of a binding material around minerals or grains in rocks. { ,sē,men'tā·shən }
- cement gravel** [GEOL] Gravel consolidated by clay, silica, calcite, or other binding material. { si'ment ,grav·əl }
- cement rock** [PETR] An argillaceous limestone containing lime, silica, and alumina in

Cenomanian

- variable proportions and usually some magnesia; used in the manufacture of natural hydraulic cement. { si'ment ,ræk }
- Cenomanian** [GEOL] Lower Upper Cretaceous geologic time. { |sen·ə|mān·ē·ən }
- cenote** See pothole. { sə'nōd·ē }
- Cenozoic** [GEOL] The youngest of the eras, or major subdivisions of geologic time, extending from the end of the Mesozoic Era to the present, or Recent. Also spelled as Cainozoic. { |sen·ə|zō·ik }
- central valley** See rift valley. { 'sen·trəl 'val·ē }
- centrifugal drainage pattern** See radial drainage pattern. { ,sen'trif·i·gəl 'drān·ij ,pād·ərn }
- centroclinal** [GEOL] Referring to geologic strata dipping toward a common center, as in a structural basin. { |sen·trō|klīn·əl }
- Centronellidina** [PALEON] A suborder of extinct articulate brachiopods in the order Terebratulida. { |sen·trō·nə'līd·ən·ə }
- centrosphere** [GEOL] The central core of the earth. Also known as the barysphere. { 'sen·trə,sfir }
- Cephalaspida** [PALEON] An equivalent name for the Osteostraci. { ,sef·ə'lās·pə·də }
- ceramicite** [PETR] A porcelainized pyrometamorphic rock composed of basic plagioclase and cordierite with a small amount of hypersthene and a groundmass of glass. { sə'ram·ə,sīt }
- Ceramoporidae** [PALEON] A family of extinct, marine bryozoans in the order Cystoporata. { sə,ram·ə'pōr·ə,dē }
- cerargyrite** [MINERAL] AgCl A colorless to pearl-gray mineral; crystallizes in the isometric system, but crystals, usually cubic, are rare; a secondary mineral that is an ore of silver. Also known as chlorargyrite; horn silver. { sa'rār·jə,rīt }
- ceratite** [PALEON] A fossil ammonoid of the genus *Ceratites* distinguished by a type of suture in which the lobes are further divided into subordinate crenulations while the saddles are not divided and are smoothly rounded. { 'ser·ə,tīt }
- ceratitic** [PALEON] Pertaining to a ceratite. { ,ser·ə'tid·ik }
- Ceratodontidae** [PALEON] A family of Mesozoic lungfishes in the order Diptheriformes. { ,ser·ə'tō'dān·tə,dē }
- Ceratopsia** [PALEON] The horned dinosaurs, a suborder of Upper Cretaceous reptiles in the order Ornithischia. { ,ser·ə'tāp·sē·ə }
- Ceratosaurus** [PALEON] A carnivorous theropod dinosaur, 20 feet (6 meters) long, from the Late Jurassic Period that had strong hindlimbs, short and weak forelimbs (with four-fingered hands), and massive jaws lined with enormous teeth. { sə,rād·ə'sōr·əs }
- cerine** See allanite. { 'sir,ēn }
- cerite** [MINERAL] (Ca,Fe)Ce₃Si₃O₁₂·H₂O A brown rare-earth hydrous silicate of cerium and other metals found in gneiss; hardness is 5.5 on Mohs scale, and specific gravity is 4.86. { 'sir,īt }
- cerolite** [MINERAL] A mixture of serpentine and stevensite occurring in yellow or greenish waxlike masses. { 'sir·ə,līt }
- cerussite** [MINERAL] PbCO₃ A yellow or white member of the aragonite group occurring in orthorhombic crystals; produced by the action of carbon dioxide on lead ore. { sə'rəs,īt }
- cervantite** [MINERAL] Sb₂O₄ A white or yellow secondary mineral crystallizing in the orthorhombic system and formed by oxidation of antimony sulfide. { sə'r·van,tīt }
- cesarolite** [MINERAL] H₂PbMn₃O₈ A steel-gray mineral consisting of a hydrous lead manganate occurring in spongy masses. { ,chāz·ə'rō,līt }
- ceylonite** [MINERAL] A dark-green, brown, or black iron-bearing variety of spinel. Also known as candite; pleonaste; zeylanite. { sə'lā,nīt }
- C figure** See C index. { 'sē ,fig·yər }
- chabazite** [MINERAL] CaAl₂Si₄O₁₂·6H₂O A white to yellow or red member of the zeolite group occurring in glassy rhombohedral crystals; hardness is 4–5 on Mohs scale, and specific gravity is 2.08–2.16. { 'kab·ə,zīt }

chalybite

- Chaetetidae** [PALEON] A family of Paleozoic corals of the order Tabulata. { ,kē'tē-də,dē }
- chain** [GEOL] A series of interconnected or related natural features, such as lakes, islands, or seamounts, arranged in a longitudinal sequence. { chān }
- chalazoidite** *See* mud ball. { 'kal·ə,zoi,dīt }
- chalcantite** [MINERAL] $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$ A blue to bluish-green mineral which occurs in triclinic crystals or in massive fibrous veins or stalactites. Also known as bluestone; blue vitriol. { kal'kan,thīt }
- chalcedony** [MINERAL] A cryptocrystalline variety of quartz; occurs as crusts with a rounded, mammillary, or botryoidal surface and as a major constituent of nodular and bedded cherts; varieties include carnelian and bloodstone. { kal'sed·ən·ē }
- chalcedonyx** [MINERAL] A mineral consisting of onyx with alternating gray and white bands; valued as a semiprecious stone. { ,kal·sə'dän·iks }
- chalcoalumite** [MINERAL] $\text{CuAl}_4(\text{SO}_4)(\text{OH})_{12} \cdot 3\text{H}_2\text{O}$ A turquoise-green to pale-blue mineral consisting of a hydrous basic sulfate of copper and aluminum. { ,kal·kō'al·ə,mīt }
- chalcocite** [MINERAL] Cu_2S A fine-grained, massive mineral with a metallic luster which tarnishes to dull black on exposure; crystallizes in the orthorhombic system, the crystals being rare and small usually with hexagonal outline as a result of twinning; hardness is 2.5–3 on Mohs scale, and specific gravity is 5.5–5.8. Also known as beta chalcocite; chalcosine; copper glance; redruthite; vitreous copper. { 'kal·kə,sīt }
- chalcocyanite** [MINERAL] CuSO_4 A white mineral consisting of copper sulfate. Also known as hydrocyanite. { ,kal·kə'st·ə,nīt }
- chalcocite** *See* torbernite. { 'kal·kə,līt }
- chalcomenite** [MINERAL] $\text{CuSeO}_3 \cdot 2\text{H}_2\text{O}$ A blue mineral consisting of copper selenite occurring in crystals. { ,kal·kə'mē,nīt }
- chalcophanite** [MINERAL] $(\text{Zn},\text{Mn},\text{Fe})\text{Mn}_2\text{O}_5 \cdot n\text{H}_2\text{O}$ A black mineral with metallic luster consisting of hydrous manganese and zinc oxide. { kal'käf·ə,nīt }
- chalcophile** [GEOL] Having an affinity for sulfur and therefore massing in greatest concentration in the sulfide phase of a molten mass. { 'kal·kə,fil }
- chalcophyllite** [MINERAL] $\text{Cu}_{18}\text{Al}_2(\text{AsO}_4)_3(\text{OH})_{27} \cdot 33\text{H}_2\text{O}$ A green mineral consisting of basic arsenate and sulfate of copper and aluminum occurring in tabular crystals or foliated masses. Also known as copper mica. { ,kal·kō'fi,līt }
- chalcopyrite** [MINERAL] CuFeS_2 A major ore mineral of copper; crystallizes in the tetragonal crystal system, but crystals are generally small with diphenoidal faces resembling the tetrahedron; usually massive with a metallic luster and brass-yellow color; hardness is 3.5–4 on Mohs scale, and specific gravity is 4.1–4.3. Also known as copper pyrite; yellow pyrite. { ,kal·kō'pī,rīt }
- chalcopyrrhite** [MINERAL] CuFe_4S_5 A sulfide mineral occurring in meteorites. { ,kal·kō'pī·rə,nīt }
- chalcosiderite** [MINERAL] $\text{Cu}(\text{Fe},\text{Al})_6(\text{PO}_4)_4(\text{OH})_8 \cdot 4\text{H}_2\text{O}$ A green mineral, isomorphous with turquoise, consisting of a hydrous basic phosphate of copper, iron, and aluminum. { ,kal·kō'sīd·ə,rīt }
- chalcosine** *See* chalcocite. { 'kal·kə,sēn }
- chalcostibite** [MINERAL] CuSbS_2 A lead-gray mineral consisting of antimony copper sulfide. { ,kal·kō'sti,bīt }
- chalcotrichite** [MINERAL] A capillary variety of cuprite occurring in long needlelike crystals. Also known as hair copper; plush copper ore. { ,kal·kō'tri,kīt }
- Chalicotheriidae** [PALEON] A family of extinct perissodactyl mammals in the superfamily Chalicotherioidea. { ,kal·ə,kō'thə'rī·ə,dē }
- Chalicotherioidea** [PALEON] A superfamily of extinct, specialized perissodactyls having claws rather than hooves. { ,kal·ə,kō,thi·rē'oid·ē·ə }
- chalk** [PETR] A variety of limestone formed from pelagic organisms; it is very fine-grained, porous, and friable; white or very light-colored, it consists almost entirely of calcite. { chók }
- chalmersite** *See* cubanite. { 'chä·mər,zīt }
- chalybite** *See* siderite. { 'kal·ə,bīt }

chamosite

- chamosite** [MINERAL] A greenish-gray or black mineral consisting of silicate belonging to the chlorite group and having monoclinic crystals; found in many oolitic iron ores. { 'sham·ə,zɪt }
- Champlainian** [GEOL] Middle Ordovician geologic time. { ,sham'plān-ē-ən }
- champsosaur** [PALEON] A large crocodile-like reptile that lived in freshwater ponds and swamps 55–65 million years ago. { 'champ·sə,sɔr }
- Chandler motion** See polar wandering. { 'chand·lər ,mō·shən }
- channel fill** [GEOL] Accumulations of sand and detritus in a stream channel where the transporting capacity of the water is insufficient to remove the material as rapidly as it is delivered. { 'chan·əl ,fil }
- channel frequency** See stream frequency. { 'chan·əl ,frē·kwən·sē }
- channel gradient ratio** See stream gradient ratio. { 'chan·əl 'grād·ē-ənt ,rā·shō }
- channel-lag deposit** [GEOL] Coarse residual material left as accumulations in the channel in the normal processes of the stream. { 'chan·əl ,lag di,pāz·ət }
- channel morphology** See river morphology. { 'chan·əl ,mór'fāl-ə-jē }
- channel-mouth bar** [GEOL] A bar formed where moving water enters a body of still water, due to decreased velocity. { 'chan·əl ,maüth ,bär }
- channel roughness** [GEOL] A measure of the resistivity offered by the material constituting stream channel margins to the flow of water. { 'chan·əl ,rəf·nəs }
- channel sand** [GEOL] A sandstone or sand deposited in a stream bed or other channel eroded into the underlying bed. { 'chan·əl ,sand }
- channel splay** See floodplain splay. { 'chan·əl ,splä }
- channel width** [GEOL] The distance across a stream or channel as measured from bank to bank near bankful stage. { 'chan·əl ,width }
- chapmanite** [MINERAL] $\text{Fe}_2\text{Sb}(\text{SiO}_4)_2(\text{OH})$ A mineral consisting of a silicate of iron and antimony. { 'chap·mə,nīt }
- Charmouthian** [GEOL] Middle Lower Jurassic geologic time. { chär'maüth-ē-ən }
- charnockite** [PETR] Any of various faintly foliated, nearly massive varieties of quartzofeldspathic rocks containing hypersthene. { 'chär·nə,kīt }
- charnockite series** [GEOL] A series of plutonic rocks compositionally similar to the granitic rock series but characterized by the presence of orthopyroxene. { 'chär·nə,kīt ,sir·ēz }
- chassignite** [GEOL] An achondritic stony meteorite composed chiefly of olivine (95); resembles dunite. { 'shas·ən,yīt }
- chatoyant** [MINERAL] Of a mineral or gemstone, having a changeable luster or color marked by a band of light, resembling the eye of a cat in this respect. { shə'toi·ənt }
- chatter mark** [GEOL] A scar on the surface of bedrock made by the abrasive action of drift carried at the base of a glacier. { 'chad·ər ,märk }
- Chattian** [GEOL] Upper Oligocene geologic time. Also known as Casselian. { 'chad·ē-ən }
- Chautauquan** [GEOL] Upper Devonian geologic time, below Bradfordian. { shə'täk·wən }
- Chazyan** [GEOL] Middle Ordovician geologic time. { 'chaz·ē-ən }
- Cheiracanthidae** [PALEON] A family of extinct acanthodian fishes in the order Acanthodiformes. { ,kī·rə'kan·thə,dē }
- chemical denudation** [GEOL] Wasting of the land surface by water transport of soluble materials into the sea. { 'kem·i·kəl ,dē·nü'dā·shən }
- chemical fossils** See biomarkers. { 'kem·i·kəl 'fäs·əlz }
- chemical precipitates** [GEOL] A sediment formed from precipitated materials as distinguished from detrital particles that have been transported and deposited. { 'kem·i·kəl pri'sip·ə,tāts }
- chemical remanent magnetization** [GEOPHYS] Permanent magnetization of rocks acquired when a magnetic material, such as hematite, is grown at low temperature through the oxidation of some other iron mineral, such as magnetite or goethite; the growing mineral becomes magnetized in the direction of any field which is present. Abbreviated CRM. { 'kem·i·kəl 'rem·ə·nənt ,mag·nət·ə'zā·shən }

chilled contact

- chemical reservoir** [GEOL] An underground oil or gas trap formed in limestones or dolomites deposited in quiescent geologic environments. { 'kem·i·kəl 'rez·əv,wär }
- chemical rock** [PETR] A type of sedimentary rock comprising material deposited directly by precipitation from solution or colloidal suspension and frequently possessing a crystalline texture. { 'kem·i·kəl 'ræk }
- chemical weathering** [GEOCHEM] A weathering process whereby rocks and minerals are transformed into new, fairly stable chemical combinations by such chemical reactions as hydrolysis, oxidation, ion exchange, and solution. Also known as decay; decomposition. { 'kem·i·kəl 'weθ·ə·rɪŋ }
- chemostratigraphy** [GEOCHEM] The correlation and dating of marine sediments and sedimentary rocks through the use of trace-element concentrations, molecular fossils, and certain isotopic ratios that can be measured on components of the rocks. { ,kē·mō·strə'tɪg·rə·fē }
- Chemungian** [GEOL] Middle Upper Devonian geologic time, below Cassodagan. { ke'mən·jē·ən }
- chenevixite** [MINERAL] $\text{Cu}_2\text{Fe}_2(\text{AsO}_4)_2(\text{OH})_4 \cdot \text{H}_2\text{O}$ A dark-green to greenish-yellow mineral consisting of a hydrous copper iron arsenate occurring in masses. { 'ʃen·ə'vɪk,sɪt }
- chenier** [GEOL] A continuous ridge of beach material built upon swampy deposits; often supports trees, such as pines or evergreen oaks. { 'ʃen·yə }
- Chernozem** [GEOL] One of the major groups of zonal soils, developed typically in temperate to cool, subhumid climate; the Chernozem soils in modern classification include Borolls, Ustolls, Udolls, and Xerolls. Also spelled Tchernozem. { 'ʃɛr·nəz'yóm }
- chert** [PETR] A hard, dense, sedimentary rock composed of fine-grained silica, characterized by a semivitreous to dull luster and a splintery to conchoidal fracture; commonly gray, black, reddish brown, or green. Also known as hornstone; phthanite. { ʃɛrt }
- chertification** [GEOL] A process of replacement by silica in limestone in the form of fine-grained quartz or chalcedony. { ,ʃɛrd·ə·fə'ka·ʃən }
- chessylite** See azurite. { 'ʃes·ə,lɪt }
- Chesterian** [GEOL] Upper Mississippian geologic time. { che'stir·ē·ən }
- chestnut coal** [GEOL] Anthracite coal small enough to pass through a round mesh of 1 $\frac{3}{8}$ inches (3.1 centimeters) but too large to pass through a round mesh of 1 $\frac{13}{16}$ inches (1.7 centimeters). { 'ʃes,nət ,kəl }
- Chestnut soil** [GEOL] One of the major groups of zonal soils, developed typically in temperate to cool, subhumid to semiarid climate; the Chestnut soils in modern classification include Ustolls, Borolls, and Xerolls. { 'ʃes,nət 'sɔɪl }
- chevkinite** [MINERAL] $(\text{Fe,Ca})(\text{Ce,L a})_2(\text{Si,Ti})_2\text{O}_8$ A mineral consisting of silicotitanate of iron, calcium, and rare-earth elements. { 'ʃef·kə,nɪt }
- chevron fold** [GEOL] An accordionlike fold with limbs of equal length. { 'ʃev·rən ,fɔld }
- chiastolite** [MINERAL] A variety of andalusite whose crystals have a cross-shaped appearance in cross section due to the arrangement of carbonaceous impurities. Also known as macle. { kɪ'as·tə,lɪt }
- Chideruan** [GEOL] Uppermost Permian geologic time. { ʃi'der·ə·wən }
- childrenite** [MINERAL] $(\text{Fe,Mn})\text{AlPO}_4(\text{OH})_2 \cdot \text{H}_2\text{O}$ A pale-yellowish to dark-brown orthorhombic mineral consisting of a hydrous basic iron aluminum phosphate occurring as translucent crystals; it is isomorphous with eosphorite; hardness is 4.5–5 on Mohs scale, and specific gravity is 3.18–3.24. { 'ʃil·drə,nɪt }
- Chile niter** See Chile saltpeter. { 'ʃil·ē 'nɪd·ər }
- Chile saltpeter** [MINERAL] Also known as Chile niter. **1.** Soda niter found in large quantities in caliche in arid regions of northern Chile. **2.** Deposits of sodium nitrate. { 'ʃil·ē ,sɔlt'pəd·ər }
- chilled contact** [PETR] The finer-grained portion of an igneous rock found near its contact with older rock. { 'ʃild 'kən,təkt }

Chilobolbinidae

- Chilobolbinidae** [PALEON] A family of extinct ostracods in the superfamily Hollinacea showing dimorphism of the velar structure. { ,kɪ·lɔ̄·bəl' bɪn·ə·dē }
- chimney** [GEOL] See pipe; spouting horn. { 'chim,nē }
- chimney rock** [GEOL] **1.** A chimney-shaped remnant of a rock cliff whose sides have been cut into and carried away by waves and the gravel beach. **2.** A rock column rising above its surroundings. { 'chim,nē ,rāk }
- chiolite** [MINERAL] $\text{Na}_5\text{Al}_3\text{F}_{14}$ A snow white mineral resembling cryolite. Also known as arksutite. { 'kɪ·ə,lɪt }
- Chirodidae** [PALEON] A family of extinct chondrosteian fishes in the suborder Platyso-moidei. { ,kɪ'rād·ə·dē }
- Chirognathidae** [PALEON] A family of conodonts in the suborder Neurodontiformes. { ,kɪ·rəg'nəth·ə·dē }
- Chitinozoa** [PALEON] An extinct group of unicellular microfossils of the kingdom Proto-tista. { |kɪt·ən·ə'zō·ə }
- chiviatite** [MINERAL] $\text{Pb}_2\text{Bi}_6\text{S}_{11}$ A lead-gray mineral consisting of a lead bismuth sulfide occurring in foliated masses. { ,chiv·ē'ā,lɪt }
- chloanthite** [MINERAL] NiAs_{2-3} A white or gray mineral with metallic luster forming crystals in the isometric system; it is isomorphous with nickel-skutterudite. { klō'an,thɪt }
- chloraluminite** [MINERAL] $\text{AlCl}_3 \cdot 6\text{H}_2\text{O}$ A mineral consisting of hydrous aluminum chlor-ide. { |klōr·ə'lüm·ə,nɪt }
- chlorapatite** [MINERAL] $\text{Ca}_5(\text{PO}_4)_3\text{Cl}$ An apatite mineral containing chlorine. { klōr'ap·ə,tɪt }
- chlorargyrite** See cerargyrite. { klōr'ar·jə,rɪt }
- chlorastrolite** [MINERAL] A mottled, green variety of pumpellyite occurring as grains or small nodules of a stellate structure in basic igneous rock in the Lake Superior region; used as a semiprecious stone. { klōr'as·trə,lɪt }
- chlorite** [MINERAL] Any of a group of greenish, platyhydrous monoclinic silicates of aluminum, ferrous iron, and magnesium which are closely associated with and resemble the micas. { 'klōr,ɪt }
- chlorite schist** [PETR] A metamorphic rock whose composition is dominated by mem-bers of the chlorite group. { 'klōr,ɪt ,shɪst }
- chlorite-sericite schist** [PETR] A low-grade, fine-grained variety of mica schist without biotite. { 'klōr,ɪt 'ser·ə,sɪt ,shɪst }
- chloritoid** [MINERAL] $\text{FeAl}_4\text{Si}_2\text{O}_{10}(\text{OH})_4$ A micaceous mineral related to the brittle mica group; has both monoclinic and triclinic modifications, a gray to green color, and weakly pleochroic crystals. { 'klōr·ə,tɔɪd }
- chloritoid schist** [PETR] A variety of mica schist whose composition is dominated by chloritoid. { 'klōr·ə,tɔɪd ,shɪst }
- chlormanganokalite** [MINERAL] K_4MnCl_6 A wine yellow to lemon or canary yellow, hex-agonal mineral consisting of potassium and manganese chloride; occurs as rhombo-hedrons. { 'klōr'maŋ·gə,nō'kāl,lɪt }
- chlorocalcite** [MINERAL] KCaCl_3 A white mineral consisting of a chloride of potassium and calcium. Also known as hydrophilite. { |klōr·ō'kal,sɪt }
- chloromagnesite** [MINERAL] MgCl_2 A mineral consisting of anhydrous magnesium chlor-ide, found on the volcano Vesuvius. { |klōr·ō'mag·nə,sɪt }
- chloropal** See nontronite. { 'klōr·ə,pal }
- chlorophoenicite** [MINERAL] $(\text{Mn},\text{An})_5(\text{AsO}_4)(\text{OH})_7$ Gray-green monoclinic mineral con-sisting of a basic arsenate of manganese and zinc occurring in crystals. { ,klōr·ō'fēn·ə,sɪt }
- chlorothionite** [MINERAL] $\text{K}_2\text{Cu}(\text{SO}_4)\text{Cl}_2$ Bright-blue secondary mineral consisting of potassium copper sulfate chloride, found on the volcano Vesuvius. { ,klōr·ə'thɪ·ə,nɪt }
- chloroxiphite** [MINERAL] $\text{Pb}_3\text{CuCl}_2(\text{OH})_2\text{O}_2$ A dull-olive or pistachio-green mineral con-sisting of a basic chloride of lead and copper, found in the Mendip Hills of England. { klə'rək·sə,fɪt }

Chrysochloridae

- choanate fish** [PALEON] Any of the lobefins composing the subclass Crossopterygii. { 'kō-ə,nāt ,fish }
- Choeropotamidae** [PALEON] A family of extinct palaeodont artiodactyls in the superfamily Entelodontoidae. { ,kir-ə-pə'tām-ə,dē }
- chondrite** [GEOLOGY] A stony meteorite containing chondrules. { 'kän,drit }
- chondrodite** [MINERAL] $Mg_5(SiO_4)_2(F_2OH)_2$ A monoclinic mineral of the humite group; has a resinous luster, is yellow-red in color, and occurs in contact-metamorphosed dolomites. { 'kän-drō,dīt }
- Chondrostei** [PALEON] The most archaic infraclass of the subclass Actinopterygii, or rayfin fishes. { kä'n'dräs-tē,ī }
- Chondrosteidae** [PALEON] A family of extinct actinopterygian fishes in the order Acipenseriformes. { ,kä'n-drə'stē-ə,dē }
- chondrule** [GEOLOGY] A spherically shaped body consisting chiefly of pyroxene or olivine minerals embedded in the matrix of certain stony meteorites. { 'kän,drül }
- Chonetidina** [PALEON] A suborder of extinct articulate brachiopods in the order Strophomenida. { ,kä'n-ə-tə-dī-nə }
- chorismite** [PETROLOGY] A mixed rock whose fabric is macropolyschematic and which consists of petrologically dissimilar materials of varied origins. { kə'riz,mīt }
- Choristodera** [PALEON] A suborder of extinct reptiles of the order Eosuchia composed of a single genus, *Champsosaurus*. { ,kōr-ə'städ-ə-rə }
- Chorizon** [GEOLOGY] The portion of the parent material in soils which has been penetrated with roots. { 'sē hə'riz-ən }
- christophite** See marmatite. { 'kris-tə,fit }
- chromate** [MINERAL] A mineral characterized by the cation CrO_4^{2-} . { 'krō,mät }
- chromatic mineral** [MINERAL] A mineral with color. { krō'mad-ik ,min-rəl }
- chrome diopside** [MINERAL] A bright green variety of diopside containing a small amount of Cr_2O_3 . { 'krōm dī'əp,sīd }
- chrome iron ore** See chromite. { ,krōm 't-ərŋ ,ōr }
- chrome spinel** See picotite. { ,krōm spə'nel }
- chromite** [MINERAL] $FeCr_2O_4$ A mineral of the spinel group; crystals and pure form are rare, and it usually is massive; the only important ore mineral of chromium. Also known as chrome iron ore. { 'krō,mīt }
- chromocratic** See melanocratic. { ,krō-mə'krad-ik }
- chron** [GEOLOGY] **1.** The time unit equivalent to the stratigraphic unit, subseries, and geologic name of a division of geologic time. **2.** The geochronological equivalent of chronozone. { krän }
- chronocline** [PALEON] A cline shown by successive morphological changes in the members of a related group, such as a species, in successive fossiliferous strata. { 'krän-ō,klīn }
- chronolith** See time-stratigraphic unit. { 'krän-ə,lith }
- chronolithologic unit** See time-stratigraphic unit. { ,krän-ə'lith-ə'lāj-ik 'yü-nət }
- chronostratic unit** See time-stratigraphic unit. { ,krän-ə'strad-ik 'yü-nət }
- chronostratigraphic unit** See time-stratigraphic unit. { ,krän-ə'strad-ə'graf-ik 'yü-nət }
- chronostratigraphic zone** See chronozone. { ,krän-ə'strad-ə'graf-ik 'zōn }
- chronostratigraphy** [GEOLOGY] A division of stratigraphy that uses age determination and time sequence of rock strata to develop an interpretation of the earth's geologic history. { ,krän-ə'strə'tig-rə-fē }
- chronozone** [GEOLOGY] **1.** A formal time-stratigraphic unit used to specify strata equivalent in time span to a zone in another type of classification, for example, a biostratigraphic zone. Also known as chronostratigraphic zone. **2.** The smallest subdivision of chronostratigraphic units, below stage, composed of rocks formed during a chron of geologic time. { krän-ə,zōn }
- chrysoberyl** [MINERAL] $BeAl_2O_4$ A pale green, yellow, or brown mineral that crystallizes in the orthorhombic system and is found most commonly in pegmatite dikes; used as a gem. Also known as chrysopal; gold beryl. { 'kris-ə,ber-əl }
- Chrysochloridae** [PALEON] The golden moles, a family of extinct lipotyphlan mammals in the order Insectivora. { ,kris-ə'klōr-ə,dē }

chrysocolla

- chrysocolla** [MINERAL] $\text{CuSiO}_3 \cdot 2\text{H}_2\text{O}$ A silicate mineral ordinarily occurring in impure cryptocrystalline crusts and masses with conchoidal fracture; a minor ore of copper; luster is vitreous, and color is normally emerald green to greenish-blue. { ,kris·ə·käl·ə }
- chrysolite** [MINERAL] **1.** A gem characterized by light-yellowish-green hues, especially the gem varieties of olivine, but also including beryl, topaz, and spinel. **2.** A variety of olivine having a magnesium to magnesium-iron ratio of 0.90–0.70. { 'kris·ə,lit }
- chrysopal** See chrysoberyl. { kri'sō·pəl }
- chrysoprase** [MINERAL] An apple-green variety of chalcedony that contains nickel; used as a gem. Also known as green chalcedony. { 'kris·ə,prāz }
- chrysotile** [MINERAL] $\text{Mg}_3\text{Si}_2\text{O}_5(\text{OH})_4$ A fibrous form of serpentine that constitutes one type of asbestos. { 'kris·ō,tīl }
- Chubb** [GEOL] A meteorite crater in Ungava, Quebec, Canada. { chəb }
- churchite** See weinschenkite. { 'chər,čit }
- churnhole** See pothole. { 'chərn ,hōl }
- ciminite** [PETR] An extrusive rock consisting essentially of olivine with sanidine and pyroxene and basic plagioclase. { 'chīm·ə,nīt }
- Cimmeria** [PALEON] In the Jurassic, a narrow continent that extended east-west at the southern margin of Eurasia. The name comes from the Crimean peninsula of Russia, where there is well-displayed evidence of an intra-Jurassic orogenic disturbance, indicative of continental collision. { sə'mer·ē·ə }
- cimolite** [MINERAL] $2\text{Al}_2\text{O}_3 \cdot 9\text{SiO}_2 \cdot 6\text{H}_2\text{O}$ A white, grayish, or reddish mineral consisting of hydrous aluminum silicate occurring in soft, claylike masses. { 'sim·ə,līt }
- Cincinnatian** [GEOL] Upper Ordovician geologic time. { sin·sə'nad·ē·ən }
- cinder** [GEOL] Fine-grained pyroclastic material ranging in diameter from 0.16 to 1.28 inch (4 to 32 millimeters). { 'sin·dər }
- cinder coal** See natural coke. { 'sin·dər ,kōl }
- cinder cone** [GEOL] A conical elevation formed by the accumulation of volcanic debris around a vent. { 'sin·dər ,kōn }
- C index** [GEOPHYS] A subjectively obtained daily index of geomagnetic activity, in which each day's record is evaluated on the basis of 0 for quiet, 1 for moderately disturbed, and 2 for very disturbed. Also known as C figure; magnetic character figure. { 'sē ,in ,deks }
- cinnabar** [MINERAL] HgS A vermilion-red mineral that crystallizes in the hexagonal system, although crystals are rare, and commonly occurs in fine, granular, massive form; the only important ore of mercury. Also known as cinnabarite; vermilion. { 'sin·ə,bär }
- cinnabarite** See cinnabar. { ,sin·ə'bä,rīt }
- CIPW classification** [PETR] A designation for the Norm system of classifying igneous rocks; from the initial letters of the names of those who devised it: Cross, Iddings, Pirsson, and Washington. { ,sē'fipē'dəb·əl·yü ,klas·ə·fə'kə·shən }
- circle of illumination** [GEOL] The edge of the sunlit hemisphere, which forms a circular boundary separating the earth into a light half and a dark half. { 'sər·kəl əv ə,lü·mə'nä·shən }
- circular coal** See eye coal. { 'sər·kyə·lär ,kōl }
- circum-Pacific province** See Pacific suite. { ,sər·kəm·pə'sif·ik 'prä·vəns }
- cirque** [GEOL] A steep elliptic to elongated enclave high on mountains in calcareous districts, usually forming the blunt end of a valley. Also known as corrie; cwm. { sər·k }
- cistern** [GEOL] A hollow that holds water. { 'sis·tərn }
- citrine** [MINERAL] An important variety of crystalline quartz, yellow to brown in color and transparent. Also known as Bohemian topaz; false topaz; quartz topaz; topaz quartz; yellow quartz. { 'si,tren }
- cladodont** [PALEON] Pertaining to sharks of the most primitive evolutionary level. { 'klad·ə,dənt }
- Cladoseiachii** [PALEON] An order of extinct elasmobranch fishes including the oldest and most primitive of sharks. { ,klad·ō·sə'lāk·ē,ī }

clay

- Claibornian** [GEOL] Middle Eocene geologic time. { ,kler'börn·ē·ən }
- clairite** *See* enargite. { 'kle,rīt }
- clan** [PETR] A category of igneous rocks defined in terms of similarities in mineralogical or chemical composition. { klan }
- clarain** [GEOL] A coal lithotype appearing as stratifications parallel to the bedding plane and usually having a silky luster and scattered or diffuse reflection. Also known as clarite. { 'kla,rān }
- Clarendonian** [GEOL] Lower Pliocene or upper Miocene geologic time. { ,kla·rən'dōn·ē·ən }
- clarinite** [MINERAL] A heterogeneous, generally translucent material making up the major micropetrological ingredient of clarain. { 'klar·ə,nīt }
- clarite** *See* clarain. { 'kla,rīt }
- clarke** [GEOCHEM] A unit of the average abundance of an element in the earth's crust, expressed as a percentage. Also known as crustal abundance. { klärk }
- Clarkecarididae** [PALEON] A family of extinct crustaceans in the order Anaspidacea. { ,klär·kə'rid·ə,dē }
- clarkeite** [MINERAL] (Na,Ca,Pb)₂U₂(O,OH)₇ A dark reddish-brown or dark brown mineral consisting of a hydrous or hydrated uranium oxide. { 'klär,kīt }
- clarodurain** [GEOL] A transitional lithotype of coal composed of vitrinite and other macerals, principally micrinite and exinite. { {kla·rō'dü,rān }
- clarofusain** [GEOL] A transitional lithotype of coal composed of fusinite and vitrinite and other macerals. { {kla·rō'fyü,zān }
- clarovitrain** [GEOL] A transitional lithotype of coal rock composed primarily of the maceral vitrinite, with lesser amounts of other macerals. { {kla·rō'vi,trān }
- clast** [GEOL] An individual grain, fragment, or constituent of detrital sediment or sedimentary rock produced by physical breakdown of a larger mass. { klast }
- clastation** *See* weathering. { kla'stā·shən }
- clastic** [GEOL] Rock or sediment composed of clasts which have been transported from their place of origin, as sandstone and shale. { 'klas·tik }
- clastic dike** [GEOL] A tabular-shaped sedimentary dike composed of clastic material and transecting the bedding of a sedimentary formation; represents invasion by extraneous material along a crack of the containing formation. { 'klas·tik 'dīk }
- clastic pipe** [GEOL] A cylindrical body of clastic material having an irregular columnar or pillarlike shape, standing approximately vertically through enclosing formations (usually limestone), and measuring a few centimeters to 50 meters (165 feet) in diameter and 1 to 60 meters (3 to 200 feet) in height. { 'klas·tik 'pīp }
- clastic ratio** [GEOL] The ratio of the percentage of clastic rocks to that of nonclastic rocks in a geologic section. Also known as detrital ratio. { 'klas·tik 'rä·shō }
- clastic reservoir** [GEOL] An underground oil or gas trap formed in clastic limestone. { 'klas·tik 'rez·əv,wär }
- clastic sediment** [GEOL] Deposits of clastic materials transported by mechanical agents. Also known as mechanical sediment. { 'klas·tik 'sed·ə·mənt }
- clastic wedge** [GEOL] The sediments of the exogeosyncline, derived from the tectonic landmasses of the adjoining orthogeosyncline. { 'klas·tik 'wej }
- clathrate** [GEOCHEM] *See* gas hydrate. [PETR] Pertaining to a condition, chiefly in leucite rock, in which clear leucite crystals are surrounded by tangential leucite crystals to give the rock an appearance of a net or a section of sponge. Also known as enclosure compound. { 'klath,rät }
- clathrate hydrate** *See* gas hydrate. { {klath,rät 'hī,drät }
- claudeite** [MINERAL] As₂O₃ A mineral containing arsenic that is dimorphous with arsenolite; crystallizes in the monoclinic system. { 'klód·ə,tīt }
- clausthalite** [MINERAL] PbSe A mineral consisting of lead selenide and resembling galena; specific gravity is 7.6–8.8. { 'kläus·tə,līt }
- Clavatoraceae** [PALEOBOT] A group of middle Mesozoic algae belonging to the Charophyta. { ,klav·əd·ə'rās·ē,ē }
- clay** [GEOL] **1.** A natural, earthy, fine-grained material which develops plasticity when mixed with a limited amount of water; composed primarily of silica, alumina, and

Clay Belt

- water, often with iron, alkalis, and alkaline earths. **2.** The fraction of an earthy material containing the smallest particles, that is, finer than 3 micrometers. { klā }
- Clay Belt** [GEOL] A lowland area bordering on the western and southern portions of Hudson and James bays in Canada, composed of clays and silts recently deposited in large glacial lakes during the withdrawal of the continental glaciers. { 'klā ,bɛlt }
- clay gall** [GEOL] A dry, curled clay shaving derived from dried, cracked mud and embedded and flattened in a sand stratum. { 'klā ,gɔl }
- clay ironstone** [PETR] **1.** A clayey rock containing large quantities of iron oxide, usually limonite. **2.** A clayey-looking stone occurring among carboniferous and other rocks; contains 20–30% iron. { 'klā 't-ɔrn,stɔn }
- clay loam** [GEOL] Soil containing 27–40% clay, 20–45% sand, and the remaining portion silt. { |klā 'lɔm }
- clay marl** [GEOL] A chalky clay, whitish with a smooth texture. { |klā 'mɔrl }
- clay mineral** [MINERAL] One of a group of finely crystalline, hydrous silicates with a two-or three-layer crystal structure; the major components of clay materials; the most common minerals belong to the kaolinite, montmorillonite, attapulgite, and illite groups. { |klā 'mɪn-rəl }
- claypan** [GEOL] A stratum of compact, stiff, relatively impervious noncemented clay; can be worked into a soft, plastic mass if immersed in water. { 'klā ,pən }
- clay plug** [GEOL] Sediment, with a great deal of organic muck, deposited in a cutoff river meander. { |klā 'plɔg }
- clay shale** [GEOL] **1.** Shale composed wholly or chiefly of clayey material which becomes clay again on weathering. **2.** Consolidated sediment composed of up to 10% sand and having a silt to clay ratio of less than 1:2. { |klā 'ʃʃəl }
- clay soil** [GEOL] A fine-grained inorganic soil which forms hard lumps when dry and becomes sticky when wet. { |klā 'sɔɪl }
- claystone** [GEOL] Indurated clay, consisting predominantly of fine material of which a major proportion is clay mineral. { 'klā ,stɔn }
- clay vein** [GEOL] A body of clay which is similar to an ore vein in form and fills a crevice in a coal seam. Also known as dirt slip. { 'klā ,vān }
- cleat** [GEOL] Vertical breakage planes found in coal. Also spelled cleet. { klɛt }
- cleat spar** See ankerite. { 'klɛt ,spɔr }
- cleavage** [GEOL] Splitting, or the tendency to split, along parallel, closely positioned planes in rock. { 'klɛv-ij }
- cleavage banding** [GEOL] A compositional banding, usually formed from incompetent material such as argillaceous rocks, that is parallel to the cleavage rather than the bedding. { 'klɛv-ij ,bænd-ɪŋ }
- cleavelandite** [MINERAL] A white, lamellar variety of albite that is almost pure NaAl-Si₃O₈ and has a tabular habit, with individuals often showing mosaic developments and tending to occur in fan-shaped aggregates. { 'klɛv-lən,dɪt }
- cleet** See cleat. { klɛt }
- clinchite** [MINERAL] A group of brownish, colloidal aluminum hydroxides that constitutes most bauxite. { 'klɪ-ɔ,kɪt }
- cliff of displacement** See fault scarp. { 'klɪf əv dɪs'plā-smənt }
- Cliftonian** [GEOL] Middle Middle Silurian geologic time. { klɪf'tɪn-ē-ən }
- Climatiidae** [PALEON] A family of archaic tooth-bearing fishes in the suborder Climatiodi. { ,klɪ-mə'tɪ-ə,dɛ }
- Climatiiformes** [PALEON] An order of extinct fishes in the class Acanthodii having two dorsal fins and large plates on the head and ventral shoulder. { ,klɪ-mə,tɪ-ə'fɔr,mɛz }
- Climatioidi** [PALEON] A suborder of extinct fishes in the order Climatiformes. { ,klɪ-mə,tɪ'ɔɪd-ē,ɪ }
- climatochronology** [GEOL] The absolute age dating of recent geologic events by using the oxygen isotope ratios in ice, shells, and so on. { klɪ'mad-ɔ-krə'nəl-ə-jɛ }
- climbing dune** [GEOL] A dune that develops on the windward side of mountains or hills. { 'klɪm-ɪŋ 'dʌn }
- clinker** [GEOL] Burnt or vitrified stony material, as ejected by a volcano or formed in a furnace. { 'klɪŋ-kɔr }

coalification

- clinoamphibole** [MINERAL] A group of amphiboles which crystallize in the monoclinic system. { 'klī-nō'am-fə,bōl }
- clinochlore** [MINERAL] $(Mg,Fe,Al)_3(Si,Al)_2O_5(OH)_4$ Green mineral of the chlorite group, occurring in monoclinic crystals, in folia or scales, or massive. { 'klī-nə,klōr }
- clinoclase** [MINERAL] $Cu_3(AsO_4)(OH)_3$ A dark-green mineral consisting of basic copper arsenate occurring in translucent prismatic crystals or massive. Also known as clinoclasite. { 'klī-nə,klās }
- clinoclasite** See clinoclase. { 'klī-nə,klā,sīt }
- clinoenstatite** [MINERAL] $Mg_2(Si_2O_6)$ A monoclinic pyroxene consisting principally of magnesium silicate; occurs frequently in stony meteorites, but is rare in terrestrial environments. { 'klī-nō'enz-tə,tīt }
- clinoferrrosilite** [MINERAL] $Fe_2(Si_2O_6)$ A monoclinic pyroxene consisting of iron silicate. { 'klī-nō,fe-rō'st,īt }
- clinoform** [GEOL] A subaqueous landform, such as the continental slope of the ocean or the foreset bed of a delta. { 'klī-nə,fōrm }
- clinohedrite** [MINERAL] $CaZnSiO_3(OH)_2$ A colorless, white, or purplish monoclinic mineral consisting of a calcium zinc silicate occurring in crystals; hardness is 5.5 on Mohs scale, and specific gravity is 3.33. { 'klī-nō,hē,drīt }
- clinohumite** [MINERAL] $Mg_9(SiO_4)_4(F,OH)_2$ A monoclinic mineral of the humite group. { 'klī-nō'hyū,mīt }
- clinoptilolite** [MINERAL] $(Na,K,Ca)_{2-3}Al_3(Al,Si)_2Si_{13}O_{36} \cdot 12H_2O$ A zeolite mineral that is considered to be a potassium-rich variety of heulandite. { 'klin-əp'til-ə,īt }
- clinopyroxene** [MINERAL] The general term for any of those pyroxenes that crystallize in the monoclinic system; on occasion, these pyroxenes have large amounts of calcium with or without aluminum and the alkalis. Also known as monopyroxene clinoaugite. { 'klī-nə-pə'rāk,sēn }
- clinozoisite** [MINERAL] $Ca_2Al_3(SiO_4)_3(OH)$ A grayish-white, pink, or green monoclinic mineral of the epidote group. { 'klī-nə'zō-i,sīt }
- clint** [GEOL] A hard or flinty rock, such as a projecting rock or ledge. { klint }
- Clintonian** [GEOL] Lower Middle Silurian geologic time. { klin'tōn-ē-ən }
- clintonite** [MINERAL] $Ca(Mg,Al)_3(Al,Si)O_{10}(OH)_2$ A reddish-brown, copper-red, or yellowish monoclinic mineral of the brittle mica group occurring in crystals or foliated masses. Also known as sebertite; xanthophyllite. { 'kling-tōn,īt }
- closed fold** [GEOL] A fold whose limbs have been compressed until they are parallel, and whose structure contour lines form a closed loop. Also known as tight fold. { 'klōzd 'fōld }
- close-joints cleavage** See slip cleavage. { 'klōs 'jōins 'klē-vij }
- close sand** See tight sand. { 'klōs 'sænd }
- closure** [GEOL] The vertical distance between the highest and lowest point on an anticline which is enclosed by contour lines. { 'klō-zhər }
- cluse** [GEOL] A narrow gorge, trench, or water gap with steep sides that cuts transversely through an otherwise continuous ridge. { klüz }
- clusterite** See botryoid. { 'klə-stə,rīt }
- Coahuilan** [GEOL] A North American provincial series in Lower Cretaceous geologic time, above the Upper Jurassic and below the Comanchean. { kō-ə'wēl-ən }
- coal** [GEOL] The natural, rocklike, brown to black derivative of forest-type plant material, usually accumulated in peat beds and progressively compressed and indurated until it is finally altered into graphite or graphite-like material. { kōl }
- coal ball** [GEOL] A subspherical mass containing mineral matter embedded with plant material, found in coal seams and overlying beds of the late Paleozoic. { 'kōl ,bōl }
- coal bed** [GEOL] A seam or stratum of coal parallel to the rock stratification. Also known as coal rake; coal seam. { 'kōl ,bed }
- coal breccia** [GEOL] Angular fragments of coal within a coal bed. { 'kōl ,brech-ə }
- coal clay** See underclay. { 'kōl ,klā }
- coalification** [GEOL] Formation of coal from plant material by the processes of diagenesis and metamorphism. Also known as bituminization; carbonification; incarbonization; incoation. { ,kōl-ə-fə'kā-shən }

Coal Measures

- Coal Measures** [GEOL] The sequence of rocks typically containing coal of the Upper Carboniferous. { 'kōl ,mez h-ərz }
- coal paleobotany** [PALEOBOT] A branch of the paleobotanical sciences concerned with the origin, composition, mode of occurrence, and significance of fossil plant materials that occur in or are associated with coal seams. { 'kōl ,pā-lē-ō'bāt-ən-ē }
- coal pebbles** [GEOL] Rounded masses of coal occurring in sedimentary rock. { 'kōl ,peb-əlz }
- coal petrology** [GEOL] The science that deals with the origin, history, occurrence, structure, chemical composition, and classification of coal. { 'kōl pə'trāl-ə-jē }
- coal rake** See coal bed. { 'kōl ,rāk }
- coal seam** See coal bed. { 'kōl ,sēm }
- coal split** See split. { 'kōl ,split }
- coarse fragment** [GEOL] A rock or mineral fragment in the soil with an equivalent diameter greater than 0.08 inch (2 millimeters). { 'kōrs 'frag-mənt }
- coarse-grained** [PETR] See phaneritic. { 'kōrs 'gränd }
- coastal berm** See berm. { 'kōs-təl 'bärm }
- coastal dune** [GEOL] A mobile mound of windblown material found along many sea and lake shores. { 'kōs-təl 'dün }
- coastal plain** [GEOL] An extensive, low-relief area that is bounded by the sea on one side and by a high-relief province on the landward side. Its geologic province actually extends beyond the shoreline across the continental shelf; it is linked to the stable part of a continent on the trailing edge of a plate. Typically, it has strata that dip gently and uniformly toward the sea. { 'kōs-təl 'plān }
- coastal sediment** [GEOL] The mineral and organic deposits of deltas, lagoons, and bays, barrier islands and beaches, and the surf zone. { 'kōs-təl 'sed-ə-mənt }
- coast shelf** See submerged coastal plain. { 'kōst ,shelf }
- cobalt bloom** See erythrite. { 'kō,bōlt ,blüm }
- cobalt glance** See cobaltite. { 'kō,bōlt 'glans }
- cobaltite** [MINERAL] CoAsS A silver-white mineral with a metallic luster that crystallizes in the isometric system, resembling crystals of pyrite; it is one of the chief ores of cobalt. Also known as cobalt glance; gray cobalt; white cobalt. { kə'bōl,tīt }
- cobaltocalcite** [MINERAL] A red, cobalt-bearing variety of calcite. { kə'bōl-tō'kal,sīt }
- cobalt ochre** See asbolite; erythrite. { 'kō,bōlt 'ō-kər }
- cobaltomenite** [MINERAL] CoSeO₃·2H₂O A mineral consisting of a hydrous cobalt selenium oxide. { ,kō,bōlt'tā-mə,nīt }
- cobalt pyrites** See linnaeite. { 'kō,bōlt 'pī,rīts }
- cobble** [GEOL] A rock fragment larger than a pebble and smaller than a boulder, having a diameter in the range of 64–256 millimeters (2.5–10.1 inches), somewhat rounded or otherwise modified by abrasion in the course of transport. { 'kəb-əl }
- cobble beach** See shingle beach. { 'kəb-əl ,bēch }
- Coblenzian** [GEOL] Upper Lower Devonian geologic time. { kō'blens-ē-ən }
- coccolith ooze** [GEOL] A fine-grained pelagic sediment containing undissolved sand- or silt-sized particles of coccoliths mixed with amorphous clay-sized material. { 'kək-ə,lith ,üz }
- coccosphere** [PALEOBOT] The fossilized remains of a member of Coccolithophorida. { 'kək-ə,sfir }
- Cocosteomorphi** [PALEON] An aberrant lineage of the joint-necked fishes. { kək'kə-stē-ə'mōr-fē }
- Cochliodontidae** [PALEON] A family of extinct chondrichthian fishes in the order Bradyodonti. { ,kək-lē-ō'dän-tə,dē }
- cocinerite** [MINERAL] Cu₂AgS A silver gray mineral consisting of copper and silver sulfide; occurs in massive form. { ,kō-sə'ne,rīt }
- cockpit karst** See cone karst. { 'kək,pit 'karst }
- Coelacanthidae** [PALEON] A family of extinct lobefin fishes in the order Coelacanthiformes. { ,sē-lə'kan-thə,dē }
- Coelolepida** [PALEON] An order of extinct jawless vertebrates (Agnatha) distinguished

collenia

- by skin set with minute, close-fitting scales of dentine, similar to placoid scales of sharks. { ,sē-lō'lep-ə-da }
- Coelurosauria** [PALEON] A group of small, lightly built saurischian dinosaurs in the suborder Theropoda having long necks and narrow, pointed skulls. { sə,lūr-ə'sōr-ē-ə }
- Coenopteridales** [PALEOBOT] A heterogeneous group of fernlike fossil plants belonging to the Polypodiophyta. { ,sē-nāp,ter-ə'dā-lēz }
- coeruleolactite** [MINERAL] (Ca,Cu)Al₆(PO₄)₄(OH)₈·4–5H₂O A milky-white to sky-blue mineral consisting of an aluminum phosphate. { sə,rül-ē-ō'lak,tīt }
- coesite** [MINERAL] A high-pressure polymorph of SiO₂ formed in nature only under unique physical conditions, requiring pressures of more than 20 kilobars (2 gigapascals); usually found in meteor impact craters. { 'sē,zīt }
- coffinite** [MINERAL] USiO₄ A black silicate important as a uranium ore; found in sandstone deposits and hydrothermal veins in New Mexico, Utah, and Wyoming. { 'kōf-ə,nīt }
- cognate** [GEOL] Pertaining to contemporaneous fractures in a system with regard to time of origin and deformational type. { ,käg,nāt }
- cognate ejecta** [GEOL] Essential or accessory pyroclasts derived from the magmatic materials of a current volcanic eruption. { ,käg,nāt ē'jek-tə }
- cognate inclusion** See autolith. { ,käg,nāt in'klü-zhən }
- cohenite** [MINERAL] (Fe,Ni,Co)₃C A tin-white, isometric mineral found in meteorites. { 'kō-ə,nīt }
- coherent deposit** [GEOL] A consolidated sedimentary deposit that is not easily shattered. { kō'hir-ənt di'pāz-ət }
- cohesionless** [GEOL] Referring to a soil having low shear strength when dry, and low cohesion when wet. Also known as frictional; noncohesive. { kō'hē-zhən-ləs }
- cohesiveness** [GEOL] Property of unconsolidated fine-grained sediments by which the particles stick together by surface forces. { kō'hē-siv-nəs }
- cohesive soil** [GEOL] A sticky soil, such as clay or silt; its shear strength equals about half its unconfined compressive strength. { kō'hē-siv'sóil }
- coke coal** See natural coke. { 'kōk ,kōl }
- cokeite** [GEOL] Naturally occurring coke formed by the action of magma on coal or by natural combustion of coal. { 'kō,kīt }
- coking coal** [GEOL] A very soft bituminous coal suitable for coking. { 'kōk-īŋ ,kōl }
- col** [GEOL] A high, sharp-edged pass occurring in a mountain ridge, usually produced by the headward erosion of opposing cirques. { käl }
- cold glacier** [GEOL] A glacier whose base is at a temperature much below 32°F (0°C) and frozen to the bedrock, resulting in insignificant movement and almost no erosion. { 'kōld 'glā-shər }
- colemanite** [MINERAL] Ca₂B₆O₁₁·5H₂O A colorless or white hydrated borate mineral that crystallizes in the monoclinic system and occurs in massive crystals or as nodules in clay. { 'kōl-mə,nīt }
- Coleodontidae** [PALEON] A family of conodonts in the suborder Neurodontiformes. { ,kō-lē-ō'dän-tə,dē }
- colk** See pothole. { kōk }
- collapse breccia** [GEOL] Angular rock fragments derived from the collapse of rock overlying a hollow space. { kə'laps ,brech-ə }
- collapse caldera** [GEOL] A caldera formed primarily as a result of collapse due to withdrawal of magmatic support. { kə'laps kal'dir-ə }
- collapse sink** [GEOL] A sinkhole resulting from local collapse of a cavern that has been enlarged by solution and erosion. { kə'laps ,sīŋk }
- collapse structure** [GEOL] A structure resulting from rock slides under the influence of gravity. Also known as gravity-collapse structure. { kə'laps ,strək-chər }
- collenia** [PALEOBOT] A convex, slightly arched, or turbinate stromatolite produced by late Precambrian blue-green algae of the genus *Collenia*. { kə'len-ē-ə }

collinite

- collinite** [GEOL] The maceral, of collain consistency, of jellified plant material precipitated from solution and hardened; a variety of euvitrinite. { 'käl·ə,nīt }
- collinsite** [MINERAL] $\text{Ca}_2(\text{Mg,Fe})(\text{PO}_4)_2$ A phosphate mineral occurring in concentric layers in phosphoric nodules; found in meteorites. { 'käl·ən,zīt }
- colloform** [GEOL] Pertaining to the rounded, globular texture of mineral formed by colloidal precipitation. { 'käl·ə,fōrm }
- collophane** [MINERAL] A massive, cryptocrystalline, carbonate-containing variety of apatite and a principal source of phosphates for fertilizers. Also known as collophanite. { 'käl·ə,fān }
- collophanite** See collophane. { kə'lāf·ə,nīt }
- colluvium** [GEOL] Loose, incoherent deposits at the foot of a slope or cliff, brought there principally by gravity. { kə'lū·vē·əm }
- Collyritidae** [PALEON] A family of extinct, small, ovoid, exocyclic Euechinoidea with fascioles or a plastron. { ,käl·ə'rid·ə,dē }
- Coloradoan** [GEOL] Middle Upper Cretaceous geologic time. { ,käl·ə'rad·ə,wən }
- coloradoite** [MINERAL] HgTe A grayish-black, isometric telluride mineral with a metallic luster; specific gravity is 8.6. { ,käl·ə'rad·ə,wīt }
- columbite** [MINERAL] $(\text{Fe,Mn})(\text{Cb,Ta})_2\text{O}_6$ An iron-black mineral with a submetallic luster that crystallizes in the orthorhombic system; the chief ore mineral of niobium (columbium); hardness is 6 on Mohs scale, and specific gravity is 5.4–6.5. Also known as dianite; greenlandite; niobite. { kə'ləm,bīt }
- column** [GEOL] See geologic column; stalacto-stalagmite. { 'käl·əm }
- columnar jointing** [GEOL] Parallel, prismatic columns that are formed as a result of contraction during cooling in basaltic flow and other extrusive and intrusive rocks. Also known as columnar structure; prismatic jointing; prismatic structure. { kə'ləm·nər 'jōint·ɪŋ }
- columnar section** [GEOL] A vertical strip or scale drawing of the strip taken from a given area or locality showing the sequence of the rock units and their stratigraphic relationship, and indicating the thickness, lithology, age, classification, and fossil content of the rock units. Also known as section. { kə'ləm·nər 'sek·shən }
- columnar structure** [GEOL] See columnar jointing. [MINERAL] Mineral structure consisting of parallel columns of slender prismatic crystals. [PETR] A primary sedimentary structure consisting of columns arranged perpendicular to the bedding. { kə'ləm·nər ,strək·chər }
- colusite** [MINERAL] $\text{Cu}_3(\text{As,Sn,V,Fe,Te})\text{S}_4$ A bronze-colored mineral consisting of a sulfide of copper and arsenic with vanadium, iron, and telluride substituting for arsenic; usually occurs in massive form. { kə'lü,sīt }
- comagmatic province** See petrographic province. { ,kō·mag'mad·ik 'prä·vəns }
- Comanchean** [GEOL] A North American provincial series in Lower and Upper Cretaceous geologic time, above Coahuilan and below Gulfian. { kə'man·chē·ən }
- combination trap** [GEOL] Underground reservoir structure closure, deformation, or fault where reservoir rock covers only part of the structure. { ,käm·bə'nā·shən 'trəp }
- combined water** [GEOCHEM] Water attached to soil minerals by means of chemical bonds. { kəm'bīnd 'wōd·ər }
- combustible shale** See tasmanite. { kəm'bəs·tə·bəl ,shāl }
- comendite** [GEOL] A white, sodic rhyolite containing alkalic amphibole or pyroxene. { kə'men,dīt }
- Comleyan** [GEOL] Lower Cambrian geologic time. { 'käm·lā·ən }
- common feldspar** See orthoclase. { ,käm·ən 'feld,spär }
- common mica** See muscovite. { ,käm·ən 'mī·kə }
- common pyrite** See pyrite. { ,käm·ən 'pī,rīt }
- common salt** See halite. { ,käm·ən 'sōlt }
- compaction** [GEOL] Process by which soil and sediment mass loses pore space in response to the increasing weight of overlying material. { kəm'pak·shən }
- competence** [GEOL] The ability of the wind to transport solid particles either by rolling, suspension, or saltation (intermittent rolling and suspension); usually expressed in terms of the weight of a single particle. { 'käm·pəd·əns }

concentric weathering

- competent beds** [GEOL] Beds or strata capable of withstanding the pressures of folding without flowing or changing in original thickness. { 'käm-pəd-ənt 'bedz }
- complementary rocks** [GEOL] Rocks which are differentiated from the same magma, and whose average composition is the same as the parent magma. { ,käm-plə'men-trē 'ræks }
- complex** [GEOL] An assemblage of rocks that has been folded together, intricately mixed, involved, or otherwise complicated. [MINERAL] Composed of many ingredients. { 'käm,pleks }
- complex dune** [GEOL] A dune of varying forms, often very large, and produced by variable, shifting winds and the merging of various dune types. { 'käm,pleks 'dün }
- complex fold** [GEOL] A fold whose axial line is also folded. { 'käm,pleks 'föld }
- complex tombolo** [GEOL] A system resulting when several islands and the mainland are interconnected by a complex series of tombolos. Also known as tombolo cluster; tombolo series. { 'käm,pleks 'täm-bə,lö }
- composite cone** [GEOL] A large volcanic cone constructed of lava and pyroclastic material in alternating layers. { kəm'pāz-ət 'kōn }
- composite dike** [GEOL] A dike consisting of several intrusions differing in chemical and mineralogical composition. { kəm'pāz-ət 'dik }
- composite fold** [GEOL] A fold having smaller folds on its limbs. { kəm'pāz-ət 'föld }
- composite gneiss** [PETR] A banded rock formed by intimate penetration of magma into country rocks. { kəm'pāz-ət 'nīs }
- composite grain** [GEOL] A sedimentary clast formed of two or more original particles. { kəm'pāz-ət 'grān }
- composite sequence** [GEOL] An ideal sequence of cyclic sediments containing all the lithological types in their proper order. { kəm'pāz-ət 'sē-kwəns }
- composite sill** [GEOL] A sill consisting of several intrusions differing in chemical and mineralogical compositions. { kəm'pāz-ət 'sil }
- composite topography** [GEOL] A topography whose features have developed in two or more erosion cycles. { kəm'pāz-ət tə'päg-rə-fē }
- composite unconformity** [GEOL] An unconformity that has resulted from more than one episode of nondeposition and possible erosion. { kəm'pāz-ət ,ən-kən'fōr-məd-ē }
- composite vein** [GEOL] A large fracture zone composed of parallel ore-filled fissures and converging diagonals, whose walls and intervening country rock have been replaced to a certain degree. { kəm'pāz-ət 'vān }
- composite volcano** *See* stratovolcano. { kəm'pāz-ət vāl'kā-nō }
- compositional maturity** [GEOL] Concept of a type of maturity in sedimentary rocks in which a sediment approaches the compositional end product to which formative processes drive it. { ,käm-pə'zish-ən-əl mə'chúr-əd-ē }
- compound alluvial fan** [GEOL] Structure formed by the lateral growth and merger of fans made by neighboring streams. { 'käm,paünd ə'lü-vē-əl 'fan }
- compound fault** [GEOL] A zone or series of essentially parallel faults, closely spaced. { 'käm,paünd 'fölt }
- compound ripple marks** [GEOL] Complex ripple marks of great diversity which originate by simultaneous interference of wave oscillation with current action. { 'käm ,paünd 'rip-əl ,mārks }
- compound volcano** [GEOL] 1. A volcano consisting of a complex of two or more cones. 2. A volcano with an associated volcanic dome. { 'käm,paünd vāl'kā-nō }
- compression** [GEOL] A system of forces which tend to decrease the volume or shorten rocks. { kəm'presh-ən }
- concentric faults** [GEOL] Faults that are arranged concentrically. { kən'sen-trik 'föls }
- concentric fold** [GEOL] A fold in which the original thickness of the strata is unchanged during deformation. Also known as parallel fold. { kən'sen-trik 'föld }
- concentric fractures** [GEOL] A system of fractures concentrically arranged about a center. { kən'sen-trik 'frak-chərz }
- concentric weathering** *See* spheroidal weathering. { kən'sen-trik 'weth-ə-riŋ }

conchoidal

- conchoidal** [GEOL] Having a smoothly curved surface; used especially to describe the fracture surface of a mineral or rock. { kən'kɔɪd-əl }
- concordant body** [GEOL] An intrusive igneous body whose contacts are parallel to the bedding of the country rock. Also known as concordant injection; concordant pluton. { kən'kɔrd-ənt |bəd-ē }
- concordant coastline** [GEOL] A coastline parallel to the land structures which form the margin of an ocean basin. { kən'kɔrd-ənt 'kɔst,līn }
- concordant injection** See concordant body. { kən'kɔrd-ənt in'jek-shən }
- concordant pluton** See concordant body. { kən'kɔrd-ənt 'plʊ,tən }
- concretion** [GEOL] A hard, compact mass of mineral matter in the pores of sedimentary or fragmental volcanic rock; represents a concentration of a minor constituent of the enclosing rock or of cementing material. { kən'krē-shən }
- concretionary** [GEOL] Tending to grow together, forming concretions. { kən'krē-shə,ner-ē }
- concretioning** [GEOL] The process of forming concretions. { kən'krē-shən-ɪŋ }
- conclusion fracture** [GEOL] Radiating system of fractures in a shock-metamorphosed rock. { kən'kəsh-ən ,frak-chər }
- condensate field** [GEOL] A petroleum field developed in predominantly gas-bearing reservoir rocks, but within which condensation of gas to oil commonly occurs with decreases in field pressure. { 'kən-dən,sāt ,fēld }
- conductivity** See permeability. { ,kən,dək'tiv-əd-ē }
- conduit** [GEOL] A water-filled underground passage that is always under hydrostatic pressure. { 'kən-də-wət }
- Condylarthra** [PALEON] A mammalian order of extinct, primitive, hoofed herbivores with five-toed plantigrade to semidigitigrade feet. { ,kən-də'lār-thrə }
- cone** [GEOL] A mountain, hill, or other landform having relatively steep slopes and a pointed top. { kɔn }
- cone delta** See alluvial cone. { 'kɔn ,del-tə }
- cone dike** See cone sheet. { 'kɔn ,dɪk }
- cone-in-cone structure** [GEOL] The structure of a concretion characterized by the development of a succession of cones one within another. { 'kɔn in 'kɔn 'strək-chər }
- cone karst** [GEOL] A type of karst, typical of tropical regions, characterized by a pattern of steep, convex sides and slightly concave floors. Also known as cockpit karst; Kegel karst. { 'kɔn ,kɑrst }
- Conemaughian** [GEOL] Upper Middle Pennsylvanian geologic time. { ,kən-ə'mɔg-ē-ən }
- cone of dejection** See alluvial cone. { 'kɔn əv di'jek-shən }
- cone of detritus** See alluvial cone. { 'kɔn əv di'trɪd-əs }
- cone sheet** [GEOL] An accurate dike forming part of a concentric set that dips inward toward the center of the arc. Also known as cone dike. { 'kɔn ,shēt }
- Conewangoan** [GEOL] Upper Upper Devonian geologic time. { ,kən-ə'wɑŋ-gə-wən }
- confining bed** [GEOL] An impermeable bed adjacent to an aquifer. { kən'fɪn-ɪŋ ,bed }
- confining pressure** [GEOL] An equal, all-sided pressure, such as lithostatic pressure produced by overlying rocks in the crust of the earth. { kən'fɪn-ɪŋ ,presh-ər }
- conformable** [GEOL] **1.** Pertaining to the contact of an intrusive body when it is aligned with the internal structures of the intrusion. **2.** Referring to strata in which layers are formed above one another in an unbroken, parallel order. { kən'fɔr-mə-bəl }
- conformity** [GEOL] The shared and undisturbed correspondence between adjacent sedimentary strata that have been deposited in orderly sequence with little or no indication of time lapses. { kən'fɔr-məd-ē }
- conglifluction** See gelifluction. { kən,jel-ə'flək-shən }
- conglifraction** [GEOL] The splitting or disintegration of rocks as the result of the freezing of the water contained. Also known as frost bursting; frost riving; frost shattering; frost splitting; frost weathering; frost wedging; gelifraction; gelivation. { kən,jel-ə'frak-shən }
- congliturbate** [GEOL] Soil or unconsolidated earth which has been moved or disturbed by frost action. { kən,jel-ə'tər-bət }

consequent valley

- congeliturbation** [GEOL] The churning and stirring of soil as a result of repeated cycles of freezing and thawing; includes frost heaving and surface subsidence during thaws. Also known as cryoturbation; frost churning; frost stirring; geliturbation. { kən,jel·ə·tər'bā·shən }
- conglomerate** [GEOL] Cemented, rounded fragments of water-worn rock or pebbles, bound by a siliceous or argillaceous substance. { kən'gläm·ə·rət }
- conglomeratic mudstone** See paraglomerate. { kən'gläm·ə'rad·ik 'mäd,stən }
- congruent melting** [GEOL] Melting of a solid substance to a liquid identical in composition. { kən'grü·ənt 'melt·iŋ }
- Coniacian** [GEOL] Lower Senonian geologic time. { ,kän·ē'a·shən }
- conichalcite** [MINERAL] $\text{CaCu}(\text{AsO}_4)(\text{OH})$ A grass green to yellowish-green or emerald green, orthorhombic mineral consisting of a basic arsenate of calcium and copper. { ,kän·ə'kal,sɪt }
- Coniconchia** [PALEON] A class name proposed for certain extinct organisms thought to have been mollusks; distinguished by a calcareous univalve shell that is open at one end and by lack of a siphon. { ,kän·ə'kän·kē·ə }
- conjugate** [GEOL] **1.** Pertaining to fractures in which both sets of veins or joints show the same strike but opposite dip. **2.** Pertaining to any two sets of veins or joints lying perpendicular. { 'kän·jə·gət }
- conjugate joint system** [GEOL] Two joint sets with a symmetrical pattern arranged about another structural feature or an inferred stress axis. { 'kän·jə·gət 'joiŋt 'sis·təm }
- connarite** [MINERAL] A green mineral consisting of hydrous nickel silicate occurring as small crystals or grains. { 'kän·ə,rɪt }
- connate** [GEOL] Referring to materials involved in sedimentary processes that are contemporaneous with surrounding materials. { kə'nāt }
- connecting bar** See tombolo. { kə'nekt·iŋ ,bär }
- connellite** [MINERAL] $\text{Cu}_{19}(\text{SO}_4)\text{Cl}_4(\text{OH})_{32}\cdot 3\text{H}_2\text{O}$ A deep-blue striated copper mineral; crystals are in the hexagonal system. Also known as footeite. { 'kän·əl,ɪt }
- Conoclypidae** [PALEON] A family of Cretaceous and Eocene exocyclic Euechinoidea in the order Holoctypoida having developed aboral petals, internal partitions, and a high test. { ,kän·ō·klə'pid·ē,ē }
- Conocyeminae** [PALEON] A subfamily of Mesozoan parasites in the family Dicyemidae. { ,kän·ə,sɪ'em·ə,nē }
- conodont** [PALEON] A minute, toothlike microfossil, composed of translucent amber-brown, fibrous or lamellar calcium phosphate; taxonomic identity is controversial. { 'kän·ə,dänt }
- Conodontiformes** [PALEON] A suborder of conodonts from the Ordovician to the Triassic having a lamellar internal structure. { 'kän·ə,dän·tə'fór,mēz }
- Conodontophorida** [PALEON] The ordinal name for the conodonts. { 'kän·ə,dän·tə·fə'rid·ē·ə }
- conoplain** See pediment. { 'kän·ə,plän }
- Conrad discontinuity** [GEOPHYS] A relatively abrupt discontinuity in the velocity of elastic waves in the earth, increasing from 6.1 to 6.4–6.7 kilometers per second; occurs at various depths and marks contact of granitic and basaltic layers. { 'kän,rad dis,känt·ən'ü·əd·ē }
- consanguineous** [GEOL] Of a natural group of sediments or sedimentary rocks, having common or related origin. { 'kän·sæn'gwin·ē·əs }
- consanguinity** [PETR] The genetic relationship between igneous rocks in a single petrographic province which are presumably derived from a common parent magma. { 'kän·sæn'gwin·əd·ē }
- consequent** [GEOL] Of, pertaining to, or characterizing movements of the earth resulting from the external transfer of material in the process of gradation. { 'kän·sə'kwənt }
- consequent stream** [GEOL] A stream whose course is determined by the slope of the land. Also known as superposed stream. { 'kän·sə'kwənt ,strēm }
- consequent valley** [GEOL] **1.** A valley whose direction depends on corrugation. **2.** A

consolidation

valley formed by the widening of a trench cut by a consequent stream. { 'kän·sə·kwant ,val·ē }

consolidation [GEOL] **1.** Processes by which loose, soft, or liquid earth become coherent and firm. **2.** Adjustment of a saturated soil in response to increased load; involves squeezing of water from the pores and a decrease in void ratio. { kən,säl·ə'dā·shən }

Constellariidae [PALEON] A family of extinct, marine bryozoans in the order Cystoporata. { ,kän·stə·lə'rī·ə,dē }

contact [GEOL] The surface between two different kinds of rocks. { 'kän,takt }

contact aureole *See* aureole. { 'kän,takt 'ör·ē,ōl }

contact breccia [PETR] Angular rock fragments resulting from shattering of wall rocks around laccolithic and other igneous masses. { 'kän,takt 'brech·ə }

contact metamorphic rock [PETR] A rock formed by the processes of contact metamorphism. { 'kän,takt ,med·ə'mór·fik 'ræk }

contact metamorphism [PETR] Metamorphism that is genetically related to the intrusion or extrusion of magmas and takes place in rocks at or near their contact. { 'kän,takt ,med·ə'mór·fiz·əm }

contact metasomatism [GEOL] One of the main local processes of thermal metamorphism that is related to intrusion of magmas; takes place in rocks or near their contact with a body of igneous rock. { 'kän,takt ,med·ə'sō·mə,tiz·əm }

contact mineral [MINERAL] A mineral formed by the processes of contact metamorphism. { 'kän,takt ,min·rəl }

contact vein [GEOL] **1.** A variety of fissure vein formed by deposition of minerals in a fault fissure at a rock contact. **2.** A replacement vein formed by mineralized solutions percolating along the more permeable surface areas of the contact. { 'kän,takt ,vān }

contact zone *See* aureole. { 'kän,takt ,zōn }

contamination [GEOL] A process in which the chemical composition of a magma changes due to the assimilation of country rocks. { kən,tam·ə'nā·shən }

contemporaneous [GEOL] **1.** Formed, existing, or originating at the same time. **2.** Of a rock, developing during formation of the enclosing rock. { kən,təm·pə'rā·nē·əs }

continental accretion [GEOL] The theory that continents have grown by the addition of new continental material around an original nucleus, mainly through the processes of geosynclinal sedimentation and orogeny. { |kánt·ən|ent·əl ə'krē·shən }

continental borderland [GEOL] The area of the continental margin between the shoreline and the continental slope. { |kánt·ən|ent·əl 'bor·dər,land }

continental crust [GEOL] The basement complex of rock, that is, metamorphosed sedimentary and volcanic rock with associated igneous rocks mainly granitic, that underlies the continents and the continental shelves. { |kánt·ən|ent·əl 'krəst }

continental deposits [GEOL] Sedimentary deposits laid down within a general land area. { |kánt·ən|ent·əl di'pəz·əts }

continental displacement *See* continental drift. { |kánt·ən|ent·əl di'spläs·mənt }

continental divide [GEOL] A drainage divide of a continent, separating streams that flow in opposite directions; for example, the divide in North America that separates watersheds of the Pacific Ocean from those of the Atlantic Ocean. { |kánt·ən|ent·əl di'vīd }

continental drift [GEOL] The concept of continent formation by the fragmentation and movement of land masses on the surface of the earth. Also known as continental displacement. { |kánt·ən|ent·əl 'drift }

continental geosyncline [GEOL] A geosyncline filled with nonmarine sediments. { |kánt·ən|ent·əl |jē·ō'sin,klin }

continental growth [GEOL] The processes contributing to growth of continents at the expense of ocean basins. { |kánt·ən|ent·əl 'grōth }

continental heat flow [GEOPHYS] The amount of thermal energy escaping from the earth through the continental crust per unit area and unit time. { |kánt·ən|ent·əl 'hēt ,flō }

continental margin [GEOL] Those provinces between the shoreline and the deep-sea

- bottom; generally consists of the continental borderland, shelf, slope, and rise. {kánt·ən|ent·əl 'mār·jən }
- continental nucleus** [GEOL] A large area of basement rock consisting of basaltic and more mafic oceanic crust and periodotitic mantle from which it is postulated that continents have grown. Also known as continental shield; cratogene; shield. {kánt·ən|ent·əl 'nü·klē·əs }
- continental plate** [GEOL] Thick continental crust. {kánt·ən|ent·əl 'plāt }
- continental platform** See continental shelf. {kánt·ən|ent·əl 'plat·förm }
- continental rise** [GEOL] A transitional part of the continental margin; a gentle slope with a generally smooth surface, built up by the shedding of sediments from the continental block, and located between the continental slope and the abyssal plain. {kánt·ən|ent·əl 'rīz }
- continental shelf** [GEOL] The zone around a continent, that part of the continental margin extending from the shoreline and the continental slope; composes with the continental slope the continental terrace. Also known as continental platform; shelf. {kánt·ən|ent·əl 'shelf }
- continental shield** See shield. {kánt·ən|ent·əl 'shēld }
- continental slope** [GEOL] The part of the continental margin consisting of the declivity from the edge of the continental shelf extending down to the continental rise. {kánt·ən|ent·əl 'slöp }
- continental shield** See shield. {kánt·ən|ent·əl 'shēld }
- continental terrace** [GEOL] The continental shelf and slope together. {kánt·ən|ent·əl 'ter·əs }
- continent formation** [GEOL] A series of six or seven major episodes, resulting from the buildup of radioactive heat and then the melting or partial melting of the earth's interior; the molten rock melt rises to the surface, differentiating into less primitive lavas; the continent then nucleates, differentiates, and grows from oceanic crust and mantle. {kánt·ən|ent·əl fər'mā·shən }
- continuous permafrost zone** [GEOL] Regional zone predominantly underlain by permanently frozen subsoil that is not interrupted by pockets of unfrozen ground. {kən'tin·yə·wəs 'pər·mə·fröst ,zōn }
- continuous profiling** [GEOL] A method of shooting in seismic exploration in which uniformly placed seismometer stations along a line are shot from holes spaced along the same line so that each hole records seismic ray paths geometrically identical with those from adjacent holes. {kən'tin·yə·wəs 'prō·fīl·īŋ }
- continuous reaction series** [MINERAL] A branch of Bowen's reaction series comprising the plagioclase mineral group in which reaction of early-formed crystals with water takes place continuously, without abrupt changes in crystal structure. {kən'tin·yə·wəs rē'ak·shən ,sir·ēz }
- contraction hypothesis** [GEOL] Theory that shrinking of the earth is the cause of compression folding and thrusting. {kən'trak·shən hī'pāth·ə·səs }
- Conularida** [PALEON] A small group of extinct invertebrates showing a narrow, four-sided, pyramidal-shaped test. {kən·əl'ar·ə·də }
- Conulidae** [PALEON] A family of Cretaceous exocyclic Euechinoidea characterized by a flattened oral surface. {kə'nü·lə·də }
- convection current** [GEOPHYS] Mass movement of subcrustal or mantle material as the result of temperature variations. {kən'vek·shən ,kər·ənt }
- convergence** [GEOL] Diminution of the interval between geologic horizons. {kən'vær·jəns }
- convolute bedding** [GEOL] The extremely contorted laminae usually confined to a single layer of sediment, resulting from subaqueous slumping. {'kän·və·lüt ,bed·īŋ }
- convolution** [GEOL] **1.** The process of developing convolute bedding. **2.** A structure resulting from a convolution process, such as a small-scale but intricate fold. {kän·və'lü·shən }
- cooperite** [MINERAL] (Pt,Pd)S A steel-gray tetragonal mineral of metallic luster consisting of a sulfide of platinum, occurring in irregular grains in igneous rock. {'kü·pə,rīt }

coorongite

- coorongite** [GEOL] A boghead coal in the peat stage. { kō'ä·rən,jīt }
- copiapite** [MINERAL] **1.** $\text{Fe}_2(\text{SO}_4)_6(\text{OH})_2 \cdot 20\text{H}_2\text{O}$ A yellow mineral occurring in granular or scalar aggregates. Also known as ihleite; knoxvillite; yellow copperas. **2.** A group of minerals containing hydrous iron sulfates. { 'kō·pē-ə,pīt }
- Copodontidae** [PALEON] An obscure family of Paleozoic fishes in the order Bradydonti. { ,kō·pə'dän-tə,dē }
- copper glance** See chalcocite. { 'kär·ər 'glans }
- copperite** [MINERAL] An important platinum mineral, composed of platinum sulfide. { 'kär·ə,rīt }
- copper mica** See chalcophyllite. { 'kär·ər 'mī·kə }
- copper nickel** See niccolite. { 'kär·ər 'nik·əl }
- copper ore** [GEOL] Rock containing copper minerals. { 'kär·ər ,ör }
- copper pyrite** See chalcopyrite. { 'kär·ər 'pī,rīt }
- copper uranite** See torbernite. { 'kär·ər 'yür·ə,nīt }
- coprolite** [GEOL] Petrified excrement. { 'kär·rə,līt }
- coquimbite** [MINERAL] $\text{Fe}_2(\text{SO}_4)_3 \cdot 9\text{H}_2\text{O}$ A white mineral that crystallizes in the hexagonal system; it is dimorphous with paracoquimbite. { kō'kim,bīt }
- coquina** [PETR] A coarse-grained, porous, easily crumbled variety of limestone composed principally of mollusk shell and coral fragments cemented together as rock. { kō'kē·nə }
- coquinoid** [PETR] **1.** Of or pertaining to coquina. **2.** Lithified coquina. **3.** An autochthonous deposit of limestone made up of more or less whole mollusk shells. { 'kō·kə,nōid }
- coracite** See uraninite. { 'kór·ə,sīt }
- coral head** [GEOL] A small reef patch of coralline material. Also known as coral knoll. { 'kä·rəl 'hed }
- coral knoll** See coral head. { 'kä·rəl 'nōl }
- coral mud** [GEOL] Fine-grade deposits of coral fragments formed around coral islands and coasts bordered by coral reefs. { 'kär·əl ,məd }
- coral pinnacle** [GEOL] A sharply upward-projecting growth of coral rising from the floor of an atoll lagoon. { 'kär·əl 'pin·ə·kəl }
- coral reef** [GEOL] A ridge or mass of limestone built up of detrital material deposited around a framework of skeletal remains of mollusks, colonial coral, and massive calcareous algae. { 'kär·əl ,rēf }
- coral-reef shoreline** [GEOL] A shoreline formed by reefs composed of coral polyps. Also known as coral shoreline. { 'kär·əl ,rēf 'shör,līn }
- coral rock** See reef limestone. { 'kär·əl ,rək }
- coral sand** [GEOL] Coarse-grade deposits of coral fragments formed around coral islands and coasts bordered by coral reefs. { 'kär·əl ,sand }
- coral shoreline** See coral-reef shoreline. { 'kär·əl 'shör,līn }
- Cordaitaceae** [PALEOBOT] A family of fossil plants belonging to the Cordaitales. { ,kór·dä,r'täs·ē,ē }
- Cordaitales** [PALEOBOT] An extensive natural grouping of forest trees of the late Paleozoic. { ,kór·dä,r'tä·lěz }
- cordierite** [MINERAL] $\text{Mg}_2(\text{Al}_2\text{Si}_5\text{O}_{18})$ A blue, orthorhombic magnesium aluminosilicate mineral frequently occurring associated with thermally metamorphosed rocks derived from argillaceous sediments. { 'kórd·ē·ə,rīt }
- cordilleran geosyncline** [GEOL] The Devonian geosynclinal region of western North America. { ,kórd·əl'er·ən ,jē·ō'sin,klīn }
- cordylite** [MINERAL] $(\text{Ce},\text{La}_2\text{Ba})(\text{CO}_3)_2\text{F}_2$ A colorless to wax-yellow mineral consisting of a carbonate and fluoride of cerium, lanthanum, and barium. { 'kórd·əl,līt }
- core** [GEOL] **1.** Center of the earth, beginning at a depth of 2900 kilometers. Also known as earth core. **2.** A vertical, cylindrical boring of the earth from which composition and stratification may be determined; in oil or gas well exploration the presence of hydrocarbons or water are items of interest. { kör }
- core analysis** [GEOL] The use of core samples taken from the borehole during drilling

Coryphodontoidea

- to give information on strata age, composition, and porosity, and the presence of hydrocarbons or water along the length of the borehole. { 'kɔr ə'nal-ə-səs }
- core intersection** [GEOL] **1.** The point in a borehole where an ore vein or body is encountered as shown by the core. **2.** The width or thickness of the ore body, as shown by the core. Also known as core interval. { 'kɔr 'in-tər,sek-shən }
- core interval** See core intersection. { 'kɔr 'in-tər-vəl }
- core logging** [GEOL] The analysis of the strata through which a borehole passes by the taking of core samples at predetermined depth intervals as the well is drilled. { 'kɔr ,læg-ɪŋ }
- core sample** [GEOL] A sample of rock, soil, snow, or ice obtained by driving a hollow tube into the undisturbed medium and withdrawing it with its contained sample or core. { 'kɔr ,sam-pəl }
- corestone** [GEOL] A rounded or broadly rectangular joint block of granite formed as a result of subsurface weathering in a manner similar to a tor but entirely separated from the bedrock. { 'kɔr,stɔn }
- corneite** [GEOL] A biotite-hornfels formed during deformation of shale by folding. { 'kɔr-nē,ɪt }
- cornetite** [MINERAL] $\text{Cu}_3(\text{PO}_4)(\text{OH})_3$ A peacock-blue mineral consisting of basic copper phosphate. { 'kɔr-nə,tɪt }
- cornwallite** [MINERAL] $\text{Cu}_5(\text{AsO}_4)_2(\text{OH})_4 \cdot \text{H}_2\text{O}$ A verdigris green to blackish-green mineral consisting of a hydrated basic arsenate of copper; occurs as small botryoidal crusts. { 'kɔrn,wɔ,lɪt }
- corona** [GEOL] A mineral zone that is usually radial about another mineral or at the area between two minerals. Also known as kelyphite. [MINERAL] An annular zone of minerals that is disposed either around another mineral or at the contact between two minerals. { kə'rɔ-nə }
- coronadite** [MINERAL] $\text{Pb}(\text{Mn}^{2+},\text{Mn}^{4+})_8\text{O}_{16}$ A black mineral consisting of a lead and manganese oxide, occurring in massive form with fibrous structure; an important constituent of manganese ore. { ,kɔr-ə'nä,dɪt }
- corrasion** [GEOL] Mechanical wearing away of rock and soil by the action of solid materials moved along by wind, waves, running water, glaciers, or gravity. Also known as mechanical erosion. { kə'rā-zhən }
- correlation** [GEOL] **1.** The determination of the equivalence or contemporaneity of geologic events in separated areas. **2.** As a step in seismic study, the selecting of corresponding phases, taken from two or more separated seismometer spreads, of seismic events seemingly developing at the same geologic formation boundary. { ,kär-ə'lā-shən }
- corrie** See cirque. { kɔr-ē }
- corrosion** [GEOCHEM] Chemical erosion by motionless or moving agents. { kə'rɔ-zhən }
- corrosion border** See corrosion rim. { kə'rɔ-zhən ,bɔrd-ər }
- corrosion rim** [MINERAL] A modification of the outlines of a porphyritic crystal due to the corrosive action of a magma on previously stable minerals. Also known as corrosion border. { kə'rɔ-zhən ,rɪm }
- corsite** [PETR] A spheroidal variety of gabbro. Also known as miagite; napoleonite. { 'kɔr,sɪt }
- cortlandite** [PETR] A peridotite consisting of large crystals of hornblende with poikilitically included crystals of olivine. Also known as hudsonite. { 'kɔrt-lən,dɪt }
- corundum** [MINERAL] Al_2O_3 A hard mineral occurring in various colors and crystallizing in the hexagonal system; crystals are usually prismatic or in rounded barrel shapes; gem varieties are ruby and sapphire. { kə'rən-dəm }
- corvusite** [MINERAL] $\text{V}_2\text{O}_4 \cdot 6\text{V}_2\text{O}_5 \cdot n\text{H}_2\text{O}$ A blue-black to brown mineral consisting of a hydrous oxide of vanadium; occurs in massive form. { 'kɔr-və,sɪt }
- Coryphodontidae** [PALEON] The single family of the Coryphodontoidea, an extinct superfamily of mammals. { ,kɔr-ə-fə'dän-tə,dē }
- Coryphodontoidea** [PALEON] A superfamily of extinct mammals in the order Pantodonta. { ,kɔr-ə-fə,dän'tɔɪd-ē-ə }

cosalite

- cosalite** [MINERAL] $\text{Pb}_2\text{Bi}_2\text{S}_5$ A lead-gray or steel-gray mineral consisting of lead, bismuth, and sulfur; specific gravity is 6.39–6.75. { 'kō-zə,lɪt }
- cosmic sediment** [GEOL] Particles of extraterrestrial origin which are observed as black magnetic spherules in deep-sea sediments. { 'kāz·mɪk 'sed·ə·mənt }
- cosmic spherules** [GEOCHEM] Solidified, millimeter-sized to microscopic, rounded particles of extraterrestrial materials that melted either during high-velocity entry into the atmosphere or during hypervelocity impact of large meteoroids onto the earth's surface. { 'kāz·mɪk 'sfe·rülz }
- cosmochlore** See ureyite. { 'kāz·mə,klór }
- cotton ball** See ulexite. { 'kät·ən ,bɒl }
- cotunnite** [MINERAL] PbCl_2 An alteration product of galena; a soft, white to yellowish mineral that crystallizes in the orthorhombic crystal system. { kə'tʌ,nɪt }
- Cotylosauria** [PALEON] An order of primitive reptiles in the subclass Anapsida, including the stem reptiles, ancestors of all of the more advanced Reptilia. { |käd·əl·ə|sɔ̃r·ē·ə }
- coulee** [GEOL] **1.** A thick, solidified sheet or stream of lava. **2.** A steep-sided valley or ravine, sometimes with a stream at the bottom. { kü'lā }
- country rock** [GEOL] **1.** Rock that surrounds and is penetrated by mineral veins. **2.** Rock that surrounds and is invaded by an igneous intrusion. { kə'n·trē 'rāk }
- Couvianian** [GEOL] Lower Middle Devonian geologic time. { kü'vin·ē·ən }
- covellite** [MINERAL] CuS An indigo-blue mineral of metallic luster that crystallizes in the hexagonal system; it is usually massive or occurs in disseminations through other copper minerals and represents an ore of copper. Also known as indigo copper. { kō've,lɪt }
- covite** [PETR] A rock of igneous origin composed of sodic orthoclase, hornblende, sodic pyroxene, nepheline, and accessory sphene, apatite, and opaque oxides. { 'kō,vɪt }
- crag** [GEOL] A steep, rugged point or eminence of rock, as one projecting from the side of a mountain. { krag }
- crandallite** [MINERAL] $\text{CaAl}_2(\text{PO}_4)_2(\text{OH})_5 \cdot \text{H}_2\text{O}$ A white to light-grayish mineral consisting of a hydrous phosphate of calcium and aluminum occurring in fine, fibrous masses. { 'kränd·əl,ɪt }
- crater** [GEOL] **1.** A large, bowl-shaped topographic depression with steep sides. **2.** A rimmed structure at the summit of a volcanic cone; the floor is equal to the vent diameter. { 'kräd·ər }
- crater cone** [GEOL] A cone built around a volcanic vent by lava extruded from the vent. { 'kräd·ər ,kɒn }
- craton** [GEOL] A large, stable portion of the continental crust. Cratons are the broad heartlands of continents with subdued topography, encompassing the largest areas of most continents. { 'krā,tän }
- crednerite** [MINERAL] CuMn_2O_4 A steel-gray to iron-black foliated mineral consisting of copper, manganese, and oxygen. { 'kred·nə,rɪt }
- creedite** [MINERAL] $\text{Ca}_3\text{Al}_2(\text{SO}_4)(\text{F},\text{OH})_{10} \cdot 2\text{H}_2\text{O}$ A white or colorless monoclinic mineral consisting of hydrous calcium aluminum fluoride with calcium sulfate, occurring in grains and radiating crystalline masses; hardness is 2 on Mohs scale, and specific gravity is 2.7. { 'krē,dɪt }
- creep** [GEOL] A slow, imperceptible downward movement of slope-forming rock or soil under sheer stress. { krēp }
- crenitic** [GEOL] Relating to or resulting from the raising of subterranean minerals by the action of spring water. { krə'nɪd·ɪk }
- crenulation cleavage** See slip cleavage. { ,kren·yə'lā·shən ,klēv·ɪj }
- Creodonta** [PALEON] A group formerly recognized as a suborder of the order Carnivora. { ,krē·ə'dän·tə }
- creescent beach** [GEOL] A crescent-shaped beach at the head of a bay or the mouth of a stream entering the bay, with the concave side facing the sea. { 'kres·ənt ,bēç }
- creescentic dune** See barchan. { krə'sen·tɪk 'dün }
- crestal plane** [GEOL] The plane formed by joining the crests of all beds of an anticline. { 'krest·əl ,plān }

Crossopterygii

- crest line** [GEOL] The line connecting the highest points on the same bed of an anticline in an infinite number of cross sections. { 'krest ,līn }
- Cretaceous** [GEOL] In geological time, the last period of the Mesozoic Era, preceded by the Jurassic Period and followed by the Tertiary Period; it extended from 144 million years to 65 million years before present. { kri'tā·shəs }
- crevasse** [GEOL] An open, nearly vertical fissure in a glacier or other mass of land ice or the earth, especially after earthquakes. { krə'vas }
- crevasse deposit** [GEOL] Kame deposited in a crevasse. { krə'vas di'pəz·ət }
- crib** See arête. { krib }
- crinoidal limestone** [PETR] A rock composed predominantly of crystalline joints of crinoids, with foraminiferans, corals, and mollusks. { krī'nóid·əl 'līm,stōn }
- crystalite** [MINERAL] SiO_2 A silicate mineral that is a high-temperature form of quartz; stable above 1470°C; crystallizes in the tetragonal system at low temperatures and the isometric system at high temperatures. { kri'stō·bəl,īt }
- critical bottom slope** [GEOL] The depth distribution in which depth d of an ocean increases with latitude ϕ according to an equation of the form $d = d_0 \sin \phi + \text{constant}$. { 'krid·ə·kəl 'bəd·əm ,slōp }
- critical density** [GEOL] That degree of density of a saturated, granular material below which, as it is rapidly deformed, it will decrease in strength and above which it will increase in strength. { 'krid·ə·kəl 'den·səd·ē }
- crocidolite** [MINERAL] A lavender-blue, indigo-blue, or leek-green asbestiform variety of riebeckite; occurs in fibrous, massive, and earthy forms. Also known as blue asbestos; kroidolite. { krō'sīd·əl,īt }
- crocoisite** See crocoite. { 'kräk·wə,zīt }
- crocoite** [MINERAL] PbCrO_4 A yellow to orange or hyacinth-red secondary mineral occurring as monoclinic, prismatic crystals; it is also massive granular. Also known as crocoisite; red lead ore. { 'kräk·ə,wīt }
- Croixian** [GEOL] Upper Cambrian geologic time. { 'kròi·ən }
- Cro-Magnon man** [PALEON] **1.** A race of tall, erect Caucasoid men having large skulls; identified from skeletons found in southern France. **2.** A general term to describe all fossils resembling this race that belong to the upper Paleolithic (35,000–8000 B.C.) in Europe. { krō'mag·nən 'mæn }
- cromfordite** See phosgenite. { 'krām·fər,dīt }
- cronstedtite** [MINERAL] $\text{Fe}_4^{2+}\text{Fe}_2^{3+}(\text{Fe}_2^{3+}\text{Si}_2)\text{O}_{10}(\text{OH})_8$ A black to brownish-black mineral consisting of a hydrous iron silicate crystallizing in hexagonal prisms; specific gravity is 3.34–3.35. { 'krän,sted,īt }
- crookesite** [MINERAL] $(\text{Cu,Tl,Ag})_2\text{Se}$ An important selenium mineral occurring in lead-gray masses and having a metallic appearance. { 'krük,sīt }
- crop out** See outcrop. { 'kräp ,aüt }
- cross-bedding** [GEOL] The condition of having laminae lying transverse to the main stratification planes of the strata; occurs only in granular sediments. Also known as cross-lamination; cross-stratification. { 'krös 'bed·iŋ }
- crosscutting relationships** [GEOL] Relationships which may occur between two adjacent rock bodies, where the relative age may be determined by observing which rock "cuts" the other, for example, a granitic dike cutting across a sedimentary unit. { 'krös,kəd·iŋ ri'lā·shən,ships }
- cross fault** [GEOL] **1.** A fault whose strike is perpendicular to the general trend of the regional structure. **2.** A minor fault that intersects a major fault. { 'krös ,fólt }
- cross fold** [GEOL] A secondary fold whose axis is perpendicular or oblique to the axis of another fold. Also known as subsequent fold; superimposed fold; transverse fold. { 'krös ,föld }
- cross joint** [GEOL] A fracture in igneous rock perpendicular to the lineation caused by flow magma. Also known as transverse joint. { 'krös ,jōint }
- cross-lamination** See cross-bedding. { 'krös lam·ə'nā·shən }
- Crossopterygii** [PALEON] A subclass of the class Osteichthyes comprising the extinct lobefins or choanate fishes and represented by one extant species; distinguished by two separate dorsal fins. { krä,säp·tə'rjij·ē,ī }

cross section

cross section [GEOL] **1.** A diagram or drawing that shows the downward projection of surficial geology along a vertical plane, for example, a portion of a stream bed drawn at right angles to the mean direction of the flow of the stream. **2.** An actual exposure or cut which reveals geological features. { 'kròs ,sek-shən }

cross-stone See harmotome; staurolite. { 'kròs ,stōn }

cross-stratification See cross-bedding. { 'kròs ,strad-ə-fə'kā-shən }

cross valley See transverse valley. { 'kròs ,val-ē }

croute calcaire See caliche. { ,krüt kal'ker }

crude oil [GEOL] A comparatively volatile liquid bitumen composed principally of hydrocarbon, with traces of sulfur, nitrogen, or oxygen compounds; can be removed from the earth in a liquid state. { |'krüd 'óil }

crumb structure [GEOL] A soil condition in which the particles are crumblike aggregates; suitable for agriculture. { 'krəm ,strək-chər }

crush breccia [GEOL] A breccia formed in place by mechanical fragmentation of rock during movements of the earth's crust. { 'krəsh ,brech-ə }

crush conglomerate [GEOL] Beds similar to a fault breccia, except that the fragments are rounded by attrition. Also known as tectonic conglomerate. { 'krəsh kən'glām-ə-rət }

crush fold [GEOL] A fold of large dimensions that may involve considerable minor folding and faulting such as would produce a mountain chain or an oceanic deep. { 'krəsh ,föld }

crush zone [GEOL] A zone of fault breccia on fault gouge. { 'krəsh ,zōn }

crust [GEOL] The outermost solid layer of the earth, mostly consisting of crystalline rock and extending no more than a few miles from the surface to the Mohorovičić discontinuity. Also known as earth crust. { ,krəst }

crustal motion [GEOL] Movement of the earth's crust. { |'krəst-əl 'mō-shən }

crustal plate See tectonic plate. { 'krəst-əl ,plāt }

cryoconite [GEOL] A dark, powdery dust transported by wind and deposited on the surface of snow or ice; found, however, mainly in cryoconite holes. [MINERAL] A mixture of garnet, sillimanite, zircon, pyroxene, quartz, and various other minerals. { ,krī'ak-ə,nīt }

cryoconite hole [GEOL] A cylindrical dust well filled with cryoconite; absorbs solar radiation, causing melting of glacier ice around and below it. { ,krī'ak-ə,nīt ,hōl }

cryogenic period [GEOL] A time period in geologic history during which large bodies of ice appeared at or near the poles and climate favored the formation of continental glaciers. { |,krī-ə'jen-ik 'pīr-ē-əd }

cryolaccolith See hydrolaccolith. { |'krī-ō'lak-ə,līth }

cryolite [MINERAL] Na_3AlF_6 A white or colorless mineral that crystallizes in the monoclinic system but has a pseudocubic aspect; found in masses of waxy luster; hardness is 2.5 on Mohs scale, and specific gravity is 2.95–3.0; used chiefly as a flux in producing aluminum from bauxite and for making salts of sodium and aluminum and porcelainous glass. Also known as Greenland spar; ice stone. { 'krī-ə,līt }

cryolithionite [MINERAL] $\text{Na}_3\text{Li}_3\text{Al}_2\text{F}_{12}$ A colorless mineral that crystallizes in the isometric system; found in the Ural Mountains. { |,krī-ō'līth-ē-ə,nīt }

cryomorphology [GEOL] The branch of geomorphology that treats the processes and topographic features of regions where the ground is permanently frozen. { |'krī-ō-mór'fāl-ə-jē }

cryopedology [GEOL] A branch of geology that deals with the study of intensive frost action and permanently frozen ground. { |'krī-ō-pə'däl-ə-jē }

cryoplanation [GEOL] Land erosion at high latitudes or elevations due to processes of intensive frost action. { |'krī-ō-plə'nā-shən }

cryosphere [GEOL] That region of the earth in which the surface is perennially frozen. { 'krī-ə,sfir }

cryostatic pressure [GEOL] Hydrostatic pressure exerted on soil and rocks when soil water freezes. { 'krī-ə,stad-ik 'presh-ər }

cryoturbation See congeliturbation. { |'krī-ō-tər'bā-shən }

Ctenothrissidae

- cryptoclastic** [GEOL] Composed of extremely fine, almost submicroscopic, broken or fragmental particles. { |krip·tə|klas·tik }
- cryptocrystalline** [GEOL] Having a crystalline structure but of such a fine grain that individual components are not visible with a magnifying lens. { |krip·tə|krist·əl·ən }
- cryptohalite** [MINERAL] $(\text{NH}_4)_2\text{SiF}_6$ A colorless to white or gray, isometric mineral consisting of ammonium silicon fluoride; occurs in massive and arborescent forms. { |krip·tə|'ha,lɪt }
- cryptolite** See monazite. { 'krip·tə,lɪt }
- cryptomelane** [MINERAL] $\text{KMn}_8\text{O}_{16}\cdot\text{H}_2\text{O}$ A usually massive mineral, common in manganese ores; contains an oxide of manganese and potassium and crystallizes in the monoclinic system. { |krip·tə|mə'lān }
- cryptoperthite** [MINERAL] A fine-grained, submicroscopic variety of perthite consisting of an intergrowth of potassic and sodic feldspar, detectable only by means of x-rays or with the aid of an electron microscope. { |krip·tə|pər,tɪt }
- Cryptostomata** [PALEON] An order of extinct bryozoans in the class Gymnolaemata. { |,krip·tə|stō·məd·ə }
- cryptovolcanic** [GEOL] A small, nearly circular area of highly disturbed strata in which there is no evidence of volcanic materials to confirm the origin as being volcanic. { |krip·tə·vəl|'kan·ik }
- cryptozoon** [PALEOBOT] A hemispherical or cabbagelike reef-forming fossil algae, probably from the Cambrian and Ordovician. { |krip·tə|zō·ən }
- crystal** See rock crystal. { 'krist·əl }
- crystalline-granular texture** [PETR] A primary texture of an igneous rock due to crystallization from a fluid medium. { |kris·tə·lən|'gran·yə·lər|'teks·chər }
- crystalline porosity** [GEOL] Porosity in crystalline limestone and dolomite, making possible underground oil reservoirs. { 'kris·tə·lən|pə'rās·əd·ē }
- crystalline rock** [PETR] 1. Rock made up of minerals in a clearly crystalline state.
2. Igneous and metamorphic rock, as opposed to sedimentary rock. { 'kris·tə·lən|'ræk }
- crystallinity** [PETR] Degree of crystallization exhibited by igneous rock. { |,kris·tə|lin·əd·ē }
- crystallite** [GEOL] A small, rudimentary form of crystal which is of unknown mineralogic composition and which does not polarize light. { 'kris·tə,lɪt }
- crystallization differentiation** See fractional crystallization. { |kris·tə·lə|zə·shən|,dif·ə,ren·chē'a·shən }
- crystalloblast** [MINERAL] A mineral crystal produced by metamorphic processes. { 'kris·tə·lə|blast }
- crystalloblastic series** [GEOL] A series of metamorphic minerals ordered according to decreasing formation energy, so crystals of a listed mineral have a tendency to form idioblastic outlines at surfaces of contact with simultaneously developed crystals of all minerals in lower positions. { 'kris·tə·lə|blas·tik|'sir,ēz }
- crystalloblastic texture** [GEOL] A crystalline texture resulting from metamorphic recrystallization under conditions of high viscosity and directed pressure. { 'kris·tə·lə|blas·tik|'teks·chər }
- crystallographic texture** [MINERAL] A texture of replacement or exsolution mineral deposits, with the distribution and form of the inclusions controlled by the host-mineral crystallography. { |kris·tə·lə|'graf·ik|'teks·chər }
- crystal sandstone** [GEOL] Siliceous sandstone in which deposited silica is precipitated upon the quartz grains in crystalline position. { |krist·əl|'sand,stōn }
- crystal settling** [GEOL] Sinking of crystals in magma from the liquid in which they formed, by the action of gravity. { |krist·əl|'set·lɪŋ }
- crystal tuff** [GEOL] Consolidated volcanic ash in which crystals and crystal fragments predominate. { |krist·əl|'təf }
- crystal-vitric tuff** [GEOL] Consolidated volcanic ash composed of 50–75% crystal fragments and 25–50% glass fragments. { |krist·əl|'vi·trik|'təf }
- Ctenothrissidae** [PALEON] A family of extinct teleostean fishes in the order Ctenothrissiformes. { ten·ə|'θris·ə,dē }

Ctenothrissiformes

- Ctenothrissiformes** [PALEON] A small order of extinct teleostean fishes; important as a group on the evolutionary line leading from the soft-rayed to the spiny-rayed fishes. { ,ten·ə,θris·ə'fɔr,mɛz }
- cubanite** [MINERAL] CuFe_2S_3 Bronze-yellow mineral that crystallizes in the orthorhombic system. Also known as chalmersite. { 'kyü·bæ,nīt }
- cube ore** See pharmacosiderite. { 'kyüb ,ɔr }
- cube spar** See anhydrite. { 'kyüb ,spär }
- culmination** [GEOL] A high point on the axis of a fold. { kəl·mə'nā·shən }
- cumberlandite** [PETR] A coarse-grained, ultramafic, ultrabasic rock composed principally of olivine crystals in a ground mass of magnetite and ilmenite with minor plagioclase. { 'kəm·bər·lən,dīt }
- cumbraite** [PETR] A variety of dacite or rhyodacite containing very calcic plagioclase and pyroxene in a glassy groundmass. { kyüm'brā,īt }
- cumengite** [MINERAL] $\text{Pb}_4\text{Cu}_4\text{Cl}_8(\text{OH})_8\cdot\text{H}_2\text{O}$ A deep-blue or light-indigo-blue tetragonal mineral consisting of a basic lead-copper chloride occurring in crystals. { kyü'men,jīt }
- cumingtonite** [MINERAL] $(\text{Fe,Mg})_7\text{Si}_8\text{O}_{22}(\text{OH})_2$ A brownish mineral that crystallizes in the monoclinic system; usually occurs as lamellae or fibers in metamorphic rocks. { 'kəm·ɪŋ·tə,nīt }
- cumulate** [PETR] Any igneous rock formed by the accumulation of crystals settling out of a magma. { 'kyü·myə,lāt }
- cumulus** [GEOCHEM] The accumulation of minerals which have precipitated from a liquid without having been modified by later crystallization. { 'kyü·myə·ləs }
- cup-and-ball joint** [GEOL] A dish-shaped transverse fracture which divides a basalt column into segments. Also known as ball-and-socket joint. { ,kəp ən 'bɔl ,jɔɪnt }
- cupola** [GEOL] An isolated, upward-projecting body of plutonic rock that lies near a larger body; both bodies are presumed to unite at depth. { 'kyü·pə·lə }
- cupped pebble** [GEOL] A pebble fragment that has become hollow after being subjected to solution. { 'kəpt 'pɛb·əl }
- cuprite** [MINERAL] Cu_2O A red mineral that crystallizes in the isometric system and is found in crystals and fine-grained aggregates or is massive; a widespread supergene copper ore. Also known as octahedral copper ore; red copper ore; ruby copper ore. { 'kyü,pɹīt }
- cuprocopiapite** [MINERAL] $\text{CuFe}_4(\text{SO}_4)_6(\text{OH})_2\cdot 20\text{H}_2\text{O}$ A sulfur yellow to orange-yellow, triclinic mineral consisting of a hydrated basic sulfate of copper and iron. { 'kyü·prɔ'kɔ·pɛ·ə,pīt }
- cuprodescloizite** See mottramite. { 'kyü·prɔ·des'klɔ·ə,zīt }
- cuprotungstite** [MINERAL] $\text{Cu}_2(\text{WO}_4)(\text{OH})_2$ A green mineral that forms compact masses; soluble in acids; the crystal system is not known. { 'kyü·prɔ'tɪŋ,stīt }
- cuprouranite** See torbernite. { 'kyü·prɔ'yür·ə,nīt }
- curite** [MINERAL] $\text{Pb}_2\text{U}_5\text{O}_{17}\cdot 4\text{H}_2\text{O}$ An orange-red radioactive mineral, occurring in acicular crystals, an alteration product of uraninite. { 'kyü,rīt }
- current-bedding** [GEOL] Cross-bedding resulting from water or air currents. { 'kər·ənt ,bed·ɪŋ }
- current lineation** See parting lineation. { 'kər·ənt lin·ɛ'ā·shən }
- current mark** [GEOL] Any structure formed by direct or indirect action of a water current on a sedimentary surface. { 'kər·ənt ,märk }
- current ripple** [GEOL] A type of ripple mark having a long, gentle slope toward the direction from which the current flows, and a shorter, steeper slope on the lee side. { 'kər·ənt ,rɪp·əl }
- curtain** [GEOL] 1. A thin sheet of dripstone that hangs or projects from a cave wall.
2. A rock formation connecting two adjacent bastions. { 'kərt·ən }
- cusps** [GEOL] One of a series of low, crescent-shaped mounds of beach material separated by smoothly curved, shallow troughs spaced at more or less regular intervals along and generally perpendicular to the beach face. Also known as beach cusp. [GEOPHYS] Any of the funnel-shaped regions in the magnetosphere extending from

cyclothem

- the front magnetopause to the polar ionosphere, and filled with solar wind plasma. {kəsp}
- cusate bar** [GEOL] A crescentic bar joining with the shore at each end. {kə,spət ,bär }
- cusate ripple mark** See linguoid ripple mark. {kə,spət 'rip-əl ,märk }
- cut and fill** [GEOL] **1.** Lateral corrosion of one side of a meander accompanied by deposition on the other. **2.** A sedimentary structure consisting of a small filled-in channel. {kət ən 'fil }
- cutbank** [GEOL] The concave bank of a winding stream that is maintained as a steep or even overhanging cliff by the action of water at its base. {kət,bæŋk }
- cutinite** [GEOL] A variety of exinite consisting of plant cuticles. {kyüt·ən,It }
- cutoff** [GEOL] A new, relatively short channel formed when a stream cuts through the neck of an oxbow or horseshoe bend. {kət,ɒf }
- cutout** [GEOL] See horseback. {kət,aüt }
- cut platform** See wave-cut platform. {kət ,plat,förm }
- Cuvieroninae** [PALEON] A subfamily of extinct proboscidean mammals in the family Gomphotheriidae. {kuv·yə'rän·ə,nē }
- cwm** See cirque. {küm }
- cyanite** See kyanite. {sī·ə,nīt }
- cyanochoite** [MINERAL] $K_2Cu(SO_4)_2 \cdot 6H_2O$ A blue mineral consisting of a hydrous sulfate of potassium and copper. {sī·ə'nä·krə,wīt }
- cyanotrichite** [MINERAL] $Cu_4Al_2(SO_4)(OH)_{12} \cdot 2H_2O$ A bright-blue or sky-blue mineral consisting of a hydrous basic copper aluminum sulfate. {sī·ə'nä·trə,kIt }
- Cycadeoidaceae** [PALEOBOT] A family of extinct plants in the order Cycadeoidales characterized by sparsely branched trunks and a terminal crown of leaves. {sī,kad·ē·öid'äs·ē,ē }
- Cycadeoidales** [PALEOBOT] An order of extinct plants that were abundant during the Triassic, Jurassic, and Cretaceous periods. {sī,kad·ē·öid'a·lēz }
- Cycadofilicales** [PALEOBOT] The equivalent name for the extinct Pteridospermae. {sī·kə·dö,fil·ə'käl·lēz }
- cycle of erosion** See geomorphic cycle. {sī·kəl əv i'rō·zhən }
- cycle of sedimentation** [GEOL] Also known as sedimentary cycle. **1.** A series of related processes and conditions appearing repeatedly in the same sequence in a sedimentary deposit. **2.** The sediments deposited from the beginning of one cycle to the beginning of a second cycle of the spread of the sea over a land area, consisting of the original land sediments, followed by those deposited by shallow water, then deep water, and then the reverse process of the receding water. {sī·kəl əv ,sed·ə·mən'tä·shən }
- cyclic sedimentation** [GEOL] Deposition of various kinds of sediment in a repeated regular sequence. {sīk·lik ,sed·ə·mən'tä·shən }
- Cyclocystoidea** [PALEON] A class of small, disk-shaped, extinct echinozoans in which the lower surface of the body probably consisted of a suction cup. {sī·klō·si'stöid·ē·ə }
- cyclopean** See mosaic. {sī·klə'pē·ən }
- cyclopean stairs** [GEOL] The landscape that results in a glacial trough after the ice has melted away, and that consists of an irregular series of rock steps, with steep cliffs on the down-valley side and small lakes in the shallow excavated depressions of the rock steps. {sī·klə'pē·ən 'sterz }
- cyclosilicate** [MINERAL] A silicate having the SiO_4 tetrahedra linked to form rings, with a silicon-oxygen ratio of 1:3, such as $Si_3O_9^{6-}$ or $Si_6O_{18}^{12-}$. Also known as ring silicate. {sī·klō'sil·ə,kät }
- Cyclosteroidea** [PALEON] A class of Middle Ordovician to Middle Devonian echinoderms in the subphylum Echinozoa. {sī·klō·stə'röid·ē·ə }
- cyclothem** [GEOL] A rock stratigraphic unit associated with unstable shelf of interior basin conditions, in which the sea has repeatedly covered the land. {si·klə,them }

cylindrite

cylindrite [MINERAL] $Pb_3Sn_4Sb_2S_{14}$ A blackish-gray mineral consisting of sulfur, lead, antimony, and tin, occurring in cylindrical forms that separate under pressure into distinct sheets or folia. { sə'lin,drit }

cymrite [MINERAL] $Ba_2Al_3Si_5O_{19}(OH)\cdot 3H_2O$ Zeolite mineral consisting of a basic aluminosilicate of barium. { 'kəm,rīt }

Cystoidea [PALEON] A class of extinct crinozoans characterized by an ovoid body that was either sessile or attached by a short aboral stem. { si'stōid·ē·ə }

Cystoporata [PALEON] An order of extinct, marine bryozoans characterized by cystopores and minutopores. { ,sis·tə'pór·əd·ə }

D

- dachiardite** [MINERAL] $(\text{Na}_2\text{Ca})_2(\text{Al}_4\text{Si}_{20}\text{O}_{48}) \cdot 12\text{H}_2\text{O}$ A white to colorless mineral in the mordenite group of the zeolite family that crystallizes in the monoclinic system. { ,däk·ē'är,dīt }
- Dacian** [GEOL] Lower upper Pliocene geologic time. { 'dā·shən }
- dacite** [GEOL] Very fine crystalline or glassy rock of volcanic origin, composed chiefly of sodic plagioclase and free silica with subordinate dark-colored minerals. { 'dā,sīt }
- dacite glass** [GEOL] A natural glass formed by rapid cooling of dacite lava. { 'dā,sīt ,glas }
- dactylitic** [GEOL] Of a rock texture, characterized by fingerlike projections of a mineral that penetrate another mineral. { dak·tə'lid·ik }
- daily variation** [GEOPHYS] Oscillation occurring in the earth's magnetic field in a 1-day period. { 'dā·lē ,ver·ē'ā·shən }
- Dakotan** [GEOL] Lower Upper Cretaceous geologic time. { də'kot·ən }
- damkjernite** [PETR] A melanocratic dike rock composed of biotite and pyroxene phenocrysts in a groundmass of pyroxene, biotite, and magnetite. { 'dam·kyər,nīt }
- danalite** [MINERAL] $(\text{Fe,Mn,Zn})_4\text{Be}_3(\text{SiO}_4)_3\text{S}$ A mineral consisting of a silicate and sulfide of iron and beryllium; it is isomorphous with helvite and genthelvite. { 'dā·nə,līt }
- danburite** [MINERAL] $\text{CaB}_2(\text{SiO}_4)_2$ An orange-yellow, yellowish-brown, grayish, or colorless transparent to translucent borosilicate mineral with a feldspar structure crystallizing in the orthorhombic system; it resembles topaz and is used as an ornamental stone. { 'dan·bə,rīt }
- Danian** [GEOL] Lowermost Paleocene or uppermost Cretaceous geologic time. { 'dān·ē·ən }
- dannemorite** [MINERAL] $(\text{Fe,Mn,Mg})_7\text{Si}_8\text{O}_{22}(\text{OH})_2$ A yellowish-brown to greenish-gray monoclinic mineral consisting of a columnar or fibrous amphibole. { ,dan·ə'mör,īt }
- daphnite** [MINERAL] $(\text{MgFe})_3(\text{Fe,Al})_3(\text{Si,Al})_4\text{O}_{10}(\text{OH})_8$ A mineral of the chlorite group consisting of a basic aluminosilicate of magnesium, iron, and aluminum. { 'daf,nīt }
- Daphnoidea** [PALEON] A family of extinct carnivorous mammals in the superfamily Miacoidea. { də'fēn·ə,dē }
- darapskite** [MINERAL] $\text{Na}_3(\text{NO}_3)(\text{SO}_4) \cdot \text{H}_2\text{O}$ A naturally occurring hydrate mineral consisting of a hydrous nitrate and sulfate of sodium. { də'rap,skīt }
- dark-red silver ore** See pyrargyrite. { 'därk 'red 'sil·vər ,ör }
- dark-ruby silver** See pyrargyrite. { 'därk 'rü·bē ,sil·vər }
- Darwin glass** [GEOL] A highly siliceous, vesicular glass shaped in smooth blobs or twisted shreds, found in the Mount Darwin range in western Tasmania. Also known as queenstownite. { 'där·wən ,glas }
- dashkesanite** [MINERAL] $(\text{Na,K})\text{Ca}_2(\text{Fe,Mg})_5(\text{Si,Al})_8\text{O}_{22}\text{Cl}_2$ A monoclinic mineral of the amphibole group consisting of a chloroaluminosilicate of sodium, potassium, iron, and magnesium. { ,dash·kə'sa,nīt }
- datolite** [MINERAL] $\text{CaBSiO}_4(\text{OH})$ A mineral nesosilicate crystallizing in the monoclinic system; luster is vitreous, and crystals are colorless or white with a greenish tinge. { 'dad·əl,īt }
- datum** [GEOL] The top or bottom of a bed of rock on which structure contours are drawn. { 'dad·əm, 'däd·əm, or 'däd·əm }

daubreite

- daubreite** [MINERAL] FeCr_2S_4 A mineral composed of a black chromium iron sulfide; occurs in some meteors. { 'dō·brē,īt }
- Davian** [GEOL] A subdivision of the Upper Cretaceous in Europe; a limestone formation with abundant hydrocorals, bryozoans, and mollusks in Denmark; marine limestone and nonmarine rocks in southeastern France; and continental formations in the Davian of Spain and Portugal. { 'dā·vē·ən }
- davidite** [MINERAL] A black primary pegmatite uranium mineral of the general formula $\text{A}_6\text{B}_{15}(\text{O},\text{OH})_{36}$, where A = Fe^{2+} , rare earths, uranium, calcium, zirconium, and thorium, and B = titanium, Fe^{3+} , vanadium, and chromium. { 'dā·və,dīt }
- daviesite** [MINERAL] An orthorhombic mineral consisting of a lead oxychloride, occurring in minute crystals. { 'dā·vē,zīt }
- davisonite** [MINERAL] $\text{Ca}_3\text{Al}(\text{PO}_4)_2(\text{OH})_3\cdot\text{H}_2\text{O}$ A white mineral consisting of a hydrous basic phosphate of calcium and aluminum. { 'dā·və·sə,nīt }
- dawsonite** [MINERAL] $\text{NaAl}(\text{OH})_2\text{CO}_3$ A white, bladed mineral found in certain oil shales that contains large quantities of alumina; specific gravity is 2.40. { 'dōs·ən,īt }
- dead** [GEOL] In economic geology, designating a region with no economic value. { ded }
- dead cave** [GEOL] A cave where there is no moisture or no growth of mineral deposits associated with moisture. { 'ded 'kāv }
- death assemblage** See thanatocoenosis. { 'deth ə,sem·blij }
- debris** [GEOL] Large fragments arising from disintegration of rocks and strata. { də'brē }
- debris avalanche** [GEOL] The sudden and rapid downward movement of incoherent mixtures of rock and soil on deep slopes. { də'brē 'av·ə,lanch }
- debris cone** [GEOL] **1.** A mound of fine-grained debris piled atop certain boulders moved by a landslide. **2.** A mound of ice or snow on a glacier covered with a thin layer of debris. { də'brē ,kōn }
- debris fall** [GEOL] A relatively free downward or forward falling of unconsolidated or poorly consolidated earth or rocky debris from a cliff, cave, or arch. { də'brē ,fōl }
- debris flow** [GEOL] A variety of rapid mass movement involving the downslope movement of high-density coarse clast-bearing mudflows, usually on alluvial fans. { də'brē ,flō }
- debris line** See swash mark. { də'brē ,līn }
- debris slide** [GEOL] A type of landslide involving a rapid downward sliding and forward rolling of comparatively dry, unconsolidated earth and rocky debris. { də'brē ,slīd }
- debris slope** See talus slope. { də'brē ,slōp }
- decay** See chemical weathering. { di'kā }
- Deccan basalt** [GEOL] Fine-grained, nonporphyritic, tholeiitic basaltic lava consisting essentially of labradorite, clinopyroxene, and iron ore; found in the Deccan region of southeastern India. Also known as Deccan trap. { 'dek·ən bə'sōlt }
- Deccan trap** See Deccan basalt. { 'dek·ən 'trap }
- declination** [GEOPHYS] The angle between the magnetic and geographical meridians, expressed in degrees and minutes east or west to indicate the direction of magnetic north from true north. Also known as magnetic declination; variation. { ,dek·lə'nā·shən }
- declivity** [GEOL] **1.** A slope descending downward from a point of reference. **2.** A downward deviation from the horizontal. { də'kliv·əd·ē }
- décollement** [GEOL] Folding or faulting of sedimentary beds by sliding over the underlying rock. { də'käl·mənt }
- decomposition** See chemical weathering. { də,käm·pə'zish·ən }
- decrepitation** [GEOPHYS] Breaking up of mineral substances when exposed to heat; usually accompanied by a crackling noise. { di,krep·ə'tā·shən }
- decussate structure** [GEOL] A crisscross microstructure of certain minerals; most noticeable in rocks composed predominantly of minerals with a columnar habit. { 'dek·ə,sät ,strək·chər }
- dedolomitization** [GEOL] Destruction of dolomite to form calcite and periclase, usually by contact metamorphism at low pressures. { də,dō·lə,mid·ə'zā·shən }

delta plain

- deep-marine sediments** [GEOL] Sedimentary environments occurring in water deeper than 200 meters (660 feet), seaward of the continental shelf break, on the continental slope and the basin. { ,dēp·mə'rēn 'sed·ə·mins }
- deep-sea basin** [GEOL] A depression of the sea floor more or less equidimensional in form and of variable extent. { ,dēp 'sē 'bās·ən }
- deep-sea channel** [GEOL] A trough-shaped valley of low relief beyond the continental rise on the deep-sea floor. Also known as mid-ocean canyon. { ,dēp 'sē 'chan·əl }
- deep-sea plain** [GEOL] A broad, almost level area forming the predominant portion of the ocean floor. { ,dēp 'sē 'plān }
- deep-seated** See plutonic. { ,dēp 'sēd·əd }
- deep-sea trench** [GEOL] A long, narrow depression of the deep-sea floor having steep sides and containing the greatest ocean depths; formed by depression, to several kilometers' depth, of the high-velocity crustal layer and the mantle. { ,dēp 'sē 'trench }
- Deerparkian** [GEOL] A North American stage of geologic time in the Lower Devonian, above Helderbergian and below Onesquethawan. { di'r'pärk·ē·ən }
- deflation** [GEOL] The sweeping erosive action of the wind over the ground. { di'flā·shən }
- deflation basin** [GEOL] A topographic depression formed by deflation. { di'flā·shən ,bās·ən }
- deformation fabric** [GEOL] The space orientation of rock elements produced by external stress on the rock. { ,def·ər,mā·shən ,fab·rik }
- deformation lamella** [GEOL] A type of slipband in the crystalline grains of a material (particularly quartz) produced by intracrystalline slip during tectonic deformation. { ,def·ər,mā·shən lə,mel·ə }
- degenerative recrystallization** See degradation recrystallization. { di'jen·ər·rəd·iv rē,krist·əl·ə'zā·shən }
- degradation** [GEOL] The wearing down of the land surface by processes of erosion and weathering. { ,deg·rə'dā·shən }
- degradation recrystallization** [GEOL] Recrystallization resulting in a decrease in the size of crystals. Also known as degenerative recrystallization; grain diminution. { ,deg·rə'dā·shən rē,krist·əl·ə'zā·shən }
- degraded illite** [MINERAL] Illite with a depleted potassium content because of prolonged leaching. Also known as stripped illite. { dē'grād·əd i'llit }
- dehrite** [MINERAL] $(Ca,Na,K)_5(PO_4)_3(OH)$ A colorless to pale green, greenish-white, or gray, hexagonal mineral consisting of a basic phosphate of calcium, sodium, and potassium; occurs as botryoidal crusts and minute hexagonal prisms. { 'der,nīt }
- Deinotheriidae** [PALEON] A family of extinct proboscidean mammals in the suborder Deinotherioidea; known only by the genus *Deinotherium*. { ,dī·nō·thə'rī·ə,dē }
- Deinotherioidea** [PALEON] A monofamilial suborder of extinct mammals in the order Proboscidea. { ,dī·nō,ther·ə'loid·ē·ə }
- Deister phase** [GEOL] A subdivision of the late Ammerian phase of the Jurassic period between the Kimmeridgian and lower Portlandian. { 'dī·stər ,fāz }
- delafossite** [MINERAL] $CuFeO_2$ A mineral consisting of an oxide of copper and iron. { ,de·lə'fō,sīt }
- dellenite** See rhyodacite. { 'del·ə,nīt }
- Delmontian** [GEOL] Upper Miocene or lower Pliocene geologic time. { del'män·chən }
- delorenzite** See tanteuxenite. { dē·lə'ren,zīt }
- delta** [GEOL] An alluvial deposit, usually triangular in shape, at the mouth of a river, stream, or tidal inlet. { 'del·tə }
- delta geosyncline** See exogeosyncline. { 'del·tə ,jē·ō'sin,klt'n }
- deltaic deposits** [GEOL] Sedimentary deposits in a delta. { del'tā·ik di'pāz·əts }
- deltaite** [MINERAL] A mixture of crandallite and hydroxylapatite. { 'del·tə,īt }
- delta moraine** See ice-contact delta. { 'del·tə mə'rān }
- delta plain** [GEOL] A plain formed by deposition of silt at the mouth of a stream or by overflow along the lower stream courses. { 'del·tə ,plān }

Deltatheridia

- Deltatheridia** [PALEON] An order of mammals that includes the dominant carnivores of the early Cenozoic. { ,del-tə-thə'rid-ē-ə }
- delvauxite** [MINERAL] A mineral, with the approximate formula $Fe_4(PO_4)_2(OH)_6 \cdot nH_2O$, consisting of a hydrous phosphate of iron. { del'vok,sīt }
- demantoid** [MINERAL] A lustrous, green variety of andradite; used as a gem. { də'man,toid }
- demorphism** See weathering. { də'mor-fiz-əm }
- dendritic valleys** [GEOL] Treelike extensions of the valleys in a region lying upon horizontally bedded rock. { den'drid-ik 'val-ēz }
- dendrochronology** [GEOL] The science of measuring time intervals and dating events and environmental changes by reading and dating growth layers of trees as demarcated by the annual rings. { ,den-drō-krə'nāl-ə-jē }
- Dendroidea** [PALEON] An order of extinct sessile, branched colonial animals in the class Graptolithina occurring among typical benthonic fauna. { den'drōid-ē-ə }
- densofacies** See metamorphic facies. { ,den-sō'fā-shēz }
- denudation** [GEOL] General wearing away of the land; laying bare of subjacent lands. { ,dē-nū'dā-shən }
- deoxidation sphere** See bleach spot. { də,äk-sə'dā-shən ,sfir }
- Depertellidae** [PALEON] A family of extinct perissodactyl mammals in the superfamily Tapiroidea. { də-pər'tel-ə,dē }
- depocenter** [GEOL] A site of maximum deposition. { 'dep-ə,sen-tər }
- deposit** [GEOL] Consolidated or unconsolidated material that has accumulated by a natural process or agent. { də'pāz-ət }
- deposition** [GEOL] The laying, placing, or throwing down of any material; specifically, the constructive process of accumulation into beds, veins, or irregular masses of any kind of loose, solid rock material by any kind of natural agent. { ,dep-ə'zish-ən }
- depositional dip** See primary dip. { ,dep-ə'zish-ən-əl 'dip }
- depositional fabric** [PETR] Arrangement of detrital particles settled from suspension or of crystals from a differentiating magma determined by the plane of the surface on which they come to rest. { ,dep-ə'zish-ən-əl 'fab-rik }
- depositional sequence** [GEOL] A major but informal assemblage of formations or groups and supergroups, bounded by regionally extensive unconformities at both their base and top and extending over broad areas of continental cratons. { ,dep-ə'zish-ən-əl 'sē-kwəns }
- depositional strike** [GEOL] Sedimentary deposits that are continuous laterally on a gently sloping surface. { ,dep-ə'zish-ən-əl 'strīk }
- depression** [GEOL] **1.** A hollow of any size on a plain surface having no natural outlet for surface drainage. **2.** A structurally low area in the crust of the earth. { di'pres-ən }
- depth of compensation** [GEOPHYS] That depth at which density differences occurring in the earth's crust are compensated isostatically; calculated to be between 62 and 70–73 miles (100 and 113–117 kilometers). { 'depth əv ,kām-pən'sā-shən }
- depth zone** [GEOL] A zone within the earth giving rise to different metamorphic assemblages. { 'depth ,zōn }
- derbylite** [MINERAL] $Fe_6Ti_6Sb_2O_{23}$ A black or brown orthorhombic mineral occurring in cinnabar-bearing gravels. { 'dər-bē,līt }
- Derbyshire spar** See fluorite. { 'där-bə,shir ,spär }
- derivative rock** See sedimentary rock. { də'riv-əd-iv 'rāk }
- descendant** [GEOL] A topographic feature that is formed from the mass beneath an older topographic form, now removed. { di'sen-dənt }
- desert crust** See desert pavement. { ,dez-ərt 'krəst }
- desert pavement** [GEOL] A mosaic of pebbles and large stones which accumulate as the finer dust and sand particles are blown away by the wind. Also known as desert crust. { ,dez-ərt 'pāv-mənt }
- desert peneplain** See pediplain. { ,dez-ərt 'pen-ə,plān }
- desert plain** See pediplain. { ,dez-ərt 'plān }
- desert polish** [GEOL] A smooth, shining surface imparted to rocks and other hard

dewindtite

- substances by the action of windblown sand and dust of desert regions. { 'dez·ərt 'päl·ish }
- desert soil** [GEOL] In early United States classification systems, a group of zonal soils that have a light-colored surface soil underlain by calcareous material and a hardpan. { 'dez·ərt 'söil }
- desert varnish** See rock varnish. { 'dez·ərt 'vār·nish }
- desiccation breccia** [GEOL] Fragments of a mud-cracked layer of sediment deposited with other sediments. { ,des·ə'kā·shən ,brech·ə }
- desiccation crack** See mud crack. { ,des·ə'kā·shən ,krak }
- desilication** [GEOCHEM] Removal of silica, as from rock or a magma. { dē,sil·ə'kā·shən }
- desmine** See stilbite. { 'dez,mēn }
- Desmodonta** [PALEON] An order of extinct bivalve, burrowing mollusks. { ,dez·mə'dän·tə }
- Des Moinesian** [GEOL] Lower Middle Pennsylvanian geologic time. { də'möin·ē·ən }
- Desmostyilia** [PALEON] An extinct order of large hippopotamuslike, amphibious, gravi-grade, shellfish-eating mammals. { ,dez·mə'stīl·ē·ə }
- Desmostyliidae** [PALEON] A family of extinct mammals in the order Desmostyilia. { ,dez·mə'stīl·ə,dē }
- detached core** [GEOL] The inner bed or beds of a fold that may become separated or pinched off from the main body of the strata due to extreme folding and compression. { di'tacht 'kór }
- detrital fan** See alluvial fan. { də'trīd·əl 'fan }
- detrital minerals** [MINERAL] Grains of heavy minerals found in sediment, resulting from mechanical disintegration of the parent rock. { də'trīd·əl 'min·rəlz }
- detrital ratio** See clastic ratio. { də'trīd·əl 'rā·shō }
- detrital remanent magnetization** [GEOPHYS] Magnetization acquired by magnetic grains during formation of a sedimentary rock. Abbreviated DRM. { də'trīd·əl 'rem·ə·nənt 'mag·nəd·ə'zā·shən }
- detrital reservoir** [GEOL] A clastic or detrital-granular reservoir, classified by rock type and other factors such as sediments (quartzose-type, graywacke, or arkose sediments). { də'trīd·əl 'rez·əv,wär }
- detrital sediment** [GEOL] Accumulations of the organic and inorganic fragmental products of the weathering and erosion of land transported to the place of deposition. { də'trīd·əl 'sed·ə·mənt }
- detritus** [GEOL] Any loose material removed directly from rocks and minerals by mechanical means, such as disintegration or abrasion. { də'trīd·əs }
- deuteric** [GEOL] Of or pertaining to alterations in igneous rock during the later stages and as a direct result of consolidation of magma or lava. Also known as epimagmatic; paulopost. { dü'tir·ik }
- development** [GEOL] The progression of changes in fossil groups which have succeeded one another during deposition of the strata of the earth. { də'vel·əp·mənt }
- deviatoric stress** [GEOL] A condition in which the stress components operating at a point in a body are not the same in every direction. Also known as differential stress. { 'dēv·ē·ə'tōr·ik 'stres }
- devillite** [MINERAL] $\text{Cu}_4\text{Ca}(\text{SO}_4)_2(\text{OH})_6 \cdot 3\text{H}_2\text{O}$ A dark-green mineral consisting of a hydrous basic sulfate of copper and calcium, occurring in six-sided platy crystals. { də'vē,līt }
- Devonian** [GEOL] The fourth period of the Paleozoic Era, covering the geological time span between about 412 and 354×10^6 years before present. { di'vō·nē·ən }
- De Vries effect** [GEOCHEM] A relatively short-term oscillation, on the order of 100 years, in the radiocarbon content of the atmosphere, and the resulting variation in the apparent radiocarbon age of samples. { də'vrēz i'fekt }
- deweylite** [MINERAL] A mixture of clinochrysolite and stevensite. Also known as gymnite. { 'dü·ē,līt }
- dewindtite** [MINERAL] $\text{Pb}(\text{UO}_2)_2(\text{PO}_4)_2 \cdot 3\text{H}_2\text{O}$ A canary-yellow secondary mineral consisting of a hydrous phosphate of lead and uranium. { də'win,tīt }

de Witte relation

- de Witte relation** [GEOPHYS] Graphical plot of the relation between electrical conductivity and distance over which the conductivity is measured through reservoir rock with clay minerals, (the effect is similar to two parallel electrical circuits), the current passing through the conducting clay minerals and the water-filled pores. {də'wit rē'lā·shən }
- dextral drag fold** [GEOLOGY] A drag fold in which the trace of a given surface bed is displaced to the right. { 'dek·strəl 'drag ,föld }
- dextral fault** [GEOLOGY] A strike-slip fault in which an observer approaching the fault sees the opposite block as having moved to the right. Also known as right-lateral fault; right-lateral slip fault; right-slip fault. { 'dek·strəl 'fölt }
- dextral fold** [GEOLOGY] An asymmetric fold in which the long limb appears to be offset to the right to an observer looking along the long limb. { 'dek·strəl 'föld }
- D horizon** [GEOLOGY] A soil horizon sometimes occurring below a B or C horizon, consisting of unweathered rock. { 'dē hō'rīz·ən }
- diabantite** [MINERAL] $(\text{Mg}, \text{Fe}^{2+}, \text{Al})_6(\text{Si}, \text{Al})_4\text{O}_{10}(\text{OH})_8$ Mineral of the chlorite group consisting of a basic silicate of magnesium, iron, and aluminum, occurring in cavities in basic igneous rock. { ,dī·ə'ban,tīt }
- diabase** [PETROLOGY] An intrusive rock consisting principally of labradorite and pyroxene. { 'dī·ə,bās }
- diabase amphibolite** [PETROLOGY] Amphibolite formed by dynamic metamorphism of diabase. { 'dī·ə,bās am'fīb·ə,līt }
- diabasic** [PETROLOGY] Denoting igneous rock in which the interstices between the feldspar crystals are filled with discrete crystals or grains of pyroxene. { 'dī·ə|bās·ik }
- diablastic** [PETROLOGY] Pertaining to a texture in metamorphic rock that consists of intergrown and interpenetrating rod-shaped components. { ,dī·ə'blas·tik }
- diaboleite** [MINERAL] $\text{Pb}_2\text{CuCl}_2(\text{OH})_4$ A sky-blue mineral consisting of a basic chloride of lead and copper. { 'dī·ə'bō'lā,tīt }
- diachronous** [GEOLOGY] Of a rock unit, varying in age in different areas or cutting across time planes or biostratigraphic zones. Also known as time-transgressive. { dī'ak·rə·nəs }
- diacinal** [GEOLOGY] Pertaining to a stream crossing a fold, perpendicular to the strike of the underlying strata it traverses. { 'dī·ə|klīn·əl }
- Diacodectidae** [PALEONTOLOGY] A family of extinct artiodactyl mammals in the suborder Palaeodonta. { ,dī·ə'kə'dek·tə,dē }
- diadochite** [MINERAL] $\text{Fe}_2(\text{PO}_4)(\text{SO}_4)(\text{OH}) \cdot 5\text{H}_2\text{O}$ A brown or yellowish mineral consisting of a basic hydrous ferric phosphate and sulfate. { dī'ad·ə,kīt }
- diagenesis** [GEOLOGY] Chemical and physical changes occurring in sediments during and after their deposition but before consolidation. { ,dī·ə'jen·ə·səs }
- diagonal fault** [GEOLOGY] A fault whose strike is diagonal or oblique to the strike of the adjacent strata. Also known as oblique fault. { dī'ag·ən·əl 'fölt }
- diagonal joint** [GEOLOGY] A joint having its strike oblique to the strike of the strata of the sedimentary rock, or to the cleavage plane of the metamorphic rock in which it occurs. Also known as oblique joint. { dī'ag·ən·əl 'jōint }
- diallage** [MINERAL] A green, brown, gray, or bronze-colored clinopyroxene characterized by prominent parting parallel to the front pinacoid *a* (100). { 'dī·ə·lij }
- diamantine** [MINERAL] Consisting of or resembling diamond. { 'dī·ə|man,tēn }
- diamictite** [PETROLOGY] A calcareous, terrigenous sedimentary rock that is not sorted or poorly sorted and contains particles of many sizes. Also known as mixtite. { dī·ə'mik,tīt }
- diamicton** [PETROLOGY] A nonlithified diamictite. Also known as symmicton. { dī·ə'mik,tān }
- diamond** [MINERAL] A colorless mineral composed entirely of carbon crystallized in the isometric system as octahedrons, dodecahedrons, and cubes; the hardest substance known; used as a gem and in cutting tools. { 'dī,mənd }
- diamond matrix** [GEOLOGY] The rock material in which diamonds are formed. { 'dī·mənd 'mā·triks }
- dianite** See columbite. { 'dī·ə,nīt }

didymolite

- Dianulitidae** [PALEON] A family of extinct, marine bryozoans in the order Cystoporata. { dī,an·yə'lid·ə,dē }
- diaphorite** [MINERAL] $Pb_2Ag_3Sb_3S_8$ A gray-black orthorhombic mineral consisting of sulfide of lead, silver, and antimony, occurring in crystals. Also known as ultrabasite. { dī'af·ə,rīt }
- diaphthoresis** See retrograde metamorphism. { dī'af·thə'rē·səs }
- diaphthorite** [PETR] Schistose rocks in which minerals have formed by retrograde metamorphism. { dī'af·thə,rīt }
- diapir** [GEO] A dome or anticlinal fold in which a mobile plastic core has ruptured the more brittle overlying rock. Also known as diapiric fold; piercement dome; piercing fold. { 'dī·ə,pir }
- diapiric fold** See diapir. { 'dī·ə,pir·ik 'föld }
- diaspore** [MINERAL] $AlO(OH)$ A mineral composed of some bauxites occurring in white, lamellar masses; crystallizes in the orthorhombic system. { 'dī·ə,spōr }
- diastem** [GEO] A temporal break between adjacent geologic strata that represents nondeposition or local erosion but not a change in the general regimen of deposition. { 'dī·ə,stem }
- diastrophism** [GEO] **1.** The general process or combination of processes by which the earth's crust is deformed. **2.** The results of this deforming action. { dī'as·trə,fiz·əm }
- diatomaceous earth** [GEO] A yellow, white, or light-gray, siliceous, porous deposit made of the opaline shells of diatoms; used as a filter aid, paint filler, adsorbent, abrasive, and thermal insulator. Also known as kieselguhr; tripolite. { 'dī·ə·tə'mā·shəs 'ərth }
- diatomaceous ooze** [GEO] A pelagic, siliceous sediment composed of more than 30% diatom tests, up to 40% calcium carbonate, and up to 25% mineral grains. { 'dī·ə·tə'mās·shəs 'ūz }
- diatomite** [GEO] Dense, chert-like, consolidated diatomaceous earth. { dī'ad·ə,mīt }
- diatreme** [GEO] A circular volcanic vent produced by the explosive energy of gas-charged magmas. { 'dī·ə,trēm }
- Diatrymiformes** [PALEON] An order of extinct large, flightless birds having massive legs, tiny wings, and large heads and beaks. { dī,a·trə·mə'fōr,mēz }
- diaborate** See borax. { dī'bōr,āt }
- Dichobunidae** [PALEON] A family of extinct artiodactyl mammals in the superfamily Dichobunoidea. { ,dī·kə'byūn·ə,dē }
- Dichobunoidea** [PALEON] A superfamily of extinct artiodactyl mammals in the suborder Paleodonta composed of small to medium-size forms with tri- to quadritubercular bunodont upper teeth. { ,dī·kə·byə'nōid·ē·ə }
- Dickinsoniidae** [PALEON] A family that comprises extinct flat-bodied, multisegmented coelomates; identified as ediacaran fauna. { ,dik·ən·sə'nī·ə,dē }
- dickinsonite** [MINERAL] $H_2Na_6(Mn,Fe,Ca,Mg)_{14}(PO_4)_{12}·H_2O$ A green mineral consisting of foliated hydrous acid phosphate, chiefly of manganese, iron, and sodium, and is isostructural with arrojadite; specific gravity is 3.34. { 'dik·ən·sə,nīt }
- dickite** [MINERAL] $Al_2Si_2O_5(OH)_4$ A mineral of the kaolin group found crystallized in clay in hydrothermal veins; it is polymorphous with kaolinite and nacrite. { 'di,kīt }
- Dictyonellidina** [PALEON] A suborder of extinct articulate brachiopods. { 'dik·tē·ō·ne'lid·ən·ə }
- dictyonema bed** [GEO] A thin shale bed rich in remains of graptolites of the genus *Dictyonema*. { ,dik·tē·ə'nē·mə ,bed }
- Dictyospongiidae** [PALEON] A family of extinct sponges in the subclass Amphidiscophora having spicules resembling a one-ended amphidisc (paraclavule). { 'dik·tē·ō,spən'jī·ə,dē }
- Didolodontidae** [PALEON] A family consisting of extinct medium-sized herbivores in the order Condylarthra. { dīd·əl·ō'dānt·ə,dē }
- didymolite** [MINERAL] $Ca_2Al_6Si_9O_{29}$ A dark-gray monoclinic mineral consisting of calcium aluminum silicate, occurring in twinned crystals. { dī'dim·ə,līt }

dietrichite

- dietrichite** [MINERAL] $(\text{Zn,Fe,Mn})\text{Al}_2(\text{SO}_4)_4 \cdot 22\text{H}_2\text{O}$ Mineral consisting of a hydrous sulfate of aluminum and one or more of the metals zinc, iron, and manganese. { 'dē·tri,kɪt }
- dietzeite** [MINERAL] $\text{Ca}_2(\text{IO}_3)_2(\text{CrO}_4)$ A dark-golden-yellow iodate mineral commonly in fibrous or columnar form as a component of caliche. { 'dēt·sə,ɪt }
- differential compaction** [GEOL] Compression in sediments, such as sand or limestone, as the weight of overburden causes reduction in pore space and forcing out of water. { ,dif·ə'ren·chəl kəm'pak·shən }
- differential erosion** [GEOL] Rapid erosion of one area of the earth's surface relative to another. { ,dif·ə'ren·chəl i'rō·zhən }
- differential fault** See scissors fault. { ,dif·ə'ren·chəl 'fólt }
- differential stress** See deviatoric stress. { ,dif·ə'ren·chəl 'stres }
- digenite** [MINERAL] Cu_9S_5 A blue to black mineral consisting of an isometric copper sulfide having a variable deficiency in copper. Also known as alpha chalcocite; blue chalcocite. { 'dī·jə,nɪt }
- digitation** [GEOL] A secondary recumbent anticline emanating from a larger recumbent anticline. { ,dij·ə'tā·shən }
- dike** [GEOL] A tabular body of igneous rock that cuts across adjacent rocks or cuts massive rocks. { dɪk }
- dike ridge** [GEOL] Any small wall-like ridge created by differential erosion. { 'dɪk ,rɪj }
- dike set** [GEOL] A small group of dikes arranged linearly or parallel to each other. { 'dɪk ,set }
- dike swarm** [GEOL] A large group of parallel, linear, or radially oriented dikes. { 'dɪk ,swɔrm }
- dilatancy** [GEOL] Expansion of deformed masses of granular material, such as sand, due to rearrangement of the component grains. { dɪ'lāt·ən·sē }
- dimorphite** [MINERAL] As_4S_3 An orange-yellow mineral consisting of arsenic sulfide. { dɪ'mór,ɪt }
- Dimyliidae** [PALEON] A family of extinct lipotyphlan mammals in the order Insectivora; a side branch in the ancestry of the hedgehogs. { dɪ'mil·ə,dē }
- Dinantian** [GEOL] Lower Carboniferous geologic time. Also known as Avonian. { di'nən·chən }
- Dinocerata** [PALEON] An extinct order of large, herbivorous mammals having semigraviportal limbs and hooved, five-toed feet; often called uintatheres. { ,dɪ·nō'ser·ə·də }
- Dinornithiformes** [PALEON] The moas, an order of extinct birds of New Zealand; all had strong legs with four-toed feet. { ,dɪn·ór,nith·ə'fór,mēz }
- dinosaur** [PALEON] The name, meaning terrible lizard, applied to the fossil bones of certain large, ancient bipedal and quadrupedal reptiles placed in the orders Saurischia and Ornithischia. { 'dɪ·nə,sór }
- diogenite** [MINERAL] An achondritic stony meteorite composed essentially of iron-rich pyroxene minerals. Also known as rodite. { dɪ'ə·jə,nɪt }
- diopside** [MINERAL] $\text{CaMg}(\text{SiO}_3)_2$ A white to green monoclinic pyroxene mineral which forms gray to white, short, stubby, prismatic, often equidimensional crystals. Also known as malacolite. { dɪ'əp,sɪd }
- diopase** [MINERAL] $\text{CuSiO}_2(\text{OH})_2$ A rare emerald-green mineral that forms hexagonal, hydrous crystals. { dɪ'əp,tās }
- diorite** [PETR] A phaneritic plutonic rock with granular texture composed largely of plagioclase feldspar with smaller amounts of dark-colored minerals; used occasionally as ornamental and building stone. Also known as black granite. { 'dɪ·ə,ɪt }
- dip** [GEOL] **1.** The angle that a stratum or fault plane makes with the horizontal. Also known as angle of dip; formation dip; true dip. **2.** A pronounced depression in the land surface. { dip }
- dip fault** [GEOL] A type of fault that strikes parallel with the dip of the strata involved. { 'dip ,fólt }
- dip joint** [GEOL] A joint that strikes approximately at right angles to the cleavage or bedding of the constituent rock. { 'dip ,jɔɪnt }

discrete-film zone

- Diplacanthidae** [PALEON] A family of extinct acanthodian fishes in the suborder Diplacanthoidei. { ,dip·lə'kan·thə·dē }
- Diplacanthoidei** [PALEON] A suborder of extinct acanthodian fishes in the order Climatiformes. { ,dip·lə·kan'thòid·ē,t }
- Diplobathrida** [PALEON] An order of extinct, camerate crinoids having two circles of plates beneath the radials. { ,dip·lə'bath·rə·də }
- Diplodocus** [PALEON] Herbivorous sauropod dinosaur, approximately 100 feet (30 meters) long and weighing 12 tons, from the Late Jurassic Period that had a very long neck and tail and a very small body. { di'pləd·ə·kəs }
- dip log** [GEOL] A log of the dips of formations traversed by boreholes. { 'dip ,lāg }
- Diploporita** [PALEON] An extinct order of echinoderms in the class Cystoidea in which the thecal canals were associated in pairs. { ,dip·lə'pór·əd·ə }
- dipmeter log** [GEOL] A dip log produced by reading of the direction and angle of formation dip as analyzed from impulses from a dipmeter consisting of three electrodes 120° apart in a plane perpendicular to the borehole. { 'dip,mēd·ər ,lāg }
- dip pole** See magnetic pole. { 'dip ,pōl }
- dip reversal** See reversal of dip. { 'dip ri'vər·səl }
- Diprotodontidae** [PALEON] A family of extinct marsupial mammals. { dī,prōd·ə'dän·tə·dē }
- dip slip** [GEOL] The component of a fault parallel to the dip of the fault. Also known as normal displacement. { 'dip ,slip }
- dip slope** [GEOL] A slope of the surface of the land determined by and conforming approximately to the dip of the underlying rocks. Also known as back slope; outface. { 'dip ,slōp }
- dip-strike symbol** [GEOL] A geologic symbol used on maps to show the strike and dip of a planar feature. { 'dip ,strīk ,sim·bəl }
- dipyre** See mizzonite. { 'dī,pīr }
- direction** See trend. { də'rek·shən }
- directional structure** [GEOL] Any sedimentary structure having directional significance; examples are cross-bedding and ripple marks. Also known as vectorial structure. { də'rek·shən·əl 'strək·chər }
- direct stratification** See primary stratification. { də'rekt ,strəd·ə·fə'kā·shən }
- dirt band** [GEOL] A dark layer in a glacier representing a former surface, usually a summer surface, where silt and debris accumulated. { 'dərt ,band }
- dirt bed** [GEOL] A buried soil containing partially decayed organic material; sometimes occurs in glacial drift. { 'dərt ,bed }
- dirt slip** See clay vein. { 'dərt ,slip }
- Disasteridae** [PALEON] A family of extinct burrowing, exocyclic Euechinoidea in the order Holasteroidea comprising mainly small, ovoid forms without fascioles or a plastron. { ,dis·ə'ster·ə,dē }
- Discoidiidae** [PALEON] A family of extinct conical or globular, exocyclic Euechinoidea in the order Hololectypoida distinguished by the rudiments of internal skeletal partitions. { dis,kói'dī·ə,dē }
- disconformity** [GEOL] Unconformity between parallel beds or strata. { ,dis·kən'fór·məd·ē }
- discontinuity** [GEOL] **1.** An interruption in sedimentation. **2.** A surface that separates unrelated groups of rocks. [GEOPHYS] A boundary at which the velocity of seismic waves changes abruptly. { dis,kánt·ən'ü·əd·ē }
- discontinuous reaction series** [GEOL] The branch of Bowen's reaction series that include olivine, pyroxene, amphibole, and biotite; each change in the series represents an abrupt change in phase. { ,dis·kən'tin·yər·wəs rē'ak·shən ,sir·ēz }
- discordance** [GEOL] An unconformity characterized by lack of parallelism between strata which touch without fusion. { di'skórd·əns }
- discordant pluton** [GEOL] An intrusive igneous body that cuts across the bedding or foliation of the intruded formations. { di'skórd·ənt 'plü,tän }
- discrete-film zone** See belt of soil water. { di'skrēt ,film ,zōn }

disharmonic fold

- disharmonic fold** [GEOL] A fold in which changes in form or magnitude occur with depth. { ,dis·här'män·ik 'föld }
- disjunct endemism** [PALEON] A type of regionally restricted distribution of a fossil taxon in which two or more component parts are separated by a major physical barrier and hence not readily explicable in terms of present-day geography. { 'dis,jəŋkt 'en·də,miz·əm }
- dislocation** [GEOL] Relative movement of rock on opposite sides of a fault. Also known as displacement. { ,dis·lō'kā·shən }
- dislocation breccia** See fault breccia. { ,dis·lō'kā·shən 'brech·ə }
- dismicrite** [GEOL] Fine-grained limestone of obscure origin, resembling micrite but containing sparry calcite bodies. { diz'mī,krit }
- dispersal pattern** [GEOCHEM] Distribution pattern of metals in soil, rock, water, or vegetation. { də'spər·səl ,pəd·ərŋ }
- dispersed elements** [GEOCHEM] Elements which form few or no independent minerals but are present as minor ingredients in minerals of abundant elements. { də'spərst 'el·ə·mənts }
- dispersion** [MINERAL] In optical mineralogy, the constant optical values at different positions on the spectrum. { də'spər·zhən }
- displaced ore body** [GEOL] An ore body which has been subjected to displacement or disruption after its initial deposition. { dis'pləst 'ör ,bäd·ə }
- displacement** [GEOL] See dislocation. { dis'plās·mənt }
- dissection** [GEOL] Destruction of the continuity of the land surface by erosive cutting of valleys or ravines into a relatively even surface. { də'sek·shən }
- dissepiment** [PALEON] One of the vertically positioned thin plates situated between the septa in extinct corals of the order Rugosa. { də'sep·ə·mənt }
- dissipation constant** [GEOPHYS] In atmospheric electricity, a measure of the rate at which a given electrically charged object loses its charge to the surrounding air. { ,dis·ə'pā·shən ,kän·stənt }
- Distacodidae** [PALEON] A family of conodonts in the suborder Conodontiformes characterized as simple curved cones with deeply excavated attachment scars. { dis·tə'käd·ə,dē }
- disthene** See kyanite. { 'dis,thēn }
- distortional wave** See S wave. { di'stör·shən·əl 'wāv }
- distributed fault** See fault zone. { di'strib·yəd·əd ,fölt }
- distributive fault** See step fault. { di'strib·yəd·iv 'fölt }
- disturbance** [GEOL] Folding or faulting of rock or a stratum from its original position. { də'stər·bəns }
- diurnal age** See age of diurnal inequality. { dī'ərŋ·əl 'āj }
- diurnal variation** [GEOPHYS] Daily variations of the earth's magnetic field at a given point on the surface, with both solar and lunar periods having their source in the horizontal movements of air in the ionosphere. { dī'ərŋ·əl ,ver·ē'a·shən }
- divergence loss** [GEOPHYS] During geophysical prospecting, the portion of the power lost in transmitting signals that is caused by the spreading of seismic or sound rays by the geometry of the geologic features. { də'vær·jəns ,lɒs }
- Divesian** See Oxfordian. { də'vezh·ən }
- dixenite** [MINERAL] $Mn_5(SiO_3)(AsO_3)(OH)_2$ A black hexagonal mineral consisting of a manganese arsenite and silicate, occurring in scales. { 'dik·sə,nīt }
- djalmaite** See microlite. { 'jal·mə,īt }
- djerfisherite** [MINERAL] $K_3CuFe_{12}S_{14}$ A sulfide mineral found only in meteorites. { jər'fish·ər,īt }
- Djulfian** [GEOL] Upper upper Permian geologic time. { 'jül·fē·ən }
- D layer** [GEOL] The lower mantle of the earth, between a depth of 600 and 1800 miles (1000 and 2900 kilometers). { 'dē ,lā·ər }
- dneprovskaite** See wood tin. { ne'pröv,skīt }
- Doodonta** [PALEON] A primitive order of Jurassic mammals of North America and England. { ,däk·ə'dän·tə }

- dogger** [GEOL] Concretionary masses of calcareous sandstone or ironstone. { 'dɔg·ər }
- dolerophanite** [MINERAL] $\text{Cu}_2(\text{SO}_4)\text{O}$ A brown, monoclinic mineral consisting of a basic copper sulfate, occurring in crystals. { ,däl·ə'ráf·ə,nīt }
- Dolichothoraci** [PALEON] A group of joint-necked fishes assigned to the Arctolepiformes in which the pectoral appendages are represented solely by large fixed spines. { 'däl·ə·kō'thòr·ə,sī }
- doline** [GEOL] A general term for a closed depression in an area of karst topography that is formed either by solution of the surficial limestone or by collapse of underlying caves. { də'lēn }
- dolocast** [GEOL] The cast or impression of a dolomite crystal. { 'dō·lə,kast }
- dolomite** [MINERAL] $\text{CaMg}(\text{CO}_3)_2$ The carbonate mineral; white or colorless with hexagonal symmetry and a structure similar to that of calcite, but with alternate layers of calcium ions being completely replaced by magnesium. { 'dō·lə,mīt }
- dolomite rock** See dolomitic limestone. { 'dō·lə,mīt 'rāk }
- dolomitic limestone** [PETR] A limestone whose carbonate fraction contains more than 50% dolomite. Also known as dolomite rock; dolostone. { 'dō·lə'mid·ik 'līm,stōn }
- dolomitization** [GEOL] Conversion of limestone to dolomite rock by replacing a portion of the calcium carbonate with magnesium carbonate. { ,dō·lə·mäd·ə'zä·shən }
- dolostone** See dolomitic limestone. { 'dō·lə,stōn }
- dome** [GEOL] **1.** A circular or elliptical, almost symmetrical upfold or anticlinal type of structural deformation. **2.** A large igneous intrusion whose surface is convex upward. { dōm }
- Domerian** [GEOL] Upper Charmouthian geologic time. { dō'mer·ə·ən }
- domeykite** [MINERAL] Cu_2As A tin-white or steel-gray mineral consisting of copper arsenide; specific gravity is 7.2–7.75. { dō'mä,kīt }
- Donau glaciation** [GEOL] A Pleistocene glacial time unit in the Alps region in Europe. { 'dō,näu glä·sē'ä·shən }
- doodlebug** [GEOL] Also known as douser. **1.** Any unscientific device or apparatus, such as a divining rod, used to locate subsurface water, minerals, gas, or oil. **2.** A scientific instrument used for locating minerals. { 'düd·əl,bæg }
- dopplerite** [GEOL] A naturally occurring gel of humic acids found in peat bags or where an aqueous extract from a low-rank coal can collect. { 'däp·lə,rīt }
- Dorypteridae** [PALEON] A family of Permian palaeonisciform fishes sometimes included in the suborder Platysoimoidi. { dō,rīp'ter·ə,dē }
- doubly plunging fold** [GEOL] A fold that plunges in opposite directions, either away from or toward a central point. { 'däb·lē ,plänj·iŋ 'föld }
- douglasite** [MINERAL] $\text{K}_2\text{FeCl}_4 \cdot 2\text{H}_2\text{O}$ Ore from Stassfurt, Germany; a member of the erythrosiderite group; orthorhombic, in the isomorphous series. { 'däg·lə,sīt }
- douser** See doodlebug. { 'daüs·ər }
- doun** [GEOL] **1.** Hillock of sand thrown up along the coast by the sea or the wind. **2.** A flat eminence on the top of a hill or mountain. { daün }
- downcutting** [GEOL] Stream erosion in which the cutting is directed in a downward direction. { 'daün,käd·iŋ }
- downdip** [GEOL] Pertaining to a position parallel to or in the direction of the dip of a stratum or bed. { 'daün,dip }
- downthrow** [GEOL] The side of a fault whose relative movement appears to have been downward. { 'daün,thrō }
- downwarp** [GEOL] A segment of the earth's crust that is broadly bent downward. { 'daün,wörp }
- Downtonian** [GEOL] Uppermost Silurian or lowermost Devonian geologic time. { daü 'tōn·ē·ən }
- drag fold** [GEOL] A minor fold formed in an incompetent bed by movement of a competent bed so as to subject it to couple; the axis is at right angles to the direction in which the beds slip. { 'drag ,föld }
- drag mark** [GEOL] Long, even mark usually having longitudinal striations produced by current drag of an object across a sedimentary surface. { 'drag ,märk }

drainage divide

- drainage divide** [GEOL] **1.** The border of a drainage basin. **2.** The boundary separating adjacent drainage basins. { 'drān·ij də,vɪd }
- draping** [GEOL] Structural concordance of the strata overlying a limestone reef or other hard core to the surface of the reef or core. { 'drāp·ij }
- dreikanter** [GEOL] A pebble with three facets shaped by sandblasting. { 'drī,kän·tər }
- Drepanellacea** [PALEON] A monomorphic superfamily of extinct paleocopian ostracods in the suborder Beyrichicopina having a subquadrate carapace, many with a marginal rim. { drə,pən·əl'ās·ē·ə }
- Drepanellidae** [PALEON] A monomorphic family of extinct ostracodes in the superfamily Drepanellacea. { ,dre·pə'nel·ə,dē }
- Dresbachian** [GEOL] Lower Croixan geologic time. { drez'bäk·ē·ən }
- drewite** [GEOL] Calcareous ooze composed of impalpable calcareous material. { 'drü,īt }
- drift** [GEOL] **1.** Rock material picked up and transported by a glacier and deposited elsewhere. **2.** Detrital material moved and deposited on a beach by waves and currents. { drift }
- drift dam** [GEOL] A dam formed by glacial drift in a stream valley. { 'drift ,dam }
- drift terrace** See alluvial terrace. { 'drift ,ter·əs }
- dripstone** [GEOL] A cave feature, such as a stalagmite, which is formed by precipitation of calcium carbonate or another mineral from dripping water. { 'drip,stōn }
- DRM** See detrital remanent magnetization.
- drop** [MINERAL] A funnel-shaped downward intrusion of sedimentary rock into the roof of a coal seam. { drāp }
- dropstone** [GEOL] A rock that was carried by a glacier or iceberg, and deposited as the ice melted. { 'drāp,stōn }
- drowned atoll** [GEOL] An atoll which has not reached the water surface. { ,draünd 'a,tól }
- drowned coast** [GEOL] A shoreline transformed from a hilly land surface to an archipelago of small islands by inundation by the sea. { ,draünd 'kōst }
- drowned valley** [GEOL] A valley whose lower part has been inundated by the sea due to submergence of the land margin. { ,draünd 'val·ē }
- drumlin** [GEOL] A hill of glacial drift or bedrock having a half-ellipsoidal streamline form like the inverted bowl of a spoon, with its long axis paralleling the direction of movement of the glacier that fashioned it. { 'drəm·lən }
- drumlinoid** See rock drumlin. { 'drəm·lə,nōid }
- druse** [GEOL] A small cavity in a rock or vein encrusted with aggregates of crystals of the same minerals which commonly constitute the enclosing rock. { drüz }
- drusy** [GEOL] Of or pertaining to rocks containing numerous druses. { 'drüz·ē }
- dry-bone ore** See smithsonite. { 'drī ,bōn ,ōr }
- dry delta** See alluvial fan. { ,drī 'del·tə }
- dry-hot-rock geothermal system** [GEOL] A water-deficient hydrothermal reservoir dominated by the presence of rocks at depths in which large quantities of heat are stored. { ,drī 'hät ,rāk jē·ō'thər·məl 'sis·təm }
- dry permafrost** [GEOL] A loose and crumbly permafrost which contains little or no ice. { ,drī 'pər·mə,frōst }
- dry quicksand** [GEOL] An accumulation of alternate layers of firmly compacted sand and loose sand that cannot support heavy loads. { ,drī 'kwik,sand }
- dry sand** [GEOL] **1.** A formation, underlying the production sand, into which oil has leaked due to careless drilling practices. **2.** A nonproductive oil sand. { ,drī ,sand }
- drystone** [GEOL] A stalagmite or stalactite formed by dropping water. { 'drī,stōn }
- dry valley** [GEOL] A valley, usually in a chalk or karst type of topography, that has no permanent water course along the valley floor. { ,drī 'val·ē }
- dry wash** [GEOL] A wash, arroyo, or coulee whose bed lacks water. { 'drī ,wāsh }
- Dst** [GEOPHYS] The "storm-time" component of variation of the terrestrial magnetic field, that is, the component which correlates with the interval of time since the onset of a magnetic storm; used as an index of intensity of the ring current.

dynamic geomorphology

- duck-billed dinosaur** [PALEON] Any of several herbivorous, bipedal ornithomorphs having the front of the mouth widened to form a ducklike beak. { 'dæk ,bild 'dɪn·ə,sɔr }
- dufrenite** [MINERAL] A blackish-green, fibrous ferric phosphate mineral; commonly massive or in nodules. { dū'frā,nīt }
- dufrenoyite** [MINERAL] $Pb_2As_2S_5$ A lead gray to steel gray, monoclinic mineral consisting of lead arsenic sulfide. { ,dū·frə'nói,zīt }
- duftite** [MINERAL] $PbCu(AsO_4)(OH)$ Orthorhombic mineral that is composed of a basic arsenate of lead and copper. { 'dɒf,tīt }
- dull coal** [GEOL] A component of banded coal with a grayish color and dull appearance, consisting of small anthraxylon constituents in addition to cuticles and barklike constituents embedded in the attritus. { 'dɒl 'kɒl }
- dumontite** [MINERAL] $Pb_2(UO_2)_2(PO_4)_2(OH)_4·3H_2O$ Yellow orthorhombic mineral consisting of a hydrated phosphate of uranium and lead, occurring in crystals. { dū'män,tīt }
- dumortierite** [MINERAL] $Al_8BSi_3O_{19}(OH)$ A pink, green, blue, or violet mineral that crystallizes in the orthorhombic system but commonly occurs in parallel or radiating fibrous aggregates; mined for the manufacture of high-grade porcelain. { dū·mɔr'tir,tīt }
- dundasite** [MINERAL] $PbAl_2(CO_3)_2(OH)_4·2H_2O$ A white mineral consisting of a basic lead aluminum carbonate, occurring in spherical aggregates. { 'dɒn·də,sīt }
- dune** [GEOL] A mound or ridge of unconsolidated granular material, usually of sand size and of durable composition (such as quartz), capable of movement by transfer of individual grains entrained by a moving fluid. { dūn }
- durite** [PETR] An ultrabasic rock consisting almost solely of a magnesium-rich olivine with some chromite and picotite; an important source of chromium. { 'dū,nīt }
- duplexite** [MINERAL] $Ca_4BeAl_2Si_6O_{24}(OH)_2$ A white fibrous mineral consisting of hydrous beryllium calcium aluminosilicate. Also known as bavenite. { 'dū,plek,sīt }
- durain** [GEOL] A hard, granular ingredient of banded coal which occurs in lenticels and shows a close, firm texture. Also known as durite. { 'dū,rān }
- durangite** [MINERAL] $NaAlF(AsO_4)$ An orange-red, monoclinic mineral consisting of a fluoarsenate of sodium and aluminum; occurs in crystals. { dɔ'rən,jīt }
- Durargid** [GEOL] A great soil group constituting a subdivision of the Argids, indicating those soils with a hardpan cemented by silica and called a duripan. { dūr'är·jəd }
- duricrust** [GEOL] The case-hardened soil crust formed in semiarid climates by precipitation of salts; contains aluminous, ferruginous, siliceous, and calcareous material. { 'dūr·ə,kɾəst }
- durinite** [GEOL] The principal maceral of durain; a heterogeneous material, semiopaque in section (including all parts of plants); micrinite, exinite, cutinite, resinite, collinite, xylinite, suberinite, and fusinite may be present. { 'dūr·ə,nīt }
- duripan** [GEOL] A horizon in mineral soil characterized by cementation by silica. { 'dūr·ə,pən }
- durite** See durain. { 'dū·rīt }
- dussertite** [MINERAL] $BaFe_3(AsO_4)_2(OH)_5$ A mineral consisting of a hydrous basic arsenate of barium and iron. { 'dɒs·ər,tīt }
- dust** [GEOL] Dry solid matter of silt and clay size (less than 1/16 millimeter). { dɒst }
- dust avalanche** [GEOL] An avalanche of dry, loose snow. { 'dɒst ,əv·ə,ləntʃ }
- dust-devil effect** [GEOPHYS] In atmospheric electricity, rather sudden and short-lived change (positive or negative) of the vertical component of the atmospheric electric field that accompanies passage of a dust devil near an instrument sensitive to the vertical gradient. { 'dɒst ,dev·əl i,fekt }
- Dwyka tillite** [GEOL] A glacial Permian deposit that is widespread in South Africa. { də'vɪk·ə 'ti,līt }
- dynamic breccia** See tectonic breccia. { dɪ'nam·ik 'breç·ə }
- dynamic geomorphology** [GEOL] The quantitative analysis of steady-state, self-regulatory geomorphic processes. Also known as analytical geomorphology. { dɪ'nam·ik ,jē·ō·mɔr'fæl·ə·jē }

dynamic height

dynamic height [GEOPHYS] As measured from sea level, the distance above the geoid of points on the same equipotential surface, in terms of linear units measured along a plumb line at a given latitude, generally 45°. { dīˈnām·ik ˈhīt }

dynamic metamorphism [GEOL] Metamorphism resulting exclusively or largely from rock deformation, principally faulting and folding. Also known as dynamometamorphism. { dīˈnām·ik ,med·əˈmôr,fiz·əm }

dynamic vertical See apparent vertical. { dīˈnām·ik ˈvərd·ə·kəl }

dynamo effect [GEOPHYS] A process in the ionosphere in which winds and the resultant movement of ionization in the geomagnetic field give rise to induced current. { ˈdī·nə,mō i,fekt }

dynamometamorphism See dynamic metamorphism. { ˈdī·nə,mō,med·əˈmôr,fiz·əm }

dynamo theory [GEOPHYS] The hypothesis which explains the regular daily variations in the earth's magnetic field in terms of electrical currents in the lower ionosphere, generated by tidal motions of the ionized air across the earth's magnetic field. { ˈdī·nə,mō ,thē·ə·rē }

dysanalyte [MINERAL] A variety of the mineral perovskite in which Nb⁵⁺ substitutes for Ti⁵⁺, and Na⁺ for Ca²⁺ in the formula Ca[TiO₃]. { dəˈsan·əl,īt }

dyscrasite [MINERAL] Ag₂Sb A gray mineral that forms rhombic crystals. { ˈdis·krə,sīt }

Dysodonta [PALEON] An order of extinct bivalve mollusks with a nearly toothless hinge and a ligament in grooves or pits. { ,dis·əˈdän·tə }

E

- earlandite** [MINERAL] $\text{Ca}_2(\text{C}_6\text{H}_5\text{O}_7)_2 \cdot 4\text{H}_2\text{O}$ A mineral consisting of a hydrous citrate of calcium; found in sediments in the Weddell Sea. { 'ir·lən,dīt }
- earth** [GEOL] **1.** Solid component of the globe, distinct from air and water. **2.** Soil; loose material composed of disintegrated solid matter. { ərθ }
- earth core** See core. { 'ərθ ,kɔr }
- earth crust** See crust. { 'ərθ ,krəst }
- earth current** [GEOPHYS] A current flowing through the ground and due to natural causes, such as the earth's magnetic field or auroral activity. Also known as telluric current. { 'ərθ ,kə·rənt }
- earth-current storm** [GEOPHYS] Irregular fluctuations in an earth current in the earth's crust, often associated with electric field strengths as large as several volts per kilometer, and superimposed on the normal diurnal variation of the earth currents. { 'ərθ ,kə·rənt ,stɔrm }
- earthflow** [GEOL] A variety of mass movement involving the downslope slippage of soil and weathered rock in a series of subparallel sheets. { 'ərθ ,flɔ }
earth hummock [GEOL] A small, dome-shaped uplift of soil caused by the pressure of groundwater. Also known as earth mound. { 'ərθ ,həm·ək }
- earth interior** [GEOL] The portion of the earth beneath the crust. { 'ərθ in'tir·ē·ər }
- earth-layer propagation** [GEOPHYS] **1.** Propagation of electromagnetic waves through layers of the earth's atmosphere. **2.** Electromagnetic wave propagation through layers below the earth's surface. { 'ərθ ,lā·ər ,prəp·ə,gā·shən }
- earth mound** See earth hummock. { 'ərθ ,maʊnd }
- earth movements** [GEOPHYS] Movements of the earth, comprising revolution about the sun, rotation on the axis, precession of equinoxes, and motion of the surface of the earth relative to the core and mantle. { 'ərθ 'mjuv·məns }
- earth oscillations** [GEOPHYS] Any rhythmic deformations of the earth as an elastic body; for example, the gravitational attraction of the moon and sun excite the oscillations known as earth tides. { 'ərθ ,äs·ə'lā·shənz }
- earth pillar** [GEOL] A tall, conical column of earth materials, such as clay or landslide debris, that has been sheltered from erosion by a cap of hard rock. { 'ərθ 'pil·ər }
- earthquake** [GEOPHYS] A sudden movement of the earth caused by the abrupt release of accumulated strain along a fault in the interior. The released energy passes through the earth as seismic waves (low-frequency sound waves), which cause the shaking. { 'ərθ ,kwāk }
- earthquake tremor** See tremor. { 'ərθ ,kwāk ,trem·ər }
- earthquake zone** [GEOL] An area of the earth's crust in which movements, sometimes with associated volcanism, occur. Also known as seismic area. { 'ərθ ,kwāk ,zɔn }
- earth system** [GEOPHYS] The atmosphere, oceans, biosphere, cryosphere, and geosphere, together. { 'ərθ , sis·təm }
- earth tide** [GEOPHYS] The periodic movement of the earth's crust caused by forces of the moon and sun. Also known as bodily tide. { 'ərθ ,tid }
- earth tremor** See tremor. { 'ərθ ,trem·ər }
- earth wax** See ozocerite. { 'ərθ ,waks }
- earthy cobalt** See asbolite. { 'ərθ·ē 'kɔ,bɔlt }
- earthy manganese** See wad. { 'ərθ·ē 'mɑŋ·gə,nēs }

eastonite

eastonite [MINERAL] $K_2Mg_5AlSi_3Al_3O_{20}(OH_4)$ A mineral consisting of basic silicate of potassium, magnesium, and aluminum; it is an end member of the biotite system. { 'ē·stə,nīt }

ebb-and-flow structure [GEOLOGY] Rock strata with alternating horizontal and cross-bedded layers, believed to have been produced by ebb and flow of tides. { jeb ən 'flō ,strək·chər }

ecdemite [MINERAL] $Pb_6As_2O_7Cl_4$ A greenish-yellow to yellow, tetragonal mineral consisting of an oxychloride of lead and arsenic; occurs as coatings of small tabular crystals and as coarsely foliated masses. { 'ek·də,mīt }

echelon faults [GEOLOGY] Separate, parallel faults having steplike trends. { 'esh·ə,lən ,fòls }

Echinocystoidea [PALEONTOLOGY] An order of extinct echinoderms in the subclass Perischoechinoidea. { ,ek·ə·nō,sis·tə'toid·ə }

eckermannite [MINERAL] $Na_3(Mg,Li)_4(Al,Fe)Si_3O_{22}(OH,F)_2$ Mineral of the amphibole group containing magnesium, lithium, iron, and fluorine. { 'ek·ər·mə,nīt }

eclogite [PETROLOGY] A class of metamorphic rocks distinguished by their composition, consisting essentially of omphacite and pyrope with small amounts of diopside, enstatite, olivine, kyanite, rutile, and rarely, diamond. { 'ek·lə,jīt }

eclogite facies [PETROLOGY] A type of facies composed of eclogite and formed by regional metamorphism at extremely high temperature and pressure. { 'ek·lə,jīt ,fā·shēz }

economic geology [GEOLOGY] **1.** Application of geologic knowledge to materials usage and principles of engineering. **2.** The study of metallic ore deposits. { ,ek·ə'nām·ik jē'al·ə·jē }

economic mineral [MINERAL] Mineral of commercial value. { ,ek·ə'nām·ik 'min·rəl }

ectinites [PETROLOGY] One of two major groups of metamorphic rocks comprising those formed with no accession or introduction of feldspathic material. { 'ek·tə,nīts }

ectohumus [GEOLOGY] An accumulation of organic matter on the soil surface with little or no mixing with mineral material. Also known as mor; raw humus. { jek·tō'hyü·məs }

Edaphosuria [PALEONTOLOGY] A suborder of extinct, lowland, terrestrial, herbivorous reptiles in the order Pelycosauria. { ,ed·ə'fō'sór·ē·ə }

eddy mill See pothole. { 'ed·ē ,mil }

Edenian [GEOLOGY] Lower Cincinnatian geologic stage in North America, above the Mohawkian and below Maysvillian. { ,ē'dēn·ē·ən }

edge water [GEOLOGY] In reservoir structures, the subsurface water that surrounds the gas or oil. { 'ej ,wōd·ər }

Ediacaran fauna [PALEONTOLOGY] The oldest known assemblage of fossil remains of soft-bodied marine animals; first discovered in the Ediacara Hills, Australia. { ,ēd·ē·ə'kar·ən 'fón·ə }

edingtonite [MINERAL] $BaAl_2Si_3O_{10}·4H_2O$ Gray zeolite mineral that forms rhombic crystals; sometimes contains large amounts of calcium. { 'ed·ij·tə,nīt }

Edrioasteroidea [PALEONTOLOGY] A class of extinct Echinozoa having ambulacral radial areas bordered by tube feet, and the mouth and anus located on the upper side of the theca. { ,ēd·rē·ō,as·tə'rōid·ē·ə }

effective porosity [GEOLOGY] A property of earth containing interconnecting interstices, expressed as a percent of bulk volume occupied by the interstices. { ə'fēk·tiv pə'rās·əd·ē }

effective pressure See effective stress. { ə'fēk·tiv 'pres·ər }

effective stress [GEOLOGY] The average normal force per unit area transmitted directly from particle to particle of a rock or soil mass. Also known as effective pressure; intergranular pressure. { ə'fēk·tiv 'stres }

efflorescence [MINERAL] A whitish powder, consisting of one or several minerals produced as an encrustation on the surface of a rock in an arid region. Also known as bloom. { ,ef·lə'res·əns }

effusive stage [GEOLOGY] The second cooling stage for volcanic rocks. { e'fyü·siv ,stāj }

eggstone See oolite. { 'eg,stōn }

Embolomeri

- eglestonite** [MINERAL] $\text{Hg}_4\text{Cl}_2\text{O}$ Rare mercuric oxide mineral; forms yellow-brown isometric crystals upon exposure to air. { 'eg·əl·stə,nīt }
- eguëite** [MINERAL] $\text{CaFe}_{14}(\text{PO}_4)_{10}(\text{OH})_{14}\cdot 21\text{H}_2\text{O}$ A brownish-yellow mineral consisting of a hydrated basic phosphate of calcium and iron; occurs as small nodules. { e'gwā,īt }
- Egyptian asphalt** [GEOLOGY] A glance pitch (bituminous mixture similar to asphalt) found in the Arabian Desert. { i'jip·shən 'as,fòlt }
- einkanter** [GEOLOGY] A stone shaped by windblown sand only upon one facet. { 'ɪn,kän·tər }
- ejecta** [GEOLOGY] Material which is discharged by a volcano. { ē'jek·tə }
- elastic bitumen** See elaterite. { i'las·tik bī'tü·mən }
- elastic rebound theory** [GEOLOGY] A theory which attributes faulting to stresses (in the form of potential energy) which are being built up in the earth and which, at discrete intervals, are suddenly released as elastic energy; at the time of rupture the rocks on either side of the fault spring back to a position of little or no strain. { i'las·tik 'rē,baünd ,thē·ə·rē }
- elaterite** [GEOLOGY] A light-brown to black asphaltic pyrobitumen that is moderately soft and elastic. Also known as elastic bitumen; mineral caoutchouc. { i'lad·ə,rīt }
- electric calamine** See hemimorphite. { i'lek·trik 'kal·ə,mīn }
- electrofiltration** [GEOLOGY] Counterprocess during electrical logging of well boreholes, in which mud filtrate forced through the mud cake produces an emf in the mud cake opposite a permeable bed, positive in the direction of filtrate flow. { i,lek·trō·fil'trā·shən }
- eleolite** See nepheline. { ə'lē·ə,līt }
- elephant-hide pahoehoe** [GEOLOGY] A type of pahoehoe on whose surface are innumerable tumuli, broad swells, and pressure ridges which impart the appearance of elephant hide. { 'el·ə·fənt ,hīd pa'hō·ē,hō·ē }
- ellestadite** [MINERAL] A pale rose, hexagonal mineral consisting of an apatite-like calcium sulfate-silicate; occurs in granular massive form. { 'el·ə,sta,dīt }
- ellipsoidal lava** See pillow lava. { ə,lip'sóid·əl 'lāv·ə }
- ellsworthite** [MINERAL] $(\text{Ca},\text{Na},\text{U})_2(\text{Nb},\text{Ta})_2\text{O}_6(\text{O},\text{OH})$ A yellow, brown, greenish or black mineral of the pyrochlore group occurring in isometric crystals and consisting of an oxide of niobium, titanium, and uranium. Also known as betafite; hatchettolite. { 'elz·wər,thīt }
- elposolite** [MINERAL] K_2NaAlF_6 Mineral composed of sodium potassium aluminum fluoride. { el'pas·ə,līt }
- elpidite** [MINERAL] $\text{Na}_2\text{ZrSi}_6\text{O}_{15}\cdot 3\text{H}_2\text{O}$ A white to brick-red mineral composed of hydrated sodium zirconium silicate. { 'el·pə,dīt }
- elutriation** [GEOLOGY] The washing away of the lighter or finer particles in a soil, especially by the action of raindrops. { ē,lū·trē'ā·shən }
- eluvial** [GEOLOGY] Of, composed of, or relating to eluvium. { ē'lüv·ē·əl }
- eluvial placer** [GEOLOGY] A placer deposit that is concentrated near the decomposed outcrop of the source. { ē'lüv·ē·əl 'plā·sər }
- eluvium** [GEOLOGY] Disintegrated rock material formed and accumulated in situ or moved by the wind alone. { ē'lü·vē·əm }
- embatholithic** [GEOLOGY] Pertaining to ore deposits associated with a batholith where exposure of the batholith and country rock is about equal. { em,bath·ə'lith·ik }
- embayed coastal plain** [GEOLOGY] A coastal plain that has been partly sunk beneath the sea, thereby forming a bay. { em'bād 'kōst·əl 'plān }
- embayed mountain** [GEOLOGY] A mountain that has been depressed enough for sea water to enter the bordering valleys. { em'bād 'maūn,tən }
- embayment** [GEOLOGY] **1.** Act or process of forming a bay. **2.** A reentrant of sedimentary rock into a crystalline massif. { em'bā·mənt }
- embolite** [MINERAL] $\text{Ag}(\text{Cl},\text{Br})$ A yellow-green mineral resembling cerargyrite; composed of native silver chloride and silver bromide. { 'em·bə,līt }
- Embolomeri** [PALEONTOLOGY] An extinct side branch of slender-bodied, fish-eating aquatic anthracosaurs in which intercentra as well as centra form complete rings. { ,em·bəl'mə,rī }

embouchure

- embouchure** [GEOL] **1.** The mouth of a river. **2.** A river valley widened into a plain. { 'äm·bø'shür }
- embrechites** [PETR] A type of migmatite in which structural features of crystalline shifts are preserved but often partially obliterated by metablastesis. { 'em·brə,kīts }
- Embrithopoda** [PALEON] An order established for the unique Oligocene mammal *Arsinoitherium*, a herbivorous animal that resembled the modern rhinoceros. { ,em·brə'thā·pə·də }
- emerald** [MINERAL] $Al_2(Be_3Si_6O_{18})$ A brilliant-green to grass-green gem variety of beryl that crystallizes in the hexagonal system; green color is caused by varying amounts of chromium. Also known as smaragd. { 'em·rəld }
- emerged shoreline** See shoreline of emergence. { ə,'mərjɪd 'shör,līn }
- emergence** [GEOL] **1.** Dry land which was part of the ocean floor. **2.** The act or process of becoming an emergent land mass. { ə'mər·jəns }
- emery** [MINERAL] A fine, granular, gray-black, impure variety of corundum containing iron oxides, either hematite or magnetite; occurs as masses in limestone and as segregations in igneous rock. { 'em·ə·rē }
- emery rock** [PETR] A rock that contains corundum and iron ores. { 'em·ə·rē ,rək }
- emmonsite** [MINERAL] $Fe_2Te_3O_9 \cdot 2H_2O$ A yellow-green mineral composed of a hydrous oxide of iron and tellurium. { 'em·ən,zīt }
- emplacement** [GEOL] Intrusion of igneous rock or development of an ore body in older rocks. { em'plās·mənt }
- emplectite** [MINERAL] $CuBiS_3$ A grayish or white mineral that crystallizes in the orthorhombic system; occurs in masses. { em'plek,tīt }
- empressite** [MINERAL] $AgTe$ An opaque, pale-bronze mineral whose crystal system is unknown. { 'em·prəs,īt }
- Enaliornithidae** [PALEON] A family of extinct birds assigned to the order Hesperornithiformes, having well-developed teeth found in grooves in the dentary and maxillary bones of the jaws. { e'nəl·ē·ör'nith·ə,dē }
- enargite** [MINERAL] A lustrous, grayish-black mineral which is found in orthorhombic crystals but is more commonly columnar, bladed, or massive; hardness is 3 on Mohs scale, specific gravity is 4.44; in some places enargite is a valuable copper ore. Also known as clairite; luzonite. { e'när,jīt }
- enclosure compound** See clathrate. { in'klō-zhər ,käm,päund }
- encrinal limestone** [GEOL] A limestone consisting of more than 10% but less than 50% of fossil crinoidal fragments. { en'krīn·əl 'līm·stōn }
- encrinite** [PALEON] One of certain fossil crinoids, especially of the genus *Encrinurus*. { 'eŋ·krə,nīt }
- endellite** [MINERAL] $Al_2Si_2O_5(OH)_4 \cdot 4H_2O$ Term used in the United States for a clay mineral, the more hydrous form of halloysite. Also known as hydrated halloysite; hydrohalloysite; hydrokaolin. { 'en·də,līt }
- endlichite** [MINERAL] A mineral similar to vanadinite, but with the vanadium replaced by arsenic. { 'end·li,kīt }
- end member** [MINERAL] One of the two or more pure chemical compounds that enters into solid solution with other pure chemical compounds to make up a series of minerals of similar crystal structure (that is, an isomorphous, solid-solution series). { 'end ,mem·bər }
- end moraine** [GEOL] An accumulation of drift in the form of a ridge along the border of a valley glacier or ice sheet. { 'end mə,rān }
- endobatholithic** [GEOL] Pertaining to ore deposits along projecting portions of a batholith. { ,en·dō·bath·ə'lid·ik }
- endocast** See steinkern. { 'en·dō,kast }
- endogenetic** See endogenic. { ,en·dō·jə'ned·ik }
- endogenic** [GEOL] Of or pertaining to a geologic process, or its resulting feature such as a rock, that originated within the earth. Also known as endogenetic; endogenous. { ,en·dō'jen·ik }
- endogenous** [GEOL] See endogenic. { en'däj·ə·nəs }
- endometamorphism** [GEOL] A phase of contact metamorphism involving changes in

- an igneous rock due to assimilation of portions of the rocks invaded by its magma. { 'en·dō,med·ə' mör,fiz·əm }
- Endotheriidae** [PALEON] A family of Cretaceous insectivores from China belonging to the Proteutheria. { ,en·dō·thə'rī·ə,dē }
- Endothyraea** [PALEON] A superfamily of extinct benthic marine foraminiferans in the suborder Fusulinina, having a granular or fibrous wall. { ,en·dō·thə'rās·ē·ə }
- en echelon** [GEOL] Referring to an overlapped or staggered arrangement of geologic features. { 'en ,esh·ə,län }
- en echelon fault blocks** [GEOL] A belt in which the individual fault blocks trend approximately 45° to the trend of the entire fault belt. { 'en ,esh·ə,län 'fölt ,bläks }
- energy level** [GEOL] The kinetic energy supplied by waves or current action in an aqueous sedimentary environment either at the interface of deposition or several meters above. { 'en·ər·jē ,lev·əl }
- englishite** [MINERAL] $K_2Ca_4Al_8(PO_4)_8(OH)_{10} \cdot 9H_2O$ A white mineral composed of hydrous basic phosphate of potassium, calcium, and aluminum. { 'iŋ·gli,shīt }
- engyseismology** [GEOPHYS] Seismology dealing with earthquake records made close to the disturbance. { ,en·jə·siz'mäl·ə·jē }
- enigmatite** [MINERAL] $Na_2Fe_3TiSi_6O_{20}$ A black amphibole mineral occurring in triclinic crystals; specific gravity is 3.14–3.80. Also spelled aenigmatite. { ə'nig·mə,tīt }
- ensialic geosyncline** [GEOL] A geosyncline whose geosynclinal prism accumulates on a sialic crust and contains clastics. { en·sē'al·ik ,jē·ō'sin,klīn }
- ensimatic geosyncline** [GEOL] A geosyncline whose geosynclinal prism accumulates on a simatic crust and is composed largely of volcanic rock or sediments of volcanic debris. { en·sə'mad·ik ,jē·ō'sin,klīn }
- enstatite** [MINERAL] $MgOSiO_2$ A member of the pyroxene mineral group that crystallizes in the orthorhombic system; usually yellowish gray but becomes green when a little iron is present. { 'en·stə,tīt }
- enstatite chondrite** [GEOL] A type of chondritic meteorite consisting almost entirely of enstatite, with metal inclusions that may be abundant and are usually low in nickel. { 'en·stə,tīt 'kän,drit }
- Enteletacea** [PALEON] A group of extinct articulate brachiopods in the order Orthida. { ,en·tə'lə'tās·ē·ə }
- Entelodontidae** [PALEON] A family of extinct palaeodont artiodactyls in the superfamily Entelodontoidea. { ,en·tə'lə'dän·tə,dē }
- Entelodontoidea** [PALEON] A superfamily of extinct piglike mammals in the suborder Palaeodonta having huge skulls and enlarged incisors. { ,en·tə'lə,dän'toid·ē·ə }
- enterolithic** [GEOL] Of or pertaining to structures, such as small folds, formed in evaporites due to flowage or hydration. { ,ent·ə'rə'lith·ik }
- Entisol** [GEOL] An order of soil having few or faint horizons. { 'ent·ə,səl }
- Entomoconchacea** [PALEON] A superfamily of extinct marine ostracods in the suborder Myodocopa that are without a rostrum above the permanent aperture. { ,ent·ə·mō,kän'kās·ē·ə }
- entrial pahoehoe** [GEOL] A type of pahoehoe having a surface that resembles an intertwined mass of entrails. { 'en,träl pə'hō·ē,hō·ē }
- entrapment** [GEOL] The underground trapping of oil or gas reserves by folds, faults, domes, asphaltic seals, unconformities, and such. { en'trap·mənt }
- environment of sedimentation** [GEOL] A more or less destructive geomorphologic setting in which sediments are deposited as beach environment. { in'vī·ərn'mənt əv ,sed·ə·men'tā·shən }
- Eocambrian** [GEOL] Pertaining to the thick sequences of strata conformably underlying Lower Cambrian fossils. Also known as Infracambrian. { ,ē·ō'kam·brē·ən }
- Eocene** [GEOL] The next to the oldest of the five major epochs of the Tertiary period (in the Cenozoic era). { 'ē·ə,sēn }
- Eocrinoidea** [PALEON] A class of extinct echinoderms in the subphylum Crinozoa that had biserial brachioles like those of cystoids combined with a theca like that of crinoids. { ,ē·ō·krə'noid·ē·ə }
- Eogene** See Paleogene. { 'ē·ə,jēn }

Eohippus

- Eohippus** [PALEON] The earliest, primitive horse, included in the genus *Hyracotherium*; described as a small, four-toed species. { ,ē·ō'hip·əs }
- eoliation** [GEOL] Any action of wind on the land. { ,ē·ə'lā·shən }
- eolian dune** [GEOL] A dune resulting from entrainment of grains by the flow of moving air. { ē'ōl·yən 'dün }
- eolian erosion** [GEOL] Erosion due to the action of wind. { ē'ōl·yən ə'rō·zhən }
- eolianite** [GEOL] A sedimentary rock consisting of clastic material which has been deposited by wind. { ē'ōl·yənīt }
- eolian ripple mark** [GEOL] A mark made in sand by the wind. { ē'ōl·yən 'rip·əl ,märk }
- eolian sand** [GEOL] Deposits of sand arranged by the wind. { ē'ōl·yən 'sand }
- eolian soil** [GEOL] A type of soil ranging from sand dunes to loess deposits whose particles are predominantly of silt size. { ē'ōl·yən 'sɔil }
- Eomoropidae** [PALEON] A family of extinct perissodactyl mammals in the superfamily Chalicotherioidea. { ,ē·ō·mə'rāp·ə,dē }
- eonothem** [GEOL] A chronostratigraphic unit, above erathem, composed of rocks formed during an eon of geologic time. { 'ēn·ə,them }
- eosphorite** [MINERAL] (Mn,Fe)Al(PO₄)(OH)₂·H₂O A usually rose-pink mineral composed of hydrous aluminum manganese phosphate, found massive or in prismatic crystals. { ē'əs·ə'fə,rīt }
- Eosuchia** [PALEON] The oldest, most primitive, and only extinct order of lepidosaurian reptiles. { ,ē·ō'sū·kē·ə }
- eötvös** [GEOPHYS] A unit of horizontal gradient of gravitational acceleration, equal to a change in gravitational acceleration of 10⁻⁹ galileo over a horizontal distance of 1 centimeter. { 'ət·vəsh }
- epirogeny** [GEOL] Movements which affect large tracts of the earth's crust. { ,e,pī'rāj·ə·nē }
- ephemeral gully** [GEOL] A channel that forms in a cultivated field when precipitation exceeds the rate of soil infiltration. { ə'fem·ə'rəl 'gəl·ē }
- epicenter** [GEOL] A point on the surface of the earth which is directly above the seismic focus of an earthquake and where the earthquake vibrations reach first. { 'ep·ə,sen·tər }
- epiclastic** [GEOL] Pertaining to the texture of mechanically deposited sediments consisting of detrital material from preexistent rocks. { 'ep·ə'klas·tik }
- epicontinental** [GEOL] Located upon a continental plateau or platform. { 'ep·ə,kant·ən'ent·əl }
- epidiorite** [PETR] A dioritic rock formed by alteration of pyroxenic igneous rocks. { 'ep·ə'dī·ərīt }
- epidosite** [PETR] A rare metamorphic rock composed of epidote and quartz. { ,ep·ə'dō,sīt }
- epidote** [MINERAL] A pistachio-green to blackish-green calcium aluminum sorosilicate mineral that crystallizes in the monoclinic system; the luster is vitreous, hardness is 6½ on Mohs scale, and specific gravity is 3.35–3.45. { 'ep·ə,dōt }
- epidote-amphibolite facies** [PETR] Metamorphic rocks formed under pressures of 3000–7000 bars and temperatures of 250–450°C with conditions intermediate between those that formed greenschist and amphibolite, or with characteristics intermediate. { 'ep·ə,dōt am'fib·əl,lt ,fə·shēz }
- epidotization** [GEOL] The introduction of epidote into, or the formation of epidote from, rocks. { ,ep·ə,dōd·ə'zā·shən }
- epieugeosyncline** [GEOL] Deep troughs formed by subsidence which have limited volcanic power and overlie a eugeosyncline. { 'ep·ē,yū,jē·ō'sin,klīn }
- epigene** [GEOL] **1.** A geologic process originating at or near the earth's surface. **2.** A structure formed at or near the earth's surface. { 'ep·ə,jēn }
- epigenesis** [GEOL] Alteration of the mineral content of rock due to outside influences. { ,ep·ə'jen·ə'səs }
- epigenetic** [GEOL] Produced or formed at or near the surface of the earth. { 'ep·ə·jə'nəd·ik }

- epigenite** [MINERAL] $(\text{Cu,Fe})_5\text{AsS}_6$ A steel gray, orthorhombic mineral consisting of copper and iron arsenic sulfide. { ə'pij-ə,nīt }
- epimagma** [GEOL] A gas-free, vesicular to semisolid magmatic residue of pasty consistency formed by cooling and loss of gas from liquid lava in a lava lake. { ,ep-ə'mag-ma }
- epimagmatic** See deuteritic. { ,ep-ə-mag'mad-ik }
- episode** [GEOL] A distinctive event or series of events in the geologic history of a region or feature. { 'ep-ə,söd }
- epistilbite** [MINERAL] $\text{CaAl}_2\text{Si}_6\text{O}_{16}\cdot 5\text{H}_2\text{O}$ A mineral of the zeolite family that contains calcium and aluminosilicate and crystallizes in the monoclinic system; occurs in white prismatic crystals or granular forms. { 'ep-ə'stil,bīt }
- epithermal** [GEOL] Pertaining to mineral veins and ore deposits formed from warm waters at shallow depth, at temperatures ranging from 50–200°C, and generally at some distance from the magmatic source. { 'ep-ə'thər-məl }
- epithermal deposit** [GEOL] Ore deposit formed in and along openings in rocks by deposition at shallow depths from ascending hot solutions. { 'ep-ə'thər-məldə'pəz-ət }
- epizone** [GEOL] **1.** The zone of metamorphism characterized by moderate temperature, low hydrostatic pressure, and powerful stress. **2.** The outer depth zone of metamorphic rocks. { 'ep-ə,zōn }
- epoch** [GEOL] A major subdivision of a period of geologic time. { 'ep-ək }
- epsomite** [MINERAL] $\text{MgSO}_4\cdot 7\text{H}_2\text{O}$ A mineral that occurs in clear, needlelike, orthorhombic crystals; commonly, it is massive or fibrous; luster varies from vitreous to milky, hardness is 2–2.5 on Mohs scale, and specific gravity is 1.68; it has a salty bitter taste and is soluble in water. Also known as epsom salt. { 'ep-sə,mīt }
- epsom salt** See epsomite. { 'ep-səm ,sölt }
- equatorial electrojet** [GEOPHYS] A concentration of electric current in the atmosphere found in the magnetic equator. { ,e-kwə'tör-ē-əl ə'lek-trə,jet }
- equigranular** [PETR] Pertaining to the texture of rocks whose essential minerals are all of the same order of size. { 'ē-kwə'gran-yə-lər }
- equilibrium profile** See profile of equilibrium. { ,ē-kwə'lib-rē-əm 'prō,fīl }
- equiphase zone** [GEOPHYS] That region in space where the difference in phase of two radio signals is indistinguishable. { 'e-kwə,fāz ,zōn }
- equipotential surface** [GEOPHYS] A surface characterized by the potential being constant everywhere on it for the attractive forces concerned. { 'e-kwə-pə'ten-chəl 'sər-fəs }
- equivalent diameter** See nominal diameter. { i'kwiv-ə-lənt dī'am-əd-ər }
- equivolumental wave** See S wave. { 'e-kwə-və'lüm-ə-nəl 'wāv }
- era** [GEOL] A unit of geologic time constituting a subdivision of an eon and comprising one or more periods. { 'ir-ə }
- erathem** [GEOL] A chronostratigraphic unit, below eonothem and above system, composed of rocks formed during an era of geologic time. { 'er-ə,them }
- Erian** [GEOL] Middle Devonian geologic time; a North American provincial series. { 'i-rē-ən }
- Erian orogeny** [GEOL] One of the orogenies during Phanerozoic geologic time, at the end of the Silurian; the last part of the Caledonian orogenic era. Also known as Hibernian orogeny. { 'i-rē-ən ó'rāj-ə-nē }
- erikite** [MINERAL] A brown mineral consisting of a silicate and phosphate of cerium metals; occurs in orthorhombic crystals. { 'er-ə,kīt }
- erinite** [MINERAL] $\text{Cu}_5(\text{OH})_4(\text{AsO}_4)_2$ Emerald-green mineral composed of basic copper arsenate. { 'er-ə,nīt }
- erionite** [MINERAL] A chabazite mineral of the zeolite family that contains calcium ions and crystallizes in the hexagonal system. { 'er-ē-ə,nīt }
- eroding velocity** [GEOL] The minimum average velocity required for eroding homogeneous material of a given particle size. { ə'rōd-īŋ və'lās-əd-ē }
- erosion** [GEOL] **1.** The loosening and transportation of rock debris at the earth's surface. **2.** The wearing away of the land, chiefly by rain and running water. { ə'rō-zhən }

erosional unconformity

- erosional unconformity** [GEOL] The surface that separates older, eroded rocks from younger, overlying sediments. { ə' rō-zhən·əl ,ən·kən'fɔr·məd·ē }
- erosion cycle** [GEOL] A postulated sequence of conditions through which a new landmass proceeds as it wears down, classically the concept of youth, maturity, and old age, as stated by W.M. Davis; an original landmass is uplifted above base level, cut by canyons, gradually converted into steep hills and wide valleys, and is finally reduced to a flat lowland at or near base level. { ə' rō-zhən ,sɪ·kəl }
- erosion pavement** [GEOL] A layer of pebbles and small rocks that prevents the soil underneath from eroding. { ə' rō-zhən ,pāv·mənt }
- erosion platform** See wave-cut platform. { ə' rō-zhən ,plat·fɔrm }
- erosion surface** [GEOL] A land surface shaped by agents of erosion. { ə' rō-zhən ,sər·fəs }
- erratic** [GEOL] A rock fragment that has been transported a great distance, generally by glacier ice or floating ice, and differs from the bedrock on which it rests. { 'er·əd·ik }
- eruption** [GEOL] The ejection of solid, liquid, or gaseous material from a volcano. { i'rəp·shən }
- eruptive rock** [PETR] **1.** Rock formed from a volcanic eruption. **2.** Igneous rock that reaches the earth's surface in a molten condition. { 'erəp·tɪv 'ræk }
- erythrine** See erythrite. { 'er·ə,θrən }
- erythrite** [MINERAL] $\text{Co}_3(\text{AsO}_4)_2 \cdot 8\text{H}_2\text{O}$ A crimson, peach, or pink-red secondary oxidized cobalt mineral that occurs in monoclinic crystals, in globular and reniform masses, or in earthy forms. Also known as cobalt bloom; cobalt ocher; erythrine; peachblossom ore; red cobalt. { 'er·ə,θrīt }
- erythrosiderite** [MINERAL] $\text{K}_2\text{FeCl}_5 \cdot \text{H}_2\text{O}$ Mineral composed of hydrous potassium iron chloride; occurs in lavas. { ə' rɪθ·rə'sɪd·ə,rīt }
- Erzgebirgian orogeny** [GEOL] Diastrophism of the early Late Carboniferous. { 'erts·gə,bər·jən ə'räj·ə·nē }
- eskar** See esker. { 'es·kər }
- escarpment** [GEOL] A cliff or steep slope of some extent, generally separating two level or gently sloping areas, and produced by erosion or by faulting. Also known as scarp. { ə'skärp·mənt }
- eschar** See esker. { 'es·kər }
- eschwegeite** See tanteuxenite. { ,esh'vā·gē,īt }
- eschynite** [MINERAL] $(\text{Ce,Ca,Fe,Th})(\text{Ti,Cb})_2\text{O}_6$ A black mineral, occurring in prismatic crystals; a rare oxide of cesium, titanium, and other metals, which is isomorphous with priorite. { 'es·kə,nīt }
- eskar** See esker. { 'es·kər }
- eskebornite** [MINERAL] CuFeSe_2 The selenium analog of the mineral pyrrhotite $(\text{Fe}_{1-x}\text{S})$. { ,es·kə'bɔr,nīt }
- esker** [GEOL] A sinuous ridge of constructional form, consisting of stratified accumulations, glacial sand, and gravel. Also known as asar; eschar; eskar; osar; serpent kame. { 'es·kər }
- essexite** [PETR] A rock of igneous origin composed principally of plagioclase hornblende, biotite, and titanite. { 'e-sɪk,sīt }
- estuarine deposit** [GEOL] A sediment deposited at the heads and floors of estuaries. { 'es·chə·wə,rēn də'pāz·ət }
- etch figures** [MINERAL] A minute pit produced by a solvent on the crystal face of a mineral which reveals its molecular structure. { 'ech ,fɪg·yərz }
- ethmolith** [GEOL] A downward tapering, funnel-shaped, discordant intrusion of igneous rocks. { 'eth·mə,lɪθ }
- ettringite** [MINERAL] $\text{Ca}_6\text{Al}_2(\text{SO}_4)_3(\text{OH})_{12} \cdot 26\text{H}_2\text{O}$ A mineral composed of hydrous basic calcium and aluminum sulfate. { 'e·trɪŋ,īt }
- eucairite** [MINERAL] CuAgSe A white, native selenide that crystallizes in the isometric crystal system. { yū'kī,rīt }
- euchlorin** [MINERAL] $(\text{K,Na})_8\text{Cu}_9(\text{SO}_4)_{10}(\text{OH})_6$ An emerald-green mineral consisting of a basic sulfate of potassium, sodium, and copper; found in lava at Vesuvius. { yū'klɔr·ən }

- euchroite** [MINERAL] $\text{Cu}_2(\text{AsO}_4)(\text{OH})\cdot 3\text{H}_2\text{O}$ An emerald green or leek green, orthorhombic mineral consisting of a hydrated basic copper arsenate. { 'yü·krō,tīt }
- euclase** [MINERAL] $\text{BeAlSiO}_4(\text{OH})$ A brittle, pale green, blue, yellow, or violet monoclinic mineral, occurring as prismatic crystals. { 'yü,klās }
- euците** [MINERAL] An olivine-bearing gabbro containing unusually calcic plagioclase; a meteorite component. { 'yü,krīt }
- eucriptite** [MINERAL] LiAlSiO_4 A colorless or white lithium aluminum silicate mineral, crystallizing in the hexagonal system; specific gravity is 2.67. { yü'krip,tīt }
- eudialite** [MINERAL] $(\text{Na,Ca,Fe})_6\text{ZrSi}_6\text{O}_{18}(\text{OH,Cl})$ Hexagonal-crystalline silicate chloride mineral; color is red to brown. { yü'dī·ə,līt }
- eudidymite** [MINERAL] $\text{NaBeSi}_2\text{O}_7(\text{OH})$ A glassy white mineral composed of sodium beryllium silicate. { yü'did·ə,mīt }
- euげosyncline** [GEOL] The internal volcanic belt of an orthogeosyncline. { yü,jē·ō'sin,klīn }
- euهدral** See automorphic. { yü'hē·drəl }
- eulytine** See eulytite. { 'yü·lə,tēn }
- eulytite** [MINERAL] $\text{Bi}_4\text{Si}_3\text{O}_{12}$ A bismuth silicate mineral usually found as minute dark-brown or gray tetrahedral crystals; specific gravity is 6.11. Also known as agricolite; bismuth blende; eulytine. { 'yü·lə,tīt }
- Euomphalacea** [PALEON] A superfamily of extinct gastropod mollusks in the order Aspidobranchia characterized by shells with low spires, some approaching bivalve symmetry. { yü,ām·fə'lās·ē·ə }
- eupelagic** See pelagic. { yü·pə'laj·ik }
- Europacea** [PALEON] A group of Paleozoic horseshoe crabs belonging to the Limulida. { yü,prō·ə'pās·ē·ə }
- Euramerica** [GEOL] The continent that was composed of Europe and North America during most of the Mesozoic Era. { ,yür·ə'mer·ə·kə }
- Euryapsida** [PALEON] A subclass of fossil reptiles distinguished by an upper temporal opening on each side of the skull. { yür·ē'ap·sə·də }
- Eurychilinidae** [PALEON] A family of extinct dimorphic ostracodes in the superfamily Hollinacea. { ,yür·ə·kə'lin·ə,dē }
- Eurymyliidae** [PALEON] A family of extinct mammals presumed to be the ancestral stock of the order Lagomorpha. { ,yür·ə'mil·ə,dē }
- Eurypterida** [PALEON] A group of extinct aquatic arthropods in the subphylum Chelicerata having elongate-lanceolate bodies encased in a chitinous exoskeleton. { ,yür·əp'ter·ə·də }
- eutaxite** [PETR] A rock exhibiting eutaxitic structure. { yü'tak,sīt }
- eutaxitic** [PETR] Referring to the banded appearance in certain extrusive rocks, resulting from the layering of different textures, materials, or colors. { yü'tak'sid·ik }
- eutectofelsite** See eutectophyre. { yü'tek·tō'fel,sīt }
- eutectophyre** [PETR] A light-colored tufflike igneous rock exhibiting a network of interlocking quartz and orthoclase crystals. Also known as eutectofelsite. { yü'tek·tə,fīr }
- Euthacanthidae** [PALEON] A family of extinct acanthodian fishes in the order Climatiformes. { ,yü·thə'kan·thə,dē }
- euuxenite** [MINERAL] A brownish-black rare-earth mineral that crystallizes in the orthorhombic system, contains oxide of calcium, cerium, columbium, tantalum, titanium, and uranium, and has a metallic luster; hardness is 6.5 on Mohs scale, and specific gravity is 4.7–5.0. { 'yük·sə,nīt }
- evansite** [MINERAL] $\text{Al}_3(\text{PO}_4)(\text{OH})_6\cdot 6\text{H}_2\text{O}$ A colorless to milky white mineral consisting of a hydrated basic aluminum phosphate; occurs in massive form and as stalactites. { 'ev·ən,zīt }
- evaporite** [GEOL] Deposits of mineral salts from sea water or salt lakes due to evaporation of the water. { 'i'vap·ə,rīt }
- event** [GEOL] An incident of probable tectonic significance, but whose full implications are unknown. { i'vent }

evjite

- evjite** [PETR] A gabbro of hornblende in which the only light-colored mineral is labradorite or bytownite; hornblende must be primary, not uraltic. { 'ev,jɪt }
- exorsion** [GEOL] The process of pothole formation in riverbeds; plays an important role in denudation. { ē'vɔr·shən }
- exorsion hollow** See pothole. { ē'vɔr·shən ,həl·ō }
- exchange capacity** [GEOL] The ability of a soil material to participate in ion exchange as measured by the quantity of exchangeable ions in a given unit of the material. { iks'chānj kə,pas·əd·ē }
- exfoliation** [GEOL] See sheeting. [PETR] The breaking off of thin concentric shells, sheets, scales, plates, and so on, from a rock mass; measuring less than a centimeter to several meters in thickness, the loosened rock is spalled, peeled, or stripped. { eks,fō·lē'ā·shən }
- exfoliation dome** [GEOL] A large rounded dome-shaped structure produced in massive homogeneous coarse-grained rocks (usually igneous) by exfoliation. { eks,fō·lē'ā·shən ,dɔm }
- exfoliation joint** See sheeting structure. { eks,fō·lē'ā·shən ,jɔɪnt }
- exhalation** [GEOPHYS] The process by which radioactive gases escape from the surface layers of soil or loose rock, where they are formed by decay of radioactive salts. { ,eks·ə'lā·shən }
- exhumation** [GEOL] The uncovering or exposure through erosion of a former surface, landscape, or feature that had been buried by subsequent deposition. { ,eks·yü'mā·shən }
- exhumed** See resurrected. { ig'zyümd }
- exinite** [GEOL] A hydrogen-rich maceral group consisting of spore exines, cuticular matter, resins, and waxes; includes sporinite, cutinite, alginite, and resinite. Also known as liptinite. { 'ek·sə,nɪt }
- exocline** [GEOL] An inverted anticline or syncline. { 'ek·sə,kli:n }
- exogenous inclusion** See xenolith. { ,ek'säj·ə·nəs in'kli·zhən }
- exogeosyncline** [GEOL] A parageosyncline that lies along the cratonal border and obtains its clastic sediments from erosion of the adjacent orthogeosynclinal belt outside the craton. Also known as delta geosyncline; foredeep; transverse basin. { ,ek·sɔ,jē·ō'sin,kli:n }
- exomorphic zone** See aureole. { ,ek·sə'mɔr·fik ,zɔn }
- exomorphism** [PETR] A change in a rock mass caused by intrusion of external igneous material; in the usual sense, contact metamorphism. { ,ek·sə'mɔr,fiz·əm }
- exorheic** [GEOL] Referring to a basin or region characterized by external drainage. { ek·sə'rē·ik }
- expansion fissures** [GEOL] A system of fissures which radiate randomly and pass through feldspars and other minerals adjacent to olivine crystals that have been replaced by serpentine. { ik'span·shən ,fɪʃ·ərz }
- expansion joint** See sheeting structure. { ik'span·shən ,jɔɪnt }
- experimental petrology** [PETR] A branch of petrology in which phenomena that occur during petrological processes are reproduced and studied in the laboratory. { ik,sper·ə'ment·əl pə'träl·ə·jē }
- explosion breccia** [PETR] Breccia resulting from volcanic eruption or a phreatic explosion. { ik'splɔ·zhən ,brech·ə }
- explosion crater** [GEOL] A volcanic crater formed by explosion and commonly developed along rift zones on the flanks of large volcanoes. { ik'splɔ·zhən ,krəd·ər }
- explosion tuff** [GEOL] A tuff whose constituent ash particles are in the place they fell after being ejected from a volcanic vent. { ik'splɔ·zhən ,tʌf }
- explosive index** [GEOL] The percentage of pyroclastics in the material from a volcanic eruption. { ik'splɔ·sɪv 'ɪn,dɛks }
- exsolution** [GEOL] A phenomenon during which molten rock solutions separate when cooled. { ,ek·sə'lü·shən }
- exsolution lamellae** [GEOL] Layers of sedimentary rock that solidify from solution by either precipitation or secretion. { ,ek·sə'lü·shən lə'mel·ē }

eye coal

- extended valley** [GEOL] **1.** A valley that is lengthened downstream either by a regression of the sea or by uplift of the coastal region. **2.** A valley formed by or containing an extended stream. { ik'stend·əd 'val·ē }
- extensional fault** See tension fault. { ik'sten·chən·əl 'fölt }
- extension fracture** [GEOL] A fracture that develops perpendicular to the direction of greatest stress and parallel to the direction of compression. { ik'sten·chən ,frak·chər }
- extension joints** [GEOL] Fractures that form parallel to a compressive force. { ik'sten·chən ,jōins }
- extravasation** [GEOL] The eruption of lava from a vent in the earth. { ik'strav·ə'sā·shən }
- extrusion** [GEOL] Emission of magma or magmatic materials at the surface of the earth. { ek'strū·zhən }
- extrusive rock** See volcanic rock. { ik'strū·siv 'rāk }
- exudative vein** See segregated vein. { ,ek·syə'dā·shən,vān }
- eye coal** [GEOL] Coal characterized by small, circular or elliptical structural disks that reflect light and are arranged in parallel planes either in or normal to the bedding. Also known as augen kohle; circular coal. { 'ī ,kōl }

F

- fabric** [GEOL] The spatial orientation of the elements of a sedimentary rock. [PETR] The sum of all the structural and textural features of a rock. Also known as petrofabric; rock fabric; structural fabric. { 'fab·rik }
- fabric analysis** See structural petrology. { 'fab·rik ə,nəl·əs· əs }
- fabric diagram** [PETR] In structural petrology, a graphic representation of the data of fabric elements. Also known as petrofabric diagram. { 'fab·rik 'dɪ·ə,gram }
- fabric domain** [PETR] A three-dimensional area or volume of uniform rock fabric delineated by boundaries such as structural or compositional discontinuities. { 'fab·rik də'mān }
- fabric element** [PETR] A surface or line of structural discontinuity in a rock fabric. { 'fab·rik 'el·ə·mənt }
- face** [GEOL] **1.** The main surface of a landform. **2.** The original surface of a layer of rock. { fās }
- facellite** See kaliophillite. { fə'se,līt }
- faceted pebble** [GEOL] A pebble with three or more faces naturally worn flat and meeting at sharp angles. { 'fas·əd·əd 'peb·əl }
- faceted spur** [GEOL] A spur or ridge with an inverted-V face resulting from faulting or from the trimming, beveling, or truncating motion of streams, waves, or glaciers. { 'fas·əd·əd 'spər }
- facies** [GEOL] Any observable attribute or attributes of a rock or stratigraphic unit, such as overall appearance or composition, of one part of the rock or unit as contrasted with other parts of the same rock or unit. { 'fā·shēz }
- facies map** [GEOL] A stratigraphic map indicating distribution of sedimentary facies within a specific geologic unit. { 'fā· shēz ,map }
- fahlband** [GEOL] A stratum containing metal sulfides; occurs in crystalline rock. { 'fāl,bānt }
- fahlore** See tetrahedrite. { 'fä,lör }
- fairchildite** [MINERAL] $K_2Ca(CO_3)_2$ A mineral composed of potassium calcium carbonate; occurs in partly burned trees. { 'fer,chīl,dīt }
- fairfieldite** [MINERAL] $Ca_2Mn(PO_4)_2 \cdot 2H_2O$ A white or pale-yellow mineral composed of hydrous calcium manganese phosphate and occurring in foliated or fibrous form. { 'fer,fēl,dīt }
- fairy stone** See staurolite. { 'fer-ē stōn }
- fallback** [GEOL] Fragmented ejecta from an impact or explosion crater during formation which partly refills the true crater almost immediately. { 'fōl,bak }
- fall line** [GEOL] **1.** The zone or boundary between resistant rocks of older land and weaker strata of plains. **2.** The line indicated by the edge over which a waterway suddenly descends, as in waterfalls. { 'fōl ,līn }
- false bedding** [GEOL] An inclined bedding produced by currents. { 'fōls 'bed·ij }
- false cleavage** [GEOL] **1.** A weak cleavage at an angle to the slaty cleavage. **2.** Spaced surfaces about a millimeter apart along which a rock splits. { 'fōls 'klēv·ij }
- false drumlin** See rock drumlin. { 'fōls 'drəm·lən }
- false form** See pseudomorph. { 'fōls 'fōrm }
- false galena** See sphalerite. { 'fōls gə'lē·nə }
- false lapis** See lazulite. { 'fōls 'lap·əs }

false oolith

false oolith *See* pseudo-oolith. { 'fòls 'õ,õ,līth }

false topaz *See* citrine. { 'fòls 'tõ,paz }

famatinite [MINERAL] Cu_3SbS_4 A reddish-gray mineral composed of copper antimony sulfide. { ,fam-ə'tē,nīt }

fan [GEOL] A gently sloping, fan-shaped feature usually found near the lower termination of a canyon. { fan }

fan fold [GEOL] A fold of strata in which both limbs are overturned, forming a syncline or anticline. { 'fan ,föld }

fanglomerate [GEOL] Coarse material in an alluvial fan, with the rock fragments being only slightly worn. { fan'glām-ə-rət }

fan-shaped delta *See* arcuate delta. { 'fan ,shāpt 'del-tə }

farinaceous [GEOL] Of a rock or sediment, having a texture that is mealy, soft, and friable, for example, a limestone or a pelagic ooze. { 'far-ə;nā-shəs }

farringtonite [MINERAL] $Mg_3(PO_4)_2$ A colorless, wax-white, or yellow phosphate mineral known only in meteorites. { 'far-īŋ-tə,nīt }

fassaite [GEOCHEM] $Ca(Mg,Ti,Al)(Al,Si)_2O_6$ A mineral found in the millimeter-sized rocklets or refractory inclusions of carbonaceous chondrite meteorites. { 'fas-ə,yīt }

faujasite [MINERAL] $(Na_2,Ca)Al_2Si_4O_{12} \cdot 6H_2O$ Zeolite mineral of the sodalite group, crystallizing in the cubic system. { 'fõ-zhə,sīt }

fault [GEOL] A fracture in rock along which the adjacent rock surfaces are differentially displaced. { fòlt }

fault basin [GEOL] A region depressed in relation to surrounding regions and separated from them by faults. { 'fòlt ,bās-ən }

fault block [GEOL] A rock mass that is bounded by faults; the faults may be elevated or depressed and not necessarily the same on all sides. { 'fòlt ,bläk }

fault-block mountain *See* block mountain. { 'fòlt ,bläk ,maunt-ən }

fault breccia [GEOL] The assembly of angular fragments found frequently along faults. Also known as dislocation breccia. { 'fòlt ,brech-ə }

fault cliff *See* fault scarp. { 'fòlt ,klif }

fault escarpment *See* fault scarp. { 'fòlt e,skärp-mənt }

faulting [GEOL] The fracturing and displacement processes which produce a fault. { 'fòl-tīŋ }

fault ledge *See* fault scarp. { 'fòlt ,lej }

fault line [GEOL] Intersection of the fault surface with the surface of the earth or any other horizontal surface of reference. Also known as fault trace. { 'fòlt ,līn }

fault-line scarp [GEOL] A cliff produced when a soft rock erodes against hard rock at a fault. { 'fòlt ,līn ,skärp }

fault plane [GEOL] A planar fault surface. { 'fòlt ,plān }

fault rock [GEOL] A rock often found along a fault plane and made up of fragments formed by the crushing and grinding which accompany a dislocation. { 'fòlt ,räk }

fault scarp [GEOL] A steep cliff formed by movement along one side of a fault. Also known as cliff of displacement; fault cliff; fault escarpment; fault ledge. { 'fòlt ,skärp }

fault separation [GEOL] Apparent displacement of a fault measured on the basis of disrupted linear features. { 'fòlt ,sep-ə,rā-shən }

fault strike [GEOL] The angular direction, with respect to north, of the intersection of the fault surface with a horizontal plane. { 'fòlt ,strīk }

fault system [GEOL] Two or more fault sets which interconnect. { 'fòlt ,sis-təm }

fault terrace [GEOL] A step on a slope, produced by displacement of two parallel faults. { 'fòlt ,ter-əs }

fault throw [GEOL] The amount of vertical displacement of rocks due to faulting. { 'fòlt ,thrõ }

fault trace *See* fault line. { 'fòlt ,trās }

fault trap [GEOL] Oil or gas reservoir formed by a structural trap limited in one or more directions by subterranean geological faulting. { 'fòlt ,trap }

fault-trough lake *See* sag pond. { 'fòlt ,tróf ,lāk }

fault vein [GEOL] A mineral vein deposited in a fault fissure. { 'fòlt ,vān }

fault wall [GEOL] The mass of rock on a particular side of a fault. { 'fòlt ,wòl }

- fault zone** [GEOL] A fault expressed as an area of numerous small fractures. Also known as distributed fault. { 'fólt ,zōn }
- faunizone** [GEOL] A bed characterized by fossils of a particular assemblage of fauna. { 'fón·ə,zōn }
- faunule** [PALEON] The localized stratigraphic and geographic distribution of a particular taxon. { 'fó,nyül }
- Favositidae** [PALEON] A family of extinct Paleozoic corals in the order Tabulata. { ,fav·ə'sid·ə,dē }
- fayalite** [MINERAL] Fe_2SiO_4 A brown to black mineral of the olivine group, consisting of iron silicate and found either massive or in crystals; specific gravity is 4.1. { fə'yä,līt }
- feather alum** See alunogen; halotrichite. { 'feth·ər ,al·əm }
- feather joint** [GEOL] One of a series of joints in a fault zone formed by shear and tension. Also known as pinnate joint. { 'feth·ər ,jōint }
- feather ore** See jamesonite. { 'feth·ər ,ör }
- fecal pellets** [GEOL] Mainly the excreta of invertebrates occurring in marine deposits and as fossils in sedimentary rocks. Also known as castings. { 'fē·kəl 'pel·əts }
- feeder** [GEOL] A small ore-bearing vein which merges with a larger one. { 'fēd·ər }
- feeder beach** [GEOL] A beach that is artificially widened and nourishes downdrift beaches by natural littoral currents or forces. { 'fēd·ər ,bēch }
- feldspar** [MINERAL] A group of silicate minerals that make up about 60% of the outer 9 miles (15 kilometers) of the earth's crust; they are silicates of aluminum with the metals potassium, sodium, and calcium, and rarely, barium. { 'fel,spär }
- feldspathic graywacke** [PETR] Sandstone containing less than 75% quartz and chert and 15–75% detrital clay matrix, and having feldspar grains in greater abundance than rock fragments. Also known as arkosic wacke; high-rank graywacke. { fel'spath·ik 'grä,wak·ə }
- feldspathic sandstone** [PETR] Sandstone rich in feldspar; intermediate in composition between arkosic sandstone and quartz sandstone, made up of 10–25% feldspar and less than 20% matrix material. { fel'spath·ik 'san,stōn }
- feldspathic shale** [PETR] A well-laminated shale with more than 10% feldspar in the silt size and with a finer matrix of kaolinitic clay minerals. { fel'spath·ik 'shäl }
- feldspathization** [GEOL] Formation of feldspar in a rock usually as a result of metamorphism leading toward granitization. { ,fel,spa·thə'zä·shən }
- feldspathoid** [GEOL] Aluminosilicates of sodium, potassium, or calcium that are similar in composition to feldspars but contain less silica than the corresponding feldspar. { 'fel,spa,thōid }
- felsermeer** [GEOL] A flat or gently sloping veneer of angular rock fragments occurring on moderate mountain slopes above the timber line. { 'felz·ən,mer }
- felsic** [MINERAL] A light-colored mineral. [PETR] Of an igneous rock, having a mode containing light-colored minerals. { 'fel·sik }
- felsite** [PETR] **1.** A light-colored, fine-grained igneous rock composed chiefly of quartz or feldspar. **2.** A rock characterized by felsitic texture. { 'fel,sīt }
- felsöbányaité** [MINERAL] $\text{Al}_4(\text{SO}_4)(\text{OH})_{10}\cdot 5\text{H}_2\text{O}$ A yellow to white, probably orthorhombic mineral consisting of a hydrated basic sulfate of aluminum; occurs as aggregates of lamellar crystals. { ,fel·sö'ban·yə,īt }
- felsophyric** See aphaniphyric. { 'fel·sə'fir·ik }
- felty** [GEOL] Referring to a pilotaxitic texture in which the microlites are randomly oriented. { 'fel·tē }
- Fenestellidae** [PALEON] A family of extinct fenestrated, cryptostomatous bryozoans which abounded during the Silurian. { ,fen·ə'stel·ə,dē }
- fen peat** See low-moor peat. { 'fen ,pēt }
- window** See window. { 'fen·stər }
- ferberite** [MINERAL] FeNO_4 A black mineral of the wolframite solid-solution series occurring as monoclinic, prismatic crystals and having a submetallic luster; hardness is 4.5 on Mohs scale, and specific gravity is 7.5. { 'fər·bə,rīt }
- ferghanite** [MINERAL] $\text{U}_3(\text{VO}_4)_2\cdot 6\text{H}_2\text{O}$ Sulfur-yellow mineral composed of hydrated uranium vanadate, occurring in scales. { fər'gä,nīt }

fergusonite

- fergusonite** [MINERAL] $Y_2O_3 \cdot (Nb, Ta)_2O_5$ Brownish-black rare-earth mineral with a tetragonal crystal form; it is isomorphous with formanite. { 'fər-gə-sə-nīt }
- fermorite** [MINERAL] $(Ca, Sr)_5[(As, P)O_4]_3$ A white mineral composed of arsenate, phosphate, and fluoride of calcium and strontium, occurring in crystalline masses. { 'fər-mə-rīt }
- fermandinite** [MINERAL] A dull green mineral composed of hydrous calcium vanadyl vanadate. { ,fər-nən'dē-nīt }
- ferriamphibole** [MINERAL] The ferric ion equivalent of the amphibole group of minerals. { ,fer-ē'am·fə,bōl }
- ferricrete** [GEOL] A conglomerate of surficial sand and gravel held together by iron oxide resulting from percolating solutions of iron salts. { 'fer-ə,krēt }
- ferrierite** [MINERAL] $(Na, K)_2MgAl_3Si_{15}O_{36}(OH) \cdot 9H_2O$ A zeolite mineral crystallizing in the orthorhombic system. { fə're-ə-rīt }
- ferriferous** [GEOL] Of a sedimentary rock, iron-rich. [MINERAL] Of a mineral, iron-bearing. { fə'rif-ə-rəs }
- ferrimolybdate** [MINERAL] $Fe_2(MoO_4)_3 \cdot 8H_2O$ A colorless to canary yellow, probably orthorhombic mineral consisting of hydrated ferric molybdate; occurs in massive form, as crusts or aggregates. { 'fe-ri-mə'lib,dīt }
- ferrinatrinite** [MINERAL] $Na_3Fe(SO_4)_3 \cdot 3H_2O$ A greenish or white mineral composed of sodium ferric iron double sulfate; usually occurs in spherical forms. { ,fe-ri'nā,trīt }
- ferrisicklerite** [MINERAL] $(Li, Fe, Mn)(PO_4)$ Mineral composed of phosphate of lithium, ferric iron, and manganese, more iron being present than manganese; it is isomorphous with sicklerite. { 'fe-ri'sik-lə,rīt }
- ferrite** [PETR] Grains or scales of unidentifiable, generally transparent amorphous iron oxide in the matrix of a porphyritic rock. { 'fe,rīt }
- ferritremolite** [MINERAL] The ferric ion equivalent of the monoclinic amphibole, tremolite. { 'fe-ri'trem-ə,līt }
- ferritungstite** [MINERAL] $Fe_2(WO_4)(OH)_4 \cdot 4H_2O$ A yellow ochre mineral composed of hydrous ferric tungstate, occurring as a powder. { 'fer-ri'təŋ-,stīt }
- ferroamphibole** [MINERAL] The ferrous iron equivalent of the amphibole group of minerals. { 'fe-rō'am·fə,bōl }
- ferroan dolomite** [MINERAL] A species of ankerite having less than 20% of the manganese positions occupied by iron. { 'fer-ə-wən 'dōl,mīt }
- ferroaugite** [MINERAL] A form of monoclinic pyroxene. { 'fe-rō'ò,gīt }
- Ferrod** [GEOL] A suborder of the soil order Spodosol that is well drained and contains an iron accumulation with little organic matter. { 'fe,räd }
- ferrodolomite** [MINERAL] $CaFe(CO_3)_2$ A mineral composed of calcium iron carbonate, isomorphous with dolomite, and occurring in ankerite. { 'fe-rō'dō-lə,mīt }
- ferrogabbro** [PETR] A gabbro rock in which the pyroxene and olivine constituents have an unusually high iron content. { 'fe-rō'ga-brō }
- ferrosilite** [MINERAL] A mineral in the orthopyroxene group; the iron analog of enstatite; occurs in hypersthene, but is not found separately in nature. { 'fe-rō'si,līt }
- ferrospinel** See hercynite. { 'fe-rō-spə'nel }
- ferrotremolite** [MINERAL] The ferrous iron equivalent of the monoclinic amphibole, tremolite. { 'fe-rō'tre-mə,līt }
- ferruccite** [MINERAL] $NaBF_4$ An orthorhombic boron mineral consisting of sodium fluoroborate. { fə'rū,chiīt }
- fersmanite** [MINERAL] $(Na, Ca)_2(Ti, Cb)Si(O, F)_6$ A brown mineral composed of a silicate fluoride of sodium, calcium, titanium, and columbium. { 'fərz-mə,nīt }
- fersmite** [MINERAL] $(Ca, Ce)(Cb, Ti)_2(O, F)_6$ A black mineral composed of an oxide and fluoride of calcium and columbium with cerium and titanium. { 'fərz,mīt }
- fervanite** [MINERAL] $Fe_4V_4O_{16} \cdot 5H_2O$ Golden-brown mineral composed of a hydrated iron vanadate; although itself not radioactive, it occurs with radioactive minerals. { 'fər-və,nīt }
- Fibrist** [GEOL] A suborder of the soil order Histosol, consisting mainly of recognizable plant residues or sphagnum moss and saturated with water most of the year. { 'fi-brəst }

fission-track dating

- fibroblastic** [PETR] Of a metamorphic rock, having a texture that is homeoblastic as a result of the development of minerals with a fibrous habit during recrystallization. { 'fī·brə'blas·tik }
- fibroferrite** [MINERAL] $\text{Fe}(\text{SO}_4)(\text{OH})\cdot 5\text{H}_2\text{O}$ A yellowish mineral composed of a hydrous basic ferric sulfate, occurring in fibrous form. { 'fī·brō'fe,rīt }
- fibrolite** See sillimanite. { 'fī·brə,līt }
- fiedlerite** [MINERAL] $\text{Pb}_3(\text{OH})_2\text{Cl}_4$ A colorless mineral composed of a hydroxychloride of lead, occurring as monoclinic crystals. { 'fēd·lə,rīt }
- field** [GEOL] A region or area with a particular mineral resource, for example, a gold field. [GEOPHYS] That area or space in which a particular geophysical effect, such as gravity or magnetism, occurs and can be measured. { 'fēld }
- field focus** [GEOPHYS] The total area or volume occupied by an earthquake source. { 'fēld ,fō·kəs }
- field geology** [GEOL] The study of rocks and rock materials in their environment and in their natural relations to one another. { 'fēld jē,äl·ə·jē }
- field pressure** [GEOL] The pressure of natural gas in the underground formations from which it is produced. { 'fēld ,pres·ə } }
- figure stone** See agalmatolite. { 'fig·yər ,stōn }
- filiform lapilli** See Pele's hair. { 'fil·ə,fōrm lə'pil·ē }
- filowite** [MINERAL] $\text{H}_2\text{Na}_2(\text{Mn,Fe,Ca})_{14}(\text{PO}_4)_{12}\cdot\text{H}_2\text{O}$ A brown, yellow, or colorless mineral composed of a hydrous phosphate of manganese, iron, sodium, and other metals. { 'fil·ə,wīt }
- fill terrace** See alluvial terrace. { 'fil ,ter·əs }
- fine admixture** [GEOL] The smaller size grades of a sediment of mixed size grades. { 'fīn 'ad,miks·chər }
- fine earth** [GEOL] A soil which can be passed through a 2-millimeter sieve without grinding its primary particles. { 'fīn 'ərth }
- fine gravel** [GEOL] Gravel consisting of particles with a diameter range of 1 to 2 millimeters. { 'fīn 'grav·əl }
- fine sand** [GEOL] Sand grains between 0.25 and 0.125 millimeter in diameter. { 'fīn 'sand }
- finger** [GEOL] The tendency for gas which is displacing liquid hydrocarbons in a heterogeneous reservoir rock system to move forward irregularly (in fingers), rather than on a uniform front. { 'fīŋ·gər }
- finger coal** See natural coke. { 'fīŋ·gər ,kōl }
- finnemanite** [MINERAL] $\text{Pb}_2\text{Cl}(\text{AsO}_3)_2$ A gray, olive-green, or black hexagonal mineral composed of arsenite and chloride of lead. { 'fīn·ə·mā,nīt }
- florite** See siliceous sinter. { 'fē'ōr,īt }
- fireclay** [GEOL] **1.** A clay that can resist high temperatures without becoming glassy. **2.** Soft, embedded, white or gray clay rich in hydrated aluminum silicates or silica and deficient in alkalis and iron. { 'fīr ,klā }
- fire fountain** See lava fountain. { 'fīr ,faunt·ən }
- fire opal** [MINERAL] A translucent or transparent, orangy-yellow, brownish-orange, or red variety of opal that gives out fiery reflections in bright light and that may have a play of colors. Also known as pyrophanes; sun opal. { 'fīr ,ō·pəl }
- firestone** See flint. { 'fīr,stōn }
- firn limit** See firn line. { 'fərn ,lim·ət }
- firn line** [GEOL] **1.** The regional snow line on a glacier. **2.** The line that divides the ablation area of a glacier from the accumulation area. Also known as firn limit. { 'fərn ,līn }
- first bottom** [GEOL] The floodplain of a river, below the first terrace. { 'fɜrst 'bäd·əm }
- fischerite** [MINERAL] A green mineral composed of a basic aluminum phosphate; may be identical to wavellite. { 'fish·ə,rīt }
- fish-eye stone** See apophyllite. { 'fish ,ī ,stōn }
- fissile** [GEOL] Capable of being split along the line of the grain or cleavage plane. { 'fis·əl }
- fission-track dating** [GEOL] A method of dating geological specimens by counting the

fissure

radiation-damage tracks produced by spontaneous fission of uranium impurities in minerals and glasses. { 'fish·ən ,trak ,dād·iŋ }

fissure [GEOL] **1.** A high, narrow cave passageway. **2.** An extensive crack in a rock. { 'fish·ər }

fissure system [GEOL] A group of fissures having the same age and generally parallel strike and dip. { 'fish·ər ,sis·təm }

fissure vein [GEOL] A mineral deposit in a cleft or crack in the rock material of the earth's crust. { 'fish·ər ,vān }

Fistuliporidae [PALEON] A diverse family of extinct marine bryozoans in the order Cystoporata. { ,fis·chə·lə'pòr·ə,dē }

fizelyite [MINERAL] A metallic, lead-gray mineral composed of a lead silver antimony sulfide, occurring as prisms. { fə'zā·lē,tɪ }

flaggy [GEOL] **1.** Of bedding, consisting of strata 4–40 inches (10–100 centimeters) in thickness. **2.** Of rock, tending to split into layers of suitable thickness (0.4–2 inches or 1–5 centimeters) for use as flagstones. { 'flag·ē }

flagstone [GEOL] **1.** A hard, thin-bedded sandstone, firm shale, or other rock that splits easily along bedding planes or joints into flat slabs. **2.** A piece of flagstone used for making pavement or covering the side of a house. { 'flag,stōn }

flajolite [MINERAL] $4\text{FeSbO}_4 \cdot 3\text{H}_2\text{O}$ A claylike, lemon-yellow mineral composed of a hydrous iron antimonate, occurring in nodular masses. { 'flaj·ə'lō,tɪt }

flamboyant structure [GEOL] The optical continuity of crystals or grains as disturbed by a structure that is divergent. { flam'bòl·ənt 'strək·chər }

flank See limb. { flɑŋk }

flaser [GEOL] Streaky layer of parallel, scaly aggregates that surrounds the lenticular bodies of granular material in flaser structure; caused by pressure and shearing during metamorphism. { 'flā·zər }

flaser gabbro [GEOL] A cataclastic gabbro that contains augen of feldspar or quartz surrounded by flakes of mica or chlorite. { 'flā·zər 'ga,brō }

flaser structure [GEOL] **1.** A metamorphic structure in which small lenses and layers of granular material are surrounded by a matrix of sheared, crushed material, resembling a crude flow structure. Also known as pachoidal structure. **2.** A primary sedimentary structure consisting of fine-sand or silt lenticles that are aligned and cross-bedded. { 'flā·zər ,strək·chər }

flat [GEOL] See mud flat. [MINERAL] An inferior grade of rough diamonds. { flat }

flat-lying [GEOL] Of mineral deposits and coal seams, having a relatively flat dip, up to 5° . { 'flat ,lɪ·iŋ }

flaw [MINERAL] A faulty part of a gemstone, such as a crack, visible imperfect crystallization, or internal twinning or cleavage. { flō }

flaxseed ore [GEOL] Iron ore composed of disk-shaped oauolites that have been partially flattened parallel to the bedding plane. { 'flak,sēd ,ɔr }

Flexibilia [PALEON] A subclass of extinct stalked or creeping Crinoidea; characteristics include a flexible tegmen with open ambulacral grooves, uniseriate arms, a cylindrical stem, and five conspicuous basals and radials. { ,flek·sə'bil·ē·ə }

flexible sandstone [GEOL] A variety of itacolumite that consists of fine grains and occurs in thin layers. { ,flek·sə·bəl 'san,stōn }

flexural slip [GEOL] The slipping of sedimentary strata along bedding planes during folding, producing disharmonic folding and, when extreme, *décollement*. Also known as bedding-plane slip. { 'flek·shə·rəl 'slip }

flexure [GEOL] **1.** A broad, domed structure. **2.** A fold. { 'flek·shər }

flinkite [MINERAL] $\text{Mn}_3(\text{AsO}_4)(\text{OH})_4$ Greenish-brown mineral composed of basic manganese arsenate, occurring in feathery forms. { 'fliŋ,kɪt }

flint [MINERAL] A black or gray, massive, hard, somewhat impure variety of chalcedony, breaking with a conchoidal fracture. Also known as firestone. { flint }

flint clay [GEOL] A hard, smooth, flintlike fireclay; when it is ground, it develops no plasticity, and it breaks with conchoidal fracture. { 'flint ,klā }

float [GEOL] An isolated, displaced rock or ore fragment. { flōt }

flowstone

- float coal** [GEOL] Small, irregularly shaped, isolated deposits of coal embedded in sandstone or in siltstone. Also known as raft. { 'flōt ,kōl }
- floating sand** [PETR] A single grain of quartz sand that does not appear to touch surrounding sand grains scattered throughout the finer-grained matrix of a sedimentary rock. { 'flōd·iŋ 'sænd }
- float mineral** [GEOL] Small ore fragments carried from the ore bed by the action of water or by gravity; a float mineral often leads to discovery of mines. { 'flōt ,min·rəl }
- floe till** [GEOL] **1.** A glacial till resulting from the intact deposition of a grounded iceberg in a lake bordering an ice sheet. **2.** A lacustrine clay with boulders, stones, and other glacial matter dropped into it by melting icebergs. Also known as berg till. { 'flō ,tɪl }
- flokite** See mordenite. { 'flō ,kɪt }
- flood basalt** See plateau basalt. { 'fləd bə ,sɔlt }
- flood basin** [GEOL] **1.** The tract of land actually submerged during the highest known flood in a specific region. **2.** The flat, wide area lying between a low, sloping plain and the natural levee of a river. { 'fləd ,bās·ən }
- flood fringe** See pondage land. { 'fləd ,frɪŋ }
- floodplain** [GEOL] The relatively smooth valley floors adjacent to and formed by alluviating rivers which are subject to overflow. { 'fləd ,plān }
- floodplain splay** [GEOL] A small alluvial fan or other outspread deposit formed where an overloaded stream breaks through a levee (artificial or natural) and deposits its material (often coarse-grained) on the floodplain. Also known as channel splay. { 'fləd ,plān ,splā }
- flood tuff** See ignimbrite. { 'fləd ,tʌf }
- floor** [GEOL] **1.** The rock underlying a stratified or nearly horizontal deposit, corresponding to the footwall of more steeply dipping deposits. **2.** A horizontal, flat ore body. { flōr }
- florencite** [MINERAL] $\text{CeAl}_3(\text{PO}_4)_2(\text{OH})_6$ Pale-yellow mineral composed of basic phosphate of cerium and aluminum. { 'flär·ən ,sɪt }
- flow** [GEOL] Any rock deformation that is not instantly recoverable without permanent loss of cohesion. Also known as flowage; rock flowage. { flō }
- flowage** See flow. { 'flō·iŋ }
- flowage line** [GEOL] A contour line at the edge of a body of water, such as a reservoir, representing a given water level. { 'flō·iŋ ,lɪn }
- flow banding** [GEOL] An igneous rock structure resulting from flowing of magmas or lavas and characterized by alternation of mineralogically unlike layers. { 'flō ,band·iŋ }
- flow breccia** [GEOL] A breccia formed with the movement of lava flow while the flow is still in motion. { 'flō ,brech·ə }
- flow cast** [PETR] One of a group of bedding plane structures formed in graywacke. { 'flō ,kast }
- flow cleavage** [GEOL] Rock cleavage in which solid flow of rock accompanies recrystallization. Also known as slaty cleavage. { 'flō ,klē·viŋ }
- flow earth** See solifluction mantle. { 'flō ,ərth }
- flow fold** [GEOL] Folding in beds, composed of relatively plastic rock, that assume any shape impressed upon them by the more rigid surrounding rocks or by the general stress pattern of the deformed zone; there are no apparent surfaces of slip. { 'flō ,fōld }
- flow layer** [PETR] In an igneous rock, a layer which is different in composition or texture from adjacent layers. { 'flō ,lā·ər }
- flow line** [PETR] In an igneous rock, any internal structure produced by parallel orientation of crystals, mineral streaks, or inclusions. { 'flō ,lɪn }
- flow rock** [PETR] An igneous rock that had been liquid. { 'flō ,rāk }
- flow slide** [GEOL] A slide of waterlogged material in which the slip surface is not well defined. { 'flō ,slɪd }
- flowstone** [GEOL] Deposits of calcium carbonate that accumulated against the walls of a cave where water flowed on the rock. { 'flō ,stōn }

flow structure

- flow structure** [GEOL] A primary sedimentary structure due to underwater slump or flow. { 'flō ,stræk·chər }
- flow texture** [PETR] A pattern of an igneous rock that is formed when the stream or flow lines of a once-molten material have a subparallel arrangement of prismatic or tabular crystals or microlites. Also known as fluidal texture. { 'flō ,teks·chər }
- flow velocity** [GEOL] In soil, a vector point function used to indicate rate and direction of movement of water through soil per unit of time, perpendicular to the direction of flow. { 'flō və'lās·əd·ē }
- fluellite** [MINERAL] $\text{AlF}_3 \cdot \text{H}_2\text{O}$ A colorless or white mineral composed of aluminum fluoride, occurring in crystals. { 'flū·ə,līt }
- fluidal texture** See flow texture. { 'flū·əd·əl 'teks·chər }
- fluid geometry** [GEOL] Fluid distribution in reservoir strata controlled by rock effective pore-size distribution, rock wettability characteristics in relation to the fluids present, method of producing saturation, and rock heterogeneity. { 'flū·əd jē'əm·ə·trē }
- fluid inclusion** [PETR] A tiny fluid-filled cavity in an igneous rock that forms by the entrapment of the liquid from which the rock crystallized. { 'flū·əd in'klū·zhən }
- fluid saturation** [GEOL] Measure of the gross void space in a reservoir rock that is occupied by a fluid. { 'flū·əd ,sach·ə'rā·shən }
- flume** [GEOL] A ravine with a stream flowing through it. { flüm }
- fluoborite** [MINERAL] $\text{Mg}_3(\text{BO}_3)(\text{F},\text{OH})_3$ A colorless mineral composed of magnesium fluoborate; occurs in hexagonal prisms. Also known as nocerite. { 'flū·ə'bòr,īt }
- fluocerite** [MINERAL] $(\text{Ce},\text{La},\text{Nd})\text{F}_3$ A reddish-yellow mineral composed of fluoride of cerium and related elements. { 'flū·ə'se,rīt }
- fluolite** See pitchstone. { 'flū·ə,līt }
- fluor** See fluorite; luminophor. { 'flū,òr }
- fluorapatite** [MINERAL] **1.** $\text{Ca}_5(\text{PO}_4)_3\text{F}$ A mineral of the solid-solution series of the apatite group; common accessory mineral in igneous rocks. **2.** An apatite mineral in which the fluoride member dominates. { flū·'rap·ə,tīt }
- fluoridation** [GEOCHEM] Formation in rocks of fluorine-containing minerals such as fluorite or topaz. { flūr·ə'dā·shən }
- fluorite** [MINERAL] CaF_2 A transparent to translucent, often blue or purple mineral, commonly found in crystalline cubes in veins and associated with lead, tin, and zinc ores; hardness is 4 on Mohs scale; the principal ore of fluorine. Also known as Derbyshire spar; fluor; fluorspar. { 'flūr,īt }
- fluorocummingtonite** [MINERAL] Cummingtonite with a high content of fluorine. { 'flūr·ò'kəm·iŋ·tə,nīt }
- fluorspar** See fluorite. { 'flūr,spär }
- flute** [GEOL] **1.** A natural groove running vertically down the face of a rock. **2.** A groove in a sedimentary structure formed by the scouring action of a turbulent, sediment-laden water current, and having a steep upcurrent end. { flüt }
- flute cast** [GEOL] A raised, oblong, or subconical welt on the bottom surface of a siltstone or sandstone bed formed by the filling of a flute. { 'flüt ,kast }
- Fluvent** [GEOL] A suborder of the soil order Entisol that is well-drained with visible marks of sedimentation and no identifiable horizons; occurs in recently deposited alluvium along streams or in fans. { 'flū·vənt }
- fluvial cycle of erosion** See normal cycle. { 'flū·vē·əl 'sī·kəl əv ə'rō·zhən }
- fluvial deposit** [GEOL] A sedimentary deposit of material transported by or suspended in a river. { 'flū·vē·əl di'pāz·ət }
- fluvial sand** [GEOL] Sand laid down by a river or stream. { 'flū·vē·əl 'sand }
- fluvial soil** [GEOL] Soil laid down by a river or stream. { 'flū·vē·əl 'soil }
- fluvialite** [GEOL] Resulting from river action. { 'flū·vē·əl,tīl }
- fluvial morphology** See river morphology. { 'flū·vē·ò·mòr'fəl·ə·jē }
- flying veins** [GEOL] A series of mineral-deposit veins which overlap or intersect in a branchlike pattern. { 'fli·iŋ 'vānz }
- flysch** [GEOL] Deposits of dark, fine-grained, thinly bedded sandstone shales and of clay, thought to be deposited by turbidity currents and originally defined as rock formations on the northern and southern borders of the Alps. { flish }

formation

- foam** See pumice. { fōm }
- foam mark** [GEOL] A surface sedimentary structure comprising a pattern of barely visible ridges and hollows formed where wind-driven sea foam passes over a surface of wet sand. { 'fōm ,mārk }
- focus** [GEOPHYS] The center of an earthquake and the origin of its elastic waves within the earth. { 'fō·kəs }
- fold** [GEOL] A bend in rock strata or other planar structure, usually produced by deformation; folds are recognized where layered rocks have been distorted into wavelike form. { fōld }
- fold belt** See orogenic belt. { 'fōld ,belt }
- folding** [GEOL] Compression of planar structure in the formation of fold structures. { 'fōld·iŋ }
- fold system** [GEOL] A group of folds with common trends and characteristics. { 'fōld ,sis·təm }
- folia** [PETR] Thin, leaflike layers that occur in gneissic or schistose rocks. { 'fō·lē·ə }
- foliaceous** [GEOL] Having a leaflike or platelike structure composed of thin layers of minerals. { ,fō·lē'ā·shəs }
- foliation** [GEOL] A laminated structure formed by segregation of different minerals into layers that are parallel to the schistosity. { ,fō·lē'ā·shən }
- Folist** [GEOL] A suborder of the soil order Histosol, consisting of wet forest litter resting on rock or rubble. { 'fāl·əst }
- Fontéchevade man** [PALEON] A fossil man representing the third interglacial *Homo sapiens* and having browridges and a cranial vault similar to those of modern *Homo sapiens*. { fōn·te·che'vād ,man }
- fool's gold** See pyrite. { 'fūlz 'gōld }
- footeite** See connellite. { 'fūt,īt }
- footwall** [GEOL] The mass of rock that lies beneath a fault, an ore body, or a mine working. Also known as heading side; heading wall; lower plate. { 'fūt,wōl }
- forbesite** [MINERAL] $H(Ni,Co)AsO_4 \cdot 3\frac{1}{2}H_2O$ A grayish-white mineral composed of hydrous nickel cobalt arsenate; occurs in fibrocrystalline form. { 'fōrb,zīt }
- forearc** [GEOL] The area between the trench and the volcanic arc of a subduction zone. { 'fōr,ārk }
- forebulge** [GEOL] An uplift at the edge of a glacier caused by tilting of the lithosphere. { 'fōr,bəlʒ }
- foredeep** [GEOL] **1.** A long, narrow depression that borders an orogenic belt, such as an island arc, on the convex side. **2.** See exogeosyncline. { 'fōr,dēp }
- foredune** [GEOL] A coastal dune or ridge that is parallel to the shoreline of a large lake or ocean and is stabilized by vegetation. { 'fōr,dūn }
- foreign inclusion** [PETR] A fragmentary piece of country rock which is enclosed in an igneous intrusion. { ,fār·ən in'klü·zhən }
- foreland** [GEOL] **1.** A lowland area onto which piedmont glaciers have moved from adjacent mountains. **2.** A stable part of a continent bordering an orogenic or mobile belt. { 'fōr·lənd }
- foreland facies** See shelf facies. { 'fōr·lənd ,fā·shēz }
- forellenstein** See troctolite. { fə'rel·ən,stīn }
- foreset bed** [GEOL] One of a series of inclined symmetrically arranged layers of a cross-bedding unit formed by deposition of sediments that rolled down a steep frontal slope of a delta or dune. { 'fōr,set ,bed }
- foreshock** [GEOPHYS] A tremor which precedes a larger earthquake or main shock. { 'fōr,shāk }
- foreshore** [GEOL] The zone that lies between the ordinary high- and low-watermarks and is daily traversed by the rise and fall of the tide. Also known as beach face. { 'fōr,shōr }
- formanite** [MINERAL] A mineral composed of an oxide of uranium, zirconium, thorium, calcium, tantalum, and niobium with some rare-earth metals. { 'fōr·mə,nīt }
- formation** [GEOL] Any assemblage of rocks which have some common character and are mappable as a unit. { fōr'mā·shən }

formation factor

- formation factor** [GEOCHEM] The ratio between the conductivity of an electrolyte and that of a rock saturated with the same electrolyte. Also known as resistivity factor. [GEOL] A function of the porosity and internal geometry of a reservoir rock system, expressed as $F = \phi^{-m}$, where ϕ is the fractional porosity of the rock, and m is the cementation factor (pore-opening reduction). {fɔr'mā-shən ,fak-tər }
- formation pressure** See reservoir pressure. {fɔr'mā-shən ,presh-ər }
- formation resistivity** [GEOPHYS] Electrical resistivity of reservoir formations measured by electrical log sondes; used for clues to formation lithography and fluid content. {fɔr'mā-shən rɪ,zɪs'tɪv-əd-ē }
- forril farina** See rock milk. {'fär-əl fə,rɛn-ē }
- forsterite** [MINERAL] Mg_2SiO_4 A whitish or yellowish, magnesium-rich variety of olivine. Also known as white olivine. {'fɔr-stə,rɪt }
- fortification agate** See landscape agate. {'fɔrd-ə-fə'kā-shən 'ag-ət }
- foshagite** [MINERAL] $Ca_5Si_3O_{10}(OH)_2 \cdot 2H_2O$ A white mineral composed of a basic hydrous calcium silicate. {'fɔ-shə,gɪt }
- fossil** [PALEON] The organic remains, traces, or imprint of an organism preserved in the earth's crust since some time in the geologic past. {'fäs-əl }
- fossil dune** [GEOL] An ancient desert dune. {'fäs-əl 'dün }
- fossil fuel** [GEOL] Any hydrocarbon deposit that may be used for fuel; examples are petroleum, coal, and natural gas. {'fäs-əl 'fyül }
- fossil man** [PALEON] Ancient human identified from prehistoric skeletal remains which are archeologically earlier than the Neolithic. {'fäs-əl 'man }
- fossil permafrost** See passive permafrost. {'fäs-əl 'pər-mə,frɔst }
- fossil reef** [GEOL] An ancient reef. {'fäs-əl 'rɛf }
- fossil resin** [GEOL] A natural resin in geologic deposits which is an exudate of long-buried plant life; for example, amber, retinite, and copal. {'fäs-əl 'rez-ən }
- fossil soil** See paleosol. {'fäs-əl 'sɔil }
- fossil wax** See ozocerite. {'fäs-əl 'waks }
- foundation coefficient** [GEOPHYS] A coefficient which expresses how much stronger the effect of an earthquake is on a given rock than it would be on an undisturbed crystalline rock under the same conditions. {'faün'dā-shən ,kō-i,fɪsh-ənt }
- founder** [GEOL] To sink under water either by depression of the land or by rise of sea level, especially in reference to large crustal masses, islands, or significant portions of continents. {'faün-dər }
- fourchite** [PETR] A monchiquite that lacks feldspar and olivine. {'fūr,ʃɪt }
- fourmarierite** [MINERAL] An orange-red to brown mineral composed of a hydrous oxide of lead and uranium. {'fūr'mär-ē-ə,rɪt }
- four-way dip** [GEOPHYS] In seismic prospecting, dip determined by an array of geophones which are set up at points in four directions from a shot point; three of the locations are essential and the fourth serves as a control point. {'fɔr ,wā 'dɪp }
- foowlerite** [MINERAL] A zinc-bearing variety of rhodonite. {'faü-lə,rɪt }
- foyaite** [PETR] A nepheline syenite composed chiefly of potassium feldspar. {'fɔi-yə,ɪt }
- fractional crystallization** [PETR] Separation of a cooling magma into multiple minerals as the different minerals cool and congeal at progressively lower temperatures. Also known as crystallization differentiation; fractionation. {'frak-shən-əl ,krɪst-əl-ə'zā-shən }
- fractionation** See fractional crystallization. {'frak-shə'nā-shən }
- fractocoformity** [GEOL] The relation between conformable strata, where faulting of the older beds occurs at the same time as deposition of the newer beds. {'frak-tō-kən'fɔr-məd-ē }
- fracture** [GEOL] A crack, joint, or fault in a rock due to mechanical failure by stress. Also known as rupture. [MINERAL] A break in a mineral other than along a cleavage plane. {'frak-shər }
- fracture cleavage** [GEOL] Cleavage that occurs in deformed but only slightly metamorphosed rocks along closely spaced, parallel joints and fractures. {'frak-shər ,klɛv-ij }

friction crack

- fracture-plane inclination** [GEOL] Gradient or inclination of the plane of fracture formed in a reservoir formation. { 'frak·shər ,plān ,in·klə'nā·shən }
- fracture system** [GEOL] A stress-related group of contemporaneous fractures. { 'frak·shər ,sis·təm }
- fracture zone** [GEOL] An elongate zone on the deep-sea floor that is of irregular topography and often separates regions of different depths; frequently crosses and displaces the mid-oceanic ridge by faulting. { 'frak·shər ,zōn }
- fragipan** [GEOL] A dense, natural subsurface layer of hard soil with relatively slow permeability to water, mostly because of its extreme density or compactness rather than its high clay content or cementation. { 'frāj·ə·pən }
- framboid** [GEOL] A microscopic aggregate of pyrite grains, often occurring in spheroidal clusters. { 'fram,boid }
- framework** [GEOL] **1.** In a sediment or sedimentary rock, the rigid arrangement created by particles that support one another at contact points. **2.** A fixed calcareous structure impervious to waves, built by sedentary organisms (for example, sponges, corals, and bryozoans) in a high-energy environment. { 'frām,wɜrk }
- framework silicate** See tectosilicate. { 'frām,wɜrk 'sil·ə·kət }
- franckeite** [MINERAL] A dark-gray or black massive mineral composed of lead antimony tin sulfide. { 'frāŋ·kə,tīt }
- francolite** [MINERAL] $\text{Ca}_5(\text{PO}_4, \text{CO}_3)_3(\text{F}, \text{OH})$ Colorless fluoride-bearing carbonate-apatite. { 'frāŋ·kə,līt }
- Franconian** [GEOL] A North American stage of geologic time; the middle Upper Cambrian. { frāŋ'kō·nē·ən }
- franklinite** [MINERAL] ZnFe_2O_4 Black, slightly magnetic mineral member of the spinel group; usually possesses extensive substitution of divalent manganese and iron for the divalent zinc, and limited trivalent manganese for the trivalent iron. { 'frāŋ·klə,nīt }
- free air** See free atmosphere. { 'frē 'er }
- free-air anomaly** See free-air gravity anomaly. { 'frē ,er ə'nām·ə·lə }
- free-air gravity anomaly** [GEOPHYS] A measure of the mass excesses and deficiencies within the earth; calculated as the difference between the measured gravity and the theoretical gravity at sea level and a free-air coefficient determined by the elevation of the measuring station. Also known as free-air anomaly. { 'frē ,er 'grav·əd·ē ə,nām·ə·lə }
- free atmosphere** [GEOPHYS] That portion of the earth's atmosphere, above the planetary boundary layer, in which the effect of the earth's surface friction on the air motion is negligible and in which the air is usually treated (dynamically) as an ideal fluid. Also known as free air. { 'frē 'at·mə,sfir }
- free-burning coal** See noncaking coal. { 'frē ,bɜrn·iŋ 'kōl }
- free face** [GEOL] A vertical or steeply inclined layer of rock from which weathered material falls to form talus at its base. { 'frē 'fās }
- freestone** [GEOL] Stone, particularly a thick-bedded, even-textured, fine-grained sandstone, that breaks freely and is able to be cut and dressed with equal facility in any direction without tending to split. { 'frē,stōn }
- F region** [GEOPHYS] The general region of the ionosphere in which the F_1 and F_2 layers tend to form. { 'ef ,rē·jən }
- freibergite** [MINERAL] A steel-gray, silver-bearing variety of tetrahedrite. { 'frī,bɜr,gīt }
- freieslebenite** [MINERAL] $\text{Pb}_3\text{Ag}_5\text{Sb}_5\text{S}_{12}$ A steel-gray to dark mineral composed of a sulfide of antimony, lead, and silver. { 'frī·əs;lā·bə,nīt }
- freirinite** [MINERAL] $\text{Na}_3\text{Cu}_3(\text{AsO}_4)_2(\text{OH})_3 \cdot \text{H}_2\text{O}$ A lavender to turquoise-blue mineral composed of a basic hydrous arsenate of sodium and copper. { 'frā'rē,nīt }
- fremontite** See natromontebrazite. { 'frē·mən,tīt }
- fresh** [GEOL] Unweathered in reference to a rock or rock surface. { fresh }
- Fresnian** [GEOL] A North American stage of upper Eocene geologic time, above Narizian and below Refugian. { 'frez·nē·ən }
- frictional** See cohesionless. { 'frik·shən·əl }
- friction crack** [GEOL] A short, crescent-shaped crack in glaciated rock produced by a

friedelite

localized increase in friction between rock and ice, oriented transverse to the direction of ice flow. { 'frik·shən ,krak }

friedelite [MINERAL] $Mn_8Si_6O_{18}(OH,Cl)_4 \cdot 3H_2O$ A rose-red mineral composed of manganese silicate with chlorine. { frē·de,līt }

fringe joint [GEOL] A small-scale joint peripheral to, and usually at a 5–25° angle from the face of, the master joint. { 'frinj ,jōint }

fringe ore [GEOL] Ore located on the outer boundary of a mineralization pattern or halo. Also known as halo ore. { 'frinj ,ōr }

fringing reef [GEOL] A coral reef attached directly to or bordering the shore of an island or continental landmass. { 'frin·jɪŋ 'rēf }

frohbergite [MINERAL] $FeTe_2$ A mineral composed of iron telluride; it is isomorphous with marcasite. { 'frō,bər,gīt }

frondelite [MINERAL] $MnFe_4(PO_4)_5(OH)_5$ A mineral composed of basic phosphate of manganese and iron; it is isomorphous with rockbridgeite. { frän'de,līt }

front abutment pressure [GEOPHYS] The release of energy in the superincumbent strata above the seam induced by the extraction of the seam. { 'frənt ə'bət·mənt ,presh·ər }

frontal apron See outwash plain. { 'frənt·əl 'ā·prən }

frontal plain See outwash plain. { 'frənt·əl 'plān }

front slope See scarp slope. { 'frənt ,slöp }

frost action [GEOL] **1.** The weathering process caused by cycles of freezing and thawing of water in surface pores, cracks, and other openings. **2.** Alternate or repeated cycles of freezing and thawing of water contained in materials; the term is especially applied to disruptive effects of this action. { 'fröst ,ək·shən }

frost boil [GEOL] **1.** An accumulation of water and mud released from ground ice by accelerated spring thawing. **2.** A low mound formed by local differential frost heaving at a location most favorable for the formation of segregated ice and accompanied by the absence of an insulating cover of vegetation. { 'fröst ,bōil }

frost bursting See congelifraction. { 'fröst ,bərst·ɪŋ }

frost churning See congeliturbation. { 'fröst ,chərn·ɪŋ }

frost heaving [GEOL] The lifting and distortion of a surface due to internal action of frost resulting from subsurface ice formation; affects soil, rock, pavement, and other structures. { 'fröst ,hēv·ɪŋ }

frost line [GEOL] **1.** The maximum depth of frozen ground during the winter. **2.** The lower limit of the permafrost. { 'fröst ,lɪn }

frost mound [GEOL] A hill and knoll associated with frozen ground in a permafrost region, containing a core of ice. Also known as soffosian knob; soil blister. { 'fröst ,maünd }

frost riving See congelifraction. { 'fröst ,rɪv·ɪŋ }

frost shattering See congelifraction. { 'fröst ,shad·ə·rɪŋ }

frost splitting See congelifraction. { 'fröst ,splɪd·ɪŋ }

frost stirring See congelifraction. { 'fröst ,stər·ɪŋ }

frost table [GEOL] An irregular surface in the ground which, at any given time, represents the penetration of thawing into seasonally frozen ground. { 'fröst ,tā·bəl }

frost thrusting [GEOL] Lateral dislocation of soil and rock materials by the action of freezing and resulting expansion of soil water. { 'fröst ,θrəst·ɪŋ }

frost weathering See congelifraction. { 'fröst ,weθ·ə·rɪŋ }

frost wedging See congelifraction. { 'fröst ,weɪ·ɪŋ }

frost zone See seasonally frozen ground. { 'fröst ,zōn }

frozen ground [GEOL] Soil having a temperature below freezing, generally containing water in the form of ice. Also known as gelisol; merzlota; taele; tjaele. { 'fröz·ən 'graünd }

fuchsinite [MINERAL] A bright-green variety of muscovite rich in chromium. { 'fyük,sɪt }

fucoïd [GEOL] A tunnellike marking on a sedimentary structure identified as a trace fossil but not referred to a described genus. { 'fyü,kōïd }

fulgurite [GEOL] A glassy, rootlike tube formed when a lightning stroke terminates in dry sandy soil; the intense heating of the current passing down into the soil along an irregular path fuses the sand. { 'fúl·gə,rɪt }

Fusulinina

- fuller's earth** [GEOL] A natural, fine-grained earthy material, such as a clay, with high adsorptive power; consists principally of hydrated aluminum silicates; used as an adsorbent in refining and decolorizing oils, as a catalyst, and as a bleaching agent. { 'fʊl·ərz 'ɔrθ }
- fulloppite** [MINERAL] $Pb_3Sb_8S_{15}$ A lead gray, monoclinic mineral consisting of lead antimony sulfide. { 'fʊl·ə,pɪt }
- fumarole** [GEOL] A hole, usually found in volcanic areas, from which vapors or gases escape. { 'fyü·mə,rəl }
- fundamental complex** [GEOL] An agglomeration of metamorphic rocks underlying sedimentary or unmetamorphosed rocks; specifically, an agglomeration of Archean rocks supporting a geological column. { 'fʌn·də'ment·əl 'käm,pleks }
- fundamental jelly** *See* ulmin. { 'fʌn·də'ment·əl 'jel·ē }
- fundamental strength** [GEOPHYS] The maximum stress that a geological structure can withstand without creep under certain conditions but without reference to time. { 'fʌn·də'ment·əl 'streŋkθ }
- fundamental substance** *See* ulmin. { 'fʌn·də'ment·əl 'səb·stəns }
- fusain** [GEOL] The local lithotype strands or patches, characterized by silky luster, fibrous structure, friability, and black color. Also known as mineral charcoal; mother-of-coal. { 'fyü,zān }
- fusinite** [GEOL] The micropetrological constituent of fusain which consists of carbonized woody tissue. { 'fyüz·ən,ɪt }
- fusinization** [GEOL] The process of formation of fusain in coal. { 'fyüz·ən·ə'zā·shən }
- fusion crust** [GEOL] A thin, glassy coating, usually black and rarely more than 1 millimeter thick, which is formed by ablation on the surface of a meteorite. { 'fyü·zhən ,krəst }
- Fusulinacea** [PALEON] A superfamily of large, marine extinct protozoans in the order Foraminifera characterized by a chambered calcareous shell. { ,fyü·zə'lin·ə's·ē·ə }
- Fusulinidae** [PALEON] A family of extinct protozoans in the superfamily Fusulinacea. { ,fyü·zə'lin·ə,dē }
- Fusulinina** [PALEON] A suborder of extinct rhizopod protozoans in the order Foraminifera having a monolamellar, microgranular calcite wall. { ,fyü·zə'lin·nə }

G

- gabbro** [PETR] A group of dark-colored, intrusive igneous rocks with granular texture, composed largely of basic plagioclase and clinopyroxene. { 'gab·rō }
- gadolinite** [MINERAL] $\text{Be}_2\text{FeY}_2\text{Si}_2\text{O}_{10}$ A black, greenish-black, or brown rare-earth mineral; hardness is 6.5–7 on Mohs scale, and specific gravity is 4–4.5. { 'gad·əl·ə,nīt }
- gagate** [MINERAL] $(\text{Mn,Mg,Zn})_8\text{Si}_3\text{O}_{14}\cdot 2\text{H}_2\text{O}$ (or $3\text{H}_2\text{O}$) A mineral composed of a hydrous silicate of manganese, magnesium, and zinc. { 'gā,jīt }
- gahnite** [MINERAL] ZnAl_2O_4 A usually dark-green, but sometimes yellow, gray, or black spinel mineral consisting of an oxide of zinc and aluminum. Also known as zinc spinel. { 'gā,nīt }
- galaxite** [MINERAL] MnAl_2O_4 A black mineral of the spinel series composed of an oxide of manganese and aluminum. { 'gā·lak,sīt }
- galena** [MINERAL] PbS A bluish-gray to lead-gray mineral with brilliant metallic luster, specific gravity 7.5, and hardness 2.5 on Mohs scale; occurs in cubic or octahedral crystals, in masses, or in grains. Also known as blue lead; lead glance. { gə'lē·nə }
- galenic** [MINERAL] Containing galena. Also known as galenical. { gə'len·ik }
- galenical** See galenic. { gə'len·i·kəl }
- galenobismutite** [MINERAL] PbBi_2S_4 A lead-gray or tin-white mineral consisting of bismuth sulfide; specific gravity is 6.9. { gə'lē·nō'biz·mə,tīt }
- Galeritidae** [PALEON] A family of extinct exocyclic Euechinoidea in the order Holecypoida, characterized by large ambulacral plates with small, widely separated pore pairs. { ,gə·lə'rid·ə,dē }
- gallery** [GEOL] **1.** A horizontal, or nearly horizontal, underground passage. **2.** A subsidiary passage in a cave at a higher level than the main passage. { 'gal·rē }
- galmei** See hemimorphite. { gəl'mī }
- Gamponychidae** [PALEON] A family of extinct crustaceans in the order Palaeocaridacea. { ,gam·sə'nī·kə,dē }
- gangue** [GEOL] The valueless rock or aggregates of minerals in an ore. { ganj }
- ganister** [PETR] A fine, hard quartzose sandstone; used to make refractory silica brick to line furnace reactors. { 'gan·ə·stər }
- ganomalite** [MINERAL] $(\text{Ca}_2)\text{Pb}_3\text{Si}_3\text{O}_{11}$ A colorless to gray silicate of lead with calcium crystallizing in the tetragonal system. { gə'näm·ə,līt }
- ganophyllite** [MINERAL] $(\text{Na,K})(\text{Mn,Fe,Al})_5(\text{Si,Al})_6\text{O}_{15}(\text{OH})_5\cdot 2\text{H}_2\text{O}$ A brown, prismatic crystalline or foliated mineral composed of a hydrous silicate of manganese and aluminum. { ,gan·ə'fi,līt }
- garnet** [MINERAL] A generic name for a group of mineral silicates that are isometric in crystallization and have the general chemical formula $\text{A}_3\text{B}_2(\text{SiO}_4)_3$, where A is Fe^{2+} , Mn^{2+} , Mg, or Ca, and B is Al, Fe^{3+} , Cr^{3+} , or Ti^{3+} ; used as a gemstone and as an abrasive. { 'gär·nət }
- garnierite** [MINERAL] $(\text{Ni,Mg})_3\text{Si}_2\text{O}_5(\text{OH})_4$ An apple-green or pale-green, monoclinic serpentine; a gemstone and an ore of nickel. Also known as nepuite; noumeite. { 'gär·nē·ə,rīt }
- garronite** [MINERAL] $\text{Na}_2\text{Ca}_5\text{Al}_{12}\text{Si}_{20}\text{O}_{64}\cdot 27\text{H}_2\text{O}$ A zeolite mineral belonging to the phillipsite group; crystallizes in the tetragonal system. { 'ga·rən,īt }
- gas clathrate** See gas hydrate. { 'gas 'klath,rät }

gas column

- gas column** [GEOL] The difference in elevation between the highest and lowest parts of the various producing zones of a gas-producing formation. { 'gas ,ka·ləm }
- gas-condensate reservoir** [GEOL] Hydrocarbon reservoir in which conditions of temperature and pressure have resulted in the condensation of the heavier hydrocarbon constituents from the reservoir gas. { 'gas 'känd·ən,sət ,rez·əv,wär }
- gas-filled porosity** [GEOL] A reservoir formation in which the pore space is filled by gas instead of liquid hydrocarbons. { 'gas ,fild pə'räs·əd·ē }
- gas floor** [GEOL] In a sedimentary basin, the depth below which there is no economic accumulation of gaseous hydrocarbons. { 'gas ,flôr }
- gash fracture** [GEOL] Open gashes that are formed diagonally to a fault or fault zone. { 'gash ,frak·chər }
- gas hydrate** [GEOCHEM] A naturally occurring solid composed of crystallized water (ice) molecules, forming a rigid lattice of cages (a clathrate) with most of the cages containing a molecule of natural gas, mainly methane. Also known as clathrate hydrate, gas clathrate. { 'gas 'hī,drät }
- gas vein** [GEOL] A mineralized fissure that extends a short distance vertically. { 'gash ,vān }
- gaspeite** [MINERAL] NaCO_3 An anhydrous normal carbonate mineral with calcite structure. { ga'spē,īt }
- gas pocket** [GEOL] A gas-filled cavity in rocks, especially above an oil pocket. { 'gas ,pāk·ət }
- gas reservoir** [GEOL] An accumulation of natural gas found with or near accumulations of crude oil in the earth's crust. { 'gas ,rez·əv,wär }
- gas sand** [GEOL] A stratum of sand or porous sandstone from which natural gas may be extracted. { 'gas ,sand }
- gas spurt** [GEOL] An accumulation of organic matter on certain strata caused by escaping gas. { 'gas ,spərt }
- gas zone** [GEOL] A rock formation containing gas under a pressure large enough to force the gas out if tapped from the surface. { 'gas ,zōn }
- gaufrage** See plaiting. { gō'frāzh }
- gaylussite** [MINERAL] $\text{Na}_2\text{Ca}(\text{CO}_3)_2 \cdot 5\text{H}_2\text{O}$ A translucent, yellowish-white hydrous carbonate mineral, with a vitreous luster, crystallizing in the monoclinic system; found in dry lakes. { 'gā·lə,sīt }
- geanticline** [GEOL] A broad land uplift; refers to the land mass from which sediments in a geosyncline are derived. { ,jē'ant·i,klīn }
- gearksutite** [MINERAL] $\text{CaAl}(\text{OH})\text{F}_4 \cdot \text{H}_2\text{O}$ A clayey mineral composed of hydrous calcium aluminum fluoride, occurring with cryolite. { jē'ärk·sə,tīt }
- gedanite** [MINERAL] A brittle, wine-yellow variety of amber containing little succinic acid; found on the shore of the Baltic Sea. { 'ged·ən,īt }
- gedrite** [MINERAL] An aluminous variety of the mineral anthophyllite. { 'je,drīt }
- gehlenite** [MINERAL] $\text{Ca}_2\text{Al}_2\text{SiO}_7$ A mineral of the melilite group that crystallizes in the tetragonal crystal system and is isomorphous with akermanite; a green, resinous material found with spinel. { 'gē·lə,nīt }
- geikielite** [MINERAL] MgTiO_3 A bluish-black or brownish-black mineral that crystallizes in the rhombohedral system and occurs in the form of rolled pebbles; it is isomorphous with ilmenite. { 'gē·kē,līt }
- gelifluction** [GEOL] The slow, continuous downslope movement of rock debris and water-saturated soil that occurs above frozen ground, as in most polar regions and in many high mountain ranges. Also known as congelifluction; gelisolifluction. { ,jel·ə'flək·shən }
- gelifraction** See congeliturbation. { ,jel·ə'frak·shən }
- gelisol** See frozen ground. { 'jel·ə,sól }
- gelisolifluction** See gelifluction. { ,jel·ə'səl·ə'flək·shən }
- geliturbation** See congeliturbation. { ,jel·ə'ter'bāsh·ən }
- gelivation** See congelifraction. { ,jel·ə'vā·shən }
- gel mineral** See mineraloid. { 'jel ,min·rəl }

geocosmogony

- Gelocidae** [PALEON] A family of extinct pecoran ruminants in the superfamily Traguloidea. { jə'läs·ə,dē }
- gelose** See ulmin. { 'je,lös }
- gem** [MINERAL] A natural or artificially produced mineral or other material that has sufficient beauty and durability for use as a personal adornment. { jem }
- gemology** [MINERAL] The science concerned with the identification, grading, evaluation, fashioning, and other aspects of gemstones. { je'mäl·ə·jē }
- gemstone** [GEOL] A mineral or petrified organic matter suitable for use in jewelry. { 'jem,stōn }
- Gemuendinoidei** [PALEON] A suborder of extinct raylike placoderm fishes in the order Rhenanida. { je'myü·ən·dä'nöid·ē,T }
- generalized hydrostatic equation** [GEOPHYS] The vertical component of the vector equation of motion in natural coordinates when the acceleration of gravity is replaced by the virtual gravity; for most purposes it is identical to the hydrostatic equation. { 'jen·rə,līzd ,hī·drə'stad·ik i'kwā·zhən }
- genesis rocks** [GEOL] Rocks that have retained their character from nearly 4.6×10^9 years ago, when planets were still occulting out of the cloud of dust and gas referred to as the solar nebula; examples are meteorites and asteroids. { 'jen·ə·səs ,rāks }
- genetic facies** [GEOL] An ancient deposit of rocks which have been formed by similar sedimentary processes. { jə'ned·ik 'fā·shēz }
- Geniohyidae** [PALEON] A family of extinct ungulate mammals in the order Hyracoidea; all members were medium to large-sized animals with long snouts. { jī·ē·nē·ō'hī·ə,dē }
- genterite** [MINERAL] $\text{Cu}_8\text{Fe}_3\text{Cr}_{11}\text{S}_{18}$ A sulfide mineral known only in meteorites. { 'jent·nə,rīt }
- geobotanical prospecting** [GEOL] The use of the distribution, appearance, and growth anomalies of plants in locating ore deposits. { jī·ē·ō·bä'tan·ə·käl 'präs·pek·tīŋ }
- geocerite** [MINERAL] A white, waxy mineral composed of carbon, oxygen, and hydrogen, occurring in brown coal. { ,jī·ē·ō'si,rīt }
- geochemical anomaly** [GEOCHEM] Above-average concentration of a chemical element in a sample of rock, soil, vegetation, stream, or sediment; indicative of nearby mineral deposit. { jī·ē·ō'kem·ə·käl ə'näm·ə·lē }
- geochemical balance** [GEOCHEM] The proportional distribution, and the migration rate, in the global fractionation of elements, minerals, or compounds; for example, the distribution of quartz in igneous rocks, its liberation by weathering, and its redistribution into sediments and, in solution, into lakes, rivers, and oceans. { jī·ē·ō'kem·ə·käl 'bal·əns }
- geochemical cycle** [GEOCHEM] During geologic changes, the sequence of stages in the migration of elements between the lithosphere, hydrosphere, and atmosphere. { jī·ē·ō'kem·ə·käl 'sī·käl }
- geochemical evolution** [GEOCHEM] **1.** A change in any constituent of a rock beyond that amount present in the parent rock. **2.** A change in chemical composition of a major segment of the earth during geologic time, as the oceans. { jī·ē·ō'kem·ə·käl ,ev·ə'lū·shən }
- geochemistry** [GEOL] The study of the chemical composition of the various phases of the earth and the physical and chemical processes which have produced the observed distribution of the elements and nuclides in these phases. { jī·ē·ō'kem·ə·strē }
- geochron** See isochron. { 'jī·ə,krän }
- geochronology** [GEOL] **1.** The dating of the events in the earth's history. **2.** A system of dating developed for the purposes of study of the earth's history. { jī·ē·ō·krə'näl·ə·jē }
- geochronometry** [GEOL] The study of the absolute age of the rocks of the earth based on the radioactive decay of isotopes, such as ^{238}U , ^{235}U , ^{232}Th , ^{87}Rb , ^{40}K , and ^{14}C , present in minerals and rocks. { jī·ē·ō·krə'näm·ə·trē }
- geocosmogony** [GEOL] The study of the origin of the earth. { jī·ē·ō,käz'mäj·ə·nē }

geocronite

geocronite [MINERAL] $Pb_5(Sb,As)_2S_3$ A mineral composed of lead-gray lead antimony arsenic sulfide. { jē'äk·rə·nīt }

geode [GEOL] A roughly spheroidal, hollow body lined inside with inward-projecting, small crystals; found frequently in limestone beds but may occur in shale. { jē,ōd }

geodesy [GEOPHYS] A subdivision of geophysics which includes determination of the size and shape of the earth, the earth's gravitational field, and the location of points fixed to the earth's crust in an earth-referred coordinate system. { jē'äd·ə·sē }

geodynamics [GEOPHYS] The branch of geophysics concerned with measuring, modeling, and interpreting the configuration and motion of the crust, mantle, and core of the earth. { jē·ō·dī'nam·iks }

geodynamo [GEOPHYS] The self-sustaining process responsible for maintaining the earth's magnetic field in which the kinetic energy of convective motion of the earth's liquid core is converted into magnetic energy. { jē·ō·dī·nə·mō }

geoelectricity See terrestrial electricity. { jē·ō·i,lek'tris·əd·ē }

geoflex See orocline. { jē·ə,flex }

geognosy [GEOL] The science dealing with the solid body of the earth as a whole, occurrences of minerals and rocks, and the origin of these and their relations. { jē'äg·nə·sē }

geographical cycle See geomorphic cycle. { jē·ə'graf·ə·kəl 'st·kəl }

geoisotherm [GEOPHYS] The locus of points of equal temperature in the interior of the earth; a line in two dimensions or a surface in three dimensions. Also known as geotherm; isogeotherm. { jē·ō't·sə,thərm }

geolith See rock-stratigraphic unit. { jē·ə,lith }

geologic age [GEOL] **1.** Any great time period in the earth's history marked by special phases of physical conditions or organic development. **2.** A formal geologic unit of time that corresponds to a stage. **3.** An informal geologic time unit that corresponds to any stratigraphic unit. { jē·ə'lāj·ik 'āj }

geological oceanography [GEOL] The study of the floors and margins of the oceans, including descriptions of topography, composition of bottom materials, interaction of sediments and rocks with air and sea water, the effects of movements in the mantle on the sea floor, and action of wave energy in the submarine crust of the earth. Also known as marine geology; submarine geology. { jē·ə'lāj·ə·kəl ,ō·shə'näg·rə·fē }

geological survey [GEOL] **1.** An organization making geological surveys and studies. **2.** A systematic geologic mapping of a terrain. { jē·ə'lāj·ə·kəl 'sər,vā }

geological transportation [GEOL] Shifting of material by the action of moving water, ice, or air. { jē·ə'lāj·ə·kəl ,tranz·pər'tā·shən }

geologic climate See paleoclimate. { jē·ə'lāj·ik 'klī·mət }

geologic column [GEOL] **1.** The vertical sequence of strata of various ages found in an area or region. Also known as column. **2.** The geologic time scale as represented by rocks. { jē·ə'lāj·ik 'käl·əm }

geologic erosion See normal erosion. { jē·ə'lāj·ik ə'rō·zhən }

geologic log [GEOL] A graphic presentation of the lithologic or stratigraphic units or both traversed by a borehole; used in petroleum and mining engineering as well as geological surveys. { jē·ə'lāj·ik 'läg }

geologic map [GEOL] A representation of the geologic surface or subsurface features by means of signs and symbols and with an indicated means of orientation; includes nature and distribution of rock units, and the occurrence of structural features, mineral deposits, and fossil localities. { jē·ə'lāj·ik 'map }

geologic noise [GEOPHYS] Disturbances in observed data caused by random inhomogeneities in surface and near-surface material. { jē·ə'lāj·ik'nóiz }

geologic province [GEOL] An area in which geologic history has been the same. { jē·ə'lāj·ik 'präv·əns }

geologic section [GEOL] Any succession of rock units found at the surface or below ground in an area. Also known as section. { jē·ə'lāj·ik 'sek·shən }

geologic structure [GEOL] The total structural features in an area. { jē·ə'lāj·ik ,strək·chər }

geopetal fabric

- geologic thermometer** *See* geothermometer. { |jē·ə|läj·ik thər'mäm·əd·ər }
- geologic thermometry** *See* geothermometry. { |jē·ə|läj·ik thər'mäm·ə·trē }
- geologic time** [GEOL] The period of time covered by historical geology, from the end of the formation of the earth as a separate planet to the beginning of written history. { |jē·ə|läj·ik 'tīm }
- geologic time scale** [GEOL] The relative age of various geologic periods and the absolute time intervals. { |jē·ə|läj·ik 'tīm ,skäl }
- geologist** [GEOL] An individual who specializes in the geological sciences. { |jē'äl·ə·jəst }
- geomagnetic coordinates** [GEOPHYS] A system of spherical coordinates based on the best fit of a centered dipole to the actual magnetic field of the earth. { |jē·ō·mag'ned·ik kō'örd·ən·əts }
- geomagnetic cutoff** [GEOPHYS] The minimum energy of a cosmic-ray particle able to reach the top of the atmosphere at a particular geomagnetic latitude. { |jē·ō·mag'ned·ik 'kə,dóf }
- geomagnetic dipole** [GEOPHYS] The magnetic dipole caused by the earth's magnetic field. { |jē·ō·mag'ned·ik 'di,pōl }
- geomagnetic equator** [GEOPHYS] That terrestrial great circle which is 90° from the geomagnetic poles. { |jē·ō·mag'ned·ik i'kwād·ər }
- geomagnetic field** [GEOPHYS] The earth's magnetic field. { |jē·ō·mag'ned·ik 'fēld }
- geomagnetic field reversal** [GEOPHYS] Reversed magnetization in sedimentary and igneous rock, that is, polarized opposite to the mean geomagnetic field. { |jē·ō·mag'ned·ik 'fēld ,ri,vər·səl }
- geomagnetic latitude** [GEOPHYS] The magnetic latitude that a location would have if the field of the earth were to be replaced by a dipole field closely approximating it. { |jē·ō·mag'ned·ik 'lad·ə,tüd }
- geomagnetic longitude** [GEOPHYS] Longitude that is determined around the geomagnetic axis instead of around the rotation axis of the earth. { |jē·ō·mag'ned·ik 'län·jə,tüd }
- geomagnetic meridian** [GEOPHYS] A semicircle connecting the geomagnetic poles. { |jē·ō·mag'ned·ik mə'rid·ē·ən }
- geomagnetic noise** [GEOPHYS] Unwanted frequencies caused by fluctuations in the geomagnetic field of the earth. { |jē·ō·mag'ned·ik 'nóiz }
- geomagnetic pole** [GEOPHYS] Either of two antipodal points marking the intersection of the earth's surface with the extended axis of a powerful bar magnet assumed to be located at the center of the earth and having a field approximating the actual magnetic field of the earth. { |jē·ō·mag'ned·ik 'pōl }
- geomagnetic reversal** [GEOPHYS] Reversed magnetization of the earth's magnetic dipole. { |jē·ō·mag'ned·ik ri'vər·səl }
- geomagnetic secular variation** *See* secular variation. { |jē·ō·mag'ned·ik |sek·yə·lär ver·ē'ä·shən }
- geomagnetic storm** *See* magnetic storm. { |jē·ō·mag'ned·ik 'stōrm }
- geomagnetic variation** [GEOPHYS] Temporal changes in the geomagnetic field, both long-term (secular) and short-term (transient). { |jē·ō·mag'ned·ik ver·ē'ä·shən }
- geomagnetism** [GEOPHYS] **1.** The magnetism of the earth. Also known as terrestrial magnetism. **2.** The branch of science that deals with the earth's magnetism. { |jē·ō'mag·nə,tiz·əm }
- geomorphic cycle** [GEOL] The cycle of change in the surface configuration of the earth. Also known as cycle of erosion; geographical cycle. { |jē·ō|mör·fik 'st·kəl }
- geomorphology** [GEOL] The study of the origin of secondary topographic features which are carved by erosion in the primary elements and built up of the erosional debris. { |jē·ō·mör'fäl·ə·jē }
- geopetal** [PETR] Pertaining to the top-to-bottom relations in rocks at the time of formation. { |jē·ə|ped·əl }
- geopetal fabric** [PETR] The internal structure of a rock indicating the original orientation of the top-to-bottom strata. { |jē·ə|ped·əl 'fab·rik }

geophysical fluid dynamics

geophysical fluid dynamics [GEOPHYS] The study of the naturally occurring, large-scale flows in the atmosphere and oceans, such as in weather patterns, atmospheric fronts, ocean currents, coastal upwelling, and the El Niño phenomenon. { ,jē-ō'fiz-ə-kəl |flü-əd dī'nam-iks }

geophysicist [GEOPHYS] An individual who specializes in geophysics. { |jē-ə'fiz-ə-sist }

geophysics [GEOL] The physics of the earth and its environment, that is, earth, air, and (by extension) space. { |jē-ə'fiz-iks }

geopotential topography [GEOPHYS] The topography of any surface as represented by lines of equal geopotential; these lines are the contours of intersection between the actual surface and the level surfaces (which everywhere are normal to the direction of the force of gravity), and are spaced at equal intervals of dynamic height. Also known as absolute geopotential topography. { |jē-ō-pə'ten-chəl tə'päg-rə-fē }

geopotential unit [GEOPHYS] A unit of gravitational potential used in describing the earth's gravitational field; it is equal to the difference in gravitational potential of two points separated by a distance of 1 meter when the gravitational field has a strength of 10 meters per second squared and is directed along the line joining the points. Abbreviated gpu. { |jē-ō-pə'ten-chəl 'yü-nət }

geopressure [GEOPHYS] An unusually high pressure exerted by a subsurface formation. { 'jē-ō,presh-ər }

geopressurized geothermal system [GEOL] A geothermal system dominated by the presence of hot fluids under high pressure (brine plus methane) and having higher-than-normal temperatures because of their low thermal conductivity, the presence of interbedded shale layers, or the existence of local, exothermic chemical reactions. { |jē-ō'presh-ə,rīzd |jē-ō'thər-məl 'sis-təm }

Georges Banks [GEOL] An elevation beneath the sea east of Cape Cod, Massachusetts. { |jör-jəz 'bæŋks }

georgiadesite [MINERAL] $Pb_3(AsO_4)Cl_3$ A white or brownish-yellow mineral composed of lead chloroarsenate, occurring in orthorhombic crystals. { |jör'jad-ə,sīt }

georgiaite [GEOL] Any of a group of North American tektites, 134 million years of age, found in Georgia. { 'jör-jə,īt }

geosere [GEOL] A series of ecological climax communities following each other in geologic time and changing in response to changing climate and physical conditions. { 'jē-ō,sir }

geosol [GEOL] A body of sediment or rock composed of one or more soil horizons. { 'jē-ə,söl }

geosphere [GEOL] **1.** The solid mass of earth, as distinct from the atmosphere and hydrosphere. **2.** The lithosphere, hydrosphere, and atmosphere combined. { 'jē-ō,sfir }

geostatic pressure See ground pressure. { |jē-ō'stad-ik 'presh-ər }

geostatistics [GEOL] A branch of applied statistics that focuses on mathematical description and analysis of geological observations. { ,jē-ō-stə'tis-tiks }

geostrophic [GEOPHYS] Pertaining to deflecting force resulting from the earth's rotation. { |jē-ō'sträf-ik }

geostrophic approximation [GEOPHYS] The assumption that the geostrophic current can represent the actual horizontal current. Also known as geostrophic assumption. { |jē-ō'sträf-ik ə'präk-sə'mā-shən }

geostrophic assumption See geostrophic approximation. { |jē-ō'sträf-ik ə'səm-shən }

geostrophic current [GEOPHYS] A current defined by assuming the existence of an exact balance between the horizontal pressure gradient force and the Coriolis force. { |jē-ō'sträf-ik 'kə-rənt }

geostrophic equation [GEOPHYS] An equation, used to compute geostrophic current speed, which represents a balance between the horizontal pressure gradient force and the Coriolis force. { |jē-ō'sträf-ik i'kwā-shən }

geostrophic equilibrium [GEOPHYS] A state of motion of a nonviscous fluid in which the horizontal Coriolis force exactly balances the horizontal pressure force at all points of the field so described. { |jē-ō'sträf-ik ,ē-kwə'lib-rē-əm }

- geostrophic flow** [GEOPHYS] A form of gradient flow where the Coriolis force exactly balances the horizontal pressure force. {jē-ō'stráf-ik 'flō }
- geosynclinal couple** See orthogeosyncline. {jē-ō,sin'klīn-əl 'kəp-əl }
- geosynclinal cycle** See tectonic cycle. {jē-ō,sin'klīn-əl 'st-kəl }
- geosynclinal facies** [GEOL] A sedimentary facies marked by great thickness, a generally argillaceous character, and few carbonate rocks. {jē-ō,sin'klīn-əl 'fā-shēz }
- geosyncline** [GEOL] A linear part of the earth's crust, hundreds of kilometers long and tens of kilometers wide, that subsided during millions of years as it received thousands of meters of sedimentary and volcanic accumulations. {jē-ō'sin,klīn }
- geotectogene** See tectogene. {jē-ō'tek-tə,jēn }
- geotectonic cycle** See orogenic cycle. {jē-ō'tek'tän-ik 'st-kəl }
- geotectonics** See tectonics. {jē-ō'tek'tän-iks }
- geotherm** See geoisotherm. {jē-ō,thərm }
- geothermal** [GEOPHYS] Pertaining to heat within the earth. {jē-ō'thər-məl }
- geothermal energy** [GEOPHYS] Thermal energy contained in the earth; can be used directly to supply heat or can be converted to mechanical or electrical energy. {jē-ō,thərm-əl 'en-ər-jē }
- geothermal gradient** [GEOPHYS] The change in temperature with depth of the earth. {jē-ō'thər-məl 'grād-ē-ənt }
- geothermal system** [GEOL] Any regionally localized geological setting where naturally occurring portions of the earth's internal heat flow are transported close enough to the earth's surface by circulating steam or hot water to be readily harnessed for use; examples are the Geysers Region of northern California and the hot brine fields in the Imperial Valley of southern California. {jē-ō'thər-məl 'sis-təm }
- geothermometer** [GEOL] A mineral that yields information about the temperature range within which it was formed. Also known as geologic thermometer. {jē-ō-thər'mām-əd-ər }
- geothermometry** [GEOL] Measurement of the temperatures at which geologic processes occur or occurred. Also known as geologic thermometry. {jē-ō-thər'mām-ə-trē }
- gerhardtite** [MINERAL] $\text{Cu}_2(\text{NO}_3)(\text{OH})_3$ An emerald-green mineral composed of basic copper nitrate. {ger,härd,īt }
- germanite** [MINERAL] $\text{Cu}_3(\text{Ge,Ga,Fe})(\text{S,As})_4$ Reddish-gray mineral occurring in massive form; an important source of germanium. {jər-mə,nīt }
- germination** See grain growth. {jər-mə'hā-shən }
- gersdorffite** [MINERAL] NiAs A silver-white to steel-gray mineral, crystallizing in the isometric system; resembles cobaltite and may contain some iron and cobalt. Also known as nickel glance. {gerz,dör,fit }
- geyserite** See siliceous sinter. {gē-zə,rīt }
- ghost** [PETR] The discernible outline of the shape of a former crystal or of another rock structure that has been partly obliterated and has as its boundaries inclusions, bubbles, or other foreign matter. Also known as phantom. {gōst }
- giant granite** See pegmatite. {jī-ənt 'gran-ət }
- giant's cauldron** See giant's kettle. {jī-əns 'kól-dran }
- giant's kettle** [GEOL] A cylindrical hole bored in bedrock beneath a glacier by water falling through a deep moulin or by boulders rotating in the bed of a meltwater stream. Also known as giant's cauldron; moulin pothole; potash kettle. {jī-əns 'ked-əl }
- gibbsite** [MINERAL] $\text{Al}(\text{OH})_3$ A white or tinted mineral, crystallizing in the monoclinic system; a principal constituent of bauxite. Also known as hydrargillite. {gib,zit }
- Gibraltar stone** See onyx marble. {jə'bröld-ər ,stōn }
- gillespite** [MINERAL] $\text{BaFeSi}_4\text{O}_{10}$ A micralike mineral composed of barium and iron silicate. {gə'le,spīt }
- gilsonite** [MINERAL] A variety of asphalt; it has black color, brilliant luster, brown streaks, and conchoidal fracture. {gil-sə,nīt }
- ginorite** [MINERAL] $\text{Ca}_2\text{B}_{14}\text{O}_{23}\cdot 8\text{H}_2\text{O}$ A white monoclinic mineral composed of hydrous borate of calcium. {jin-ə,rīt }

giobertite

giobertite *See* magnesite. { 'jō·bær,tīt }

girdle [PETR] With reference to a fabric diagram or equal-area projection net, a belt showing concentration of points which is approximately coincident with a great circle of the net and which represents orientation of the fabric elements. { 'gærd·əl }

gismondite [MINERAL] $\text{CaAl}_2\text{Si}_2\text{O}_8 \cdot 4\text{H}_2\text{O}$ A light-colored mineral composed of hydrous calcium aluminum silicate, occurring in pyramidal crystals. { jiz'män,dīt }

glacial [GEOL] Pertaining to an interval of geologic time which was marked by an equatorward advance of ice during an ice age; the opposite of interglacial; these intervals are variously called glacial periods, glacial epochs, glacial stages, and so on. { 'glā·shəl }

glacial abrasion [GEOL] Alteration of portions of the earth's surface as a result of glacial flow. { 'glā·shəl ə'brā·zhən }

glacial accretion [GEOL] Deposition of material as a result of glacial flow. { 'glā·shəl ə'krē·shən }

glacial advance [GEOL] **1.** Increase in the thickness and area of a glacier. **2.** A time period equal to that increase. { 'glā·shəl əd'vans }

glacial boulder [GEOL] A boulder moved to a point distant from its original site by a glacier. { 'glā·shəl 'bōl·dər }

glacial deposit [GEOL] Material carried to a point beyond its original location by a glacier. { 'glā·shəl di'pāz·ət }

glacial drift [GEOL] All rock material in transport by glacial ice, and all deposits predominantly of glacial origin made in the sea or in bodies of glacial meltwater, including rocks rafted by icebergs. { 'glā·shəl 'drift }

glacial epoch [GEOL] **1.** Any of the geologic epochs characterized by an ice age; thus, the Pleistocene epoch may be termed a glacial epoch. **2.** Generally, an interval of geologic time which was marked by a major equatorward advance of ice; the term has been applied to an entire ice age or (rarely) to the individual glacial stages which make up an ice age. { 'glā·shəl 'ep·ək }

glacial erosion [GEOL] Movement of soil or rock from one point to another by the action of the moving ice of a glacier. Also known as ice erosion. { 'glā·shəl ə'rō·zhən }

glacial flour *See* rock flour. { 'glā·shəl 'flāu·ər }

glacial geology [GEOL] The study of land features resulting from glaciation. { 'glā·shəl jē'al·ə·jē }

glacial lake [GEOL] A lake that exists because of the effects of the glacial period. { 'glā·shəl 'lāk }

glacial maximum [GEOL] The time or position of the greatest extent of any glaciation; most frequently applied to the greatest equatorward advance of Pleistocene glaciation. { 'glā·shəl 'mak·sə·məm }

glacial outwash *See* outwash. { 'glā·shəl 'aüt,wāsh }

glacial period [GEOL] **1.** Any of the geologic periods which embraced an ice age; for example, the Quaternary period may be called a glacial period. **2.** Generally, an interval of geologic time which was marked by a major equatorward advance of ice. { 'glā·shəl 'pir·ē·əd }

glacial plucking *See* plucking. { 'glā·shəl 'plək·iŋ }

glacial retreat [GEOL] A condition occurring when backward melting at the front of a glacier takes place at a rate exceeding forward motion. { 'glā·shəl ri'trēt }

glacial scour [GEOL] Erosion resulting from glacial action, whereby the surface material is removed and the rock fragments carried by the glacier abrade, scratch, and polish the bedrock. Also known as scouring. { 'glā·shəl 'skaür }

glacial striae [GEOL] Scratches, commonly parallel, on smooth rock surfaces due to glacial abrasion. { 'glā·shəl 'strī,tī }

glacial till *See* till. { 'glā·shəl 'til }

glacial trough [GEOL] A deep U-shaped valley with steep sides that leads down from a cirque and was excavated by a glacier. { 'glā·shəl 'tróf }

glacial varve *See* varve. { 'glā·shəl 'vārv }

glaciated terrain [GEOL] A region that once bore great masses of glacial ice; a distinguishing feature is marks of glaciation. { 'glā·shē,əd·əd tə'rān }

- glaciation** [GEOL] Alteration of any part of the earth's surface by passage of a glacier, chiefly by glacial erosion or deposition. { ,glā·shē'ā·shən }
- glaciation limit** [GEOPHYS] For a given locality, the lowest altitude at which glaciers can develop. { ,glā·shē'ā·shən ,lim·ət }
- glacier table** [GEOL] A stone block supported by an ice pedestal above the surface of a glacier. { 'glā·shər ,tā·bəl }
- glacioeustasy** [GEOL] Changes in sea level due to storage or release of water from glacier ice. { 'glās·ē·ō'yū·stə·sē }
- glacifluvial** [GEOL] Pertaining to streams fed by melting glaciers, or to the deposits and landforms produced by such streams. { 'glā·shē·ō'flū·vē·əl }
- glacioisostasy** [GEOL] Lithospheric depression or rebound due to the weight or melting of glacier ice. { ,glā·sē·ō't'sās·tə·sē }
- glaciolacustrine** [GEOL] Pertaining to lakes fed by melting glaciers, or to the deposits forming therein. { 'glā·shē·ō'ləkəs·trən }
- glaciology** [GEOL] A broad field encompassing all aspects of the study of ice: glaciers, the largest ice masses on earth; ice that forms on rivers, lakes, and the sea; ice in the ground, including both permafrost and seasonal ice such as that which disrupts roads; ice that crystallizes directly from the air on structures such as airplanes and antennas, and all forms of snow research, including hydrological and avalanche forecasting. { ,glā·shē'al·ə·jē }
- gladite** [MINERAL] PbCuBi₂S₉ A lead gray mineral consisting of lead and copper bismuth sulfide; occurs as prismatic crystals. { 'glā,dīt }
- glance pitch** [GEOL] A variety of asphaltite having brilliant conchoidal fracture, and resembling gilsonite but having higher specific gravity and percentage of fixed carbon. { 'glans ,pich }
- glaserite** See arcanite. { 'glā·zə,rīt }
- glass porphyry** See vitrophyre. { 'glas 'pór·fə·rē }
- glass schorl** See axinite. { 'glas ,shórl }
- glassy feldspar** See sanidine. { 'glas·ē 'fel,spär }
- glauberite** [MINERAL] Na₂Ca(SO₄)₂ A brittle, gray-yellow monoclinic mineral having vitreous luster and saline taste. { 'glāu·bə,rīt }
- glaucoconerite** [MINERAL] A mineral composed of a hydrous basic sulfate of copper, zinc, and aluminum. { ,glō·kō'se·rə,nīt }
- glaucochroite** [MINERAL] CaMnSiO₄ A bluish-green mineral that is related to monticellite, is composed of calcium manganese silicate, and occurs in prismatic crystals. { ,glō·kə'krō,īt }
- glaucodot** [MINERAL] (Co,Fe)AsS A grayish-white, metallic-looking mineral composed of cobalt iron sulfarsenide, occurring in orthorhombic crystals. { 'glō·kə,dət }
- glaucosite** [MINERAL] K₁₅(Fe,Mg,Al)₄₋₆(Si,Al)₈O₂₀(OH)₄ A type of clay mineral; it is dioctahedral and occurs in flakes and as pigmentary material. { 'glō·kə,nīt }
- glauconic sandstone** [PETR] A quartz sandstone or an arkosic sandstone that has many glauconite grains. { 'glō·kə'nid·ik 'san,stōn }
- glaucophane** [MINERAL] Na₂Mg₃Al₂Si₈ A blue to black monoclinic sodium amphibole; blue to black coloration with marked pleochroism. { 'glō·kə,fān }
- glaucophane schist** [PETR] Metamorphic schist that contains glaucophane. { 'glō·kə,fān ,shist }
- glessite** [GEOL] Fossil resin similar to amber. { 'gle,sīt }
- gley** [GEOL] A sticky subsurface layer of clay in some waterlogged soils. { glā }
- glide fold** See shear fold. { 'glīd ,fōld }
- globigerina ooze** [GEOL] A pelagic sediment consisting of than 30% calcium carbonate in the form of foraminiferal tests of which *Globigerina* is the dominant genus. { glō,bij·ə'tī·nə ,ūz }
- globular** See spherulitic. { 'glāb·yə·lər }
- globulite** [GEOL] A small, isotropic, globular of spherulelike crystallite; usually dark in color and found in glassy extrusive rocks. { 'glāb·yə,līt }
- glockerite** [MINERAL] A brown, ocher yellow, black, or dull green mineral consisting of

glossopterid flora

a hydrated basic sulfate of ferric iron; occurs in stalactitic, encrusting, or earthy forms. { 'glä·kə,rit }

glossopterid flora [PALEOBOT] Permian and Triassic fossil ferns of the genus *Glossopteris*. { glä'säp·tə·rəd 'flör·ə }

gloop [GEOL] An opening in the roof of a sea cave. { glüp }

glowing avalanche See ash flow. { |glō·iŋ 'av·ə,lanch }

glowing cloud See nuée ardente. { |glō·iŋ 'klaüd }

Glyphocyphidae [PALEON] A family of extinct echinoderms in the order Temnopleuroida comprising small forms with a sculptured test, perforate crenulate tubercles, and diademoid ambulacral plates. { ,glif·ō'sif·ə,dē }

Glyptocrinina [PALEON] A suborder of extinct crinoids in the order Monobathrida. { |glip·tō·krə'nit·nə }

glyptolith See ventifact. { 'glip·tə,lith }

gmelinite [MINERAL] $(\text{Na}_2\text{Ca})\text{Al}_2\text{Si}_4\text{O}_{12}\cdot 6\text{H}_2\text{O}$ Zeolite mineral that is colorless or lightly colored and crystallizes in the hexagonal system. { gə'mel·ə,nit }

Gnathobelodontinae [PALEON] A subfamily of extinct elephantoid proboscideans containing the shovel-jawed forms of the family Gomphotheriidae. { nā'thəb·ə·lō'dän·tə,nē }

Gnathodontidae [PALEON] A family of extinct conodonts having platforms with large, cup-shaped attachment scars. { ,nə·thō'dän·tə,dē }

gneiss [PETR] A variety of rocks with a banded or coarsely foliated structure formed by regional metamorphism. { nis }

gneissic granodiorites [PETR] Granodiorite rocks with gneissic characteristics. { 'nīs·ik |grə·nō'dfī·ə,rīts }

gobi [GEOL] Sedimentary deposits in a synclinal basin. { 'gō·bē }

Gobiatheriinae [PALEON] A subfamily of extinct herbivorous mammals in the family Uintatheriidae known from one late Eocene genus; characterized by extreme reduction of anterior dentition and by lack of horns. { gō|bī·ə·thə'rī·ə,nē }

goethite [MINERAL] $\text{FeO}(\text{OH})$ A yellow, red, or dark-brown mineral crystallizing in the orthorhombic system, although it is usually found in radiating fibrous aggregates; a common constituent of natural rust or limonite. Also known as xanthosiderite. { 'gə,tīt }

gold beryl See chrysoberyl. { 'gōld ,ber·əl }

goldschmidtine See stephanite. { 'gōl,shmīd,ēn }

goldschmidtite See sylvanite. { 'gōl,shmīd,tīt }

Goldschmidt's mineralogical phase rule [GEOL] The rule that the probability of finding a system with degrees of freedom less than two is small under natural rock-forming conditions. { 'gōl,shmits ,mīn·ə·rə'lāj·ə·kəl |fāz ,rül }

Gomphotheriidae [PALEON] A family of extinct proboscidean mammals in the suborder Elephantoida consisting of species with shoveling or digging specializations of the lower tusks. { ,gəm·fō·thə'rī·ə,dē }

Gomphotheriinae [PALEON] A subfamily of extinct elephantoid proboscideans in the family Gomphotheriidae containing species with long jaws and bunomastodont teeth. { ,gəm·fō·thə'rī·ə,nē }

Gondwana [GEOL] The ancient continent that is supposed to have fragmented and drifted apart during the Triassic to form eventually the present continents. Also known as Gondwanaland. { gänd'wä·nə }

Gondwanaland See Gondwana. { gänd'dwän·ə,land }

gonnardite [MINERAL] $\text{Na}_2\text{CaAl}_4\text{Si}_6\text{O}_{20}\cdot 7\text{H}_2\text{O}$ Zeolite mineral occurring in fibrous, radiating spherules; specific gravity is 2.3. { 'gän·ər,dīt }

goongarrite [MINERAL] $\text{Pb}_4\text{Bi}_2\text{S}_7$ A mineral composed of a sulfide of lead and bismuth. { gūn'ga,rīt }

gooseberry stone See grossularite. { 'güs,ber·ē ,stōn }

gorceixite [MINERAL] $\text{BaAl}_3(\text{PO}_4)_2(\text{OH})_5\cdot \text{H}_2\text{O}$ A brown mineral composed of a hydrous basic phosphate of barium and aluminum. { 'gór·sək,sīt }

gordonite [MINERAL] $\text{MgAl}_2(\text{PO}_4)_2(\text{OH})_2\cdot 8\text{H}_2\text{O}$ A colorless mineral composed of a hydrous basic phosphate of magnesium and aluminum. { 'görd·ən,tīt }

granite-gneiss

- goslarite** [MINERAL] $\text{ZnSO}_4 \cdot 7\text{H}_2\text{O}$ A white mineral composed of hydrous zinc sulfate. { 'gäs·lə,ʀt }
- gossan** [GEOL] A rusty, ferruginous deposit filling the upper regions of mineral veins and overlying a sulfide deposit; formed by oxidation of pyrites. Also known as capping; gozzan; iron hat. { 'gas·ən }
- Gotlandian** [GEOL] A geologic time period recognized in Europe to include the Ordovician; it appears before the Devonian. { gät'lan·dē·ən }
- gouge** [GEOL] Soft, pulverized mixture of rock and mineral material found along shear (fault) zones and produced by the differential movement across the plane of slippage. { gauj }
- goyazite** [MINERAL] $\text{SrAl}_3(\text{PO}_4)_2(\text{OH})_5 \cdot \text{H}_2\text{O}$ A granular, yellowish-white mineral composed of a hydrous strontium aluminum phosphate. { 'gòi·ə,zīt }
- gozzan** See gossan. { 'gäz·ən }
- gpu** See geopotential unit.
- graben** [GEOL] A block of the earth's crust, generally with a length much greater than its width, that has dropped relative to the blocks on either side. { 'grä·bən }
- gradation** [GEOL] **1.** The leveling of the land, or the bringing of a land surface or area to a uniform or nearly uniform grade or slope through erosion, transportation, and deposition. **2.** Specifically, the bringing of a stream bed to a slope at which the water is just able to transport the material delivered to it. { grä'dä·shən }
- gradation period** [GEOL] The time during which the base level of the sea remains in one position. Also known as base-leveling epoch. { grä'dä·shən ,pɪr·ē·əd }
- grade** [GEOL] The slope of the bed of a stream, or of a surface over which water flows, upon which the current can just transport its load without either eroding or depositing. { gräd }
- grade correction** See slope correction. { 'gräd kə,rek·shən }
- graded** [GEOL] Brought to or established at grade. { 'gräd·əd }
- graded bedding** [GEOL] A stratification in which each stratum displays a gradation in the size of grains from coarse below to fine above. { 'gräd·əd 'bed·ɪŋ }
- graded profile** See profile of equilibrium. { 'gräd·əd 'prō,fil }
- grade scale** [GEOL] A continuous scale of particle sizes divided into a series of size classes. { 'gräd ,skäl }
- gradient** [GEOL] The rate of descent or ascent (steepness of slope) of any topographic feature, such as streams or hillsides. { 'gräd·ē·ənt }
- grading** [GEOL] The gradual reduction of the land to a level surface; for example, erosion of land to base level by streams. { 'gräd·ɪŋ }
- grafonite** [MINERAL] $(\text{Fe},\text{Mn},\text{Ca})_3(\text{PO}_4)_2$ A salmon-pink mineral, crystallizing in the monoclinic system, and found as laminated intergrowths of triphylite; hardness is 5 on Mohs scale, and specific gravity is 3.7. { 'graf·tə,nɪt }
- grahamite** [GEOL] See mesosiderite. [MINERAL] A solid, jet-black hydrocarbon that occurs in veinlike masses; soluble in carbon disulfide and chloroform. { 'grä·ə,mɪt }
- grain** [GEOL] The particles or discrete crystals that make up a sediment or rock. { grän }
- grain diminution** See degradation recrystallization. { 'grän dim·yə'nɪsh·ən }
- grain growth** [PETR] Enlargement of some individual crystals in a monomineralic rock, producing a coarser texture. Also known as germination. { 'grän ,grōth }
- grain size** [GEOL] Average size of mineral particles composing a rock or sediment. { 'grän ,sɪz }
- grainstone** [PETR] A mud-free (micrite-free) limestone. { 'grän,stōn }
- gramenite** See nontronite. { 'gra·mə,nɪt }
- grandite** [MINERAL] A garnet that is intermediate in chemical composition between grossular and androditite. { 'gran,dɪt }
- granite** [PETR] A visibly crystalline plutonic rock with granular texture; composed of quartz and alkali feldspar with subordinate plagioclase and biotite and hornblende. { 'gran·ət }
- granite-gneiss** [PETR] A banded metamorphic rock derived from igneous or sedimentary rocks mineralogically equivalent to granite. { 'gran·ət 'nɪs }

granite pegmatite

- granite pegmatite** *See* pegmatite. { 'gran·ət 'peg·mə,tīt }
- granite porphyry** *See* quartz porphyry. { 'gran·ət 'pôr·fə·rē }
- granite series** [GEOL] A sequence of products that evolve continuously during crustal fusion; earlier products tend to be deep-seated, syntectonic, and granodioritic, and later products tend to be shallower, late syntectonic, or postsyntectonic, and more potassic. { 'gran·ət ,sir·ēz }
- granite wash** [GEOL] Material eroded from granites and redeposited, forming a rock with the same major mineral constituents as the original rock. { 'gran·ət ,wəʃ }
- granitic batholith** [GEOL] A granitic shield mass intruded as the fusion of older formations. { grə'nid-ik 'bath·ə,lith }
- granitic layer** *See* sial. { grə'nid-ik 'lā·ər }
- granitic magma** [PETR] A coarse-grained igneous rock. { grə'nid-ik 'mag·mə }
- granitization** [PETR] A process whereby various types of rock may be converted to granite or closely related material. { ,gran·əd·ə'zā·shən }
- granoblastic fabric** [PETR] The texture of metamorphic rocks composed of equidimensional elements formed during recrystallization. { 'gra·nō'blas·tik 'fab·rik }
- granodiorite** [PETR] A visibly crystalline plutonic rock composed chiefly of sodic plagioclase, alkali feldspar, quartz, and subordinate dark-colored minerals. { 'gra·nō'di·ə,rīt }
- granofels** [PETR] A medium-to coarse-grained metamorphic rock possessing a granoblastic fabric and either lacking foliation or lineation entirely or exhibiting such characteristics only indistinctly. { 'gran·ə,felz }
- granogabbro** [PETR] Plutonic rock composed of quartz, basic plagioclase, potash-feldspar, and at least one ferromagnesian mineral; intermediate between a granite and a gabbro, and in a strict sense, a granodiorite with more than 50% boric plagioclase. { 'gra·nō'ga·brō }
- granophyre** [PETR] A quartz porphyry or fine-grained porphyritic granite. { 'gran·ə,fīr }
- granularity** [PETR] The feature of rock texture relating to the size of the constituent grains or crystals. { ,gran·yə'lar·əd·ē }
- granule** [GEOL] A somewhat rounded rock fragment ranging in diameter from 2 to 4 millimeters; larger than a coarse sand grain and smaller than a pebble. { 'gran·yül }
- granulite** [PETR] **1.** Granite that contains muscovite. **2.** A relatively coarse, granoblastic rock formed at the high temperatures and pressures of the granulite facies. { 'gran·yə,līt }
- granulite facies** [PETR] A group of gneissic rocks characterized by a granoblastic fabric and formed by regional dynamothermal metamorphism at temperatures above 650°C and pressures of 3000–12,000 bars. { 'gran·yə,līt 'fā·shēz }
- granulometry** [PETR] Measurement of grain sizes of sedimentary rock. { ,gran·yə'lām·ə·trē }
- grapestone** [GEOL] A cluster of sand-size grains, such as calcareous pellets, held together by incipient cementation shortly after deposition; the outer surface is lumpy, resembling a bunch of grapes. { 'grāp,stōn }
- graphic granite** [PETR] A distinct type of pegmatite in which quartz and orthoclase crystals grew together along a parallel axis. Also known as Hebraic granite; runite. { 'graf-ik'gran·ət }
- graphic intergrowth** [PETR] An intergrowth of crystals, commonly feldspar and quartz, that produces a type of poikilitic texture in which the larger crystals have a fairly regular geometric outline and orientation, and resemble cuneiform writing. { 'graf-ik 'in·tər,grōth }
- graphic tellurium** *See* sylvanite. { 'graf-ik te'lūr·ē·əm }
- graphic texture** [GEOL] A pattern of rocks that is similar to cuneiform characters. { 'graf-ik ,teks·chər }
- graphite** [MINERAL] A mineral consisting of a low-pressure allotropic form of carbon; it is soft, black, and lustrous and has a greasy feeling; it occurs naturally in hexagonal crystals or massive or can be synthesized from petroleum coke; hardness is 1–2 on Mohs scale, and specific gravity is 2.09–2.23; used in pencils, crucibles, lubricants, paints, and polishes. Also known as black lead; plumbago. { 'gra,fīt }

- graptolites** *See* graptolithina. { 'grap·tə,līts }
- graptolite shale** [GEOL] Shale containing an abundance of extinct colonial marine organisms known as graptolites. { 'grap·tə,līt 'shāl }
- Graptolithina** [PALEON] A class of extinct colonial animals believed to be related to the class Pterobranchia of the Hemichordata. Also known as graptolites. { ,grap·tə·lə'thīn·ə }
- Graptoloidea** [PALEON] An order of extinct animals in the class Graptolithina including branched, planktonic forms described from black shales. { ,grap·tə'löid·ē·ə }
- Graptozoa** [PALEON] The equivalent name for Graptolithina. { ,grap·tə'zō·ə }
- grattonite** [MINERAL] $Pb_7As_4S_{15}$ A mineral composed of lead arsenic sulfide, occurring in rhombohedral crystals. { 'grat·ən,tīt }
- gravel** [GEOL] A loose or unconsolidated deposit of rounded pebbles, cobbles, or boulders. { 'grav·əl }
- gravel bank** [GEOL] A natural mound or exposed face of gravel, particularly such a place from which gravel is dug. { 'grav·əl ,bæŋk }
- gravel desert** *See* reg. { 'grav·əl 'dez·ərt }
- gravitational settling** [GEOL] A movement of sediment resulting from gravitational forces. { ,grav·ə'tä·shən·əl 'set·liŋ }
- gravitational sliding** [GEOL] Extensive sliding of strata down a slope of an uplifted area. Also known as sliding. { ,grav·ə'tä·shən·əl 'slīd·iŋ }
- gravity anomaly** [GEOPHYS] The difference between the observed gravity and the theoretical or predicted gravity. { 'grav·əd·ē ə,näm·ə·lə }
- gravity-collapse structure** *See* collapse structure. { 'grav·əd·ē kə'ləps ,stræk·chər }
- gravity drainage reservoir** [GEOL] A reservoir in which production is significantly affected by gas, oil, and water separating under the influence of gravity while production takes place. { 'grav·əd·ē 'drän·ij ,rez·əv,wär }
- gravity erosion** *See* mass erosion. { 'grav·əd·ē i,rō·zhən }
- gravity fault** *See* normal fault. { 'grav·əd·ē ,fólt }
- gravity map** [GEOPHYS] A map of gravitational variations in an area displaying gravitational highs and lows. { 'grav·əd·ē ,map }
- gravity slope** [GEOL] The relatively steep slope on a hillside above the wash slope; usually situated at the angle of repose of the material eroded from it. { 'grav·əd·ē ,slop }
- gravity tide** [GEOPHYS] Cyclic motion of the earth's surface caused by interaction of gravitational forces of the moon, sun, and earth. { 'grav·əd·ē ,tīd }
- gray antimony** *See* antimonite; jamesonite. { ,grā 'ant·ə,mō·nē }
- gray cobalt** *See* cobaltite. { ,grā 'kō,bólt }
- gray copper ore** *See* tetrahedrite. { 'gra 'kæp·ər ,ór }
- gray hematite** *See* specularite. { ,grā 'hē·mə,tīt }
- gray manganese ore** *See* manganite. { ,grā 'maŋ·gə,nēs ,ór }
- graywacke** [PETR] An argillaceous sandstone characterized by an abundance of unstable mineral and rock fragments and a fine-grained clay matrix binding the larger, sand-size detrital fragments. { 'grā,wak·ə }
- gray quartz** *See* milky quartz. { 'grē·sē 'kwórts }
- Great Ice Age** [GEOL] The Pleistocene epoch. { ,grāt 'ts ,āj }
- great soil group** [GEOL] A group of soils having common internal soil characteristics; a subdivision of a soil order. { ,grāt 'söil ,grüp }
- green chalcidony** *See* chrysoprase. { ,grēn kal'sed·ən·ē }
- greenlandite** *See* columbite. { 'grēn·lænd ,dīt }
- Greenland spar** *See* cryolite. { 'grēn·lænd 'spär }
- green lead ore** *See* pyromorphite. { 'grēn 'led ,ór }
- green mud** [GEOL] 1. A fine-grained, greenish terrigenous mud or oceanic ooze found near the edge of a continental shelf at depths of 300–7500 feet (90–2300 meters).
2. A deep-sea terrigenous deposit characterized by the presence of a considerable proportion of glauconite and calcium carbonate. { ,grēn 'mæd }
- greenockite** [MINERAL] CdS A green or orange mineral that crystallizes in the hexagonal

greensand

- system; occurs as an earthy encrustation and is dimorphous with hawleyite. Also known as cadmium blende; cadmium ocher; xanthochroite. { 'grē-nə,kīt }
- greensand** [GEOL] A greenish sand consisting principally of grains of glauconite and found between the low-water mark and the inner mud line. [PETR] Sandstone composed of greensand with little or no cement. { 'grēn,sand }
- greenschist** [PETR] A schistose metamorphic rock with abundant chlorite, epidote, or actinolite present, giving it a green color. { 'grēn,shist }
- greenschist facies** [PETR] Any schistose rock containing an abundance of green minerals and produced under conditions of low to intermediate temperatures (300–500°C) and low to moderate hydrostatic pressures (3000–8000 bars). { 'grēn,shist 'fā·shēz }
- greenstone** [MINERAL] See nephrite. [PETR] Any altered basic igneous rock which is green due to the presence of chlorite, hornblende, or epidote. { 'grēn,stōn }
- greenstone belts** [GEOL] Oceanic and island arclike sequences that are similar to, and run to the south and north of, the Swaziland System. { 'grēn,stōn ,belts }
- greenstone schist** [PETR] Greenstone with a foliated structure. { 'grēn,stōn ,shist }
- greisen** [PETR] A pneumatolytically altered granite consisting of mainly quartz and a light-green mica. { 'grīz·ən }
- grenatite** See leucite; staurolite. { 'gren·ə,tīt }
- Grenville orogeny** [GEOL] A Precambrian mountain-forming epoch. { 'gren·vəl ə'ōrāj·ə·nē }
- griffithite** [MINERAL] A micallike mineral containing magnesium, iron, calcium, and aluminosilicate. { 'grif·ə,thīt }
- grike** [GEOL] A vertical fissure developed along a joint in limestone by dissolution of some of the rock. Also spelled gryke. { grīk }
- griphite** [MINERAL] $(\text{Na,Al,Ca,Fe})_6\text{Mn}_4(\text{PO}_4)_5(\text{OH})_4$ Mineral composed of a basic phosphate of sodium, calcium, iron, aluminum, and manganese. { 'gri,fīt }
- griquaite** [PETR] A hypabyssal rock that contains garnet and diopside, and sometimes olivine or phlogopite, and is found in kimberlite pipes and dikes. { 'grē·kwə,īt }
- grit** [GEOL] **1.** A hard, sharp granule, as of sand. **2.** A coarse sand. [PETR] A sandstone composed of angular grains of different sizes. { grit }
- Groeberiidæ** [PALEON] A family of extinct rodentlike marsupials. { ,grə·bə'ī·rī·ə,dē }
- groove** [GEOL] Glaciated marks of large size on rock. { grūv }
- groove casts** [GEOL] Rounded or sharp, crested, rectilinear ridges that are a few millimeters high and a few centimeters long; found on the undersurfaces of sandstone layers lying on mudstone. { 'grūv ,kasts }
- grossular** See grossularite. { 'gräs·yə·lər }
- grossularite** [MINERAL] $\text{Ca}_3\text{Al}_2(\text{SiO}_4)_3$ The colorless or green, yellow, brown, or red end member of the garnet group, often occurring in contact-metamorphosis impure limestones. Also known as gooseberry stone; grossular. { 'gräs·yə·lə,rīt }
- grothite** See sphene. { 'grō,thīt }
- ground** [GEOL] **1.** Any rock or rock material. **2.** A mineralized deposit. **3.** Rock in which a mineral deposit occurs. { graünd }
- ground ice mound** [GEOL] A frost mound containing bodies of ice. Also known as ice mound. { 'graünd ,ɪs ,maünd }
- groundmass** See matrix. { 'graünd ,mas }
- ground moraine** [GEOL] Rock material carried and deposited in the base of a glacier. Also known as bottom moraine; subglacial moraine. { 'graünd mə,rān }
- ground noise** [GEOPHYS] In seismic exploration, disturbance of the ground due to some cause other than the shot. { 'graünd ,nɔiz }
- ground pressure** [GEOPHYS] The pressure to which a rock formation is subjected by the weight of the superimposed rock and rock material or by diastrophic forces created by movements in the rocks forming the earth's crust. Also known as geostatic pressure; lithostatic pressure; rock pressure. { 'graünd ,pres·ər }
- ground truth measurements** [GEOPHYS] Measurements of various properties, such as temperature and land utilization, which are conducted on the ground to calibrate observations made from satellites or aircraft. { 'graünd ,trūth ,mez·ər·məns }

- group** [GEOL] A lithostratigraphic material unit comprising several formations. { grüp }
- groutite** [MINERAL] HMnO_2 A mineral of the diaspore group, composed of manganese, hydrogen, and oxygen; it is polymorphous with manganite. { 'gräu,tit }
- growl** [GEOPHYS] Noise heard when strata are subjected to great pressure. { graül }
- growth fabric** [PETR] Orientation of fabric elements independent of the influences of stress and resultant movement. { 'gröth ,fab-rik }
- growth lattice** [GEOL] The rigid, reef-building, inplace framework of an organic reef, consisting of skeletons of sessile organisms and excluding reef-flank and other associated fragmental deposits. Also known as organic lattice. { 'gröth ,lad-əs }
- gruenlingite** [MINERAL] Bi_4TeS_3 A mineral composed of sulfide and telluride of bismuth. { 'grün-liŋ,tit }
- grunerite** [MINERAL] $(\text{Mg,Fe})_7\text{Si}_8\text{O}_{22}(\text{OH})_2$ Variety of amphibole; forms monoclinic crystals. { 'grün-ə,rīt }
- grus** See gruss. { grüs }
- gruss** [GEOL] A loose accumulation of fragmental products formed from the weathering of granite. Also spelled grus. { grüs }
- gryke** See grike. { grīk }
- Guadalupian** [GEOL] A North American provincial series in the Lower and Upper Permian, above the Leonardian and below the Ochoan. { 'gwäd-əl;ü-pē-ən }
- guanajuatite** [MINERAL] Bi_2Se_3 Bluish-gray mineral composed of bismuth selenide, occurring in crystals or masses. { ,gwän-ə'hwä,tīt }
- gudmundite** [MINERAL] FeSbS A silver-white to steel-gray orthorhombic mineral composed of a sulfide and antimonide of iron. { 'güd-mən,dīt }
- guest element** See trace element. { 'gest 'el-ə-mənt }
- guide fossil** [PETR] A fossil used for rock correlation and age determination. { 'gīd ,fäs-əl }
- guildite** [MINERAL] $(\text{Cu,Fe})_3(\text{Fe,Al})_4(\text{SO}_4)_7(\text{OH})_4 \cdot 15\text{H}_2\text{O}$ A dark-brown mineral composed of a basic hydrated sulfate of copper, iron, and aluminum. { 'gil,dīt }
- guitermanite** [MINERAL] $\text{Pb}_{10}\text{As}_6\text{S}_{19}$ A bluish-gray mineral composed of lead, arsenic, and sulfur, occurring in compact masses. { 'gid-ər-mə,nīt }
- Gulfian** [GEOL] A North American provincial series in Upper Cretaceous geologic time, above the Comanchean and below the Paleocene of the Tertiary. { 'gəlf-ē-ən }
- gully erosion** [GEOL] Erosion of soil by running water. { 'gəl-ē i;ri-ə-zən }
- gumbo** [GEOL] A soil that forms a sticky mud when wet. { 'gəm-bō }
- gumbotil** [GEOL] Deoxidized, leached clay that contains siliceous stones. { 'gəm-bō,tīl }
- gummite** [MINERAL] Any of various yellow, orange, red, or brown secondary minerals containing hydrous oxides of uranium, thorium, and lead. Also known as uranium ocher. { 'gə,mīt }
- Günz** [GEOL] A European stage of geologic time, in the Pleistocene (above Astian of Pliocene, below Mindel); it is the first stage of glaciation of the Pleistocene in the Alps. { gīnts }
- Günz-Mindel** [GEOL] The first interglacial stage of the Pleistocene in the Alps, between Günz and Mindel glacial stages. { 'gīnts 'mind-əl }
- gut** [GEOL] **1.** A narrow water passage such as a strait. **2.** A channel deeper than the surrounding water; generally formed by water in motion. { gət }
- guyot** [GEOL] A seamount, usually deeper than 100 fathoms (180 meters), having a smooth platform top. Also known as tablemount. { gē'ō }
- Gymnarthridae** [PALEON] A family of extinct lepospondylous amphibians that have a skull with only a single bone representing the tabular and temporal elements of the primitive skull roof. { ,jim'närth-rə,dē }
- gymnite** See deweylite. { 'jim,nīt }
- Gymnocodiaceae** [PALEOBOT] A family of fossil red algae. { ,jim-nō,kō-dē'as-ē,ē }
- gypcrete** [GEOL] A type of duricrust composed of hydrous calcium sulfate. { 'jip,krēt }
- gypsite** [GEOL] A variety of gypsum consisting of dirt and sand; found as an efflorescent deposit in arid regions, overlying gypsum. Also known as gypsum earth. { 'jip,sīt }

gypsum

gypsum [MINERAL] $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$ A mineral, the commonest sulfate mineral; crystals are monoclinic, clear, white to gray, yellowish, or brownish in color, with well-developed cleavages; luster is subvitreous to pearly, hardness is 2 on Mohs scale, and specific gravity is 2.3; it is calcined at 190–200°C to produce plaster of paris. { 'jip·səm }

gypsum earth See gypsite. { 'jip·səm 'ə:θ }

Gyracanthidae [PALEON] A family of extinct acanthodian fishes in the suborder Diplacanthoidei. { ,jī·rə,kən'thid·ə,dē }

gyrogonite [PALEOBOT] A minute, ovoid body that is the residue of the calcareous encrustation about the female sex organs of a fossil stonewort. { jī'räg·ə,nīt }

gyttja [GEOL] A fresh-water anaerobic mud containing an abundance of organic matter; capable of supporting aerobic life. { 'yi,chä }

H

- Haanel depth rule** [GEOPHYS] A rule for estimating the depth of a magnetic body, provided the body may be considered magnetically equivalent to a single pole; the depth of the pole is then equal to the horizontal distance from the point of maximum vertical magnetic intensity to the points where the intensity is one-third of the maximum value. { 'hän·əl 'depth ,rül }
- hackly fracture** [MINERAL] A break in a mineral characterized by jagged irregular surfaces with sharp edges. { 'hak·lē 'frak·chər }
- hackmanite** [MINERAL] A mineral of the sodalite family containing a small amount of sulfur; fluoresces orange or red in ultraviolet light. { 'hak·mə,nīt }
- hade** [GEOL] **1.** The angle of inclination of a fault as measured from the vertical. **2.** The inclination angle of a vein or lode. { hād }
- Hadean** [GEOL] The period (more than 3800 million years ago) extending for several hundred millions of years from the end of the accretion of the earth to the formation of the oldest recognized rocks. { 'hā·dē·Pen }
- hadrosaur** [PALEON] A duck-billed dinosaur. { 'had·rə,sór }
- haidingerite** [MINERAL] $\text{HCaAsO}_4 \cdot \text{H}_2\text{O}$ A white mineral composed of hydrous calcium arsenate. { 'hī·dīŋ·ə,rīt }
- hair copper** See chalcotrichite. { 'her ,kăp·ər }
- hair pyrites** See millerite. { 'her ;pī,rīts }
- hair salt** See alunogen. { 'her ,sòlt }
- hairstone** [GEOL] Quartz embedded with hairlike crystals of rutile, actinolite, or other mineral. { 'her,stōn }
- haldenhang** See wash slope. { 'hal·dən,haŋ }
- halite** [MINERAL] NaCl Native salt; an evaporite mineral occurring as isometric crystals or in massive, granular, or compact form. Also known as common salt; rock salt. { 'ha,līt }
- Halitheriinae** [PALEON] A subfamily of extinct sirenian mammals in the family Dugongidae. { hə,līth·ə'rī·ə,nē }
- Hallian** [GEOL] A North American stage of Pleistocene geologic time, above the Wheel-erian and below the Recent. { 'hòl·ē·ən }
- halloysite** [MINERAL] $\text{Al}_2\text{Si}_2\text{O}_5(\text{OH})_4 \cdot 2\text{H}_2\text{O}$ Porcelainlike clay mineral whose composition is like that of kaolinite but contains more water and is structurally distinct; varieties are known as metahalloysites. { hə'lòi,sīt }
- halmeic** [GEOL] Referring to minerals or sediments derived directly from sea water. Also known as halmyrogenic; halogenic. { hal'mē-ik }
- halmyrogenic** See halmeic. { hal,mī·rə'jen-ik }
- halmyrolysis** [GEOCHEM] Postdepositional chemical changes that occur while sediment is on the sea floor. { ,hal·mə'räl·ə·səs }
- halo** [GEOL] A ring or crescent surrounding an area of opposite sign; it is a diffusion of a high concentration of the sought mineral into surrounding ground or rock; it is encountered in mineral prospecting and in magnetic and geochemical surveys. { 'hā-lò }
- halogenic** See halmeic. { 'hal·ə;jen-ik }
- halogen mineral** [MINERAL] Any of the naturally occurring compounds containing a halogen as the sole or principal anionic constituent. { 'hal·ə·jən ,mīn·rəl }

halokinesis

halokinesis See salt tectonics. { ˈhal·ə·kəˈnē·səs }

halomorphic [GEOCHEM] Referring to an intrazonal soil whose features have been strongly affected by either neutral or alkali salts, or both. { ˈhal·ə·mɔr·fɪk }

halo ore See fringe ore. { ˈhā·lō ,ɔr }

halotrichite [MINERAL] 1. $\text{FeAl}_2(\text{SO}_4)_4 \cdot 22\text{H}_2\text{O}$ A mineral composed of hydrous sulfate of iron and aluminum. Also known as butter rock; feather alum; iron alum; mountain butter. 2. Any sulfate mineral resembling halotrichite in structure and habit. { ˈhəˈlā·trɪ·kɪt }

Halysitidae [PALEON] A family of extinct Paleozoic corals of the order Tabulata. { ˌhal·əˈsɪd·əˌdē }

hamada [GEO] A barren desert surface composed of consolidated material usually consisting of exposed bedrock, but sometimes of consolidated sedimentary material. { ˈhəˈmā·də }

hambergite [MINERAL] $\text{Be}_2\text{BO}_3\text{OH}$ A grayish-white or colorless mineral composed of beryllium borate and occurring as prismatic crystals; hardness is 7.5 on Mohs scale, and specific gravity is 2.35. { ˈham·bər·ɡɪt }

hammarite [MINERAL] $\text{Pb}_2\text{Cu}_2\text{Bi}_4\text{S}_9$ A monoclinic mineral whose color is a steel gray with red tone; consists of lead and copper bismuth sulfide. { ˈham·əˌrɪt }

hancockite [MINERAL] A complex silicate mineral containing lead, calcium, strontium, and other minerals; it is isomorphous with epidote. { ˈhan·kɑˌkɪt }

hanger See hanging wall. { ˈhæŋ·ər }

hanging See hanging wall. { ˈhæŋ·ɪŋ }

hanging side See hanging wall. { ˈhæŋ·ɪŋ ˈsaɪd }

hanging valley [GEO] A valley whose floor is higher than the level of the shore or other valley to which it leads. { ˈhæŋ·ɪŋ ˈvæl·ē }

hanging wall [GEO] The rock mass above a fault plane, vein, lode, ore body, or other structure. Also known as hanger; hanging; hanging side. { ˈhæŋ·ɪŋ ˈwɔl }

hanksite [MINERAL] $\text{Na}_{22}\text{K}(\text{SO}_4)_6(\text{CO}_3)_2\text{Cl}$ A white or yellow mineral crystallizing in the hexagonal system; found in California. { ˈhæŋk·saɪt }

hannayite [MINERAL] $\text{Mg}_3(\text{NH}_4)_2\text{H}_2(\text{PO}_4)_4 \cdot 8\text{H}_2\text{O}$ Mineral composed of hydrous acid ammonium magnesium phosphate; occurs as yellow crystals in guano. { ˈha·nēˌɪt }

Haplolepidae [PALEON] A family of Carboniferous chondrosteian fishes in the suborder Palaeoniscoidei having a reduced number of fin rays and a vertical jaw suspension. { ˈhəˌplɔˌlep·əˌdē }

haplopore [PALEON] Any randomly distributed pore on the surface of fossil cystoid echinoderms. { ˈhəˌplɔˌpɔr }

hard coal See anthracite. { ˈhɑrd ˈkɔl }

hardpan See caliche. { ˈhɑrdˌpæn }

hard rock [GEO] Rock which needs drilling and blasting for removal. { ˈhɑrd ˈræk }

hardystonite [MINERAL] $\text{Ca}_2\text{ZnSi}_2\text{O}_7$ A white mineral composed of zinc calcium silicate. { ˈhɑr·dē·stəˌnɪt }

Harker diagram See variation diagram. { ˈhɑrk·ər ˌdɪ·əˌɡræm }

Harlechian [GEO] A European stage of geologic time: Lower Cambrian. { hɑrˈlek·ē·ən }

harmonic folding [GEO] Folding in the earth's surface, with no sharp changes with depth in the form of the folds. { hɑrˈmæn·ɪk ˈfɔld·ɪŋ }

harmotome [MINERAL] $(\text{K},\text{Ba})(\text{Al},\text{Si})_2(\text{Si}_6\text{O}_{16}) \cdot 6\text{H}_2\text{O}$ A zeolite mineral with ion-exchange properties that forms cruciform twin crystals. Also known as cross-stone. { ˈhɑr·məˌtɒm }

harstgite [MINERAL] $\text{Be}_2\text{Ca}_3\text{Si}_3\text{O}_{11}$ A mineral composed of silicate of beryllium and calcium. { ˈhɑrs·təˌɡɪt }

hartite [GEO] A white, crystalline, fossil resin that is found in lignites. Also known as bombicite; branchite; hofmannite; josen. { ˈhɑrˌtɪt }

harzburgite [PETR] A peridotite consisting principally of olivine and orthopyroxene. { ˈhɑrtsˌbɜrˌɡɪt }

hastingsite [MINERAL] $\text{NaCa}_2(\text{Fe},\text{Mg})_3\text{Al}_2\text{Si}_6\text{O}_{22}(\text{OH})_2$ A mineral of the amphibole group

hedyphane

- crystallizing in the monoclinic system and composed chiefly of sodium, calcium, and iron, but usually with some potassium and magnesium. { 'hās-tiŋ,zīt }
- hatchettine** *See* hatchettite. { 'ha·chəd,ēn }
- hatchettite** [MINERAL] $C_{38}H_{78}$ A yellow-white mineral paraffin wax, melting at 55–65°C in the natural state and 79°C in the pure state; occurs in masses in ironstone nodules or in cavities in limestone. Also known as adipocerite; adipocire; hatchettine; mineral tallow; mountain tallow; naphthine. { 'ha·chəd,tīt }
- hatchettolite** *See* ellsworthite. { 'ha·ched·ō,līt }
- hatchite** [MINERAL] A lead-gray mineral composed of sulfide of lead and arsenic; occurs in triclinic crystals. { 'ha,chtīt }
- hauerite** [MINERAL] MnS_2 A reddish-brown or brownish-black mineral composed of native manganese sulfide; occurs massive or in octahedral or pyritohedral crystals. { 'haü·ə,rīt }
- haughtonite** [PETR] A black variety of biotite that is rich in iron. { 'hót·ən,tīt }
- hausmannite** [MINERAL] Mn_3O_4 Brownish-black, opaque mineral composed of manganese tetroxide. { 'haüs·mä,nīt }
- Hauterivian** [GEOL] A European stage of geologic time, in the Lower Cretaceous, above Valanginian and below Barremian. { õ·trə'vē·ən }
- häüyne** [MINERAL] $(Na,Ca)_4-8(Al_6Si_6O_{24})(SO_4S)_1-2$ An isometric silicate mineral of the sodalite group occurring as grains embedded in various igneous rocks; hardness is 5.5–6 on Mohs scale, and specific gravity is 2.4–2.5. Also known as häüynite. { ä'wēn }
- häüynite** *See* häüyne. { ä'wē,nīt }
- hazel sandstone** [GEOL] An arkosic, iron-bearing redbed sandstone from the Precambrian found in western Texas. { 'ha·zəl 'san,stōn }
- head erosion** *See* headward erosion. { 'hed i,rō·zhən }
- heading side** *See* footwall. { 'hed-iŋ ,sīd }
- heading wall** *See* footwall. { 'hed-iŋ ,wól }
- headwall** [GEOL] The steep cliff at the back of a cirque. { 'hed,wól }
- headward erosion** [GEOL] Erosion caused by water flowing at the head of a valley. Also known as head erosion; headwater erosion. { 'hed·wərd i'rō·zhən }
- headwater erosion** *See* headward erosion. { 'hed,wód·ər i'rō·zhən }
- heat budget** [GEOPHYS] Amount of heat needed to raise a lake's water from the winter temperature to the maximum summer temperature. { 'hēt ,flō ,präv·əns }
- heat flow province** [GEOPHYS] A geographic area in which the heat flow and heat production are linearly related. { 'hēt ,flō ,präv·əns }
- heave** [GEOL] The horizontal component of the slip, measured at right angles to the strike of the fault. { hēv }
- heavy mineral** [MINERAL] A mineral with a density above 2.9, which is the density of bromoform, the liquid used to separate the heavy from the light minerals. { 'hev·ē 'min·rəl }
- heazelwoodite** [MINERAL] Ni_3S_2 A meteorite mineral consisting of a sulfide of nickel. { 'hē·zəl,wú,dīt }
- Hebraic granite** *See* graphic granite. { hē'brā·ik ,gran·ət }
- hecatolite** *See* moonstone. { hək'at·əl,tīt }
- hectorite** [MINERAL] $(Mg,Li)_3Si_4O_{10}(OH)_2$ A trioctohedral clay mineral of the montmorillonite group composed of a hydrous silicate of magnesium and lithium. { 'hek·tə,rīt }
- hedenbergite** [MINERAL] $CaFeSi_2O_6$ A black mineral consisting of calcium-iron pyroxene and occurring at the contacts of limestone with granitic masses. { 'hed·ən,bər,gīt }
- hedleyite** [MINERAL] A mineral composed of an alloy of bismuth and tellurium. { 'hed·lē,tīt }
- hedrocraton** [GEOL] A craton that influenced later continental development. { ,hed·rē·ō'krā,tän }
- hedyphane** [MINERAL] $(Ca,Pb)_5Cl(AsO_4)_3$ Yellowish-white mineral composed of lead and calcium arsenate and chloride; occurs in monoclinic crystals. { 'hed·ə,fān }

Heidelberg man

- Heidelberg man** [PALEON] An early type of European fossil man known from an isolated lower jaw; considered a variant of *Homo erectus* or an early stock of Neanderthal man. { 'hīd·əl·bərg ,man }
- Helalidae** [PALEON] A family of extinct perissodactyl mammals in the superfamily Tapiroidea. { ,hel·ə'led·ə,dē }
- Helcionellacea** [PALEON] A superfamily of extinct gastropod mollusks in the order Aspidobranchia. { 'hē·sē·ō·nə'las·ē·ə }
- Helderbergian** [GEOL] A North American stage of geologic time, in the lower Lower Devonian. { ,hel·dər'bərg·ē·ən }
- Helicoplacoidea** [PALEON] A class of free-living, spindle- or pear-shaped, plated echnozoans known only from the Lower Cambrian of California. { ,hel·ə·kō·plə'kōid·ē·ə }
- helictite** [GEOL] A speleothem whose origin is similar to that of a stalactite or stalagmite but that angles or twists in an irregular fashion. { 'hē·lik,tīt }
- heliolite** See sunstone. { 'hē·lē·ə,līt }
- Heliolitidae** [PALEON] A family of extinct corals in the order Tabulata. { ,hē·lē·ō'līd·ə,dē }
- heliophyllite** [MINERAL] $Pb_6As_2O_7Cl_4$ A yellow to greenish-yellow, orthorhombic mineral consisting of an oxychloride of lead and arsenic; occurs in massive and tabular form and as crystals. { ,hē·lē·ō'fī,līt }
- heliotrope** See bloodstone. { 'hē·lē·ə,trōp }
- hellandite** [MINERAL] Mineral composed of silicate of metals in the cerium group with aluminum, iron, manganese, and calcium. { 'hel·ən,dīt }
- Helmert's formula** [GEOPHYS] A formula for the acceleration due to gravity in terms of the latitude and the altitude above sea level. { 'hel·mərts ,fōr·myə'lə }
- Helodontidae** [PALEON] A family of extinct ratfishes conditionally placed in the order Bradyodonti. { ,he·lō'dənt·ə,dē }
- helvine** See helvite. { 'hel,vēn }
- helvite** [MINERAL] $(Mn,Fe,Zn)_4Be_3(SiO_4)_2S$ A silicate mineral isomorphous with danalite and genthelvite. Also known as helvine. { 'hel,vīt }
- hemafibrite** [MINERAL] $Mn_3(AsO_4)(OH)_3 \cdot H_2O$ A brownish to garnet-red mineral composed of basic manganese arsenate. { 'hē·mə'fī,brit }
- hematite** [MINERAL] Fe_2O_3 An iron mineral crystallizing in the rhombohedral system; the most important ore of iron, it is dimorphous with maghemite, occurs in black metallic-looking crystals, in reniform masses or fibrous aggregates, or in reddish earthy forms. Also known as bloodstone; red hematite; red iron ore; red ochre; rhombohedral iron ore. { 'hē·mə,tīt }
- hematolite** [MINERAL] $(Mn,Mg)_4Al(AsO_4)(OH)_8$ A brownish-red mineral composed of aluminum manganese arsenate; occurs in rhombohedral crystals. { 'he·məd·ō,līt }
- hematophanite** [MINERAL] $Pb_5Fe_4O_{10}(Cl,OH)_2$ A mineral composed of oxychloride lead and iron. { ,hē·mə'täf·ə,nīt }
- Hemicidaridae** [PALEON] A family of extinct Echinacea in the order Hemicidaroida distinguished by a stirodont lantern, and ambulacra abruptly widened at the ambitus. { 'he·mē·si'där·ə,dē }
- Hemicidaroida** [PALEON] An order of extinct echinoderms in the superorder Echinacea characterized by one very large tubercle on each interambulacral plate. { 'he·mē,sid·ə'rōid·ə }
- hemicone** See alluvial cone. { 'he·mē,kōn }
- hemicrystalline** See hypocrystalline. { 'he·mē'krist·əl·ən }
- hemimorphite** [MINERAL] $Zn_4Si_2O_7(OH)_2 \cdot H_2O$ A white, colorless, pale-green, blue, or yellow mineral having an orthorhombic crystal structure; an ore of zinc. Also known as calamine; electric calamine; galmei. { ,he·mē'mōr,fīt }
- hemipelagic sediment** [GEOL] Deposits containing terrestrial material and the remains of pelagic organisms, found in the ocean depths. { 'he·mē·pə'laj·ik 'sed·ə·mənt }
- Hemist** [GEOL] A suborder of the soil order Histosol, consisting of partially decayed plant residues and saturated with water most of the time. { 'he·mist }
- Hemizonida** [PALEON] A Paleozoic order of echinoderms of the subclass Asteroidea

hexahedrite

- having an ambulacral groove that is well defined by adambulacral ossicles, but with restricted or undeveloped marginal plates. {*he·mē'zän·ə·dä*}
- Hercules stone** See lodestone. {*'hər·kyə,lēz ,stön*}
- Hercynian geosyncline** [GEOL] A principal area of geosynclinal sediment accumulation in Devonian time; found in south-central and southern Europe and northern Africa. {*hər'sin·ē·ən ,jē·ō'sin,klin*}
- Hercynian orogeny** See Variscan orogeny. {*hər'sin·ē·ən ö'räj·ə·nē*}
- hercynite** [MINERAL] (Fe,Mg)Al₂O₄ A black mineral of the spinel group; crystallizes in the isometric system. Also known as ferrosphenel; iron spinel. {*'hərs·ən,īt*}
- herderite** [MINERAL] CaBe(PO₄)(F,OH) A colorless to pale-yellow or greenish-white mineral consisting of phosphate and fluoride of calcium and beryllium; hardness is 7.5–8 on Mohs scale, and specific gravity is 3.92. {*'hər·də,rīt*}
- hervidero** See mud volcano. {*!hər·və'der·ō*}
- Hesperornithidae** [PALEON] A family of extinct North American birds in the order Hesperornithiformes. {*!hes·pər,ör'nith·ə,dē*}
- Hesperornithiformes** [PALEON] An order of ancient extinct birds; individuals were large, flightless, aquatic diving birds with the shoulder girdle and wings much reduced and the legs specialized for strong swimming. {*!hes·pə,rör,nith·ə'för,mēz*}
- hessite** [MINERAL] Ag₂Te A lead-gray sectile mineral crystallizing in the isometric system; usually massive and often auriferous. {*'he,sīt*}
- hetaerolite** [MINERAL] ZnMn₂O₄ A black mineral consisting of zinc-manganese oxide found with chalcophanite. {*hə'tir·ə,līt*}
- Heteractinida** [PALEON] A group of Paleozoic sponges with calcareous spicules; probably related to the Calcareia. {*!hed·ə·rak'tin·əd·ə*}
- heteroblastic** [PETR] Pertaining to rocks in which the essential constituents are of two distinct orders of magnitude of size. {*!hed·ə·rö'blas·tik*}
- heterochronism** [GEOL] A phenomenon in which two similar geologic deposits may not be of the same age even though they underwent like processes of formation. {*!hed·ə'räk·rə,niz·əm*}
- Heterocorallia** [PALEON] An extinct small, monofamilial order of fossil corals with elongate skeletons; found in calcareous shales and in limestones. {*!hed·ə·rö·kə'ral·ē·ə*}
- heterogeneous reservoir** [GEOL] Formation with two or more noncommunicating sand members, each possibly with different specific- and relative-permeability characteristics. {*!hed·ə·rə'jē·nē·əs 'rez·əv,wär*}
- heterogenite** [MINERAL] Co(OH) A black cobalt mineral, sometimes with some copper and iron, found in mammillary masses. Also known as stainerite. {*!hed·ə'räj·ə,nīt*}
- heteromorphite** [MINERAL] Pb₇Sb₈S₁₉ An iron black, monoclinic mineral consisting of lead antimony sulfide. {*!hed·ə·rö'mör,fit*}
- Heterophyllidae** [PALEON] The single family of the extinct cnidarian order Heterocorallia. {*!hed·ə·rö'fil·ə,dē*}
- heterosite** [MINERAL] A mineral composed of phosphate of iron and manganese; it is isomorphous with purpurite. {*'hed·ə·rə,sīt*}
- Heterosoricinae** [PALEON] A subfamily of extinct insectivores in the family Soricidae distinguished by a short jaw and hedgehoglike teeth. {*!hed·ə·rö·sə'ris·ə,nē*}
- Heterostraci** [PALEON] An extinct group of ostracoderms, or armored, jawless vertebrates; armor consisted of bone lacking cavities for bone cells. {*!hed·ə'räs·trə,sī*}
- Hettangian** [GEOL] A stage of Lower Jurassic geologic time. {*he'tan·jē·ən*}
- heulandite** [MINERAL] CaAl₂Si₆O₁₆·5H₂O A zeolite mineral that crystallizes in the monoclinic system; often occurs as foliated masses or in crystal form in cavities of decomposed basic igneous rocks. {*'hyü·lən,dīt*}
- hewettite** [MINERAL] CaV₆O₁₆·9H₂O A deep-red mineral composed of hydrated calcium vanadate; found in silky orthorhombic crystal aggregates in Colorado, Utah, and Peru. {*'hyü·ə,tīt*}
- hexahedrite** [GEOL] An iron meteorite composed of single crystals or aggregates of kamacite, usually containing 4–6% nickel in the metal phase. {*!hek·sə'he,drit*}

hexahydrate

- hexahydrate** [MINERAL] $MgSO_4 \cdot 6H_2O$ A white or greenish-white monoclinic mineral composed of hydrous magnesium sulfate. { 'hek·sə'hī,drit }
- hiatus** [GEOL] A gap in a rock sequence due to a lack of deposition of a bed or to erosion of beds. { hī'ād·əs }
- Hibernian orogeny** See Erian orogeny. { hī'bər·nē·ən ó'räj·ə·nē }
- hibonite** [MINERAL] $CaAl_2O_9$ Common mineral found in carbonaceous chondrite meteorites; occurs only rarely on earth. { 'hib·ə,nīt }
- hiddenite** [MINERAL] A transparent green or yellowish-green spodumene mineral containing chromium and valued as a gem. { 'hid·ən,tīt }
- hieratite** [MINERAL] K_2SiF_6 A grayish mineral composed of potassium fluosilicate; occurs as deposits in volcanic holes. { 'hī·ər·ə,tīt }
- hieroglyph** [GEOL] Any sort of sedimentary mark or structure occurring on a bedding plane. { 'hī·rə,glif }
- high-angle fault** [GEOL] A fault with a dip greater than 45°. { 'hī ,aŋ·gəl 'fólt }
- high-energy environment** [GEOL] An aqueous sedimentary environment which features a high energy level and turbulent motion, created by waves, currents, or surf, which prevents the settling and piling up of fine-grained sediment. { 'hī ,en·ər·jē in'vī·ərən·mənt }
- highland** [GEOL] **1.** A lofty headland, cliff, or other high platform. **2.** A dissected mountain region composed of old folded rocks. { 'hī·lənd }
- high quartz** [MINERAL] Quartz that was formed at high temperatures. { 'hī 'kwórts }
- high-rank coal** [GEOL] Coal consisting of less than 4% moisture when air-dried, or more than 84% carbon. { 'hī ,raŋk 'kól }
- high-rank graywacke** See felspathic graywacke. { 'hī ,raŋk 'grā,wak·ə }
- high-volatile bituminous coal** [GEOL] A bituminous coal composed of more than 31% volatile matter. { 'hī 'vəl·əd·əl bə'tū·mə·nəs 'kól }
- high-water platform** See wave-cut bench. { 'hī 'wöd·ər 'plat,fórm }
- hilgardite** [MINERAL] $Ca_8(B_6O_{11})_3Cl_4 \cdot H_2O$ Colorless mineral composed of hydrous borate and chloride of calcium; occurs as monoclinic domatic crystals. { 'hil,gär,dīt }
- hill creep** [GEOL] Slow gravity movement of rock and soil waste down a steep hillside. Also known as hillside creep. { 'hil ,krēp }
- hillebrandite** [MINERAL] $Ca_2SiO_3(OH)_2$ A white mineral composed of hydrous calcium silicate; occurs in masses. { 'hil·ə,bran,dīt }
- hillock** [GEOL] A small, low hill. { 'hil·ək }
- hillside creep** See hill creep. { 'hil,stīd ,krēp }
- Hilt's law** [GEOL] The law that in a small area the deeper coals are of higher rank than those above them. { 'hilt,s ,ló }
- hinge fault** [GEOL] A fault whose movement is an angular or rotational one on a side of an axis that is normal to the fault plane. { 'hinj ,fólt }
- hinge line** [GEOL] **1.** The line separating the region in which a beach has been thrust upward from that in which it is horizontal. **2.** A line in the plane of a hinge fault separating the part of a fault along which thrust or reverse movement occurred from that having normal movement. { 'hinj ,līn }
- hinsdalite** [MINERAL] $(Pb,Sr)Al_3(PO_4)(SO_4)(OH)_6$ Dark-gray or greenish rhombohedral mineral composed of basic lead and strontium aluminum sulfate and phosphate; occurs in coarse crystals and masses. { 'hinz,dā,līt }
- hinterland** [GEOL] **1.** The region behind the coastal district. **2.** The terrain on the back of a folded mountain chain. **3.** The moving block which forces geosynclinal sediments toward the foreland. { 'hin·tər,land }
- hisingerite** [MINERAL] $Fe^{3+}Si_2O_5(OH)_4 \cdot 2H_2O$ A black, amorphous mineral composed of hydrous ferric silicate; an iron ore. { 'hi·siŋ·ə,rīt }
- historical geology** [GEOL] A branch of geology concerned with the systematic study of bedded rocks and their relations in time and the study of fossils and their locations in a sequence of bedded rocks. { hi'stär·ə·kəl jē'äl·ə·jē }
- Histosol** [GEOL] An order of wet soils consisting mostly of organic matter, popularly called peats and mucks. { 'his·tə,sól }

Homo erectus

- hitch** [GEOL] **1.** A fault of strata common in coal measures, accompanied by displacement. **2.** A minor dislocation of a vein or stratum not exceeding in extent the thickness of the vein or stratum. { 'hich }
- hjelmite** [MINERAL] A black mineral containing yttrium, iron, manganese, uranium, calcium, columbium, tantalum, tin, and tungsten oxide; often occurs with crystal structure disrupted by radiation. { 'yel,mīt }
- hodgkinsonite** [MINERAL] $MnZnSiO_5 \cdot H_2O$ A pink to reddish-brown mineral composed of hydrous zinc manganese silicate; occurs as crystals. { 'häj·kən·sə,nīt }
- hoegbomite** [MINERAL] $Mg(Al,Fe,Ti)_4O_7$ A black mineral composed of an oxide of magnesium, aluminum, iron, and titanium. Also spelled högbomite. { 'häg·bə,mīt }
- hoernesite** [MINERAL] $Mg_3As_2O_8 \cdot H_2O$ A white, monoclinic mineral composed of hydrous magnesium arsenate; occurs as gypsumlike crystals. { 'hər·nə,sīt }
- hofmannite** See hartite. { 'häf·mə,nīt }
- hogback** [GEOL] Alternate ridges and ravines in certain areas of mountains, caused by erosive action of mountain torrents. { 'häg,bak }
- högbomite** See hoegbomite. { 'häg·bə,mīt }
- hohmannite** [MINERAL] $Fe_2(SO_4)_2(OH)_2 \cdot 7H_2O$ A chestnut brown to burnt orange and amaranth red, triclinic mineral consisting of a hydrated basic sulfate of iron. { 'hō·mə,nīt }
- holdenite** [MINERAL] A red, orthorhombic mineral composed of basic manganese zinc arsenate with a small amount of calcium, magnesium, and iron. { 'höl·də,nīt }
- Holactypidae** [PALEON] A family of extinct exocyclic Euechinoidea in the order Holactypoida; individuals are hemispherical. { hō,lek'tip·ə,dē }
- hollandite** [MINERAL] $Ba(Mn^{2+},Mn^{4+})_8O_{16}$ A silvery-gray to black mineral composed of manganate of barium and manganese; occurs as crystals. { 'hä·lən,dīt }
- Hollinacea** [PALEON] A dimorphic superfamily of extinct ostracods in the suborder Beyrichicopina including forms with sulci, lobation, and some form of velar structure. { ,häl·ə'nās·ē·ə }
- Hollinidae** [PALEON] An extinct family of ostracodes in the superfamily Hollinacea distinguished by having a bulbous third lobe on the valve. { hō'lin·ə,dē }
- holmquistite** [MINERAL] $(Na,K,Ca)Li(Mg,Fe)_2Al_2Si_8O_{22}(OH)_2$ A bluish-black, orthorhombic mineral composed of alkali and silicate of iron, magnesium, lithium, and aluminum. { 'hōm,kwi,stīt }
- Holocene** [GEOL] An epoch of the Quaternary Period from the end of the Pleistocene, around 10,000 years ago, to the present. Also known as Postglacial; Recent. { 'hō·lə,sēn }
- holoclastic** [PETR] Being or belonging to ordinary (sedimentary) clastic rock. { ,häl·ō'klas·tik }
- holocrystalline** [PETR] Pertaining to igneous rocks that are entirely crystallized minerals, without glass. { ,häl·ō'krist·əl·ən }
- holohyaline** [PETR] Pertaining to an entirely glassy rock. { ,häl·ō'hī·ə·lən }
- Holoptychidae** [PALEON] A family of extinct lobe-fish fishes in the order Osteolepiformes. { ,häl·əp·tə'kt·ə,dē }
- holostratotype** [GEOL] The originally defined stratotype. { ,häl·ō'strad·ə,tīp }
- Holuridae** [PALEON] A group of extinct chondrosteian fishes in the suborder Palaeoniscoidei distinguished in having lepidotrichia of all fins articulated but not bifurcated, fins without fulcra, and the tail not cleft. { hō'lūr·ə,dē }
- Homacodontidae** [PALEON] A family of extinct palaeodont mammals in the superfamily Dichobunoidea. { ,häm·ə·kō'dänt·ə,dē }
- homeoblastic** [PETR] Of a metamorphic crystalloblastic texture, having constituent minerals of approximately the same size. { ,hō·mē·ō'blas·tik }
- homilite** [MINERAL] $Ca_2(Fe,Mg)B_2Si_2O_{10}$ A black or blackish brown mineral composed of iron calcium borosilicate. { 'hä·mə,līt }
- homocline** [GEOL] Any rock unit in which the strata exhibit the same dip. { 'hä·mə,klīn }
- Homo erectus** [PALEON] A type of fossil human from the Pleistocene of Java and China representing a specialized side branch in human evolution. { 'hō·mō ə'rek·təs }

Homoistela

- Homoistela** [PALEON] A class of extinct echinoderms in the subphylum Homalozoa. { hō'moi-stə-lə }
- homologous** [GEOL] **1.** Referring to strata, in separated areas, that are correlatable (contemporaneous) and are of the same general character or facies, or occupy analogous structural positions along the strike. **2.** Pertaining to faults, in separated areas, that have the same relative position or structure. { hə'mäl-ə-gəs }
- honeycomb coral** [PALEON] The common name for members of the extinct order Tabulata; has prismatic sections arranged like the cells of a honeycomb. { 'hən-ē,köm |kär-əl }
- honeycomb formation** [GEOL] A rock stratum containing large cavities or caverns. { 'hən-ē,köm fór,mā-shən }
- hopeite** [MINERAL] $Zn_3(PO_4)_2 \cdot 4H_2O$ A gray, orthorhombic mineral composed of hydrous phosphate of zinc; specific gravity is 2.76–2.85; dimorphous with parahopeite. { 'hō,pīt }
- horizon** [GEOL] **1.** The surface separating two beds. **2.** One of the layers, each of which is a few inches to a foot thick, that make up a soil. { hə'rīz-ən }
- horizontal displacement** See strike slip. { ,här-ə'zänt-əl dis'pläs-mənt }
- horizontal fold** See nonplunging fold. { ,här-ə'zänt-əl 'föld }
- horizontal intensity** [GEOPHYS] The strength of the horizontal component of the earth's magnetic field. { ,här-ə'zänt-əl in'ten-səd-ē }
- horizontal pressure force** [GEOPHYS] The horizontal pressure gradient per unit mass, $-\alpha \nabla_H p$, where α is the specific volume, p the pressure, and ∇_H the horizontal component of the del operator; this force acts normal to the horizontal isobars toward lower pressure; it is one of the three important forces appearing in the horizontal equations of motion, the others being the Coriolis force and friction. { ,här-ə'zänt-əl 'presh-ər ,förs }
- horizontal separation** See strike slip. { ,här-ə'zänt-əl ,sep-ə'rā-shən }
- horn** [GEOL] A topographically high, sharp, pyramid-shaped mountain peak produced by the headward erosion of mountain glaciers; the Matterhorn is the classic example. { hörn }
- hornblende** [MINERAL] A general name given to the monoclinic calcium amphiboles that form an extensive solid-solution series between the various metals in the generalized formula $(Ca,Na)_2(Mg,Fe,Al)_5(Al,Si)_8O_{22}(OH,F)_2$. { 'hörn,blend }
- hornblendite** [PETR] A plutonic rock consisting mainly of hornblende. { 'hörn-blendīt }
- horned dinosaur** [PALEON] Common name for extinct reptiles of the suborder Ceratopsia. { |hörnd 'dīn-ə,sör }
- horned-toad dinosaur** [PALEON] The common name for extinct reptiles composing the suborder Ankylosauria. { |hörnd ,tōd 'dīn-ə,sör }
- hornfels** [PETR] A common name for a class of metamorphic rocks produced by contact metamorphism and characterized by equidimensional grains without preferred orientation. { 'hör,felz }
- hornfels facies** [PETR] Rock formed at depths in the earth's crust not exceeding 6.2 miles (10 kilometers) at temperatures of 250–800°C; includes albite-epidote hornfels facies, pyroxene-hornfels facies, and hornblende-hornfels facies. { 'hör,felz|fä-shēz }
- horn lead** See phosgenite. { 'hörn ,led }
- horn quicksilver** See calomel. { 'hörn 'kwik,sil-vər }
- horn silver** See cerargyrite. { 'hörn ,sil-vər }
- hornstone** See chert. { 'hörn,stōn }
- horse** [GEOL] A large rock caught along a fault. { hörs }
- horseback** [GEOL] A low and sharp ridge of sand, gravel, or rock. { 'hörs,bak }
- horsetail ore** [GEOL] An ore occurring in fractures which diverge from a larger fracture. { 'hörs,täl ,ör }
- horsfordite** [MINERAL] Cu_5Sb A silver-white mineral composed of copper-antimony alloy. { 'hörs-fər,dīt }
- horst** [GEOL] **1.** A block of the earth's crust uplifted along faults relative to the rocks on either side. **2.** A mass of the earth's crust limited by faults and standing in

hutchinsonite

- relief. **3.** One of the older mountain masses limiting the Alps on the west and north. **4.** A knobby ledge of limestone beneath a thin soil mantle. { hōrst }
- hortonolite** [MINERAL] $(\text{Fe,Mg,Mn})_2\text{SiO}_4$ A dark mineral composed of silicate of iron, magnesium, and manganese; a member of the olivine series. { hōr'tän-əl,īt }
- host rock** [GEOL] Rock which serves as a host for other rocks or for mineral deposits. { 'hōst ,ræk }
- howardite** [GEOL] An achondritic stony meteorite composed chiefly of calcic plagioclase and orthopyroxene. { 'haü·ər,dīt }
- howlite** [MINERAL] $\text{Ca}_2\text{Bi}_5\text{SiO}_9(\text{OH})_5$ A white mineral occurring in nodular or earthy form. { 'haü,līt }
- huangho deposit** [GEOL] A coastal-plain deposit comprising alluvium spread over a level surface (such as a floodplain) but extending into marine beds of equivalent age. { 'hwäng|hō di,päz-ət }
- hudsonite** See cortlandite. { 'həd-sə,nīt }
- huebnerite** [MINERAL] MnWO_4 A brownish-red to black manganese member of the wolframite series, occurring in short, monoclinic, prismatic crystals; isomorphous with ferberite. { 'hëb-nə,rīt }
- hühnerkobelite** [MINERAL] $(\text{Na,Ca})(\text{Fe,Mn})_2(\text{PO}_4)_2$ A mineral composed of phosphate of sodium, calcium, iron, and manganese; it is isomorphous with varulite. { 'hyü-nər|kō-bə,līt }
- hulsite** [MINERAL] $(\text{Fe}^{2+},\text{Mg})_2(\text{Fe}^{3+},\text{Sn})(\text{BO}_3)_2\text{O}_2$ A black mineral composed of iron calcium magnesium tin borate. { 'həl,sīt }
- humboldtine** [MINERAL] $\text{FeC}_2\text{O}_4 \cdot 2\text{H}_2\text{O}$ A mineral composed of hydrous ferrous oxalate. Also known as humboldtite; oxalite. { 'həm,bōl,tēn }
- humboldtite** See humboldtine. { 'həm,bōl,tīt }
- humic** [GEOL] Pertaining to or derived from humus. { 'hyü-mik }
- humic-cannel coal** See pseudocannel coal. { 'hyü-mik |kan-əl 'kōl }
- humic coal** [GEOL] A coal whose attritus is composed mainly of transparent humic degradation material. { 'hyü-mik 'kōl }
- humification** [GEOL] Formation of humus. { ,hyü-mə-fə'kā-shən }
- humic** See ulmin. { 'hyü-mən }
- humite** [MINERAL] **1.** A humic coal mineral. **2.** A series of magnesium neosilicate minerals closely related in crystal structure and chemical composition. { 'hyü,mīt }
- hummock** [GEOL] A rounded or conical knoll, mound, hillock, or other small elevation, generally of equal dimensions and not ridgelike. Also known as hammock. { 'həm-ək }
- hummocky** [GEOL] Any topographic surface characterized by rounded or conical mounds. { 'həm-ək-ē }
- Humod** [GEOL] A suborder of the soil order Spodosol having an accumulation of humus, and of aluminum but not iron. { 'hyü,mäd }
- humodurite** See translucent attritus. { 'hyü-mə|dú,rīt }
- humogelite** See ulmin. { hyü'mäj-əl,īt }
- Humox** [GEOL] A suborder of the soil order Oxisol that is high in organic matter, well drained but moist all or nearly all year, and restricted to relatively cool climates and high altitudes for Oxisols. { 'hyü,mäks }
- Humult** [GEOL] A suborder of the soil order Ultisol, well drained with a moderately thick surface horizon; formed under conditions of high rainfall distributed evenly over the year; common in southeastern Brazil. { 'hyü-məlt }
- humus** [GEOL] The amorphous, ordinarily dark-colored, colloidal matter in soil; a complex of the fractions of organic matter of plant, animal, and microbial origin that are most resistant to decomposition. { 'hyü-məs }
- huntite** [MINERAL] $\text{CaMg}_3(\text{CO}_3)_4$ A white mineral consisting of calcium magnesium carbonate. { 'hən,tīt }
- hureaulite** [MINERAL] $\text{Mn}_5\text{H}_2(\text{PO}_4)_4 \cdot 4\text{H}_2\text{O}$ A monoclinic mineral of varying colors consisting of a hydrated acid phosphate of manganese. { 'hyü-rō,līt }
- Huronian** [GEOL] The lower system of the restricted Proterozoic. { hyü'rō-nē-ən }
- hutchinsonite** [MINERAL] $(\text{Pb,Tl})_2(\text{Cu,Ag})\text{As}_5\text{S}_{10}$ Red mineral composed of sulfide of

huttonite

lead, copper, and arsenic, with varying amounts of thallium and silver, occurring in small orthorhombic crystals. { 'hæch·ən·sə,nɪt }

huttonite [MINERAL] ThSiO_4 A colorless to pale-green monoclinic mineral composed of silicate of thorium; it is dimorphous with thorite. { 'hət·ən,tɪ }

hyacinth See zircon. { 'hī·ə,sɪnθ }

Hyaeodontidae [PALEON] A family of extinct carnivorous mammals in the order Delta-theridia. { hɪ,ē·nə'dänt·ə,de }

hyaline [GEOL] Transparent and resembling glass. { 'hī·ə,læn }

hyalinocrystalline [PETR] Of porphyritic rock texture, having the phenocrysts lying in a glassy ground mass. { hɪ'al·ə·nō'krist·əl·ən }

hyalite [MINERAL] A colorless, clear or translucent variety of opal occurring as globular concretions or botryoidal crusts in cavities or cracks of rocks. Also known as Müller's glass; water opal. { 'hī·ə,lɪt }

hyalobasalt See tachylite. { 'hī·ə·lō·bə'sölt }

hyaloclastite [GEOL] A tufflike deposit formed by the flowing of basalt under water and ice and its consequent fragmentation. Also known as aquagene tuff. { 'hī·ə·lō'kla,stɪt }

hyaloophitic [PETR] Of the texture of igneous rocks, being composed principally of a glassy ground mass with little interstitial texture. { 'hī·ə·lō,ō'fid·ɪk }

hyalophane [MINERAL] $\text{BaAl}_2\text{Si}_2\text{O}_8$ A colorless feldspar mineral crystallizing in the monoclinic system; isomorphous with adularia. Also known as baryta feldspar. { hɪ'al·ə,fæn }

hyalopsite See obsidian. { ,hī·ə'läp,sɪt }

Hyalospongia [PALEON] A class of extinct glass sponges, equivalent to the living Hexactinellida, having siliceous spicules made of opaline silica. { ,hī·ə·lō'spən·jē·ə }

hyalotekite [MINERAL] $(\text{Pb,Ca,Ba})_4\text{BSi}_6\text{O}_{17}(\text{OH,F})$ A white gray mineral composed of borosilicate and fluoride of lead, barium, and calcium, occurring in crystalline masses. { 'hī·ə·lō'tek,tɪt }

Hybodontoidae [PALEON] An ancient suborder of extinct fossil sharks in the order Selachii. { ,hī·bə,dän'tóid·ē·ə }

hybrid [PETR] Pertaining to a rock formed by the assimilation of two magmas. { 'hī·brəd }

hydatogenesis [GEOL] Crystallization and deposition of minerals from aqueous solutions. { 'hīd·ə·tō'jen·ə·səs }

hydrargillite See gibbsite. { hɪ'drär·jə,lɪt }

hydrated halloysite See endellite. { 'hī,dräd·əd hə'löi,sɪt }

hydraulic ratio [GEOL] The weight of a heavy mineral multiplied by 100 and divided by the weight of a hydraulically equivalent light mineral. { hɪ'drō'lik 'rā·shō }

hydrobasaluminite [MINERAL] $\text{Al}_4(\text{SO}_4)(\text{OH})_{10}·36\text{H}_2\text{O}$ Mineral composed of a hydrous sulfate and hydroxide of aluminum. { 'hī·drō'bas·ə'lüm·ə,nɪt }

hydrobiotite [MINERAL] A light-green, trioctahedral clay mineral of mixed layers of biotite and vermiculite. { ,hī·drō'bɪ·ə,tɪt }

hydroboracite [MINERAL] $\text{CaMg}_6\text{O}_{11}·6\text{H}_2\text{O}$ A white mineral composed of hydrous calcium magnesium borate, occurring in fibrous and foliated masses. { ,hī·drō'bór·ə,sɪt }

hydrocalumite [MINERAL] $\text{Ca}_2\text{Al}(\text{OH})_7·3\text{H}_2\text{O}$ A colorless to light-green mineral composed of a hydrous hydroxide of calcium and aluminum. { ,hī·drō'kal·yəl,mɪt }

hydrocerussite [MINERAL] $\text{Pb}_3(\text{OH})_2(\text{CO}_3)_2$ A colorless mineral composed of basic lead carbonate, occurring as crystals in thin hexagonal plates. { ,hī·drō·sə'rəs,sɪt }

hydrocyanite See chalcocyanite. { ,hī·drə'sɪ·ə,nɪt }

hydrogarnet [MINERAL] One of a group of minerals having the general formula $\text{A}_3\text{B}_2·(\text{SiO}_4)_{3-x}(\text{OH})_{4x}$; isomorphous with certain garnets. { 'hī·drō'gär·nət }

hydrogenic rock See aqueous rock. { 'hī·drə,jen·ɪk 'ræk }

hydrogeochemistry [GEOCHEM] The study of the chemical characteristics of ground and surface waters as related to areal and regional geology. { 'hī·drō,jē·ō'kem·ə·strē }

hydroxylapatite

- hydrohalite** [MINERAL] $\text{Na}_2\text{Cl}\cdot 2\text{H}_2\text{O}$ A mineral composed of hydrated sodium chloride, formed only from salty water cooled below 0°C . { 'hī·drə'ha,lit }
- hydrohalloysite** See endellite. { 'hī·drō·hə'lōi,zīt }
- hydrohetaerolite** [MINERAL] $\text{Zn}_2\text{Mn}_4\text{O}_8\cdot\text{H}_2\text{O}$ A dark brown to brownish-black mineral consisting of a hydrated oxide of zinc and manganese; occurs in massive form. { 'hī·drō·hə'tir·ə,lit }
- hydrokaolin** See endellite. { ,hī·drə'kə·ə·lən }
- hydrolaccolith** [GEOL] A frost mound, 0.3–20 feet (0.1–6 meters) in height, having a core of ice and resembling a laccolith in section. Also known as cryolaccolith. { ,hī·drə'lak·ə,lith }
- hydroolith** [PETR] **1.** A chemically precipitated aqueous rock, such as rock salt. **2.** A rock that is free of organic material. { 'hī·drə,lith }
- hydrologic sequence** [GEOL] A series of soil sections from differentiated parent material that shows increasing lack of drainage downslope. { 'hī·drə'lāj·ik 'sē·kwəns }
- hydrolyzate** [GEOL] A sediment characterized by elements such as aluminum, potassium, or sodium which are readily hydrolyzed. { 'hī·drəl·ə,zāt }
- hydromagnesite** [MINERAL] $\text{Mg}_4(\text{OH})_2(\text{CO}_3)_3\cdot 3\text{H}_2\text{O}$ A white, earthy mineral crystallizing in the monoclinic system and found in small crystals, amorphous masses, or chalky crusts. { ,hī·drō'mag·nə,zīt }
- hydrometamorphism** [GEOL] Alteration of rocks by material carried in solution by water without the influence of high temperature or pressure. { ,hī·drə,med·ə'mór·fiz·əm }
- hydromica** [GEOL] Any of several varieties of muscovite, especially illite, which are less elastic than mica, have a pearly luster, and sometimes contain less potash and more water than muscovite. Also known as hydrous mica. { 'hī·drō'mī·kə }
- hydromorphic** [GEOL] Referring to an intrazonal soil with characteristics that were developed in the presence of excess water all or part of the time. { 'hī·drə'mór·fik }
- hydrophilite** See chlorocalcite. { hī'drəf·ə,lit }
- hydrostatic assumption** [GEOPHYS] **1.** The assumption that the pressure of seawater increases by 1 atmosphere (101,325 pascals) over approximately 33 feet (10 meters) of depth, the exact value depending on the water density and the local acceleration of gravity. **2.** Specifically, the assumption that fluid is not undergoing vertical accelerations, hence the vertical component of the passive gradient force per unit mass is equal to g , the local acceleration due to gravity. { ,hī·drə'stad·ik ə'səm·shən }
- hydroalcite** [MINERAL] $\text{Mg}_6\text{Al}_2(\text{OH})_{16}(\text{CO}_3)\cdot 4\text{H}_2\text{O}$ Pearly-white mineral composed of hydrous aluminum and magnesium hydroxide and carbonate. { ,hī·drə'tal,sīt }
- hydrothermal** [GEOL] Of or pertaining to heated water, to its action, or to the products of such action. { ,hī·drə'thər·mə'l }
- hydrothermal alteration** [GEOL] Rock or mineral phase changes that are caused by the interaction of hydrothermal liquids and wall rock. { ,hī·drə'thər·mə'l ,əl·tə'rā·shən }
- hydrothermal deposit** [GEOL] A mineral deposit precipitated from a hot, aqueous solution. { ,hī·drə'thər·mə'l di'pāz·ət }
- hydrothermal solution** [GEOL] Hot, residual watery fluids derived from magmas during the later stages of their crystallization and commonly containing large amounts of dissolved metals which are deposited as ore veins in fissures along which the solutions often move. { ,hī·drə'thər·mə'l sə'lū·shən }
- hydrothermal synthesis** [GEOL] Mineral synthesis in the presence of heated water. { ,hī·drə'thər·mə'l 'sin·thə·səs }
- hydrotroilite** [MINERAL] $\text{FeS}\cdot n\text{H}_2\text{O}$ A black, finely divided colloidal material reported in many muds and clays; thought to be formed by bacteria on bottoms of marine basins. { ,hī·drō'trōi,lit }
- hydrotungstite** [MINERAL] $\text{H}_2\text{WO}_4\cdot\text{H}_2\text{O}$ A mineral composed of hydrous tungstic acid. { 'hī·drō'təŋz,tīt }
- hydrous** [MINERAL] Indicating a definite proportion of combined water. { 'hī·drəs }
- hydrous mica** See hydromica. { 'hī·drəs 'mī·kə }
- hydroxylapatite** [MINERAL] $\text{Ca}_5(\text{PO}_4)_3\text{OH}$ A rare form of the apatite group that crystallizes in the hexagonal system. { hī'drək·səl'ap·ə,tīt }

hydroxylherderite

- hydroxylherderite** [MINERAL] $\text{CaBe}(\text{PO}_4)(\text{OH})$ A monoclinic mineral composed of a phosphate and hydroxide of calcium and beryllium; isomorphous with herderite. { hī'drāk·səl'hər·də,rīt }
- hydrozincite** [MINERAL] $\text{Zn}_5(\text{OH})_5(\text{CO}_3)_2$ A white, grayish, or yellowish mineral composed of basic zinc carbonate, occurring as masses or crusts. { ,hī·drō'zīŋ,kīt }
- Hyeniales** [PALEOBOT] An order of Devonian plants characterized by small, dichotomously forked leaves borne in whorls. { ,hī·ə'nā·lēz }
- Hyeniatae** See Hyeniopsida. { ,hī·ə'nī·ə,tē }
- Hyeniopsida** [PALEOBOT] An extinct class of the division Equisetophyta. { ,hī·ə·nē'əp·sə·də }
- Hypossodontidae** [PALEON] A family of extinct mammalian herbivores in the order Condylarthra. { ,hī·əp·sə'dänt·ə,dē }
- hypabyssal rock** [PETR] Those igneous rocks that rose from great depths as magmas but solidified as minor intrusions before reaching the surface. { ,hīp·ə'bis·əl 'rāk }
- hypautomorphic** See hypidiomorphic. { hī'pōd·ə'mōr·fik }
- hypergene** See supergene. { 'hī·pər,jēn }
- hypersaline** [GEOL] Geologic material with high salinity. { ,hī·pər'sā,lēn }
- hypersthene** [MINERAL] $(\text{Mg,Fe})\text{SiO}_3$ A grayish, greenish, black, or dark-brown rock-forming mineral of the orthopyroxene group, with bronzelike luster on the cleavage surface. { 'hī·pər,sthēn }
- hypersthénfels** See norite. { ,hī·pər'sthēn,felz }
- Hypertragulidae** [PALEON] A family of extinct chevrotainlike pecoran ruminants in the superfamily Traguloidea. { ,hī·pər·trə'gyūl·ə,dē }
- hypidiomorphic** [PETR] Of the texture of igneous rocks, having the crystals bounded partly by the crystal faces characteristic of the mineral species. Also known as hypautomorphic; subidiomorphic. { hī,pid·ē·ō'mōr·fik }
- hypocenter** [GEOPHYS] The point along a fault where an earthquake is initiated. { 'hī·pə,sent·ər }
- hypocrystalline** [PETR] Pertaining to the texture of igneous rock characterized by crystalline components in an amorphous groundmass. Also known as hemicrystalline; hypohyaline; merocrystalline; micocrystalline; semicrystalline. { ,hī·pō'krist·əl·ən }
- hypogene** [GEOL] **1.** Of minerals or ores, formed by ascending waters. **2.** Of geologic processes, originating within or below the crust of the earth. { 'hī·pə,jēn }
- hypohyaline** See hypocrystalline. { ,hī·pō'hī·ə·lən }
- hypomagma** [GEOL] Relatively immobile, viscous lava that forms at depth beneath a shield volcano, is undersaturated with gases, and initiates volcanic activity. { ,hī·pō'mag·mə }
- hypothermal** [GEOL] Referring to the high-temperature (300–500°C) environment of hypothermal deposits. { ,hī·pō'thər·məl }
- hypothermal deposit** [MINERAL] Mineral deposit formed at great depths and high (300–500°C) temperatures. { ,hī·pō'thər·məl di'pāz·ət }
- Hypsithermal** See Altithermal. { ,hīp·sə'thərm·əl }
- hypsometric formula** [GEOPHYS] A formula, based on the hydrostatic equation, for either determining the geopotential difference or thickness between any two pressure levels, or for reducing the pressure observed at a given level to that at some other level. { ,hīp·sə'me·trik 'fōr·myə·lə }
- Hyracodontidae** [PALEON] The running rhinoceroses, an extinct family of perissodactyl mammals in the superfamily Rhinoceroidea. { ,hī·rə·kō'dänt·ə,dē }
- Hystrichospherida** [PALEON] A group of protistan microfossils. { ,hī·strə·kō'sfer·ə·də }

ianthinite [MINERAL] $2\text{UO}_2 \cdot 7\text{H}_2\text{O}$ A violet mineral composed of hydrous uranium dioxide, occurring as orthorhombic crystals. { ē'an·thə,nīt }

ice age [GEOL] A major interval of geologic time during which extensive ice sheets (continental glaciers) formed over many parts of the world. { 'ɪs ,āj }

Ice Age *See* Pleistocene. { 'ɪs ,āj }

ice calving *See* calving. { 'ɪs ,kav·ɪŋ }

ice cave [GEOL] A cave that is cool enough to hold ice through all or most of the warm season. { 'ɪs ,kāv }

ice-contact delta [GEOL] A delta formed by a stream flowing between a valley slope and the margin of glacial ice. Also known as delta moraine; morainal delta. { 'ɪs |kän,tak ,del·tə }

ice erosion [GEOL] **1.** Erosion due to freezing of water in rock fractures. **2.** *See* glacial erosion. { 'ɪs i'rō·zhən }

ice-laid drift *See* till. { 'ɪs |lād ,drift }

Iceland agate *See* obsidian. { 'ɪs·lənd 'ag·ət }

Iceland crystal *See* Iceland spar. { 'ɪs·lənd 'krist·əl }

Iceland spar [MINERAL] A pure, transparent form of calcite found particularly in Iceland; easily cleaved to form rhombohedral crystals that are doubly refracting. Also known as Iceland crystal. { 'ɪs·lənd 'spär }

ice mound *See* ground ice mound. { 'ɪs ,maünd }

ice push [GEOL] Lateral pressure that is caused by expansion of shoreward-moving ice on a lake or a bay of the sea and that follows a rise in temperature. Also known as ice shove; ice thrust. { 'ɪs ,pʊʃ }

ice-rafting [GEOL] The transporting of rock and other minerals, of all sizes, on or within icebergs, ice floes, river drift, or other forms of floating ice. { 'ɪs ,raf·tɪŋ }

ice shove *See* ice push. { 'ɪs ,shəv }

ice spar *See* sanidine. { 'ɪs ,spär }

ice stone *See* cryolite. { 'ɪs ,stōn }

ice thrust *See* ice push. { 'ɪs ,θrəst }

ichnite [PALEON] An ichnofossil of the footprint or track of an organism. Also known as ichnolite. { 'ɪk,nīt }

ichnofacies [GEOL] A recurrent assemblage of ichnofossils that represent certain environmental conditions. { 'ɪk·nō'fə,ʃeɪz }

ichnofossil *See* trace fossil. { 'ɪk·nə'fäs·əl }

ichnolite [PALEON] **1.** A rock containing a fossilized track or footprint. **2.** *See* ichnite. { 'ɪk·nə,līt }

ichnology [PALEON] The study of ichnofossils, especially fossil footprints. { ik'näl·ə·jē }

ichor [GEOL] A fluid rich in mineralizers. { 'ɪ,kór }

ichthyodectidae [PALEON] A family of Cretaceous marine osteoglossiform fishes. { ,ɪk·thē·ə'dek·tə,dē }

ichthyolith [PALEON] Fossil fish remains. { 'ɪk·thē·ə,lɪθ }

ichthyopterygia [PALEON] A subclass of extinct Mesozoic reptiles composed of predatory fish-finned and sea-swimming forms with short necks and a porpoiselike body. { ,ɪk·thē,əp·tə'rij·ē·ə }

Ichthyornis

- Ichthyornis** [PALEON] The type genus of Ichthyornithidae. { ik·thē'ōr·nəs }
- Ichthyornithes** [PALEON] A superorder of fossil birds of the order Ichthyornithiformes according to some systems of classification. { ,ik·thē'ōr·nə,thēz }
- Ichthyornithidae** [PALEON] A family of extinct birds in the order Ichthyornithiformes. { ,ik·thē,ōr'nith·ə,dē }
- Ichthyornithiformes** [PALEON] An order of ancient fossil birds including strong flying species from the Upper Cretaceous that possessed all skeletal characteristics of modern birds. { ,ik·thē,ōr·nə·thə'fōr,mēz }
- Ichthyosauria** [PALEON] The only order of the reptilian subclass Ichthyopterygia, comprising the extinct predacious fish-lizards; all were adapted to a sea life in having tail flukes, paddles, and dorsal fins. { ,ik·thē·ə'sōr·ē·ə }
- Ichthyostega** [PALEON] Four-legged vertebrates that evolved from their lobe-finned fish ancestors during the later Devonian Period (400–350 million years ago). { ,ik·thē·ə'steg·ə }
- Ichthyostegalia** [PALEON] An extinct Devonian order of labyrinthodont amphibians, the oldest known representatives of the class. { ,ik·thē·ō·stə'gal·ē·ə }
- Ictidosauria** [PALEON] An extinct order of mammal-like reptiles in the subclass Synapsida including small carnivorous and herbivorous terrestrial forms. { ik'tid·ə'sōr·ē·ə }
- iddingsite** [MINERAL] A reddish-brown mixture of silicates, forming patches in basic igneous rocks. { 'id·iŋ,zīt }
- ideogenous** See syngenetic. { ,id·ē'ä·ə·nəs }
- idioblast** [GEOL] A mineral constituent of a metamorphic rock formed by recrystallization which is bounded by its own crystal faces. { 'id·ē·ō,blast }
- idiochromatic** [MINERAL] Having characteristic color, usually applied to minerals. { 'id·ē·ō·krō'mad·ik }
- idiomorphic** See automorphic. { 'id·ē·ō'mōr·fik }
- idocrase** See vesuvianite. { 'T·dō,krās }
- idrialite** [MINERAL] A mineral composed of crystalline hydrocarbon, C₂₂H₁₄. { 'id·rē·ə,līt }
- igneous** [PETR] Pertaining to rocks which have congealed from a molten mass. { 'ig·nē·əs }
- igneous complex** [PETR] An assemblage of igneous rocks that are intimately associated and roughly contemporaneous. { 'ig·nē·əs 'käm,pleks }
- igneous facies** [PETR] A part of an igneous rock differing in structure, texture, or composition from the main mass. { 'ig·nē·əs 'fā·shēz }
- igneous mineral** [MINERAL] Mineral material forming igneous rock. { 'ig·nē·əs 'mīn·rəl }
- igneous petrology** [PETR] The study of igneous rocks, their occurrence, composition, and origin. { 'ig·nē·əs pi'trəl·ə·jē }
- igneous province** See petrographic province. { 'ig·nē·əs präv·əns }
- Iguanodon** [PALEON] A herbivorous ornithomimid dinosaur, 30 feet (9 meters) long and weighing 5 tons, that appeared during the Early Cretaceous Period. { i'gwän·ə,dän }
- ignimbrite** [PETR] A rock deposit (welded or not) resulting from one or more ground-hugging flows of hot volcanic fragments and particles commonly produced during explosive eruptions (pyroclastic flows and tephra fall). Most ignimbrites have a sheet-like shape, cover many thousands of square kilometers, and have chemical compositions that span the range commonly exhibited by igneous rocks (basaltic to rhyolitic). Also known as ash-flow tuff; pyroclastic-flow deposit; welded tuff. { 'ig·nəm,brit }
- IGY** See International Geophysical Year.
- ihleite** See copiapite. { 'ē·lā,līt }
- ilesite** [MINERAL] (Mn,Zn,Fe)SO₄·4H₂O A green mineral composed of hydrous manganese zinc iron sulfate. { 'ī,l,zīt }
- ijolite** [PETR] A plutonic rock of nepheline and 30–60% mafic materials, generally sodic pyroxene, with accessory apatite, sphene, calcite, and titaniferous garnet. { 'ē·ə,līt }

inclusion

- Illinoian** [GEOL] The third glaciation of the Pleistocene in North America, between the Yarmouth and Sangamon interglacial stages. { ɪl·ə'noɪ·ən }
- illite** [MINERAL] A group of gray, green, or yellowish-brown micaceous clay minerals found in argillaceous sediments; intermediate in composition and structure between montmorillonite and muscovite. { 'ɪ,lɪt }
- illuvial** [GEOL] Pertaining to a region or material characterized by the accumulation of soil by the illuviation of another zone or material. { i'lü·vē·əl }
- illuvial horizon** See B horizon. { i'lü·vē·əl hə'riz·ən }
- illuviation** [GEOL] The deposition of colloids, soluble salts, and small mineral particles in an underlying layer of soil. { i,lü·vē'ä·shən }
- illuvium** [GEOL] Material leached by chemical or other processes from one soil horizon and deposited in another. { i'lü·vē·əm }
- ilmeneite** [MINERAL] FeTiO_3 An iron-black, opaque, rhombohedral mineral that is the principal ore of titanium. Also known as mohnsite; titanite iron ore. { il·mə,nɪt }
- ilsemannite** [MINERAL] A black, blue-black, or blue mineral composed of hydrous molybdenum oxide or perhaps sulfate, occurring in earthy massive form. { 'il·sə·mə,nɪt }
- imbricate structure** [GEOL] **1.** A sedimentary structure characterized by shingling of pebbles all inclined in the same direction with the upper edge of each leaning downstream or toward the sea. Also known as shingle structure. **2.** Tabular masses that overlap one another and are inclined in the same direction. Also known as schuppen structure; shingle-block structure. { 'im·brə'kæt ,strək·chər }
- imbrication** [GEOL] Formation of an imbricate structure. Also known as shingling. { ,im·brə'kə·shən }
- imerinite** [MINERAL] $\text{Na}_2(\text{Mg},\text{Fe})_6\text{Si}_8\text{O}_{22}(\text{O},\text{OH})_2$ A colorless to blue mineral composed of a basic silicate of sodium, iron, and magnesium, occurring as acicular crystals. { ,im·ə're,nɪt }
- immature soil** See azonal soil. { 'im·ə'chür 'sɔɪl }
- impact cast** See prod cast. { 'im,pakt ,kast }
- impact crater** [GEOL] A crater formed on a planetary surface by the impact of a projectile. { 'im,pakt ,kräd·ər }
- impactite** [GEOL] Glassy fused rock or meteor fragments resulting from heat of impact of a meteor on the earth. { 'im,pak,tɪt }
- impact mark** See prod mark. { 'im,pakt ,märk }
- impression** [GEOL] A form left on a soft soil surface by plant parts; the soil hardens and usually the imprint is a concave feature. { im'preʃ·ən }
- imprint** See overprint. { 'im,prɪnt }
- imponite** [GEOL] A black, asphaltic pyrobitumen with a high fixed-carbon content derived from the metamorphosis of petroleum. { 'im·sə,nɪt }
- Inadunata** [PALEON] An extinct subclass of stalked Paleozoic Crinozoa characterized by branched or simple arms that were free and in no way incorporated into the calyx. { i'nä·jə'näd·ə }
- incandescent tuff flow** See ash flow. { ,in·kən'des·ənt 'tʌf ,flɔ }
- incarbonization** See coalification. { in,kär·bə·nə'zä·shən }
- Inceptisol** [GEOL] A soil order characterized by soils that are usually moist, with pedogenic horizons of alteration of parent materials but not of illuviation. { in'sep·tə,sɔl }
- incised meander** [GEOL] A deep, tortuous valley cut by a meandering stream that was rejuvenated. { in'sɪzd mə'an·dər }
- inclination** [GEOL] The angle at which a geological body or surface deviates from the horizontal or vertical; often used synonymously with dip. [GEOPHYS] In magnetic inclination, the dip angle of the earth's magnetic field. Also known as magnetic dip. { ,ɪŋ·klə'nä·shən }
- inclined bedding** [GEOL] A type of bedding in which the strata dip in the direction of current flow. { in'klɪnd 'bed·ɪŋ }
- inclined contact** [GEOL] A contact plane of gas or oil with water underlying, in which the plane slopes or is inclined. { in'klɪnd 'kän,takt }
- inclusion** [PETR] A fragment of older rock enclosed in an igneous rock. { in'klü·zhən }

incoaltation

incoaltation *See* coalification. { ,in·kō'lä·shən }

incoherent [GEOL] Pertaining to a rock or deposit that is loose or unconsolidated, or that is unable to hold together firmly or solidly. { ,in·kō'hir·ənt }

incompetent bed [GEOL] A bed not combining sufficient firmness and flexibility to transmit a thrust and to lift a load by bending. { in'käm·pəd·ənt 'bed }

incongruous [GEOL] Of a drag fold, having an axis and axial surface not parallel to the axis and axial surface of the main fold to which it is related. { in'käŋ·grü·əs }

incumbent [GEOL] Lying above, said of a stratum that is superimposed or overlies another stratum. { in'kəm·bənt }

inderborite [MINERAL] $\text{CaMgB}_6\text{O}_{11} \cdot 11\text{H}_2\text{O}$ A monoclinic mineral composed of hydrous calcium and magnesium borate. { ,in·dər'bó·rīt }

inderite [MINERAL] $\text{Mg}_2\text{B}_6\text{O}_{11} \cdot 15\text{H}_2\text{O}$ A hydrated borate mineral. { 'in·də·rīt }

index bed *See* key bed. { 'in·deks ,bed }

index fossil [PALEON] The ancient remains and traces of an organism that lived during a particular geologic time period and that geologically date the containing rocks. { 'in·deks ,fäs·əl }

index mineral [PETR] A mineral whose first appearance in passing from low to higher grades of metamorphism indicates the outer limit of a zone. { 'in·deks ,min·rəl }

index plane [GEOL] A surface used as a reference point in determining geological structure. { 'in·deks ,plän }

indialite [MINERAL] $\text{Mg}_2\text{Al}_4\text{Si}_5\text{O}_{18}$ A hexagonal cordierite mineral; it is isotypic with beryl. { 'in·dē·ə,līt }

indianaité [MINERAL] A white porcelainlike clay mineral; a variety of halloysite found in Indiana. { ,in·dē'a·nə,īt }

Indiana limestone *See* spergenite. { ,in·dē'a·nə 'līm·stōn }

indicolite [MINERAL] An indigo-blue variety of tourmaline that is used as a gemstone. Also known as indigolite. { in'dik·ə,līt }

indigenous coal *See* autochthonous coal. { in'dij·ə·nəs kōl }

indigenous limonite [MINERAL] Sulfide-derived limonite that remains fixed at the site of the parent sulfide. { in'dij·ə·nəs 'līm·ə,nīt }

indigo copper *See* covellite. { 'in·də·gō 'káp·ər }

indigolite *See* indicolite. { 'in·də,gō,līt }

indirect stratification *See* secondary stratification. { ,in·də'rekt ,strəd·ə·fə'kā·shən }

induced magnetization [GEOPHYS] That component of a rock's magnetization which is proportional to, and has the same direction as, the ambient magnetic field. { in'düst ,mag·nə·tə'zā·shən }

induration [GEOL] **1.** The hardening of a rock material by the application of heat or pressure or by the introduction of a cementing material. **2.** A hardened mass formed by such processes. **3.** The hardening of a soil horizon by chemical action to form a hardpan. { ,in·də'rā·shən }

industrial diamond [MINERAL] Diamond that is too hard or too radial-grained to be used for jewel cutting. { in'dəs·trē·əl 'dī·mənd }

industrial jewel [MINERAL] A hard stone, such as ruby or sapphire, used for bearings and impulse pins in instruments and for recording needles. { in'dəs·trē·əl 'jūl }

inertial flow [GEOPHYS] Frictionless flow in a geopotential surface in which there is no pressure gradient; the centrifugal and Coriolis accelerations must therefore be equal and opposite, and the constant inertial wind speed V_i is given by $V_i = fR$, where f is the Coriolis parameter and R the radius of curvature of the path. { i'nər·shəl 'flō }

inertinite [GEOL] A carbon-rich maceral group, which includes micrinite, sclerotinite, fusinite, and semifusinite. { i'nərt·ən,īt }

inesite [MINERAL] $\text{Ca}_2\text{Mn}_7\text{Si}_9\text{O}_{28}(\text{OH})_2 \cdot 5\text{H}_2\text{O}$ A pale-red mineral composed of hydrous manganese calcium silicate, occurring in small prismatic crystals or massive. { 'in·ə,sīt }

inface *See* scarp slope. { 'in,fās }

infancy [GEOL] The initial (youthful) or very early stage of the cycle of erosion characterized by smooth, nearly level erosional surfaces dissected by narrow stream gorges,

interglacial

- numerous depressions filled by marshy lakes and ponds, and shallow streams. Also known as topographic infancy. { 'in·fən·sē }
- infiltration** [GEOL] Deposition of mineral matter among the pores or grains of a rock by permeation of water carrying the matter in solution. { ,in·fil'trā·shən }
- infiltration vein** [GEOL] Vein deposited in rock by percolating water. { ,in·fil'trā·shən vān }
- Infracambrian** See Eocambrian. { |in·frə'kam·brē·ən }
- infusorial earth** [GEOL] Formerly, and incorrectly, a soft rock or an earthy substance composed of siliceous remains of diatoms. { ,in·fyə'sōr·ē·əl 'ərth }
- ingrown meander** [GEOL] A meander of a stream with an undercut bank on one side and a gentle slope on the other. { 'in·grōn mē'an·dər }
- initial dip** See primary dip. { i'nish·əl 'dip }
- initial landform** [GEOL] A landform that is produced directly by epeirogenic, orogenic, or volcanic activity, and whose original features are only slightly modified by erosion. { i'nish·əl 'land,fōrm }
- injected** [PETR] Pertaining to intrusive igneous rock or other mobile rock that has erupted through rock walls to neighboring older rocks. { in'jek·təd }
- injection** [GEOL] Also known as intrusion; sedimentary injection. **1.** A process by which sedimentary material is forced under abnormal pressure into a preexisting rock or deposit. **2.** A structure formed by an injection process. { in'jek·shən }
- injection gneiss** [PETR] A composite rock with banding entirely or partly caused by layer-by-layer injection of granitic magma into rock layers. { in'jek·shən 'nɪs }
- inlier** [GEOL] A circular or elliptical area of older rocks surrounded by strata that are younger. { 'in,lī·ər }
- inner core** [GEOL] The central part of the earth's core, extending from a depth of 3160 miles (5100 kilometers) to the center of the earth. Also known as siderosphere. { |in·ər 'kōr }
- inner mantle** See lower mantle. { |in·ər 'mant·əl }
- inorganic chert** [PETR] Chert derived from siliceous colloids precipitated from silica-saturated waters. { |in·ōr'gan·ik 'chərt }
- inosilicate** [GEOL] A class or structural type of silicate in which the SiO₄ tetrahedrons are linked together by the sharing of oxygens to form linear chains of indefinite length. { |in·ō'sil·ə,kāt }
- in-place stress field** See ambient stress field. { ,in ,plās 'stres ,fēld }
- inselberg** [GEOL] A large, steep-sided residual hill, knob, or mountain, generally rocky and bare, rising abruptly from an extensive, nearly level lowland erosion surface in arid or semiarid regions. Also known as island mountain. { 'in·səl,bərg }
- inshore zone** [GEOL] The zone of variable width extending from the shoreline at low tide through the breaker zone. { 'in,shōr 'zōn }
- insoluble residue** [GEOL] Material remaining after a geological specimen is dissolved in hydrochloric or acetic acid. { in'säl·yə·bəl 'rez·ə,dü }
- inspissation** [GEOCHEM] Thickening of an oil deposit by evaporation or oxidation, resulting, for example, after long exposure in pitch or gum formation. { ,in·spi'sā·shən }
- interbedded** [GEOL] Having beds lying between other beds with different characteristics. { |in·tər'bed·əd }
- intercalation** [GEOL] A layer located between layers of different character. { in,tər·kəl·ā·shən }
- interface** See seismic discontinuity. { 'in·tər,fās }
- interference ripple mark** [GEOL] A pattern resulting from two sets of symmetrical ripples formed by waves crossing at right angles. { ,in·tər'fir·əns 'rip·əl ,mārk }
- interfluve** [GEOL] The area of land between two rivers, usually an upland or ridge between two adjacent valleys that contain streams flowing in approximately the same direction. { 'in·tər,flüv }
- intergelisol** See pereletok. { |in·tər'jel·ə,sól }
- interglacial** [GEOL] Pertaining to or formed during a period of geologic time between two successive glacial epochs or between two glacial stages. { |in·tər'glā·shəl }

intergranular pressure

- intergranular pressure** See effective stress. { ʃin·tər'gran·yə·lər 'presh·ər }
- intergrowth** [MINERAL] A state of interlocking of different mineral crystals because of simultaneous crystallization. { 'in·tər,grōth }
- interlobate moraine** See intermediate moraine. { ʃin·tər'lō,bāt mə'rān }
- intermediate layer** See sima. { ,in·tər'mēd·ē·ət ʃlā·ər }
- intermediate moraine** [GEOL] A type of lateral moraine formed at the junction of two adjacent glacial lobes. Also known as interlobate moraine. { ,in·tər'mēd·ē·ət mə'rān }
- intermontane** [GEOL] Located between or surrounded by mountains. { ʃin·tər,män,tān }
- intermontane glacier** [GEOL] A glacier that is formed by the confluence of several valley glaciers and occupies a trough between separate ranges of mountains. { ʃin·tər,män,tān 'glā·shər }
- intermontane trough** [GEOL] **1.** A subsiding area in an island arc of the ocean, lying between the stable elements of a region. **2.** A basinlike area between mountains. { ʃin·tər,män,tān 'trōf }
- internal cast** See steinkern. { in'tərn·əl 'kast }
- internal erosion** [GEOL] Erosion effected within a compacting sediment by movement of water through the larger pores. { in'tərn·əl i'rō·zhən }
- internal sedimentation** [GEOL] Accumulation of clastic or chemical sediments derived from the surface of, or within, a more or less consolidated carbonate sediment (mud or silt); deposited in secondary cavities formed in the host rock (after its deposition) by bending of laminae or by internal erosion or solution. { in'tərn·əl ,sed·ə·mən'tā·shən }
- International Geophysical Year** [GEOPHYS] An internationally accepted period, extending from July 1957 through December 1958, for concentrated and coordinated geophysical exploration, primarily of the solar and terrestrial atmospheres. Abbreviated IGY. { ʃin·tər'ʃnash·ən·əl ,jē·ō'fiz·ə·kəl ,yir }
- internides** [GEOL] The internal part of an orogenic belt, farthest away from the craton, which is commonly the site of a eugeosyncline during its early phases and is later subjected to plastic folding and plutonism. Also known as primary arc. { in'tər·nə,dēz }
- interpluvial** [GEOL] Pertaining to an episode or period of geologic time that was dryer than the pluvial period occurring before or after it. { ,in·tər'plü·vē·əl }
- intersertal** [PETR] Referring to the texture of a porphyritic igneous rock in which the groundmass forms a small proportion of the rock, filling the interstices between unoriented feldspar laths. { ʃin·tər'ʃərd·əl }
- interstadial** [GEOL] Pertaining to a period during a glacial stage in which the ice retreated temporarily. { ,in·tər'stād·ē·əl }
- interstice** [GEOL] A pore space within a rock or soil. { in'tərs·təs }
- intraclast** [GEOL] A fragment of limestone formed by erosion within a basin of deposition and redeposited there to form a new sediment. { 'in·trə,klast }
- intracratonic basin** See autogeosyncline. { ʃin·trə·krə'tän·ik 'bā·sən }
- intraformational breccia** [PETR] A rock resulting from cracking and desiccation-shrinkage of a mud after withdrawal of water followed by almost contemporaneous sedimentation. { ʃin·trə,fór'māsh·ən·əl 'brech·ə }
- intraformational conglomerate** [GEOL] **1.** A conglomerate in which clasts and the matrix are contemporaneous in origin. **2.** A conglomerate formed in the midst of a geologic formation. { ʃin·trə,fór'māsh·ən·əl kən'gläm·ə·rət }
- intraformational fold** [GEOL] A minor fold confined to a sedimentary layer lying between undeformed beds. { in·trə,fór'māsh·ən·əl 'fōld }
- intrastratal solution** [GEOCHEM] A chemical attrition of the constituents of a rock after deposition. { ʃin·trə'strad·əl sə'lü·shən }
- intratelluric** [GEOL] **1.** Pertaining to a phenocryst that is formed earlier than its matrix. **2.** Pertaining to a period in which igneous rocks crystallized prior to their eruption. **3.** Located, formed, or originating at great depths within the earth. { ʃin·trə·tə'lyür·ik }
- intrazonal soil** [GEOL] A group of soils with well-developed characteristics that reflect

iron-stony meteorite

the dominant influence of some local factor of relief, parent material, or age over the usual effect of vegetation and climate. { ,in·trə'zɔn·əl 'sɔil }

intrusion [GEOL] **1.** The process of emplacement of magma in preexisting rock. Also known as injection; invasion; irruption. **2.** A large-scale sedimentary injection. Also known as sedimentary intrusion. **3.** Any rock mass formed by an intrusive process. { in'trū·zhən }

intrusive [PETR] Pertaining to material forced while still in a fluid state into cracks or between layers of rock. { in'trū·siv }

invasion [GEOL] **1.** The movement of one material into a porous reservoir area that has been occupied by another material. **2.** See intrusion; transgression. { in'vā·zhən }

inversion [GEOL] **1.** Development of inverted relief through which anticlines are transformed into valleys and synclines are changed into mountains. **2.** The occupancy by a lava flow of a ravine or valley that occurred in the side of a volcano. **3.** A diagenetic process in which unstable minerals are converted to a more stable form without a change in chemical composition. { in'vər·zhən }

inverted See overturned. { in'vərd·əd }

inverted plunge [GEOL] A plunge of a fold whose inclination has been carried past the vertical, so that the plunge is less than 90° in the direction opposite from the original attitude; younger rocks plunge beneath the older rocks. { in'vərd·əd 'plənj }

inverted relief [GEOL] A topographic configuration that is opposite to that of the geologic structure, for example, where a valley occupies the site of an anticline. { in'vərd·əd ri'li:f }

inyoite [MINERAL] $\text{Ca}_2\text{B}_6\text{O}_{11} \cdot 13\text{H}_2\text{O}$ A colorless, monoclinic mineral consisting of a hydrous calcium borate; hardness is 2 on Mohs scale, and specific gravity is 2. { in·yō,īt }

iodargyrite [MINERAL] AgI A yellowish or greenish hexagonal mineral composed of native silver iodide, usually occurring in thin plates. Also known as iodyrite. { ,ī·ə'där·jə,rīt }

iodobromite [MINERAL] Ag(Br,Cl,I) An isometric mineral composed of chloride, iodide, and bromide of silver; it is isomorphous with cerargyrite and bromyrite. { ,ī·ə·dä'brō,mīt }

iodyrite See iodargyrite. { ,ī'dä·ə,rīt }

ionite See anauxite. { ,ī·ə,nīt }

lowan glaciation [GEOL] The earliest substage of the Wisconsin glacial stage; occurred more than 30,000 years ago. { ,lō·ə·wən ,glā·sē'a·shən }

ipsonite [GEOL] The final stage of weathered asphalt; a black, infusible substance, only slightly soluble in carbon disulfide, containing 50–80% fixed carbon and very little oxygen. { ,ip·sə,nīt }

iron alum See halotrichite. { ,ī·ərn 'al·əm }

iron cordierite See sekaninaite. { ,ī·ərn 'kór·dē·ə,rīt }

iron formation [GEOL] Sedimentary, low-grade iron ore bodies consisting mainly of chert or fine-grained quartz and ferric oxide segregated in bands or sheets irregularly mingled. { ,ī·ərn fɔr'mā·shən }

iron glance See specularite. { ,ī·ərn 'glans }

iron hat See gossan. { ,ī·ərn 'hat }

iron mica See lepidomelane. { ,ī·ərn 'mī·kə }

iron ore [GEOL] Rocks or deposits containing compounds from which iron can be extracted. { ,ī·ərn 'ɔr }

iron pyrites See pyrite. { ,ī·ərn 'pī,rīts }

ironshot [MINERAL] Pertaining to a mineral with streaks or spots of iron or iron ore. { ,ī·ərn,shät }

iron spar See siderite. { ,ī·ərn 'spär }

iron spinel See hercynite. { ,ī·ərn spə'nel }

ironstone [PETR] An iron-rich sedimentary rock, either deposited directly as a ferruginous sediment or resulting from chemical replacement. { ,ī·ərn,stɔn }

iron-stony meteorite See stony-iron meteorite. { ,ī·ərn ,stō·nē 'mēd·ē·ə,rīt }

irrotational strain

- irrotational strain** [GEOL] Strain in which the orientation of the axes of strain does not change. Also known as nonrotational strain. { |ir·ə'tā·shən·əl 'strän }
- irruption** See intrusion. { i'rəp·shən }
- Irvingtonian** [GEOL] A stage of geologic time in southern California, in the lower Pleistocene, below the Rancholabrean. { ,ər·viŋ'tō·nē·ən }
- Ischnacanthidae** [PALEON] The single family of the acanthodian order Ischnacanthiformes. { ,isk·nə'kan·thə·dē }
- Ischnacanthiformes** [PALEON] A monofamilial order of extinct fishes of the order Acanthodii; members were slender, lightly armored predators with sharp teeth, deeply inserted fin spines, and two dorsal fins. { ,isk·nə·kan·thə'fōr,mēz }
- Isectolophidae** [PALEON] A family of extinct ceratomorph mammals in the superfamily Tapiroidea. { ,i'sek·tə'ləf·ə·dē }
- isentropic map** [GEOL] A map indicating constant entropy function for facies. { 'i's·ən'trəp·ik 'map }
- ishikawaite** [MINERAL] A black, orthorhombic mineral consisting essentially of uranium, iron, rare earth, and columbium oxide. { ,ish·ē'kə·wə'it }
- ishkyldite** [MINERAL] $Mg_{15}Si_{11}O_{27}(OH)_{20}$ A mineral composed of a basic silicate of magnesium. { 'ish·kəl,dit }
- isinglass** [MINERAL] Sheet mica, usually in the form of single cleavage plates; used in furnace and stove doors. { 'i'z·ən,glas }
- island mountain** See inselberg. { 'i·lənd 'maunt·ən }
- isocarb** [GEOCHEM] A line on a map that connects points of equal content of fixed carbon in coal. { 'i·sə,kərb }
- isochemical metamorphism** [PETR] Theoretically, a metamorphism involving no great change in its chemical composition. Also known as treptomorphism. { 'i·sō'kem·ə·kəl ,med·ə'mōr·fiz·əm }
- isochemical series** [PETR] A series of rocks with identical chemical compositions. { 'i·sō'kem·ə·kəl 'sir·ēz }
- isochron** [GEOCHEM] A line on a graph defined by data for rocks of the same age with the same initial lead isotopic composition, the slope of which is proportional to the age. Also known as geochron. { 'i·sə,krän }
- isoclasite** [MINERAL] $Ca_2(PO_4)(OH)·2H_2O$ A white mineral composed of a basic hydrous calcium phosphate; occurring in small crystals or columnar forms. { ,i·sə'klā,sit }
- isoclinar** See isoclinic line. { 'i·sə'klīn·əl }
- isoclinar chart** [GEOPHYS] A chart showing isoclinic lines. Also known as isoclinic chart. { 'i·sə'klīn·əl 'chärt }
- isocline** [GEOL] A fold of strata so tightly compressed that parts on each side dip in the same direction. { 'i·sə,klin }
- isoclinic chart** See isoclinar chart. { 'i·sə'klīn·ik 'chärt }
- isoclinic line** [GEOPHYS] A line connecting points on the earth's surface which have the same magnetic dip. Also known as isoclinal. { 'i·sə'klīn·ik 'līn }
- isodynamic line** [GEOPHYS] One of the lines on a map of a magnetic field that connect points having equal strengths of the earth's field. { 'i·sō·dī'nām·ik 'līn }
- isofacies map** [GEOL] A stratigraphic map showing the distribution of one or more facies within a particular stratigraphic unit. { 'i·sə'fā·shēz ,map }
- isogal** [GEOPHYS] A contour line on a map connecting points of equal gravity values on the earth's surface. { 'i·sə,gəl }
- isogam** [GEOPHYS] A line joining points on the earth's surface having the same value of the acceleration of gravity. { 'i·sə,gam }
- isogotherm** See geoisotherm. { 'i·sō'jē·ə,thərm }
- isogonic line** [GEOPHYS] **1.** Any of the lines on a chart or map showing the same direction of the wind vector. **2.** Any of the lines on a chart or map connecting points of equal magnetic variation. { 'i·sə'gän·ik ,līn }
- isograd** [GEOL] A line on a map joining those rocks comprising the same metamorphic grade. { 'i·sə,grad }
- isohume** [GEOL] A line of a map or chart connecting points of equal moisture content in a coal bed. { 'i·sə,hyüm }

I-type magma

- isolith** [GEOL] A line on a contour-type map that denotes the aggregate thickness of a single lithology in a stratigraphic succession composed of one or more lithologies. { 'I·sə,lɪθ }
- isolith map** [GEOL] A contour-line map depicting the thickness of an exclusive lithology. { 'I·sə,lɪθ ,mæp }
- isomagnetic** [GEOPHYS] Of or pertaining to lines connecting points of equality in some magnetic element. { 'I·sə'mæɡnɪd·ɪk }
- isomorph** See isomorphous mineral. { 'I·sə,mɔːf }
- isomorphous mineral** [MINERAL] Any two or more crystalline mineral compounds having different chemical composition but identical structure, such as the garnet series or the feldspar group. Also known as isomorph. { 'I·sə'mɔːf·ɪk 'mɪn·rəl }
- isopach map** [GEOL] Map of the areal extent and thickness variation of a stratigraphic unit; used in geological exploration for oil and for underground structural analysis. { 'I·sə,pæk ,mæp }
- isopachous line** [GEOL] One of the lines drawn on a map to indicate equal thickness. { 'I·sə'pæk·əs ,lɪn }
- isopor** [GEOPHYS] An imaginary line connecting points on the earth's surface having the same annual change in a magnetic element. { 'I·sə,pɔːr }
- isodeismal** [GEOPHYS] Pertaining to points having equal intensity of earthquake shock, or to a line on a map of the earth's surface connecting such points. { 'I·sə'sɪz·məl }
- isostasy** [GEOPHYS] A theory of the condition of approximate equilibrium in the outer part of the earth, such that the gravitational effect of masses extending above the surface of the geoid in continental areas is approximately counterbalanced by a deficiency of density in the material beneath those masses, while deficiency of density in ocean waters is counterbalanced by an excess in density of the material under the oceans. { 'I·səs·tə·sɪ }
- isostatic adjustment** See isostatic compensation. { 'I·sə'stad·ɪk ə'ʃəs·mənt }
- isostatic anomaly** [GEOPHYS] A gravity anomaly based on a generalized hypothesis that the gravitational effect of masses above sea level is approximately compensated by a density deficiency of the subsurface materials. { 'I·sə'stad·ɪk ə'näm·ə·lɪ }
- isostatic compensation** [GEOL] The process in which lateral transport at the surface of the earth by erosion or deposition is compensated by lateral movements in a subcrustal layer. Also known as isostatic adjustment; isostatic correction. { 'I·sə'stad·ɪk ,käm·pən'sā·ʃən }
- isostatic correction** See isostatic compensation. { 'I·sə'stad·ɪk kə'rek·ʃən }
- isotherm** [GEOPHYS] A line on a chart connecting all points of equal or constant temperature. { 'I·sə,θɜːm }
- isothermal** See isotherm. { 'I·sə'thɜːməl }
- isothermal chart** [GEOPHYS] A map showing the distribution of air temperature (or sometimes sea-surface or soil temperature) over a portion of the earth or at some level in the atmosphere; places of equal temperature are connected by lines called isotherms. { 'I·sə'thɜːməl 'tʃɑːrt }
- isothermal remanent magnetization** [GEOPHYS] A spurious magnetization induced by lightning strikes that produce large surface electrical currents. Abbreviated IRM. { 'I·sə'thɜːməl rɛm·ənənt ,mæɡ·nə'tɪz·ʃən }
- isotropic fabric** [PETR] A random orientation in space of the elements that compose a rock. { 'I·sə'trə·pɪk 'fæb·rɪk }
- itabirite** [GEOL] A laminated, metamorphosed, oxide-facies iron formation in which the original chert or jasper bands have been recrystallized into megascopically distinguished grains of quartz and in which the iron is present as thin layers of hematite, magnetite, or martite. { ,ɪd·ə'bi,rɪt }
- itacolumite** [PETR] A fine-grained, thin-bedded sandstone or a schistose quartzite that contains mica, chlorite, and talc and that exhibits flexibility when split into slabs. Also known as articulite. { 'ɪd·ə'käl·ə,mɪt }
- I-type magma** [GEOL] Magma formed from igneous source materials. { 'I ,tɪp 'mæɡ·mə }

J

jacinth *See* zircon. { 'jas·ənth }

jack *See* sphalerite. { jak }

jacobsite [MINERAL] $MnFe_2O_4$ A black magnetic mineral composed of an oxide of manganese and iron; a member of the magnetite series. { 'jā·kəb,zīt }

jacupirangite [PETR] An ultramafic plutonic rock that is part of the ijolite series; composed chiefly of titanaugite and magnetite, with a smaller amount of nepheline. { jə'kü·pə·rən,jīt }

jade [MINERAL] A hard, compact, dark-green or greenish-white gemstone composed of either jadeite or nephrite. Also known as jadestone. { jād }

jadeite [MINERAL] $NaAl(SiO_3)_2$ A clinopyroxene mineral occurring as green, fibrous monoclinic crystals; the most valuable variety of jade. { 'jā,dīt }

jadeitite [PETR] A type of metamorphic rock composed of jadeite associated with small amounts of feldspar or feldspathoids. { 'jād·ə,tīt }

jadestone *See* jade. { 'jād,stōn }

jamesonite [MINERAL] $Pb_4FeSb_6S_{14}$ A lead-gray to gray-black mineral that crystallizes in the orthorhombic system, occurs in acicular crystals with fibrous or featherlike forms, and has a metallic luster. Also known as feather ore; gray antimony. { 'jām·sə,nīt }

jarlite [MINERAL] $NaSr_3Al_3F_{16}$ A colorless to brownish mineral composed of aluminofluoride of sodium and strontium. { 'yār,līt }

jarosite [MINERAL] $KFe_3(SO_4)_2(OH)_6$ An ochre-yellow or brown alunite mineral having rhombohedral crystal structure. Also known as utahite. { jə'rō,sīt }

jaspagate *See* agate jasper. { 'jas·pə·gət }

jasper [PETR] A dense, opaque to slightly translucent cryptocrystalline quartz containing iron oxide impurities; characteristically red. Also known as jasperite; jasperoid; jaspis. { 'jas·pər }

jasperite *See* jasper. { 'jas·pə,rīt }

jasperoid *See* jasper. { 'jas·pə,rōid }

jaspilite [PETR] A compact siliceous rock resembling jasper and containing iron oxides in bands. { 'jas·pə,līt }

jaspis *See* jasper. { 'jas·pəs }

jaspoid *See* tachylite. { 'jas,pōid }

Java man [PALEON] An overspecialized, apelike form of *Homo sapiens* from the middle Pleistocene having a small brain capacity, low cranial vault, and massive browridges. { jāv·ə 'mān }

jaw [GEOL] The side of a narrow passage such as a gorge. { jō }

jeffersonite [MINERAL] $Ca(Mn,Zn,Fe)Si_2O_6$ A dark-green or greenish-black mineral composed of pyroxene. { 'jef·ər·sə,nīt }

jelly *See* ulmin. { 'jel·ē }

jeremejevite [MINERAL] $AlBO_3$ A colorless or yellowish mineral composed of aluminum borate that occurs in hexagonal crystals. { ,yer·ə'mā·ə,vīt }

jet coal [GEOL] A hard, lustrous, pure black variety of lignite, occurring in isolated masses in bituminous shale; thought to be derived from waterlogged driftwood. Also known as black amber. { 'jet 'kōl }

jezekite *See* morinite. { 'jez·ə,kīt }

J function

- J function** [GEOPHYS] A dimensionless mathematical relationship to correlate capillary pressure data of similar geologic formations. { 'jā ,fəŋk·shən }
- joaquinite** [MINERAL] $\text{NaBa}_2\text{Ce}_2\text{Fe}(\text{Ti,Nb})_2\text{Si}_8\text{O}_{26}(\text{OH,F})_2$ A honey-yellow mineral composed of sodium iron titanium silicate, occurring in orthorhombic crystals. { wā'kē,nīt }
- johannite** [MINERAL] $\text{Cu}(\text{UO}_2)_2(\text{SO}_4)_2 \cdot 6\text{H}_2\text{O}$ An emerald green to apple green, triclinic mineral consisting of a hydrated basic copper and uranium sulfate. { jō'ha,nīt }
- johannsenite** [MINERAL] $\text{CaMnSi}_2\text{O}_6$ A clove-brown, grayish, or greenish clinopyroxene mineral composed of a silicate of calcium and manganese; a member of the pyroxene group. { jō'han·sə,nīt }
- johnstrupite** [MINERAL] A mineral that is composed of a complex silicate of cerium and other metals, approximately $(\text{Ca,Na})_3(\text{Ce,Ti,Zr})(\text{SiO}_4)_2\text{F}$; occurs in prismatic crystals. { 'jān·strə,pīt }
- joint** [GEOL] A fracture that traverses a rock and does not show any discernible displacement of one side of the fracture relative to the other. { jōint }
- joint block** [GEOL] A body of rock that is bounded by joints. { 'jōint ,blāk }
- joint drag** See kink band. { 'jōint ,drag }
- jointing** [GEOL] A condition of rock characterized by joints. { 'jōint·iŋ }
- joint plane** [GEOL] The surface of fracturing or potential fracture of a joint. { 'jōint ,plān }
- joint set** [GEOL] A group of parallel joints in a geologic formation. { 'jōint ,set }
- joint system** [GEOL] Two or more joint sets. { 'jōint ,sis·təm }
- joint vein** [GEOL] A small vein in a joint. { 'jōint ,vān }
- jordanite** [MINERAL] $(\text{Pb,Tl})_{13}\text{As}_7\text{S}_{23}$ A lead-gray mineral composed of lead arsenic sulfide, occurring as monoclinic crystals. { 'jōrd·ən,īt }
- joseite** [MINERAL] $\text{Bi}_3\text{Te}(\text{Si,S})$ A mineral composed of telluride of bismuth containing sulfur and selenium. { zhə'zā,īt }
- josén** See hartite. { 'jō·sən }
- josephinite** [MINERAL] A mineral consisting of an alloy of iron and nickel; occurs naturally in stream gravel. { 'jō·zə'fē,nīt }
- julienite** [MINERAL] $\text{Na}_2\text{Co}(\text{SCN})_4 \cdot 8\text{H}_2\text{O}$ A blue, tetragonal mineral consisting of a hydrated sodium cobalt thiocyanate. { 'jül·yə,nīt }
- Jura** See Jurassic. { 'jūr·ə }
- Jurassic** [GEOL] Also known as Jura. **1.** The second period of the Mesozoic era of geologic time. **2.** The corresponding system of rocks. { jə'ras·ik }
- jurupaite** [MINERAL] $(\text{Ca,Mg})_2(\text{Si}_2\text{O}_5)(\text{OH})_2$ A mineral composed of hydrous calcium magnesium silicate. { hə'rüp·ə,īt }
- juvenile rift** [GEOL] A stage of continental breakup before the onset of actual spreading which precedes the generation of new oceanic lithosphere. { 'jü·və·nəl 'rīft }
- juvite** [PETR] A light-colored nepheline syenite in which the feldspar is exclusively or predominantly orthoclase and the potassium oxide content is higher than the sodium oxide content. { 'jü,vīt }

K

- K-A age** [GEOL] The radioactive age of a rock determined from the ratio of potassium-40 (^{40}K) to argon-40 (^{40}A) present in the rock. { 'kā'ā' ,āj }
- kainite** [MINERAL] $\text{MgSO}_4 \cdot \text{KCl} \cdot 3\text{H}_2\text{O}$ A white, gray, pink, or black monoclinic mineral, occurring in irregular granular masses; used as a fertilizer and as a source of potassium and magnesium compounds. { 'kī,nīt }
- kainosite** [MINERAL] $\text{Ca}_2(\text{Ce},\text{Y})_2(\text{SiO}_4)_3\text{CO}_3 \cdot \text{H}_2\text{O}$ A yellowish-brown mineral composed of a hydrous silicate and carbonate of calcium, cerium, and yttrium. { 'kī-nə,sīt }
- kaliborite** [MINERAL] $\text{HKMg}_2\text{B}_2\text{O}_{21} \cdot 9\text{H}_2\text{O}$ A colorless to white mineral composed of a hydrous borate of potassium and magnesium. Also known as paternoite. { ,kal-ə'bö,rīt }
- kalicinite** [MINERAL] KHCO_3 A colorless to white or yellowish, monoclinic mineral consisting of potassium bicarbonate; occurs in crystalline aggregates. { ,kə'lis-ən,īt }
- kalsilite** [MINERAL] $\text{KAl}(\text{SO}_4)_2 \cdot 11\text{H}_2\text{O}$ A birefringent mineral of the alum group composed of a hydrous sulfate of potassium and aluminum, occurring in fibrous form. Also known as potash alum. { 'kal-ə,nīt }
- kaliophilite** [MINERAL] KAlSiO_4 A rare hexagonal tectosilicate mineral found in volcanic rocks; high in potassium and low in silica, it is dimorphous with kalsilite. Also known as facellite; phacellite. { ,kal-ə'äf-ə,līt }
- kalkowskite** [MINERAL] $\text{Fe}_2\text{Ti}_3\text{O}_9$ A rare, brownish or black mineral composed of an oxide of iron and titanium, usually with small amounts of rare-earth elements, niobium, and tantalum. { kal'kóf,sīt }
- kalsilite** [MINERAL] KAlSiO_4 A rare mineral from volcanic rocks in southwestern Uganda; the crystal system is hexagonal; kalsilite is dimorphous with kaliophilite and sometimes contains sodium. { 'kal-sə,līt }
- kalunite** [MINERAL] The naturally occurring form of alum. { 'kal-ə,nīt }
- kamacite** [MINERAL] A mineral composed of a nickel-iron alloy and comprising with taenite the bulk of most iron meteorites. { 'kam-ə,sīt }
- kame** [GEOL] A low, long, steep-sided mound of glacial drift, commonly stratified sand and gravel, deposited as an alluvial fan or delta at the terminal margin of a melting glacier. { kām }
- kame terrace** [GEOL] A terracelike ridge deposited along the margins of glaciers by meltwater streams flowing adjacent to the valley walls. { kām ,ter-əs }
- Kansan glaciation** [GEOL] The second glaciation of the Pleistocene epoch in North America; began about 400,000 years ago, after the Aftonian and before the Yarmouth interglacials. { 'kan-zən ,glā-sē'ā-shən }
- kansite** See mackinawite. { 'kan,zīt }
- kaolin** [MINERAL] Any of a group of clay minerals, including kaolinite, nacrite, dickite, and anauxite, with a two-layer crystal in which silicon-oxygen and aluminum-hydroxyl sheets alternate; approximate composition is $\text{Al}_2\text{O}_3 \cdot 2\text{SiO}_2 \cdot 2\text{H}_2\text{O}$. [PETR] A soft, non-plastic white rock composed principally of kaolin minerals. Also known as bolus alba; white clay. { 'kā-ə-lən }
- kaolinite** [MINERAL] $\text{Al}_2\text{Si}_2\text{O}_5(\text{OH})_4$ A common hydrous aluminum silicate mineral found in sediments, soils, hydrothermal deposits, and sedimentary rocks. It is a member of the kaolin group of minerals, which include dickite, halloysite, nacrite, ordered kaolinite, and disordered kaolinite. { 'kā-ə-lə,nīt }

kaolinization

- kaolinization** [GEOL] The forming of kaolin by the weathering of aluminum silicate minerals or other clay minerals. { ,kā·ə·lə·nə'zā·shən }
- Karnian** See Carnian. { 'kār·nē·ən }
- karren** [GEOL] Furrows or channels formed on the surface of soluble bedrock by dissolution of a portion of the rock. Also known as lapies. { kar·ən }
- Karoo System** [GEOL] Glaciated strata formed in Permian times in southern Africa. { kə'rū ,sis·təm }
- karst** [GEOL] A topography formed over limestone, dolomite, or gypsum and characterized by sinkholes, caves, and underground drainage. { kārst }
- karst base level** [GEOL] The level below which karstification ceases in an area of karst topography. { 'kārst 'bās ,lev·əl }
- karst fenster** See karst window. { 'kārst ,fen·stər }
- karstification** [GEOL] Formation of the features of karst topography by the chemical, and sometimes mechanical, action of water in a region of limestone, dolomite, or gypsum bedrock. { ,kār·stə·fə'kā·shən }
- karst plain** [GEOL] A plain on which karst features are developed. { 'kārst ,plān }
- karst window** [GEOL] An area over a subterranean stream that is open to the surface and appears as a depression at whose bottom the stream is visible. Also known as karst fenster. { 'kārst ,win·dō }
- kasolite** [MINERAL] $Pb(UO_2)SiO_4 \cdot H_2O$ Yellow-ocher mineral composed of a hydrous lead uranium silicate, occurring in monoclinic crystals. { 'kas·ə,līt }
- katazone** [GEOL] The lowest depth zone of metamorphism; features include high temperatures (500–700°C), strong hydrostatic pressure, and little or no shearing stress. { 'kad·ə,zōn }
- katoptrite** See catoptrite. { kə'tāp,trīt }
- kay** See key. { kā }
- Kazanian** [GEOL] A European stage of geologic time: Upper Permian (above Kungurian, below Tatarian). { kə'zā·nē·ən }
- K bentonite** See potassium bentonite. { 'kā 'ben·tə,nīt }
- Keewatin** [GEOL] A division of the Archeozoic rocks of the Canadian Shield. { kē'wāt·ən }
- Kegel karst** See cone karst. { 'kā·gəl ,kārst }
- kelyphite** [MINERAL] An amorphous mineral composed of a basic hydrous calcium aluminum zinc phosphate, occurring in massive form. { 'kē·ō,līt }
- Keilor skull** [PALEON] An Australian fossil type specimen of *Homo sapiens* from the Pleistocene. { 'kē·lər ,skəl }
- kelyphite** See corona. { 'kē·lə,līt }
- kelyphytic border** See kelyphytic rime. { 'kē·lə'fid·ik 'bör·dər }
- kelyphytic rime** [PETR] A peripheral zone of pyroxene or amphibole developed around olivine in some igneous rocks. Also known as kelyphytic border. { 'kē·lə'fid·ik 'rīm }
- kempite** [MINERAL] $Mn_2(OH)_3Cl$ An emerald-green orthorhombic mineral composed of a basic manganese oxychloride, occurring in small crystals. { 'kem,pīt }
- Kenoran orogeny** See Algoman orogeny. { kə'nōr·ən ó'rāj·ə·nē }
- kentrolite** [MINERAL] $Pb_2Mn_2Si_2O_9$ A dark reddish-brown mineral composed of a lead manganese silicate. { 'ken·trō,līt }
- Kenyapithecus** [PALEON] An early member of Hominidae from the Miocene. { ,ken·yə'pith·ə·kəs }
- kenyte** [MINERAL] A variety of phonolite containing olivine in addition to anorthoclase feldspar, nepheline, acmite-augite, sodic amphibole, apatite, and opaque oxides. { 'ke,nīt }
- kerabituden** See kerogen. { 'ker·ə·bətü·mən }
- keratophyre** [PETR] Any dike rock or salic lava that is characterized by the presence of albite or albite oligoclase, chlorite, epidote, and calcite. { 'ker·əd·ō,fī·ər }
- kermesite** [MINERAL] Sb_2S_3O A cherry-red mineral occurring as tufts of capillary crystals, and formed from an alteration of stibnite. Also known as antimony blende; purple blende; pyrostibite; red antimony. { 'kər·mə,zīt }

Kirkbyidae

- kernite** [MINERAL] $\text{Na}_2\text{B}_4\text{O}_7 \cdot 4\text{H}_2\text{O}$ A colorless to white hydrous borate mineral crystallizing in the monoclinic system and having vitreous luster; an important source of boron. Also known as rasorite. { 'kær,nīt }
- kerogen** [GEOL] The complex, fossilized organic material present in sedimentary rocks, especially in shales; converted to petroleum products by distillation. Also known as kerabittumen; petrologen. { 'ker·ə·jən }
- kerogen shale** See oil shale. { 'ker·ə·jən ,shāl }
- kerosine shale** See torbanite. { 'ker·ə,sēn ,shāl }
- kersantite** [PETR] Dark dike rocks consisting mostly of biotite, plagioclase, and augite. { kær'zan,tīt }
- kettle** [GEOL] **1.** A bowl-shaped depression with steep sides in glacial drift deposits that is formed by the melting of glacier ice left behind by the retreating glacier and buried in the drift. Also known as kettle basin; kettle hole. **2.** See pothole. { 'ked·əl }
- kettle basin** See kettle. { 'ked·əl ,bās·ən }
- kettle hole** See kettle. { 'ked·əl ,hōl }
- Keuper** [GEOL] A European stage of geologic time, especially in Germany; Upper Triassic. { 'kōip·ər }
- Keweenaw** [GEOL] The younger of two Precambrian time systems that constitute the Proterozoic period in Michigan and Wisconsin. { 'kē·wē'nō·ən }
- key** [GEOL] A cay, especially one of the islets off the south of Florida. Also spelled kay. { kē }
- key bed** [GEOL] Also known as index bed; key horizon; marker bed. **1.** A stratum or body of strata that has distinctive characteristics so that it can be easily identified. **2.** A bed whose top or bottom is employed as a datum in the drawing of structure contour maps. { 'kē ,bed }
- key horizon** See key bed. { 'kē hō,rīz·ən }
- K feldspar** See potassium feldspar. { 'kā 'fel,spär }
- khibinite** See mosandrite. { 'kib·ə,nīt }
- kidney ore** [MINERAL] A form of hematite found in compact masses, concretions, or nodules that are kidney-shaped. { 'kid·nē ,ōr }
- kidney stone** See nephrite. { 'kid·nē ,stōn }
- kieselguhr** See diatomaceous earth. { 'kē·zəl,gūr }
- kieserite** [MINERAL] $\text{MgSO}_4 \cdot \text{H}_2\text{O}$ A white mineral that crystallizes in the monoclinic system, is composed of hydrous magnesium sulfate, and occurs in saline residues. { 'kē·zə,rīt }
- Kilkenny coal** See anthracite. { kil'ken·ē 'kōl }
- Kimberley reefs** [GEOL] Gold-bearing reefs in southern Africa that lie above the Main reef and Bird reef groups. Also known as battery reefs. { 'kim·bər·lē ,rēfs }
- kimberlite** [PETR] A form of mica periodite that is formed mainly of phenocrysts, olivine, phlogopite, and subordinate melilite with minor amounts of pyroxene, apatite, perovskite, and opaque oxides. { 'kim·bər,līt }
- Kimmeridgian** [GEOL] A European stage of geologic time; middle Upper Jurassic, above Oxfordian, below Portlandian. { ,kim·ə'rīj·ē·ən }
- kimzeyite** [MINERAL] $\text{Ca}_3(\text{Zr,Ti})_2(\text{Al,Si})_3\text{O}_{12}$ A mineral of the garnet group. { 'kim·zē,īt }
- Kinderhookian** [GEOL] Lower Mississippian geologic time, above the Chatauquan of Devonian, below Osagian. { ,kin·dər,'hūk·ē·ən }
- kink band** [GEOL] A deformation band in a single crystal or in foliated rocks in which the orientation is changed due to slipping on several parallel slip planes. Also known as joint drag; knick band; knick zone. { 'kiŋk ,band }
- kinzigite** [PETR] A coarse-grained metamorphic rock that is formed principally of garnet and biotite, with K feldspar, quartz, mica, cordierite, and sillimanite. { 'kin·zə,gīt }
- Kirkbyacea** [PALEON] A monomorphic superfamily of extinct ostracods in the suborder Beyrichicopina, all of which are reticulate. { ,kærk·bē'ās·ē·ə }
- Kirkbyidae** [PALEON] A family of extinct ostracods in the superfamily Kirkbyacea in which the pit is reduced and lies below the middle of the valve. { kærk'bē·ə,dē }

kirovite

- kirovite** [MINERAL] $(\text{Fe,Mg})\text{SO}_4 \cdot 7\text{H}_2\text{O}$ A mineral composed of a hydrous sulfate of iron and magnesium; it is isomorphous with malanterite and pisanite. { 'kir·ə,vit }
- kirwanite** [MINERAL] A type of anthracite coal with a metallic luster. { 'kər·wə,nit }
- klapperstein** See rattle stone. { 'kläp·ər,shtīn }
- klaprothite** [MINERAL] $\text{Cu}_6\text{Bi}_4\text{S}_9$ A gray mineral composed of copper bismuth sulfide. { 'klap·rə,thīt }
- klebelsbergite** [MINERAL] A mineral composed of basic antimony sulfate, occurring between crystals of stibnite. { 'klä·bälz,bər,gīt }
- kleinite** [MINERAL] A yellow to orange mineral composed of a basic oxide, sulfate, and chloride of mercury and ammonium. { 'klī,nīt }
- klint** [GEOL] An exhumed coral reef or bioherm that is more resistant to the processes of erosion than the rocks that enclose it so that the core remains in relief as hills and ridges. { klint }
- klintite** [GEOL] The dense, hard dolomite composing a klint; gives to the core a strength and resistance to erosion. { 'klin,tīt }
- klippe** [GEOL] A block of rock that is separated from underlying rocks by a fault that usually has a gentle dip. { klip }
- lockmannite** [MINERAL] CuSe A slate gray mineral consisting of copper selenide; occurs in granular aggregates. { 'kläk·mə,nīt }
- Kloedenellacea** [PALEON] A dimorphic superfamily of extinct ostracods in the suborder Kloedenellopina having the posterior part of one dimorph longer and more inflated than the other dimorph. { ,klēd·ən·ə'lās·ē·ə }
- Kloedenellopina** [PALEON] A suborder of extinct ostracods in the order Paleocopa characterized by a relatively straight dorsal border with a gently curved or nearly straight ventral border. { ,klēd·ən·el·ə'käp·ə·nə }
- knebelite** [MINERAL] $(\text{Fe,Mn})_2\text{SiO}_4$ A mineral composed of an iron manganese silicate. { 'nä·bälīt }
- knick** See knickpoint. { nik }
- knick band** See kink band. { 'nik ,band }
- knickpoint** [GEOL] A point of sharp change of slope, especially in the longitudinal profile of a stream or of its valley. Also known as break; knick; nick; nickpoint; rejuvenation head; rock step. { 'nik ,pōint }
- knick zone** See kink band. { 'nik ,zōn }
- knob** [GEOL] **1.** A rounded eminence, such as a knoll, hillock, or small hill or mountain, and especially a prominent or isolated hill with steep sides. **2.** A peak or other projection at the top of a hill or mountain. { näb }
- knoll** [GEOL] A mound rising less than 3300 feet (1000 meters) from the sea floor. Also known as sea knoll. { ,nöl }
- knopite** [MINERAL] A cerium-bearing variety of perovskite. { 'nä,pīt }
- knoxvillite** See copiapite. { 'näks·vi,līt }
- kobellite** [MINERAL] $\text{Pb}_2(\text{Bi,Sb})_2\text{S}_5$ A blackish-gray mineral composed of antimony bismuth lead sulfide. { 'kō·bälīt }
- koehliinite** [MINERAL] Bi_2MoO_6 A greenish-yellow orthorhombic mineral composed of a bismuth molybdate. { 'kek·lə,nīt }
- koenite** [MINERAL] $\text{Mg}_3\text{Al}_2(\text{OH})_2\text{Cl}_4$ A very soft mineral composed of a basic magnesium aluminum chloride. { 'kō·nə,nit }
- koettigite** [MINERAL] $\text{Zn}_3(\text{AsO}_4)_2 \cdot 8\text{H}_2\text{O}$ A carmine mineral composed of a hydrated zinc arsenate. { 'ked·i,gīt }
- koktaite** [MINERAL] $(\text{NH}_4)_2\text{Ca}(\text{SO}_4)_2 \cdot \text{H}_2\text{O}$ A mineral composed of a hydrous calcium ammonium sulfate. { 'käk·tə,īt }
- kolbeckite** [MINERAL] A blue to gray mineral composed of a hydrous beryllium aluminum calcium silicate and phosphate. Also known as sterrettite. { 'kōl,be,kīt }
- komatite** [PETR] A mantle-derived igneous rock with a high content of magnesium, particularly magnesium oxide. { kō'mäd·ē,īt }
- kongsbergite** [MINERAL] A silver-rich variety of a native amalgam composed of silver (95) and mercury (5). { 'kaŋz,bər,gīt }

kyanite

- koninckite** [MINERAL] $\text{FePO}_4 \cdot 3\text{H}_2\text{O}$ A yellow mineral composed of a hydrous ferric phosphate. { 'kō·niŋ,kīt }
- koppite** [MINERAL] Mineral composed of a form of pyrochlore containing cerium, iron, and potassium. { 'kă,pīt }
- kornelite** [MINERAL] $\text{Fe}_2(\text{SO}_4)_3 \cdot 7\text{H}_2\text{O}$ A colorless to brown mineral composed of hydrous ferric sulfate. { 'kōrn·əl,īt }
- kornerupine** [MINERAL] $(\text{Mg,Fe,Al})_{20}(\text{Si,B})_9\text{O}_{43}$ A colorless, yellow, brown, or sea-green mineral composed of magnesium iron borosilicate. { ,kōr·nə'rū,pēn }
- kosmochlor** See ureyite. { 'kăz·mə,klōr }
- kotoite** [MINERAL] $\text{Mg}_3(\text{BO}_3)_2$ An orthorhombic borate mineral; it is isostructural with jimboite. { 'kōd·ə,wīt }
- krausite** [MINERAL] $\text{KFe}(\text{SO}_4)_2 \cdot \text{H}_2\text{O}$ A yellowish-green mineral composed of hydrous potassium iron sulfate. { 'kraū,sīt }
- kremersite** [MINERAL] $[(\text{NH}_4),\text{K}]_2\text{FeCl}_5 \cdot \text{H}_2\text{O}$ A red mineral composed of hydrous potassium ammonium iron chloride, occurring in octahedral crystals. { 'krem·ər,zīt }
- krennerite** [MINERAL] AuTe_2 A silver-white to pale-yellow mineral composed of gold telluride and often containing silver. Also known as white tellurium. { 'kren·ə,rīt }
- kribergite** [MINERAL] $\text{Al}_3(\text{PO}_4)_3(\text{SO}_4)(\text{OH})_4 \cdot 2\text{H}_2\text{O}$ White, chalklike mineral composed of hydrous basic aluminum sulfate and phosphate. { 'krib·ər,gīt }
- krohnkite** [MINERAL] $\text{Na}_2\text{Cu}(\text{SO}_4)_2 \cdot 2\text{H}_2\text{O}$ An azure-blue monoclinic mineral composed of hydrous copper sodium sulfate, occurring in massive form. { 'kreŋ,kīt }
- crocidolite** See crocidolite. { krə'kid·əl,īt }
- kryolithionite** [MINERAL] $\text{Na}_3\text{Li}_3(\text{AlF}_6)_2$ Variety of spodumene found in Greenland; has a crystal structure resembling that of garnet. { ,krī·ə'lith·ē·ə,nīt }
- Kuehneosauridae** [PALEON] The gliding lizards, a family of Upper Triassic reptiles in the order Squamata including the earliest known aerial vertebrates. { 'kyūn,nē·ō'sōr·ə,dē }
- kukersite** [GEOL] An organic sediment rich in remains of the alga *Gloexapsamorpha prisca*; found in the Ordovician of Estonia. { 'kü·kər,sīt }
- Kungurian** [GEOL] A European stage of geologic time; Middle Permian, above Artinskian, below Kazanian. { kŋ'gūr·ē·ən }
- kunzite** [MINERAL] A pinkish gem variety of spodumene. { 'künt,sīt }
- kurnakovite** [MINERAL] $\text{Mg}_2\text{B}_6\text{O}_{11} \cdot 13\text{H}_2\text{O}$ A white mineral composed of hydrous magnesium borate. { kūr'näk·ə,vīt }
- kutnahorite** [MINERAL] $\text{Ca}(\text{Mn,Mg,Fe})(\text{CO}_3)_2$ A rare carbonate of calcium and manganese, found with some magnesium and iron substituting for manganese; forms rhombohedral crystals and is isomorphous with dolomite. { ,kət·nə'hōr,īt }
- Kutorginida** [PALEON] An order of extinct brachiopod mollusks that is unplaced taxonomically. { ,küd·ər'jīn·ə·də }
- kyanite** [MINERAL] Al_2SiO_5 A blue or light-green neosilicate mineral; crystallizes in the triclinic system, and luster is vitreous to pearly; occurs in long, thin bladed crystals and crystalline aggregates. Also known as cyanite; disthene; sappare. { 'kī·ə,nīt }

L

- labite** [MINERAL] $\text{MgSi}_3\text{O}_6(\text{OH})_2 \cdot \text{H}_2\text{O}$ A mineral composed of hydrous basic silicate of magnesium. { 'lā,bīt }
- labradorite** [MINERAL] A gray, blue, green, or brown plagioclase feldspar with composition ranging from $\text{Ab}_{50}\text{An}_{50}$ to $\text{Ab}_{30}\text{An}_{70}$, where $\text{Ab} = \text{NaAlSi}_3\text{O}_8$ and $\text{An} = \text{CaAl}_2\text{Si}_2\text{O}_8$; in the course of formation when the natural material cools, the feldspar sometimes exhibits a variously colored luster. Also known as Labrador spar. { 'lab·rə,dō,rīt }
- Labrador spar** See labradorite. { 'lab·rə,dō,r 'spär }
- Labyrinthodontia** [PALEON] A subclass of fossil amphibians descended from crossopterygian fishes, ancestral to reptiles, and antecedent to at least part of other amphibian types. { ,lab·ə,rin·thə'dän·chə }
- laccolith** [GEOL] A body of igneous rock intruding into sedimentary rocks so that the overlying strata have been notably lifted by the force of intrusion. { 'lak·ə,lith }
- lacroixite** [MINERAL] A pale yellowish-green mineral composed of basic phosphate of aluminum, calcium, manganese, and sodium (often with fluorine), occurring as crystals. { lə'krwä,zīt }
- lacustrine** [GEOL] Belonging to or produced by lakes. { lə'kəs·trən }
- lacustrine sediments** [GEOL] Sediments that are deposited in lakes. { lə'kəs·trən 'sed·ə·məns }
- lacustrine soil** [GEOL] Soil that is uniform in texture but variable in chemical composition and that has been formed by deposits in lakes which have become extinct. { lə'kəs·trən 'sōil }
- Ladinian** [GEOL] A European stage of geologic time: upper Middle Triassic (above Anisian, below Carnian). { lə'din·ē·ən }
- lag deposit** [GEOL] Residual accumulation of coarse, unconsolidated rock and mineral debris left behind by the winnowing of finer material. { 'lag di,päz·ət }
- lag fault** [GEOL] A minor low-angle thrust fault occurring within an overthrust; it develops when one part of the mass is thrust farther than an adjacent higher or lower part. { 'lag ,fólt }
- lag gravel** [GEOL] Residual accumulations of particles that are coarser than the material that has blown away. { 'lag ,grav·əl }
- lahar** [GEOL] **1.** A mudflow or landslide of pyroclastic material occurring on the flank of a volcano. **2.** The deposit of mud or land so formed. { 'lä,här }
- lake ore** See bog iron ore. { 'lāk ,ōr }
- lake peat** [GEOL] A sedimentary peat formed near lakes. { 'lāk ,pēt }
- lake plain** [GEOL] One of the surfaces of the earth that represent former lake bottoms; these featureless surfaces are formed by deposition of sediments carried into the lake by streams. { 'lāk ,plān }
- lamina** [GEOL] A thin, clearly differentiated layer of sedimentary rock or sediment, usually less than 1 centimeter thick. { 'lam·ə·nə }
- laminite** [GEOL] Any sedimentary rock composed of millimeter- or finer-scale layers. { 'lam·ə,nīt }
- lampadite** [MINERAL] A mineral composed chiefly of hydrous manganese oxide with as much as 18% copper oxide and often cobalt oxide. { 'lam·pə,dīt }
- lamprobolite** See basaltic hornblende. { ,lam·prə'bō,līt }

lamprophyllite

- lamprophyllite** [MINERAL] $\text{Na}_2\text{SrTiSi}_2\text{O}_8$ A mineral composed of titanium strontium sodium silicate. { ,lam·prə'fi,līt }
- lamprophyre** [PETR] Any of a group of igneous rocks characterized by a porphyritic texture in which abundant, large crystals of dark-colored minerals appear set in a not visibly crystalline matrix. { 'lam·prə,fi·ər }
- Lanarkian** [GEO] A European stage of geologic time forming part of the lower Upper Carboniferous, above Lancastrian and below Yorkian, equivalent to lowermost Westphalian. { lə'när·kē·ən }
- lanarkite** [MINERAL] Pb_2OSO_4 A white, greenish, or gray monoclinic mineral consisting of basic lead sulfate, with specific gravity of 6.92; formed by action of heat and air on galena. { 'lan·ər,kīt }
- Lancastrian** [GEO] A European stage of geologic time forming part of the lower Upper Carboniferous, above Viséan and below Lanarkian. { lən'kas·trē·ən }
- Landenian** [GEO] A European stage of geologic time: upper Paleocene (above Montian, below Ypresian of Eocene). { lan'den·ē·ən }
- landesite** [MINERAL] A brown mineral consisting of a hydrated phosphate of iron and manganese. { 'lan·də,sīt }
- landform map** See physiographic diagram. { 'lan,förm ,map }
- land pebble** See land pebble phosphate. { 'land ,peb·əl }
- land pebble phosphate** [GEO] A pebble phosphate in a clay or sand bed below the ground surface; a small amount of uranium is often present and is recovered as a by-product; used as a source of phosphate fertilizer. Also known as land pebble; land rock; matrix rock. { 'land ,peb·əl 'fäs,fät }
- land rock** See land pebble phosphate. { 'land ,ræk }
- landscape agate** [MINERAL] A type of chalcedony that is translucent and contains inclusions which give it an appearance reminiscent of familiar natural scenes. Also known as fortification agate. { 'lan,skäp ,äg·ət }
- landslide** [GEO] The perceptible downward sliding or falling of a relatively dry mass of earth, rock, or combination of the two under the influence of gravity. Also known as landslip. { 'lan,slīd }
- landslide track** [GEO] An exposed path in rock or earth created as the result of a landslide. { 'lan,slīd ,trak }
- landslip** See landslide. { 'lan,slip }
- langbanite** [MINERAL] An iron-black hexagonal mineral composed of silicate and oxide of manganese, iron, and antimony, occurring in prismatic crystals. { 'läng·bə,nīt }
- langbeinite** [MINERAL] $\text{K}_2\text{Mg}_2(\text{SO}_4)_3$ Colorless, yellowish, reddish, or greenish hexagonal mineral with vitreous luster, found in salt deposits; used in the fertilizer industry as a source of potassium sulfate. { 'läng,bi,nīt }
- langite** [MINERAL] A blue to green mineral composed of basic hydrous copper sulfate. { 'läng,īt }
- lansfordite** [MINERAL] $\text{MgCO}_3 \cdot 5\text{H}_2\text{O}$ A mineral composed of hydrous basic carbonate of magnesium when extracted from the earth, changing to nesquehovite after exposure to the air. { 'lanz·fər,dīt }
- lanthanite** [MINERAL] $(\text{La,Ce})_2(\text{CO}_3)_3 \cdot 8\text{H}_2\text{O}$ A colorless, white, pink, or yellow mineral composed of hydrous lanthanum carbonate, occurring in crystals or in earthy form. { 'lan·thə,nīt }
- lapies** See karren. { lə'pēz }
- lapilli** [GEO] Pyroclasts that range from 0.04 to 2.6 inches (1 to 64 millimeters) in diameter. { lə'pi,lī }
- lapilli-tuff** [GEO] A pyroclastic deposit that is indurated and consists of lapilli in a fine tuff matrix. { lə'pi,lī 'təf }
- lapis lazuli** [PETR] An azure-blue, violet-blue, or greenish-blue, translucent to opaque crystalline rock used as a semiprecious stone; composed chiefly of lazurite and calcite with some haiüyne, sodalite, and other minerals. Also known as lazuli. { 'lap·is 'laz·ə·lē }
- Laramic orogeny** See Laramidian orogeny. { 'lar·ə·mik ə'räj·ə·nē }
- Laramide orogeny** See Laramidian orogeny. { 'lar·ə·məd ə'räj·ə·nē }

laumontite

- Laramide revolution** *See* Laramidian orogeny. { 'lar·ə·məd ,rev·ə'lü·shən }
- Laramidian orogeny** [GEOLOGY] An orogenic era typically developed in the eastern Rocky Mountains; phases extended from Late Cretaceous until the end of the Paleocene. Also known as Laramic orogeny; Laramide orogeny; Laramide revolution. { ,lar·ə'mid·ē·ən ö'räj·ə·nē }
- larderillite** [MINERAL] $(\text{NH}_4)\text{B}_5\text{O}_8 \cdot 2\text{H}_2\text{O}$ A white mineral composed of hydrous ammonium borate, occurring as a crystalline powder. { ,lär·də're,līt }
- lardite** *See* agalmatolite. { 'lär,dīt }
- larnite** [MINERAL] $\beta\text{-Ca}_2\text{SiO}_4$ A gray mineral that is a metastable monoclinic phase of calcium orthosilicate, stable from 520 to 670°C. Also known as belite. { 'lär,nīt }
- arsenite** [MINERAL] PbZnSiO_4 A colorless or white mineral composed of lead zinc silicate, occurring in orthorhombic crystals. { 'lars·ən,līt }
- larvikite** [PETROLOGY] An alkali syenite consisting of cryptoperthite or anorthoclase in rhombic crystals; used as an ornamental building material. { 'lär·vi,kīt }
- lateral accretion** [GEOLOGY] The digging away of material at the outer bank of a meandering stream and the simultaneous building up to the water level by deposition of material brought there by pushing and rolling along the stream bottom. { 'lad·ə·rəl ə'krē·shən }
- lateral cone** *See* adventive cone. { 'lad·ə·rəl kōn }
- lateral erosion** [GEOLOGY] The action of a stream in undermining a bank on one side of its channel so that material falls into the stream and disintegrates; simultaneously, the stream shifts toward the bank that is being undercut. { 'lad·ə·rəl i'rō·zhən }
- lateral fault** [GEOLOGY] A fault along which there has been strike separation. Also known as strike-separation fault. { 'lad·ə·rəl 'fölt }
- lateral moraine** [GEOLOGY] Drift material, usually thin, that was deposited by a glacier in a valley after the glacier melted. { 'lad·ə·rəl mə'rān }
- lateral planation** [GEOLOGY] Reduction in land in interstream areas in a plane parallel to the stream profile; the reduction is caused by lateral movement of the stream against its banks. { 'lad·ə·rəl plā'nā·shən }
- lateral secretion** [GEOLOGY] A supposed phenomenon whereby a lode's or vein's mineral content is derived from the adjacent wall rock. { 'lad·ə·rəl si'krē·shən }
- laterite** [GEOLOGY] Weathered material composed principally of the oxides of iron, aluminum, titanium, and manganese; laterite ranges from soft, earthy, porous soil to hard, dense rock. { 'lad·ə,līt }
- lateritic soil** [GEOLOGY] **1.** Soil containing laterite. **2.** Any reddish soil developed from weathering. Also known as latosol. { 'lad·ə'rid·ik 'sōil }
- laterization** [GEOLOGY] Those conditions of weathering that lead to removal of silica and alkalis, resulting in a soil or rock with high concentrations of iron and aluminum oxides (laterite). { ,lad·ə·rə'zā·shən }
- latite** [PETROLOGY] A not visibly crystalline rock of volcanic origin composed chiefly of sodic plagioclase and alkali feldspar with subordinate quantities of dark-colored minerals in a finely crystalline to glassy groundmass. { 'lā,tīt }
- latitude variation** [GEOGRAPHY] A periodic change in the latitude of any position on the earth's surface, caused by the polar variation. { 'lad·ə'tüd ,ver·ə'ā·shən }
- latosol** *See* lateritic soil. { 'lad·ə,sōl }
- latrappite** [MINERAL] $(\text{Ca},\text{Na})(\text{Nb},\text{Ti},\text{Fe})\text{O}_3$ A variety of the mineral perovskite. { 'la·trə,pīt }
- lattice drainage pattern** *See* rectangular drainage pattern. { 'lad·əs 'drän·ij ,pad·əm }
- Lattorian** *See* Tongrian. { lə'tör·fē·ən }
- laubmannite** [MINERAL] $\text{Fe}_3\text{Fe}_6(\text{PO}_4)_4(\text{OH})_2$ Mineral composed of basic ferrous iron phosphate and ferric iron phosphate. { 'laüb·mə,nīt }
- Laugiidae** [PALEONTOLOGY] A family of Mesozoic fishes in the order Coelacanthiformes. { laü'jī·ə,dē }
- laumontite** *See* laumontite. { lō'mä,nīt }
- laumontite** [MINERAL] $\text{CaAl}_2\text{Si}_4\text{O}_{12} \cdot 4\text{H}_2\text{O}$ A white zeolite mineral crystallizing in the monoclinic system; loses water on exposure to air, eventually becoming opaque and crumbling. Also known as laumonite; lomonte; lomontite. { lō'män,līt }

lauho o pele

lauho o pele See Pele's hair. { ,lā·ū'ō,hō ō 'pe,lē }

Laurasia [GEOL] A continent theorized to have existed in the Northern Hemisphere; supposedly it broke up to form the present northern continents about the end of the Pennsylvanian period. { lō'rā-zhə }

Laurentian Plateau See Laurentian Shield. { lō'ren·chən pla'tō }

Laurentian Shield [GEOL] A Precambrian plateau extending over half of Canada from Labrador southwest along Hudson Bay and northwest to the Arctic Ocean. Also known as Canadian Shield; Laurentian Plateau. { lō'ren·chən 'shēld }

laurionite [MINERAL] $Pb(OH)Cl$ A colorless mineral composed of basic lead chloride, occurring in prismatic crystals; it is dimorphous with paralaurionite. { 'lōr·ē·nīt }

laurite [MINERAL] RuS_2 A black mineral composed of ruthenium sulfide (often with osmium), occurring as small crystals or grains. { 'lō,rīt }

lausenite [MINERAL] $Fe_2(SO_4)_3 \cdot 6H_2O$ A white, monoclinic mineral consisting of hydrated ferric sulfate; occurs in lumpy aggregates of fibers. { 'lōs·ən,īt }

lautarite [MINERAL] $Ca(IO_3)_2$ A monoclinic mineral composed of calcium iodate that occurs in prismatic crystals. { 'laüd·ə,rīt }

lautite [MINERAL] $CuAsS$ A mineral composed of copper sulfide and copper arsenide. { 'laü,tīt }

lava [GEOL] **1.** Molten extrusive material that reaches the earth's surface through volcanic vents and fissures. **2.** The rock mass formed by consolidation of molten rock issuing from volcanic vents and fissures, consisting chiefly of magnesium silicate; used for insulators. { 'lä·və }

lava blisters [GEOL] Small, steep-sided swellings that are hollow and raised on the surfaces of some basaltic lava flows; formed by gas bubbles pushing up the lava's viscous surface. { 'lä·və ,blis·tərz }

lava cone [GEOL] A volcanic cone that was formed of lava flows. { 'lä·və ,kōn }

lava dome See shield volcano. { 'lä·və ,dōm }

lava field [GEOL] A wide area of lava flow; it is commonly several square kilometers in area and forms along the base of a large compound volcano or on the flanks of shield volcanoes. { 'lä·və ,fēld }

lava flow [GEOL] **1.** A lateral, surficial stream of molten lava issuing from a volcanic cone or from a fissure. **2.** The solidified mass of rock formed when a lava stream congeals. { 'lä·və ,flō }

lava fountain [GEOL] A jetlike eruption of lava that issues vertically from a volcanic vent or fissure. Also known as fire fountain. { 'lä·və ,faünt·ən }

lava lake [GEOL] A lake of lava that is molten and fluid; usually contained within a summit volcanic crater or in a pit crater on the flanks of a shield volcano. { 'lä·və ,lāk }

lava plateau [GEOL] An elevated tableland or flat-topped highland that is several hundreds to several thousands of square kilometers in area; underlain by a thick succession of lava flows. { 'lä·və pla,tō }

lava tube [GEOL] A long, tubular opening under the crust of solidified lava. { 'lä·və ,tüb }

lavenite [MINERAL] $(Na,Ca)_3Zr(Si_2O_7)(O,OH,F)_2$ A mineral composed of complex silicate, occurring in prismatic crystals. { 'lä·və,nīt }

law of superposition [GEOL] The law that strata underlying other strata must be the older if there has been neither overthrust nor inversion. { 'lō əv ,sü·pər·pə'zish·ən }

lawrencite [MINERAL] $(Fe,Ni)Cl_2$ A brown or green mineral composed of ferrous chloride and found as an abundant accessory mineral in iron meteorites. { 'lär·ən,sīt }

lawsonite [MINERAL] $CaAl_2(Si_2O_7)(OH)_2 \cdot H_2O$ A colorless or grayish-blue mineral crystallizing in the orthorhombic system; found in gneisses and schists. { 'lōs·ən,īt }

layer [GEOL] A tabular body of rock, ice, sediment, or soil lying parallel to the supporting surface and distinctly limited above and below. [GEOPHYS] One of several strata of ionized air, some of which exist only during the daytime, occurring at altitudes between 30 and 250 miles (50 and 400 kilometers); the layers reflect radio waves at certain frequencies and partially absorb others. { 'lä·ər }

layer depth effect [GEOPHYS] The weakening of a sound beam or seismic pulse because

left lateral fault

- of abnormal spreading in passing from a positive gradient layer to an underlying negative layer. { 'lā·ər ,dɛpθ i,fekt }
- layered complex** [GEOLOGY] An igneous rock body of large dimensions, 5–300 miles (8–480 kilometers) across and as much as 23,000 feet (7000 meters) thick, within which distinct subhorizontal stratification, or layering, is apparent and may be continuous over great distances, in some cases more than 60 miles (100 kilometers). { 'lā·ər d 'kām ,pleks }
- layer silicate** See phyllosilicate. { 'lā·ər ,sil·ə·kət }
- lazuli** See lapis lazuli. { 'laz·ə·lɛ }
- lazulite** [MINERAL] $(\text{Mg,Fe})\text{Al}_2(\text{OH})_2(\text{PO}_4)_2$ A violet-blue or azure-blue mineral with vitreous luster; composed of basic aluminum phosphate and occurring in small masses or monoclinic crystals; hardness is 5–6 on Mohs scale, and specific gravity is 3.06–3.12. Also known as berkeite; blue spar; false lapis. { 'laz·ə,lɪt }
- lazurite** [MINERAL] $(\text{Na,Ca})_8(\text{Al,Si})\text{O}_{24}(\text{S,SO}_4)$ A blue or violet-blue feldspathoid mineral crystallizing in the isometric system; the chief mineral constituent of lapis lazuli. { 'laz·ə,rɪt }
- leachate** [GEOCHEMISTRY] A liquid that has percolated through soil and dissolved some soil materials in the process. { 'lɛ,çət }
- leaching** [GEOCHEMISTRY] The separation or dissolving out of soluble constituents from a rock or ore body by percolation of water. { 'lɛç·ɪŋ }
- lead** [GEOLOGY] A small, narrow passage in a cave. { led }
- lead glance** See galena. { 'led 'glans }
- leadhillite** [MINERAL] $\text{Pb}_4(\text{SO}_4)(\text{CO}_3)_2(\text{OH})_2$ A yellowish or greenish- or grayish-white monoclinic mineral consisting of basic sulfate and carbonate of lead; dimorphous with susanite. { 'led,hi,lɪt }
- leading stone** See lodestone. { 'lɛd·ɪŋ ,stɔn }
- lead marcasite** See sphalerite. { 'led 'mār·kə,zɪt }
- lead ocher** See massicot. { 'led 'ɔ·kər }
- lead spar** See anglesite. { 'led 'spär }
- lead vitriol** See anglesite. { 'led 'vit·rē,ɔl }
- leaf mold** [GEOLOGY] A soil layer or compost consisting principally of decayed vegetable matter. { 'lɛf ,mɔld }
- leakage halo** [GEOCHEMISTRY] The dispersion of elements along channels and paths followed by mineralizing solutions leading into and away from the central focus of mineralization. { 'lɛk·ɪŋ ,hā·lə }
- leaking mode** [GEOPHYSICS] A surface seismic wave which is imperfectly trapped, so that its energy leaks or escapes across a layer boundary, causing some attenuation. Also known as leaky wave. { 'lɛk·ɪŋ ,mɔd }
- leaky wave** See leaking mode. { 'lɛk·ē 'wāv }
- lechatelierite** [MINERAL] A natural silica glass, occurring in fulgurites and impact craters and formed by the melting of quartz sand at high temperatures generated by lightning or by the impact of a meteorite. { le,ʃād·əl'ɪ,rɪt }
- lecontite** [MINERAL] $\text{Na}(\text{NH}_4,\text{K})\text{SO}_4 \cdot 2\text{H}_2\text{O}$ A colorless mineral composed of a hydrous sodium potassium ammonium sulfate; found in bat guano. { lə'kən,tɪt }
- ledge** [GEOLOGY] **1.** A narrow, shelflike ridge or rock protrusion, much longer than high, and usually horizontal, formed in a rock wall or on a cliff face. **2.** A ridge of rocks found underwater, especially one near a shore or connected with and bordering a shore. { ledj }
- Ledian** [GEOLOGY] Lower upper Eocene geologic time. Also known as Auversian. { 'lɛd·ē·ən }
- lee dune** [GEOLOGY] A dune formed to the leeward of a source of sand or of an obstacle. { 'lɛ ,dün }
- left lateral fault** [GEOLOGY] A fault in which movement is such that an observer walking toward the fault along an index plane (a bed, vein, or dike) would turn to the left to find the other part of the displaced index plane. Also known as sinistral fault. { 'left 'lad·ə·rəl 'fɔlt }

leg

- leg** [GEOPHYS] A single cycle of more or less periodic motion in a wave train on a seismogram. { 'leg }
- legrandite** [MINERAL] $Zn_{14}(OH)(AsO_4)_9 \cdot 12H_2O$ A yellow to nearly colorless mineral composed of basic hydrous zinc arsenate. { lə'gran,dīt }
- lehiite** [MINERAL] $(Na,K)_2Ca_5Al_8(PO_4)_8(OH)_{12} \cdot 6H_2O$ White mineral composed of hydrous basic calcium aluminum phosphate. { 'lē,hīt }
- leifite** [MINERAL] $Na_2AlSi_4O_{10}F$ A colorless mineral composed of fluoride and silicate of sodium and aluminum. { 'lē,fīt }
- leightonite** [MINERAL] $K_2Ca_2Cu(SO_4)_4 \cdot 2H_2O$ A pale-blue mineral composed of hydrous sulfate of copper, calcium, and potassium. { 'lāt-ən,īt }
- lengenbachite** [MINERAL] $Pb_6(Ag,Cu)_2As_4S_{13}$ A steel gray mineral consisting of lead, silver, and copper arsenic sulfide. { 'leŋ-ən,bā,kīt }
- lens** [GEOL] **1.** A geologic deposit that is thick in the middle and converges toward the edges, resembling a convex lens. **2.** An irregularly shaped formation consisting of a porous, permeable sedimentary deposit surrounded by impermeable rock. { lenz }
- lenticle** [GEOL] A bed or rock stratum or body that is lens-shaped. { 'len-tə-kəl }
- lentil** [GEOL] **1.** A rock body that is lens-shaped and enclosed in a stratum of different material. **2.** A rock stratigraphic unit that is a subdivision of a formation and has limited geographic extent; it thins out in all directions. { 'lent-əl }
- Leonardian** [GEOL] A North American provincial series: Lower Permian (above Wolfcampian, below Guadalupian). { 'lā-ən'nār-dē-ən }
- leonite** [MINERAL] $K_2Mg(SO_4)_2 \cdot 4H_2O$ A colorless, white, or yellowish mineral composed of hydrous magnesium potassium sulfate, occurring in monoclinic crystals. { 'lē-ən,īt }
- leopoldite** See sylvite. { 'lē-ə,pōl,dīt }
- Leperditicopida** [PALEON] An order of extinct ostracods characterized by very thick, straight-backed valves which show unique muscle scars and other markings. { ,le-pər,did-ə'kăp-ə-də }
- Leperditillacea** [PALEON] A superfamily of extinct paleocopan ostracods in the suborder Kloedenellocopina including the unisulcate, nondimorphic forms. { ,le-pər,did-ə'lās-ē-ə }
- lepidoblastic** [PETR] Of the texture of a metamorphic rock, having a fabric of minerals characterized as flaky or scaly, such as mica. { 'lep-ə-dō'blas-tik }
- lepidocrocite** [MINERAL] $\alpha-FeO(OH)$ A ruby- or blood-red mineral crystallizing in the orthorhombic system; it is associated with limonite in iron ores and is a component of meteorites. { ,lep-ə-dō'krō,sīt }
- Lepidodendrales** [PALEOBOT] The giant club mosses, an order of extinct lycopods (Lycopodiopsida) consisting primarily of arborescent forms characterized by dichotomous branching, small amounts of secondary vascular tissue, and heterospory. { ,lep-ə-dō,den'drā-lēz }
- lepidolite** [MINERAL] $K(Li,Al)_3(Si,Al)_4O_{10}(F,OH)_2$ A rose-colored mineral of the mica group crystallizing in the monoclinic system. Also known as lithionite; lithium mica. { lə'pid-əl,īt }
- lepidomelane** [MINERAL] A black variety of biotite that is characterized by the presence of large amounts of ferric iron. Also known as iron mica. { ,lep-ə-dō'me,lān }
- lepisphere** [PETR] A microspherical aggregate of platy, blade-shaped crystals of opal-CT. { 'lep-ə,sfir }
- Lepospondyli** [PALEON] A subclass of extinct amphibians including all forms in which the vertebral centra are formed by ossification directly around the notochord. { ,lep-ə'spānd-əl,ī }
- Leptictidae** [PALEON] A family of extinct North American insectivoran mammals belonging to the Proteutheria which ranged from the Cretaceous to middle Oligocene. { ,lep'tik-tā,dē }
- leptite** [PETR] A quartz-feldspathic metamorphic rock that is fine-grained with little or no foliation; formed by regional metamorphism of the highest grade. { 'lep,tīt }

Libby effect

- Leptochoeridae** [PALEON] An extinct family of palaeodont artiodactyl mammals in the superfamily Dichobunoidea. { ,lep·tə'kir·ə,dē }
- leptogeosyncline** [GEOL] A deep oceanic trough that has not been filled with sedimentation and is associated with volcanism. { ,lep·tə,jē·ō'sin,klin }
- Leptolepidae** [PALEON] An extinct family of fishes in the order Leptolepiformes representing the first teleosts as defined on the basis of the advanced structure of the caudal skeleton. { ,lep·tə'lep·ə,dē }
- Leptolepiformes** [PALEON] An extinct order of small, ray-finned teleost fishes characterized by a relatively strong, ossified axial skeleton, thin cycloid scales, and a preopercle with an elongated dorsal portion. { ,lep·tə,lep·ə'fōr,mēz }
- levovcite** [MINERAL] $(\text{NH}_3)_3\text{H}(\text{SO}_4)_2$ A mineral composed of acid ammonium sulfate. { ,led·ə'vi,sīt }
- leucite** [MINERAL] KAlSi_2O_6 A white or gray rock-forming mineral belonging to the feldspathoid group; at ordinary temperatures the mineral exists as aggregates of trapezohedral crystals with glassy fracture; hardness is 5.5–6.0 on Mohs scale, and specific gravity is 2.45–2.50. Also known as amphigene; grenatite; vesuvian; Vesuvian garnet; white garnet. { 'lü,sīt }
- leucite phonolite** [PETR] An extrusive rock composed of alkali feldspar, mafic minerals, and leucite. { 'lü,sīt 'fän·əl,īt }
- leucitite** [PETR] A fine-grained or porphyritic extrusive rock or hypabyssal igneous rock composed mostly of pyroxene and leucite. { 'lü·sə,īt }
- leucochalcite** See olivenite. { ,lü·kə'kal,sīt }
- leucocratic** [PETR] Light-colored as applied to igneous rock containing 0–50% dark-colored minerals. { 'lü·kə'krad·ik }
- leucophanite** [MINERAL] $(\text{Na,Ca})_2\text{BeSi}_7(\text{O,F,OH})_7$ Greenish mineral composed of beryllium sodium calcium silicate containing fluorine and occurring in glassy, tabular crystals. { 'lü·kə'fa,nīt }
- leucophosphate** [MINERAL] $\text{K}_2\text{Fe}_4(\text{PO}_4)_4(\text{OH})_2 \cdot 9\text{H}_2\text{O}$ White mineral composed of hydrous basic phosphate of potassium and iron. { ,lü·kə'fäs,fit }
- leucopyrite** See loellingite. { ,lü·kə'pī,rīt }
- leucosphenite** [MINERAL] $\text{Na}_4\text{BaTi}_2\text{Si}_{10}\text{O}_{27}$ A white mineral composed of sodium barium silicotitanate and occurring as wedge-shaped crystals. { ,lü·kə'sfē,nīt }
- leucoxene** [MINERAL] A mineral composed of rutile with some anatase or sphene; occurs in igneous rocks, usually as an alteration product of ilmenite. { lü'kək,sēn }
- leuneburgite** [MINERAL] $\text{Mg}_3\text{B}_2(\text{PO}_4)_2(\text{OH})_6 \cdot 5\text{H}_2\text{O}$ A colorless mineral consisting of a hydrous basic phosphate of magnesium and boron. { 'lü·nən,bər,gīt }
- levee** [GEOL] **1.** An embankment bordering one or both sides of a sea channel or the low-gradient seaward part of a canyon or valley. **2.** A low ridge sometimes deposited by a stream on its sides. { 'lev·ē }
- level fold** See nonplunging fold. { 'lev·əl 'föld }
- levyine** See levynite. { lā'vē,īn }
- levyite** See levynite. { lā'vē,īt }
- levyne** See levynite. { lā'vēn }
- levynite** [MINERAL] $\text{NaCa}_3\text{Al}_7\text{Si}_{11}\text{O}_{36} \cdot 15\text{H}_2\text{O}$ A white or light-colored mineral of the zeolite group, composed of hydrous silicate of aluminum, sodium, and calcium, and occurring in rhombohedral crystals. Also known as levyine; levyite; levyne. { lā'vē,nīt }
- lewisite** [MINERAL] $(\text{Ca,Fe,Na})_2$ A titanian romeite mineral. { 'lü·ə,sīt }
- lewistonite** [MINERAL] $(\text{Ca,K,Na})_5(\text{PO}_4)_3(\text{OH})$ White mineral composed of basic calcium potassium sodium phosphate. { 'lü·ə·stə,nīt }
- lherzolite** [PETR] Peridotite composed principally of olivine with orthopyroxene and clinopyroxene. { 'lɔrt·sə,īt }
- Lias** See Liassic. { 'lī·as }
- Liassic** [GEOL] The Lower Jurassic period of geologic time. Also known as Lias. { lī'as·ik }
- Libby effect** [GEOCHEM] The increase, since about 1950, in the carbon-14 content

libethenite

of the atmosphere, produced by the detonation of thermonuclear devices. { 'lib-
ē i, fekt }

libethenite [MINERAL] $\text{Cu}_2(\text{PO}_4)\text{OH}$ An olive-green mineral composed of basic copper sulfate, occurring as small prismatic crystals or in masses. { lə'beth·ə, nīt }

lichenometry [GEOL] Measurement of the diameter of lichens growing on exposed rock surfaces; used for dating geomorphic features, particularly of glacial origin. { ,lī·kə'näm·ə·trē }

liebigite [MINERAL] $\text{Ca}_2\text{U}(\text{CO}_3)_4 \cdot 10\text{H}_2\text{O}$ An apple- or yellow-green mineral composed of hydrous uranium calcium carbonate; occurs as a coating or concretion in rock. { 'lē·bi, gīt }

Liesegang banding [GEOL] Colored or compositional rings or bands in a fluid-saturated rock due to rhythmic precipitation. Also known as Liesegang rings. { 'lēz·
ə, gəŋ , bənd·iŋ }

Liesegang rings See Liesegang banding. { 'lēz·ə, gəŋ , riŋz }

light mineral [MINERAL] **1.** A rock with minerals that have a specific gravity lower than a standard, usually 2.85. **2.** A light-colored mineral. { 'līt , min·rəl }

light-red silver ore See proustite. { 'līt , red 'sil·vər , ər }

light-ruby silver See proustite. { 'līt , rü·bē 'sil·vər }

lignite [GEOL] Coal of relatively recent origin, intermediate between peat and bituminous coal; often contains patterns from the wood from which it formed. Also known as brown coal; earth coal. { 'lig, nīt }

lignite A See black lignite. { 'lig, nīt 'ā }

lignite B See brown lignite. { 'lig, nīt 'bē }

lignitious coal [MINERAL] A type of coal containing 75–84% elemental carbon. { lig'-
nish·əs 'kōl }

lillianite [MINERAL] $\text{Pb}_3\text{Bi}_2\text{S}_6$ A steel-gray mineral composed of lead bismuth sulfide. { 'lil·ē·ə, nīt }

limb [GEOL] One of the two sections of an anticline or syncline on either side of the axis. Also known as flank. { limb }

limburgite [PETR] A dark, glass-rich igneous rock with abundant large crystals of olivine and pyroxene and with little or no feldspar. { 'lim·bər, gīt }

lime-pan playa [GEOL] A playa with a smooth, hard surface composed of calcium carbonate. { 'līm , pən 'plī·ə }

limestone [PETR] **1.** A sedimentary rock composed dominantly (more than 95) of calcium carbonate, principally in the form of calcite; examples include chalk and travertine. **2.** Any rock containing 80% or more of calcium carbonate or magnesium carbonate. { 'līm, stōn }

limestone pebble conglomerate [GEOL] A well-sorted conglomerate composed of limestone pebbles resulting from special conditions involving rapid mechanical erosion and short transport distances. { 'līm, stōn , pɛb·əl kən'glām·ə·rət }

limnite See bog iron ore. { 'lim, nīt }

limonite [MINERAL] A group of brown or yellowish-brown, amorphous, naturally occurring ferric oxides of variable composition; commonly formed secondary material by oxidation of iron-bearing minerals; a minor ore of iron. Also known as brown hematite; brown iron ore. { 'lī·mə, nīt }

linarite [MINERAL] $\text{PbCu}(\text{SO}_4)(\text{OH})_2$ A deep-blue mineral composed of basic lead copper sulfate and occurring as monoclinic crystals. { 'lī·nə, rīt }

lindackerite [MINERAL] $\text{Cu}_6\text{Ni}_3(\text{AsO}_4)_4(\text{SO}_4)(\text{OH})_4$ A light-green or apple-green mineral composed of hydrous basic sulfate and arsenate of nickel and copper; occurs in tabular crystals or massive. { lin'dak·ə, rīt }

lindgrenite [MINERAL] $\text{Cu}_3(\text{MoO}_4)_2(\text{OH})_2$ A green mineral composed of basic copper molybdate. { 'lin·grə, nīt }

lindstromite [MINERAL] $\text{PbCuBi}_3\text{S}_6$ A lead-gray to tin-white mineral composed of bismuth copper lead sulfide. { 'līnz·trə, mīt }

lineament [GEOL] A straight or gently curved, lengthy topographic feature expressed as depressions or lines of depressions. Also known as linear. { 'lin·ē·ə·mənt }

linear See lineament. { 'lin·ē·ər }

lithification

- linear cleavage** [GEOL] The property of metamorphic rocks of breaking into long planar fragments. { 'lin·ē·ər 'klē·vij }
- linear flow structure** See platy flow structure. { 'lin·ē·ər 'flō ,strək·chər }
- linear parallel texture** [PETR] The parallel texture of a rock in which the constituents are parallel to a line, not just to a plane as in plane parallel texture. { 'lin·ē·ər 'pɑr·ə,ləl 'teks·chər }
- lineation** [GEOL] Any linear structure on or within a rock; examples are ripple marks and flow lines. { ,lin·ē'ā·shən }
- line of strike** See strike. { 'līn əv 'strīk }
- linguoid ripple mark** See linguoid ripple mark. { 'liŋ·gyə,lōid 'rip·əl ,märk }
- linguoid current ripple** See linguoid ripple mark. { 'liŋ·gwōid 'kə·rənt ,rip·əl }
- linguoid ripple mark** [GEOL] An aqueous current ripple mark with tongue-like projections which are formed by action of a current of water and which point into the current. Also known as cusped ripple mark; linguoid ripple mark; linguoid current ripple. { 'liŋ·gwōid 'rip·əl ,märk }
- linnaeite** [MINERAL] (Co,Ni)₂S₄ A steel-gray mineral with a coppery-red tarnish, occurring in isometric crystals; an ore of cobalt. Also known as cobalt pyrites; linneite. { lə'nē,īt }
- linneite** See linnaeite. { lə'nē,īt }
- Lipalian** [GEOL] A hypothetical geologic period that supposedly antedated the Cambrian. { lə'pal·yən }
- Lipostraca** [PALEON] An order of the subclass Branchiopoda erected to include the single fossil species *Lepidocaris rhyniensis*. { li'päs·trə·kə }
- liptinite** See exinite. { 'lip·tə,nīt }
- liquid-dominated hydrothermal reservoir** [GEOL] Any geothermal system mainly producing superheated water (often termed brines); hot springs, fumaroles, and geysers are the surface expressions of hydrothermal reservoirs; an example is the hot-brine region in the Imperial Valley-Salton Sea area of southern California. { 'lik·wəd 'däm·ə,nəd·əd ,hī·drə'thər·mə'l 'rez·əv,wär }
- liquid-filled porosity** [GEOL] The condition in porous rock or sand formations in which pore spaces contain fresh or salt water, liquid petroleum, pressure-liquefied butane or propane, or tar. { 'lik·wəd 'fild pə'räs·əd·ē }
- liquid limit** [GEOL] The moisture content boundary that exists between the plastic and semiliquid states of a sediment. { 'lik·wəd 'lim·ət }
- lironite** [MINERAL] Cu₂Al(AsO₄)(OH)₄·4H₂O A light-blue or yellowish-green mineral composed of basic hydrous aluminum copper arsenate, occurring in monoclinic crystals. { lī'räk·ə,nīt }
- liskeardite** [MINERAL] (Al,Fe)₂(AsO₄)(OH)₆·5H₂O A soft, white mineral composed of basic hydrous aluminum iron arsenate. { li'skär,dīt }
- litharenite** [PETR] A sandstone that contains more than 25% detrital rock fragments, and more rock fragments than feldspar grains. { li'thər·ə,nīt }
- lithian muscovite** [MINERAL] A form of the mineral lepidolite containing 3–4% lithium oxide and having a modified two-layer monoclinic muscovite structure. { 'lith·ē·ən 'mäs·kə,vīt }
- lithic** [PETR] Pertaining to stone. { 'lith·ik }
- lithic graywacke** [PETR] A low-grade graywacke, that is, containing an abundance of unstable materials, especially a sandstone containing less than 75% quartz and chert, 15–75% detrital clay matrix, and more rock fragments than feldspar grains. { 'lith·ik 'grā,wak·ə }
- lithic sandstone** [PETR] A sandstone that contains more rock fragments than feldspar grains. { 'lith·ik 'san,stōn }
- lithic tuff** [GEOL] **1.** A tuff that is mostly crystalline rock fragments. **2.** An indurated volcanic ash deposit whose fragments are composed of previously formed rocks that first solidified in the volcanic vent and were then blown out. { 'lith·ik 'təf }
- lithifaction** See lithification. { ,lith·ə'fak·shən }
- lithification** [GEOL] **1.** Conversion of a newly deposited sediment into an indurated

lithionite

- rock. Also known as lithification. **2.** Compositional change of coal to bituminous shale or other rock. { ,lith·ə·fə'kā·shən }
- lithionite** See lepidolite. { 'lith·ē·ə,nīt }
- lithiophilite** [MINERAL] Li(Mn,Fe)PO₄ A salmon-pink or clove-brown mineral crystallizing in the orthorhombic system; isomorphous with triphylite. { ,lith·ē'äf·ə,līt }
- lithiophorite** [MINERAL] (Al,Li)MnO₂(OH)₂ A mineral composed of basic manganese aluminum lithium oxide. { ,lith·ē'äf·ə,rīt }
- Lithistida** [PALEON] An order of fossil sponges in the class Demospongia having a reticulate skeleton composed of irregular and knobby siliceous spicules. { lə'this·tə·də }
- lithium mica** See lepidolite. { 'lith·ē·əm 'mī·kə }
- lithoclast** [GEOL] A naturally produced rock fracture. { 'lith·ə,klās }
- lithofacies** [GEOL] A subdivision of a specified stratigraphic unit distinguished on the basis of lithologic features. { ,lith·ə'fā·shēz }
- lithofacies map** [GEOL] The facies map of an area based on lithologic characters; shows areal variation in all aspects of the lithology of a stratigraphic unit. { ,lith·ə'fā·shēz ,map }
- lithogenesis** [PETR] The branch of science dealing with the formation of rocks, especially the formation of sedimentary rocks. { ,lith·ə'jen·ə·səs }
- lithochemical survey** [GEOCHEM] A geochemical survey that involves the sampling of rocks. { ,lith·ō,jē·ə'kem·ə·kəl 'sə,r,vā }
- lithographic limestone** [GEOL] A dense, compact, fine-grained crystalline limestone having a pale creamy-yellow or grayish color. Also known as lithographic stone; litho stone. { ,lith·ə'graf·ik 'līm,stōn }
- lithographic stone** See lithographic limestone. { ,lith·ə'graf·ik 'stōn }
- lithographic texture** [GEOL] The texture of certain calcareous sedimentary rocks characterized by grain size of less than 1/256 millimeter and having a smooth appearance. { ,lith·ə'graf·ik 'teks·chər }
- lithologic map** [GEOL] A kind of geologic map showing the rock types of a particular area. { |lith·ə,lāj·ik 'map }
- lithologic unit** See rock-stratigraphic unit. { |lith·ə,lāj·ik 'yü·nət }
- lithology** [GEOL] The description of the physical character of a rock as determined by eye or with a low-power magnifier, and based on color, structures, mineralogic components, and grain size. { lə'thəl·ə·jē }
- lithomorphic** [GEOL] Referring to a soil whose characteristics are derived from events or conditions of a former period. { |lith·ə,mör·fik }
- lithophile** [GEOCHEM] **1.** Pertaining to elements that have become concentrated in the silicate phase of meteorites or the slag crust of the earth. **2.** Pertaining to elements that have a greater free energy of oxidation per gram of oxygen than iron. Also known as oxyphile. { 'lith·ə,fil }
- lithophysa** [GEOL] A large spherulitic hollow or bubble in glassy basalts and certain rhyolites. Also known as stone bubble. { ,lith·ə'fis·ə }
- lithosiderite** See stony-iron meteorite. { ,lith·ə'stīd·ə,rīt }
- lithosol** [GEOL] A group of shallow soils lacking well-defined horizons and composed of imperfectly weathered fragments of rock. { 'lith·ə,söl }
- lithospar** [MINERAL] A combination of spodumene and feldspar which occurs naturally. { 'lith·ə,spär }
- lithosphere** [GEOL] **1.** The rigid outer crust of rock on the earth about 50 miles (80 kilometers) thick, above the asthenosphere. Also known as oxysphere. **2.** Since the development of plate tectonics theory, a term referring to the rigid, upper 60 miles (100 kilometers) of the crust and upper mantle, above the asthenosphere. { 'lith·ə,sfir }
- lithostatic pressure** See ground pressure. { |lith·ə'stad·ik 'presh·ər }
- litho stone** See lithographic limestone. { 'lith·ō ,stōn }
- lithostratic unit** See rock-stratigraphic unit. { |lith·ə'strad·ik 'yü·nət }
- lithostratigraphic unit** See rock-stratigraphic unit. { |lith·ə,stad·ə'graf·ik 'yü·nət }
- lithostratigraphy** [GEOL] A branch of stratigraphy concerned with the description and

Iodranite

- interpretation of sedimentary successions in terms of their lithic character. { 'liθ·ō·strə'tig·rə·fē }
- lithotope** [GEOL] **1.** The environment under which a sediment is deposited. **2.** An area of uniform sedimentation. { 'liθ·ə,tōp }
- lithotype** [GEOL] A macroscopic band in humic coals, analyzed on the basis of physical characteristics rather than botanical origin. { 'liθ·ə,tīp }
- Liptopterna** [PALEON] An order of hoofed, herbivorous mammals confined to the Cenozoic of South America; characterized by a skull without expansion of the temporal or squamosal sinuses, a postorbital bar, primitive dentition, and feet that were three-toed or reduced to a single digit. { ,lið·əp'tər·nə }
- lit-par-lit** [GEOL] Pertaining to the penetration of bedded, schistose, or other foliate rocks by innumerable narrow sheets and tongues of granitic rock. { 'lɛ,pār'lɛ }
- Little Ice Age** [GEOL] A period of expansion of mountain glaciers, marked by climatic deterioration, that began about 5500 years ago and extended to as late as A.D. 1550–1850 in some regions, as the Alps, Norway, Iceland, and Alaska. { 'lið·əl'ts,āj }
- littoral drift** [GEOL] Materials moved by waves and currents of the littoral zone. Also known as longshore drift. { 'lit·ə·rəl'drift }
- littoral sediments** [GEOL] Deposits of littoral drift. { 'lit·ə·rəl'sed·ə·məns }
- littoral transport** [GEOL] The movement of littoral drift. { 'lit·ə·rəl'tranz,pɔrt }
- Littorinacea** [PALEON] An extinct superfamily of gastropod mollusks in the order Prosobranchia. { ,lið·ə·rə'nās·ē·ə }
- livingstonite** [MINERAL] HgSb₄S₇; A lead-gray mineral with red streak and metallic luster; a source of mercury. { 'liv·iŋ·stə,nɪt }
- lizard-hipped dinosaur** [PALEON] The name applied to members of the Saurichia because of the comparatively unspecialized three-pronged pelvis. { 'liz·ərd'hipt'dī·nə,sɔr }
- L joint** See primary flat joint. { 'el ,jɔint }
- Llandellian** [GEOL] Upper Middle Ordovician geologic time. { lan'del·yən }
- Llandoveryan** [GEOL] Lower Silurian geologic time. { ,lan·də'vir·ē·ən }
- Llanvirnian** [GEOL] Lower Middle Ordovician geologic time. { lan'vir·nē·ən }
- load cast** [GEOL] An irregularity at the base of an overlying stratum, usually sandstone, that projects into an underlying stratum, usually shale or clay. { lɔd ,kast }
- load metamorphism** See static metamorphism. { 'lɔd ,med·ə'mɔr,fiz·əm }
- loadstone** See lodestone. { 'lɔd,stɔn }
- loam** [GEOL] Soil mixture of sand, silt, clay, and humus. { lɔm }
- loaming** [GEOCHEM] In geochemical prospecting, a method in which samples of material from the surface are tested for traces of a sought-after metal; its presence on the surface presumably indicates a near-surface ore body. { ,lɔm·iŋ }
- lobate rill mark** [GEOL] A flute cast formed by current action. { 'lɔ,bāt 'ril ,mɑrk }
- local attraction** See local magnetic disturbance. { 'lɔ·kəl ə'trak·shən }
- local base level** See temporary base level. { 'lɔ·kəl 'bās 'lev·əl }
- local magnetic disturbance** [GEOPHYS] An anomaly of the magnetic field of the earth, extending over a relatively small area, due to local magnetic influences. Also known as local attraction. { 'lɔ·kəl mag'ned·ik di'stə·bəns }
- local peat** [GEOL] Peat formed by groundwater. Also known as basin peat. { 'lɔ·kəl ,pēt }
- local relief** [GEOL] The vertical difference in elevation between the highest and lowest points of a land surface within a specified horizontal distance or in a limited area. Also known as relative relief. { 'lɔ·kəl ri'lɛf }
- lode** [GEOL] A fissure in consolidated rock filled with mineral; usually applied to metaliferous deposits. { lɔd }
- lodestone** [MINERAL] The naturally occurring magnetic iron oxide, or magnetite, possessing polarity, and attracting iron objects to itself. Also known as Hercules stone; leading stone; loadstone. { 'lɔd,stɔn }
- lodranite** [GEOL] A stony iron meteorite composed of bronzite and olivine within a fine network of nickel-iron. { 'lɔ·drə,nɪt }

loellingite

- loellingite** [MINERAL] FeAs_2 A silver-white to steel-gray mineral composed of iron arsenide with some cobalt, nickel, antimony, and sulfur; isomorphous with arsenopyrite; a source of arsenic. Also known as leucopyrite; laoullingite. { 'lel·iŋ,ɪt }
- loess** [GEOL] An essentially unconsolidated, unstratified calcareous silt; commonly it is homogeneous, permeable, and buff to gray in color, and contains calcareous concretions and fossils. { les }
- loess kindchen** [GEOL] An irregular or spheroidal nodule of calcium carbonate that is found in loess. { 'les ,kint·chən }
- loeweite** [MINERAL] $\text{Na}_4\text{Mg}_2(\text{SO}_4)_4 \cdot 5\text{H}_2\text{O}$ A white to pale-yellow mineral composed of hydrous sulfate of sodium and magnesium. { 'lā·və,ɪt }
- löllingite** See loellingite. { 'lel·iŋ,ɪt }
- lomonite** See laumontite. { lō'mā,nɪt }
- lomontite** See laumontite. { lō'män,tɪt }
- longitudinal dune** [GEOL] A type of linear dune ridge that extends parallel to the direction of the dominant dune-building winds. { ,län·jə'tüüd·ən·əl 'dün }
- longitudinal fault** [GEOL] A fault parallel to the trend of the surrounding structure. { ,län·jə'tüüd·ən·əl 'fölt }
- longshore bar** [GEOL] A ridge of sand, gravel, or mud built on the seashore by waves and currents, generally parallel to the shore and submerged by high tides. Also known as offshore bar. { 'lōŋ,shór ,bär }
- longshore drift** See littoral drift. { 'lōŋ,shór ,drift }
- longshore trough** [GEOL] A long, wide, shallow depression of the sea floor parallel to the shore. { 'lōŋ,shór ,tróf }
- lonsdaleite** [MINERAL] A mineral composed of a form of carbon; found in meteorites. { 'länz,dā,lɪt }
- loparite** [MINERAL] $(\text{Ce},\text{Na},\text{Ca})_2(\text{Ti},\text{Nb})_2\text{O}_6$ A brown to black mineral; a variety of perovskite containing alkalies and cerium. { 'lō·pə,rɪt }
- lopezite** [MINERAL] $\text{K}_3\text{Cr}_2\text{O}_7$ An orange-red mineral composed of potassium dichromate. { 'lā·pə,zɪt }
- Lophialetidae** [PALEON] A family of extinct perissodactyl mammals in the superfamily Tapiroidea. { ,lā·fē·ə'dänt·ə,dē }
- Lophiodontidae** [PALEON] An extinct family of perissodactyl mammals in the superfamily Tapiroidea. { ,lā·fē·ə'dänt·ə,dē }
- lopolith** [GEOL] A large, floored intrusive body that is sunken centrally into the shape of a basin due to sagging of the underlying country rock. { 'löp·ə,lɪθ }
- lorandite** [MINERAL] TlAsS_2 A cochineal- to carmine-red or dark lead-gray mineral composed of thallium sulfarsenide, occurring in monoclinic form. { 'lā·rən,dɪt }
- loranskite** [MINERAL] $(\text{Y},\text{Ce},\text{Ca},\text{Zr})\text{TaO}_4$ A black mineral composed of an oxide of yttrium, cerium, calcium, tantalum, and zirconium. { lə'rən,skɪt }
- lorettoite** [MINERAL] $\text{Pb}_7\text{O}_6\text{Cl}_2$ A honey-yellow to brownish-yellow mineral composed of lead oxychloride. { lə'red·ə,wɪt }
- loseyite** [MINERAL] $(\text{Mn},\text{Zn})_7(\text{CO}_3)_2(\text{OH})_{10}$ A bluish-white or brownish, monoclinic mineral consisting of a basic carbonate of manganese and zinc. { 'lō·zē,ɪt }
- lotrite** See pumpellyite. { 'lō,ɪrɪt }
- loughlinite** [MINERAL] $\text{Na}_2\text{Mg}_3\text{Si}_6\text{O}_{16} \cdot 8\text{H}_2\text{O}$ A pearly-white mineral that resembles asbestos, consisting of a hydrous silicate of sodium and magnesium. { 'lōf·lə,nɪt }
- lovchorrite** See mosandrite. { 'löv·kó,rɪt }
- Love wave** [GEOPHYS] A horizontal dispersive surface wave, multireflected between internal boundaries of an elastic body, applied chiefly in the study of seismic waves in the earth's crust. { 'löv ,wæv }
- lovozerite** [MINERAL] $(\text{Na},\text{K})_2(\text{Mn},\text{Ca})\text{ZrSi}_6\text{O}_{16} \cdot 3\text{H}_2\text{O}$ Mineral composed of hydrous silicate of sodium, potassium, manganese, calcium, and zirconium. { lō'və·zə,rɪt }
- low-angle fault** [GEOL] A fault that dips at an angle less than 45°. { 'lō ,əŋ·gəl 'fölt }
- low-angle thrust** See overthrust. { 'lō ,əŋ·gəl 'θrəst }
- low-energy environment** [GEOL] An aqueous sedimentary environment in which there is standing water with a general lack of wave or current action, permitting accumulation of very fine-grained sediments. { 'lō ,en·ər·jē in·vɪ·ərən·mənt }

- Lower Cambrian** [GEOL] The earliest epoch of the Cambrian period of geologic time, ending about 540,000,000 years ago. { 'lō·ər 'kam-brē·ən }
- Lower Cretaceous** [GEOL] The earliest epoch of the Cretaceous period of geologic time, extending from about 140- to 120,000,000 years ago. { 'lō·ər krə'tā-shəs }
- Lower Devonian** [GEOL] The earliest epoch of the Devonian period of geologic time, extending from about 400- to 385,000,000 years ago. { 'lō·ər də'vō-nē·ən }
- Lower Jurassic** [GEOL] The earliest epoch of the Jurassic period of geologic time, extending from about 185- to 170,000,000 years ago. { 'lō·ər jū'ras-ik }
- lower mantle** [GEOL] The portion of the mantle below a depth of about 600 miles (1000 kilometers). Also known as inner mantle; mesosphere; pallasite shell. { 'lō·ər mant·əl }
- Lower Mississippian** [GEOL] The earliest epoch of the Mississippian period of geologic time, beginning about 350,000,000 years ago. { 'lō·ər,mis·ə'sip·ē·ən }
- Lower Ordovician** [GEOL] The earliest epoch of the Ordovician period of geologic time, extending from about 490- to 460,000,000 years ago. { 'lō·ər ,ōr-də'vish·ən }
- Lower Pennsylvanian** [GEOL] The earliest epoch of the Pennsylvanian period of geologic time, beginning about 310,000,000 years ago. { 'lō·ər ,pen·səl'vā·nyən }
- Lower Permian** [GEOL] The earliest epoch of the Permian period of geologic time, extending from about 275- to 260,000,000 years ago. { 'lō·ər 'pər·mē·ən }
- lower plate** See footwall. { 'lō·ər ,plāt }
- Lower Silurian** [GEOL] The earliest epoch of the Silurian period of geologic time, beginning about 420,000,000 years ago. { 'lō·ər sə'lūr·ē·ən }
- Lower Triassic** [GEOL] The earliest epoch of the Triassic period of geologic time, extending from about 230- to 215,000,000 years ago. { 'lō·ər trī'as-ik }
- low-moor bog** [GEOL] A bog that is at or slightly below the ground water table. { 'lō ,mūr 'bäg }
- low-moor peat** [GEOL] Peat found in low-moor bogs or swamps and containing little or no sphagnum. Also known as fen peat. { 'lō ,mūr 'pēt }
- low quartz** [MINERAL] Quartz that has been formed below 573°C; the tetrahedral crystal structure is less symmetrically arranged than a quartz formed at a higher temperature. { 'lō 'kwörtz }
- low-rank graywacke** [PETR] A graywacke that is nonfeldspathic. { 'lō ,raŋk 'grā,wak·ə }
- low-rank metamorphism** [GEOL] A metamorphic process that occurs under conditions of low to moderate pressure and temperature. { 'lō ,raŋk ,med·ə'mōr·fiz·əm }
- low-tide terrace** [GEOL] A flat area of a beach adjacent to the low-water line. { 'lō ,tīd 'ter·əs }
- low-velocity layer** [GEOPHYS] A layer in the solid earth in which seismic wave velocity is lower than the layers immediately below or above. { 'lō və'lās·əd·ē ,lā·ər }
- low-volatile coal** [GEOL] A coal that is nonagglomerating, has 78% to less than 86% fixed carbon, and 14% to less than 22% volatile matter. { 'lō ,vāl·ət·əl 'kōl }
- Loxonematacea** [PALEON] An extinct superfamily of gastropod mollusks in the order Prosobranchia. { ,lāk·sə,nē·mə'tās·ē·ə }
- Ludian** [GEOL] A European stage of geologic time in the uppermost Eocene, above the Bartonian and below the Tongrian of the Oligocene. { 'lū·dē·ən }
- ludlamite** [MINERAL] $(\text{Fe,Mg,Mn})_2(\text{PO}_4)_2 \cdot 4\text{H}_2\text{O}$ A green mineral crystallizing in the monoclinic system and occurring in small, transparent crystals. { 'lød·lā,mīt }
- Ludlovian** [GEOL] A European stage of geologic time; Upper Silurian, below Gedinian of Devonian, above Wenlockian. { lød'lō·vē·ən }
- ludwigite** [MINERAL] $(\text{Mg,Fe})_2\text{FeBO}_3$ A blackish-green mineral that crystallizes in the monoclinic system and occurs in fibrous masses; isomorphous with ronsenite. { 'lød,wī,gīt }
- lueneburgite** [MINERAL] $\text{Mg}_3\text{B}_2(\text{OH})_6(\text{PO}_4)_2 \cdot 6\text{H}_2\text{O}$ A colorless mineral composed of hydrous basic phosphate of magnesium and boron. { 'lū·nə·bər,gīt }
- lueshite** [MINERAL] NaNbO_3 An orthorhombic mineral having perovskite-type structure; it is dimorphous with natroniobite. { 'lū·əs,hīt }
- Luisian** [GEOL] A North American stage of geologic time: Miocene (above Relizian, below Mohnian). { lū'ē·shən }

lum

lum *See* trolley. { ləm }

lunar inequality [GEOPHYS] A minute fluctuation of a magnetic needle from its mean position, caused by the moon. { 'lū·nər ,in·i'kwäl·əd·ē }

lunate bar [GEOL] A crescent-shaped bar of sand that is frequently found off the entrance to a harbor. { 'lū,nät 'bär }

lunette [GEOL] A broad, low crescentic mound of windblown fine silt and clay. { lü'net }

Lusitanian [GEOL] Lower Jurassic geologic time. { ,lū·sə'tan·ē·ən }

luster mottlings [GEOL] The spotted, shimmering appearance of certain rocks caused by reflection of light from cleavage faces of crystals that contain small inclusions of other minerals. { 'ləs·tər ,mät·liŋz }

lutaceous [GEOL] Claylike. { lü'tä·shəs }

lutecite [GEOL] A fibrous, chalcedony-like quartz with optical anomalies that have led to its being considered a distinct species. { 'lüd·ə,sīt }

lutite [GEOL] A consolidated rock or sediment formed principally of clay or clay-sized particles. { 'lū,tīt }

luzonite *See* enargite. { 'lū·zə,nīt }

L wave [GEOPHYS] A phase designation for an earthquake wave that is a surface wave, without respect to type. { 'el ,wāv }

Lydian stone *See* basanite. { 'lid·ē·ən 'stōn }

lydite *See* basanite. { 'li,dīt }

Lyginopteridaceae [PALEOBOT] An extinct family of the Lyginopteridales including monostelic pteridosperms having one or two vascular traces entering the base of the petiole. { ,lī·jə·näp,ter·ə'däs·ē,ē }

Lyginopteridales [PALEOBOT] An order of the Pteridospermae. { ,lī·jə·näp,ter·ə'dä·lēz }

Lyginopteridatae [PALEOBOT] The equivalent name for Pteridospermae. { ,lī·jə·näp·fə'rid·əd,ē }

M

- maar** [GEOL] A volcanic crater that was created by violent explosion but not accompanied by igneous extrusion; frequently, it is filled by a small circular lake. { mār }
- macaluba** See mud volcano. { ,mä·kə'lu·bə }
- macedonite** [MINERAL] PbTiO_3 A mineral composed of an oxide of lead and titanium. [PETR] A basaltic rock that contains orthoclase, sodic plagioclase, biotite, olivine, and rare pyriboles. { ,mas·ə'dä,nit }
- maceral** [GEOL] The microscopic organic constituents found in coal. { ,mas·ə'ral }
- macgovernite** [MINERAL] $\text{Mn}_5(\text{AsO}_3)\text{SiO}_3(\text{OH})_2$ A mineral composed of basic manganese arsenite and silicate. Also spelled mcgovernite. { mə'gəv·ər,nīt }
- mackayite** [MINERAL] $\text{FeTe}_2\text{O}_5(\text{OH})$ A green mineral composed of basic iron tellurite. { 'mak·ē,īt }
- mackinawite** [MINERAL] $(\text{Fe},\text{Ni})\text{S}$ A tetragonal mineral occurring as a corrosion product in iron pipes. Also known as kansite. { mə'kin·ə,wīt }
- macle** [MINERAL] **1.** A dark or discolored spot in a mineral specimen. **2.** See chialstolite. { 'mak·əl }
- Macraucheniidae** [PALEON] A family of extinct herbivorous mammals in the order Litopterna; members were proportioned much as camels are, and eventually lost the vertebral arterial canal of the cervical vertebrae. { ,ma,kro·kə'nī·ə,dē }
- macroclastic** [PETR] Rock that is composed of fragments that are visible without magnification. { ,mak·rə'klas·tik }
- macrocrystalline** [PETR] **1.** Pertaining to the texture of holocrystalline rock in which the constituents are visible without magnification. **2.** Pertaining to the texture of a rock with grains or crystals greater than 0.75 millimeter in diameter in recrystallized sediment. { ,mak·rō'krist·əl·ən }
- macrofacies** [GEOL] A collection of sedimentary facies that are related genetically. { ,mak·rō'fā·shēz }
- macrofossil** [PALEON] A fossil large enough to be observed with the naked eye. { ,mak·rō'fäs·əl }
- macropore** [GEOL] A pore in soil of a large enough size so that water is not held in it by capillary attraction. { 'mak·rə,pōr }
- maculose** [GEOL] Of a group of contact-metamorphosed rocks or their structures, having spotted or knotted character. { 'mak·yə,lōs }
- Maestrichtian** [GEOL] A European stage of geologic time: Upper Cretaceous (above Menevian, below Fastiniogian). { mə'strik·tē·ən }
- mafic mineral** [MINERAL] **1.** A mineral that is composed predominantly of the ferromagnesian rock-forming silicates. **2.** In general, any dark mineral. { 'maf·ik 'min·rəl }
- maghemite** [MINERAL] $\gamma\text{-Fe}_2\text{O}_3$ A mineral form of iron oxide that is strongly magnetic and a member of the magnetite series. { mag'he,mīt }
- magma** [GEOL] The molten rock material from which igneous rocks are formed. { 'mag·mə }
- magma chamber** [GEOL] A larger reservoir in the crust of the earth that is occupied by a body of magma. { 'mag·mə ,chām·bər }
- magma geothermal system** [GEOL] A geothermal system in which the dominant source of heat is a large reservoir of igneous magma within an intrusive chamber or lava

magma province

pool; an example is the Yellowstone Park area of Wyoming. { 'mag-mə |jē-ō'thər-məl |sɪs-təm }

magma province See petrographic province. { 'mag-mə |präv-əns }

magmatic differentiation [PETR] 1. The process by which the different types of igneous rocks are derived from a single parent magma. 2. The process by which ores are formed by solidification from magma. Also known as magmatic segregation. { mag'mad-ik |dif-ə,ren-che'ä-shən }

magmatic rock [PETR] A rock derived from magma. { mag'mad-ik 'rāk }

magmatic segregation See magmatic differentiation. { mag'mad-ik |seg-rə'gä-shən }

magmatic stoping [GEOL] A process of igneous intrusion in which magma gradually works its way upward by breaking off and engulfing blocks of the country rock. Also known as stoping. { mag'mad-ik 'stöp-ɪŋ }

magmatism [PETR] The formation of igneous rock from magma. { 'mag-mə,tiz-əm }

magmosphere See pyrosphere. { 'mag-mə,sfir }

magnafacies [GEOL] A major, continuous belt of deposits that is homogeneous in lithologic and paleontologic characteristics and that extends obliquely across time planes or through several time-stratigraphic units. { |mag-nə'fä-shēz }

magnesia mica See biotite. { mag'nē-zhə 'mī-kə }

magnesian calcite [MINERAL] $(Ca,Mg)CO_3$ A variety of calcite consisting of randomly substituted magnesium carbonate in a disordered calcite lattice. Also known as magnesium calcite. { mag'nē-zhən 'kal,sīt }

magnesian limestone [PETR] Limestone with at least 90% calcite, a maximum of 10% dolomite, an approximate magnesium oxide equivalent of 1.1–2.1, and an approximate magnesium carbonate equivalent of 2.3–4.4. { mag'nē-zhən 'līm,stōn }

magnesian marble [PETR] A type of magnesian limestone that has been metamorphosed; contains some dolomite. Also known as dolomitic marble. { mag'nē-zhən 'mār-bəl }

magnesiochromite [MINERAL] $MgCr_2O_4$ A mineral of the spinel group composed of magnesium chromium oxide; it is isomorphous with chromite. Also known as magnochromite. { mag,nē-zhō-'krō,mīt }

magnesiocopiapite [MINERAL] $MgFe_4(SO_4)_6(OH)_2 \cdot 20H_2O$ A mineral of the copiapite group composed of hydrous basic magnesium and iron sulfate; it is isomorphous with copiapite and cuprocopiapite. { mag,nē-zhō-'kō-pē-ə,pīt }

magnesioferrite [MINERAL] $(Mg,Fe)Fe_2O_4$ A black, strongly magnetic mineral of the magnetite series in the spinel group. Also known as magnoferrite. { mag,nē-zhō'fe,rīt }

magnesite [MINERAL] $MgCO_3$ The mineral form of magnesium carbonate, usually massive and white, with hexagonal symmetry; specific gravity is 3, and hardness is 4 on Mohs scale. Also known as giobertite. { 'mag-nə,sīt }

magnesium calcite See magnesian calcite. { mag'nē-zē-əm 'kal,sīt }

magnesium-iron mica See biotite. { mag'nē-zē-əm 'T-ərn 'mī-ka }

magnetic annual change [GEOPHYS] The amount of secular change in the earth's magnetic field which occurs in 1 year. Also known as annual magnetic change. { mag'ned-ik 'an-yə-wəl 'chānj }

magnetic annual variation [GEOPHYS] The small, systematic temporal variation in the earth's magnetic field which occurs after the trend for secular change has been removed from the average monthly values. Also known as annual magnetic variation. { mag'ned-ik 'an-yə-wəl |ver-ē'ä-shən }

magnetic bay [GEOPHYS] A small magnetic disturbance whose magnetograph resembles an indentation of a coastline; on earth, magnetic bays occur mainly in the polar regions and have a duration of a few hours. { mag'ned-ik 'bä }

magnetic character figure See C index. { mag'ned-ik |kar-ik-tər |fig-yər }

magnetic daily variation See magnetic diurnal variation. { mag'ned-ik |dä-lē ver-ē'ä-shən }

magnetic declination See declination. { mag'ned-ik |dek-lə'nä-shən }

magnetic dip See inclination. { mag'ned-ik 'dip }

magnetic diurnal variation [GEOPHYS] Oscillations of the earth's magnetic field which

magnetoionic duct

- have a periodicity of about a day and which depend to a close approximation only on local time and geographic latitude. Also known as magnetic daily variation. { mag'ned-ik dī'ər-n-əl ,ver-ē'ā-shən }
- magnetic element** [GEOPHYS] Magnetic declination, dip, or intensity at any location on the surface of the earth. { mag'ned-ik 'el-ə-mənt }
- magnetic equator** [GEOPHYS] That line on the surface of the earth connecting all points at which the magnetic dip is zero. Also known as aclinic line. { mag'ned-ik i'kwād-ər }
- magnetic iron ore** See magnetite. { mag'ned-ik 'ī-ər-n 'ōr }
- magnetic latitude** [GEOPHYS] Angular distance north or south of the magnetic equator. { mag'ned-ik 'lad-ə,tūd }
- magnetic local anomaly** [GEOPHYS] A localized departure of the geomagnetic field from its average over the surrounding area. { mag'ned-ik ,lō-kəl ə'nām-ə-lē }
- magnetic meridian** [GEOPHYS] A line which is at any point in the direction of horizontal magnetic force of the earth; a compass needle without deviation lies in the magnetic meridian. { mag'ned-ik mə'rid-ē-ən }
- magnetic north** [GEOPHYS] At any point on the earth's surface, the horizontal direction of the earth's magnetic lines of force (direction of a magnetic meridian) toward the north magnetic pole; a particular direction indicated by the needle of a magnetic compass. { mag'ned-ik 'nōrth }
- magnetic observatory** [GEOPHYS] A geophysical measuring station employing some form of magnetometer to measure the intensity of the earth's magnetic field. { mag'ned-ik əb'zər-və,tōr-ē }
- magnetic pole** [GEOPHYS] In geomagnetism, either of the two points on the earth's surface where the magnetic meridians converge, that is, where the magnetic field is vertical. Also known as dip pole. { mag'ned-ik 'pōl }
- magnetic prime vertical** [GEOPHYS] The vertical circle through the magnetic east and west points of the horizon. { mag'ned-ik 'prīm 'vərd-ə-kəl }
- magnetic profile** [GEOPHYS] A profile of a geologic structure showing magnetic anomalies. { mag'ned-ik 'prō,fīl }
- magnetic reversal** [GEOPHYS] A reversal of the polarity of the earth's magnetic field that has occurred at about one-million-year intervals. { mag'ned-ik ri'vər-səl }
- magnetic secular change** [GEOPHYS] The gradual variation in the value of a magnetic element which occurs over a period of years. { mag'ned-ik 'sek-yə-lər 'chānj }
- magnetic station** [GEOPHYS] A facility equipped with instruments for measuring local variations in the earth's magnetic field. { mag'ned-ik 'stā-shən }
- magnetic storm** [GEOPHYS] A worldwide disturbance of the earth's magnetic field; frequently characterized by a sudden onset, in which the magnetic field undergoes marked changes in the course of an hour or less, followed by a very gradual return to normalcy, which may take several days. Also known as geomagnetic storm. { mag'ned-ik 'stōrm }
- magnetic stratigraphy** See paleomagnetic stratigraphy. { mag'ned-ik strə'tig-rə-fē }
- magnetic survey** [GEOPHYS] **1.** Magnetometer map of variations in the earth's total magnetic field; used in petroleum exploration to determine basement-rock depths and geologic anomalies. **2.** Measurement of a component of the geomagnetic field at different locations. { mag'ned-ik 'sər,vā }
- magnetic temporal variation** [GEOPHYS] Any change in the earth's magnetic field which is a function of time. { mag'ned-ik 'tem-pə-rəl ,ver-ē'ā-shən }
- magnetic variation** [GEOPHYS] Small changes in the earth's magnetic field in time and space. { mag'ned-ik ,ver-ē'ā-shən }
- magnetite** [MINERAL] An opaque iron-black and streak-black isometric mineral and member of the spinel structure type, usually occurring in octahedrals or in granular to massive form; hardness is 6 on Mohs scale, and specific gravity is 5.20. Also known as magnetic iron ore; octahedral iron ore. { 'mag-nə,tīt }
- magnetoionic duct** [GEOPHYS] Duct along the geomagnetic lines of force which exhibits waveguide characteristics for radio-wave propagation between conjugate points on the earth's surface. { mag'nēd-ō-ī'ān-ik 'dəkt }

magnetoionic theory

- magnetoionic theory** [GEOPHYS] The theory of the combined effect of the earth's magnetic field and atmospheric ionization on the propagation of electromagnetic waves. { mag₁nēd·ō·t'ān·ik 'thē·ə·rē }
- magnetoionic wave component** [GEOPHYS] Either of the two elliptically polarized wave components into which a linearly polarized wave incident on the ionosphere is separated because of the earth's magnetic field. { mag₁nēd·ō·t'ān·ik 'wāv kəm₁pō·nənt }
- magnetoplumbite** [MINERAL] (Pb,Mn)₂Fe₆O₁₁ Black mineral consisting of a ferric oxide of plumbite and manganese, and occurring in acute metallic hexagonal crystals. { mag₁nēd·ə'pləm,bīt }
- magnetostratigraphy** [GEOLOG] A branch of stratigraphy in which sedimentary successions are described and interpreted in terms of remanent magnetization. { mag₁nēd·ō·strə'tig·rə·fē }
- magnetotellurics** [GEOPHYS] A geophysical exploration technique that measures natural electromagnetic fields to image subsurface electrical resistivity, providing information about the earth's interior composition and structure since naturally occurring rocks and minerals exhibit a broad range of electrical resistivities. { mag₁nēd·ō·tə'lūr·iks }
- magnitude** [GEOPHYS] A measure of the amount of energy released by an earthquake. { 'mag·nə,tüd }
- magnochromite** See magnesiochromite. { ,mag·nə'krō,mīt }
- magnoferrite** See magnesioferrite. { ,mag·nə'fe,rīt }
- magnophorite** [MINERAL] NaKCaMg₅Si₈O₂₃OH A monoclinic mineral composed of a basic silicate of sodium, potassium, calcium, and magnesium; member of the amphibole group. { ,mag·nə'fōr,īt }
- main joint** See master joint. { 'mān 'jōint }
- major fold** [GEOLOG] A large-scale fold with which minor folds are usually associated. { 'mā·jər 'fōld }
- majorite** [MINERAL] Mg₃(Fe,Al,Si)₂(SiO₄)₃ A garnet mineral that forms in the deep upper mantle in response to the gradual dissolution of pyroxene due to increasing pressure, first identified as an inclusion in diamond. { 'mā·jə,rīt }
- major joint** See master joint. { 'mā·jər 'jōint }
- malachite** [MINERAL] Cu₂CO₃(OH)₂ A bright-green monoclinic mineral consisting of a basic carbonate of copper and usually occurring in massive forms or in bundles of radiating fibers; specific gravity is 4.05, and hardness is 3.5–4 on Mohs scale. { 'mal·ə,kīt }
- malacolite** See diopside. { 'mal·ə·kə,līt }
- malchite** [PETRO] A fine-grained lamprophyre with small, rare phenocrysts or hornblende, labradorite, and sometimes biotite embedded in a matrix of hornblende, andesine, and some quartz. { 'mal,kīt }
- maldonite** [MINERAL] Au₂Bi A pinkish silver-white mineral consisting of gold and bismuth; occurs in massive granular form. { 'mal·də,nīt }
- malladrite** [MINERAL] Na₂SiF₆ A hexagonal mineral composed of sodium fluosilicate, occurring as small crystals in volcanic holes in Vesuvius. { mə'lä,drīt }
- mallardite** [MINERAL] MnSO₄·7H₂O A pale-rose, monoclinic mineral composed of hydrous manganese sulfate. { mə'lär,dīt }
- malloseismic** [GEOPHYS] Referring to an area that is likely to experience destructive earthquakes several times in a century. { ,mal·ə'siz·mik }
- malm** See marl. { mām }
- Malm** [GEOLOG] The Upper Jurassic geologic series, above Dogger and below Cretaceous. { mām }
- malysite** [MINERAL] FeCl₃ A halogen mineral deposited by sublimation; found most commonly at Mount Vesuvius, Italy. { 'mal·ə,sīt }
- mamelon** [GEOLOG] A small, rounded volcano which forms over a vent as a result of the slow extrusion of viscous, silicic lava. { 'mam·ə·lən }
- mammillary** [MINERAL] Of or pertaining to an aggregate of crystals in the form of a rounded mass. { 'ma·mə,lər·ē }

marginal salt pan

- mammillary structure** See pillow structure. { 'ma·mə,ler-ē 'strək·chər }
- mammoth** [PALEON] Any of various large Pleistocene elephants having long, upcurved tusks and a heavy coat of hair. { 'mam·əθ }
- Mammutinae** [PALEON] A subfamily of extinct proboscidean mammals in the family Mastodontidae. { mə'myüt·ən,ē }
- mandonite** [MINERAL] $\text{Li}_4\text{Al}_{14}\text{B}_4\text{Si}_6\text{O}_{29}(\text{OH})_{24}$ A white mineral composed of basic borosilicate of lithium and aluminum. { mə'nən·də,nīt }
- manasseite** [MINERAL] $\text{Mg}_6\text{Al}_2(\text{OH})_{16}(\text{CO}_3)\cdot 4\text{H}_2\text{O}$ A hexagonal mineral composed of basic hydrous magnesium and aluminum carbonate; it is dimorphous with hydrotalcite. { mə'nas·ē,īt }
- manganese epidote** See piemontite. { 'maŋ·gə,nēs 'ep·ə,dōt }
- manganese nodule** [GEOL] Small, irregular black to brown concretions consisting chiefly of manganese salts and manganese oxide minerals; formed in oceans as a result of pelagic sedimentation or precipitation. { 'maŋ·gə,nēs 'naj·ül }
- manganite** [MINERAL] $\text{MnO}(\text{OH})$ A brilliant steel-gray or black polymorphous mineral; crystallizes in the orthorhombic system. Also known as gray manganese ore. { 'maŋ·gə,nīt }
- manganolangeinite** [MINERAL] $\text{K}_2\text{Mn}_2(\text{SO}_4)_3$ A rose-red, isometric mineral composed of potassium manganese sulfate; occurs in lava on Vesuvius. { maŋ·gə·nō'laŋ,bī,nīt }
- manganosite** [MINERAL] MnO An emerald-green isometric mineral occurring in small octahedrons that blacken on exposure; hardness is 5–6 on Mohs scale, and specific gravity is 5.18. { ,maŋ·gə'nō,sīt }
- mankato stone** [PETR] A variety of limestone containing more than 49% calcium carbonate, with about 4.5% alumina and some silica. { man'kād·ō ,stōn }
- mansfieldite** [MINERAL] $\text{Al}(\text{AsO}_4)\cdot 2\text{H}_2\text{O}$ A white to pale-gray orthorhombic mineral composed of hydrous aluminum arsenate; it is isomorphous with scorodite. { 'manz,fēl,dīt }
- mantle** [GEOL] The intermediate shell zone of the earth below the crust and above the core (to a depth of 2160 miles or 3480 kilometers). { 'mant·əl }
- mantled gneiss dome** [GEOL] A dome in metamorphic terrains that has a remobilized core of gneiss surrounded by a concordant sheath of the basal part of the overlying metamorphic sequence. { 'mant·əld 'nīs ,dōm }
- mantle rock** See regolith. { 'mant·əl ,rāk }
- manto** [GEOL] A sedimentary or igneous ore body occurring in flat-lying depositional layers. { 'man,tō }
- marble** [PETR] **1.** Metamorphic rock composed of recrystallized calcite or dolomite. **2.** Commercially, any limestone or dolomite taking polish. { 'mär·bəl }
- marcasite** [MINERAL] FeS_2 A pale bronze-yellow to nearly white mineral, crystallizing in the orthorhombic system; hardness is 6–6.5 on Mohs scale, and specific gravity is 4.89. { 'mär·kə,sīt }
- marekanite** [GEOL] Rounded to subangular obsidian bodies that occur in masses of perlite. { 'mär·ə|ka,nīt }
- margarite** [GEOL] A string of beadlike globulites; commonly found in glassy igneous rocks. [MINERAL] $\text{CaAl}_2(\text{Al}_2\text{Si}_2)\text{O}_{10}(\text{OH})_2$ A pink, reddish, or yellow, brittle mica mineral. { 'mär·gə,rīt }
- margarosanite** [MINERAL] $\text{PbCa}_2(\text{SiO}_3)_3$ A colorless or snow-white triclinic mineral composed of lead calcium silicate, occurring in lamellar masses. { ,mär·gə'rōs·ən,īt }
- marginal escarpment** [GEOL] A seaward slope of a marginal plateau with a gradient of 1:10 or more. { 'mär·jən·əl e'skärp·mənt }
- marginal fissure** [GEOL] A magma-filled fracture bordering an igneous intrusion. { 'mär·jən·əl 'fish·ər }
- marginal moraine** See terminal moraine. { 'mär·jən·əl mə'rän }
- marginal plain** See outwash plain. { 'mär·jən·əl 'plän }
- marginal plateau** [GEOL] A relatively flat shelf adjacent to a continent and similar topographically to, but deeper than, a continental shelf. { 'mär·jən·əl pla'tō }
- marginal salt pan** [GEOL] A natural, coastal salt pan. { 'mär·jən·əl 'sölt ,pan }

marginal thrust

- marginal thrust** [GEOL] One of a series of faults bordering an igneous intrusion and crossing both the intrusion and the wall rock. Also known as marginal upthrust. { 'mār·jən·əl 'thrəst }
- marginal upthrust** See marginal thrust. { 'mār·jən·əl 'əp,thrəst }
- marialite** [MINERAL] $3\text{NaAlSi}_3\text{O}_8\cdot\text{NaCl}$ A scapolite mineral that is isomorphous with meronite. { mār·rē·əl·līt }
- marine abrasion** [GEOL] Erosion of the ocean floor by sediment moved by ocean waves. Also known as wave erosion. { mār·rēn ə'brā·zhən }
- marine arch** See sea arch. { mār·rēn 'ärch }
- marine bridge** See sea arch. { mār·rēn 'brɪj }
- marine cave** See sea cave. { mār·rēn 'kāv }
- marine-cut terrace** [GEOL] A terrace or platform cut by wave erosion of marine origin. Also known as wave-cut terrace. { mār·rēn |kət 'ter·əs }
- marine geology** See geological oceanography. { mār·rēn jē'äl·ə·jē }
- Marinesian** See Bartonian. { mār·ə'nē·zhē·ən }
- marine stack** See stack. { mār·rēn 'stak }
- marine terrace** [GEOL] A seacoast terrace formed by the merging of a wave-built terrace and a wave-cut platform. Also known as sea terrace; shore terrace. { mār·rēn 'ter·əs }
- marine transgression** See transgression. { mār·rēn tranz'grēsh·ən }
- marker bed** [GEOL] **1.** A stratified unit with distinctive characteristics making it an easily recognized geologic horizon. **2.** A rock layer which accounts for a characteristic portion of a seismic refraction time-distance curve. **3.** See key bed. { 'mār·k·ər ,bed }
- marl** [GEOL] A deposit of crumbling earthy material composed principally of clay with magnesium and calcium carbonate; used as a fertilizer for lime-deficient soils. Also known as malm. { mār| }
- marlite** See marlstone. { 'mār,līt }
- marlstone** [PETR] **1.** A consolidated rock that has about the same composition as marl; considered to be an earthy or impure argillaceous limestone. Also known as marlite. **2.** A hard ferruginous rock of the Middle Lias in England. { 'mār|,stōn }
- marly** [GEOL] Pertaining to, containing, or resembling marl. { 'mār·lē }
- marmatite** [MINERAL] A dark-brown to black mineral composed of iron-bearing sphalerite. Also known as christophite. { 'mār·mə,tīt }
- marmolite** [MINERAL] A pale-green serpentine mineral, occurring in thin laminations; a variety of chrysotile. { 'mār·mə,līt }
- Marmor** [GEOL] A North American stage of Middle Ordovician geologic time, forming the lower subdivision of Chazyan, above Whiterock and below Ashby. { 'mār,mór }
- marrite** [MINERAL] PbAgAsS_3 A monoclinic mineral, occurring as small crystals in Valais, Switzerland. { 'mä,rīt }
- marsh gas** [GEOCHEM] Combustible gas, consisting chiefly of methane, produced as a result of decay of vegetation in stagnant water. { 'mārsh ,gas }
- marshite** [MINERAL] CuI A reddish, oil-brown isometric mineral composed of cuprous iodide and occurring as crystals; hardness is 2.5 on Mohs scale, and specific gravity is 5.6. { 'mār,shīt }
- marsh ore** See bog iron ore. { 'mārsh ,ör }
- martite** [MINERAL] Hematite occurring in iron-black octahedral crystals pseudomorphous after magnetite. { 'mār,tīt }
- mascagnite** [MINERAL] $(\text{NH}_4)_2\text{SO}_4$ A yellowish-gray mineral found in guano, near burning coal beds, or as lava incrustation; specific gravity is 1.77; hardness is 2–2.5 on Mohs scale. { mə'skan,yīt }
- mascon** [GEOL] A large, high-density mass concentration below a ringed mare on the surface of the moon. { 'mas,kän }
- mass attraction vertical** [GEOPHYS] The vertical which is a function only of the distribution of mass and is unaffected by forces resulting from the motions of the earth. { 'mas ə'trak·shən ,verd·ə·kəl }
- mass erosion** [GEOL] A process in which the direct application of gravitational body

mature soil

- stresses causes earth and rocks to fall and be carried downslope. Also known as gravity erosion. { 'mas i'rō-zhən }
- mass heaving** [GEOL] A comprehensive expansion of the ground due to freezing. { 'mas 'hēv-iŋ }
- massicot** [MINERAL] PbO A yellow, orthorhombic mineral consisting of lead monoxide; found in the western and southern United States. Also known as lead ocher. { 'mas-ə,kät }
- massif** [GEOL] A massive block of rock within an erogenic belt, generally more rigid than the surrounding rocks, and commonly composed of crystalline basement or younger plutons. { mə'sēf }
- massive** [GEOL] Of a mineral deposit, having a large concentration of ore in one place. [MINERAL] Of a mineral, lacking an internal structure. [PALEON] Of corallum, composed of closely packed corallites. [PETR] **1.** Of a competent rock, being homogeneous, isotropic, and elastically perfect. **2.** Of a metamorphic rock, having constituents which do not show parallel orientation and are not arranged in layers. **3.** Of igneous rocks, being homogeneous over wide areas and lacking layering, foliation, cleavage, or similar features. { 'mas-iv }
- mass movement** [GEOL] Movement of a portion of the land surface as a unit. { 'mas 'müv-mənt }
- mass wasting** [GEOL] Dislodgement and downslope transport of loose rock and soil material under the direct influence of gravitational body stresses. { 'mas ,wäst-iŋ }
- master joint** [GEOL] A persistent joint plane of greater than average extent, generally constituting the dominant jointing of an area. Also known as main joint; major joint. { 'mas-tər 'jōint }
- mastodon** [PALEON] A member of the Mastodontidae, especially the genus *Mammut*. { 'mas-tə,dän }
- Mastodontidae** [PALEON] An extinct family of elephantoid proboscideans that had low-crowned teeth with simple ridges and without cement. { ,mas-tə'dän-tə,dē }
- matched terrace** See paired terrace. { 'macht 'ter-əs }
- material unit** [GEOL] A stratigraphic unit based on rocks and their fossil content without time implication. { mə'tir-ē-əl ,yü-nət }
- mathematical geology** [GEOL] The branch of geology concerned with the study of probability distributions of values of random variables involved in geologic processes. { ,math-ə,'mad-ə-kəl jē'al-ə-jē }
- matildite** [MINERAL] Ag₂BiS₂ An iron black to gray, orthorhombic mineral consisting of silver bismuth sulfide; occurrence is massive or granular. { mə'til,dīt }
- matlockite** [MINERAL] PbFCl A mineral consisting of lead chloride and fluoride. { 'mat-lə,kīt }
- matric forces** [GEOL] Forces acting on soil water that are independent of gravity but exist due to the attraction of solid surfaces for water, the attraction of water molecules for each other, and a force in the air-water interface due to the polar nature of water. { 'mā-trik ,förs-əz }
- matrix** [PETR] The continuous, fine-grained material in which large grains of a sediment or sedimentary rock are embedded. Also known as groundmass. { 'mā-triks }
- matrix porosity** [GEOL] Core-sample porosity determined from a small sample of the core, in contrast to total porosity, where the whole core is used. { 'mā-triks pə'räs-əd-ē }
- matrix rock** See land pebble phosphate. { 'mā-triks ,räk }
- matrix velocity** [GEOPHYS] The velocity of sound through a formation's rock matrix during an acoustic-velocity log. { 'mā-triks və'läs-əd-ē }
- mature** [GEOL] **1.** Pertaining to a topography or region, and to its landforms, having undergone maximum development and accentuation of form. **2.** Pertaining to the third stage of textural maturity of a clastic sediment. { mə'chür }
- matureland** [GEOL] The land surface which is characteristic of the mature stage in the erosion cycle. { mə'chür,land }
- mature soil** See zonal soil. { mə'chür 'sōil }

maturity

maturity [GEOL] **1.** The second stage of the erosion cycle in the topographic development of a landscape or region characterized by numerous and closely spaced mature streams, reduction of level surfaces to slopes, large well-defined drainage systems, and the absence of swamps or lakes on the uplands. Also known as topographic maturity. **2.** A stage in the development of a shore or coast that begins with the attainment of a profile of equilibrium. **3.** The extent to which the texture and composition of a clastic sediment approach the ultimate end product. **4.** The stage of stream development at which maximum vigor and efficiency has been reached. { mə'chür·əd·ē }

maturity index [GEOL] A measure of the progress of a clastic sediment in the direction of chemical or mineralogic stability; for example, a high ratio of quartz + cherts to feldspar + rock fragments indicates a highly mature sediment. { mə'chür·əd·ē ,in,dex }

maucherite [MINERAL] Ni₁₁As₈ A reddish silver-white mineral composed of nickel arsenide. { 'maü·chə,rit }

maximum subsidence [GEOL] The maximum amount of subsidence in a basin. { 'mak·sə·məm səb'sid·əns }

mcgovernite See magovernite. { mə'gəv·ər,nit }

meadow ore See bog iron ore. { 'med·ō ,ör }

meander bar See point bar. { mə'an·dər ,bär }

meander belt [GEOL] The zone along the floor of a valley across which a meandering stream periodically shifts its channel. { mə'an·dər ,belt }

meander core [GEOL] A hill encircled by a stream meander. Also known as rock island. { mə'an·dər ,kör }

meander niche [GEOL] A conical or crescentic opening in the wall of a cave formed by downward and lateral stream erosion. { mə'an·dər ,nich }

meander plain [GEOL] A plain built by the meandering process, or a plain of lateral accretion. { mə'an·dər ,plän }

meander scar [GEOL] A crescentic, concave mark on the face of a bluff or valley wall formed by a meandering stream. { mə'an·dər ,skär }

meander spur [GEOL] An undercut projection of high land that extends into the concave part of, and is enclosed by, a meander. { mə'an·dər ,spər }

mechanical erosion See corrasion. { mi'kan·ə·kəl i'rō·zhən }

mechanical sediment See clastic sediment. { mi'kan·ə·kəl 'sed·ə·mənt }

mechanical weathering [GEOL] The process of weathering by which physical forces break down or reduce a rock to smaller and smaller fragments, involving no chemical change. Also known as physical weathering. { mi'kan·ə·kəl 'weθ·ə·riŋ }

medial moraine [GEOL] **1.** An elongate moraine carried in or upon the middle of a glacier and parallel to its sides. **2.** A moraine formed by glacial abrasion of a rocky protuberance near the middle of a glacier. { 'mē·dē·əl mə'rän }

median mass [GEOL] A less disturbed structural block in the middle of an orogenic belt, bordered on both sides by orogenic structure, thrust away from it. Also known as betwixt mountains; Zwischengebirge. { 'mē·dē·ən 'mas }

median particle diameter [GEOL] The middlemost particle diameter of a rock or sediment, larger than 50% of the diameter in the distribution and smaller than the other 50%. { 'mē·dē·ən 'pärd·ə·kəl dī,am·əd·ər }

medina quartzite [MINERAL] A variety of quartz containing 97.8% silica; melting point is about 1700°C. { mə'dē·nə 'kwört,sit }

mediterranean See mesogeosyncline. { ,med·ə·tə'rā·nē·ən }

medium-volatile bituminous coal [GEOL] Bituminous coal consisting of 23–31% volatile matter. { 'mē·dē·əm 'väl·ə·təl bə'tü·mə·nəs 'köl }

Medullosaceae [PALEOBOT] A family of seed ferns; these extinct plants all have large spirally arranged petioles with numerous vascular bundles. { mə'dəl·əl·ə'sās·ē,ē }

meerscham See sepiolite. { 'mir,shöm }

megacryst [PETR] Any crystal or grain in an igneous or metamorphic rock that is significantly larger than the surrounding matrix. { 'meg·ə,krist }

- megacyclothem** [GEOL] A cycle of or combination of related cyclothem. { ,meg·ə'sī·klə,them }
- megaripple** [GEOL] A large sand wave. { 'meg·ə,rɪp·əl }
- megatectonics** [GEOL] The tectonics of the very large structural features of the earth. { ,meg·ə,tek'tän·iks }
- meionite** [MINERAL] $3\text{CaAl}_2\text{Si}_2\text{O}_8\cdot\text{CaCO}_3$ A scapolite mineral composed of calcium aluminosilicate and calcium carbonate; it is isomorphous with marialite. { 'mī·ə,nīt }
- mélange** [GEOL] A heterogeneous medley or mixture of rock materials; specifically, a mappable body of deformed rocks consisting of a pervasively sheared, fine-grained, commonly pelitic matrix, thoroughly mixed with angular and poorly sorted inclusions of native and exotic tectonic fragments, blocks, or slabs, of diverse origins and geologic ages, that may be as much as several kilometers in length. Also known as block clay. { mā'länzh }
- melanic** See melanocratic. { me'lan·ik }
- melanocerite** [MINERAL] $(\text{Ca,Ce,Y})_8(\text{BO}_3)(\text{SiO}_4)_4(\text{F,OH})_4$ A brown or black rhombohedral mineral composed of complex silicate, borate, fluoride, tantalate, or other anion of cerium, yttrium, calcium, and other metals; occurs as crystals. { |mel·ə·nō'se,rīt }
- melanocratic** [GEOL] Dark-colored, referring to igneous rock containing at least 50–60% mafic minerals. Also known as chromocratic; melanic. { |mel·ə·nō'krad·ik }
- melanophlogite** [MINERAL] A mineral composed chiefly of silicon dioxide and containing some carbon and sulfur. { |mel·ə·nō'flō,jīt }
- melanostibian** [MINERAL] $\text{Mn}(\text{Sb,Fe})\text{O}_3$ A black mineral consisting of iron and manganese antimonite; occurs as foliated masses and as striated crystals. { ,mel·ə·nō'stib·ē·ən }
- melanotekite** [MINERAL] $\text{Pb}_2\text{Fe}_2\text{Si}_2\text{O}_9$ A black or dark-gray mineral composed of lead iron silicate. { ,mel·ə·nō'tek,īt }
- melanovanadite** [MINERAL] $\text{Ca}_2\text{V}_{10}\text{O}_{25}$ A black mineral composed of a complex oxide of calcium and vanadium. { |mel·ə·nō'van·ə,dīt }
- melanterite** [MINERAL] $\text{FeSO}_4\cdot 7\text{H}_2\text{O}$ A green mineral occurring mainly in fibrous or concretionary masses, or in short, monoclinic, prismatic crystals; hardness is 2 on Mohs scale, and specific gravity is 1.90. { mə'lan·tə,rīt }
- melaphyre** [PETR] Altered basalt, especially of Carboniferous and Permian age. { 'mel·ə,fr }
- melilite** [MINERAL] A sorosilicate mineral group of complex composition $[(\text{Na,Ca})_2(\text{Mg,Al})(\text{Si,Al})_2\text{O}_7]$ crystallizing in the tetragonal system; luster is vitreous to resinous, and color is white, yellow, greenish, reddish, or brown; hardness is 5 on Mohs scale, and specific gravity varies from 2.95 to 3.04. { 'mel·ə,līt }
- melilitite** [PETR] An extrusive rock that is generally olivine-free and composed of more than 90% mafic mineral such as melilite and augite, with minor amounts of feldspathoids and sometimes plagioclase. { mə'lil·ə,tīt }
- meliphane** See meliphanite. { 'mel·ə,fän }
- meliphanite** [MINERAL] $(\text{Ca,Na})_2\text{Be}(\text{Si,Al})_2(\text{O,OH,F})_7$ A yellow, red, or black mineral composed of sodium calcium beryllium fluosilicate. Also known as meliphane. { mə'lif·ə,nīt }
- melissopalynology** [PALEOBOT] A branch of palynology that deals with the analysis of bee pollen loads (pollen collected from flowers and then carried back to the hive on the bee's hindlegs) and the pollen component within honeys. { mə,lis·ə,pal·ə'näl·ə·jē }
- melkite** [MINERAL] $\text{Al}_2[\text{C}_6(\text{COO})_6]\cdot 18\text{H}_2\text{O}$ A honey-colored mineral with resinous luster composed of the hydrous aluminum salt of mellitic acid, occurring as nodules in brown coal; it is in part a product of vegetable decomposition. { 'me,līt }
- melonite** [MINERAL] NiTe_2 A reddish-white mineral composed of nickel telluride. { 'mel·ə,nīt }
- member** [GEOL] A rock stratigraphic unit of subordinate rank comprising a specially developed part of a varied formation. { 'mem·bər }
- mendip** [GEOL] **1.** A buried hill that is exposed as an inlier. **2.** A coastal-plain hill that was originally an offshore island. { 'men,dip }

mendipite

- mendipite** [MINERAL] $Pb_3Cl_2O_2$ A white orthorhombic mineral consisting of an oxide and chloride of lead. { 'men·də,pīt }
- mendozite** [MINERAL] $NaAl(SO_4)_2 \cdot 11H_2O$ A monoclinic mineral of the alum group composed of hydrous sodium aluminum sulfate. { 'men·də,zīt }
- meneghinite** [MINERAL] $CuPb_{13}Sb_7S_{24}$ A blackish lead gray mineral consisting of lead antimony sulfide. { 'men·ə'gē,nīt }
- Meniscotheriidae** [PALEON] A family of extinct mammals of the order Condylarthra possessing selenodont teeth and molarized premolars. { mə,nis·kō·thə'rī·ə,dē }
- Meramecian** [GEOL] A North American provincial series of geologic time: Upper Mississippian (above Osagian, below Chesterian). { ,mer·ə'mē·shən }
- meraspis** [PALEON] Advanced larva of a trilobite; stage in which the pygidium begins to form. { mə'rəp·səs }
- Mercalli scale** [GEOPHYS] A 12-point scale for classifying the magnitude of an earthquake. { mer'käl·ē ,skäl }
- mercallite** [MINERAL] $KHSO_4$ A colorless or sky blue, orthorhombic mineral consisting of potassium acid sulfate; occurs as stalactites composed of minute crystals. { mə'r'kal,īt }
- mercurial horn ore** See calomel. { mə'r'kyūr·ē·əl 'hörn ,ör }
- meridional** [GEOL] Pertaining to longitudinal movements or directions, that is, northerly or southerly. { mə'rid·ē·ən·əl }
- merismite** [PETR] A type of chorismite in which penetration of the diverse units is irregular. { mə'rīz,mīt }
- merocrystalline** See hypocrySTALLINE. { ,mer·ə'krist·əl·ən }
- merrihueite** [MINERAL] $(K,Na)_2(Fe,Mg)_5Si_{12}O_{30}$ A silicate mineral found only in meteorites. { ,mer·ə'hwā,īt }
- merrillite** [MINERAL] $Ca_3(PO_4)_2$ Colorless phosphate mineral found only in meteorites. { 'mer·əl,īt }
- Mersey yellow coal** See tasmanite. { 'mər·zē 'yel·ō 'kōl }
- merwinite** [MINERAL] $Ca_2MgSi_2O_8$ A rare colorless or pale-green neosilicate mineral crystallizing in the monoclinic system; occurs in granular aggregates showing polysynthetic twinning; hardness is 6 on Mohs scale, and specific gravity is 3.15 { 'mər·wə,nīt }
- Merycoïdodontidae** [PALEON] A family of extinct tylopod ruminants in the superfamily Merycoïdodontoidea. { ,mer·ə,kōid·ə'dän·tə,dē }
- Merycoïdodontoidea** [PALEON] A superfamily of extinct ruminant mammals in the infraorder Tylopoda which were exceptionally successful in North America. { 'mer·ə,kōid·ə,dän'tōid·ē·ə }
- merzlota** See frozen ground. { ,merz'lō·tə }
- Mesacanthidae** [PALEON] An extinct family of primitive acanthodian fishes in the order Acanthodiformes distinguished by a pair of small intermediate spines, large scales, superficially placed fin spines, and a short branchial region. { ,mes·ə'kan·thə,dē }
- mesh texture** See reticulate. { 'mesh ,teks·chər }
- mesocratic** [PETR] Of igneous rock, being intermediate in color between leucocratic and melanocratic due to equal amounts of light and dark constituents. { ,mez·ə'krad·ik }
- mesocrystalline** [PETR] Of a crystalline rock, containing crystals whose diameters are intermediate between microcrystalline and macrocrystalline rock. { ,mez·ə'krist·əl·ən }
- mesogeosyncline** [GEOL] A geosyncline between two continents. Also known as mediterranean. { 'me·zō,jē·ō'siŋ,klīn }
- Mesohippus** [PALEON] An early ancestor of the modern horse; occurred during the Oligocene. { 'me·zō'hip·əs }
- mesolite** [MINERAL] $Na_2Ca_2Al_6Si_9O_{30} \cdot 8H_2O$ Zeolite mineral composed of hydrous sodium calcium aluminosilicate, usually found in white or colorless tufts of acicular crystals; used as cation exchangers or molecular sieves. { 'mez·ə,īt }
- Mesonychidae** [PALEON] A family of extinct mammals of the order Condylarthra. { ,me,zəŋ'kid·ə,dē }

metamorphic breccia

- mesopore** [PALEON] A tube paralleling the autopore or chamber in fossil bryozoans. { 'mez·ə,pór }
- Mesosauria** [PALEON] An order of extinct aquatic reptiles which is known from a single genus, *Mesosaurus*, characterized by a long snout, numerous slender teeth, small forelimbs, and webbed hindfeet. { ,me·zō'sōr·ē·ə }
- mesosiderite** [GEOL] A stony-iron meteorite containing about equal amounts of silicates and nickel-iron, with considerable troilite. Also known as grahamite. { !me·zō'sīd·ə,rīt }
- mesosphere** See lower mantle. { 'mez·ə,sfir }
- mesostasis** [GEOL] The last-formed interstitial material, either glassy or aphanitic, of an igneous rock. { !me·zō'stā·səs }
- Mesosuchia** [PALEON] A suborder of extinct crocodiles of the Late Jurassic and Early Cretaceous. { ,me·zō'sū·kē·ə }
- mesothermal** [MINERAL] Of a hydrothermal mineral deposit, formed at great depth at temperatures of 200–300°C. { !mez·ə'thər·məł }
- mesotil** [GEOL] A semiplastic or semifriable derivative of chemically weathered till; forms beneath a partially drained area. { 'mez·ə,tīł }
- Mesozoic** [GEOL] A geologic era from the end of the Paleozoic to the beginning of the Cenozoic; commonly referred to as the Age of Reptiles. { !mez·ə'zō·ik }
- mesozone** [PETR] The intermediate depth zone of metamorphism in metamorphic rock characterized by moderate temperatures (300–500°C), hydrostatic pressure, and shearing stress. { 'mez·ə,zōn }
- metaanthracite** [GEOL] Anthracite coal containing at least 98% fixed carbon. { !med·ə'an·thrə,sīt }
- metabentonite** [GEOL] Altered bentonite, formed by compaction or metamorphism; it swells very little and lacks the usual high colloidal properties of bentonite. { !med·ə'bent·ən,tīt }
- metacinnabar** [MINERAL] HgS A black isometric mineral that represents an ore of mercury. Also known as metacinnabarite. { ,med·ə'sin·ə,bār }
- metacinnabarite** See metacinnabar. { ,med·ə'sin·ə,bār,tīt }
- Metacopina** [PALEON] An extinct suborder of ostracods in the order Podocopida. { ,med·ə'kəp·ə,nə }
- metacryst** [PETR] A large crystal, such as garnet, formed in metamorphic rock by recrystallization. Also known as metacrystal. { 'med·ə,krist }
- metacrystal** See metacryst. { !med·ə'krist·əl }
- metahalloysite** [GEOL] A term used in Europe for the less hydrous form of halloysite. Also known as halloysite in the United States. { !med·ə'hə'lōi,sīt }
- metaharmosis** See metharmosis. { !med·ə'här'mō·səs }
- metahewettite** [MINERAL] CaV₆O₁₆·9H₂O A deep red, probably orthorhombic mineral consisting of hydrated calcium vanadate; occurs as pulverulent masses. { !med·ə'hyü·ə,tīt }
- metahohmannite** [MINERAL] Fe₂(SO₄)₂(OH)₂·3H₂O An orange mineral consisting of a hydrated basic iron sulfate; occurs as pulverulent masses. { !med·ə'hō·mə,nīt }
- metaigneous** [PETR] Pertaining to metamorphic rock formed from igneous rock. { !med·ə'ig·nē·əs }
- metalimnion** See thermocline. { ,med·ə'lim·nē,än }
- metalliferous** [MINERAL] Pertaining to mineral deposits from which metals can be extracted. { ,med·əl'if·ə·rəs }
- metallogenic province** [GEOL] A region characterized by a particular mineral assemblage, or by one or more specific types of mineralization. Also known as metallographic province. { mə'tal·ə'jen·ik 'präv·əns }
- metalographic province** See metallogenetic province. { mə'tal·ə,graf·ik 'präv·əns }
- metamict** [MINERAL] Of a radioactive mineral, exhibiting lattice disruption due to radiation damage while the original external morphology is retained. { 'med·ə,mikt }
- metamorphic aureole** See aureole. { !med·ə'mör·fik 'ör·ē,öl }
- metamorphic breccia** [PETR] Breccia formed by metamorphism. { !med·ə'mör·fik 'brech·ə }

metamorphic differentiation

metamorphic differentiation [PETR] Processes by which different mineral assemblages develop in some sequence from an initially uniform parent rock. { 'med·ə,mōr·fik ,dif·ə,ren·chē'ā·shen }

metamorphic facies [PETR] All rocks of any composition that have reached chemical equilibrium with respect to certain ranges of pressure and temperature during metamorphism, characterized by the stability of specific index minerals. Also known as densofacies. { 'med·ə'mōr·fik 'fā·shēz }

metamorphic facies series [PETR] A group of metamorphic facies characteristic of an individual area, represented in a pressure-temperature diagram by a curve or group of curves illustrating the range of the different types of metamorphism and metamorphic facies. { 'med·ə'mōr·fik 'fā·shēz ,sir·ēz }

metamorphic overprint See overprint. { 'med·ə'mōr·fik 'ō·vər,prɪnt }

metamorphic rock [PETR] A rock formed from preexisting solid rocks by mineralogical, structural, and chemical changes, in response to extreme changes in temperature, pressure, and shearing stress. { 'med·ə'mōr·fik 'rāk }

metamorphic rock reservoir [GEOL] Uncommon type of formation for oil reservoir; developed when secondary porosity results from fracturing or weathering. { 'med·ə'mōr·fik 'rāk 'rez·əv,wär }

metamorphic zone See aureole. { 'med·ə'mōr·fik 'zōn }

metamorphism [PETR] The mineralogical and structural changes of solid rock in response to environmental conditions at depth in the earth's crust. { 'med·ə'mōr ,fiz·əm }

metaquartzite [MINERAL] A quartzite formed by metamorphic recrystallization. { 'med·ə'kwōrt,zīt }

metaripple [GEOL] An asymmetrical sand ripple. { 'med·ə,rip·əl }

metarossite [MINERAL] $\text{CaV}_2\text{O}_6 \cdot 2\text{H}_2\text{O}$ A light yellow mineral consisting of hydrated calcium vanadate; occurs as masses and veinlets. { 'med·ə'rō,sīt }

metasediment [GEOL] A sediment or sedimentary rock which shows evidence of metamorphism. [PETR] Metamorphic rock formed from sedimentary rock. { 'med·ə'sed·ə·mənt }

metasideronatrite [MINERAL] $\text{Na}_4\text{Fe}_2(\text{SO}_4)_4(\text{OH})_2 \cdot 3\text{H}_2\text{O}$ A yellow mineral composed of basic hydrous iron sodium sulfate. { 'med·ə,sid·ə·rə'nā,trīt }

metasilicate [MINERAL] A salt of the hypothetical metasilicic acid H_2SiO_3 . Also known as bisilicate. { 'med·ə'sil·ə,kāt }

metasomatic [PETR] Pertaining to the process or the result of metasomatism. { 'med·ə·sō'mad·ik }

metasomatism [PETR] A variety of metamorphism in which one mineral or a mineral assemblage is replaced by another of different composition without melting. { ,med·ə'sō·mə ,tiz·əm }

metatorbernite [MINERAL] $\text{Cu}(\text{UO}_2)_2(\text{PO}_4)_2 \cdot 8\text{H}_2\text{O}$ A green secondary mineral composed of hydrous copper uranium phosphate; similar to torbernite, but with less water content. { 'med·ə'tōr·bər,nīt }

metavariscite [MINERAL] $\text{AlPO}_4 \cdot 2\text{H}_2\text{O}$ A green monoclinic mineral composed of hydrous aluminum phosphate; it is isomorphous with phosphosiderite. { 'med·ə'var·ə,sīt }

metavauxite [MINERAL] $\text{FeAl}_2(\text{PO}_4)_2(\text{OH})_2 \cdot 8\text{H}_2\text{O}$ A colorless mineral composed of hydrous basic phosphate of iron and aluminum; similar to vauxite, but with more water. { 'med·ə'vōk,sīt }

metavoltine [MINERAL] A yellowish-brown or orange-brown to greenish-brown, hexagonal mineral consisting of a hydrated basic sulfate of iron and potassium; occurs in tabular form or as aggregates. { 'med·ə'vōl,tēn }

metazeunerite [MINERAL] $\text{Cu}(\text{UO}_2)_2(\text{AsO}_4)_2 \cdot 8\text{H}_2\text{O}$ A grass to emerald green, tetragonal mineral consisting of a hydrated arsenate of copper and uranium; occurs in tabular form. { 'med·ə'zōi·nə,rīt }

meteoric stone See stony meteorite. { ,mēd·ē'ōr·ik 'stōn }

meteorite [GEOL] Any meteoroid that has fallen to the earth's surface. { 'mēd·ē·ə,rīt }

meteorite crater [GEOL] An impact crater on the surface of the earth or of a celestial

microfacies

- body caused by a meteorite; a characteristic feature on the earth is the upturned rim, which formed as the rocks rebounded following the impact. { 'mēd·ē·ə, rīt ,krād·ər }
- meteorolite** See stony meteorite. { ,med·ē'ór·ə,līt }
- metharmosis** [GEOL] Changes that occur in a buried sediment after uplift or consolidation but before the onset of weathering. Also spelled metaharmosis. { mə'thär·mə'səs }
- Mexican onyx** See onyx marble. { 'mek·si·kən 'än·iks }
- meyerhofferite** [MINERAL] $\text{Ca}_2\text{B}_6\text{O}_{11}\cdot 7\text{H}_2\text{O}$ A colorless, hydrated borate mineral that crystallizes in the triclinic system. { 'mī·ər,häf·ə,rīt }
- Miacidae** [PALEON] The single, extinct family of the carnivoran superfamily Miacioidea. { mī'as·ə,dē }
- Miacioidea** [PALEON] A monofamilial superfamily of extinct carnivoran mammals; a stem group thought to represent the progenitors of the earliest member of modern carnivoran families. { ,mī·ə'koid·ē·ə }
- miagite** See corsite. { 'mī·ə,jīt }
- miargyrite** [MINERAL] AgSbS_2 An iron-black to steel-gray mineral that crystallizes in the monoclinic system. { mī'är·jə,rīt }
- miarolithite** [PETR] A chorismite type of igneous rock having miarolitic cavities or vestiges thereof. { ,mē·ə'rō·lə,thīt }
- miarolitic** [PETR] Of igneous rock, characterized by small irregular cavities into which well-formed crystals of the rock-forming mineral protrude. { 'mē·ə'rō'lid·ik }
- mica** [MINERAL] A group of phyllosilicate minerals (with sheetlike structures) of general formula $(\text{K},\text{Na},\text{Ca})(\text{Mg},\text{Fe},\text{Li},\text{Al})_{2-3}(\text{Al},\text{Si})_4\text{O}_{10}(\text{OH},\text{F})_2$ characterized by low hardness ($2-2\frac{1}{2}$) and perfect basal cleavage. { 'mī·kə }
- mica book** [MINERAL] A crystal of mica, usually large and irregular, whose cleavage plates resemble the leaves of a book. Also known as book. { 'mī·kə ,bük }
- micaceous** [GEOL] Pertaining to or resembling mica. { mī'kā·shəs }
- micaceous arkose** [PETR] A sandstone containing 25–90% feldspars and feldspathic crystalline rock fragments, 10–50% micas and micaceous metamorphic rock fragments, and 0–65% quartz, chert, and metamorphic quartzite. { mī'kā·shəs 'är,kōs }
- mica schist** [PETR] A schist which is composed essentially of mica and quartz and whose characteristic foliation is mainly due to the parallel orientation of the mica flakes. { 'mī·kə ,shist }
- michenerite** [MINERAL] A silver-white mineral (PdBiTe) that is a major source of palladium. { 'mich·ə·nə,rīt or 'mich·nə,rīt }
- micrinite** [PETR] An opaque granular variety of inertinite of medium hardness showing no plant-cell structure. { 'mī·krə,nīt }
- micrite** [PETR] A semiopaque crystalline limestone matrix that consists of chemically precipitated calcite mud, whose crystals are generally 1–4 micrometers in diameter. { 'mī,krīt }
- microbarm** [GEOPHYS] That portion of the record of a microbarograph between any two or a specified small number of the successive crossings of the average pressure level in the same direction; analogous to microseism. { 'mī·krə,bärm }
- microbreccia** [GEOL] A poorly sorted sandstone containing large, angular sand particles in a fine silty or clayey matrix. { 'mī·krō'brech·ə }
- microcline** [MINERAL] KAlSi_3O_8 A triclinic potassium-rich feldspar, usually containing minor amounts of sodium; may be clear, white, pale-yellow, brick-red, or green, and is generally characterized by crosshatch twinning. { 'mī·krə,klin }
- microcoquina** [PETR] A clastic limestone composed wholly or partially of cemented sand-size particles of shell detritus. { 'mī·krō·kə'kē·nə }
- Microdomatacea** [PALEON] An extinct superfamily of gastropod mollusks in the order Aspidobranchia. { ,mī·krə,dō·mə'tās·ē·ə }
- microearthquake** [GEOPHYS] An earthquake with a low intensity, usually less than 3 on the Richter scale. Also known as microquake. { ,mī·krō'ərth,kwāk }
- microfacies** [PETR] The composition, features, or appearance of a rock or mineral in thin section under the microscope. { 'mī·krō'fā·shēz }

microfossil

- microfossil** [PALEON] A small fossil which is studied and identified by means of the microscope. { 'mī·krō'fās·əl }
- microlite** [MINERAL] (Na,Ca)₂(Ta,Nb)₂O₆(O,OH,F) A pale-yellow, reddish, brown, or black isometric mineral composed of sodium calcium tantalum oxide with a small amount of fluorine; it is isomorphous with pyrochlore. Also known as djalmaite. { 'mī·krō,līt }
- microlithology** [PETR] Microscopic study of the characteristics of rocks. { 'mī·krō·li'thāl·ə·jē }
- microlitic** [PETR] Of the texture of a porphyritic igneous rock, having a groundmass composed of an aggregate of microlites in a generally glassy base. { 'mī·krō'lid·ik }
- micropaleontology** [PALEON] A branch of paleontology that deals with the study of microfossils. { 'mī·krō,pā·lē·ən'täl·ə·jē }
- micropegmatite** [PETR] Microcrystalline graphic granite. { 'mī·krō'peg·mə,tīt }
- microp Perthite** [MINERAL] Perthite in which the lamellae are visible only under the microscope. { 'mī·krō'pər,thīt }
- microphyric** [PETR] Of the texture of an igneous rock, containing microscopic phenocrysts (longest dimension 0.2 millimeter). Also known as microporphyritic. { 'mī·krō'fir·ik }
- micropoikilitic** [PETR] Of the texture of an igneous rock, having poikilitic character visible only under the microscope. { 'mī·krō,poi·kə'lid·ik }
- micropore** [GEOL] A pore small enough to hold water against the pull of gravity and to retard water flow. { 'mī·krō,pòr }
- microporphyritic** See microphyric. { 'mī·krō,pòr·fə'rid·ik }
- micropulsation** [GEOPHYS] A short-period geomagnetic variation in the range of about 0.2–600 seconds, typically exhibiting an oscillatory waveform. { 'mī·krō·pəl'sā·shən }
- microquake** See microearthquake.
- Microsauria** [PALEON] An order of Carboniferous and early Permian lepospondylous amphibians. { ,mī·krō'sór·ē·ə }
- microseism** [GEOPHYS] A weak, continuous, oscillatory motion in the earth having a period of 1–9 seconds and caused by a variety of agents, especially atmospheric agents; not related to an earthquake. { 'mī·krō,sīz·əm }
- microspherulitic** [PETR] Of the texture of an igneous rock, having spherulitic character visible only under the microscope. { 'mī·krō,sfer·ə'lūd·ik }
- microstylolite** [PETR] A stylolite in which the surface relief is less than 1 millimeter. { 'mī·krō'stīl·ə,līt }
- microtectonics** See structural petrology. { 'mī·krō,tek'tän·iks }
- microtektite** [GEOL] An extremely small tektite, 1 millimeter or less in diameter. { ,mī·krō'tek,tīt }
- Microtragulidae** [PALEON] A group of saltatorial caenolistoid marsupials that appeared late in the Cenozoic and paralleled the small kangaroos of Australia. { ,mī·krō·trə'gyūl·ə,dē }
- microvitrain** [GEOL] A coal lithotype; fine vitrain-like lenses or laminae in clarain. { 'mī·krō'vi,trān }
- mid-Atlantic ridge** [GEOL] The mid-oceanic ridge in the Atlantic. { ,mid·ət'lan·tik 'rij }
- Middle Cambrian** [GEOL] The geologic epoch occurring between Upper and Lower Cambrian, beginning approximately 540,000,000 years ago. { 'mid·əl 'kam·brē·ən }
- Middle Cretaceous** [GEOL] The geologic epoch between the Upper and Lower Cretaceous, beginning approximately 120,000,000 years ago. { 'mid·əl krə'tā·shəs }
- Middle Devonian** [GEOL] The geologic epoch occurring between the Upper and Lower Devonian, beginning approximately 385,000,000 years ago. { 'mid·əl di'vō·nē·ən }
- Middle Jurassic** [GEOL] The geologic epoch occurring between the Upper and Lower Jurassic, beginning approximately 170,000,000 years ago. { 'mid·əl jə'rās·ik }
- Middle Mississippian** [GEOL] The geologic epoch between the Upper and Lower Mississippian. { 'mid·əl ,mis·ə'sip·ē·ən }
- Middle Ordovician** [GEOL] The geologic epoch occurring between the Upper and Lower

- Ordovician, beginning approximately 460,000,000 years ago. { 'mid·əl ,ɔr·də'vish·ən }
- Middle Pennsylvanian** [GEOL] The geologic epoch between the Upper and Lower Pennsylvanian. { 'mid·əl ,pen·səl'vā·nyə }
- Middle Permian** [GEOL] The geologic epoch occurring between the Upper and Lower Permian, beginning approximately 260,000,000 years ago. { 'mid·əl 'pər·mē·ən }
- Middle Silurian** [GEOL] The geologic epoch between the Upper and Lower Silurian. { 'mid·əl si'lūr·ē·ən }
- Middle Triassic** [GEOL] The geologic epoch occurring between the Upper and Lower Triassic, beginning approximately 215,000,000 years ago. { 'mid·əl trī'as·ik }
- midfan** [GEOL] The portion of an alluvial fan between the fanhead and the outer, lower margins. { 'mid,fan }
- mid-ocean canyon** *See* deep-sea channel. { 'mid|ō·shən 'kan·yən }
- mid-oceanic ridge** [GEOL] A continuous, median, seismic mountain range on the floor of the ocean, extending through the North and South Atlantic oceans, the Indian Ocean, and the South Pacific Ocean; the topography is rugged, elevation is 0.6–1.8 miles (1–3 kilometers), width is about 900 miles (1500 kilometers), and length is over 52,000 miles (84,000 kilometers). Also known as mid-ocean ridge; mid-ocean rise; oceanic ridge. { 'mid,ō·shē|an·ik 'rij }
- mid-ocean ridge** *See* mid-oceanic ridge. { 'mid|ō·shən 'rij }
- mid-ocean rift** *See* rift valley. { 'mid|ō·shən 'rift }
- mid-ocean rise** *See* mid-oceanic ridge. { 'mid|ō·shən 'rīs }
- miersite** [MINERAL] (Cu,Ag)I A canary yellow, isometric mineral consisting of copper and silver iodide. { 'mīr,zīt }
- migma** [GEOL] A mixture of solid rock materials and rock melt with mobility or potential mobility. { 'mig,mə }
- migmatite** [PETR] A mixed rock exhibiting crystalline textures in which a truly metamorphic component is streaked and mixed with obviously once-molten material of a more or less granitic character. { 'mig,mə,tīt }
- migmatization** [PETR] Formation of migmatite; involves either injection or in-place melting. { ,mig·mə·də'zā·shən }
- migration** [GEOL] **1.** Movement of a topographic feature from one place to another, especially movement of a dune by wind action. **2.** Movement of liquid or gaseous hydrocarbons from their source into reservoir rocks. { mī'grā·shən }
- migratory dune** *See* wandering dune. { 'mī·grə,tōr·ē 'dün }
- Milankovitch cycles** [GEOPHYS] Periodic variations in the earth's position relative to the sun as the earth orbits, affecting the distribution of the solar radiation reaching the earth and causing climatic changes that have profound impacts on the abundance and distribution of organisms, best seen in the fossil record of the Quaternary Period (the last 1.6 million years). { mē·lən'kō·vich ,sīk·əlz }
- milarite** [MINERAL] $K_2Ca_4Be_4Al_2Si_{24}O_{62} \cdot H_2O$ A colorless to greenish, glassy, hexagonal mineral composed of a hydrous silicate of potassium, calcium, beryllium, and aluminum, occurring in crystals. { 'mē,lä,rīt }
- milky quartz** [MINERAL] An opaque, milk-white variety of crystalline quartz, often with a greasy luster; milkiness is due to the presence of air-filled cavities. Also known as greasy quartz. { 'mil·kē 'kwōrts }
- millerite** [MINERAL] NiS A brass to bronze-yellow mineral that crystallizes in the hexagonal system and usually contains trace amounts of cobalt, copper, and iron; hardness is 3–3.5 on Mohs scale, and specific gravity is 5.5; it generally occurs in fine crystals, chiefly as nodules in clay ironstone. Also known as capillary pyrites; hair pyrites; nickel pyrites. { 'mil·ə,rīt }
- millisite** [MINERAL] (Na,K)CaAl₆(PO₄)₄(OH)₉·3H₂O White mineral composed of a basic hydrous phosphate of sodium, potassium, calcium, and aluminum. { 'mil·ə,sīt }
- millstone** *See* buhrstone. { 'mil,stōn }
- mimetene** *See* mimetite. { 'mim·ə,tēn }
- mimetesite** *See* mimetite. { mə'med·ə,zīt }

mimetic

- mimetic** [PETR] Of a tectonite, having a deformation fabric, formed by mimetic crystallization, that reflects and is influenced by preexisting anisotropic structure. { mə'med-ik }
- mimetic crystallization** [PETR] Recrystallization or neomineralization in metamorphism which reproduces preexistent structures. { mə'med-ik ,krist-əl-ə'zā-shən }
- mimetite** [MINERAL] $Pb_5(AsO_4)_3Cl$ A yellow to yellowish-brown mineral of the apatite group, commonly containing calcium or phosphate; a minor ore of lead. Also known as mimetene; mimetosite. { 'mim-ə,tīt }
- minasragrite** [MINERAL] $(VO)_2H_2(SO_4)_3 \cdot 15H_2O$ A blue, monoclinic mineral consisting of hydrated acid vanadyl sulfate; occurs in efflorescences and as aggregates or masses. { ,mē-nās'rā,grīt }
- Mindel glaciation** [GEOL] The second glacial stage of the Pleistocene in the Alps. { 'min-dəl ,glā-sē'ā-shən }
- Mindel-Riss interglacial** [GEOL] The second interglacial stage of the Pleistocene in the Alps; follows the Mindel glaciation. { 'min-dəl 'ris ,in-tər'glā-shəl }
- mineragraphy** See ore microscopy. { ,min-ə'räg-rə-fē }
- mineral** [GEOL] A naturally occurring substance with a characteristic chemical composition expressed by a chemical formula; may occur as individual crystals or may be disseminated in some other mineral or rock; most mineralogists include the requirements of inorganic origin and internal crystalline structure. { 'min-rəl }
- mineral caoutchouc** See elaterite. { 'min-rəl 'kaù,çhùk }
- mineral charcoal** See fusain. { 'min-rəl 'chär,kōl }
- mineral deposit** [GEOL] A mass of naturally occurring mineral material, usually of economic value. { 'min-rəl di,pāz-ət }
- mineral facies** [PETR] Rocks of any origin whose components have been formed within certain temperature-pressure limits characterized by the stability of certain index minerals. { 'min-rəl 'fā,shēz }
- mineralization** [GEOL] **1.** The process of fossilization whereby inorganic materials replace the organic constituents of an organism. **2.** The introduction of minerals into a rock, resulting in a mineral deposit. { ,min-rə-lə'zā-shən }
- mineralize** [GEOL] To convert to, or impregnate with, mineral material; applied to processes of ore vein deposition and of fossilization. { 'min-rə,līz }
- mineralizer** [GEOL] A gas or fluid dissolved in a magma that aids in the concentration and crystallization of ore minerals. { 'min-rə,līz-ər }
- mineralogenetic epoch** [GEOL] A geologic time period during which mineral deposits formed. { ,min-rə-lō-jə'ned-ik 'ep-ək }
- mineralogenetic province** [GEOL] Geographic region where conditions were favorable for the concentration of useful minerals. { ,min-rə-lō-jə'ned-ik 'prā-vəns }
- mineralogical phase rule** [MINERAL] Any of several variations of the Gibbs phase rule, taking into account the number of degrees of freedom consumed by the fixing of physical-chemical variables in the natural environment; it assumes that temperature and pressure are fixed externally and that consequently the number of phases (minerals) in a system (rock) will not usually exceed the number of components. { ,min-rə'lāj-ə-kəl 'fāz ,rül }
- mineralogist** [MINERAL] A person who studies the occurrence, description, mode of formation, and uses of minerals. { ,min-ə'räl-ə-jəst }
- mineralography** See ore microscopy. { ,min-rə'läg-rə-fē }
- mineraloid** [MINERAL] A naturally occurring, inorganic material that is amorphous and is therefore not considered to be a mineral. Also known as gel mineral. { 'min-rə,lōid }
- mineral resources** [GEOL] Valuable mineral deposits of an area that are presently recoverable and may be so in the future; includes known ore bodies and potential ore. { 'min-rəl ri'sórs-əz }
- mineral sequence** See paragenesis. { 'min-rəl 'sē-kwəns }
- mineral soil** [GEOL] Soil composed of mineral or rock derivatives with little organic matter. { 'min-rəl ,sōil }

- mineral suite** [MINERAL] **1.** A group of associated minerals in one deposit. **2.** A representative group of minerals from a certain locality. **3.** A group of specimens showing variations, as in color or form, in a single mineral species. { 'min·rəl 'swēt }
- mineral tallow** See hatchettite. { 'min·rəl 'tal·ō }
- mineral wax** See ozocerite. { 'min·rəl 'waks }
- minette** [PETR] A syenitic variety of lamprophyre composed principally of biotite phenocrysts in a matrix of orthoclase and biotite. { mə'net }
- minium** [MINERAL] Pb_3O_4 A scarlet or orange-red mineral consisting of an oxide of lead; found in Wisconsin and the western United States. Also known as red lead. { 'min·ē·əm }
- minus-cement porosity** [GEOL] The porosity that would characterize a sedimentary material if it contained no chemical cement. { 'mī·nəs sɪ'ment pə'rās·əd·ē }
- minyulite** [MINERAL] $KAl_2(PO_4)_2(OH,F)·4H_2O$ A white mineral composed of hydrous basic potassium aluminum phosphate. { 'min·yə,lɪt }
- Miocene** [GEOL] A geologic epoch of the Tertiary period, extending from the end of the Oligocene to the beginning of the Pliocene. { 'mī·əs·ēn }
- miocrystalline** See hypocrySTALLINE. { 'mī·ō'krist·əl·ən }
- miogeocline** [GEOL] A nonvolcanic (nonmagmatic) continental margin, characterized by carbonate, shale, and sandstone sediments. { ,mī·ō'jē·ə,klɪn }
- miogeosyncline** [GEOL] The nonvolcanic portion of an orthogeosyncline, located adjacent to the craton. { 'mī·ō'jē·ō'sɪn,klɪn }
- Miosireninae** [PALEON] A subfamily of extinct sirenian mammals in the family Dugongidae. { 'mī·ō·sə'ren·ə,nē }
- mirabilite** [MINERAL] $Na_2SO_4·10H_2O$ A yellow or white monoclinic mineral consisting of hydrous sodium sulfate, occurring as a deposit from saline lakes, playas, and springs, and as an efflorescence; the pure crystals are known as Glauber's salt. { mə'rəb·əlɪt }
- mire** [GEOL] Wet spongy earth, as of a marsh, swamp, or bog. { mɪr }
- mirror glance** See wehrLITE. { 'mɪr·ər ,glans }
- mirror stone** See muscovITE. { 'mɪr·ər ,stōn }
- misenite** [MINERAL] $K_8H_6(SO_4)_7$ A white mineral composed of native acid potassium sulfate. { mə'ze,nɪt }
- mispickel** See arsenopyrite. { 'mi,spɪk·əl }
- Mississippian** [GEOL] The fifth period of the Paleozoic Era beginning about 350 million years ago and ending about 320 million years ago. The Mississippian System (referring to rocks) or Period (referring to the time during which these rocks were deposited) is employed in North America as the lower (or older) subdivision of the Carboniferous, as used in Europe and on other continents. { 'mɪs·ə'sɪp·i·ən }
- Missourian** [GEOL] A North American provincial series of geologic time: lower Upper Pennsylvanian (above Desmoinesian, below Virgilian). { mə'zʊr·ē·ən }
- mitscherlichite** [MINERAL] $K_2CuCl_4·2H_2O$ A greenish-blue, tetragonal mineral consisting of potassium copper chloride dihydrate. { 'mɪtʃ·ər·lɪ,ktɪt }
- mixed-layer mineral** [MINERAL] A mineral having an interstratified structure consisting of alternating layers of two different clays or of a clay and some other mineral. { 'mɪkst 'lā·ər 'mɪn·rəl }
- mixed ore** [GEOL] Any ore with both oxidized and unoxidized minerals. { 'mɪkst 'ɔr }
- mixite** [MINERAL] $Cu_{11}Bi(AsO_4)_5(OH)_{10}·6H_2O$ A green to whitish mineral composed of a hydrous basic arsenate of copper and bismuth. { 'mɪk,sɪt }
- Mixodectidae** [PALEON] A family of extinct insectivores assigned to the Proteutheria; a superficially rodentlike group confined to the Paleocene of North America. { ,mɪk·sə'dek·tə,dē }
- mixtite** See diamictite. { 'mɪks,tɪt }
- mizzonite** [MINERAL] A mineral of the scapolite group, composed of 54 to 57% silica. Also known as dipyre. { 'mɪz·ən,nɪt }
- moat** [GEOL] **1.** A ringlike depression around the base of a seamount. **2.** A valleylike depression around the inner side of a volcanic cone, between the rim and the lava dome. { mōt }

mobile belt

- mobile belt** [GEOL] A long, relatively narrow crustal region of tectonic activity. { 'mō·bəl 'bɛlt }
- mobilization** [GEOL] Any process by which solid rock becomes sufficiently soft and plastic to permit it to flow or to permit geochemical migration of the mobile components. { ,mō·bə·lə'zā·shən }
- mock lead** *See* sphalerite. { 'māk 'led }
- mock ore** *See* sphalerite. { 'māk 'ɔr }
- mode** [PETR] The mineral composition of a rock, usually expressed as percentages of total weight or volume. { mōd }
- moder** [GEOL] Humus consisting of plant material that is undergoing alteration from the living to the decayed state and is intermediate in acidity between mor and mull. { 'mōd·ər }
- Moeritheriidae** [PALEON] The single family of the extinct order Moeritherioidea. { ,mir·ə·thə'ri·ə,dē }
- Moeritherioidea** [PALEON] A suborder of extinct sirenian mammals considered as primitive proboscideans by some authorities and as a sirenian offshoot by others. { ,mir·ə·thir·ē'oid·ē·ə }
- mofette** [GEOL] A small opening emitting carbon dioxide in an area of late-stage volcanic activity. { mō'fet }
- mohavite** *See* tinalconite. { mō'hä,vīt }
- Mohawkian** [GEOL] A North American stage of middle Ordovician geologic time, above Chazyan and below Edenian. { mō'hök·ē·ən }
- Mohnian** [GEOL] A North American stage of geologic time: Miocene (above Luisian, below Delmontian). { 'mō·nē·ən }
- Moho** *See* Mohorovičić discontinuity. { 'mō·hō }
- Mohole drilling** [GEOL] Drilling aimed at penetrating of the earth's crust, through the Mohorovičić discontinuity, to sample the mantle. { 'mō,hōl ,dri·lɪŋ }
- Mohorovičić discontinuity** [GEOPHYS] A seismic discontinuity that separates the earth's crust from the subjacent mantle, inferred from travel time curves indicating that seismic waves undergo a sudden increase in velocity. Also known as Moho. { ,mō·hō'rō·və·chich dis,känt·ən'ü·əd·ē }
- mohsite** *See* ilmenite. { 'mō,sīt }
- Mohs scale** [MINERAL] An empirical scale consisting of 10 minerals with reference to which the hardness of all other minerals is measured; it includes, from softest (designated 1) to hardest (10): talc, gypsum, calcite, fluorite, apatite, orthoclase, quartz, topaz, corundum, and diamond. { 'mōz ,skāl }
- moissanite** [MINERAL] SiC A carbide mineral found in meteorites; identical with artificial carborundum. { 'móis·ən,īt }
- moisture film cohesion** *See* apparent cohesion. { 'móis·chər 'film kō,hē·zhən }
- molasse** [GEOL] A paralic sedimentary facies consisting mainly of shale, subgraywacke sandstone, and conglomerate; it is more clastic and less rhythmic than the preceding flysch and is generally postorogenic. { mə'lās }
- mold** [GEOL] Soft, crumbling friable earth. [PALEON] An impression made in rock or earth material by an inner or outer surface of a fossil shell or other organic structure; a complete mold would be the hollow space. { mōld }
- moldavite** *See* moldavite. { mōl'dä,vīt }
- moldavite** [GEOL] A translucent, olive-to brownish-green or pale-green tektite from western Czechoslovakia, characterized by surface sculpturing due to solution etching. Also known as moldavite; pseudochrysolite; vitavite. [MINERAL] A variety of zoocerite from Moldavia. { mōl'dä,vīt }
- molecular fossils** *See* biomarkers. { mə'lek·yə·lər 'fäs·əlz }
- Mollisol** [GEOL] An order of soils having dark or very dark, friable, thick A horizons high in humus and bases such as calcium and magnesium; most have lighter-colored or browner B horizons that are less friable and about as thick as the A horizons; all but a few have paler C horizons, many of which are calcareous. { 'mal·ə,säl }

montmorillonite

- molybdenite** [MINERAL] MoS_2 A metallic, lead-gray mineral that crystallizes in the hexagonal system and is commonly found in scales or foliated masses; hardness is 1.5 on Mohs scale, and specific gravity is 4.7; it is chief ore of molybdenum. { mə'lib-də,nīt }
- molybdic ocher** See molybdenite. { mə'lib-dik 'ō-kər }
- molybdine** See molybdenite. { mə'lib,dēn }
- molybdenite** [MINERAL] MoO_3 A mineral, much of which is actually ferrimolybdenite. Also known as molybdic ocher; molybdine. { mə'lib,dīt }
- molybdophyllite** [MINERAL] $(\text{Pb,Mg})_2\text{SiO}_4 \cdot \text{H}_2\text{O}$ A colorless, white, or pale-green mineral composed of a silicate of lead and magnesium. { mə'lib-dō'fi,līt }
- molysite** [MINERAL] FeCl_3 A brownish-red or yellow mineral composed of native ferric chloride, occurring in lava at Vesuvius. { 'mäl-ə,sīt }
- monadnock** [GEOL] A remnant hill of resistant rock rising abruptly from the level of a peneplain; commonly represents an outcrop of rock that has withstood erosion. Also known as torso mountain. { mə'nad,näk }
- monalbite** [MINERAL] A modification of albite with monoclinic symmetry that is stable under equilibrium conditions at temperatures (about 1000°C) near the melting point. { ,mō'nal,bīt }
- monazite** [MINERAL] A yellow or brown rare-earth phosphate monoclinic mineral with appreciable substitution of thorium for rare-earths and silicon for phosphorus; the principal ore of the rare earths and of thorium. Also known as cryptolite. { 'män-ə,zīt }
- monchiquite** [PETR] A lamprophyre composed of olivine, pyroxene, and usually mica or amphibole phenocrysts embedded in a glass or analcime groundmass. { 'man·chə,kwīt }
- monetite** [MINERAL] CaHPO_4 A yellowish-white mineral consisting of an acid calcium hydrogen phosphate, occurring in crystals. { 'män-ə,tīt }
- monimolite** [MINERAL] $(\text{Pb,Ca})_2\text{Sb}_2\text{O}_8$ Yellowish to brownish or greenish mineral composed of lead calcium antimony oxide; it may contain ferrous iron. { mə'nim-ə,līt }
- Monobothrida** [PALEON] An extinct order of monocyelic camerate crinoids. { ,män-ō'bäth-rə-də }
- monocline** [GEOL] A stratigraphic unit that dips from the horizontal in one direction only, not as part of an anticline or syncline. { 'män-ə,klīn }
- Monocyathia** [PALEON] A class of extinct parazoans in the phylum Archaeocyathia containing single-walled forms. { ,män-ō-sī'ā-thē-ə }
- monogeosyncline** [GEOL] A primary geosyncline that is long, narrow, and deeply subsided; composed of the sediments of shallow water and situated along the inner margin of the borderlands. { ,män-ō,jē-ō'sin,klīn }
- monomineralic** [PETR] Of a rock, composed entirely or principally of a single mineral. { ,män-ō,min-ə'ral-ik }
- monopyroxene clinoaugite** See clinopyroxene. { ,män-ō-pə'räk,sēn 'klī-nō'jō,gät }
- montanite** [MINERAL] $\text{Bi}_2\text{O}_3 \cdot \text{TeO}_3 \cdot 2\text{H}_2\text{O}$ A yellowish mineral consisting of a hydrated tellurate of bismuth; occurs in soft and earthy to compact form. { män'ta,nīt }
- montebrasite** [MINERAL] $\text{LiAlPO}_4(\text{OH})$ A mineral composed of basic lithium aluminum phosphate; it is isomorphous with amblygonite and natromontebrasite. { ,män-tə'brä,zīt }
- montgomeryite** [MINERAL] $\text{Ca}_2\text{Al}_2(\text{PO}_4)_3(\text{OH}) \cdot 7\text{H}_2\text{O}$ A green to colorless mineral composed of hydrous basic calcium aluminum phosphate. { mant'gəm-rē,līt }
- Montian** [GEOL] A European stage of geologic time: Paleocene (above Danian, below Thanetian). { 'män·chən }
- monticellite** [MINERAL] CaMgSiO_4 A colorless or gray mineral of the olivine structure type; isomorphous with kirsch steinitite. { ,män-tə'se,līt }
- montmorillonite** [MINERAL] **1.** A group name for all clay minerals with an expanding structure, except vermiculite. **2.** The high-alumina end member of the montmorillonite group; it is grayish, pale red, or blue and has some replacement of aluminum ion by magnesium ion. **3.** Any mineral of the montmorillonite group. { ,mänt-mə'rīl-ə,nīt }

montroydite

- montroydite** [MINERAL] HgO Natural mercury oxide mineral from Texas. {män 'trói,dīt }
- monzonite** [PETR] A phaneritic (visibly crystalline) plutonic rock composed chiefly of sodic plagioclase and alkali feldspar, with subordinate amounts of dark-colored minerals, intermediate between syenite and dorate. { 'män·zə,nīt }
- moonstone** [MINERAL] An alkali feldspar or cryptoperthite that is semitransparent to translucent and exhibits a bluish to milky-white, pearly, or opaline luster; used as a gemstone if flawless. Also known as hecatolite. { 'mün,stōn }
- moor coal** [GEOL] A friable lignite or brown coal. { 'mür ,kōl }
- mooreite** [MINERAL] (Mg,Zn,Mn)₈(SO₄)₄(OH)₁₄·4H₂O A glassy white mineral composed of hydrous basic magnesium zinc manganese sulfate. { 'mür,īt }
- mor** See ectohumus. { mör }
- morainal apron** See outwash plain. { mə'rān·əl 'ā·prən }
- morainal delta** See ice-contact delta. { mə'rān·əl 'del-tə }
- morainal plain** See outwash plain. { mə'rān·əl 'plān }
- moraine** [GEOL] An accumulation of glacial drift deposited chiefly by direct glacial action and possessing initial constructional form independent of the floor beneath it. { mə'rān }
- moraine bar** [GEOL] A terminal moraine serving as a bar, rising out of deep water at some distance from the shore. { mə'rān ,bār }
- moraine kame** [GEOL] One of a group of kames characterized by the same topography, constitution, and position as a terminal moraine. { mə'rān ,kām }
- moraine plateau** [GEOL] A relatively flat area within a hummocky moraine, generally at the same elevation as, or a little higher than, the summits of surrounding knobs. { mə'rān plə'tō }
- morass ore** See bog iron ore. { mə'ras ,ör }
- moravite** [MINERAL] Fe₂(N,Fe)₄Si₇O₂₀(OH)₄ A black mineral of the chlorite group, composed of basic iron aluminum silicate, occurring as fine scales. { mə'rāv,īt }
- mordenite** [MINERAL] (Ca,Na₂,K₂)₄Al₈Si₄₀O₉₆·28H₂O A zeolite mineral crystallizing in the orthorhombic system and found in minute crystals or fibrous concretions. Also known as arduinite; ashtonite; flokite; ptilolite. { 'mörd·ən,īt }
- morencite** See nontronite. { mə'ren,sīt }
- morenosite** [MINERAL] NiSO₄·7H₂O An apple-green or light-green mineral composed of hydrous nickel sulfate, occurring in crystals or fibrous crusts. Also known as nickel vitriol. { mə'ren·ə,sīt }
- morganite** See vorobyevite. { 'mör·gə,nīt }
- morinite** [MINERAL] Na₂Ca₂Al₃H(PO₄)₄F₆·8H₂O A mineral composed of hydrous acid phosphate of sodium, calcium, and aluminum. Also known as jezekite. { 'mör·ə,nīt }
- morphogenetic region** [GEOL] A region in which, under certain climatic conditions, the predominant geomorphic processes will contribute regional characteristics to the landscape that contrast with those of other regions formed under different climatic conditions. { ,mör·fə·jə'ned·ik 'rē·jən }
- morphographic map** See physiographic diagram. { 'mör·fə'graf·ik 'māp }
- mortar structure** [PETR] A cataclastic structure produced by dynamic metamorphism of crystalline rocks and characterized by a mica-free aggregate of finely crushed grains of quartz and feldspar filling the interstices between or forming borders on the edges of larger, rounded relicts. Also known as cataclastic structure; murbruk structure; porphyroclastic structure. { 'mörd·ər ,strək·chər }
- morvan** [GEOL] The area where two peneplains intersect. Also known as skiou. { 'mör·vən }
- mosaic** [PETR] **1.** Pertaining to a granoblastic texture in a rock formed by dynamic metamorphism in which the boundaries between individual grains are straight or slightly curved. Also known as cyclopean. **2.** Pertaining to a texture in a crystalline sedimentary rock in which contacts at grain boundaries are more or less regular. { mō'zā·ik }
- mosandrite** [MINERAL] A reddish-brown or yellowish-brown mineral composed of a

mud crack

- silicate of sodium, calcium, titanium, zirconium, and cerium. Also known as khibinite; lovorhorrite; rinkite; rinkelite. { mō'san,drīt }
- mosasaur** [PALEON] Any reptile of the genus *Mosasaurus*; large, aquatic, fish-eating lizards from the Cretaceous which are related to the monitors but had paddle-shaped limbs. { 'mō·sə,sōr }
- moschellandsbergite** [MINERAL] Ag_2Hg_3 A silver-white mineral consisting of a silver and mercury compound; occurs in dodecahedral crystals and in massive and granular forms. { ,mō-shə'lanz·bər,gīt }
- moscovite** See muscovite. { 'mäs·kə,vīt }
- mosesite** [MINERAL] $\text{Hg}_2\text{N}(\text{SO}_4,\text{MoO}_4)\cdot\text{H}_2\text{O}$ A mineral composed of a hydrous nitride of mercury and various anions. { 'mō·zə,zīt }
- moss agate** [MINERAL] A milky or almost transparent chalcedony containing dark inclusions in a dendritic pattern. { 'mōs 'ag·ət }
- mossite** [MINERAL] $\text{Fe}(\text{Nb},\text{Ta})_2\text{O}_6$ A mineral composed of an iron tantalum oxide; it is isomorphous with tapiolite. { 'mō,sīt }
- mother lode** [GEOL] A main unit of mineralized matter that may not have economic value but to which workable veins are related. { 'mōth·ər ,lōd }
- mother-of-coal** See fusain. { 'mōth·ər əv 'kōl }
- mother-of-emerald** See prase. { 'mōth·ər əv 'em·rəld }
- mother rock** See source rock. { 'mōth·ər ,rāk }
- mottled** [GEOL] Of a soil, irregularly marked with spots of different colors. [PETR] Of a sedimentary rock, marked with spots of various colors. { 'mäd·əld }
- mottramite** [MINERAL] $(\text{Cu},\text{Zn})\text{Pb}(\text{VO}_4)(\text{OH})$ A mineral composed of a basic lead copper zinc vanadate; it is isomorphous with descloizite. Also known as cuprodescloizite; psittacinite. { 'mä·trə,mīt }
- moulin pothole** See giant's kettle. { mü'lan 'pät,hōl }
- mound** [GEOL] **1.** A low, isolated, rounded natural hill, usually of earth. Also known as tuft. **2.** A structure built by fossil colonial organisms. { maünd }
- mountain brown ore** [GEOL] Name used in Virginia for limonite or brown iron ore. { 'maünt·ən 'braun 'ōr }
- mountain butter** See halotrichite. { 'maünt·ən 'bəd·ər }
- mountain cork** [MINERAL] **1.** A white or gray variety of asbestos composed of thick, interwoven fibers and having a corklike weight and texture. Also known as rock cork. **2.** A fibrous clay mineral, such as sepiolite. { 'maünt·ən 'kōrk }
- mountain crystal** See rock crystal. { 'maünt·ən 'krist·əl }
- mountain mahogany** See obsidian. { 'maünt·ən mə'häg·ə·nē }
- mountain pediment** [GEOL] A plain of combined erosion and transportation at the base of and surrounding a desert mountain range; at a distance it has the appearance of a broad triangular mass. { 'maünt·ən 'ped·ə·mənt }
- mountain soap** See saponite. { 'maünt·ən ,sōp }
- mountain tallow** See hatchettite. { 'maünt·ən ,tal·ō }
- mountain wood** [GEOL] **1.** A compact, fibrous, gray to brown type of asbestos which has an appearance similar to dry wood. Also known as rock wood. **2.** A fibrous clay mineral; for example, sepiolite or palygorskite. { 'maünt·ən ,wūd }
- muck** [GEOL] Dark, finely divided, well-decomposed, organic matter intermixed with a high percentage of mineral matter, usually silt, forming a surface deposit in some poorly drained areas. { mək }
- mud** [GEOL] An unindurated mixture of clay and silt with water; it is slimy with a consistency varying from that of a semifluid to that of a soft and plastic sediment. [PETR] The silt plus clay portion of a sedimentary rock. { məd }
- mud ball** [GEOL] A rounded mass of mud or mudstone up to 8 inches (20 centimeters) in diameter in a sedimentary rock. Also known as chalazoidite; tuff ball. { 'məd ,bōl }
- mud cone** [GEOL] A cone of sulfurous mud built around the opening of a mud volcano or mud geyser, with slopes as steep as 40° and diameters ranging upward to several hundred yards. Also known as puff cone. { 'məd ,kōn }
- mud crack** [GEOL] An irregular fracture formed by shrinkage of clay, silt, or mud under

mud crack polygon

the drying effects of atmospheric conditions at the surface. Also known as desiccation crack; sun crack. { 'məd ,krak }

mud crack polygon See mud polygon. { 'məd ,krak 'päl·ə,gän }

mud flat [GEOL] A relatively level, sandy or muddy coastal strip along a shore or around an island; may be alternately covered and uncovered by the tide or may be covered by shallow water. Also known as flat. { 'məd ,flat }

mudflow [GEOL] A flowing mass of fine-grained earth material having a high degree of fluidity during movement. { 'məd ,flō }

mudlump [GEOL] A diapiric sedimentary structure consisting of clay or silt and forming an island in deltaic areas; produced by the loading action of rapidly deposited delta front sands upon lighter-weight prodelta clays. { 'məd ,lʌmp }

mud polygon [GEOL] A nonsorted polygon whose center lacks vegetation but whose peripheral fissures contain peat and plants. Also known as mud crack polygon. { 'məd 'päl·ə,gän }

mud pot [GEOL] A type of hot spring which contains boiling mud, typically sulfurous and often multicolored; tends to be associated with geysers and other hot springs in volcanic zones. Also known as painted pot; sulfur-mud pool. { 'məd ,pät }

mudslide [GEOL] A slow-moving mudflow in which movement is mainly by sliding upon a discrete boundary shear surface. { 'məd ,slid }

mudstone [GEOL] An indurated equivalent of mud in the form of a blocky or massive, fine-grained sedimentary rock containing approximately equal proportions of silt and clay; lacks the fine lamination or fissility of shale. { 'məd ,stōn }

mud volcano [GEOL] A conical accumulation of variable admixtures of sand and rock fragments, the whole resulting from eruption of wet mud and impelled upward by fluid or gas pressure. Also known as hervidero; macaluba. { 'məd vāl'kā·nō }

mugearite [PETR] A dark-colored, fine-grained igneous rock in which the chief feldspar is oligoclase, plus orthoclase and olivine with some apatite and opaque oxides; originates by differentiation and volcanic crystallization of the primary magma. { myü 'jē·ə,rīt }

mull [GEOL] Granular forest humus that is incorporated with mineral matter. { məl }

Müller's glass See hyalite. { 'mil·ərz ,glas }

mullion [GEOL] In folded sedimentary and metamorphic rocks, a columnar structure in which the rock columns seem to intersect. { 'məl·yən }

mullite [MINERAL] $Al_6Si_2O_{13}$ An orthorhombic mineral consisting of an aluminum silicate that is resistant to corrosion and heat; used as a refractory. Also known as porcelainite. { 'mə,līt }

multicycle [GEOL] Pertaining to a landscape or landform produced by more than one cycle of erosion. { 'məl·tə,sī·kəl }

multiple fault See step fault. { 'məl·tə·pəl 'fólt }

multiple reflection [GEOPHYS] A seismic wave which has more than one reflection. Also known as repeated reflection; secondary reflection. { 'məl·tə·pəl ri'flek·shən }

Multituberculata [PALEON] The single order of the nominally mammalian suborder Allotheria; multituberculates had enlarged incisors, the coracoid bones were fused to the scapula, and the lower jaw consisted of the dentary bone alone. { ,mə'l·tē·tə,bər·kyə'lād·ə }

mundic See pyrite. { 'mən,dik }

murbruk structure See mortar structure. { 'mər,bruk ,strək·chər }

Murchisoniacea [PALEON] An extinct superfamily of gastropod mollusks in the order Prosobranchia. { ,mər·chə,sən·ē'ā·shē·ə }

muromontite [MINERAL] $Be_2FeY_2(SiO_4)_3$ A mineral composed of yttrium iron beryllium silicate. { ,myür·ə'män,tīt }

Muschelkalk [GEOL] A European stage of geologic time equivalent to the Middle Triassic, above Bunter and below Keuper. { 'müsh·əl,kälk }

muscovite [MINERAL] $KAl_2(AlSi_3)O_{10}(OH)_2$ One of the mica group of minerals, occurring in some granites and abundant in pegmatites; it is colorless, whitish, or pale brown, and the crystals are tabular sheets with prominent base and hexagonal or rhomboid outline; hardness is 2–2.5 on Mohs scale, and specific gravity is 2.7–3.1. Also known

myrmekitic

as common mica; mirror stone; moscovite; Muscovy glass; potash mica; white mica. { 'mæs·kə,vīt }

Muscovy glass See muscovite. { 'mæs·kə·vē 'glas }

mustard-seed coal [GEOL] Anthracite that will pass through circular holes in a screen which measure 3/64 inch (1.2 millimeter) in diameter. { 'mæs·tərd,sēd ,kōl }

muthmannite [MINERAL] (Ag,Au)Te A bright brass yellow mineral consisting of silver-gold telluride; occurs as tabular crystals. { 'müt·mə,nīt }

mylonite [PETR] A hard, coherent, often glassy-looking rock that has suffered extreme mechanical deformation and granulation but has remained chemically unaltered; appearance is flinty, banded, or streaked, but the nature of the parent rock is easily recognized. { 'mī·lə,nīt }

mylonite gneiss [PETR] A metamorphic rock intermediate in character between mylonite and schist. { 'mī·lə,nīt 'nīs }

mylonitic structure [PETR] A structure characteristic of mylonites, produced by extreme microbrecciation and shearing which gives the appearance of a flow structure. { 'mī·lə'nid·ik 'strək·chər }

mylonitization [GEOL] Rock deformation produced by intense microbrecciation without appreciable chemical alteration of granulated materials. { mī,län·ə'tə'zā·shən }

myrmekite [PETR] Intergrowth of plagioclase feldspar and vermicular quartz in an igneous rock. { 'mər·mə,kīt }

myrmekitic [PETR] **1.** Pertaining to the texture of an igneous rock marked by intergrowths of feldspar and vermicular quartz. **2.** Having characteristic properties of myrmekite. { 'mər·mə'kid·ik }

N

- nacrite** [MINERAL] $\text{Al}_2\text{Si}_2\text{O}_5(\text{OH})_4$ A crystallized clay mineral of the kaolinite group; structurally distinct in being the most closely stacked in the c -axis direction. { 'nā,kɾɪt }
- nadorite** [MINERAL] PbSbO_2Cl A smoky brown or brownish-yellow to yellow, orthorhombic mineral consisting of an oxychloride of lead and antimony. { 'nad·ə,ɾɪt }
- nagatelite** [MINERAL] Black mineral composed of phosphosilicate of an aluminum, rare-earth elements, calcium, and iron; occurs in tabular masses. { ,nag·ə'te,lɪt }
- nagyagite** [MINERAL] $\text{Pb}_5\text{Au}(\text{Te,Sb})_4\text{S}_{5-8}$ A lead-gray mineral consisting of a sulfide of lead, gold, tellurium, and antimony. Also known as black tellurium; tellurium glance. { 'nag·yə,jɪt }
- nahcolite** [MINERAL] NaHCO_3 A white, monoclinic mineral consisting of natural sodium bicarbonate. { 'nā·kə,lɪt }
- naif** [MINERAL] Of a gemstone, having a true or natural luster when uncut. Also spelled naife. { nā'ɛf }
- naife** See naif. { nā'ɛf }
- nailhead striation** [GEOL] A glacial striation with a definite or blunt head or point of origin, generally narrowing or tapering in the direction of ice movement and coming to an indefinite end. { 'nāl,hed strɪ'ā·shən }
- naked karst** [GEOL] Karst that is developed in a region without soil cover, so that its topographic features are well exposed. { 'nā·kəd 'kɑ:st }
- nakhlite** [GEOL] An achondritic stony meteorite composed of an aggregate of diopside and olivine. { 'nāk,lɪt }
- Namurian** [GEOL] A European stage of geologic time; divided into a lower stage (Lower Carboniferous or Upper Mississippian) and an upper stage (Upper Carboniferous or Lower Pennsylvanian). { nə'myūr·ē·ən }
- naphthine** See hatchettite. { 'naf,θɪn }
- napoleonite** See corsite. { nə'pōl·yə,nɪt }
- Napoleonville** [GEOL] A North American (Gulf Coast) stage of geologic time; a subdivision of the Miocene, above Anahauc and below Duck Lake. { nə'pōl·ē·ən,vɪl }
- nappe** [GEOL] A sheetlike, allochthonous rock unit that is formed by thrust faulting or recumbent folding or both. { nap }
- nari** See caliche. { 'nār·ē }
- Narizian** [GEOL] A North American stage of geologic time; a subdivision of the upper Eocene, above Ulatisian and below Fresnian. { nə'rɪzɪən }
- narsarsukite** [MINERAL] $\text{Na}_2(\text{Ti,Fe})\text{Si}_4(\text{O,F})$ Mineral composed of sodium titanium iron fluoride and silicate. { ,nār·sə'sə,kɪt }
- nasonite** [MINERAL] $\text{Ca}_4\text{Pb}_6\text{Si}_6\text{O}_{21}\text{Cl}_2$ A white mineral composed of silicate and chloride of calcium and lead and occurring in granular masses. { 'nās·ən,ɪt }
- nasturan** See pitchblende. { 'nas·tə'rən }
- native** [GEOCHEM] Pertaining to an element found in nature in a nongaseous state. { 'nād·ɪv }
- native asphalt** [GEOL] Exudations or seepages of asphalt occurring in nature in a liquid or semiliquid state. Also known as natural asphalt. { 'nād·ɪv 'as,fəlt }
- native coal** See natural coke. { 'nād·ɪv 'kōl }

native element

- native element** [GEOL] Any of 20 elements, such as copper, gold, and silver, which occur naturally uncombined in a nongaseous state; there are three groups—metals, semimetals, and nonmetals. { 'nād·iv 'el·ə·mənt }
- native metal** [GEOCHEM] A metallic native element; includes silver, gold, copper, iron, mercury, iridium, lead, palladium, and platinum. { 'nād·iv 'med·əl }
- native paraffin** *See* ozocerite. { 'nād·iv 'par·ə·fən }
- native uranium** [GEOCHEM] Uranium as found in nature; a mixture of the fertile uranium-238 isotope (99.3%), the fissionable uranium-235 isotope (0.7%), and a minute percentage of other uranium isotopes. Also known as natural uranium; normal uranium. { 'nād·iv yə'rā·nē·əm }
- natric horizon** [GEOL] A soil horizon that has the properties of an argillic horizon, but also displays a blocky, columnar, or prismatic structure and has a subhorizon with an exchangeable-sodium saturation of over 15%. { 'nā·trik hə'rīz·ən }
- natroalunite** [MINERAL] $\text{NaAl}_2(\text{SO}_4)_2(\text{OH})_6$ Mineral composed of basic sodium aluminum sulfate. Also known as almerite. { 'nā·trō'al·ə·nīt }
- natrochalcite** [MINERAL] $\text{NaCu}_2(\text{SO}_4)(\text{OH})\cdot\text{H}_2\text{O}$ An emerald-green mineral composed of hydrous basic sulfate of sodium and copper. { 'nā·trō'kal,sīt }
- natrolite** [MINERAL] $\text{Na}_2\text{Al}_2\text{Si}_3\text{O}_{10}\cdot 2\text{H}_2\text{O}$ A zeolite mineral composed of hydrous silicate of sodium and aluminum; usually occurs in slender acicular or prismatic crystals. { 'nā·trə,līt }
- natromontebasite** [MINERAL] $(\text{Na},\text{Li})\text{Al}(\text{PO}_4)(\text{OH},\text{F})$ A mineral composed of hydrous basic phosphate of sodium, lithium, and aluminum; it is isomorphous with montebasite and ambygonite. Also known as fremontite. { 'nā·trō,män·tē'brā,zīt }
- natron** [MINERAL] $\text{Na}_2\text{CO}_3\cdot 10\text{H}_2\text{O}$ A white, yellow, or gray mineral that crystallizes in the monoclinic system, is soluble in water, and generally occurs in solution or in saline residues. { 'nā·trən }
- natrophilite** [MINERAL] $\text{NaMn}(\text{PO}_4)$ A mineral composed of sodium manganese phosphate. { nə'trə'fə,līt }
- natural arch** [GEOL] **1.** A landform similar to a natural bridge but not formed by erosive agencies. **2.** *See* natural bridge. { 'nach·rəl 'ärch }
- natural asphalt** *See* native asphalt. { 'nach·rəl 'as,fölt }
- natural bitumen** [GEOL] Native mineral pitch, tar, or asphalt. { 'nach·rəl bə'tü·mən }
- natural bridge** [GEOL] An archlike rock formation spanning a ravine or valley and formed by erosion. Also known as natural arch. { 'nach·rəl 'brɪj }
- natural coke** [GEOL] Coal that has been naturally carbonized by contact with an igneous intrusion, or by natural combustion. Also known as black coal; blind coal; carbonite; cinder coal; coke coal; cokeite; finger coal; native coal. { 'nach·rəl 'kōk }
- natural glass** [GEOL] An amorphous, vitreous inorganic material that has solidified from magma too quickly to crystallize. { 'nach·rəl 'glas }
- natural levee** [GEOL] An elongate embankment compounded of sand and silt and deposited along both banks of a river channel during times of flood. { 'nach·rəl 'lev·ē }
- natural remanent magnetization** [GEOPHYS] The magnetization of rock which exists in the absence of a magnetic field and has been acquired from the influence of the earth's magnetic field at the time of their formation or, in certain cases, at later times. Abbreviated NRM. { 'nach·rəl 'rem·ə·nənt ,mag·nə'tə'zā·shən }
- natural tunnel** [GEOL] A cave that is nearly horizontal and is open at both ends. Also known as tunnel cave. { 'nach·rəl 'tən·əl }
- natural uranium** *See* native uranium. { 'nach·rəl yū'rā·nē·əm }
- natural well** [GEOL] A sinkhole or other natural opening which resembles a well extending below the water table and from which groundwater can be withdrawn. { 'nach·rəl 'wel }
- naujaite** [PETR] A coarse hypidiomorphic-granular sodalite-rich nepheline syenite that contains microcline and small amounts of albite, analcime, acmite, and sodium amphiboles and is characterized by a poikilitic texture. { 'nau·jə,īt }
- naumannite** [MINERAL] Ag_2Se An iron-black mineral that crystallizes in the isometric

nematoblastic

system; consists of silver selenide, and occurs massive or in crystals; specific gravity is 8. { 'naü·mə,nīt }

Navajo sandstone [GEOL] A fossil dune formation of Jurassic age found in the Colorado Plateau of the United States. { 'nä·və,hō 'san,stōn }

Navarroan [PALEON] A North American (Gulf Coast) stage of Upper Cretaceous geologic time, above the Tayloran and below the Midwayan of the Tertiary. { ,nav·ə'rō·ən }

navite [MINERAL] A porphyritic basalt containing phenocrysts of altered olivine, augite, and basic plagioclase in a groundmass of labradorite and augite. { 'nä,vīt }

Neanderthal man [PALEON] A type of fossil human that is a subspecies of *Homo sapiens* and is distinguished by a low broad braincase, continuous arched browridges, projecting occipital region, short limbs, and large joints. { nē'an·dər,täl 'man }

Nebraskan drift [GEOL] Rock material transported during the Nebraskan glaciation; it is buried below the Kansan drift in Iowa. { nə'bras·kən 'drift }

Nebraskan glaciation [GEOL] The first glacial stage of the Pleistocene epoch in North America, beginning about 1,000,000 years ago, and preceding the Aftonian interglacial stage. { nə'bras·kən glā·sē·ā·shən }

nebulite [PETR] A chorismite in which one of the textural elements occurs in nebulitic lenticular masses. { 'neb·yə,līt }

nebulitic [PETR] **1.** Having indistinct boundaries between textural elements. **2.** Of or pertaining to a nebulite. { ,neb·yə'lid·ik }

neck [GEOL] See pipe. { nek }

Necrolestidae [PALEON] An extinct family of insectivorous marsupials. { 'ne·krō 'les·tə,dē }

Nectridea [PALEON] An order of extinct lepospondylous amphibians characterized by vertebrae in which large fan-shaped hemal arches grow directly downward from the middle of each caudal centrum. { nek'trid·ē·ə }

needle [GEOL] A pointed, elevated, and detached mass of rock formed by erosion, such as an aiguille. [MINERAL] A needle-shaped or acicular mineral crystal. { 'nēd·əl }

needle coal [MINERAL] Lignite containing fibrous needle-shaped masses formed from the vascular bundles of palm stems. { 'nēd·əl ,kōl }

needle ore [MINERAL] **1.** Iron ore of very high metallic luster, found in small quantities, which may be separated into long, slender filaments resembling needles. **2.** See aikinite. { 'nēd·əl ,ōr }

negative area [GEOL] See negative element. { 'neg·əd·iv 'er·ē·ə }

negative element [GEOL] A large structural feature or part of the earth's crust, characterized through a long geologic time period by frequent and conspicuous downward movement (subsidence) or by extensive erosion, or by an uplift that is considerably less rapid or less frequent than that of adjacent positive elements. Also known as negative area. { 'neg·əd·iv 'el·ə·mənt }

negative landform [GEOL] **1.** A relatively depressed or low-lying topographic form, such as a valley, basin, or plain. **2.** A volcanic feature formed by a lack of material (such as a caldera). { 'neg·əd·iv 'land,fórm }

negative movement [GEOL] **1.** A downward movement of the earth's crust relative to an adjacent part of the crust, such as produced by subsidence. **2.** A relative lowering of the sea level with respect to the land, such as produced by a positive movement of the earth's crust or by a retreat of the sea. { 'neg·əd·iv 'müv·mənt }

negative shoreline See shoreline of emergence. { 'neg·əd·iv 'shör,līn }

nelsonite [PETR] A group of hypabyssal rocks composed mainly of ilmenite and apatite. { 'nel·sə,nīt }

nemalite [MINERAL] A fibrous brucite that contains ferrous oxide. { 'nem·ə,līt }

nematath [GEOL] A submarine ridge across an Atlantic-type ocean basin which is not an orogenic structure, but which is composed of otherwise undeformed continental crust that has been stretched across a sphenochasm or rhombochasm. { 'nem·ə,tath }

nematoblastic [PETR] Pertaining to a metamorphic rock with a homeoblastic texture due to development during recrystallization of slender prismatic crystals. { 'nem·ə·də'blas·tik }

Nematophytales

- Nematophytales** [PALEOBOT] A group of fossil plants from the Silurian and Devonian periods that bear some resemblance to the brown seaweeds (Phaeophyta). { 'nem·əd·ō·fī'tā·lēz }
- Neanthropinae** [PALEON] A subfamily of the Hominidae in some systems of classification, set up to include *Homo sapiens* and direct ancestors of *H. sapiens*. { 'nē·ō·an'thräp·ə,nē }
- neoautochthon** [GEOLOG] A stable basement or autochthon formed where a nappe has ceased movement and has become defunct. { 'nē·ō·ō'tāk·thən }
- Neocathartidae** [PALEON] An extinct family of vulturelike diurnal birds of prey (Falconiformes) from the Upper Eocene. { 'nē·ō·kə'thārd·ə,dē }
- Neocomian** [GEOLOG] A European stage of Lower Cretaceous geologic time; includes Berriasian, Valanginian, Hauterivian, and Barremian. { 'nē·ə|kō·mē·ən }
- neocryst** [GEOLOG] An individual crystal of a secondary mineral in an evaporite. { 'nē·ə,krist }
- neoformation** See neogenesis. { 'nē·ō·fōr'mā·shən }
- Neogene** [GEOLOG] An interval of geologic time incorporating the Miocene and Pliocene of the Tertiary period; the Upper Tertiary. { 'nē·ə,jēn }
- neogenesis** [GEOLOG] The formation of new minerals, as by diagenesis or metamorphism. Also known as neoformation. { 'nē·ō'jēn·ə·səs }
- neoglaciation** [GEOLOG] The removal of glacier ice growth in certain mountain areas during the Little Ice Age, following its shrinkage or disappearance during the Altithermal interval. { 'nē·ō·glā·sē'ä·shən }
- neomagma** [GEOLOG] Magma formed by partial or complete refusion of preexisting rocks under the conditions of plutonic metamorphism. { 'nē·ō'mag·mə }
- neomineralization** [GEOCHEM] Chemical interchange within a rock whereby its mineral constituents are converted into entirely new mineral species. { 'nē·ō,min·rə·lə'zä·shən }
- neosilicate** [MINERAL] A structural type of silicate mineral characterized by linkage of isolated SiO₄ tetrahedra by ionic bonding only; an example is olivine. { 'nē·ō'sil·ə·kāt }
- neosome** [GEOLOG] A geometric element of a composite rock or mineral deposit, appearing to be younger than the main rock mass. { 'nē·ə,sōm }
- neostatotype** [GEOLOG] A stratotype established after the holostatotype has been destroyed or is otherwise not usable. { 'nē·ō'strad·ə,tīp }
- neotectonic map** [GEOLOG] A map depicting neotectonic structures. { 'nē·ō·tek'tän·ik 'map }
- neotectonics** [GEOLOG] The study of the most recent structures and structural history of the earth's crust, after the Miocene. { 'nē·ō·tek'tän·iks }
- neovolcanic** [PETRO] Referring to extrusive rocks that are of Tertiary or younger age. { 'nē·ō·väl'kan·ik }
- nepheline** [MINERAL] A mineral of variable composition, with its purest state represented by the formula NaAlSiO₄; calcium, magnesium, iron (Fe²⁺ and Fe³⁺), and titanium are usually present in only minor or trace amounts. { 'nef·ə,lēn }
- nepheline basalt** See olivine nephelinite. { 'nef·ə,lēn bə'sölt }
- nepheline monzonite** [PETRO] A nepheline syenite in which sodic plagioclase exceeds the quantity of alkali feldspar. { 'nef·ə,lēn 'män·zə,nīt }
- nepheline phonolite** [PETRO] The fine-grained equivalent of nepheline syenite. { 'nef·ə,lēn fän·ə,līt }
- nepheline syenite** [PETRO] A phaneritic plutonic rock with granular texture, composed largely of alkali feldspar, nepheline, and dark-colored materials. { 'nef·ə,lēn 'sī·ə,nīt }
- nephelinite** [PETRO] A dark-colored, aphanitic rock of volcanic origin, composed essentially of nepheline and pyroxene; texture is usually porphyritic with large crystals of augite and nepheline in a very-fine-grained matrix. { 'nefel·ə,nīt }
- nephelite** See nepheline. { 'nef·ə,līt }
- nephrite** [MINERAL] An exceptionally tough, compact, fine-grained, greenish or bluish

- amphibole constituting the less valuable type of jade; formerly worn as a remedy for kidney diseases. Also known as greenstone; kidney stone. { ne'frīt }
- neptunian dike** [GEOL] A sedimentary dike formed by infilling of sediment, generally sand, in an undersea fissure or hollow. { nep'tü·nē·ən 'dīk }
- neptunianism** See neptunism. { nep'tü·nē·ən·niz·əm }
- neptunian theory** See neptunism. { nep'tü·nē·ən 'thē·ə·rē }
- neptunic rock** [GEOL] **1.** A rock that is formed in the sea. **2.** See sedimentary rock. { nep'tün·ik 'rāk }
- neptunism** [GEOL] The obsolete theory that all rocks of the earth's crust were deposited from or crystallized out of water. Also known as neptunianism; neptunian theory. { 'nep·tə·niz·əm }
- neptunite** [MINERAL] (Na,K)₂(Fe,Mn)TiSi₄O₁₂ Black mineral composed of silicate of sodium, potassium, iron, manganese, and titanium. { 'nep·tə·nīt }
- neprite** See garnierite. { 'nep·yə·wīt }
- Nesophontidae** [PALEON] An extinct family of large, shrewlike lipotyphlans from the Cenozoic found in the West Indies. { ,nes·ə'fän·tə·dē }
- nesosilicate** [MINERAL] A mineral (such as olivine) composed of independent silicon-oxygen tetrahedra bonded by ionic bonds, without sharing of oxygens. { 'nes·ə'sil·ə·kət }
- nesquehonite** [MINERAL] MgCO₃·3H₂O A colorless to white, orthorhombic mineral consisting of hydrated magnesium carbonate. { ,nes·kwə'hō·nīt }
- nest** [GEOL] A concentration of some relatively conspicuous element of a geologic feature, such as pebbles or inclusions, within a sand layer or igneous rock. { nest }
- nested** [GEOL] **1.** Pertaining to volcanic cones, craters, or calderas that occur one within another. **2.** Pertaining to two or more calderas that intersect, having been formed at different times or by different explosions. { 'nes·təd }
- net** [GEOL] **1.** In structural petrology, coordinate network of meridians and parallels, projected from a sphere at intervals of 2°; used to plot points whose spherical coordinates are known and to study the distribution and orientation of planes and points. Also known as projection net; stereographic net. **2.** A form of horizontal patterned ground whose mesh is intermediate between a circle and a polygon. { net }
- net slip** [GEOL] On a fault, the distance between two formerly adjacent points on either side of the fault; defines direction and relative amount of displacement. Also known as total slip. { 'net 'slip }
- Neurodontiformes** [PALEON] A suborder of Conodontophorida having a lamellar internal structure. { 'nür·ō·dänt·ə'fōr·mēz }
- neutral shoreline** [GEOL] A shoreline whose essential features are independent of either the submergence of a former land surface or the emergence of a former underwater surface. { 'nü·trəl 'shór·līn }
- Nevadan orogeny** [GEOL] Orogenic episode during Jurassic and Early Cretaceous geologic time in the western part of the North American Cordillera. Also known as Nevadian orogeny; Nevadic orogeny. { nə'vad·ən ó'raj·ə·nē }
- Nevadian orogeny** See Nevadan orogeny. { nə'vad·ē·ən ó'raj·ə·nē }
- Nevadic orogeny** See Nevadan orogeny. { nə'vad·ik ó'raj·ə·nē }
- newberyite** [MINERAL] MgH(PO₄)·3H₂O A white, orthorhombic member of the brushite mineral group; it is isostructural with gypsum. { 'nü·b·rē·īt }
- new global tectonics** [GEOL] Comprehensive theory relating the formation of mountain belts, island arcs, and ocean trenches to the relative movement of regionally extensive lithospheric plates which are delineated by the major seismic belts of the earth. { 'nü 'glō·bəl tek'tän·iks }
- New Red Sandstone** [GEOL] The red sandstone facies of the Permian and Triassic systems exposed in the British Isles. { 'nü 'red 'san·stōn }
- Niagan** [GEOL] A North American provincial geologic series, in the Middle Silurian. { nī'ag·rən }
- niccolite** [MINERAL] NiAs A pale-copper-red, hexagonal mineral with metallic luster;

niche

- an important ore of nickel; hardness is 5–5.5 on Mohs scale. Also known as arsenical nickel; copper nickel; nickeline. { 'nik·ə,līt }
- niche** [GEOL.] A shallow cave or reentrant produced by weathering and erosion near the base of a rock face or cliff or beneath a waterfall. { nich }
- nick** [GEOL.] See knickpoint. { nik }
- nickel-antimony glance** See ullmannite. { 'nik·əl 'ant·ə,mō·nē 'glans }
- nickel bloom** See annabergite. { 'nik·əl ,blüm }
- nickel glance** See gersdorffite. { 'nik·əl 'glans }
- nickeline** See niccolite. { 'nik·əl|ēn }
- nickel ochre** See annabergite. { 'nik·əl 'ō·kər }
- nickel pyrites** See millerite. { 'nik·əl 'pī,rīts }
- nickel vitriol** See morenosite. { 'nik·əl 'vit·rē,ōl }
- nickpoint** See knickpoint. { 'nik,pōint }
- nieve penitente** [GEOL.] A jagged pinnacle or spike of snow or firn, up to several meters in height. Also known as penitent. { nē'ā·vā ,pen·ə'ten,tā }
- niggliite** [MINERAL] PtSn or PtTe A silver-white mineral consisting of a platinum telluride compound. { 'nig·lē,īt }
- niklesite** [PETR.] A pyroxenite containing the three pyroxenes: diopside, enstatite, and diallage. { 'nik·lə,sīt }
- niningerite** [MINERAL] (Mg,Fe,Mn)S A mineral found only in meteorites. { nə'nin·jə,rīt }
- niobite** See columbite. { 'nī·ə,bīt }
- nip** [GEOL.] **1.** A small, low cliff or break in slope which is produced by wavelets at the high-water mark. **2.** The point on the bank of a meander lake where erosion takes place due to crowding of the stream current toward the lake. **3.** Thinning of a coal seam, particularly if caused by tectonic movements. Also known as want. { nip }
- nitrate mineral** [MINERAL] Any of several generally rare minerals characterized by a fundamental ionic structure of NO₃⁻; examples are soda niter, niter, and nitrocalcite. { 'nī,trāt ,min·rəl }
- nitratine** See soda niter. { 'nī·trə,tēn }
- nitrogen balance** [GEOCHEM.] The net loss or gain of nitrogen in a soil. { 'nī·trə·jən ,bal·əns }
- nitromagnesite** [MINERAL] Mg(NO₃)₂·6H₂O Mineral consisting of magnesium nitrate, occurring as an efflorescence in limestone caverns. { 'nī·trō'mag·nə,sīt }
- nival gradient** [GEOL.] The angle between a nival surface and the horizon. { 'nī·vəl ,grād·ē·ənt }
- nival surface** [GEOL.] The hypothetical planar surface containing all of the different snowlines of the same geologic time period. { 'nī·vəl ,sər·fəs }
- nivation** [GEOL.] Rock or soil erosion beneath a snowbank or snow patch, due mainly to frost action but also involving chemical weathering, solifluction, and meltwater transport of weathering products. Also known as snow patch erosion. { nī'vā·shən }
- nivation cirque** See nivation hollow. { nī'vā·shən ,sərk }
- nivation hollow** [GEOL.] A small, shallow depression formed, and occupied during part of the year, by a snow patch or snowbank that, through nivation, is thought to initiate glaciation. Also known as nivation cirque; snow niche. { nī'vā·shən ,həl·ō }
- nivation ridge** See winter-talus ridge. { nī'vā·shən ,rij }
- nival** [GEOL.] Property of features and effects resulting from the action of snow and ice. { 'niv·ē·əl }
- nivenite** [MINERAL] UO₂ A velvet-black member of the uranite group; contains rare-earth metals cerium and yttrium; a source of uranium. { 'niv·ə,nīt }
- niveoglacial** [GEOL.] Pertaining to the combined action of snow and ice. { 'niv·ē·ō'glā·shəl }
- niveolian** [GEOL.] Pertaining to simultaneous accumulation and intermixing of snow and airborne sand at the side of a gentle slope. { 'niv·ē'ō·lē·ən }
- nocerite** See fluoborite. { 'nō·sə,rīt }
- nocturnal radiation** See effective terrestrial radiation. { nək'tərən·əl ,rād·ē'ā·shən }

nonwetting sand

- node** [GEOL] That point along a fault at which the direction of apparent displacement changes. { nōd }
- nodular chert** [GEOL] Chert occurring as nodular or concretionary segregations (chert nodules). { 'näj·ə·lär 'chert }
- nodule** [GEOL] A small, hard mass or lump of a mineral or mineral aggregate characterized by a contrasting composition from and a greater hardness than the surrounding sediment or rock matrix in which it is embedded. { 'näj·ül }
- Noeggerathiales** [PALEOBOT] A poorly defined group of fossil plants whose geologic range extends from Upper Carboniferous to Triassic. { ,neg·ə,rath·ē·ä·lēz }
- nominal diameter** [GEOL] The diameter computed for a hypothetical sphere which would have the same volume as the calculated volume for a specific sedimentary particle. Also known as equivalent diameter. { 'nä·m·ə·nəl dī'am·əd·ər }
- nonbanded coal** [GEOL] Coal without lustrous bands, composed mainly of clarain or durain without nitrain. { 'nä·n,bän·däd 'köl }
- noncaking coal** [GEOL] Hard or dull coal that does not cake when heated. Also known as free-burning coal. { 'nä·n,käk·ij 'köl }
- Noncalic Brown soil** [GEOL] A great soil group having a slightly acidic, light-pink or reddish-brown A horizon and a light-brown or dull-red B horizon, and developed under a mixture of grass and forest vegetation in a subhumid climate. Also known as Shantung soil. { 'nä·n'kal·sik 'braün ,söl }
- noncapillary porosity** [GEOL] The property of a volume of large interstices in a rock or soil that do not hold water by capillarity. { 'nä·n'kap·ə·ler·ē pä'räs·əd·ē }
- nonclastic** [GEOL] Of the texture of a sediment or sedimentary rock, formed chemically or organically and showing no evidence of a derivation from preexisting rock or mechanical deposition. Also known as nonmechanical. { 'nä·n'kla,stik }
- noncohesive** See cohesionless. { ,nä·n·kō'hē·siv }
- nonconformity** [GEOL] A type of unconformity in which rocks below the surface of unconformity are either igneous or metamorphic. { 'nä·n·kən'fór·mäd·ē }
- noncyclic terrace** [GEOL] One of a series of terraces representing previous valley floors formed during periods when continued valley deepening accompanied lateral erosion. { 'nä·n'sī·klik 'ter·əs }
- nondepositional unconformity** See paraconformity. { 'nä·n,dep·ə'zish·ən·əl ,ən·kən'fór·mäd·ē }
- nonesite** [PETR] A porphyritic basalt composed of enstatite, labradorite, and augite phenocrysts in a groundmass of plagioclase and augite. { 'nä·n·əsīt }
- nongraded** [GEOL] Pertaining to a soil or an unconsolidated sediment consisting of particles of essentially the same size. { 'nä·n'gräd·əd }
- nonmechanical** See nonclastic. { 'nä·n·mī'kan·ə·kəl }
- nonpenetrative** [GEOL] Of a type of deformation, affecting only part of a rock, such as kink bands. { nä·n'pen·ə,trä·d·iv }
- nonplunging fold** [GEOL] A fold with a horizontal axial surface. Also known as horizontal fold; level fold. { 'nä·n'plän·jij 'föld }
- nonrotational strain** See irrotational strain. { ,nä·n·rō'tä·shən·əl 'strän }
- nonsorted polygon** [GEOL] A form of patterned ground which has a dominantly polygonal mesh and an unsorted appearance due to the absence of border stones, and whose borders are generally marked by wedge-shaped fissures narrowing downward. { 'nä·n,sórd·əd 'pä·l·i,gän }
- nonsystematic joint** [GEOL] A joint that is not part of a set. { 'nä·n,sis·tə'mäd·ik 'jōint }
- nontectonite** [PETR] Any rock whose fabric shows no influence of movement of adjacent grains; for example, a rock formed by mechanical settling. { 'nä·n'tek·tə,nīt }
- nontronite** [MINERAL] Na(Al,Fe,Si)O₁₀(OH)₂ An iron-rich clay mineral of the montmorillonite group that represents the end member in which the replacement of aluminum by ferric ion is essentially complete. Also known as chloropal; gramenite; morencite; pinguite. { 'nä·n·trə,nīt }
- nonwetting sand** [GEOL] Sand that resists infiltration of water; consists of angular particles of various sizes and occurs as a tightly packed lens. { 'nä·n,wed·ij 'sand }

norbergite

- norbergite** [MINERAL] $Mg_3SiO_4(F,OH)_2$ A yellow or pink orthorhombic mineral composed of magnesium silicate with fluoride and hydroxyl; it is a member of the humite group. { 'nɔr,bɛr,gɪt }
- nordenskioldine** [MINERAL] $CaSn(BO_3)_2$ A colorless or sulfur-, lemon-, or wine-yellow, hexagonal mineral consisting of a borate of calcium and tin; occurs in tabular form and as lenslike crystals. { 'nɔrd·ən,shɛl·dɔn }
- nordmarkite** [PETR] A quartz-bearing alkalic syenite that has microperthite as its main component with smaller amounts of oligoclase, quartz, and biotite and is characterized by granitic or trachytoid texture. { 'nɔrd,mär,kɪt }
- Norian** [GEOL] A European stage of Upper Triassic geologic time that lies above the Carnian and below the Rhaetian. { 'nɔr·ē·ən }
- norite** [PETR] A coarse-grained plutonic rock composed principally of basic plagioclase with orthopyroxene (hypersthene) as the dominant mafic material. Also known as hypersthenfels. { 'nɔr,ɪt }
- norm** [PETR] The theoretical mineral composition of a rock expressed in terms of standard mineral molecules as determined by means of chemical analyses. { 'nɔrm }
- normal aeration** [GEOL] The complete renewal of soil air to a depth of 8 inches (20 centimeters) about once each hour. { 'nɔr·mæl e'rā·shən }
- normal anticlinorium** [GEOL] An anticlinorium in which axial surfaces of the subsidiary folds converge downward. { 'nɔr·mæl,ant·i·klə'nɔr·ē·əm }
- normal consolidation** [GEOL] Consolidation of a sedimentary material in equilibrium with overburden pressure. { 'nɔr·mæl kən,säl·ə'dä·shən }
- normal cycle** [GEOL] A cycle of erosion whereby a region is reduced to base level by running water, especially by the action of rivers. Also known as fluvial cycle of erosion. { 'nɔr·mæl 'sɪ·kəl }
- normal dip** See regional dip. { 'nɔr·mæl 'dɪp }
- normal dispersion** [GEOPHYS] The dispersion of seismic waves in which the recorded wave period increases with time. { 'nɔr·mæl dɪ'spɛr·zhən }
- normal displacement** See dip slip. { 'nɔr·mæl dɪ'spläs·mənt }
- normal erosion** [GEOL] Erosion effected by prevailing agencies of the natural environment, including running water, rain, wind, waves, and organic weathering. Also known as geologic erosion. { 'nɔr·mæl i'rɔ·zhən }
- normal fault** [GEOL] A fault, usually of 45–90°, in which the hanging wall appears to have shifted downward in relation to the footwall. Also known as gravity fault; normal slip fault; slump fault. { 'nɔr·mæl 'fɔlt }
- normal fold** See symmetrical fold. { 'nɔr·mæl 'fɔld }
- normal horizontal separation** See offset. { 'nɔr·mæl ,här·ə'zänt·əl ,sep·ə'rā·shən }
- normal moveout** [GEOPHYS] In seismic prospecting, the increase in stepout time that results from an increase in distance from source to detector when there is no dip. { 'nɔr·mæl 'müv,äut }
- normal polarity** [GEOPHYS] Natural remanent magnetism nearly identical to the present ambient field. { 'nɔr·mæl pɔ'lar·əd·ē }
- normal ripple mark** [GEOL] An aqueous current ripple mark consisting of a simple asymmetrical ridge that may have various configurations. { 'nɔr·mæl 'rɪp·əl ,märk }
- normal slip fault** See normal fault. { 'nɔr·mæl 'slɪp ,fɔlt }
- normal soil** [GEOL] A soil having a profile that is more or less in equilibrium with the environment. { 'nɔr·mæl 'sɔɪl }
- normal synclinorium** [GEOL] A synclinorium in which the axial surfaces of the subsidiary folds converge upward. { 'nɔr·mæl ,sɪn·klə'nɔr·ē·əm }
- normal uranium** See native uranium. { 'nɔr·mæl yü'rā·nē·əm }
- normative mineral** See standard mineral. { 'nɔr·mæd·ɪv 'mɪn·rəl }
- north geomagnetic pole** See north pole. { 'nɔrθ |jē·ō,mæg'ned·ɪk 'pɔl }
- north magnetic pole** See north pole. { 'nɔrθ mag'ned·ɪk 'pɔl }
- north pole** [GEOPHYS] The geomagnetic pole in the Northern Hemisphere, at approximately latitude 78.5°N, longitude 69°W. Also known as north geomagnetic pole; north magnetic pole. { 'nɔrθ 'pɔl }

- northupite** [MINERAL] $\text{Na}_3\text{MgCl}(\text{CO}_3)_2$ A white, yellow, gray, or colorless isometric mineral composed of magnesium sodium carbonate; occurs in octahedral crystals. { 'nɔr·thə,pt }
- nose** [GEOL] **1.** A plunging anticline that is short and without closure. **2.** A projecting and generally overhanging buttress of rock. **3.** The projecting end of a hill, spur, ridge, or mountain. **4.** The central forward part of a parabolic dune. { nɔz }
- nosean** *See* noselite. { 'nɔz·ə·n }
- noselite** [MINERAL] $\text{Na}_4\text{Al}_3\text{Si}_3\text{O}_{12}\cdot\text{SO}_4$ A gray, blue or brown mineral of the sodalite group; similar to haüynite; hardness is 5.5 on Mohs scale. Also known as nosean. { 'nɔz·ə,lɪt }
- notch** [GEOL] A deep, narrow cut near the high-water mark at the base of a sea cliff. { nɑtʃ }
- Nothosauria** [PALEON] A suborder of chiefly marine Triassic reptiles in the order Sauropsidia. { ,nɔθ·ə'sɔr·ē·ə }
- Notiomastodontinae** [PALEON] A subfamily of extinct elephantoid proboscidean mammals in the family Gomphotheriidae. { ,nɔd·ē·ɔ,mɑs·tɔ'dɑn·tɔ,nē }
- Notioprogonia** [PALEON] A suborder of extinct mammals comprising a diversified archaic stock of Notoungulata. { ,nɔd·ē·ɔ·prɔ'gɔ·nē·ə }
- Notoryctidae** [PALEON] An extinct family of Australian insectivorous mammals in the order Marsupialia. { ,nɔd·ə'trɪk·tɑ,dē }
- Notoungulata** [PALEON] An extinct order of hoofed herbivorous mammals, characterized by a skull with an expanded temporal region, primitive dentition, and primitive feet with five toes, the weight borne mainly by the third digit. { ,nɔd·ɔ,ɔŋ·gɔ'lɑd·ə }
- noumeite** *See* garnierite. { 'nū·mē,ɪt }
- nourishment** [GEOL] The replenishment of a beach, either naturally (such as by littoral transport) or artificially (such as by deposition of dredged materials). { 'nɔr·ɪsh·mənt }
- novaculite** [GEOL] A siliceous sedimentary rock that is dense, hard, even-textured, light-colored, and characterized by dominance of microcrystalline quartz over chalcedony. Also known as razor stone. { nɔ'vɑk·yɑ,lɪt }
- novaculitic chert** [GEOL] A gray chert that fragments into slightly rough, splintery pieces. { nɔ'vɑk·yɑ'lɪd·ɪk 'tʃɛrt }
- NRM** *See* natural remanent magnetization.
- nubbin** [GEOL] **1.** One of the isolated bedrock knobs or small hills forming the last remnants of a mountain crest or mountain range that has succumbed to desert erosion. **2.** A residual boulder, commonly granitic, occurring on a desert dome or broad pediment. { 'nʌb·ən }
- nuée ardente** [GEOL] A turbulent, rapidly flowing, and sometimes incandescent gaseous cloud erupted from a volcano and containing ash and other pyroclastics in its lower part. Also known as glowing cloud; Pelean cloud. { 'nū·ā ɑr'dɑnt }
- nugget** [GEOL] A small mass of metal found free in nature. { 'nʌg·ət }
- nunatak** [GEOL] An isolated hill, knob, ridge, or peak of bedrock projecting prominently above the surface of a glacier and completely surrounded by glacial ice. { 'nʌn·ə,tɑk }

O

- oblique fault** *See* diagonal fault. { ə'blɪk 'fɔlt }
- oblique joint** *See* diagonal joint. { ə'blɪk 'jɔɪnt }
- oblique slip fault** [GEOL] A fault which has slippage along both the strike and dip of the fault plane. { ə'blɪk 'slɪp ,fɔlt }
- Obolellida** [PALEON] A small order of Early and Middle Cambrian inarticulate brachiopods, distinguished by a shell of calcium carbonate. { ,əb·ə'lɛl·ə·də }
- obsequent** [GEOL] Of a stream, valley, or drainage system, being in a direction opposite to that of the original consequent drainage. { 'əb·sə·kwənt }
- obsequent fault-line scarp** [GEOL] A fault-line scarp which faces in the direction opposite to that of the original fault scarp or in which the structurally upthrown block is topographically lower than the downthrown block. { 'əb·sə·kwənt 'fɔlt ,lɪn ,skɑ:p }
- obsidian** [GEOL] A jet-black volcanic glass, usually of rhyolitic composition, formed by rapid cooling of viscous lava; generally forms the upper parts of lava flows. Also known as hyalopside; Iceland agate; mountain mahogany. { əb'sɪd·i·ən }
- obsidianite** *See* tektite. { əb'sɪd·i·nɪt }
- obstructed stream** [GEOL] A stream whose valley has been blocked by a landslide, glacial moraine, sand dune, or lava flow; it frequently consists of a series of ponds or small lakes. { əb'strɔk·təd 'strɛm }
- obstruction moraine** [GEOL] A moraine formed where the movement of ice is obstructed, for example, by a ridge of bedrock. { əb'strɔk·ʃən mə'ræn }
- occult mineral** [MINERAL] A mineral component of rock which cannot be seen through a microscope, but whose presence can be detected by chemical analyses. { ə'kɔlt 'mɪn·rəl }
- ocean basin** [GEOL] The great depression occupied by the ocean on the surface of the lithosphere. { 'oʊ·ʃən 'bɑ:sən }
- ocean floor** [GEOL] The near-horizontal surface of the ocean basin. { 'oʊ·ʃən 'flɔr }
- ocean-floor spreading** *See* sea-floor spreading. { 'oʊ·ʃən ,flɔr ,sprɛd·ɪŋ }
- oceanic basalt** [PETR] Rocks of the oceanic island volcanoes. { ,oʊ·ʃe'an·ɪk bə'sɔlt }
- oceanic crust** [GEOL] A thick mass of igneous rock which lies under the ocean floor. { ,oʊ·ʃe'an·ɪk 'krɔst }
- oceanic heat flow** [GEOPHYS] The amount of thermal energy escaping from the earth through the ocean floor per unit area and unit time. { ,oʊ·ʃe'an·ɪk 'hɛt ,flɔ }
- oceanic island** [GEOL] Any island which rises from the deep-sea floor rather than from shallow continental shelves. { ,oʊ·ʃe'an·ɪk 'I·lənd }
- oceanic ridge** *See* mid-oceanic ridge. { ,oʊ·ʃe'an·ɪk 'rɪdʒ }
- oceanic rise** [GEOL] A long, broad elevation of the bottom of the ocean. { ,oʊ·ʃe'an·ɪk 'rɪz }
- oceanite** [PETR] A picritic basalt in which olivine is a great deal more abundant than plagioclase. { 'oʊ·ʃə,nɪt }
- oceanization** [GEOL] Process by which continental crust (sial) is converted into oceanic crust (sima). { ,oʊ·ʃə·nə'zə·ʃən }
- oceanology** *See* oceanography. { ,oʊ·ʃə'nɒlə·jɪ }
- ocellar** [PETR] Of the texture of an igneous rock, having crystalline aggregates of phenocrysts arranged radially or tangentially around larger euhedral crystals or which form rounded branching forms. { ə'sel·ər }

ocellus

- ocellus** [PETR] A phenocryst in an ocellar rock. { ɔ'sel·əs }
- ocher** [MINERAL] A yellow, brown, or red earthy iron oxide, or any similar earthy, pulverulent metallic oxides used as pigments. { 'ō·kər }
- Ochoan** [GEOL] A North American provincial series that is uppermost in the Permian, lying above the Guadalupian and below the lower Triassic. { ɔ'chō·ən }
- Ochrept** [GEOL] A suborder of the soil order Inceptisol, with horizon below the surface, lacking clay, sesquioxides, or humus; widely distributed, occurring from the margins of the tundra region through the temperate zone, but not into the tropics. { 'ō·krep̄t }
- octahedral borax** See tinalconite. { ʔäk·tə|hē·drəl 'bɔr,aks }
- octahedral coordination** [MINERAL] An atomic structure where six cations surround every anion, and vice versa. { ʔäk·tə|hē·drəl kō'órd·ən,ā·shən }
- octahedral copper ore** See cuprite. { ʔäk·tə|hē·drəl 'kəp·ər ,ór }
- octahedral iron ore** See magnetite. { ʔäk·tə|hē·drəl 'T·ərn ,ór }
- octahedrite** [GEOL] The most common iron meteorite, containing 6–18% nickel in the metal phase and having intimate intergrowths lying parallel to the octahedral planes. [MINERAL] See anatase. { ʔäk·tə'hē,drīt }
- octaphyllite** [MINERAL] **1.** A group of mica minerals that contain eight cations per ten oxygen and two hydroxyl ions. **2.** Any mineral of this group, such as biotite. { ʔäk·tə'fi,līt }
- odinite** [PETR] A grayish-green lamprophyre composed of labradorite and augite or diallage; sometimes containing hornblende, phenocrysts in a groundmass of fine lath-shaped or equigranular feldspar, and a felty mesh of acicular hornblende crystals. { 'ōd·ən,īt }
- Odontognathae** [PALEON] An extinct superorder of the avian subclass Neornithes, including all large, flightless aquatic forms and other members of the single order Hesperornithiformes. { ɔ,dän'täg·nə,thē }
- Oepikellacea** [PALEON] A dimorphic superfamily of extinct ostracods in the order Paleocopa, distinguished by convex valves and the absence of any trace of a major sulcus in the external configuration. { ɛ,pik·ə'lās·ē·ə }
- offlap** [GEOL] The successive lateral contraction extent of strata (in an upward sequence) due to their deposition in a shrinking sea or on the margin of a rising landmass. Also known as regressive overlap. { 'óf,ləp }
- off-reef facies** [GEOL] Facies of the inclined strata made up of reef detritus deposited along the seaward margin of a reef. { 'óf,rēf 'fā·shēz }
- offset** [GEOL] **1.** The movement of an upcurrent part of a shore to a more seaward position than a downcurrent part. **2.** A spur from a mountain range. **3.** A level terrace on the side of a hill. **4.** The horizontal displacement component in a fault, measured parallel to the strike of the fault. Also known as normal horizontal separation. { 'óf,set }
- offset deposit** [GEOL] A mineral deposit, especially of sulfides, formed partly by magmatic segregation and partly by hydrothermal solution and located near the source rock. { 'óf,set di'pəz·ət }
- offset ridge** [GEOL] A ridge consisting of resistant sedimentary rock that has been made discontinuous as a result of faulting. { 'óf,set 'rij }
- offset stream** [GEOL] A stream displaced laterally or vertically by faulting. { 'óf,set 'strēm }
- offshore** [GEOL] The comparatively flat zone of variable width extending from the outer margin of the shoreface to the edge of the continental shelf. { 'óf,shór }
- offshore bar** See longshore bar. { 'óf,shór 'bār }
- offshore beach** See barrier beach. { 'óf,shór 'bēch }
- offshore slope** [GEOL] The frontal slope below the outer edge of an offshore terrace. { 'óf,shór 'slöp }
- offshore terrace** [GEOL] A wave-built terrace in the offshore zone composed of gravel and coarse sand. { 'óf,shór 'ter·əs }
- ogive** [GEOL] One of a periodically repeated series of dark, curved structures occurring down a glacier that resemble a pointed arch. { 'ō,iv }
- oikocryst** [PETR] One of the enclosing crystals in a poikilitic fabric. { 'ōik·ə,krist }

Old Red Sandstone

- oil** See petroleum. { 'õil }
- oil accumulation** See oil pool. { 'õil ə,kyü·myə,lā·shən }
- oil column** [GEOL] The difference in elevation between the highest and lowest portions of various producing zones of an oil-producing formation. { 'õil ,käl·əm }
- oil floor** [GEOL] In a sedimentary basin, the depth below which there is no economic oil accumulation. { 'õil ,flör }
- oil pool** [GEOL] An accumulation of petroleum locally confined by subsurface geologic features. Also known as oil accumulation; oil reservoir. { 'õil ,pül }
- oil reservoir** See oil pool. { 'õil 'rez·əv,wär }
- oil rock** [GEOL] A rock stratum containing oil. { 'õil ,räk }
- oil sand** [GEOL] An unconsolidated, porous sand formation or sandstone containing or impregnated with petroleum or hydrocarbons. { 'õil ,sand }
- oil seep** [GEOL] The emergence of liquid petroleum at the land surface as a result of slow migration from its buried source through minute pores or fissure networks. Also known as petroleum seep. { 'õil ,sēp }
- oil shale** [GEOL] A finely layered brown or black shale that contains kerogen and from which liquid or gaseous hydrocarbons can be distilled. Also known as kerogen shale. { 'õil ,shāl }
- oil trap** [GEOL] An accumulation of petroleum which, by a combination of physical conditions, is prevented from escaping laterally or vertically. Also known as trap. { 'õil ,trap }
- Oiluvium** See Pleistocene. { 'õil'lu·vē·əm }
- oil-water contact** See oil-water surface. { 'õil 'wöd·ər 'kän,takt }
- oil-water interface** See oil-water surface. { 'õil 'wöd·ər 'in·tər,fäs }
- oil-water surface** [GEOL] The datum of a two-dimensional oil-water interface. Also known as oil-water contact; oil-water interface. { 'õil 'wöd·ər 'sär·fäs }
- oil zone** [GEOL] The formation or horizon from which oil is produced, usually immediately under the gas zone and above the water zone if all three fluids are present and segregated. { 'õil ,zõn }
- okaite** [PETR] An ultramafic igneous rock composed chiefly of melilite and haüyne, with accessory biotite, perovskite, apatite, calcite, and opaque oxides. { 'õ'kä,īt }
- okenite** [MINERAL] $\text{CaSi}_2\text{O}_4(\text{OH})_2 \cdot \text{H}_2\text{O}$ A whitish mineral consisting of calcium silicate and occurring in fibrous masses. { 'õ·kə,nīt }
- old age** [GEOL] The last stage of the erosion cycle in the development of the topography of a region in which erosion has reduced the surface almost to base level and the land forms are marked by simplicity of form and subdued relief. Also known as topographic old age. { 'õld 'āj }
- Oldhaminidina** [PALEON] A suborder of extinct articulate brachiopods in the order Strophomenida distinguished by a highly lobate brachial valve seated within an irregular convex pedicle valve. { 'õl·dä·mā'nī·dä·nə }
- oldhamite** [MINERAL] CaS A pale-brown mineral known only from meteorites; unstable under earth conditions; member of the galena group with face-centered isometric structure. { 'õl·dä,mīt }
- old lake** [GEOL] **1.** A lake in an advanced stage of filling by sediments. **2.** A eutrophic or dystrophic lake. **3.** A lake whose shoreline exhibits an advanced stage of development. { 'õld 'lāk }
- oldland** [GEOL] **1.** An extensive area (as the Canadian Shield) of ancient crystalline rocks reduced to low relief by long, continuous erosion from which the materials of later sedimentary rocks were derived. **2.** A region of older land, projected above sea level behind a coastal plain, that supplied the material of which the coastal-plain strata were formed. { 'õld,land }
- old mountain** [GEOL] A mountain that was formed before the beginning of the Tertiary Period. { 'õld 'maünt·ən }
- Old Red Sandstone** [GEOL] A Devonian formation in Great Britain and northwestern Europe, of nonmarine, predominantly red sedimentary rocks, consisting principally of sandstone, conglomerates, and shales. { 'õld 'red 'san,stõn }

Olenellidae

- Olenellidae** [PALEON] A family of extinct arthropods in the class Trilobita. { ɔ̃·lə'nel·ə,dē }
- Oligocene** [GEOL] The third oldest of the seven geological epochs of the Cenozoic Era, beginning 34 million years ago and ending 24 million years ago. It corresponds to an interval of geological time (and rocks deposited during that time) from the close of the Eocene Epoch to the beginning of the Miocene Epoch. { ə'lig·ə,sēn }
- oligoclase** [MINERAL] A plagioclase feldspar mineral with a composition ranging from $Ab_{90}An_{10}$ to $Ab_{70}An_{30}$, where $Ab = NaAlSi_3O_8$ and $An = CaAl_2O_8$. { 'əl·ə·gō,klās }
- oligoclasite** [PETR] A granular plutonic rock composed almost entirely of oligoclase. Also known as oligosite. { 'äl·ə·gō'kla,sīt }
- oligomictic** [PETR] Of a clastic sedimentary rock, composed of a single rock type. { ə,lig·ə'mik·tik }
- oligopellic** [GEOL] Property of a lake bottom deposit which contains very little clay. { ə,lig·ə'pel·ik }
- oligophyre** [PETR] A light-colored diorite containing oligoclase phenocrysts in a groundmass of the same minerals. { ə'lig·ə,fīr }
- Oligopygidae** [PALEON] An extinct family of exocyclic Euechinoidia in the order Holecypoida which were small ovoid forms of the Early Tertiary. { 'äl·ə·gō'pij·ə,dē }
- oligosite** See oligoclasite. { ə'lig·ə,sīt }
- olistolith** [GEOL] An exotic block or other rock mass that has been transported by submarine gravity sliding or slumping and is included in the binder of an olistostrome. { ə'lis·tə,lith }
- olistostrome** [GEOL] A sedimentary deposit composed of a chaotic mass of heterogeneous material that is intimately mixed; accumulated in the form of a semifluid body by submarine gravity sliding or slumping of unconsolidated sediments. { ə'lis·tə,ström }
- oliveiraite** [MINERAL] $Zr_3Ti_2O_{10} \cdot 2H_2O$ An isotropic mineral consisting of an oxide of titanium and zirconium. { 'äl·ə·və'rā,īt }
- olivenite** [MINERAL] $Cu_2(AsO_4)(OH)$ An olive-green, dull-brown, gray, or yellow mineral crystallizing in the orthorhombic system and consisting of a basic arsenate of copper. Also known as leucochalcite; wood copper. { ə'liv·ə,nīt }
- olivine** [MINERAL] $(Mg,Fe_2)SiO_4$ A nesosilicate group of olive-green magnesium-iron silicate minerals crystallizing in the orthorhombic system and having a vitreous luster; hardness is 6½–7 on Mohs scale; specific gravity is 3.27–3.37. { 'äl·ə,vēn }
- olivine basalt** [PETR] Any of a group of olivine-bearing basalts. { 'äl·ə,vēn bæ'sɔlt }
- olivine-bronzite chondrite** [GEOL] A type of chondritic meteorite that contains about equal amounts of olivine and bronzite. { 'äl·ə,vēn 'brän,zīt 'kän,drīt }
- olivine diabase** [PETR] An igneous rock composed principally of olivine and formed from tholeiitic magmas by differentiation in thick sills. { 'äl·ə,vēn 'dī·ə,bās }
- olivine-hypersthene chondrite** [GEOL] A type of chondritic meteorite generally containing more olivine than hypersthene; the hypersthene contains 12–20% iron, giving the meteorite a relatively dark color, and the metal grains usually contain 7–12% nickel. { 'äl·ə,vēn 'hī·pər,sthēn 'kän,drīt }
- olivine nephelinite** [PETR] An extrusive igneous rock differing in composition from nephelinite only by the presence of olivine. Also known as ankarartrite; nepheline basalt. { 'äl·ə,vēn nə'fel·ə,nīt }
- olivine-pigeonite chondrite** [GEOL] A type of chondritic meteorite in which olivine is the predominant mineral and pigeonite is secondary, and metal inclusions are usually rich in nickel. { 'äl·ə,vēn 'pij·ə,nīt 'kän,drīt }
- ollenite** [PETR] A type of hornblende schist characterized by abundant epidote, sphene, and rutile. { 'äl·ə,nīt }
- omission** [GEOL] The elimination or nonexposure of certain stratigraphic beds at the surface of any specified section because of disruption and displacement of the beds by faulting. { ə'mish·ən }
- omphacite** [MINERAL] A grassy- to pale-green, granular or foliated, high-temperature aluminous clinopyroxene mineral with a vitreous luster that commonly occurs in the rock eclogite; a variety of augite. { 'əm·fə,sīt }

- oncolite** [GEOL] A small, variously shaped (often spheroidal), concentrically laminated, calcareous sedimentary structure resembling an oolith; formed by accretion of successive, layered masses of gelatinous sheaths of blue-green algae. { 'ən·kō,līt }
- Onesquethawan** [GEOL] A North American stage in the Lower and Middle Devonian, lying above the Deerparkian and below the Cazenovian. { ,ən·ə'skweth·ə,wän }
- onionskin weathering** [GEOL] A type of spheroidal weathering in which successive shells of decayed rock resembling the layers of an onion are produced. { 'ən,yən,skin 'weth·ə·rɪŋ }
- onlap** [GEOL] A type of overlap characterized by regular and progressive pinching out of the strata toward the margins of a depositional basin; each unit transgresses and extends beyond the point of reference of the underlying unit. Also known as transgressive overlap. { 'ɒn,lap }
- Onychodontidae** [PALEON] A family of Lower Devonian lobefin fishes in the order Osteolepiformes. { ,jən·ə·kō'dänt·ə,dē }
- onyx** [MINERAL] **1.** Banded chalcedonic quartz, in which the bands are straight and parallel; natural colors are usually red or brown with white, although black is occasionally encountered. **2.** See onyx marble. { 'än·iks }
- onyx agate** [MINERAL] A banded agate with straight, parallel, alternating bands of white and different tones of gray. { 'än·iks 'ag·ət }
- onyx marble** [MINERAL] A hard, compact, dense, generally translucent variety of calcite resembling true onyx and usually banded. Also known as alabaster; Algerian onyx; Gibraltar stone; Mexican onyx; onyx; oriental alabaster. { 'än·iks 'mär·bəl }
- onyx opal** [MINERAL] Common opal with straight, parallel markings. { 'än·iks 'ɒ·pəl }
- ooliclast** [PETR] A small, nearly spherical feature occurring in an oolith as a result of a selective dissolution that did not destroy the matrix but left an opening that was subsequently filled. { 'ɔ̄l·ə,kast }
- ooliclastic porosity** [PETR] The porosity produced in an oolitic rock by removal of the ooids and formation of ooliclasts. { 'ɔ̄l·ə,kas·tik pə'räs·əd·ē }
- oolite** [PETR] A sedimentary rock, usually a limestone, composed principally of cemented ooliths. Also known as eggstone; roestone. { 'ɒ·ə,līt }
- oolith** [PETR] A small (0.25–2.0 millimeters), rounded accretionary body in a sedimentary rock; generally formed of calcium carbonate by inorganic precipitation or by replacement; ooliths generally exhibit concentric or radial internal structure. { 'ɒ·ə,lɪθ }
- oolitic chert** [PETR] Chert composed chiefly of ooliths. { ,ɒ·ə'lɪd·ɪk 'tʃɜrt }
- oolitic limestone** [PETR] An even-textured limestone made up almost entirely of calcareous ooliths with essentially no matrix. { ,ɒ·ə'lɪd·ɪk 'lɪm,stɒn }
- oomicrite** [PETR] A limestone containing at least 25% ooliths and no more than 25% intraclasts in which the carbonate-mud matrix (micrite) is more abundant than the sparry-calcite cement. { ,ɒ·ə'mɪ,krɪt }
- oomicrudite** [PETR] An oomicrite containing ooliths that are more than 1 millimeter in diameter. { ,ɒ·ə'mɪ·krə,dɪt }
- oospararenite** [PETR] An oosparite containing medium sand or coarse sand-sized ooliths. { ,ɒ·ə·spə'rər·ənɪt }
- oosparite** [PETR] A limestone containing at least 25% ooliths and no more than 25% intraclasts in which the sparry-calcite cement is more abundant than the carbonate-mud matrix. { ,ɒ·ə'spa,rɪt }
- oosparrudite** [PETR] An oosparite containing ooliths that are more than 1 millimeter in diameter. { ,ɒ·ə'spar·ə,dɪt }
- oovoid** [PETR] A void in the center of an incompletely replaced oolith. { 'ɒ·ə,vɔɪd }
- ooze** [GEOL] **1.** A soft, muddy piece of ground, such as a bog, usually resulting from the flow of a spring or brook. **2.** A marine pelagic sediment composed of at least 30% skeletal remains of pelagic organisms, the rest being clay minerals. **3.** Soft mud or slime, typically covering the bottom of a lake or river. { ūz }
- opaque** [PETR] Masses of opaque, microscopic grains in rocks, particularly in the groundmass of an igneous rock. { 'əp·ə,sɪt }
- opal** [MINERAL] A natural hydrated form of silica; it is amorphous, usually occurs in

opal agate

botryoidal or stalactitic masses, has a hardness of 5–6 on Mohs scale, and specific gravity is 1.9–2.2. { 'õ·pəl }

opal agate [PETR] A variety of banded opal that displays different shades of color, is agatelike in structure, and consists of alternating layers of opal and chalcedony. { 'õ·pəl 'ag·ət }

opal-CT [PETR] A poorly ordered crystalline form of silica thought to be the intermediate phase in quartz chert formation. { 'õ·pəl 'sɛ'tɛ }

opaline [MINERAL] **1.** Any of several minerals related to or resembling opal. **2.** An earthy form of gypsum. { 'õ·pə,lɛn }

opalized wood See silicified wood. { 'õ·pə,lɪzd 'wʊd }

opaque attritus [GEOL] Attritus that does not contain large quantities of transparent humic degradation matter. { ɔ'pæk ə'trɪd·əs }

open fault [GEOL] A fault, or section of a fault, whose two walls have become separated along the fault surface. { 'õ·pən 'fɔlt }

open fold [GEOL] A fold having only moderately compressed limbs. { 'õ·pən ,fɔld }

open rock [GEOL] Any stratum sufficiently open or porous to contain a significant amount of water or to convey water along its bed. { 'õ·pən 'ræk }

open sand [GEOL] A formation of sandstone that has porosity and permeability sufficient to provide good storage for oil. { 'õ·pən 'sænd }

open-space structure [GEOL] A structure in a carbonate sedimentary rock formed by a partial or complete occupation by internal sediments or cement. { 'õ·pən ,spæs 'stræk·chər }

operational unit [GEOL] An arbitrary stratigraphic unit that is distinguished by objective criteria for some practical purpose. Also known as parastratigraphic unit. { ,ɔp·ə'rā·shən·əl 'yü·nət }

opicalcrite [PETR] A recrystallized limestone composed of calcite and serpentine and formed by dedolomitization of a siliceous dolomite. { 'ɔf·ə'kal,sɪt }

Ophiocistoidea [PALEON] A small class of extinct Echinozoa in which the domed aboral surface of the test was roofed by polygonal plates and carried an anal pyramid. { ,ɔf·ē·ō,sɪs·tē'oid·ē·ə }

ophiolite [PETR] A distinctive assemblage of mafic plus ultramafic rocks, generally considered to be fragments of oceanic lithosphere that have been tectonically emplaced onto continental margins and island arcs. { 'ɔf·ē·ə,lɪt }

ophiolitic eclogite [PETR] Any of the eclogites which are products of early orogenic volcanism and which by later metamorphism transformed into rocks of the high-pressure facies series. { ,ɔf·ē·ə,lɪd·ɪk 'ek·lə,jɪt }

ophite [PETR] A diabase in which the ophitic structure is retained even though the pyroxene is altered to uralite. { 'ɔ,fɪt }

ophitic [PETR] Of the holocrystalline, hypidiomorphic-granular texture of an igneous rock, exhibiting lath-shaped plagioclase crystals partly or wholly included within pyroxene crystals. { ə'fɪd·ɪk }

opoka [PETR] A porous, flinty, and calcareous sedimentary rock, with conchoidal or irregular fracture, consisting of fine-grained opaline silica (up to 90%), and hardened by the presence of silica of organic origin. { ɔ'pæk·ə }

optical calcite [MINERAL] The type of calcite used to make Nicol prisms. { 'ɔp·tə·kəl 'kal,sɪt }

optimum moisture content [GEOL] The water content at which a specified compactive force can compact a soil mass to its maximum dry unit weight. { 'ɔp·tə·məm 'mɔis·chər ,kän,tent }

orange sapphire [MINERAL] An orange variety of gem corundum (sapphire). Also known as padparadsha. { 'är·ɪn 'sa,fɪr }

orbicular [PETR] Of the structure of a rock, containing large quantities of orbicules. { ɔr'bɪk·yə·lər }

orbicule [GEOL] A nearly spherical body, up to 2 centimeters (0.8 inch) or more in diameter, in which the components are arranged in concentric layers. { 'ɔr·bə,kyül }

orbite [PETR] An igneous rock containing large phenocrysts of hornblende, or plagioclase and hornblende, in a groundmass with the composition of malachite. { 'ɔr,bɪt }

oriental alabaster

- Ordovician** [GEOL] The second period of the Paleozoic era, above the Cambrian and below the Silurian, from approximately 500 million to 440 million years ago. { ,órd-ə'vish·ən }
- ore** [GEOL] **1.** The naturally occurring material from which economically valuable minerals can be extracted. **2.** Specifically, a natural mineral compound of the elements, of which one element at least is a metal. **3.** More loosely, all metalliferous rock, though it contains the metal in a free state. **4.** Occasionally, a compound of nonmetallic substances, as sulfur ore. { ór }
- ore bed** [GEOL] An economic aggregation of minerals occurring between or in rocks of sedimentary origin. { 'ór ,bed }
- orebody** [GEOL] Generally, a solid and fairly continuous mass of ore, which may include low-grade ore and waste as well as pay ore, but is individualized by form or character from adjoining country rock. { 'ór,bäd-ē }
- ore chimney** See pipe. { 'ór ,chim·nē }
- ore cluster** [GEOL] A group of interconnected ore bodies. { 'ór ,kləs·tər }
- ore control** [GEOL] A geologic feature that has influenced the ore deposition. { 'ór ,kən'tröl }
- ore deposit** [GEOL] Rocks containing minerals of economic value in such amount that they can be profitably exploited. { 'ór di,päz·ət }
- ore district** [GEOL] A combination of several ore deposits into one common whole or system. { 'ór ,dis,trikt }
- ore-lead age** [GEOL] An estimate of the age of the earth made by comparing the relative progress of the two radioactive decay schemes ^{235}U - ^{207}Pb and ^{238}U - ^{206}Pb . { 'ór 'led ,āj }
- ore microscopy** [MINERAL] The use of a reflecting microscope to study polished sections of ore minerals. Also known as mineragraphy; mineralography. { 'ór mī'kräs·kə:pē }
- orendite** [PETR] A porphyritic extrusive rock containing phlogopite phenocrysts in a nepheline-free reddish-gray groundmass of leucite, sanidine, phlogopite, amphibole, and diopside. { 'ór·ən,dīt }
- oreodont** [PALEON] Any member of the family Merycoidodontidae. { 'ór·ē·ō,dänt }
- ore of sedimentation** See placer. { 'ór əv ,sed·ə·mən'tä·shən }
- ore pipe** See pipe. { 'ór ,pīp }
- ore shoot** [GEOL] **1.** A large, generally vertical, pipelike ore body that is economically valuable. Also known as shoot. **2.** A large and usually rich aggregation of mineral in a vein. { 'ór ,shüt }
- organic geochemistry** [GEOCHEM] A branch of geochemistry which deals with naturally occurring carbonaceous and biologically derived substances which are of geological interest. { ór'gan·ik ,jē·ō'kem·ə·strē }
- organic lattice** See growth lattice. { ór'gan·ik 'lad·əs }
- organic mound** See bioherm. { ór'gan·ik 'maünd }
- organic reef** [GEOL] A sedimentary rock structure of significant dimensions erected by, and composed almost exclusively of the remains of, corals, algae, bryozoans, sponges, and other sedentary or colonial organisms. { ór'gan·ik 'rēf }
- organic rock** [PETR] A sedimentary rock composed principally of the remains of plants and animals. { ór'gan·ik 'räk }
- organic soil** [GEOL] Any soil or soil horizon consisting chiefly of, or containing at least 30% of, organic matter; examples are peat soils and muck soils. { ór'gan·ik 'söil }
- organic texture** [GEOL] A sedimentary texture resulting from the activity of organisms such as the secretion of skeletal material. { ór'gan·ik 'teks·chər }
- organic weathering** [GEOL] Biological processes and changes that contribute to the breakdown of rocks. Also known as biological weathering. { ór'gan·ik 'weth·ə·riŋ }
- organogenic** [GEOL] Property of a rock or sediment derived from organic substances. { ór'gan·ə'jen·ik }
- organolite** [GEOL] Any rock consisting mainly of organic material. { ór'gan·ə'līt }
- oriental alabaster** See onyx marble. { ,ór·ē'ent·əl 'al·ə,bas·tər }

oriental amethyst

- oriental amethyst** [MINERAL] A violet to purple variety of sapphire. { ,ór-ē'ent-əl 'am-ə,thist }
- oriental jasper** See bloodstone. { ,ór-ē'ent-əl 'jas-pər }
- oriental topaz** [MINERAL] A yellow variety of corundum, used as a gem. { ,ór-ē'ent-əl 'tō,paz }
- orientation diagram** [GEOL] Any point or contour diagram used in structural petrology. { ,ór-ē-ən'tā-shən ,dī-ə,gram }
- oriented** [GEOL] Pertaining to a specimen that is so marked as to show its exact, original position in space. { 'ór-ē,ent-əd }
- original dip** See primary dip. { ə'rij-ən-əl 'dip }
- original interstice** [PETR] An interstice that formed contemporaneously with the enclosing rock. Also known as primary interstice. { ə'rij-ən-əl 'in-tər,stɪs }
- original valley** [GEOL] A valley formed by hypogene action or by epigene action other than that of running water. { ,ór-rij-ən-əl 'val-ē }
- Ornithischia** [PALEON] An order of extinct terrestrial reptiles, popularly known as dinosaurs; distinguished by a four-pronged pelvis, and a median, toothless predeantary bone at the front of the lower jaw. { ,ór-nə'this-kē-ə }
- Ornithomimus** [PALEON] A 13-foot-long (4-meter) omnivorous theropod dinosaur from the Late Cretaceous Period that had large hips, a long tail, and strong hindlimbs, and closely resembled ostriches. { ,ór-nə-thō'mīm-əs }
- Ornithopoda** [PALEON] A suborder of extinct reptiles in the order Ornithischia including all bipedal forms in the order. { ,ór-nə'thāp-ə-də }
- orocline** [GEOL] An orogenic belt with a change in horizontal direction, either a horizontal curvature or a sharp bend. Also known as geoflex. { 'ór-ə,klīn }
- orocratic** [GEOL] Pertaining to a period of time in which there is much diastrophism. { 'ór-ə'krad-ik }
- orogen** See orogenic belt. { 'ór-ə-jən }
- orogene** See orogenic belt. { 'ór-ə,jēn }
- orogenesis** See orogeny. { ,ór-ə'jen-ə-səs }
- orogenic belt** [GEOL] A linear region that has undergone folding or other deformation during the orogenic cycle. Also known as fold belt; orogen; orogene. { 'ór-ə'jen-ik 'belt }
- orogenic cycle** [GEOL] A time interval during which a mobile belt evolved into an orogenic belt, passing through preorogenic, orogenic, and postorogenic stages. Also known as geotectonic cycle. { 'ór-ə'jen-ik 'sī-kəl }
- orogenic sediment** [GEOL] Any sediment that is produced as the result of an orogeny or that is directly attributable to the orogenic region in which it is later found. { 'ór-ə'jen-ik 'sed-ə-mənt }
- orogenic unconformity** [GEOL] An angular unconformity produced locally in a region affected by mountain-building movements. { 'ór-ə'jen-ik ,ən-kən'fór-məd-ē }
- orogeny** [GEOL] The process or processes of mountain formation, especially the intense deformation of rocks by folding and faulting which, in many mountainous regions, has been accompanied by metamorphism, invasion of molten rock, and volcanic eruption; in modern usage, orogeny produces the internal structure of mountains, and epeirogeny produces the mountainous topography. Also known as orogenesis; tectogenesis. { ó'rāj-ə-nē }
- orogeosyncline** [GEOL] A geosyncline that later became an area of orogeny. { 'ór-əjē-ō'sin,klīn }
- orographic** [GEOL] Pertaining to mountains, especially in regard to their location and distribution. { 'ór-ə'graf-ik }
- orotath** [GEOL] An orogenic belt that has been stretched substantially in a lengthwise direction. { 'ór-ə,tath }
- orpiment** [MINERAL] As₂S₃ A lemon-yellow mineral, crystallizing in the monoclinic system, and generally occurring in foliated or columnar masses; luster is resinous and pearly on the cleavage surface, hardness is 1.5–2 on Mohs scale, and specific gravity is 3.49. Also known as yellow arsenic. { 'ór-pə-mənt }

orthophyric

- Orthacea** [PALEON] An extinct group of articulate brachiopods in the suborder Orthidina in which the delthyrium is open. {ór'thās·ē·ə}
- Orthent** [GEOL] A suborder of the soil order Entisol, well drained and of medium or fine texture, usually shallow to bedrock and lacking evidence of horizonation; occurs mostly on strong slopes. {'ór·thənt}
- Orthid** [GEOL] A suborder of the soil order Aridisol, mostly well drained, gray or brownish-gray with little change from top to bottom of the soil profile; occupies younger, but not the youngest, land surfaces in deserts. {'ór·thəd}
- Orthida** [PALEON] An order of extinct articulate brachiopods which includes the oldest known representatives of the class. {'ór·thə·dā}
- Orthidina** [PALEON] The principal suborder of the extinct Orthida, including those articulate brachiopods characterized by biconvex, finely ribbed shells with a straight hinge line and well-developed interareas on both valves. {'ór·thid·ən·ə}
- orthite** [MINERAL] Allantite in the form of slender prismatic or acicular crystals. {'ór,thīt}
- orthobituminous coal** [GEOL] Bituminous coal that contains 87–89% carbon, analyzed on a dry, ash-free basis. {'ór·thō·bə'tü·mən·əs 'kōl}
- orthochem** [GEOCHEM] A precipitate formed within a depositional basin or within the sediment itself by direct chemical action. {'ór·thə,kem}
- orthochronology** [GEOL] Geochronology based on a standard succession of biostratigraphically significant faunas or floras, or based on irreversible evolutionary processes. {'ór·thə·krə'näl·ə·jē}
- orthoclase** [MINERAL] KAlSi_3O_8 A colorless, white, cream-yellow, flesh-reddish, or gray potassium feldspar that usually contains some sodium feldspar, either as albite or analbite or in some intermediate state; it is or appears to be monoclinic. Also known as common feldspar; orthose; pegmatolite. {'ór·thə,klās}
- orthoconglomerate** [GEOL] A conglomerate with an intact gravel framework held together by mineral cement and deposited by ordinary water currents. {'ór·thə·kən'gläm·ə·rət}
- orthocumulate** [PETR] A cumulate composed chiefly of one or more cumulus minerals plus the crystallization products of the intercumulus liquid. {'ór·thə'kyü·myə·lət}
- Orthod** [GEOL] A suborder of the soil order Spodosol having accumulations of humus, aluminum, and iron; widespread in Canada and the former Soviet Union. {'ór,thäd}
- orthodolomite** [PETR] **1.** A primary dolomite, or one formed by sedimentation. **2.** A dolomite rock so well cemented that the particles interlock. {'ór·thə'dō·lə,mīt}
- orthoferrosilite** [MINERAL] An orthopyroxene consisting of the orthorhombic silicate FeSiO_3 . {'ór·thō,fer·ə'sil,īt}
- orthogeosyncline** [GEOL] A linear geosynclinal belt lying between continental and oceanic cratons, and having internal volcanic belts (eugeosynclinal) and external nonvolcanic belts (miogeosynclinal). Also known as geosynclinal couple; primary geosyncline. {'ór·thō,jē·ə'sin,klīn}
- orthogneiss** [GEOL] Gneiss originating from igneous rock. {'ór·thə,nīs}
- orthohydrous coal** [GEOL] Coal that contains 5–6% hydrogen, analyzed on a dry, ash-free basis. {'ór·thə'hī·drəs 'kōl}
- ortholignituous coal** [GEOL] Coal that contains 75–80% carbon, analyzed on a dry, ash-free basis. {'ór·thō·lig'nīd·əs 'kōl}
- orthomagmatic stage** [GEOL] The principal stage in the crystallization of silicates from a typical magma; up to 90% of the magma may crystallize during this stage. Also known as orthotectic stage. {'ór·thō,mag'mad·ik 'stāj}
- orthomimic feldspars** [MINERAL] A group of feldspars that by repeated twinning simulate a higher degree of symmetry with rectangular cleavages. {'ór·thə'mim·ik 'fel,spärz}
- orthophotograph** [GEOL] A photographic copy, prepared from a photograph formed by a perspective projection, in which the displacements due to tilt and relief have been removed. {'ór·thə'fōd·ə,graf}
- orthophyric** [PETR] Of the texture of the matrix of certain igneous rocks, having feldspar

Orthopsidae

- crystals with quadratic or short and stumpy rectangular cross sections. { őr-thə'fir-ik }
- Orthopsidae** [PALEON] A family of extinct echinoderms in the order Hemicaroida distinguished by a camarodont lantern. { őr'thəp-sə,dē }
- orthopyroxene** [MINERAL] A series of pyroxene minerals crystallizing in the orthorhombic system; members include enstatite, bronzite, hypersthene, ferrohypersthene, eulite, and orthoferrosilite. { őr-thə-pə'räk,sēn }
- orthoquartzite** [PETR] A clastic sedimentary rock composed almost entirely of detrital quartz grains; a quartzite of sedimentary origin. Also known as orthoquartzitic sandstone; sedimentary quartzite. { őr-thə'kwört,sīt }
- orthoquartzitic conglomerate** [GEOL] A lithologically homogeneous, light-colored orthoconglomerate composed of quartzose residues that is commonly interbedded with pure quartz sandstone. Also known as quartz-pebble conglomerate. { őr-thə'kwört'sid-ik kən'gläm-ə-rət }
- orthoquartzitic sandstone** See orthoquartzite. { őr-thə'kwört'sid-ik 'san,stōn }
- orthorhombic pyroxene** [MINERAL] A member of the mineral series enstatite-orthoferrosilite, crystallizing in the orthorhombic system, space group *Pbca*. { őr-thə'räm-bik pə'räk,sēn }
- orthoschist** [PETR] A schist derived from igneous rocks. { őr-thə'shist }
- orthose** See orthoclase. { őr,thōs }
- orthosite** [PETR] A light-colored coarse-grained igneous rock composed almost entirely of orthoclase. { őr-thə,sīt }
- orthostratigraphy** [GEOL] Standard stratigraphy based on fossils which identify recognized biostratigraphic zones. { őr-thō-strə'tig-rə-fē }
- orthotectic stage** See orthomagmatic stage. { őr-thə'tek-tik ,stāj }
- orthotill** [GEOL] A till formed by immediate release of material from transported ice, such as by ablation and melting. { őr-thə,tīl }
- Orthox** [GEOL] A suborder of the soil order Oxisol that is moderate to low in organic matter, well drained, and moist all or nearly all year; believed to be extensive at low altitudes in the heart of the humid tropics. { őr,thäks }
- orvietite** [PETR] An extrusive rock composed of approximately equal amounts of plagioclase and sanidine; includes leucite, augite, minor biotite, and olivine, and accessory apatite and opaque oxides. { őr-vē-ə,tīt }
- oryctocoenosis** [PALEON] The part of a thanatocoenosis that has been preserved as a fossil. { ə,rik-tə-sə'nō-səs }
- Osagean** [GEOL] A provincial series of geologic time in North America; Lower Mississippian (above Kinderhookian, below Meramecian). { ősə-jē-ən }
- osar** See esker. { ős,sär }
- oscillation ripple** See oscillation ripple mark. { əs-ə'lä-shən ,rip-əl }
- oscillation ripple mark** [GEOL] A symmetric ripple mark having a sharp, narrow, and relatively straight crest between broadly rounded troughs, formed by the motion of water agitated by oscillatory waves on a sandy base at a depth shallower than wave base. Also known as oscillation ripple; oscillatory ripple mark; wave ripple mark. { əs-ə'lä-shən 'rip-əl ,märk }
- oscillatory ripple mark** See oscillation ripple mark. { əs-ə'lä,tör-ē 'rip-əl ,märk }
- ossipite** [PETR] A coarse-grained variety of troctolite containing labradorite, olivine, magnetite, and a small amount of diallage. { äs-ə,pīt }
- Osteolepidae** [PALEON] A family of extinct fishes in the order Osteolepiformes. { äs-tē-ō'lep-ə,dē }
- Osteolepiformes** [PALEON] A primitive order of fusiform lobefin fishes, subclass Crossopterygii, generally characterized by rhombic bony scales, two dorsal fins placed well back on the body, and a well-ossified head covered with large dermal plating bones. { äs-tē-ō,lep-ə'fōr-mēz }
- osteolith** [PALEON] A fossil bone. { äs-tē-ə,lith }
- Osteostraci** [PALEON] An order of extinct jawless vertebrates; they were mostly small, with the head and part of the body encased in a solid armor of bone, and the posterior part of the body and the tail covered with thick scales. { äs-tē'äs-trə,sī }

- ostracoderm** [PALEON] Any of various extinct jawless vertebrates covered with an external skeleton of bone which together with the Cyclostomata make up the class Agnatha. { 'ä·strə·kō,dərm }
- osumilite** [MINERAL] $(K,Na)(Mg,Fe^{2+})_2(Al,Fe^{3+})_3(Si,Al)_{12}O_{30}·H_2O$ A mineral that crystallizes in the hexagonal system and is commonly mistaken for cordierite. { 'ä'sü·mə,līt }
- otavite** [MINERAL] $CdCO_3$ A mineral that crystallizes in the hexagonal system and is isostructural with calcite. { 'öd·ə,vīt }
- ottrelite** [MINERAL] A gray to black variety of chloritoid containing manganese. { 'ä·trə,līt }
- ouachitite** [PETR] A biotite monchiquite with no olivine and a glassy or analcime groundmass. { 'wä·chə,tīt }
- outcrop** [GEOL] Exposed stratum or body of ore at the surface of the earth. Also known as cropout. { 'äüt,kräp }
- outcrop curvature** See settling. { 'äüt,kräp 'kər·və·chər }
- outcrop map** [GEOL] A type of geologic map that shows the distribution and shape of actual outcrops, leaving those areas without outcrops blank. { 'äüt,kräp ,map }
- outer bar** [GEOL] A bar formed at the mouth of an ebb channel of an estuary. { 'äüd·ər 'bär }
- outer beach** [GEOL] The part of a beach that is ordinarily dry and reached only by the waves generated by a violent storm. { 'äüd·ər 'bēch }
- outer core** [GEOL] The outer or upper zone of the earth's core, extending to a depth of 3160 miles (5100 kilometers), and including the transition zone. { 'äüd·ər 'kōr }
- outer mantle** See upper mantle. { 'äüd·ər 'mant·əl }
- outface** See dip slope. { 'äüt,fās }
- outflow cave** [GEOL] A cave from which a stream issues or is known to have issued. { 'äüt,flō ,käv }
- outlier** [GEOL] A group of rocks separated from the main mass and surrounded by outcrops of older rocks. { 'äüt,lī·ər }
- outwash** [GEOL] **1.** Sand and gravel transported away from a glacier by streams of meltwater and either deposited as a floodplain along a preexisting valley bottom or broadcast over a preexisting plain in a form similar to an alluvial fan. Also known as glacial outwash; outwash drift; overwash. **2.** Soil material washed down a hillside by rainwater and deposited on more gently sloping land. { 'äüt,wāsh }
- outwash apron** See outwash plain. { 'äüt,wāsh ,ä·prən }
- outwash cone** [GEOL] A cone-shaped deposit consisting chiefly of sand and gravel found at the edge of shrinking glaciers and ice sheets. { 'äüt,wāsh ,kōn }
- outwash drift** See outwash. { 'äüt,wāsh ,drift }
- outwash fan** [GEOL] A fan-shaped accumulation of outwash deposited by meltwater streams in front of the terminal moraine of a glacier. { 'äüt,wāsh ,fan }
- outwash plain** [GEOL] A broad, outspread flat or gently sloping alluvial deposit of outwash in front of or beyond the terminal moraine of a glacier. Also known as apron; frontal apron; frontal plain; marginal plain; morainal apron; morainal plain; outwash apron; overwash plain; sandur; wash plain. { 'äüt,wāsh ,plān }
- outwash terrace** [GEOL] A dissected and incised valley train or benchlike deposit extending along a valley downstream from an outwash plain or terminal moraine. { 'äüt,wāsh ,ter·əs }
- outwash train** See valley train. { 'äüt,wāsh ,trän }
- ouvarovite** See uvarovite. { 'ü'vär·ə,vīt }
- oven** [GEOL] **1.** A rounded, saclike, chemically weathered pit or hollow in a rock (especially a granitic rock) which has an arched roof and resembles an oven. **2.** See spouting horn. { 'əv·ən }
- overbank deposit** [GEOL] Fine-grained sediment (silt and clay) deposited from suspension on a floodplain by floodwaters from a stream channel. { 'ō·vər,bāŋk dī,pāz·ət }
- overburden** [GEOL] **1.** Rock material overlying a mineral deposit or coal seam. Also known as baring; top. **2.** Material of any nature, consolidated or unconsolidated, that overlies a deposit of useful materials, ores, or coal, especially those deposits

overconsolidation

that are mined from the surface by open cuts. **3.** Loose soil, sand, or gravel that lies above the bedrock. { 'õ·vər,bərd·ən }

overconsolidation [GEOL] Consolidation of sedimentary material exceeding that which is normal for the existing overburden. { 'õ·vər·kən,säl·ə'dä·shən }

overdeepening [GEOL] The erosive process by which a glacier deepens and widens an inherited preglacial valley to below the level of the subglacial surface. { 'õ·vər'dēp·ə·niŋ }

overflow channel [GEOL] A channel or notch cut by the overflow waters of a lake, especially the channel draining meltwater from a glacially dammed lake. { 'õ·vər,flō ,chan·əl }

overfold [GEOL] A fold that is overturned. { 'õ·vər,fōld }

overgrowth [MINERAL] A mineral deposited on and growing in oriented, crystallographic directions on the surface of another mineral. { 'õ·vər,grōth }

overhang [GEOL] The part of a salt plug that projects from the top. { 'õ·vər,haŋ }

overite [MINERAL] $\text{Ca}_3\text{Al}_8(\text{PO}_4)_8(\text{OH})_6 \cdot 15\text{H}_2\text{O}$ A mineral composed of hydrous basic calcium aluminum phosphate. { 'õ·vər,īrt }

overlap [GEOL] **1.** Movement of an upcurrent part of a shore to a position extending seaward beyond a downcurrent part. **2.** Extension of strata over or beyond older underlying rocks. **3.** The horizontal component of separation measured parallel to the strike of a fault. { 'õ·vər,lap }

overlap fault [GEOL] A fault structure in which the displaced strata are doubled back upon themselves. { 'õ·vər,lap ,fōlt }

overload [GEOL] The amount of sediment that exceeds the ability of a stream to transport it and is therefore deposited. { 'õ·vər,lōd }

overprint [GEOCHEM] A complete or partial disturbance of an isolated radioactive system by thermal, igneous, or tectonic activities which results in loss or gain of radioactive or radiogenic isotopes and, hence, a change in the radiometric age that will be given the disturbed system. [GEOL] The development or superposition of metamorphic structures on original structures. Also known as imprint; metamorphic overprint; superprint. { 'õ·vər,prīnt }

oversaturated *See* silicic. { 'õ·vər'sach·ə,rād·əd }

oversteepening [GEOL] The process by which an eroding alpine glacier steepens the sides of an inherited preglacial valley. { 'õ·vər'stēp·ə·niŋ }

overstep [GEOL] **1.** An overlap characterized by the regular truncation of older units of a complete sedimentary sequence by one or more later units of the sequence. **2.** A stratum deposited on the upturned edges of underlying strata. { 'õ·vər,step }

overthrust [GEOL] **1.** A thrust fault that has a low dip or a net slip that is large. Also known as low-angle thrust; overthrust fault. **2.** A thrust fault with the active element being the hanging wall. { 'õ·vər,thrəst }

overthrust black *See* overthrust nappe. { 'õ·vər,thrəst ,blak }

overthrust fault *See* overthrust. { 'õ·vər,thrəst ,fōlt }

overthrust nappe [GEOL] The body of rock making up the hanging wall of a large-scale overthrust. Also known as overthrust block; overthrust sheet; overthrust slice. { 'õ·vər,thrəst ,nap }

overthrust sheet *See* overthrust nappe. { 'õ·vər,thrəst ,shēt }

overthrust slice *See* overthrust nappe. { 'õ·vər,thrəst ,slīs }

overturned [GEOL] Of a fold or the side of a fold, tilted beyond the perpendicular. Also known as inverted; reversed. { 'õ·vər,tərnd }

overwash [GEOL] **1.** A mass of water representing the part of the wave advancing up a beach that runs over the highest part of the berm (or other structure) and that does not flow directly back to the sea or lake. **2.** *See* outwash. { 'õ·vər,wəsh }

overwash mark [GEOL] A narrow, tongue-like ridge of sand formed by overwash on the landward side of a berm. { 'õ·vər,wəsh ,märk }

overwash plain *See* outwash plain. { 'õ·vər,wəsh ,plān }

oxalite *See* humboldtine. { 'äk·sə,līt }

ozokerite

- oxammite** [MINERAL] $(\text{NH}_4)_2\text{C}_2\text{O}_4 \cdot \text{H}_2\text{O}$ A yellowish-white, orthorhombic mineral consisting of ammonium oxalate monohydrate; occurs as lamellar masses. { 'äk·sə,mɪt }
- oxbow** [GEOL] The abandoned, horseshoe-shaped channel of a former stream meander after the stream formed a neck cutoff. Also known as abandoned channel. { 'äks,bō }
- Oxfordian** [GEOL] A European stage of geologic time, in the Upper Jurassic (above Callovian, below Kimmeridgian). Also known as Divesian. { äks'fɔr·dē·ən }
- oxidate** [GEOL] A sediment made up of iron and manganese oxides and hydroxides crystallized from aqueous solution. { 'äk·sə,dät }
- oxide mineral** [MINERAL] A naturally occurring material in oxide form such as silicon dioxide, SiO_2 , magnetite, Fe_3O_4 , or lime, CaO . { 'äk,sɪd 'mɪn·rəl }
- oxidite** *See* shale ball. { 'äk·sə,dɪt }
- oxidized zone** [GEOL] A region of mineral deposits which has been altered by oxidizing surface waters. { 'äk·sə,dɪzd ,zōn }
- Oxisol** [GEOL] A soil order characterized by residual accumulations of inactive clays, free oxides, kaolin, and quartz; mostly tropical. { 'äk·sə,səl }
- oxoferrite** [GEOL] A variety of naturally occurring iron with some ferrous oxide in solid solution. { 'jäk·sə'fe,rɪt }
- Oxyaenidae** [PALEON] An extinct family of mammals in the order Deltatheridea; members were short-faced carnivores with powerful jaws. { ,äk·sē'en·ə,dē }
- oxybiotite** [MINERAL] Phenocrystic biotite with increased amounts of Fe(III). { 'äk·sē'bt·ə,tɪt }
- oxygen deficit** [GEOCHEM] The difference between the actual amount of dissolved oxygen in lake or sea water and the saturation concentration at the temperature of the water mass sampled. { 'äk·sə·jən ,def·ə·sət }
- oxygen isotope fractionation** [GEOCHEM] The use of temperature-dependent variations of the oxygen-18/oxygen-16 ratio in the carbonate shells of marine organisms, to measure water temperature at the time of deposition. { 'äk·sə·jən 'ɪs·ə,tɔp ,frak·shə'nā·shən }
- oxygen ratio** *See* acidity coefficient. { 'äk·sə·jən ,rā·shō }
- oxyheelite** [MINERAL] $\text{Pb}_5\text{Ag}_2\text{Sb}_6\text{S}_{15}$ A light steel gray to silver white mineral consisting of lead and silver antimony sulfide; occurs as acicular needles or in massive form. { ,äk·sē'hē,ɪt }
- oxyhornblende** *See* basaltic hornblende. { 'jäk·sē'hörn,blend }
- oxyphile** *See* lithophile. { 'äk·sə,fil }
- oxysphere** *See* lithosphere. { 'äk·sə,sfɪr }
- Ozawainellidae** [PALEON] A family of extinct protozoans in the superfamily Fusulinacea. { ɔzä·wə-i'nel·ə,dē }
- ozocerite** [GEOL] A natural, brown to jet black paraffin wax occurring in irregular veins; consists principally of hydrocarbons, is soluble in water, and has a variable melting point. Also known as ader wax; earth wax; fossil wax; mineral wax; native paraffin; ozokerite. { ɔ'zäs·ə,rɪt }
- ozokerite** *See* ozocerite. { ɔ'zäk·ə,rɪt }

P

- paar** [GEOL] A depression produced by the moving apart of crustal blocks rather than by subsidence within a crustal block. { pär }
- pachnolite** [MINERAL] $\text{NaCaAlF}_6 \cdot \text{H}_2\text{O}$ Colorless to white mineral composed of hydrous sodium calcium aluminum fluoride, occurring in monoclinic crystals. { 'pak-nə,līt }
- pachoidal structure** See flaser structure. { pə'kōid-əl ,strək-chər }
- pachycephalosaur** [PALEON] A bone-headed dinosaur, composing the family Pachycephalosauridae. { ,pak-ə'sef-ə-lə,sōr }
- Pachycephalosauridae** [PALEON] A family of ornithischian dinosaurs characterized by a skull with a solid rounded mass of bone 4 inches (10 centimeters) thick above the minute brain cavity. { ,pak-ə,sef-ə-lə'sōr-ə,dē }
- Pacific suite** [PETR] A large group of igneous rocks characterized by calcic and calc-alkalic rocks, especially in the region of the circum-Pacific orogenic belt. Also known as anapeirean; circum-Pacific province. { pə'sif-ik 'swēt }
- Pacific-type continental margin** [GEOL] A continental margin typified by that of the western Pacific where oceanic lithosphere descends beneath an adjacent continent and produces an intervening island arc system. { pə'sif-ik ,tīp ,kənt-ən'ent-əl 'mār-jən }
- packing** [GEOL] The arrangement of solid particles in a sediment or in sedimentary rock. { 'pak-ɪŋ }
- packing density** [GEOL] A measure of the extent to which the grains of a sedimentary rock occupy the gross volume of the rock in contrast to the spaces between the grains; equal to the cumulative grain-intercept length along a traverse in a thin section. { 'pak-ɪŋ ,den-səd-ē }
- packing proximity** [GEOL] In a sedimentary rock, an estimate of the number of grains that are in contact with adjacent grains; equal to the total percentage of grain-to-grain contacts along a traverse measured on a thin section. { 'pak-ɪŋ prāk,sim-əd-ē }
- packsand** [PETR] A very fine-grained sandstone that is so loosely consolidated by a slight calcareous cement that it can be readily cut by a spade. { 'pak,sand }
- packstone** [PETR] A sedimentary carbonate rock whose granular material is arranged in a self-supporting framework, yet also contains some matrix of calcareous mud. { 'pak,stōn }
- padparadsha** See orange sapphire. { pad'par-əd,shä }
- pagoda stone** [GEOL] **1.** A Chinese limestone showing in section fossil orthoceratites arranged in pagodalike designs. **2.** An agate whose markings resemble pagodas. { pə'gōd-ə,stōn }
- pagodite** See agalmatolite. { 'pag-ə,dīt }
- paha** [GEOL] A low, elongated, rounded glacial ridge or hill which consists mainly of drift, rock, or windblown sand, silt, or clay but is capped with a thick cover of loess. { pä'hä }
- pahoehoe** [GEOL] A type of lava flow whose surface is glassy, smooth, and undulating; the lava is basaltic, glassy, and porous. Also known as ropy lava. { pə'hō-ē,hō-ē }
- paigeite** [MINERAL] $(\text{Fe,Mg})\text{FeBO}_5$ A black mineral composed of iron magnesium borate, occurring as fibrous aggregates. { 'pā,ɪt }
- painted pot** See mud pot. { 'pānt-əd 'pät }
- paint pot** [GEOL] A mud pot containing multicolored mud. { 'pānt ,pät }

paired terrace

- paired terrace** [GEOL] One of two stream terraces that face each other at the same elevation from opposite sides of the stream valley and represent the remnants of the same floodplain or valley floor. Also known as matched terrace. {ˈpɛrd ˈtɛr.əs }
- paisanite** See ailsyte. {ˈpɪs.ən,ɪt }
- Palaeacanthaspidoidei** [PALEON] A suborder of extinct, placoderm fishes in the order Rhenanida; members were primitive, arthrodire-like species. {ˈpæl.ē.ə.kən.thəspiˈdɔɪd.ē,ɪ }
- Palaechinoida** [PALEON] An extinct order of echinoderms in the subclass Perischoechinoidea with a rigid test in which the ambulacra bevel over the adjoining interambulacra. {ˈpæl.ē.kɪˈnɔɪd.ē.ə }
- Palaeoconcha** [PALEON] An extinct order of simple, smooth-hinged bivalve mollusks. {ˈpæl.ē.ə.kən.kə }
- Palaeocopida** [PALEON] An extinct order of crustaceans in the subclass Ostracoda characterized by a straight hinge and by the anterior location for greatest height of the valve. {ˈpæl.ē.ə.kəp.ə.də }
- Palaeoisopus** [PALEON] A singular, monospecific, extinct arthropod genus related to the pycnogonida, but distinguished by flattened anterior appendages. {ˈpæl.ē.ə.ɪ.sə.pəs }
- Palaeomastodontinae** [PALEON] An extinct subfamily of elephantoid proboscidean mammals in the family Mastodontidae. {ˈpæl.ē.ə.mas.təˈdɒnt.ən,ē }
- Palaeomerycidae** [PALEON] An extinct family of pecoran ruminants in the superfamily Cervioidea. {ˈpæl.ē.ə.məˈrɪs.ə.dē }
- Palaeonisciformes** [PALEON] A large extinct order of chondrosteian fishes including the earliest known and most primitive ray-finned forms. {ˈpæl.ē.ə.nɪs.əˈfɔːm.ēz }
- Palaeoniscoidei** [PALEON] A suborder of extinct fusiform fishes in the order Palaeonisciformes with a heavily ossified exoskeleton and thick rhombic scales on the body surface. {ˈpæl.ē.ə.nɪsˈkɔɪd.ē,ɪ }
- Palaeopantopoda** [PALEON] A monogeneric order of extinct marine arthropods in the subphylum Pycnogonida. {ˈpæl.ē.ə.panˈtəp.ə.də }
- Palaeoryctidae** [PALEON] A family of extinct insectivorous mammals in the order Deltatheridia. {ˈpæl.ē.ə.ɪˈrɪk.tə,dē }
- Palaeospondyloidea** [PALEON] An ordinal name assigned to the single, tiny fish *Palaeospondylus*, known only from Middle Devonian shales in Carthness, Scotland. {ˈpæl.ē.ə.spənˈdɔːlɔɪd.ē.ə }
- Palaeotheriidae** [PALEON] An extinct family of perissodactylous mammals in the superfamily Equoidea. {ˈpæl.ē.ə.thəˈrɪ.ə.dē }
- palagonite** [GEOL] A brown to yellow altered basaltic glass found as interstitial material or amygdules in pillow lavas. {pəˈlɑːɡ.ə.nɪt }
- palagonite tuff** [PETR] A pyroclastic rock composed of angular fragments of palagonite. {pəˈlɑːɡ.ə.nɪt ˈtʌf }
- palasite** [GEOL] The most abundant of the intermediate types of meteorites, consisting of olivine enclosed in a nickel-iron matrix. {ˈpæl.ə.sɪt }
- paleic surface** [GEOL] A smooth, preglacial erosion surface. {pəˈleɪk ˈsʌr.fəs }
- paleoagrostology** [PALEOBOT] The study of fossil grasses. {ˈpæl.ē.ə.ɑːɡ.rəˈstɒl.ə.jē }
- paleoalgology** [PALEOBOT] The study of fossil algae. Also known as paleoophycology. {ˈpæl.ē.ə.alˈɡæl.ə.jē }
- paleochemistry** [PALEON] The study of chemical processes used by organisms that lived in the geologic past. {ˈpæl.ē.ə.bɪ.əˈkɛm.ə.stre }
- paleoclimatology** [PALEON] The study of climatological events affecting living organisms for millennia or longer. {ˈpæl.ē.ə.bɪ.ə.klɪ.məˈtɒl.ə.jē }
- paleobiocoenosis** [PALEON] An assemblage of organisms that lived together in the geologic past as an interrelated community. Also known as paleocoenosis. {ˈpæl.ē.ə.bɪ.ə.səˈnɔːsəs }
- paleobiology** [PALEON] The branch of paleontology concerned with the biologic aspects of the history of life. {ˌpæl.ē.ə.bɪˈɒl.ə.jē }
- paleobotanic province** [GEOL] A large region defined by similar fossil floras. {ˈpæl.ē.ə.bəˈtænɪk ˈprɒv.əns }

paleoisotherm

- paleobotany** [PALEON] The branch of paleontology concerned with the study of ancient and fossil plants and vegetation of the geologic past. { 'pāl·ē·ō'bat·ən·ē }
- Paleocene** [GEOL] The oldest of the seven geological epochs of the Cenozoic Era, spanning 65 million to 55 million years ago. Comprising the Tertiary and Quaternary periods in modern usage, it is also the oldest of the five epochs constituting the Tertiary Period. It represents an interval of geological time (and rocks deposited during that time) extending from the termination of the Cretaceous Period of the Mesozoic Era to the dawn of the Eocene Epoch. { 'pāl·ē·ō, sēn }
- paleochannel** [GEOL] A remnant of a stream channel cut in older rock and filled by the sediments of younger overlying rock. { 'pāl·ē·ō'chan·əl }
- Paleocharaceae** [PALEOBOT] An extinct group of fossil plants belonging to the Charophyta distinguished by sinistrally spiraled gyrogonites. { 'pāl·ē·ō·kə'ras·ē, ē }
- paleoclimate** [GEOL] The climate of a given period of geologic time. Also known as geologic climate. { 'pāl·ē·ō'klī·mət }
- paleoclimatic sequence** [GEOL] The sequence of climatic changes in geologic time; it shows a succession of oscillations between warm periods and ice ages, but superimposed on this are numerous shorter oscillations. { 'pāl·ē·ō·klə'mad·ik 'sē·kwəns }
- paleoclimatology** [GEOL] The study of climates in the geologic past, involving the interpretation of glacial deposits, fossils, and paleogeographic, isotopic, and sedimentologic data. { 'pāl·ē·ō, klī·mə'täl·ə·jē }
- paleoecoenosis** *See* paleobiocoenosis. { 'pāl·ē·ō·sə'nō·səs }
- Paleocopa** [PALEON] An order of extinct ostracodes distinguished by a long, straight hinge. { 'pāl·ē'äk·ə·pə }
- paleocurrent** [GEOL] Ancient fluid current flow whose orientation can be inferred by primary sedimentary structures and textures. { 'pāl·ē·ō'kə·rənt }
- paleodepth** [PALEON] The water level at which an ancient organism or group of organisms flourished. { 'pāl·ē·ō,depth }
- paleoecology** [PALEON] The ecology of the geologic past. { 'pāl·ē·ō·i'käl·ə·jē }
- paleoequator** [GEOL] The position of the earth's equator in the geologic past as defined for a specific geologic period and based on geologic evidence. { 'pāl·ē·ō·i'kwäd·ər }
- paleofluminology** [GEOL] The study of ancient stream systems. { 'pāl·ē·ō,flü·mə'näl·ə·jē }
- Paleogene** [GEOL] A geologic time interval comprising the Oligocene, Eocene, and Paleocene of the lower Tertiary period. Also known as Eogene. { 'pāl·ē·ō, jēn }
- paleogeographic event** *See* palevent. { 'pāl·ē·ō, jē·ə'graf·ik i'vent }
- paleogeographic stage** *See* palstage. { 'pāl·ē·ō, jē·ə'graf·ik 'stāj }
- paleogeography** [GEOL] The geography of the geologic past; concerns all physical aspects of an area that can be determined from the study of the rocks. Paleogeography is used to describe the changing positions of the continents and the ancient extent of land, mountains, shallow sea, and deep ocean basins. { 'pāl·ē·ō·jē'äg·rə·fē }
- paleogeologic map** [GEOL] An areal map of the geology of an ancient surface immediately below a buried unconformity, showing the geology as it appeared at some time in the geologic past at the time the surface of unconformity was completed and before the overlapping strata were deposited. { 'pāl·ē·ō, jē·ə'lāj·ik 'map }
- paleogeology** [GEOL] The geology of the past, applied particularly to the interpretation of the rocks at a surface of unconformity. { 'pāl·ē·ō·jē'äl·ə·jē }
- paleogeomorphology** [GEOL] A branch of geomorphology concerned with the recognition of ancient erosion surfaces and the study of ancient topographies and topographic features that are now concealed beneath the surface and have been removed by erosion. Also known as paleophysiography. { 'pāl·ē·ō, jē·ō·mór'fäl·ə·jē }
- paleoherpetology** [PALEON] The study of fossil reptiles. { 'pāl·ē·ō, hər·pə'täl·ə·jē }
- paleohydrology** [GEOL] The study of ancient hydrologic features preserved in rock. { 'pāl·ē·ō·hī'dräl·ə·jē }
- paleoichnology** [PALEON] The study of trace fossils in the fossil state. Also spelled palichnology. { 'pāl·ē·ō·ik'näl·ə·jē }
- paleoisotherm** [GEOL] The locus of points of equal temperature for some former period of geologic time. { 'pāl·ē·ō't·sə,thərm }

paleokarst

- paleokarst** [GEOL] A rock or area that has undergone the karst process and subsequently been buried under sediments. { 'pāl·ē·ō,kärst }
- paleolatitude** [GEOL] The latitude of a specific area on the earth's surface in the geologic past. { 'pāl·ē·ō'lād·ə,tüd }
- paleolimnology** [GEOL] **1.** The study of the past conditions and processes of ancient lakes. **2.** The study of the sediments and history of existing lakes. { 'pāl·ē·ō·lim'näl·ə·jē }
- paleolithologic map** [GEOL] A paleogeologic map indicating lithologic variations at a buried horizon or within a restricted zone at a specific time in the geologic past. { 'pāl·ē·ō,lith·ə'läj·ik 'map }
- paleomagnetics** [GEOPHYS] The study of the direction and intensity of the earth's magnetic field throughout geologic time. { 'pāl·ē·ō·mag'nəd·iks }
- paleomagnetic stratigraphy** [GEOPHYS] The use of natural remanent magnetization in the identification of stratigraphic units. Also known as magnetic stratigraphy. { 'pāl·ē·ō·mag'nəd·ik strə'tig·rə·fē }
- paleomalacology** [PALEON] A branch of paleontology concerned with the study of mollusks. { 'pāl·ē·ō,mal·ə'käl·ə·jē }
- paleometeoritics** [GEOL] The study of variation of extraterrestrial debris as a function of time over extended parts of the geologic record, especially in deep-sea sediments and possibly in sedimentary rocks, and, for more recent periods, in ice. { 'pāl·ē·ō,mēd·ē'ör·iks }
- paleomorphology** [PALEON] The study of the form and structure of fossil remains in order to describe the original anatomy of an organism. { 'pāl·ē·ō·mór'fäl·ə·jē }
- paleomycology** [PALEOBOT] The study of fossil fungi. { 'pāl·ē·ō·mī'käl·ə·jē }
- Paleonthropinae** [PALEON] A former subfamily of fossil man in the family Hominidae; set up to include the Neanderthals together with Rhodesian man. { 'pāl·ē·ən'thräp·ə,nē }
- paleopalynology** [PALEON] A field of palynology concerned with fossils of microorganisms and of dissociated microscopic parts of megaorganisms. { 'pāl·ē·ō,pal·ə'näl·ə·jē }
- Paleoparadoxidae** [PALEON] A family of extinct hippopotamuslike animals in the order Desmostylia. { 'pāl·ē·ō,par·ə'däk·sə,dē }
- paleopedology** [GEOL] The study of soils of past geologic ages, including determination of their ages. { 'pāl·ē·ō·pə'däl·ə·jē }
- paleophycology** See paleoalgology. { 'pāl·ē·ō·fī'käl·ə·jē }
- paleophysiology** See paleogeomorphology. { 'pāl·ē·ō,fiz·ē'äg·rə·fē }
- Paleophytic** [PALEOBOT] A paleobotanic division of geologic time, signifying that period during which the pteridophytes flourished, sometime between the evolution of the algae and the appearance of the first gymnosperms. Also known as Pteridophytic. { 'pāl·ē·ə'fid·ik }
- paleoplain** [GEOL] An ancient degradational plain that is buried beneath later deposits. { 'pāl·ē·ə,plän }
- paleopole** [GEOL] A pole of the earth, either magnetic or geographic, in past geologic time. { 'pāl·ē·ə,pöl }
- paleosalinity** [GEOL] The salinity of a body of water in the geologic past, as evaluated on the basis of chemical analyses of sediment or formation water. { 'pāl·ē·ō·sə'lin·əd·ē }
- paleoseismology** [PALEON] The study of geological evidence for past earthquakes. { ,pā·lē·ō·sīz'mäl·ə·jē }
- paleoslope** [GEOL] The direction of initial dip of a former land surface, such as an ancient continental slope. { 'pāl·ē·ə,slöp }
- paleosol** [GEOL] A soil horizon that formed on the surface during the geologic past, that is, an ancient soil. Also known as buried soil; fossil soil. { 'pāl·ē·ə,sól }
- paleosome** [GEOL] A geometric element of a composite rock or mineral deposit which appears to be older than an associated younger rock element. { 'pāl·ē·ə,söm }

palygorskite

- paleospecies** [PALEON] The species that are given ancestor and descendant status in a phyletic lineage, depending on the geological strata in which they are found. { 'pē·lē·ō·spē,shēz }
- paleostructure** [GEOL] The geologic structure of a region or sequence of rocks in the geologic past. { 'pāl·ē·ō'strək·chər }
- paleotectonic map** [GEOL] Regional map that shows the structural patterns that existed during a particular period of geologic time, for example, the Lower Cretaceous in western Canada. { 'pāl·ē·ō·tek'tän·ik 'map }
- paleotemperature** [GEOL] **1.** The temperature at which a geologic process took place in ancient past. **2.** The mean climatic temperature at a given time or place in the geologic past. { 'pāl·ē·ō'tem·prə·chər }
- paleothermal** [GEOL] Pertaining to warm climates of the geologic past. { 'pāl·ē·ō'thər·mə } }
- paleothermometry** [GEOL] Measurement or estimation of past temperatures. { 'pāl·ē·ō'thər'mäm·ə·trē }
- paleotopography** [GEOL] The topography of a given area in the geologic past. { 'pāl·ē·ō·tə'päg·rə·fē }
- Paleozoic** [GEOL] The era of geologic time from the end of the Precambrian (600 million years before present) until the beginning of the Mesozoic era (225 million years before present). { 'pāl·ē·ə'zō·ik }
- paleozoology** [PALEON] The branch of paleontology concerned with the study of ancient animals as recorded by fossil remains. { 'pāl·ē·ō·zō'äl·ə·jē }
- palette** [GEOL] A broad sheet of calcite representing a solutional remnant in a cave. Also known as shield. { 'pal·ət }
- palevent** [GEOL] A relatively sudden and short-lived paleogeographic happening, such as the short, static existence of a particular depositional environment, or a rapid geographic change separating two palstages. Also known as paleogeographic event. { 'pal·ə·vənt }
- palichnology** See paleoichnology. { ,pal·ik'näl·ə·jē }
- palimpsest** [GEOL] **1.** Referring to a kind of drainage in which a modern, anomalous drainage pattern is superimposed upon an older one, clearly indicating different topographic and possibly structural conditions at the time of development. **2.** In sedimentology, autochthonous sediment deposits which exhibit some of the attributes of the source sediment. [PETR] Of a metamorphic rock, having remnants of the original structure or texture preserved. { pə'lim·səst }
- palinspastic map** [GEOL] A paleogeographic or paleotectonic map showing restoration of the features to their original geographic positions, before thrusting or folding of the crustal rocks. { 'pāl·ən'spas·tik 'map }
- Palisade disturbance** [GEOL] Appalachian orogenic episode occurring during Triassic time which produced a series of faultlike basins. { ,pal·ə'sād di'stər·bəns }
- palisades** [GEOL] A series of sharp cliffs. { ,pal·ə'sādz }
- palladium amalgam** See potarite. { pə'lād·ē·əm ə'mal·gəm }
- palladium gold** See porpezite. { pə'lād·ē·əm 'göld }
- pallasite** [GEOL] **1.** A stony-iron meteorite composed essentially of large single glassy crystals of olivine embedded in a network of nickel-iron. **2.** An ultramafic rock, of either meteoric or terrestrial origin, which contains more than 60% iron in the former, or more iron oxides than silica in the latter. { 'pal·ə,sīt }
- pallasite shell** See lower mantle. { 'pal·ə,sīt ,shel }
- palmerite** [MINERAL] (K,Na)₂Pb(SO₄)₂ A white hexagonal mineral that is composed of potassium sodium lead sulfate. { pə'mi,rīt }
- palstage** [GEOL] A period of time when paleogeographic conditions were relatively static or were changing gradually and progressively with relation to such factors as sea level, surface relief, or the distance of the shoreline from the region in question. Also known as paleogeographic stage. { 'pal ,stāj }
- palygorskite** [MINERAL] **1.** A chain-structure type of clay mineral. **2.** A group of light-weight, tough, fibrous clay minerals showing extensive substitution of aluminum for magnesium. { ,pal·ə'gör,skīt }

palynofacies

- palynofacies** [PALEON] An assemblage of palynomorphs in a portion of a sediment, representing local environmental conditions, but not representing the regional paly-noflora. { ,pal·ə·nō'fā·shēz }
- palynology** [PALEON] The study of spores, pollen, microorganisms, and microscopic fragments of megaorganisms that occur in sediments. { ,pal·ə'nāl·ə·jē }
- palynomorph** [PALEON] A microscopic feature such as a spore or pollen that is of interest in palynological studies. { pə'lin·ə,mɔrf }
- palynostratigraphy** [PALEON] The stratigraphic application of palynologic methods. { ,pal·ə·nō·strə'tig·rə·fē }
- pan** [GEOL] **1.** A shallow, natural depression or basin containing a body of standing water. **2.** A hard, cementlike layer, crust, or horizon of soil within or just beneath the surface; may be compacted, indurated, or very high in clay content. { pan }
- panabase** See tetrahedrite. { 'pan·ə,bās }
- panautomorphic rock** See panidiomorphic rock. { ,pan,əd·ə'mɔr·fik 'rāk }
- pandermite** See priceite. { 'pan·dər,mɪt }
- panethite** [MINERAL] A phosphate mineral known only in meteorites; contains sodium, potassium, magnesium, calcium, iron, and manganese. { 'pan·ə,thīt }
- panfan** See pediplain. { 'pan,fan }
- Pangaea** [GEOL] A postulated former supercontinent supposedly composed of all the continental crust of the earth, and later fragmented by drift into Laurasia and Gondwana. Also spelled Pangea. { pan'jē·ə }
- Pangea** See Pangaea. { pan'jē·ə }
- panidiomorphic rock** [GEOL] An igneous rock that is completely or predominantly idiomorphic. Also known as panautomorphic rock. { ,pan'id·ē·ō'mɔr·fik 'rāk }
- Pannonian** [GEOL] A European stage of geologic time comprising the lower Pliocene. { pə'nō·nē·ən }
- panplain** [GEOL] A broad, level plain formed by coalescence of several adjacent flood plains. Also spelled panplane. { 'pan,plān }
- panplanation** [GEOL] The action or process of formation or development of a panplain. { ,pan·plə'nā·shən }
- panplane** See panplain. { 'pan,plān }
- panstellerite** [PETR] A green to black extrusive rock characterized by acmite-augite or diopside, anorthoclase, and cossyrite phenocrysts in an acmite or feldspar matrix that is either pumiceous, partly glassy, fine-grained holocrystalline trachytic, or microlitic. { pan'tel·ə,rɪt }
- Panthalassa** [GEOL] The hypothetical proto-ocean surrounding Pangea, supposed by some geologists to have combined all the oceans or areas of oceanic crust of the earth at an early time in the geologic past. { ,pan·thə'lās·ə }
- Pantodonta** [PALEON] An extinct order of mammals which included the first large land animals of the Tertiary. { ,pan·tə'dän·tə }
- Pantolambdidae** [PALEON] A family of middle to late Paleocene mammals of North America in the superfamily Pantolamboidea. { ,pan·tə'lam·də,dē }
- Pantolambdodontidae** [PALEON] A family of late Eocene mammals of Asia in the superfamily Pantolamboidea. { ,pan·tə'lam·də'dän·tə,dē }
- Pantolamboidea** [PALEON] A superfamily of extinct mammals in the order Pantodonta. { ,pan·tə'lam·dɔid·ē·ə }
- Pantolestidae** [PALEON] An extinct family of large aquatic insectivores referred to the Proteutheria. { ,pan·tə'les·tə,dē }
- Pantotheria** [PALEON] An infraclass of carnivorous and insectivorous Jurassic mam-mals; early members retained many reptilian features of the jaws. { ,pan·tə'thɪr·ē·ə }
- paper shale** [GEOL] A shale that easily separates on weathering into very thin, tough, uniform, and somewhat flexible layers or laminae suggesting sheets of paper. { 'pā·pər 'ʃhāl }
- paper spar** [GEOL] A crystallized variety of calcite occurring in thin lamellae or paperlike plates. { 'pā·pər 'ʃpār }
- Pappotheriidae** [PALEON] A family of primitive, tenrelike Cretaceous insectivores assigned to the Proteutheria. { ,pap·ə·thə'rɪ·ə,dē }

paraliageosyncline

- parabittuminous coal** [GEOL] Bituminous coal that contains 84–87% carbon, analyzed on a dry, ash-free basis. { ˈpar-ə-bə'tüm-ə-nəs 'kɒl }
- parabolic dune** [GEOL] A long, scoop-shaped sand dune having a ground plan approximating the form of a parabola, with the horns pointing windward (upwind). Also known as blowout dune. { ˈpar-ə'bəl-ik 'dün }
- parabutlerite** *See* butlerite. { ˈpar-ə'bət-lə,rɪt }
- parachronology** [GEOL] **1.** Practical dating and correlation of stratigraphic units. **2.** Geochronology based on fossils that supplement, or replace, biostratigraphically significant fossils. { ˈpar-ə-krə'näl-ə-jē }
- paraclinal** [GEOL] Referring to a stream or valley that is oriented in a direction parallel to the fold axes of a region. { ˈpar-ə'klɪn-əl }
- paraconformity** [GEOL] A type of unconformity in which strata are parallel; there is little apparent erosion and the unconformity surface resembles a simple bedding plane. Also known as nondepositional unconformity; pseudoconformity. { ˈpar-ə-kən'fɔr-məd-ē }
- paraconglomerate** [GEOL] A conglomerate that is not a product of normal aqueous flow but is deposited by such modes of mass transport as subaqueous turbidity currents and glacier ice; characterized by a disrupted gravel framework, often unstratified, and notable for a matrix of greater than gravel-sized fragments. { ˈpar-ə-kən'gläm-ə-rət }
- paracoquimbite** [MINERAL] $\text{Fe}_2(\text{SO}_4)_3 \cdot 9\text{H}_2\text{O}$ A pale-violet rhombohedral mineral composed of hydrous ferric iron sulfate; it is dimorphous with coquimbite. { ˈpar-ə-kə'kim,bɪt }
- Paracrinoidea** [PALEON] A class of extinct Crinozoa characterized by the numerous, irregularly arranged plates, uniserial armlike appendages, and no clear distinction between adoral and aboral surfaces. { ˈpar-ə-krə'nɔɪd-ē-ə }
- paraffin coal** [GEOL] A type of light-colored bituminous coal from which oil and paraffin are produced. { ˈpar-ə'fæn ,kɒl }
- paraffin dirt** [GEOL] A clay soil appearing rubbery or curdy and occurring in the upper several inches of a soil profile near gas seeps; probably formed by biodegradation of natural gas. { ˈpar-ə'fæn ,dɜrt }
- paragenesis** [MINERAL] **1.** The association and order of crystallization of minerals in a rock or vein. **2.** The effect of one mineral on the development of another. Also known as mineral sequence; paragenetic sequence. { ˈpar-ə'jen-ə-səs }
- paragenetic mineralogy** [MINERAL] The study of mineral paragenesis, usually accompanying the analysis of the general geologic structures within and around the ore body. { ˈpar-ə-jə'ned-ik ,mɪn-ə'räl-ə-jē }
- paragenetic sequence** *See* paragenesis. { ˈpar-ə-jə'ned-ik 'sɛ-kwəns }
- parageosyncline** [GEOL] An epeirogenic geosynclinal basin located within a craton or stable area. { ˈpar-ə,jɛ-ð'sɪn,kɪlɪn }
- paraglomerate** [GEOL] A conglomerate which contains more matrix than gravel-sized fragments and was deposited by subaqueous turbidity flows and glacier ice rather than normal aqueous flow. Also known as conglomeratic mudstone. { ˈpar-ə'gläm-ə-rət }
- paragneiss** [GEOL] A gneiss showing a sedimentary parentage. { ˈpar-ə,nɪs }
- paragonite** [MINERAL] $\text{NaAl}_2(\text{AlSi}_3)\text{O}_{10}(\text{OH})_2$ A yellowish or greenish monoclinic mica species that contains sodium and usually occurs in metamorphic rock. Also known as soda mica. { pə'rag-ə,nɪt }
- parahilgardite** [MINERAL] $\text{Ca}_8(\text{B}_2\text{O}_{11})_3\text{Cl} \cdot 4\text{H}_2\text{O}$ A triclinic mineral composed of hydrous borate and chloride of calcium; it is dimorphous with hilgardite. { ˈpar-ə'hil-gär,dɪt }
- parahopeite** [MINERAL] $\text{Zn}_3(\text{PO}_4)_2 \cdot 4\text{H}_2\text{O}$ A colorless mineral composed of hydrous phosphate of zinc, occurring in tabular triclinic crystals; it is dimorphous with hopeite. { ˈpar-ə'hɔ,pɪt }
- paralaurionite** [MINERAL] $\text{PbCl}(\text{OH})$ A white mineral composed of basic lead chloride; it is dimorphous with laurionite. { ˈpar-ə'lɔr-ē-ə,nɪt }
- paraliageosyncline** [GEOL] A geosyncline developing along a present-day continental margin, such as the Gulf Coast geosyncline. { pə,räl-yə,jɛ-ð'sɪn,kɪlɪn }

paralic

- paralic** [GEOL] Pertaining to deposits laid down on the landward side of a coast. { pə'ral·ik }
- paralic coal basin** [GEOL] Coal deposits formed along the margin of the sea. { pə'ral·ik 'kōl ,bas·ən }
- parallel fold** *See* concentric fold. { 'par·ə,ləl 'fōld }
- parallel ripple mark** [GEOL] A ripple mark characterized by a relatively straight crest and an asymmetric profile. { 'par·ə,ləl 'rip·əl ,märk }
- parallel roads** [GEOL] A series of horizontal beaches or wave-cut terraces occurring parallel to each other at different levels on each side of a glacial valley. { 'par·ə,ləl 'rōdz }
- parallel texture** [PETR] A rock texture characterized by tabular-to-prismatic crystals oriented parallel to a plane or line. { 'par·ə,ləl 'teks·chər }
- parallochthon** [GEOL] Rocks that were brought from intermediate distances and deposited near an allochthonous mass during transit. { ,par·ə'lāk,thən }
- paramelaconite** [MINERAL] A black tetragonal mineral composed of cupric and cuprous oxides, occurring in pyramidal crystals. { ,par·ə'mə'lak·ə,nīt }
- paramorph** [MINERAL] A mineral exhibiting paramorphism. { 'par·ə,mōrf }
- paramorphism** [MINERAL] The property of a mineral whose internal structure has changed without change in composition or external form. Formerly known as allomorphism. { ,par·ə'mōr,fiz·əm }
- Paranycoidea** [PALEON] An extinct family of birds in the order Anseriformes, restricted to the Miocene of South Dakota. { pə,ran·ə'rās·ə,dē }
- Paraparchitacea** [PALEON] A superfamily of extinct ostracods in the suborder Kloedenellocopina including nonsulcate, nondimorphic forms. { ,par·ə,pär·kətās·ē·ə }
- pararammelsbergite** [MINERAL] NiAs₂ A tin white, orthorhombic or pseudoorthorhombic mineral consisting of nickel diarsenide; occurrence is usually in massive form. { ,par·ə'ram·əlz,bərgīt }
- pararipple** [GEOL] A large, symmetric ripple whose surface slopes gently and which shows no assortment of grains. { 'par·ə,rip·əl }
- paraschist** [PETR] A schist derived from sedimentary rocks. { 'par·ə,shist }
- Paraseminotidae** [PALEON] A family of Lower Triassic fishes in the order Palaeonisciformes. { ,par·ə,sem·ə'näd·ə,dē }
- parasitic cone** *See* adventive cone. { ,par·ə'sik·ik 'kōn }
- parastratigraphic unit** *See* operational unit. { ,par·ə,strad·ə'graf·ik 'yü·nət }
- parastratigraphy** [GEOL] **1.** Supplemental stratigraphy based on fossils other than those governing the prevalent orthostratigraphy. **2.** Stratigraphy based on operational units. { ,par·ə·strə'tig·rə·fē }
- parastratotype** [GEOL] Another section in the original locality where a stratotype was defined. { ,par·ə'strad·ə,tīp }
- Parasuchia** [PALEON] The equivalent name for Phytosauria. { ,par·ə'sü·kē·ə }
- paratacamite** [MINERAL] Cu₂(OH)₃Cl Rhombohedral mineral composed of basic copper chloride; it is dimorphous with tacamite. { par,ad·ə'ka,mīt }
- Parathuramminacea** [PALEON] An extinct superfamily of foraminiferans in the suborder Fusulinina, with a test having a globular or tubular chamber and a simple, undifferentiated wall. { ,par·ə·thə,ram·ə'nās·ē·ə }
- paratill** [GEOL] A till formed by ice-rafting in a marine or lacustrine environment; includes deposits from ice floes and icebergs. { 'par·ə,tīl }
- parautochthonous** [GEOL] Pertaining to a mobilized part of an autochthonous granite moved higher in the crust or into a tectonic area of lower pressure and characterized by variable and diffuse contacts with country rocks. [PETR] Pertaining to a rock that is intermediate in tectonic character between autochthonous and allochthonous. { ,par·ə·ótāk·thə·nəs }
- paravauxite** [MINERAL] FeAl₂(PO₄)₂(OH)₂·8H₂O A colorless mineral composed of hydrous basic iron aluminum phosphate; contains more water than vauxite. { ,par·ə'vók,sīt }
- parawollastonite** [MINERAL] CaSiO₃ A monoclinic mineral composed of silicate of calcium; it is dimorphous with wollastonite. { ,par·ə'wól·ə·stə,nīt }

parting-step lineation

- Pareiasauridae** [PALEON] A family of large, heavy-boned terrestrial reptiles of the late Permian, assigned to the order Cotylosauria. {pə'ri:ə'sɔ:r-ə'dē}
- parental magma** [GEOL] The naturally occurring mobile rock material from which a particular igneous rock solidified or from which another magma was derived. {pə'rent-əl 'mag-mə}
- parent material** [GEOL] The unconsolidated mineral or organic material from which the true soil develops. {'per-ənt mə,tir-ē-əl}
- parent rock** [GEOL] **1.** The rock mass from which parent material is derived. **2.** See source rock. {'per-ənt ,ræk}
- parisite** [MINERAL] (Ce,La)₂Ca(CO₃)₃F₂ A brownish-yellow secondary mineral composed of a carbonate and a fluoride of calcium, cerium, and lanthanum. {'par-ə'sɪt}
- parkerite** [MINERAL] Ni₃(Bi,Pb)₂S₂ A bright-bronze mineral composed of nickel bismuth lead sulfide. {'pär-kə,rɪt}
- paragenetic** [GEOL] Formed previous to the enclosing rock; especially said of a concretion formed in a different (older) rock from its present (younger) host. {,par-ə'jen-ik}
- paroxysmal eruption** See Vulcanian eruption. {'par-ək'siz-məl i'rəp-shən}
- parsettensite** [MINERAL] Mn₅Si₆O₁₃(OH)₈ A copper-red mineral composed of hydrous silicate of manganese. {pär'set-ən,zɪt}
- parsonsite** [MINERAL] Pb₂(UO₂)(PO₄)₂·2H₂O A pale-yellow to brownish mineral composed of hydrous lead uranyl phosphate, occurring as a powder. {'pär-sən,zɪt}
- partial pediment** [GEOL] **1.** A broadly planate, gravel-capped, interstream bench or terrace. **2.** A broad, planate erosion surface which is formed by the coalescence of contemporaneous, valley-restricted benches developed at the same elevation in proximate valleys, and which would produce a pediment if uninterrupted planation were to continue at this level. {'pär-shəl 'ped-ə-mənt}
- partial pluton** [GEOL] That part of a composite intrusion representing a single intrusive episode. {'pär-shəl 'plü,tən}
- partial thermoremanent magnetization** [GEOPHYS] The thermoremanent magnetization acquired by cooling in an ambient field over only a restricted temperature interval, as opposed to the entire temperature range from Curie point to room temperature. Abbreviated PTRM. {'pär-shəl 'thər-mō'rem-ə-nənt ,mag-nə-tə'zä-shən}
- particle diameter** [GEOL] The diameter of a sedimentary particle considered as a sphere. {'pärd-ə-kəl dɪ,əm-əd-ər}
- particle size** [GEOL] The general dimensions of the particles or mineral grains in a rock or sediment based on the premise that the particles are spheres; commonly measured by sieving, by calculating setting velocities, or by determining areas of microscopic images. {'pärd-ə-kəl ,sɪz}
- particle-size analysis** [GEOL] A determination of the distribution of particles in a series of size classes of a soil, sediment, or rock. Also known as size analysis; size-frequency analysis. {'pärd-ə-kəl 'sɪz ə,nal-əs-səs}
- parting** [GEOL] **1.** A bed or bank of waste material dividing mineral veins or beds. **2.** A soft, thin sedimentary layer following a surface of separation between thicker strata of different lithology. **3.** A surface along which a hard rock can be readily separated or is naturally divided into layers. [MINERAL] Fracturing a mineral along planes weakened by deformation or twinning. {'pärd-ɪŋ}
- parting cast** [GEOL] A sand-filled tension crack produced by creep along the sea floor. {'pärd-ɪŋ ,kast}
- parting lineation** [GEOL] A small-scale primary sedimentary structure made up of a series of parallel ridges and grooves formed parallel to the current. Also known as current lineation. {'pärd-ɪŋ ,lɪn-ē'ä-shən}
- parting plane lineation** [GEOL] A parting lineation on a laminated surface, consisting of subparallel, linear, shallow grooves and ridges of low relief, generally less than 1 millimeter. {'pärd-ɪŋ |plän ,lɪn-ē,ä-shən}
- parting-step lineation** [GEOL] A parting lineation characterized by subparallel, steplike

partiversal

- ridges where the parting surface cuts across several adjacent laminae. { 'pārd-iŋ 'stɛp 'lɪn-ē,ā-shən }
- partiversal** [GEOL] Pertaining to formations that dip in different directions roughly as far as a semicircle. { 'pɑrd-ə'vər-səl }
- partridgeite** See bixbyite. { 'pār-trə,jɪt }
- parvafacies** [GEOL] A body of rock constituting the part of any magnafacies that occurs between designated time-stratigraphic planes or key beds traced across the magnafacies. { 'pār-və'fā-shēz }
- pascoite** [MINERAL] $\text{Ca}_2\text{V}_6\text{O}_{17} \cdot 11\text{H}_2\text{O}$ A dark-red-orange to yellow-orange mineral composed of hydrous vanadate of calcium. { 'pas-kə,wɪt }
- passage bed** [GEOL] A stratum marking a transition from rocks of one geological system to those of another. { 'pas-ij ,bed }
- passive fold** [GEOL] A fold in which the mechanism of folding, either flow or slip, crosses the boundaries of the strata at random. { 'pas-iv 'fɒld }
- passive margin** [GEOL] A continental margin formed by rifting during continental breakup. { 'pas-iv 'mār-jən }
- passive permafrost** [GEOL] Permafrost that will not refreeze under present climatic conditions after being disturbed or destroyed. Also known as fossil permafrost. { 'pas-iv 'pər-mə,frɒst }
- patch reef** [GEOL] **1.** A small, irregular organic reef with a flat top forming a part of a reef complex. **2.** A small, thick, isolated lens of limestone or dolomite surrounded by rocks of different facies. **3.** See reef patch. { 'pɑtʃ ,rēf }
- Patellacea** [PALEON] An extinct superfamily of gastropod mollusks in the order Aspidobranchia which developed a cap-shaped shell and were specialized for clinging to rock. { ,pɑd-əl'ās-ē-ə }
- Paterinida** [PALEON] A small extinct order of inarticulated brachiopods, characterized by a thin shell of calcium phosphate and convex valves. { ,pɑd-əl'ɪn-əd-ə }
- paternoite** See kaliborite. { ,pɑd-ər'nō,ɪt }
- patina** [GEOL] A thin, colored film produced on a rock surface by weathering. { 'pat-ən-ə or pətē-nə }
- patronite** [MINERAL] A black vanadium sulfide mineral; mined as a vanadium ore in Minasragra, Peru. { 'pɑ-trə,nɪt }
- patterned ground** [GEOL] Any of several well-defined, generally symmetrical forms, such as circles, polygons, and steps, that are characteristic of surficial material subject to intensive frost action. { 'pɑd-ərnd 'grauŋd }
- paulingite** [MINERAL] An isometric zeolite mineral consisting of an aluminosilicate of potassium, calcium, and sodium. { 'pɒl-iŋ,ɪt }
- paulopost** See deuterite. { 'pɒl-ə,pɒst }
- pavement** [GEOL] A bare rock surface that suggests a paved road surface or other pavement in smoothness, hardness, horizontality, surface extent, or close packing of units. { 'pāv-mənt }
- pavonite** [MINERAL] AgBi_3S_5 A mineral composed of silver bismuth sulfide. { 'pɑ-və,nɪt }
- pwdite** [PETR] A dark-colored, fine-grained, granular hypabyssal rock composed of magnetite, titanite, biotite, hornblende, calcic plagioclase, and traces of quartz. { 'pɒ,dɪt }
- PDB** See PeeDee belemnite.
- peachblossom ore** See erythrite. { 'pēch,bläs-əm ,ɔr }
- pea coal** [GEOL] A size of anthracite that will pass through a 13/16-inch (20.6-millimeter) round mesh but not through a 9/16-inch (14.3-millimeter) round mesh. { 'pē ,kɒl }
- peacock copper** See peacock ore. { 'pē,kāk 'kɑp-ər }
- peacock ore** [MINERAL] A copper mineral, such as bornite, having an iridescent tarnished surface upon exposure to air. Also known as peacock copper. { 'pē,kāk 'ɔr }
- pea gravel** [GEOL] A type of gravel whose individual particles are about the size of peas. { 'pē ,gräv-əl }
- peak** [GEOL] **1.** The conical or pointed top of a hill or mountain. **2.** An individual

pebblestone

- mountain or hill taken as a whole, used especially when it is isolated or has a pointed, conspicuous summit. { 'pēk }
- peak plain** [GEOL] A high-level plain formed by a series of summits of approximately the same elevation, often described as an uplifted and fully dissected peneplain. Also known as summit plain. { 'pēk ,plān }
- peak zone** [PALEON] An informal biostratigraphic zone consisting of a body of strata characterized by the exceptional abundance of some taxon (or taxa) or representing the maximum development of some taxon. { 'pēk ,zōn }
- pea ore** [MINERAL] A variety of pisolitic limonite or bean ore occurring in small, rounded grains or masses about the size of a pea. { 'pē ,ōr }
- pearceite** [MINERAL] $Ag_{16}As_2S_{11}$ A black mineral composed of sulfide of arsenic and silver. { 'pīr ,sīt }
- pearlite** *See* perlite. { 'pər ,līt }
- pearl sinter** *See* siliceous sinter. { 'pər l ,sīn ·tər }
- pearl spar** [MINERAL] A crystalline carbonate having a pearly luster; an example is ankerite. { 'pər l ,spār }
- pearlstone** *See* perlite. { 'pər l ,stōn }
- peat** [GEOL] A dark-brown or black residuum produced by the partial decomposition and disintegration of mosses, sedges, trees, and other plants that grow in marshes and other wet places. { 'pēt }
- peat bed** *See* peat bog. { 'pēt ,bed }
- peat bog** [GEOL] A bog in which peat has formed under conditions of acidity. Also known as peat bed; peat moor. { 'pēt ,bäg }
- peat breccia** [GEOL] Peat that has been broken up and then redeposited in water. Also known as peat slime. { 'pēt ,brech·ə }
- peat coal** [GEOL] A coal transitional between peat and lignite. { 'pēt ,kōl }
- peat formation** [GEOCHEM] Decomposition of vegetation in stagnant water with small amounts of oxygen, under conditions intermediate between those of putrefaction and those of moldering. { 'pēt fōr'mā·shən }
- peat moor** *See* peat bog. { 'pēt ,mūr }
- peat-sapropel** [GEOL] A product of the degradation of organic matter that is transitional between peat and sapropel. Also known as sapropel-peat. { 'pēt 'sap·rə ,pel }
- peat slime** *See* peat breccia. { 'pēt ,slīm }
- peat soil** [GEOL] Soil containing a large amount of peat; it is rich in humus and gives an acid reaction. { 'pēt ,sōil }
- pebble** [GEOL] A clast, larger than a granule and smaller than a cobble, having a diameter in the range of 0.16–2.6 inches (4–64 millimeters). Also known as pebblestone. [MINERAL] *See* rock crystal. { 'peb·əl }
- pebble armor** [GEOL] A desert armor made up of rounded pebbles. { 'peb·əl ,är·mər }
- pebble bed** [GEOL] Any pebble conglomerate, especially one in which the pebbles weather conspicuously and become loose. Also known as popple rock. { 'peb·əl ,bed }
- pebble coal** [GEOL] Coal that is transitional between peat and brown coal. { 'peb·əl ,kōl }
- pebble conglomerate** [PETR] A consolidated rock consisting mainly of pebbles. { 'peb·əl kən'gläm·ə·rət }
- pebble dike** [GEOL] **1.** A clastic dike composed largely of pebbles. **2.** A tabular body containing sedimentary fragments in an igneous matrix. { 'peb·əl ,dīk }
- pebble peat** [GEOL] Peat that is formed in a semiarid climate by the accumulation of moss and algae, no more than 0.25 inch (6 millimeters) in thickness, under the surface pebbles of well-drained soils. { 'peb·əl ,pēt }
- pebble phosphate** [GEOL] A secondary phosphorite of either residual or transported origin, consisting of pebbles or concretions of phosphatic material. { 'peb·əl 'fās ,fāt }
- pebblestone** *See* pebble. { 'peb·əl ,stōn }

pebbly mudstone

- pebbly mudstone** [GEOL] A delicately laminated till-like conglomeratic mudstone. { 'peb·lē 'məd,stōn }
- pebbly sand** [GEOL] An unconsolidated sedimentary deposit containing at least 75% sand and up to a maximum of 25% pebbles. { 'peb·lē 'sand }
- pebbly sandstone** [GEOL] A sandstone that contains 10–20% pebbles. { 'peb·lē 'san,stōn }
- pectolite** [MINERAL] $\text{NaCa}_2\text{Si}_3\text{O}_8(\text{OH})$ A colorless, white, or gray inosilicate, crystallizing in the monoclinic system and having a vitreous to silky luster; hardness is 5 on Mohs scale, and specific gravity is 2.75. { 'pek·tə,līt }
- ped** [GEOL] A naturally formed unit of soil structure. { ped }
- pedalfer** [GEOL] A soil in which there is an accumulation of sesquioxides; it is characteristic of a humid region. { pə'dal·fər }
- pedality** [GEOL] The physical nature of a soil as expressed by the features of its constituent peds. { pe'dal·əd·ē }
- pedestal** [GEOL] A relatively slender column of rock supporting a wider rock mass and formed by undercutting as a result of wind abrasion or differential weathering. Also known as rock pedestal. { 'ped·əst·əl }
- pedestal boulder** [GEOL] A rock mass supported on a rock pedestal. Also known as pedestal rock. { 'ped·əst·əl ,bōl·dər }
- pedestal rock** See pedestal boulder. { 'ped·əst·əl ,rāk }
- pediment** [GEOL] A piedmont slope formed from a combination of processes which are mainly erosional; the surface is chiefly bare rock but may have a covering veneer of alluvium or gravel. Also known as conoplain; piedmont interstream flat. { 'ped·ə·mənt }
- pedimentation** [GEOL] The actions or processes by which pediments are formed. { ,ped·ə·mənt'tā·shən }
- pediment gap** [GEOL] A broad opening formed by the enlargement of a pediment pass. { 'ped·ə·mənt ,gap }
- pediment pass** [GEOL] A flat, narrow tongue that extends from a pediment on one side of a mountain to join a pediment on the other side. { 'ped·ə·mənt ,pas }
- pediocratic** [GEOL] Pertaining to a period of time in which there is little diastrophism. { ,ped·ē·ə'krad·ik }
- pediplain** [GEOL] A rock-cut erosion surface formed in a desert by the coalescence of two or more pediments. Also known as desert peneplain; desert plain; panfan. { 'ped·ə,plān }
- pediplanation** [GEOL] The actions or processes by which pediplanes are formed. { ,ped·ə·plə'nā·shən }
- pediplane** [GEOL] Any planate erosion surface formed in the piedmont area of a desert, either bare or covered with a veneer of alluvium. { 'ped·ə,plān }
- pedocal** [GEOL] A soil containing a concentration of carbonates, usually calcium carbonate; it is characteristic of arid or semiarid regions. { 'ped·ə,kal }
- pedogenesis** See soil genesis. { 'ped·ō'jen·ə·səs }
- pedogenics** [GEOL] The study of the origin and development of soil. { 'ped·ō'jen·iks }
- pedochemical survey** [GEOCHEM] A geochemical prospecting survey in which the materials sampled are soil and till. { 'ped·ō,jē·ō'kem·ə·kəl 'sər,vā }
- pedogeography** [GEOL] The study of the geographic distribution of soils. { 'ped·ō·jē'äg·rə·fē }
- pedography** [GEOL] The systematic description of soils; an aspect of soil science. { pə'däg·rə·fē }
- pedolith** [GEOL] A surface formation that has undergone one or more pedogenic processes. { 'ped·ə,lith }
- pedologic age** [GEOL] The relative maturity of a soil profile. { 'ped·ō'lāj·ik 'āj }
- pedologic unit** [GEOL] A soil considered without regard to its stratigraphic relations. { 'ped·ō'lāj·ik 'yü·nət }
- pedology** See soil science. { pe'däl·ə·jē }
- pedon** [GEOL] The smallest unit or volume of soil that represents or exemplifies all

- the horizons of a soil profile; it is usually a horizontal, hexagonal area of about 1 square meter, or possibly larger. { 'pe,dän }
- pedorelic** [GEOL] Referring to a soil feature that is derived from a preexisting soil horizon. { |'ped·ō'rel·ik }
- pedosphere** [GEOL] That shell or layer of the earth in which soil-forming processes occur. { 'ped·ə,sfir }
- pedotubule** [GEOL] A soil feature consisting of skeleton grains, or skeleton grains plus plasma, and having a tubular external form (either single tubes or branching systems of tubes) characterized by relatively sharp boundaries and relatively uniform cross-sectional size and shape (circular or elliptical). { |'ped·ō'tüb·yül }
- PeeDee belemnite** [GEOCHEM] Limestone from the PeeDee Formation in South Carolina (derived from the Cretaceous marine fossil *Belemnitella americana*), the carbon and oxygen isotope ratios of which are used as an international reference standard. Abbreviated PDB. { ,pē,dē bə'lem,nīt }
- peel thrust** [GEOL] A sedimentary sheet peeled off a sedimentary sequence, usually along a bedding plane. { 'pēl,thrəst }
- pegmatite** [PETR] Any extremely coarse-grained, igneous rock with interlocking crystals; pegmatites are relatively small, are relatively light colored, and range widely in composition, but most are of granitic composition; they are principal sources for feldspar, mica, gemstones, and rare elements. Also known as giant granite; granite pegmatite. { 'peg·mə,tīt }
- pegmatitic stage** [GEOL] A stage in the normal sequence of crystallization of magma containing volatiles when the residual fluid is sufficiently enriched in volatile materials to permit the formation of coarse-grained rocks, that is pegmatites. { |'peg·mə'tid·ik ,stāj }
- pegmatization** [GEOL] Formation of or replacement by a pegmatite. { ,'peg·mə'tid·ə'za·shən }
- pegmatoid** [PETR] An igneous rock that has the coarse-grained texture of a pegmatite but that lacks graphic intergrowths or typically granitic composition. { 'peg·mə,toid }
- pegmatolite** See orthoclase. { 'peg'mad·əl,tīt }
- peg model** [GEOL] Three-dimensional model used to illustrate and study stratigraphic and structural conditions of subsurface geology; consists of a flat platform onto which vertical pegs of varying heights are mounted to represent the contours of various strata. { 'peg ,mäd·əl }
- Peking man** [PALEON] *Sinanthropus pekinensis*. An extinct human type; the braincase was thick, with a massive basal and occipital torus structure and heavy browridges. { 'pē,kiŋ 'man }
- pelagic** [GEOL] Pertaining to regions of a lake at depths of 33–66 feet (10–20 meters) or more, characterized by deposits of mud or ooze and by the absence of vegetation. Also known as eupelagic. { pə'laj·ik }
- pelagic limestone** [GEOL] A fine-textured limestone formed in relatively deep water by the concentration of calcareous tests of pelagic Foraminifera. { pə'laj·ik 'līm,stōn }
- pelagochthonous** [GEOL] Referring to coal derived from a submerged forest or from driftwood. { ,pel·ə'gäk·thə·nəs }
- pelagosite** [GEOL] A superficial calcareous crust a few millimeters thick, generally white, gray, or brownish with a pearly luster, formed in the intertidal zone by ocean spray and evaporation, and composed of calcium carbonate with higher contents of magnesium carbonate, strontium carbonate, calcium sulfate, and silica than are found in normal limy sediments. { pə'læg·ə,sīt }
- peldon** [PETR] A very hard, smooth, compact sandstone with conchoidal fracture, occurring in coal measures. { 'pel·dən }
- Pelean cloud** See nuée ardente. { pə'lē·ən 'klaüd }
- pelelith** [GEOL] Vesicular or pumiceous lava in the throat of a volcano. { pə'lā,lith }
- Pele's hair** [GEOL] A spun volcanic glass formed naturally by blowing out during quiet fountaining of fluid lava. Also known as capillary ejecta; filiform lapilli; lauhoho o pele. { ,pā,lāz 'her }

Pele's tears

- Pele's tears** [GEOL] Volcanic glass in the form of small, solidified drops which precede pendants of Pele's hair. { 'pā,lāz 'tirz }
- pelite** [GEOL] A sediment or sedimentary rock, such as mudstone, composed of fine, clay- or mud-size particles. Also spelled pelyte. { 'pē,līt }
- pelitic** [GEOL] Pertaining to, characteristic of, or derived from pelite. { pə'lid·ik }
- pelitic hornfels** [PETR] A fine-grained metamorphic rock derived from pelite. { pə'lid·ik 'hörn,felz }
- pelitic schist** [PETR] A foliated crystalline metamorphic rock derived from pelite. { pə'lid·ik 'shist }
- pellet** [GEOL] A fine-grained, sand-size, spherical to elliptical aggregate of clay-sized calcareous material, devoid of internal structure, and contained in the body of a well-sorted carbonate rock. { 'pel·ət }
- pell-mell structure** [GEOL] A sedimentary structure characterized by absence of bedding in a coarse deposit of waterworn material; it may occur where deposition is too rapid for sorting or where slumping has destroyed the layered arrangement. { 'pel,mel 'strək·chər }
- pellodite** See pelodite. { 'pel·ə,dīt }
- pelmicrite** [GEOL] A limestone containing less than 25% each of intraclasts and oolites, having a volume ratio of pellets to fossils greater than 3 to 1, and with the micrite matrix more abundant than the sparry-calcite cement. { 'pel,mə,krīt }
- pelodite** [GEOL] A lithified glacial rock flour which is composed of glacial pebbles in a silt or clay matrix and which was formed by redeposition of the fine fraction of a till. Also spelled pellodite. { 'pel·ə,dīt }
- pelogloea** [GEOL] Marine detrital slime from settled plankton. { 'pel·ə'glē·ə }
- pelphyte** [GEOL] A lake-bottom deposit consisting mainly of fine, nonfibrous plant remains. { 'pel,fit }
- pelsparite** [PETR] A limestone containing less than 25% each of intraclasts and oolites, having a volume ratio of pellets to fossils greater than 3 to 1, and with the sparry-calcite cement more abundant than the micrite matrix. { 'pel,spä,rīt }
- Pelycosauria** [PALEON] An extinct order of primitive, mammallike reptiles of the subclass Synapsida, characterized by a temporal fossa that lies low on the side of the skull. { ,pel·ə·kə'sōr·ē·ə }
- pelyte** See pelite. { 'pe,līt }
- pentacite** [PETR] A recrystallized limestone containing periclase or brucite and calcite in approximately equal molecular proportions. { 'pen,kə,tīt }
- pencil cleavage** [GEOL] Cleavage in which fracture produces long, slender pieces of rock. { 'pen·səl ,klē·vij }
- pencil gneiss** [GEOL] A gneiss that splits into thin, rodlike quartz-feldspar crystal aggregates. { 'pen·səl ,nīs }
- pencil ore** [GEOL] Hard, fibrous masses of hematite that can be broken up into splinters. { 'pen·səl ,ōr }
- pencil stone** See pyrophyllite. { 'pen·səl ,stōn }
- pendant** See roof pendant. { 'pen·dənt }
- pendent terrace** [GEOL] A connecting ribbon of sand that joins an isolated point of rock with a neighboring coast. { 'pen·dənt ,ter·əs }
- penecontemporaneous** [GEOL] Of a geologic process or the structure or mineral that is formed by the process, occurring immediately following deposition but before consolidation of the enclosing rock. { 'pēn·ē·kən,təm·pə'rā·nē·əs }
- penepain** See base-leveled plain. { 'pēn·ə,plān }
- penplanation** [GEOL] The actions or processes by which penepains are formed. { ,pēn·ə·plə'nā·shən }
- penetration frequency** See critical frequency. { ,pen·ə'trā·shən ,frē·kwən·sē }
- penetration funnel** [GEOL] An impact crater, generally funnel-shaped, formed by a small meteorite striking the earth at a relatively low velocity and containing nearly all the impacting mass within it. { ,pen·ə'trā·shən ,fən·əl }
- penetrative** [GEOL] Referring to a texture of deformation that is uniformly distributed in a rock, without notable discontinuities; for example, slaty cleavage. { 'pen·ə,trā·div }

- penfieldite** [MINERAL] $Pb_2(OH)Cl_3$ A white hexagonal mineral composed of basic chloride of lead, occurring in hexagonal prisms. { 'pen,fēl,dīt }
- penikkavaarite** [PETR] An intrusive rock composed chiefly of augite, barkevikite, and green hornblende in a feldspathic groundmass. { ,pen·ə'ka·və,rīt }
- penitent** *See* nieve penitente. { 'pen·ə'tənt }
- pennantite** [MINERAL] $Mn_9Al_6Si_5O_{20}(OH)_{16}$ Orange mineral composed of basic manganese aluminum silicate; member of the chlorite group; it is isomorphous with thuringite. { 'pen·ən,tīt }
- penninite** [MINERAL] $(Mg,Fe,Al)_6(Si,Al)_4O_{11}(OH)_8$ An emerald-green, olive-green, pale-green, or bluish mineral of the chlorite group crystallizing in the monoclinic system, with a hardness of 2–2.5 on Mohs scale, and specific gravity of 2.6–2.85. { 'pen·ə,nīt }
- Pennsylvanian** [GEOL] A division of late Paleozoic geologic time, extending from 320 to 280 million years ago, varying considered to rank as an independent period or as an epoch of the Carboniferous period; named for outcrops of coal-bearing rock formations in Pennsylvania. { ,pen·sal'vā·nyən }
- Penokean** *See* Animikean. { pə'nō·kē·ən }
- penroseite** [MINERAL] $(Ni,Co,Cu)Se_2$ A lead gray, isometric mineral consisting of a selenide of nickel, copper, and cobalt; occurs in reniform masses. { 'pen,rō,zīt }
- pentahydrate** [MINERAL] $MgSO_4 \cdot 5H_2O$ A triclinic mineral composed of hydrous magnesium sulfate; it is isostructural with chalcantite. { ,pen·tə'hī,drīt }
- Pentamerida** [PALEON] An extinct order of articulate brachiopods. { ,pen·tə'mer·ə·də }
- Pentameridina** [PALEON] A suborder of extinct brachiopods in the order Pentamerida; dental plates associated with the brachiophores were well developed, and their bases enclosed the dorsal adductor muscle field. { ,pen·tə·mə'rid·ən·ə }
- pentlandite** [MINERAL] $(Fe,Ni)_9S_8$ A yellowish-bronze mineral having a metallic luster and crystallizing in the isometric system; hardness is 3.5–4 on Mohs scale, and specific gravity is 4.6–5.0; the major ore of nickel. { 'pent·lən,dīt }
- Penutian** [GEOL] A North American stage of geologic time: lower Eocene (above Bulitian, below Ulatasian). { pə'nū·shən }
- peperite** [GEOL] A breccialike material in marine sedimentary rock, considered to be either a mixture of lava with sediment, or shallow intrusions of magma into wet sediment. { 'pep·ə,rīt }
- peralkaline** [PETR] Of igneous rock, having a molecular proportion of aluminum lower than that of sodium oxide and potassium oxide combined. { pər'al·kə,līn }
- peraluminous** [PETR] Of igneous rock, having a molecular proportion of aluminum oxide greater than that of sodium oxide and potassium oxide combined. { ,pər·ə'lū·mə·nəs }
- perbituminous** [GEOL] Referring to bituminous coal containing more than 5.8% hydrogen, analyzed on a dry, ash-free basis. { ,pər·bət'ū·mə·nəs }
- perched block** [GEOL] A large, detached rock fragment presumed to have been transported and deposited by a glacier, and perched in a conspicuous and precarious position on the side of a hill. Also known as balanced rock; perched boulder; perched rock. { 'pərch't 'blāk }
- perched boulder** *See* perched block. { 'pərch't 'bōl·dər }
- perched rock** *See* perched block. { 'pərch't 'rāk }
- perching bed** [GEOL] A body of rock, generally stratiform, that supports a body of perched water. { 'pərch·iŋ ,bed }
- percussion mark** [GEOL] A small, crescent-shaped scar produced on a hard, dense pebble by a blow. { pər'kəsh·ən ,mārk }
- percyllite** [MINERAL] $PbCuCl_2(OH)_2$ Mineral made up of a basic chloride of copper and lead and occurring as cubic blue crystals, with a hardness of 2.5. { 'pər·sē·līt }
- pereletok** [GEOL] A frozen layer of ground, at the base of the active layer, which may persist for one or several years. Also known as intergelisol. { ,per·ə·lə'tāk }
- perezone** [GEOL] A zone in which sediments accumulate along coastal lowlands; includes lagoons and brackish-water bays. { 'per·ə,zōn }

perfemic rock

- perfemic rock** [GEOL] An igneous rock in which the ratio of salicalic to femic minerals is less than 1:7. { pər'fem-ik 'ræk }
- perforation deposit** [GEOL] An isolated kame consisting of material that accumulated in a vertical shaft which pierced a glacier and afforded no outlet for water at the bottom. { ,pər-fə'rā-shən di,pāz-ət }
- pergelic** [GEOL] Referring to a soil temperature regime in which the mean annual temperature is less than 0°C and there is permafrost. { pər'jel-ik }
- pergelisol table** See permafrost table. { ,pər'jel-ə,sól }
- perhydrous coal** [GEOL] Coal that contains more than 6% hydrogen, analyzed on a dry, ash-free basis. { ,pər'hī-drəs 'kól }
- periblinite** [GEOL] A variety of provitrite consisting of cortical tissue. { pə'rib-lə,nīt }
- periclase** [MINERAL] MgO Native magnesia; a mineral occurring in granular forms or isometric crystals, with hardness of 6 on Mohs scale, and specific gravity of 3.67–3.90. Also known as periclasite. { 'per-ə,klās }
- periclasite** See periclase. { ,per-ə'klā,sīt }
- periclinal** [GEOL] Referring to strata and structures that dip radially outward from, or inward toward, a center, forming a dome or a basin. { ,pər-ə'klīn-əl }
- pericline** [GEOL] A fold characterized by central orientation of the dip of the beds. [MINERAL] A variety of albite elongated, and often twinned, along the *b* axis. { 'per-ə,klīn }
- pericline ripple mark** [GEOL] A ripple mark arranged in an orthogonal pattern either parallel to or transverse to the current direction and having a wavelength up to 80 centimeters and amplitude up to 30 centimeters. { 'per-ə,klīn 'ripəl ,mārk }
- peridot** [MINERAL] **1.** A gem variety of olivine that is transparent to translucent and pale-, clear-, or yellowish-green in color. **2.** A variety of tourmaline approaching olivine in color. { 'per-ə,dät }
- peridotite** [PETR] A dark-colored, ultrabasic phaneritic igneous rock composed largely of olivine, with smaller amounts of pyroxene or hornblende. { pə'rid-ə,tīt }
- peridotite shell** See upper mantle. { pə'rid-ə,tīt ,shel }
- perigenic** [GEOL] Referring to a rock constituent or mineral formed at the same time as the rock it is part of, but not formed at the specific location it now occupies in the rock. { ,pər-ə'jen-ik }
- periglacial** [GEOL] Of or pertaining to the outer perimeter of a glacier, particularly to the fringe areas immediately surrounding the great continental glaciers of the geologic ice ages, with respect to environment, topography, areas, processes, and conditions influenced by the low temperature of the ice. { ,pər-ə'glā-shəl }
- perimagmatic** [GEOL] Referring to a hydrothermal mineral deposit located near its magmatic source. { ,pər-ə-mag'ned-ik }
- period** [GEOL] A unit of geologic time constituting a subdivision of an era; the fundamental unit of the standard geologic time scale. { 'pīr-ē-əd }
- peripediment** [GEOL] The segment of a pediplane extending across the younger rocks or alluvium of a basin which is always beyond but adjacent to the segment developed on the older upland rocks. { ,pər-ə'ped-ə-mənt }
- peripheral depression** See ring depression. { pə'rīf-ə-rəl di'presh-ən }
- peripheral faults** [GEOL] Arcuate faults bounding an elevated or depressed area such as a diapir. { pə'rīf-ə-rəl 'fōls }
- peripheral sink** See rim syncline. { pə'rīf-ə-rəl 'sɪŋk }
- Periptychidae** [PALEON] A family of extinct herbivorous mammals in the order Condylarthra distinguished by specialized, fluted teeth. { ,pər-əp'tik-ə,dē }
- peristerite** [MINERAL] A gem variety of albite (An₂-An₂₄) that resembles moonstone and has a blue or bluish-white luster characterized by sharp internal reflections of blue, green, and yellow. { pə'ris-tə,rīt }
- perlite** [GEOL] A rhyolitic glass with abundant spherical or convolute cracks that cause it to break into small pearl-like masses or pebbles, usually less than a centimeter across; it is commonly gray or green with a pearly luster and has the composition of rhyolite. Also known as pearlite; pearlstone. { 'pər,līt }
- permafrost** [GEOL] Perennially frozen ground, occurring wherever the temperature

perthitic

remains below 0°C for several years, whether the ground is actually consolidated by ice or not and regardless of the nature of the rock and soil particles of which the earth is composed. { 'pær·mæ,fröst }

perlitic [PETR] **1.** Of the texture of a glassy igneous rock, exhibiting small spheruloids formed from cracks due to contraction during cooling. **2.** Pertaining to or characteristic of perlite. { 'pær|lɪd·ɪk }

permafrost island [GEOL] A small, shallow, isolated patch of permafrost surrounded by unfrozen ground. { 'pær·mæ,fröst 'ɪ·lənd }

permafrost line [GEOL] A line on a map representing the border of the arctic permafrost. { 'pær·mæ,fröst ,lɪn }

permafrost table [GEOL] The upper limit of permafrost. Also known as pergelisol table. { 'pær·mæ,fröst ,tā·bəl }

permanent extinction [GEOL] The extinction of a lake by destruction of the lake basin, because of such processes as deposition of sediments, erosion of the basin rim, filling with vegetation, or catastrophic events. { 'pær·mæ·nənt ɪk'stɪŋk·ʃən }

permeability [GEOL] The capacity of a porous rock, soil, or sediment for transmitting a fluid without damage to the structure of the medium. Also known as conductivity; perviousness. { ,pær·mē·ə'bil·əd·ē }

permeability trap [GEOL] An oil trap formed by lateral variation within a reservoir bed which seals the contained hydrocarbons through a change of permeability. { ,pær·mē·ə'bil·əd·ē ,trap }

permeable bed [GEOL] A porous reservoir formation through which hydrocarbon fluids (oil or gas) or water (waterflood or interstitial) can flow. { 'pær·mē·ə·bəl 'bed }

permeation gneiss [PETR] A gneiss formed as a result of or modified by the passage of geochemically mobile materials through or into solid rock. { ,pær·mē'ā·ʃən 'nɪs }

Permian [GEOL] The last period of geologic time in the Paleozoic era, from 280 to 225 million years ago. { 'pær·mē·ən }

permineralization [GEOL] A fossilization process whereby additional minerals are deposited in the pore spaces of originally hard animal parts. { pær,min·rə·lə'zā·ʃən }

Permo-Carboniferous [GEOL] **1.** The Permian and Carboniferous periods considered as one unit. **2.** The Permian and Pennsylvanian periods considered as a single unit. **3.** The rock unit, or the period of geologic time, transitional between the Upper Pennsylvanian and the Lower Permian periods. { 'pær·mō,kār·bə'nɪf·ə·rəs }

perovskite [MINERAL] $\text{Ca}(\text{TiO}_3)$ A natural, yellow, brownish-yellow, reddish, brown, or black mineral and a structure type which includes no less than 150 synthetic compounds; the crystal structure is ideally cubic, it occurs as rounded cubes modified by the octahedral and dodecahedral forms, luster is subadamantine to submetallic, hardness is 5.5 on Mohs scale, and specific gravity is 4.0. { pə'rävz,kɪt }

perpendicular slip [GEOL] The component of a fault slip measured at right angles to the trace of the fault on any intersecting surface. { 'pær·pən'dɪk·yə·lər 'slɪp }

perpendicular slope [GEOL] A very steep slope or precipitous face, as on a mountain. { 'pær·pən'dɪk·yə·lər 'slɒp }

perpendicular throw [GEOL] The distance between two points which were formerly adjacent in a faulted bed, vein, or other surface, measured at right angles to the surface. { 'pær·pən'dɪk·yə·lər 'θrō }

Perret phase [GEOL] That stage of a volcanic eruption that is characterized by the emission of much high-energy gas that may significantly enlarge the volcanic conduit. { 'per·ət ,fāz }

perryite [MINERAL] $(\text{Ni},\text{Fe})_3(\text{Si},\text{P})_2$ A mineral found only in meteorites. { 'per·ē,ɪt }

persallic rock [GEOL] An igneous rock in which the ratio of salic to femic minerals is greater than 7:1. { pær'sal·ɪk 'rɒk }

persillicic See silicic. { 'pær·sə'lɪs·ɪk }

perthite [GEOL] A parallel to subparallel intergrowth of potassium and sodium feldspar; the potassium-rich phase is usually the host from which the sodium-rich phase evolves. { 'pær,θɪt }

perthitic [GEOL] Of a texture produced by perthite, exhibiting sodium feldspar as small

perthosite

- strings, blebs, films, or irregular veinlets in a host of potassium feldspar. { pər'thɪd-ɪk }
- perthosite** [PETR] A light-colored syenite composed almost entirely of perthite, with less than 3% mafic minerals. { 'pər-thə,sɪt }
- Peru saltpeter** See soda niter. { pə'rū 'sɒlt'pɛd-ər }
- perviousness** See permeability. { 'pər-vē-əs-nəs }
- Petalichthyida** [PALEON] A small order of extinct dorsoventrally flattened fishes belonging to the class Placodermi; the external armor is in two shields of large plates. { ,pɛd-ə-lik'thē-ə-də }
- petalite** [MINERAL] $\text{LiAlSi}_4\text{O}_{10}$ A white, gray, or colorless monoclinic mineral composed of silicate of lithium and aluminum, occurring in foliated masses or as crystals. { 'pɛd-əl,ɪt }
- Petalodontidae** [PALEON] A family of extinct cartilaginous fishes in the order Brachyodonti distinguished by teeth with deep roots and flattened diamond-shaped crowns. { ,pɛd-əl-ə'dänt-ə,dē }
- petrifaction** [GEOL] A fossilization process whereby inorganic matter dissolved in water replaces the original organic materials, converting them to a stony substance. { ,pɛ-trə'fak-shən }
- petrified wood** See silicified wood. { 'pɛ-trə,fɪd 'wʊd }
- petrochemistry** [GEOCHEM] An aspect of geochemistry that deals with the study of the chemical composition of rocks. { 'pɛ-trō'kɛm-ə-strɛ }
- petrofabric** See fabric. { 'pɛ-trō'fab-ɪk }
- petrofabric analysis** See structural petrology. { 'pɛ-trō'fab-ɪk ə'nal-ə-səs }
- petrofabric diagram** See fabric diagram. { 'pɛ-trō'fab-ɪk 'dɪ-ə,grəm }
- petrofabrics** See structural petrology. { 'pɛ-trō'fab-ɪks }
- petrofacies** See petrographic facies. { 'pɛ-trō'fā-shɛz }
- petrogenesis** [PETR] That branch of petrology dealing with the origin of rocks, particularly igneous rocks. Also known as petrogeny. { 'pɛ-trō'jɛn-ə-səs }
- petrogenic grid** [PETR] A diagram whose coordinates are parameters of the rock-forming environment on which equilibrium curves are plotted indicating the limits of the stability fields of specific minerals and mineral assemblages. { 'pɛ-trō'jɛn-ɪk 'grɪd }
- petrogeny** See petrogenesis. { pə'trɔj-ə-nē }
- petrogeometry** See structural petrology. { 'pɛ-trō-jē'am-ə-trɛ }
- petrographer** [GEOL] An individual who does petrography. { pə'træg-rə-fər }
- petrographic facies** [GEOL] Facies distinguished principally by composition and appearance. Also known as petrofacies. { 'pɛ-trə'grɪf-ɪk 'fā-shɛz }
- petrographic period** [GEOL] The extension in time of a rock association. { 'pɛ-trə'grɪf-ɪk 'pɪr-ē-əd }
- petrographic province** [GEOL] A broad area in which similar igneous rocks are formed during the same period of igneous activity. Also known as comagmatic region; igneous province; magma province. { 'pɛ-trə'grɪf-ɪk 'präv-əns }
- petrography** [GEOL] The branch of geology that deals with the description and systematic classification of rocks, especially by means of microscopic examination. { pə'træg-rə-fē }
- petroleum** [GEOL] A naturally occurring complex liquid hydrocarbon which after distillation yields combustible fuels, petrochemicals, and lubricants; can be gaseous (natural gas), liquid (crude oil, crude petroleum), solid (asphalt, tar, bitumen), or a combination of states. { pə'trō-lē-əm }
- petroleum geology** [GEOL] The branch of economic geology dealing with the origin, occurrence, movement, accumulation, and exploration of hydrocarbon fuels. { pə'trō-lē-əm jē'al-ə-jē }
- petroleum seep** See oil seep. { pə'trō-lē-əm ,sɛp }
- petroleum trap** [GEOL] Stable underground formation (geological or physical) of such nature as to trap and hold liquid or gaseous hydrocarbons; usually consists of sand or porous rock surrounded by impervious rock or clay formations. { pə'trō-lē-əm ,trɪp }
- petroliferous** [GEOL] Containing petroleum. { ,pɛ-trə'lɪf-ə-rəs }

phenocrystalline

- petrologen** *See* kerogen. {pə'träl·ə·jən }
- petrologist** [GEOL] An individual who studies petrology. {pə'träl·ə·jəst }
- petrology** [GEOL] The branch of geology concerned with the origin, occurrence, structure, and history of rocks, principally igneous and metamorphic rock. {pə'träl·ə·jē }
- petromict** [GEOL] Of a sediment, composed of metastable rock fragments. { 'pe·trə,mikt }
- petromorph** [GEOL] A speleothem or cave formation that is exposed to the surface by erosion of the limestone in which the cave was formed. { 'pe·trə,mɔrf }
- petromorphology** *See* structural petrology. { |pe·trō·mòr'fäl·ə·jē }
- petrophysics** [GEOL] Study of the physical properties of reservoir rocks. { |pe·trō'fiz·iks }
- protectonics** [GEOL] Extension of the field of structural petrology to include analysis of the movements that produced the rock's fabric. Also known as tectonic analysis. { |pe·trō·tek'tän·iks }
- petzite** [MINERAL] Ag_3AuTe_2 A steel-gray to iron-black mineral consisting of a silver gold telluride; hardness is 2.5–3 on Moh's scale, and specific gravity is 8.7–9.0. { 'pet,sīt }
- peuroseite** [MINERAL] $(Ni,Cu,Pb)Se_2$ A gray mineral composed of nickel copper lead selenide, occurring in columnar masses. { pyü'rō,zīt }
- pezograph** *See* regmaglypt. { 'pez·ə,graf }
- phacellite** *See* kaliophillite. { 'fas·əl,īt }
- phacolith** [GEOL] A minor, concordant, lens-shaped, and usually granitic intrusion into folded sedimentary strata. { 'fak·əl,lith }
- phanerite** [PETR] An igneous rock having phaneritic texture. { 'fan·ə,rīt }
- phaneritic** [PETR] Of the texture of an igneous rock, being visibly crystalline. Also known as coarse-grained; phanero-crystalline; phenocrystalline. { ,fan·ə'rid·ik }
- phanerocryst** *See* phenocryst. { 'fan·ə,rō,krist }
- phanero-crystalline** *See* phaneritic. { |fan·ə'rō'krist·əl·ən }
- Phanerorhynchidae** [PALEON] A family of extinct chondrosteian fishes in the order Palaeonisciformes having vertical jaw suspension. { |fan·ə'rō'riŋ·kə,dē }
- Phanerozoic** [GEOL] The part of geologic time for which there is abundant evidence of life, especially higher forms, in the corresponding rock, essentially post-Precambrian. { |fan·ə'rō'zō·ik }
- phantom** [GEOL] A bed or member that is absent from a specific stratigraphic section but is usually present in a characteristic position in a sequence of similar geologic age. [PETR] *See* ghost. { 'fan·təm }
- phantom horizon** [GEOL] In seismic reflection prospecting, a line constructed so that it is parallel to the nearest actual dip segment at all points along a profile. { 'fan·təm hə'rīz·ən }
- pharmacolite** [MINERAL] $CaH(AsO_4) \cdot 2H_2O$ A white to grayish monoclinic mineral composed of hydrous acid arsenate of calcium, occurring in fibrous form. { fār'mak·əl,īt }
- pharmacosiderite** [MINERAL] $Fe_3(AsO_4)_2(OH)_3 \cdot 5H_2O$ Green or yellowish-green mineral composed of a hydrous basic iron arsenate and commonly found in cubic crystals. Also known as cube ore. { |fār·mə'kō'sīd·ə,rīt }
- phenacite** *See* phenakite. { 'fen·ə,sīt }
- Phenacodontidae** [PALEON] An extinct family of large herbivorous mammals in the order Condylarthra. { fə,näk·ə'dänt·ə,dē }
- phenakite** [MINERAL] Be_2SiO_4 A colorless, white, wine-yellow, pink, blue, or brown glassy mineral that crystallizes in the rhombohedral system; used as a minor gemstone. Also spelled phenacite. { 'fen·ə,kīt }
- phenicochroite** *See* phoenicochroite. { ,fēn·ə'kāk·rə,wīt }
- phenoclastic rock** [PETR] A nonuniformly sized clastic rock containing phenoclasts. { |fēn·ə'klas·tik 'rāk }
- phenoclasts** [PETR] The larger, conspicuous fragments in a sediment or sedimentary rock, such as cobbles in a conglomerate. { 'fen·ə,klasts }
- phenocryst** [PETR] A large, conspicuous crystal in a porphyritic rock. Also known as phanerocryst. { 'fēn·ə,krist }
- phenocrystalline** *See* phaneritic. { |fēn·ə'krist·əl·ən }

phenoplast

- phenoplast** [PETR] A large rock fragment in a rudaceous rock that was plastic at the time of its incorporation into the matrix. { 'fē·nə,plast }
- phi grade scale** [GEOL] A logarithmic transformation of the Wentworth grade scale in which the diameter value of the particle is replaced by the negative logarithm to the base 2 of the particle diameter (in millimeters). { 'fi 'grād ,skāl }
- philipstadite** [MINERAL] $\text{Ca}_2(\text{Fe,Mg})_5(\text{Si,Al})_8\text{O}_{22}(\text{OH})_2$ Monoclinic mineral composed of basic silicate of calcium, iron, magnesium, and aluminum; member of the amphibole group. { 'fil·əp,stā,dīt }
- phillipsite** [MINERAL] $(\text{K}_2,\text{Na}_2,\text{Ca})\text{Al}_2\text{Si}_4\text{O}_{12}\cdot\text{H}_2\text{O}$ A white or reddish zeolite mineral crystallizing in the orthorhombic system; occurs in complex fibrous crystals, which make up a large part of the red-clay sediments in the Pacific Ocean. { 'fil·əp,sīt }
- phlebite** [PETR] Roughly banded or veined metamorphite or migmatite. { 'fle,bīt }
- phlogopite** [MINERAL] $\text{K}_2[\text{Mg,Fe(II)}]_6(\text{Si}_6,\text{Al}_2)\text{O}_{20}(\text{OH})_4$ A yellow-brown to copper mineral of the mica group occurring in disseminated flakes, foliated masses, or large crystals; hardness is 2.5–3.0 on Mohs scale, and specific gravity is 2.8–3.0. Also known as bronze mica; brown mica. { 'fläg·ə,pīt }
- phoenicite** See phoenicochroite. { 'fē·nə,sīt }
- phoenicochroite** [MINERAL] Pb_2CrO_5 A red mineral composed of basic chromate of lead, occurring in crystals and masses. Also known as beresovite; phenicochroite; phoenicite. { ,fēn·ə'kā·krə,wīt }
- Pholidophoridae** [PALEON] A generalized family of extinct fishes belonging to the Pholidophoriformes. { fə,lid·ə'fōr·ə,dē }
- Pholidophoriformes** [PALEON] An extinct actinopterygian group composed of mostly small fusiform marine and fresh-water fishes of an advanced holostean level. { fə,lid·ə'fōr·ə'fōr,mēz }
- phonolite** [PETR] A light-colored, aphanitic rock of volcanic origin, composed largely of alkali feldspar, feldspathoids, and smaller amounts of mafic minerals. { 'fō·nə,līt }
- phorogenesis** [GEOL] The shifting or slipping of the earth's crust relative to the mantle. { 'fōr·ə'jen·ə'səs }
- phosgenite** [MINERAL] $\text{Pb}_2\text{Cl}_2(\text{CO}_3)$ A white, yellow, or grayish mineral that crystallizes in the tetragonal system, has adamantine luster, hardness of 3 on Mohs scale, and specific gravity of 6–6.3. Also known as cromfordite; horn lead. { 'fäz·jə,nīt }
- phosphate** [MINERAL] A mineral compound characterized by a tetrahedral ionic group of phosphate and oxygen, PO_4^{3-} . { 'fä,sfāt }
- phosphatic nodule** [GEOL] A dark, usually black, earthy mass or pebble of variable size and shape, having a hard shiny surface and occurring in marine strata. { fä'sfad·ik 'naj·yül }
- phosphatization** [GEOCHEM] Conversion to a phosphate or phosphates; for example, the diagenetic replacement of limestone, mudstone, or shale by phosphate-bearing solutions, producing phosphates of calcium, aluminum, or iron. { ,fäs·fəd·ə'zä·shən }
- phosphoferrite** [MINERAL] $(\text{Fe,Mn})_3(\text{PO}_4)_2\cdot 3\text{H}_2\text{O}$ A white or greenish orthorhombic mineral composed of hydrous phosphate of ferrous iron manganese phosphate; exhibits micallike cleavage. { ,fäs·fō'fe,rīt }
- phosphophyllite** [MINERAL] $\text{Zn}_2(\text{FeMn})(\text{PO}_4)_2\cdot 4\text{H}_2\text{O}$ Colorless to pale-blue mineral composed of hydrous zinc ferrous iron manganese phosphate; exhibits micallike cleavage. { ,fäs·fō'fi,līt }
- phosphorite** [PETR] A sedimentary rock composed chiefly of phosphate minerals. { 'fäs·fə,rīt }
- phosphorization** [GEOCHEM] Impregnation or combination with phosphorus or a compound of phosphorus; for example, the diagenetic process of phosphatization. { ,fäs·fə'rəzä·shən }
- phosphorroesslerite** [MINERAL] $\text{MgH}(\text{PO}_4)\cdot 7\text{H}_2\text{O}$ A yellowish, monoclinic mineral consisting of a hydrated acid magnesium phosphate. { ,fäs·fə'res·lə,rīt }
- phosphosiderite** [MINERAL] $\text{FePO}_4\cdot 2\text{H}_2\text{O}$ A pinkish-red mineral crystallizing in the monoclinic system, dimorphous with strengite and isomorphous with metavariscite. { 'fä·sfō'sīd·ə,rīt }

physiographic diagram

- phosphuranylite** [MINERAL] $(\text{UO}_2)(\text{PO}_4)_2 \cdot 6\text{H}_2\text{O}$ A yellow secondary mineral composed of hydrous uranyl phosphate, occurring in powder form; it is phosphorescent when exposed to radium emanations. { fās·fyə'ran·əl,ɪt }
- photoclinometry** [GEOL] A technique for ascertaining slope information from an image brightness distribution, used especially for studying the amount of slope to a lunar crater wall or ridge by measuring the density of its shadow. { fōd·ō·klə'näm·ə·trē }
- photogeologic anomaly** [GEOL] Any systematic deviation of a photogeologic factor from the expected norm in a given area. { fōd·ō,jē·ə'lāj·ik ə'näm·ə·lē }
- photogeologic map** [GEOL] A compilation of interpretations of a series of aerial photographs, including annotations of geologic features. { fōd·ō,jē·ə'lāj·ik 'map }
- photogeology** [GEOL] The geologic interpretation of landforms by means of aerial photographs. { fōd·ō,jē'äl·ə·jē }
- photogeomorphology** [GEOL] The study of landforms by means of aerial photographs. { fōd·ō,jē·ō·mór'fäl·ə·jē }
- phreatic** [GEOL] Of a volcanic explosion of material such as steam or mud, not being incandescent. { frē'ad·ik }
- phreatic gas** [GEOL] A gas formed by the contact of atmospheric or surface water with ascending magma. { frē'ad·ik 'gas }
- phreatomagmatic** [GEOL] Pertaining to a volcanic explosion that extrudes both magmatic gases and steam; it is caused by the contact of the magma with groundwater or ocean water. { frē'ad·ō·mag'mad·ik }
- phthanite** *See* chert. { 'tha,nɪt }
- phyllite** [PETR] A metamorphic rock intermediate in grade between slate and schist, and derived from argillaceous sediments; has a silky sheen on the cleavage surface. { 'fi,lɪt }
- phylofacies** [GEOL] A facies differentiated on the basis of stratification characteristics, especially the stratification index. { ,fil·ō'fā·shēz }
- Phyllolepidia** [PALEON] A monogeneric order of placoderms from the late Upper Devonian in which the armor is broad and low with a characteristic ornament of concentric and transverse ridges on the component plates. { ,fil·ə'lep·ə·dē }
- phyllomorphic stage** [GEOL] The most advanced geochemical stage of diagenesis, characterized by authigenic development of micas, feldspars, and chlorites at the expense of clays. { 'fil·ə,mór·fik ,stāj }
- phyllonite** [PETR] A metamorphic rock occupying an intermediate position between phyllite and mylonite. { 'fil·ə,nɪt }
- phyllosilicate** [MINERAL] A structural type of silicate mineral in which flat sheets are formed by the sharing of three of the four oxygen atoms in each tetrahedron with neighboring tetrahedrons. Also known as layer silicate; sheet mineral; sheet silicate. { 'fil·ō'sil·ə·kət }
- physical exfoliation** [GEOL] A type of exfoliation caused by physical forces; for example, by the freezing of water that has penetrated fine cracks in rock or by the removal of overburden concealing deeply buried rocks. { 'fiz·ə·kəl eks,fō·lē'ā·shən }
- physical geology** [GEOL] That branch of geology concerned with understanding the composition of the earth and the physical changes occurring in it, based on the study of rocks, minerals, and sediments, their structures and formations, and their processes of origin and alteration. { 'fiz·ə·kəl jē'äl·ə·jē }
- physical residue** [GEOL] A residue which results from physical, as opposed to chemical, weathering processes. { 'fiz·ə·kəl 'rez·ə,dü }
- physical stratigraphy** [GEOL] Stratigraphy based on the physical aspects of rocks, especially the sedimentologic aspects. { 'fiz·ə·kəl strə'tig·rə·fē }
- physical time** [GEOL] Geologic time as measured by some physical process, such as the radioactive decay of elements. { 'fiz·ə·kəl 'tīm }
- physical weathering** *See* mechanical weathering. { 'fiz·ə·kəl 'weth·ə·rɪŋ }
- physiographic diagram** [GEOL] A small-scale map showing landforms by the systematic application of a standardized set of simplified pictorial symbols that represent the appearance such forms would have if viewed obliquely from the air at an angle

physiographic feature

- of about 45°. Also known as landform map; morphographic map. { 'fiz·ē·ə'graf·ik 'dī·ə,gram }
- physiographic feature** [GEOL] A prominent or conspicuous physiographic form or noticeable part thereof. { 'fiz·ē·ə'graf·ik 'fē·chər }
- physiographic form** [GEOL] A landform considered with regard to its origin, cause, or history. { 'fiz·ē·ə'graf·ik 'förm }
- physiographic province** [GEOL] A region having a pattern of relief features or landforms that differs significantly from that of adjacent regions. { 'fiz·ē·ə'graf·ik 'präv·əns }
- phyteral** [GEOL] Morphologically recognizable forms of vegetal matter in coal. { 'fid·ə·rəl }
- phytocolite** [GEOL] A black, gelatinous, nitrogenous humic body occurring beneath or within peat deposits. { 'fīt·ək·ə,līt }
- phylolith** [PALEON] A fossilized part of a living plant that secreted mineral matter. { 'fīd·ə,līth }
- Phytosauria** [PALEON] A suborder of Late Triassic long-snouted aquatic thecodonts resembling crocodiles but with posteriorly located external nostrils, absence of a secondary palate, and a different structure of the pelvic and pectoral girdles. { 'fīd·ə'sör·ē·ə }
- Piacention** *See* Plaisancian. { ,pē·ə'sen·chən }
- pickeringite** [MINERAL] $MgAl_2(SO_4)_4 \cdot 22H_2O$ A white or faintly colored mineral composed of hydrous sulfate of magnesium and aluminum, occurring in fibrous masses. { 'pik·rīŋ,īt }
- picotite** [MINERAL] A dark-brown variety of hercynite that contains chromium and is commonly found in dunites. Also known as chrome spinel. { 'pik·ə,tīt }
- picrite** [PETR] A medium- to fine-grained igneous rock composed chiefly of olivine, with smaller amounts of pyroxene, hornblende, and plagioclase feldspar. { 'pi,krit }
- picrolite** *See* antigorite. { 'pik·rə,līt }
- picromerite** [MINERAL] $K_2Mg(SO_4)_2 \cdot 6H_2O$ A white mineral composed of hydrous sulfate of magnesium and potassium, occurring as crystalline encrustations. { pi'kräm·ə,rīt }
- picropharmacolite** [MINERAL] $(Ca,Mg)_3(AsO_4)_2 \cdot 6H_2O$ Mineral composed of hydrous calcium magnesium arsenate. { 'pik·rō·fär'mak·ə,līt }
- piecemeal stoping** [GEOL] Magmatic stoping in which only isolated blocks of roof rock are assimilated. { 'pēs,mēl ,stöp·iŋ }
- piedmont** [GEOL] Lying or formed at the base of a mountain or mountain range, as a piedmont terrace or a piedmont pediment. { 'pēd,mänt }
- piedmont alluvial plain** *See* bajada. { 'pēd,mänt ə'līv·ē·əl 'plān }
- piedmont angle** [GEOL] The sharp break of slope between a hill and a plain, such as the angle at the junction of a mountain front and the pediment at its base. { 'pēd,mänt ,aŋ·gəl }
- piedmont bench** *See* piedmont step. { 'pēd,mänt 'bench }
- piedmont benchland** [GEOL] One of several successions or systems of piedmont steps. Also known as piedmont stairway; piedmont tresse. { 'pēd,mänt 'bench,land }
- piedmont flat** *See* piedmont step. { 'pēd,mänt ,flat }
- piedmont gravel** [GEOL] Coarse gravel derived from high ground by mountain torrents and spread out on relatively flat ground where the velocity of the water is decreased. { 'pēd,mänt 'grav·əl }
- piedmont interstream flat** *See* pediment. { 'pēd,mänt 'in·tər,strēm ,flat }
- piedmontite** *See* piemontite. { 'pēd,män,tīt }
- piedmont plain** *See* bajada. { 'pēd,mänt 'plān }
- piedmont plateau** [GEOL] A plateau lying between the mountains and the plains or the ocean. { 'pēd,mänt pla'tō }
- piedmont scarp** [GEOL] A small, low cliff formed in alluvium on a piedmont slope at the foot of a steep mountain range; due to dislocation of the surface, especially by faulting. Also known as scarpnet. { 'pēd,mänt 'skärp }
- piedmont slope** *See* bajada. { 'pēd,mänt 'slöp }

- piedmont stairway** *See* piedmont benchland. { 'pēd,mānt 'ster,wā }
- piedmont step** [GEOL] A terracelike or benchlike piedmont feature that slopes outward or downvalley. Also known as piedmont bench; piedmont flat. { 'pēd,mānt 'step }
- piedmont trenche** *See* piedmont benchland. { 'pēd,mānt 'trēp-ə }
- piemontite** [MINERAL] $\text{Ca}_2(\text{Al,Mn}^{2+},\text{Fe})_3\text{Si}_3\text{O}_{12}(\text{OH})$ Reddish-brown epidote mineral that contains manganese. Also known as manganese epidote; piedmontite. { 'pē,mān,tīt }
- piercement** *See* diapir. { 'pīrs-mənt }
- piercement dome** *See* diapir. { 'pīrs-mənt ,dōm }
- piercing fold** *See* diapir. { 'pīrs-īŋ ,fōld }
- piezocrystallization** [GEOL] Crystallization of a magma under pressure, such as the pressure associated with orogeny. { pē'ā-zō,krist-əl-ə'zā-shən }
- piezogene** [GEOL] Pertaining to the formation of minerals primarily under the influence of pressure. { pē'ā-zō,jēn }
- piezoglypt** *See* regmaglypt. { pē'ā-zō,glipt }
- pigeonite** [MINERAL] $(\text{Mg,Fe}^{2+},\text{Ca})(\text{MgFe}^{2+})\text{Si}_2\text{O}_6$ Clinopyroxene mineral species intermediate in composition between clinoenstatite and diopside, found in basic igneous rocks. { 'pīj-ə,nīt }
- pike** [GEOL] A mountain or hill which has a peaked summit. { pīk }
- pillar** [GEOL] **1.** A natural formation shaped like a pillar. **2.** A joint block produced by columnar jointing. **3.** *See* stalacto-stalagmite. { 'pil-ər }
- pillow breccia** [PETR] A deposit of pillow structures and fragments of lava in a matrix of tuff. { 'pil-ō ,brech-ə }
- pillow lava** [GEOL] Any lava characterized by pillow structure and presumed to have formed in a subaqueous environment. Also known as ellipsoidal lava. { 'pil-ō ,lāv-ə }
- pillow structure** [GEOL] A primary sedimentary structure that resembles a pillow in size and shape. Also known as mammillary structure. [PETR] A pillow-shaped structure visible in some extrusive lavas attributed to the congealment of lava under water. { 'pil-ō ,strək-chər }
- pilotaxitic** [GEOL] Pertaining to the texture of the groundmass of a holocrystalline igneous rock in which lath-shaped microlites (usually of plagioclase) are arranged in a glass-free felted mesh, often aligned along the flow lines. { 'pī-lō-tak'sid-ik }
- Pitdown man** [PALEON] An alleged fossil man based on fragments of a skull and mandible that were eventually discovered to constitute a skillful hoax. { 'pīt ,daūn ,man }
- pimple mound** [GEOL] A low, flattened, roughly circular or elliptical dome consisting of sandy loam that is entirely distinct from the surrounding soil; peculiar to the Gulf coast of eastern Texas and southwestern Louisiana. { 'pim-pəl ,maūnd }
- pimple plain** [GEOL] A plain distinguished by the presence of numerous, conspicuous pimple mounds. { 'pim-pəl ,plān }
- pinakioilite** [MINERAL] $\text{Mg}_3\text{Mn}_3\text{B}_2\text{O}_{10}$ A black mineral composed of borate of magnesium and manganese; it is polymorphous with orthopinakioilite. { pə'nāk-ē-ə,līt }
- pinch** [GEOL] Thinning of a rock layer, as where a vein narrows. { pinch }
- pinch-and-swell structure** [GEOL] A structural condition common in pegmatites and veins of quartz in metamorphosed rocks; the vein is pinched at frequent intervals, leaving expanded parts between. { 'pinch ən 'swel ,strək-chər }
- pingo remnant** [GEOL] A rimmed depression formed by the rupturing of a pingo summit which results in the exposure of the ice core to melting followed by partial or total collapse. Also known as pseudokettle. { 'pīŋ-gō 'rem-nənt }
- pinguite** *See* nontronite. { 'pīŋ,gwīt }
- pinhole chert** [PETR] Chert containing weathered pebbles which are pierced by minute holes or pores. { 'pin,hōl 'chərt }
- pinite** [MINERAL] A compact gray, green, or brown mica, chiefly muscovite derived from other minerals such as cordierite. { 'pē,nīt }
- pinacle** [GEOL] **1.** A sharp-pointed rock rising from the bottom, which may extend above the surface of the water, and may be a hazard to surface navigation; due to

pinnate joint

the sheer rise from the sea floor, no warning is given by sounding. **2.** Any high tower or spire-shaped pillar of rock, alone or cresting a summit. { 'pin·ə·kəl }

pinnate joint See feather joint. { 'pi,nāt ,jòint }

pinnoite [MINERAL] $Mg(BO_2)_2 \cdot 3H_2O$ A yellow mineral composed of hydrous borate of magnesium, occurring in nodular masses. { 'pin·ə,wīt }

pinolite [PETR] A metamorphic rock containing magnesite (breunnerite) as crystals and as granular aggregates in a schistose matrix (phyllite or talc schist). { 'pin·əl,īt }

pentadoite [MINERAL] $Ca_2V_2O_7 \cdot 9H_2O$ A green mineral consisting of a hydrated calcium vanadate; occurs as an efflorescence. { ,pin·tə' dō,īt }

piotine See saponite. { 'pī·ə,tēn }

pipe [GEOL] **1.** A vertical, cylindrical ore body. Also known as chimney; neck; ore chimney; ore pipe; stock. **2.** A tubular cavity of varying depth in calcareous rocks, often filled with sand and gravel. **3.** A vertical conduit through the crust of the earth below a volcano, through which magmatic materials have passed. Also known as breccia pipe. { pīp }

pipe amygdule [GEOL] An elongate amygdule occurring toward the base of a lava flow, probably formed by the generation of gases or vapor from the underlying material. { 'pīp ə'mig,dyūl }

pipe clay [GEOL] A mass of fine clay, usually lens-shaped, which forms the surface of bedrock and upon which often rests the gravel of old river beds. { 'pīp ,klā }

pipernoid texture [GEOL] The eutaxitic texture of certain extrusive igneous rocks in which dark patches and stringers occur in a light-colored groundmass. { 'pī·pər,nòid ,teks·chər }

pipe rock [PETR] A marine sandstone containing abundant scolites. { 'pīp ,rāk }

pipestone [PETR] A pink or mottled argillaceous stone; carved by the Indians into tobacco pipes. { 'pīp ,stōn }

pipe vesicle [GEOL] A slender vertical cavity, a few centimeters or tens of centimeters in length, extending upward from the base of a lava flow. { 'pīp ,ves·ə·kəl }

pirssonite [MINERAL] $Na_2Ca(CO_3)_2 \cdot 2H_2O$ A colorless or white orthorhombic mineral composed of hydrous carbonate of sodium and calcium. { 'pīrs·ən,īt }

pisanite [MINERAL] $(Fe,Cu)SO_4 \cdot 7H_2O$ A blue mineral composed of hydrous sulfate of copper and iron; it is isomorphous with kirovite and melanterite. { pə'zā,nīt }

pisolite [PETR] A sedimentary rock composed principally of pisoliths. { 'pī·zə,līt }

pisolith [GEOL] Small, more or less spherical particles found in limestones and dolomites, having a diameter of 2–10 millimeters and often formed of calcium carbonate. { 'pī·zə,līth }

pisolitic [PETR] Pertaining to pisolite or to the characteristic texture of such a rock. { 'pī·zə,līd·ik }

pisolitic tuff [GEOL] Of a tuff, composed of accretionary lapilli or pisoliths. { 'pī·zə,līd·ik 'təf }

pisoparite [PETR] A limestone which contains at least 25% pisoliths and no more than 25% intraclasts and in which the sparry-calcite cement is more abundant than the carbonate-mud matrix (micrite). { pī'zäp·ə,rīt }

pitch See plunge. { pich }

pitchblende [MINERAL] A massive, brown to black, and fine-grained, amorphous, or microcrystalline variety of uraninite which has a pitchy to dull luster and contains small quantities of uranium. Also known as nasturan; pitch ore. { 'pich ,blend }

pitch coal See bituminous lignite. { 'pich ,kōl }

pitching fold See plunging fold. { 'pich·iŋ ,fōld }

pitch opal [MINERAL] A yellowish to brownish inferior quality of common opal displaying a luster resembling that of pitch. { 'pich ,ō·pəl }

pitch ore See pitchblende. { 'pich ,ór }

pitchstone [GEOL] A type of volcanic glass distinguished by a waxy, dull, resinous, pitchy luster. Also known as fluolite. { 'pich ,stōn }

pit-run gravel [GEOL] A natural deposit of a mixture of gravel, sand, and foreign materials. { 'pit ,rən ,grav·əl }

plain of marine denudation

- pitted outwash plain** [GEOL] An outwash plain characterized by numerous depressions such as kettles, shallow pits, and potholes. { 'pid·əd 'aüt,wəʃ ,plān }
- pitted pebble** [GEOL] A pebble having marked concavities not related to the texture of the rock in which it appears or to differential weathering. { 'pid·əd 'peb·əl }
- pitticite** [MINERAL] A mineral of varying color composed of a hydrous sulfate-arsenate of iron. { 'pid·ə,sɪt }
- Pityaceae** [PALEOBOT] A family of fossil plants in the order Cordaitales known only as petrifications of branches and wood. { ,pid·ē'ās·ē,ē }
- pivotal fault** See rotary fault. { 'piv·əd·əl 'fɒlt }
- placanticline** [GEOL] A gentle, anticlinallike uplift of the continental platform, usually asymmetric and without a typical outline. { plək'ant·i,klɪn }
- placer** [GEOL] A mineral deposit at or near the surface of the earth, formed by mechanical concentration of mineral particles from weathered debris. Also known as ore of sedimentation. { 'plās·ər }
- plagic horizon** [GEOL] A black to dark red soil horizon that is usually cemented with iron and is not very permeable. { 'plā·sɪk hɔ'rɪz·ən }
- Placodermi** [PALEON] A large and varied class of Paleozoic fishes characterized by a complex bony armor covering the head and the front portion of the trunk. { ,plā·kə'dɜr·mə }
- Placodontia** [PALEON] A small order of Triassic marine reptiles of the subclass Euryapsida characterized by flat-crowned teeth in both the upper and lower jaws and on the palate. { ,plā·kə'dɔn·chə }
- Plaggept** [GEOL] A suborder of the soil order Inceptisol, with very thick surface horizons of mixed mineral and organic materials resulting from manure or human wastes added over long periods of time. { 'plä·gept }
- plagiaplite** [PETR] An aplite composed chiefly of plagioclase (oligoclase to andesine), possibly green hornblende, and accessory quartz, biotite, and muscovite. { 'plä·jē·ə,plɪt }
- Plagiaulacida** [PALEON] A primitive, monofamilial suborder of multituberculate mammals distinguished by their dentition (dental formula I 3/0 C 0/0 Pm 5/4 M 2/2), having cutting premolars and two rows of cusps on the upper molars. { 'plä·jē·ə·yü'lās·ə·də }
- Plagiaulacidae** [PALEON] The single family of the extinct mammalian suborder Plagiaulacida. { 'plä·jē·ə·yü'lās·ə·dē }
- plagioclase** [MINERAL] **1.** A type of triclinic feldspars having the general formula (Na,Ca)Al(Si,Al)Si₂O₈; they are common rock-forming minerals. **2.** A series in the plagioclase group which can be divided into a number of varieties based on the relative proportion of the solid solution end members, albite and anorthite (An): albite (An 0–10) oligoclase (An 10–30), andesine (An 30–50), labradorite (An 50–70), bytownite (An 70–90), and anorthite (An 90–100). Also known as sodium-calcium feldspar. { 'plä·jē·ə,klās }
- plagionite** [MINERAL] Pb₅Sb₈S₁₇ A lead-gray mineral with metallic appearance, composed of sulfide of lead and antimony. { 'plä·jē·ə,nɪt }
- Plagiosauria** [PALEON] An aberrant Triassic group of labyrinthodont amphibians. { 'plä·jē·ə'sɔr·ē·ə }
- plain** [GEOL] A flat, gently sloping region of the sea floor. Also known as submarine plain. { plān }
- plain of denudation** [GEOL] A surface that has been reduced to sea level or to just above sea level by the agents of erosion (usually considered to be of subaerial origin). { 'plān əv ,dē·nü'dā·ʃən }
- plain of lateral planation** [GEOL] An extensive, smooth, apronlike surface developed at the base of a mountain or escarpment by the widening of valleys and the coalescence of floodplains as a result of lateral planation. { 'plān əv 'lād·ə·rəl plā'nā·ʃən }
- plain of marine denudation** [GEOL] A plane or nearly plane surface worn down by the gradual encroachment of ocean waves upon the land; or a plane or nearly plane imaginary surface representing such a plain after uplift and partial subaerial erosion. Also known as plain of submarine denudation. { 'plān əv mə'rɪn ,dē·nü'dā·ʃən }

plain of marine erosion

plain of marine erosion [GEOL] A theoretical platform representing a plane surface of unlimited width produced below sea level by the complete cutting away of the land by marine processes acting over a very long period of stillstand. { 'plān əv məʁrən i'rō·zhən }

plain of submarine denudation See plain of marine denudation. { 'plān əv |səb·mə,rən ,dē·nü'dā·shən }

plains-type fold [GEOL] An anticlinal or domelike structure of the continental platform which has no typical outline and for which there is no corresponding synclinal structure. { 'plānz |tīp ,fōld }

plain tract [GEOL] The lower part of a stream, characterized by a low gradient and a wide floodplain. { 'plān |trakt }

Plaisancian [GEOL] A European stage of geologic time: lower Pliocene (above Pontian of Miocene, below Astian). Also known as Piacentian; Plaisanzian. { plā'zān·chən }

Plaisanzian See Plaisancian. { plā'zān·zhən }

plaiting [GEOL] A texture in some schists that results from the intersection of relict bedding planes with well-developed cleavage planes. Also known as gaufrage. { 'plād·iŋ }

planar cross-bedding [GEOL] Cross-bedding characterized by planar surfaces of erosion in the lower bounding surface. { 'plā·nər 'krɔs ,bed·iŋ }

planar flow structure See platy flow structure. { 'plā·nər 'flō ,strək·chər }

planate [GEOL] Referring to a surface that has been flattened or leveled by planation. { 'plā,nāt }

planation [GEOL] Erosion resulting in flat surfaces, caused by meandering streams, waves, ocean currents, wind, or glaciers. { plā'nā·shən }

plane bed [GEOL] A sedimentary bed without elevations or depressions larger than the maximum size of the bed material. { 'plān ,bed }

plane parallel texture [PETR] The parallel texture of a rock in which the constituents are parallel to a plane, but not to a line as in linear parallel texture. { 'plān |pɑ·ə,ləl 'teks·chər }

planetary geology [GEOL] A science that applies geologic principles and techniques to the study of planets and their natural satellites. Also known as planetary geoscience. { 'plan·ə,ter·ē jē'āl·ə·jē }

planetary geoscience See planetary geology. { 'plan·ə,ter·ē |jē·ō'st·əns }

planetary vorticity effect [GEOPHYS] The effect of the variation of the earth's vorticity with latitude in altering the relative vorticity of a flow with a meridional component; a fluid with a free surface in a rotating cylinder exhibits a corresponding effect, owing to the shrinking or stretching of radially displaced columns. { 'plan·ə,ter·ē vɔr'tis·əd·ē i,fekt }

planoclastic rock [PETR] An even-grained or uniformly sized clastic rock. { |'plan·ə|kla·stik 'ræk }

planoc conformity [GEOL] The relation between conformable strata that are approximately uniform in thickness and sensibly parallel throughout. { 'plā·nō·kən'fɔr·mād·ē }

Planosol [GEOL] An intrazonal, hydromorphic soil having a clay pan or hardpan covered with a leached surface layer; developed in a humid to subhumid climate. { 'plan·ə,sól }

plasma [GEOL] The part of a soil material that can be, or has been, moved, reorganized, or concentrated by soil-forming processes. [MINERAL] A faintly translucent or semi-translucent and bright green, leek green, or nearly emerald green variety of chalcidony, sometimes having white or yellowish spots. { 'plaz·mə }

plasma mantle [GEOPHYS] A thick layer of plasma just inside the magnetopause characterized by a tailward bulk flow with a speed of 60 to 120 miles (100 to 200 kilometers) per second and by a gradual decrease of density, temperature, and speed as the depth inside the magnetosphere increases. { 'plaz·mə 'mant·əl }

plasmopause [GEOPHYS] The sharp outer boundary of the plasmasphere, at which the plasma density decreases by a factor of 100 or more. { 'plaz·mə,pöz }

plasma sheet [GEOPHYS] A region of relatively hot plasma outside the plasmasphere,

which reaches, during quiet times, from an altitude of about 30,000 miles (50,000 kilometers) to at least past the moon's orbit in a long tail extending away from the sun; composed of particles with typical thermal energies of 2 to 4 kiloelectronvolts. { 'plaz·mə ,shēt }

plaster conglomerate [GEOL] A conglomerate composed entirely of boulders derived from a partially exhumed monadnock forming a wedgelike mass of its flank. { 'plas·tər kən'gläm·ə·rət }

plastic equilibrium [GEOL] State of stress within a soil mass or a portion thereof that has been deformed to such an extent that its ultimate shearing resistance is mobilized. { 'plas·tik ,ē·kwə'lib·rē·əm }

plasticity index [GEOL] The percent difference between moisture content of soil at the liquid and plastic limits. { plas'tis·əd·ē ,in,deks }

plasticlast [GEOL] An intraclast consisting of calcareous mud that has been torn up while still soft. { 'plas·tə,klast }

plastic limit [GEOL] The water content of a sediment, such as a soil, at the point of transition between the plastic and semisolid states. { 'plas·tik 'lim·ət }

plastic zone [GEOL] A region located adjacent to the rupture zone of an explosion crater and at an increased distance from the shot site, differing from the rupture zone by having less fracturing and only small permanent deformations. { 'plas·tik ,zōn }

plate [GEOL] **1.** A smooth, thin, flat fragment of rock, such as a flagstone. **2.** A large rigid, but mobile, block involved in plate tectonics; thickness ranges from 30 to 150 miles (50 to 250 kilometers) and includes both crust and a portion of the upper mantle. { plāt }

plateau [GEOL] A broad, comparatively flat and poorly defined elevation of the sea floor, commonly over 60 meters (200 feet) in elevation. { pla'tō }

plateau basalt [GEOL] One or a succession of high-temperature basaltic lava flows from fissure eruptions which accumulate to form a plateau. Also known as flood basalt. { pla'tō bə'sölt }

plateau gravel [GEOL] A sheet, spread, or patch of surficial gravel, often compacted, occupying a flat area on a hilltop, plateau, or other high region at a height above that normally occupied by a stream terrace gravel. { pla'tō 'grav·əl }

plateau mountain [GEOL] A pseudomountain produced by the dissection of a plateau. { pla'tō 'maunt·ən }

plateau plain [GEOL] An extensive plain surmounted by a sublevel summit area and bordered by escarpments. { pla'tō ,plān }

plate tectonics [GEOL] Global tectonics based on a model of the earth characterized by a small number (10–25) of semirigid plates which float on some viscous underlayer in the mantle; each plate moves more or less independently and grinds against the others, concentrating most deformation, volcanism, and seismic activity along the periphery. Also known as raft tectonics. { 'plāt tek'tän·iks }

platform [GEOL] **1.** Any level or almost level surface; a small plateau. **2.** A continental area covered by relatively flat or gently tilted, mainly sedimentary strata which overlay a basement of rocks consolidated during earlier deformations; platforms and shields together constitute cratons. { 'plat,fōrm }

platform beach [GEOL] A looped bar or ridge of sand and gravel formed on a wave-cut platform. { 'plat,fōrm ,bēch }

platform facies *See* shelf facies. { 'plat,fōrm ,fā·shēz }

platform reef [GEOL] An organic reef, generally small but more extensive than a patch reef, with a flat upper surface. { 'plat,fōrm ,rēf }

platiniridium [MINERAL] A silver-white cubic mineral composed of platinum, iridium, and related metals, occurring in grains. { 'plat·ən·ə'rid·ē·əm }

platinite *See* platynite. { 'plat·ən,īt }

platte [GEOL] A resistant knob of rock in a glacial valley or rising in the midst of an existing glacier, often causing a glacier to split near its snout. { 'plad·ə }

plattnerite [MINERAL] PbO₂ An iron-black mineral consisting of lead dioxide, occurring in masses with submetallic luster. { 'plat·nə,rīt }

platy

- platy** [GEOL] **1.** Referring to a sedimentary particle whose length is more than three times its thickness. **2.** Referring to a sandstone or limestone that splits into laminae having thicknesses in the range of 2 to 10 millimeters. { 'plad·ē }
- Platybelondoninae** [PALEON] A subfamily of extinct elephantoid mammals in the family Gomphotheriidae consisting of species with digging specializations of the lower tusks. { ,plad·ē, bel·ən'dän·ə, nē }
- Platyceratacea** [PALEON] A specialized superfamily of extinct gastropod mollusks which adapted to a coprophagous life on crinoid calices. { ,plad·ē, ser·ə'tās·ē·ə }
- platy flow structure** [PETR] Structure of an igneous rock characterized by tabular sheets which suggest stratification, and formation by contraction during cooling. Also known as linear flow structure; planar flow structure. { 'plad·ē 'flō ,strək·chər }
- platynite** [MINERAL] $PbBi_2(Se,S)_3$ An iron-black mineral composed of selenide and sulfide of lead and bismuth; occurs in thin metallic plates resembling graphite. Also spelled platinite. { 'plad·ə, nīt }
- Platysomidae** [PALEON] A family of extinct palaeonisciform fishes in the suborder Platysomoidei; typically, the body is laterally compressed and rhombic-shaped, with long dorsal and anal fins. { ,plad·ē'sām·ə, dē }
- Platysomoidei** [PALEON] A suborder of extinct deep-bodied marine and fresh-water fishes in the order Palaeonisciformes. { ,plad·ē·sə'mōid·ē, ī }
- playa** [GEOL] **1.** A low, essentially flat part of a basin or other undrained area in an arid region. **2.** A small, generally sandy land area at the mouth of a stream or along the shore of a bay. **3.** A flat, alluvial coastland, as distinguished from a beach. { 'plī·ə }
- Playfair's law** [GEOL] The law that each stream cuts its own valley, the valley being proportional in size to its stream, and the stream junctions in the valley are accordant in level. { 'plā, ferz ,lō }
- Pleistocene** [GEOL] The older of the two epochs of the Quaternary Period, spanning about 1.8 million to 10,000 years ago. It represents the interval of geological time (and rocks accumulated during that time) extending from the end of the Pliocene Epoch (and the end of Tertiary Period) to the start of the Holocene Epoch. It is commonly characterized as an epoch when the earth entered its most recent phase of widespread glaciation. Also known as Ice Age; Oiluvium. { 'plī·stə, sēn }
- pleonaste** See ceylonite. { 'plē·ə, nast }
- Plesiocidaroida** [PALEON] An extinct order of echinoderms assigned to the Euechinoidea. { ,plē·sē·ō, sik·ə'rōid·ē, ī }
- Plesiosauria** [PALEON] A group of extinct reptiles in the order Sauropterygia constituting a highly specialized offshoot of the nothosaurs. { ,plē·sē·ə'sór·ē·ə }
- Pleuracanthodii** [PALEON] An order of Paleozoic sharklike fishes distinguished by two-pronged teeth, a long spine projecting from the posterior braincase, and direct backward extension of the tail. { plū, rak·ən'thō·dē, ī }
- Pleuromeiaceae** [PALEOBOT] A family of plants in the order Pleuromiales, but often included in the Isoetales due to a phylogenetic link. { ,plūr·ō·mē'ās·ē, ē }
- Pleuromeiales** [PALEOBOT] An order of Early Triassic lycopods consisting of the genus *Pleuromeia*; the upright branched stem had grasslike leaves and a single terminal strobilus. { ,plūr·ō·mē'ā·lēz }
- Pleurotomariaceae** [PALEON] An extinct superfamily of gastropod mollusks in the order Aspidobranchia. { ,plūr·əd·ə, mar·ē'ās·ē·ə }
- plexus** [GEOL] An area on a subglacial deposit that encloses a giant's kettle. { 'plek·səs }
- plication** [GEOL] Intense, small-scale folding. { plī'kā·shən }
- Pliensbachian** [GEOL] A European stage of geologic time: Lower Jurassic (above Sinemurian, below Toarcian). { plēnz'bāk·ē·ən }
- Plinian eruption** See Vulcanian eruption. { 'plin·ē·ən i'rəp·shən }
- plinth** [GEOL] The lower and outer part of a seif dune, beyond the slip-face boundaries, that has never been subjected to sand avalanches. { 'plinth }
- plinthite** [GEOL] In a soil, a material consisting of a mixture of clay and quartz with

plutonian

- other diluents, that is rich in sesquioxides, poor in humus, and highly weathered. { 'plɪn,θɪt }
- Pliocene** [GEOL] The youngest of the five geological epochs of the Tertiary Period. The Pliocene represents the interval of geological time (and rocks deposited during that time) extending from the end of the Miocene Epoch to the beginning of the Pleistocene Epoch of the Quaternary Period. Modern time scales assign the duration of 5.0 million to 1.8 million years ago to the Pliocene. { 'plɪ-ə,sɛn }
- Pliohyracinae** [PALEON] An extinct subfamily of ungulate mammals in the family Pro-caviidae. { ,plɪ-ð-hɪ'ras-ə,nē }
- pliothermic** [GEOL] Pertaining to a period in geologic history characterized by more than average climatic warmth. { 'plɪ-ð;thə-r'mɪk }
- plow sole** [GEOL] A pressure pan representing a layer of soil compacted by repeated plowing to the same depth. { 'pləʊ ,sɔl }
- plucking** [GEOL] A process of glacial erosion which involves the penetration of ice or rock wedges into subglacial niches, crevices, and joints in the bedrock; as the glacier moves, it plucks off pieces of jointed rock and incorporates them. Also known as glacial plucking; quarrying. { 'plʌk-ɪŋ }
- plug** [GEOL] **1.** A vertical pipelike magmatic body representing the conduit to a former volcanic vent. **2.** A crater filling of lava, the surrounding material of which has been removed by erosion. **3.** A mass of clay, sand, or other sediment filling the part of a stream channel abandoned by the formation of a cutoff. { pləɡ }
- plug dome** [GEOL] A volcanic dome characterized by an upheaved, consolidated conduit filling. { 'pləɡ ,dɒm }
- plug reef** [GEOL] A small, triangular reef that grows with its apex pointing seaward through openings between linear shelf-edge reefs. { 'pləɡ ,rɛf }
- plum** [GEOL] A clast embedded in a matrix of a different kind, especially a pebble in a conglomerate. { pləm }
- plumbago** See graphite. { ,pləm'bā-gō }
- plumb line** [GEOPHYS] A continuous curve to which the direction of gravity is everywhere tangential. { 'pləm ,lɪn }
- plumboferrite** [MINERAL] $PbFe_4O_7$ A dark hexagonal mineral composed of lead iron oxide. { 'pləm-bō'fe,rɪt }
- plumbogummite** [MINERAL] **1.** $PbAl_3(PO_4)_2(OH)_5 \cdot H_2O$ A mineral composed of hydrous basic lead aluminum phosphate. **2.** A group of isostructural minerals, that includes gorceixite, goyazite, crandallite, deltaite, florencite, and dussertite, as well as plumbogummite. { 'pləm-bō'gə,mɪt }
- plumbojarosite** [MINERAL] $PbFe_6(SO_4)_4(OH)_{12}$ A mineral composed of basic lead iron sulfate; it is isostructural with jarosite. { 'pləm-bō-jə'rɔ,sɪt }
- plume structure** [GEOL] On the surface of a master joint, a ridgelike tracing in a plumelike pattern, usually oriented parallel to the upper and lower surfaces of the constituent rock unit. Also known as plumose structure. { 'plüm ,strək-chər }
- plumose structure** See plume structure. { 'plü,mɔs ,strək-chər }
- plunge** [GEOL] The inclination of a geologic structure, especially a fold axis, measured by its departure from the horizontal. Also known as pitch; rake. { plənj }
- plunge basin** [GEOL] A deep, large hollow or cavity scoured in the bed of a stream at the foot of a waterfall or cataract by the force and eddying effect of the falling water. { 'plənj ,bās-ən }
- plunging cliff** [GEOL] A sea cliff bordering directly on deep water, having a base that lies well below water level. { 'plənj-ɪŋ 'klɪf }
- plunging fold** [GEOL] A fold having a relatively steep plunge. Also known as pitching fold. { 'plənj-ɪŋ 'fɔld }
- plush copper ore** See chalcotrichite. { 'pləʃ 'kæp-ər 'ɔr }
- plutology** [GEOL] The study of the interior of the earth. { plü'täl-ə-jē }
- pluton** [GEOL] **1.** An igneous intrusion. **2.** A body of rock formed by metasomatic replacement. { 'plü,tän }
- plutonian** See plutonic. { plü'tō-nē-ən }

plutonic

- plutonic** [GEOL] Pertaining to rocks formed at a great depth. Also known as abyssal; deep-seated; plutonian. { plü'tän·ik }
- plutonic breccia** [GEOL] Breccia consisting of older annular rock fragments enclosed in younger plutonic rock. { plü'tän·ik 'brech·ə }
- plutonic metamorphism** [GEOL] Deep-seated regional metamorphism at high temperatures and pressures, often accompanied by strong deformation. { plü'tän·ik ,med·ə'mör,fiz·əm }
- plutonic rock** [GEOL] A rock formed at considerable depth by crystallization of magma or by chemical alteration. { plü'tän·ik 'räk }
- plutonism** [GEOL] **1.** Pertaining to the processes associated with pluton formation. **2.** The theory that the earth formed by solidification of a molten mass. { 'plüt·ən ,iz·əm }
- pluvial** [GEOL] Of a geologic process or feature, effected by rain action. { 'plü·vê·əl }
- pluvial lake** [GEOL] A lake formed during a period of exceptionally heavy rainfall; specifically, a Pleistocene lake formed during a period of glacial advance and now either extinct or only a remnant. { 'plü·vê·əl 'lāk }
- pluviofluvial** [GEOL] Pertaining to the combined action of rainwater and streams. { 'plü·vê·ō'flü·vê·əl }
- pneumatogenic** [GEOL] Referring to a rock or mineral deposit formed by a gaseous agent. { 'nü·mäd·ō'jen·ik }
- pneumatolysis** [GEOL] Rock alteration or mineral crystallization effected by gaseous emanations from solidifying magma. { ,nü·mätäl·ə'səs }
- pneumatolytic** [GEOL] Formed by gaseous agents. { 'nü·mäd·ō'lid·ik }
- pneumatolytic metamorphism** [PETR] Contact metamorphism by the chemical action of magmatic gases. { 'nü·mäd·ō'lid·ik 'med·ə'mör,fiz·əm }
- pneumatolytic stage** [GEOL] The stage in the cooling of a magma in which the solid and gaseous phases are in equilibrium. { 'nü·mäd·ō'lid·ik 'stāj }
- pneumotectic** [GEOL] Referring to processes and products of magmatic consolidation affected to some degree by the gaseous constituents of the magma. { 'nü·mō'tek·tik }
- pocket** [GEOL] **1.** A cavity that contains a deposit such as a gas or an ore. **2.** An enclosed or sheltered place along a coast, such as a reentrant between rocky, cliffed headlands or a bight on a lee shore. { 'päk·ət }
- pocket beach** [GEOL] A small, narrow beach formed in a pocket, commonly crescentic in plan, with the concave edge toward the sea, and displaying well-sorted sands. { 'päk·ət ,bēch }
- pocket valley** [GEOL] A valley whose head is enclosed by steep walls at the base of which underground water emerges as a spring. { 'päk·ət ,val·ē }
- pod** [GEOL] An orebody of elongate, lenticular shape. Also known as podiform orebody. { päd }
- podiform orebody** See pod. { 'päd·ə,fórm 'ór,bäd·ē }
- Podzol** [GEOL] A soil group characterized by mats of organic matter in the surface layer and thin horizons of organic minerals overlying gray, leached horizons and dark-brown illuvial horizons; found in coal forests to temperate coniferous or mixed forests. { 'päd,zól }
- podzolic soil** See red-yellow podzolic soil. { päd'zäl·ik 'sóil }
- podzolization** [GEOL] The process by which a soil becomes more acid because of the depletion of bases, and develops surface layers that have been leached of clay. { ,päd·zə·lə'zā·shən }
- poikilitic** [PETR] Of the texture of an igneous rock, having small crystals of one mineral randomly scattered without common orientation in larger crystals of another mineral. { ,pói·kə'lid·ik }
- poikiloblast** [GEOL] A large crystal (xenoblast) formed by recrystallization during metamorphism and containing numerous inclusions of small idioblasts. { 'pói'kil·ə,blast }
- poikiloblastic** [PETR] Of a metamorphic texture, simulating the poikilitic texture of

polygenic

- igneous rocks in having small idioloblasts of one constituent lying within larger xenoblasts. Also known as sieve texture. { pói'kil·ə'blas·tik }
- poikilocrystalline** See poikilotopic. { pói'kil·ə'kri'stal·ik }
- poikilophitic** [GEOL] Referring to ophitic texture characterized by lath-shaped feldspar crystals completely included in large, anhedral pyroxene crystals. { pói'kil·ə'fid·ik }
- poikilotope** [GEOL] A large crystal enclosing smaller crystals of another mineral in a sedimentary rock showing poikilotopic fabric. { pói'kil·ə'töp }
- poikilotopic** [GEOL] Referring to the fabric of a crystalline sedimentary rock in which the constituent crystals are multisized and larger crystals enclose smaller crystals of another mineral. Also known as poikilocrystalline. { pói'kil·ə'täp·ik }
- point bar** [GEOL] One of a series of low, arcuate sand and gravel ridges formed on the inside of a growing meander by the gradual addition of accretions. Also known as meander bar. { 'póint ,bär }
- point diagram** [PETR] A fabric diagram in which a point represents the preferred orientation of each individual fabric element. Also known as scatter diagram. { 'póint ,di·ə,gram }
- Poisson relation** [GEOPHYS] A model of elastic behavior used in experimental structural geology that takes the Poisson ratio as equal to 0.25. { pwá'sōn ri,lā·shən }
- polarity epoch** [GEOPHYS] A period of time during which the earth's magnetic field was predominantly of a single polarity. { pə'lar·əd·ē ,ep·ək }
- polarity event** [GEOPHYS] A period of no more than about 100,000 years when the earth's magnetic polarity was opposite to the predominant polarity of that polarity epoch. { pə'lar·əd·ē i,vent }
- polarity zone** [GEOL] In stratigraphy, a material unit that is defined in terms of magnetic polarity, that is, reversals of the earth's magnetic field. { pə'lar·əd·ē ,zōn }
- polar migration** See polar wandering. { 'pō·lär mī'grā·shən }
- polar variation** [GEOPHYS] A small movement of the earth's axis of rotation relative to the geoid, the resultant of the Chandler wobble and other smaller movements. { 'pō·lär ,ver·ē'ā·shən }
- polar wandering** [GEOL] Migration during geologic time of the earth's poles of rotation and magnetic poles. Also known as Chandler motion; polar migration. { 'pō·lär 'wan·də·riŋ }
- pollucite** [MINERAL] $(\text{Cs},\text{Na})_2\text{Al}_2\text{Si}_4\text{O}_{12}\cdot\text{H}_2\text{O}$ A colorless, transparent zoolite mineral composed of hydrous silicate of cesium, sodium, and aluminum, occurring massive or in cubes; used as a gemstone. Also known as pollux. { pə'lü,sīt }
- pollux** See pollucite. { 'päl·əks }
- polyargyrite** [MINERAL] $\text{Ag}_{24}\text{Sb}_2\text{S}_{15}$ A gray to black mineral composed of antimony silver sulfide. { ,päl·ē'är·jə,rīt }
- polybasite** [MINERAL] $(\text{Ag},\text{Cu})_{16}\text{Sb}_2\text{S}_{11}$ An iron-black to steel-gray metallic-looking mineral; an ore of silver. { ,päl·i'bā,sīt }
- polyclinal fold** [GEOL] One of a group of adjacent folds, the axial surfaces of which are oriented randomly, but which have similar surface axes. { ,päl·i'klīn·əl 'föld }
- polycrase** [MINERAL] $(\text{Y},\text{Ca},\text{Ce},\text{U},\text{Th})(\text{Ti},\text{Cb},\text{Ta})_2\text{O}_6$ Black mineral composed of titanate, columbate, and tantalate of yttrium-group metals; it is isomorphous with euxenite and occurs in granite pegmatites. { 'päl·i,krās }
- Polydolopidae** [PALEON] A Cenozoic family of rodentlike marsupial mammals. { ,päl·i·də'löp·ə,dē }
- polydymite** [MINERAL] Ni_3S_4 A mineral of the linnaeite group consisting of nickel sulfide. { pə'lid·ə,mīt }
- polygene** [GEOL] An igneous rock composed of two or more minerals. Also known as polymere. { 'päl·i,jēn }
- polygenetic** [GEOL] **1.** Resulting from more than one process of formation or derived from more than one source, or originating or developing at various places and times. **2.** Consisting of more than one type of material, or having a heterogeneous composition. Also known as polygenic. { ,päl·i·jə'ned·ik }
- polygenic** See polygenetic. { ,päl·i'jen·ik }

polygeosyncline

- polygeosyncline** [GEOL] A geosynclinal-geoanticlinal belt that lies along the continental margin and receives sediments from a borderland on its oceanic side. { ,päl-i,jē-ō'sin,klīn }
- Polygnathidae** [PALEON] A family of Middle Silurian to Cretaceous conodonts in the suborder Conodontiformes, having platforms with small pitlike attachment scars. { ,päl-ig'nath-ə,dē }
- polygonal ground** [GEOL] A ground surface consisting of polygonal arrangements of rock, soil, and vegetation formed on a level or gently sloping surface by frost action. Also known as cellular soil. { pə'lig-ən-əl 'graund }
- polygonal karst** [GEOL] A karst pattern that is characteristic of tropical types such as cone karsts, with the surface completely divided into a polygonal network. { pə'lig-ən-əl 'kärst }
- polyhalite** [MINERAL] $K_2MgCa_2(SO_4)_4 \cdot 2H_2O$ A sulfate mineral usually found in fibrous brick-red masses due to iron. { ,päl-i'ha,līt }
- polymere** See polygene. { 'päl-ə,mir }
- polymetamorphic diaphthoresis** [GEOL] Retrograde changes during a second phase of metamorphism that is clearly separated from a previous, higher-grade metamorphic period. { ,päl-i,med-ə'mör-fik dī,af-thə'rē-səs }
- polymetamorphism** [GEOL] Polyphase or multiple metamorphism whereby two or more successive metamorphic events have left their imprint upon the same rocks. { ,päl-i,med-ə'mör,fiz-əm }
- polymictic** [PETR] Of a clastic sedimentary rock, being made up of many rock types or of more than one mineral species. { ,päl-i'mik-tik }
- polymignite** See polymignyte. { ,päl-i'mig,nīt }
- polymignyte** [MINERAL] $(Ca,Fe,Y,Zr,Th)(Nb,Ti,Ta)O_4$ A black mineral composed of niobate, titanate, and tantalate of cerium-group metals, with calcium and iron. Also spelled polymignite. { ,päl-i'mig,nīt }
- polzenite** [PETR] **1.** A group of lamprophyres characterized by the presence of olivine and melilite. **2.** Any rock in this group. { 'päl-zə,nīt }
- pondage land** [GEOL] Land on which water is stored as dead water during flooding, and which does not contribute to the downstream passage of flow. Also known as flood fringe. { 'pän-dij ,land }
- Pontian** [GEOL] A European stage of geologic time in the uppermost Miocene, above the Sarmatian and below the Plaisancian of the Pliocene; it has also been regarded as the lowermost Pliocene. { 'pän-chən }
- pontic** [GEOL] Pertaining to sediments or facies deposited in comparatively deep and motionless water, such as an association of black shales and dark limestones deposited in a stagnant basin. { 'pän-tik }
- pool** [GEOL] Underground accumulation of petroleum. { pül }
- popple rock** See pebble bed. { 'pöp-əl ,rāk }
- porcelainite** See mullite. { 'pör-slə,nīt }
- porcelain jasper** [GEOL] A hard, naturally baked, impure clay (or porcellanite) which because of its red color had long been considered a variety of jasper. { 'pör-slən 'jas-pər }
- porcelaneous** [GEOL] Resembling unglazed porcelain. { 'pör-sə,lä-nē-əs }
- porcelaneous chert** [PETR] A hard, opaque to subtranslucent smooth chert, having a smooth fracture surface and a typically china-white appearance resembling chinaware or glazed porcelain. { 'pör-sə,lä-nē-əs 'chərt }
- porcellanite** [PETR] A hard, dense siliceous rock, such as impure chert or indurated clay or shale. { 'pör'sel-ə,nīt }
- pore** [GEOL] An opening or channelway in rock or soil. { pör }
- pore compressibility** [GEOL] The fractional change in reservoir-rock pore volume with a unit change in pressure upon that rock. { 'pör kəm,pres-ə'bil-əd-ē }
- pore-size distribution** [GEOL] Variations in pore sizes in reservoir formations; each type of rock has its own typical pore size and related permeability. { 'pör'siz ,dis-trə'byü-shən }

postorogenic

- pore space** [GEOL] The pores in a rock or soil considered collectively. Also known as pore volume. { 'pɔr ,spās }
- pore volume** See pore space. { 'pɔr ,vəl-yəm }
- porosity trap** See stratigraphic trap. { pə'rās-əd-ē ,trap }
- Poroxylaceae** [PALEOBOT] A monogeneric family of extinct plants included in the Cordaitales. { pɔ,räk-sə'lās-ē,ē }
- porpezite** [MINERAL] A mineral consisting of a native alloy of palladium (5–10%) and gold. Also known as palladium gold. { 'pɔr-pə,zīt }
- porphrite** See porphyry. { 'pɔr,frīt }
- porphyritic** [PETR] Pertaining to or resembling porphyry. { 'pɔr-fə'rid-ik }
- porphyroblast** [PETR] A relatively large crystal formed in a metamorphic rock. { pɔr'fir-ə,blast }
- porphyroblastic** [PETR] Pertaining to the texture of recrystallized metamorphic rock having large idioblasts of minerals possessing high form energy in a finer-grained crystalloblastic matrix. { pɔr'fir-ə'blas-tik }
- porphyrocrystalline** See porphyrotopic. { pɔr'fir-ō-kri'stal-ik }
- porphyroclastic structure** See mortar structure. { pɔr'fir-ō'klas-tik 'strək-chər }
- porphyrogranulite** [PETR] Referring to ophitic texture characterized by large phenocrysts of feldspar and augite or olivine in a groundmass of smaller lath-shaped feldspar crystals and irregular augite grains; a combination of porphyritic and intergranular textures. { pɔr'fir-ō,gran-yə'lid-ik }
- porphyroid** [PETR] **1.** A blastoporphyrityc, or sometimes porphyroblastic, metamorphic rock of igneous origin. **2.** A feldspathic metasedimentary rock having the appearance of a porphyry. { 'pɔr-fə,rɔid }
- porphyroskelic** [GEOL] Pertaining to an arrangement in a soil fabric whereby the plasma occurs as a dense matrix in which skeleton grains are set like phenocrysts in a porphyritic rock. { pɔr'fir-ə'skel-ik }
- porphyrotopy** [GEOL] A large crystal enclosed in a finer-grained matrix in a sedimentary rock showing porphyrotopic fabric. { pɔr'fir-ə,tɔp }
- porphyrotopic** [GEOL] Referring to the fabric of a crystalline sedimentary rock in which the constituent crystals are of more than one size and in which larger crystals are enclosed in a finer-grained matrix. Also known as porphyrocrystalline. { pɔr'fir-ə'tɔp-ik }
- porphyry** [PETR] An igneous rock in which large phenocrysts are enclosed in a very-fine-grained to aphanitic matrix. Formerly known as porphrite. { 'pɔr-fə-rē }
- Porterfield** [GEOL] A North American geologic stage of the Middle Ordovician, forming the lower division of the Mohawkian, and lying above Ashby and below Wilderness. { 'pɔrd-ər,fēld }
- Portlandian** [GEOL] A European geologic stage of the Upper Jurassic, above Kimmeridgian, below Berriasian of Cretaceous. { pɔrt'land-ē-ən }
- portlandite** [MINERAL] Ca(OH)₂ A colorless, hexagonal mineral consisting of calcium hydroxide; occurs as minute plates. { 'pɔrt-lən,dīt }
- positive landform** [GEOL] An upstanding topographic form, such as a mountain, hill, plateau, or cinder cone. { 'pəz-əd-iv 'land,fɔrm }
- positive movement** [GEOL] **1.** Uplift or emergence of the earth's crust relative to an adjacent area of the crust. **2.** A relative rise in sea level with respect to land level. { 'pəz-əd-iv 'müv-mənt }
- positive shoreline** See shoreline of submergence. { 'pəz-əd-iv 'shɔr,līn }
- Postglacial** See Holocene. { pɔst'glā-shəl }
- posthumous structure** [GEOL] Folds, faults, and other structural features in covering strata which revive or mimic the structure of older underlying rocks that are generally more deformed. { 'päs-chə-məs 'strək-chər }
- postmagmatic** [GEOL] Pertaining to geologic reactions or events occurring after the bulk of the magma has crystallized. { ,pɔst-mag'mad-ik }
- postorogenic** [GEOL] Of a geologic process or event, occurring after a period of orogeny. { ,pɔst,ɔr-ə'jen-ik }

potamogenic rock

- potamogenic rock** [PETR] A sedimentary rock formed by precipitation from river water. { ˈpɑd·ə·mɔːjən·ɪk ræk }
- potarite** [MINERAL] PdHg A silver-white isometric mineral composed of palladium and mercury alloy. Also known as palladium amalgam. { pə'tɑ,ɹɪt }
- potash alum** See kalinite. { 'pɑd,ʌʃ 'al·əʊm }
- potash bentonite** See potassium bentonite. { 'pɑd,ʌʃ 'bent·ən,ɪt }
- potash feldspar** See potassium feldspar. { 'pɑd,ʌʃ 'fel,spɑr }
- potash kettle** See giant's kettle. { 'pɑd,ʌʃ 'ked·əl }
- potash mica** See muscovite. { 'pɑd,ʌʃ 'mɪ·kə }
- potassic** [PETR] Referring to a rock which contains a significant amount of potassium. { pə'tas·ɪk }
- potassium-argon dating** [GEOL] Dating of archeological, geological, or organic specimens by measuring the amount of argon accumulated in the matrix rock through decay of radioactive potassium. { pə'tas·ē·əʊm 'ɑr,gən 'dɑd·ɪŋ }
- potassium bentonite** [GEOL] A clay of the illite group that contains potassium and is formed by alteration of volcanic ash. Also known as K bentonite; potash bentonite. { pə'tas·ē·əʊm 'bent·ən,ɪt }
- potassium feldspar** [MINERAL] Any alkali feldspar (orthoclase, microcline, sanidine, adularia) containing the molecule $KAlSi_3O_8$. Incorrectly known as K feldspar; potash feldspar. { pə'tas·ē·əʊm 'fel,spɑr }
- potato stone** [GEOL] A potato-shaped geode, especially one consisting of hard, silicified limestone with an internal lining of quartz crystals. { pə'tɑ·dɔ, 'stɔn }
- pothole** [GEOL] **1.** A shaftlike cave opening upward to the surface. **2.** Any bowl-shaped, cylindrical, or circular hole formed by the grinding action of a stone in the rocky bed of a river or stream. Also known as churn hole; colk; eddy mill; eversion hollow; kettle; pot. **3.** A vertical, or nearly vertical shaft in limestone. Also known as aven; cenote. **4.** A small depression with steep sides in a coastal marsh; contains water at or below low-tide level. Also known as rotten spot. { 'pɔt,hɔl }
- potrero** [GEOL] An elongate, islandlike beach ridge, surrounded by mud flats and separated from the coast by a lagoon and barrier island, made up of a series of accretionary dune ridges. { pə'trɛr·o }
- Poulter seismic method** [GEOPHYS] A type of air shooting in which the explosive is set on poles above the ground. { 'pɔl·tər 'sɪz·mɪk ,meth·əd }
- powder avalanche** [GEOL] Loose powder snow rapidly descending a mountainside. { 'paʊd·ər 'ʌv·ə,lʌnʃ }
- powellite** [MINERAL] $Ca(WMo)O_4$ A commercially important tungsten mineral, crystallizing in the tetragonal system; isomorphous with scheelite ($CaWO_4$). { ,paʊ·ə,lɪt }
- pozzolan** [GEOL] A finely ground burnt clay or shale resembling volcanic dust, found near Pozzuoli, Italy; used in cement because it hardens underwater. { 'pɔt·sɔ·lən }
- prairie soil** [GEOL] A group of zonal soils having a surface horizon that is dark or grayish brown, which grades through brown soil into lighter-colored parent material; it is 2–5 feet (0.6–1.5 meters) thick and develops under tall grass in a temperate and humid climate. { 'prɛr·ē ,sɔɪl }
- prase** [MINERAL] **1.** A translucent and dull leek green or light-grayish yellow-green variety of chalcedony. **2.** Crystalline quartz containing a multitude of green hairlike crystals of actinolite. Also known as mother-of-emerald. { prɑz }
- prase opal** See prasopal. { 'prɑz 'ɒ·pəl }
- prasinite** [PETR] A greenschist in which the proportions of the hornblende-chlorite-epidote assemblage are more or less equal. { 'prɑz·ən,ɪt }
- prasopal** [MINERAL] A green variety of common opal containing chromium. Also spelled prase opal. { 'prɑz,ɒ·pəl }
- prealpine facies** [GEOL] A geosynclinal facies characteristic of neritic areas, displaying thick limestone deposits and coarse terrigenous material and resembling epicontinental platform sediments. { prē'al,pɪn 'fɑ·ʃɛz }
- Precambrian** [GEOL] All geologic time prior to the beginning of the Paleozoic era (before 600,000,000 years ago); equivalent to about 90% of all geologic time. { prē 'kɑm·brē·ən }

pressure solution

- precious stone** [MINERAL] **1.** Any genuine gemstone. **2.** A gemstone of high commercial value because of its beauty, rarity, durability, and hardness; examples are diamond, ruby, sapphire, and emerald. { 'presh·əs 'stɒn }
- precipice** [GEOL] A very steeply inclined, vertical, or overhanging wall or surface of rock. { 'pres·ə·pəs }
- precipitation facies** [GEOL] Facies characteristics that provide evidence of depositional conditions; revealed mainly by sedimentary structures (such as cross-bedding and ripple marks) and by primary constituents (especially fossils). { prə,sɪp·ə'tā·shən ,fā·shēz }
- preconsolidation pressure** [GEOL] The greatest effective stress exerted on a soil; result of this pressure from overlying materials is compaction. Also known as prestress. { 'prē·kən,säl·ə'dā·shən ,presh·ər }
- predazzite** [PETR] A recrystallized limestone that resembles pencatite, but contains less brucite than calcite. { 'pred·ə,zɪt }
- predozzite** [PETR] Limestone rich in periclase and brucite. { 'pred·ə,zɪt }
- preferred orientation** [PETR] The nonrandom orientation of planar or linear fabric elements in structural petrology. { pri'fərd ,ɔr·ē·ən'tā·shən }
- preglacial** [GEOL] **1.** Pertaining to the geologic time immediately preceding the Pleistocene epoch. **2.** Of material, underlying glacial deposits. { prē'glā·shəl }
- prehnite** [MINERAL] $\text{Ca}_2\text{Al}_2\text{Si}_2\text{O}_{10}(\text{OH})_2$ A light-green to white mineral sorosilicate crystallizing in the orthorhombic system and generally found in reniform and stalactitic aggregates with crystalline surface; it has a vitreous luster, hardness is 6–6.5 on Mohs scale, and specific gravity is 2.8–2.9. { 'prē,nɪt }
- preliminary waves** [GEOPHYS] The body of waves of an earthquake, including both P waves and S waves. { pri'lim·ə,ner·ē ,wāvz }
- prorogenic** [GEOL] The initial phase of an orogenic cycle during which geosynclines form. { 'prē,ɔr·ə'jen·ik }
- pressolution** See pressure solution. { 'pres·ə,lü·shən }
- pressolved** [GEOL] Referring to a sedimentary bed or rock in which the grains have undergone pressure solution. { pri'zälvd }
- pressure breccia** See tectonic breccia. { 'presh·ər ,brech·ə }
- pressure fringe** See pressure shadow. { 'presh·ər ,frɪnj }
- pressure pan** [GEOL] An induced soil pan which has a higher bulk density and a lower total porosity than the soil directly above or below it and is produced as a result of pressure applied by normal tillage operations or by other artificial means. { 'presh·ər ,pan }
- pressure penitente** [GEOL] A nieve penitente composed of brilliantly white ice which is shaped into a slender ridge by lateral pressure of converging morainal streams and by melting of the adjacent debris-covered ice. { 'presh·ər ,pen·ə'ten·tā }
- pressure plateau** [GEOL] An uplifted area of a thick lava flow, measuring up to 10 or 13 feet (3 or 4 meters), the uplift of which is due to the intrusion of new lava from below that does not reach the surface. { 'presh·ər plā,tō }
- pressure release** [GEOPHYS] The outward-expanding force of pressure which is released within rock masses by unloading, as by erosion of superincumbent rocks or by removal of glacial ice. { 'presh·ər ri,lēs }
- pressure-release jointing** [GEOL] Exfoliation that occurs in once deeply buried rock that erosion has brought nearer the surface, thus releasing its confining pressure. { 'presh·ər ri'lēs ,jɔɪnt·ɪŋ }
- pressure ridge** [GEOL] **1.** A seismic feature resulting from transverse pressure and shortening of the land surface. **2.** An elongate upward movement of the congealing crust of a lava flow. **3.** A ridge of glacier ice. { 'presh·ər ,rɪj }
- pressure shadow** [PETR] In structural petrology, an area adjoining a porphyroblast, characterized by a growth fabric rather than a deformation fabric, as seen in a section perpendicular to the b axis of the fabric. Also known as pressure fringe; strain shadow. { 'presh·ər ,shad·ō }
- pressure solution** [PETR] In a sedimentary rock, solution occurring preferentially at the grain boundary surfaces. Also known as pressolution. { 'presh·ər sə,lü·shən }

prestress

- prestress** [GEOL] See preconsolidation pressure. { 'prē'stɛs }
- presuppression** [GEOPHYS] In seismic prospecting, the suppression of the early events on a seismic record for control of noise and reflections on that portion of the record. { 'prē-sə'prɛsh-ən }
- previtrain** [GEOL] The woody lenses in lignite that are equivalent to vitrain in coal of higher rank. { prē'vi,tɹān }
- Priabonian** [GEOL] A European stage of geologic time in the upper Eocene, believed to consist of Auversian and Bartonian. { ,prē-ə'bō-nē-ən }
- priceite** [MINERAL] $\text{Ca}_4\text{B}_{10}\text{O}_{19}\cdot 7\text{H}_2\text{O}$ A snow-white earthy mineral composed of hydrous calcium borate, occurring as a massive. Also known as pandermite. { 'prī,sīt }
- primary** [GEOL] **1.** A young shoreline whose features are produced chiefly by nonmarine agencies. **2.** Of a mineral deposit, unaffected by supergene enrichment. { 'prī ,mer-ē }
- primary arc** [GEOL] **1.** A curved segment of elongated mountain zones that are the areas of the earth's major and most recent tectonic activity. **2.** See internides. { 'prī,mer-ē 'ärk }
- primary basalt** [PETR] Theoretically, the original magma from which all other rock types are supposedly obtained by various processes. { 'prī,mer-ē bə'sɔlt }
- primary clay** See residual clay. { 'prī,mer-ē 'klā }
- primary crater** [GEOL] **1.** An impact crater produced directly by the high-velocity impact of a meteorite or other projectile. **2.** See true crater. { 'prī,mer-ē 'kräd-ər }
- primary dip** [GEOL] The slight dip assumed by a bedded deposit at its moment of deposition. Also known as depositional dip; initial dip; original dip. { 'prī,mer-ē 'dip }
- primary fabric** See apposition fabric. { 'prī,mer-ē 'fab-rik }
- primary flat joint** [GEOL] An approximately horizontal joint plane in igneous rocks. Also known as L joint. { 'prī,mer-ē 'flat ,jɔint }
- primary geosyncline** See orthogeosyncline. { 'prī,mer-ē |jē-ō'sin,klīn }
- primary gneiss** [PETR] A rock that exhibits planar or linear structures characteristic of metamorphic rocks but lacks observable granulation or recrystallization and is therefore considered to be of igneous origin. { 'prī,mer-ē 'nīs }
- primary gneissic banding** [PETR] A kind of banding developed in certain igneous (plutonic) rocks of heterogeneous composition, produced by the admixture of two magmas only partly miscible or by magma intimately admixed with country rock into which it has been injected along planes of bedding or foliation. { 'prī,mer-ē |nī,sik 'band-ɪŋ }
- primary interstice** See original interstice. { 'prī,mer-ē in'tər-stəs }
- primary magma** [GEOL] A magma that originates below the earth's crust. { 'prī,mer-ē 'mag-mə }
- primary mineral** [MINERAL] A mineral that is formed at the same time as the rock in which it is contained, and that retains its original form and composition. { 'prī,mer-ē 'min-rəl }
- primary orogeny** [GEOL] Orogeny that is characteristic of the internides and that involves deformation, regional metamorphism, and granitization. { 'prī,mer-ē ó'rāj-ə-nē }
- primary porosity** [GEOL] Natural porosity in petroleum reservoir sands or rocks. { 'prī,mer-ē pə'räs-əd-ē }
- primary rocks** [PETR] Rocks whose constituents are newly formed particles that have never been constituents of previously formed rocks and that are not the products of alteration or replacement, such as limestones formed by precipitation from solution. { 'prī,mer-ē 'rāks }
- primary sedimentary structure** [GEOL] A sedimentary structure produced during deposition, such as ripple marks and graded bedding. { 'prī,mer-ē ,sed-ə'men-trē ,strək-chər }
- primary stratification** [GEOL] Stratification which develops when sediments are first deposited. Also known as direct stratification. { 'prī,mer-ē ,strəd-ə'fāk-shən }
- primary stratigraphic trap** [GEOL] A stratigraphic trap formed by the deposition of

profile of equilibrium

- clastic materials (such as shoestring sands, lenses, sand patches, bars, or cocinas) or through chemical deposition (such as organic reefs or biostromes). { 'prī,mer-ē 'strad-ə'graf-ik 'trap }
- primary stress field** See ambient stress field. { 'prī,mer-ē 'stres ,fēld }
- primary structure** [GEOL] A structure, in an igneous rock, that formed at the same time as the rock, but before its final consolidation. { 'prī,mer-ē 'strək-chər }
- primary tectonite** [PETR] A tectonite with depositional fabric. { 'prī,mer-ē 'tek-tə,nīt }
- primary wave** [GEOPHYS] The first seismic wave that reaches a station from an earthquake. { 'prī,mer-ē 'wāv }
- Primitiopsacea** [PALEON] A small dimorphic superfamily of extinct ostracodes in the suborder Beyrichicopina; the velum of the male was narrow and uniform, but that of the female was greatly expanded posteriorly. { prī,mid-ē-əp'sā-shə }
- principle of uniformity** See uniformitarianism. { 'prin-sə-pəl əv ,yü-nə'fōr-məd-ē }
- Prioniodidae** [PALEON] A family of conodonts in the suborder Conodontiformes having denticulated bars with a large denticle at one end. { ,prī-ə,nī-əd-ə,dē }
- Prioniodinidae** [PALEON] A family of conodonts in the suborder Conodontiformes characterized by denticulated bars or blades with a large denticle in the middle third of the specimen. { ,prī-ə,nī-əd'din-ə,dē }
- priorite** [MINERAL] (Y,Ce,Th)(Ti,Nb)₂O₆ A mineral composed of titanoniobate of rare-earth metals; it is isomorphous with eschynite. Also known as blomstrandine. { 'prī-ə,rīt }
- prism** [GEOL] A long, narrow, wedge-shaped sedimentary body with a width-thickness ratio greater than 5 to 1 but less than 50 to 1. { 'priz-əm }
- prismatic jointing** See columnar jointing. { 'priz'mad-ik 'jōint-ŋ }
- prismatic structure** See columnar jointing. { 'priz'mad-ik 'strək-chər }
- prism crack** [GEOL] A mud crack that develops in regular or irregular polygonal patterns on the surface of drying mud puddles and that breaks the sediment into prisms standing normal to the bedding. { 'priz-əm ,krak }
- Proanura** [PALEON] Triassic forerunners of the Anura. { prō'an-yə-rə }
- proberlite** [MINERAL] NaCaB₃O₇·5H₂O A colorless mineral crystallizing in the monoclinic system, consisting of hydrous sodium calcium borate. { 'prəb-ər,tīt }
- Procellarian** [GEOL] Pertaining to lunar lithologic map units and topographic forms constituting, or closely associated with, the maria. { ,prō-sə'lar-ē-ən }
- Procolophonina** [PALEON] A subclass of extinct cotylosaurian reptiles. { ,prāk-ə-lə'fō-nē-ə }
- prod cast** [GEOL] The cast of a prod mark. Also known as impact cast. { 'prəd ,kast }
- prodelta** [GEOL] The part of a delta lying beyond the delta front, and sloping gently down to the basin floor of the delta; it is entirely below the water level. { 'prō,del-tə }
- prodelta clay** [GEOL] Fine sand, silt, and clay transported by the river and deposited on the floor of a sea or lake beyond the main body of a delta. { 'prō,del-tə ,klā }
- Prodinoceratinae** [PALEON] A subfamily of extinct herbivorous mammals in the family Untatheriidae; animals possessed a carnivorelike body of moderate size. { 'prəd-ən-ō-sə'rat-ən,ē }
- prod mark** [GEOL] A short tool mark oriented parallel to the current and gradually deepening downcurrent. Also known as impact mark. { 'prəd ,märk }
- Productinida** [PALEON] A suborder of extinct articulate brachiopods in the order Strophomenida characterized by the development of spines. { ,prə-dək'tin-ə-də }
- profile** [GEOL] **1.** The outline formed by the intersection of the plane of a vertical section and the ground surface. Also known as topographic profile. **2.** Data recorded by a single line of receivers from one shot point in seismic prospecting. [GEOPHYS] A graphic representation of the variation of one property, such as gravity, usually as ordinate, with respect to another property, usually linear, such as distance. [PETR] In structural petrology, a cross section of a homoaxial structure. { 'prō,fīl }
- profile line** [GEOL] The top line of a profile section, representing the intersection of a vertical plane with the surface of the ground. { 'prō,fīl ,līn }
- profile of equilibrium** [GEOL] **1.** The slope of the floor of a sea, ocean, or lake, taken in a vertical plane, when deposition of sediment is balanced by erosion. **2.** The

profile section

longitudinal profile of a graded stream. Also known as equilibrium profile; graded profile. { ˈprɒʃ,ɪl əv ˌēkwəˈlɪb-rē-əm }

profile section [GEOL] A diagram or drawing that shows along a given line the configuration or slope of the surface of the ground as it would appear if it were intersected by a vertical plane. { ˈprɒʃ,ɪl ˌsek-shən }

Proganosauria [PALEON] The equivalent name for Mesosauria. { prɒˌɡɑːn-əˈsɔːr-ē-ə }

proglacial [GEOL] Of streams, deposits, and other features, being immediately in front of or just beyond the outer limits of a glacier or ice sheet, and formed by or derived from glacier ice. { prɒˈɡlɑː-shəl }

progradation [GEOL] Seaward buildup of a beach, delta, or fan by nearshore deposition of sediments transported by a river, by accumulation of material thrown up by waves, or by material moved by longshore drifting. { ˈprɒˌɡrəˈdɑː-shən }

prograde metamorphism [GEOL] Metamorphic changes in response to a higher pressure or temperature than that to which the rock was last adjusted. { ˈprɒˈɡrɑːd ˌmed-əˈmɔːr,fɪz-əm }

prograding shoreline [GEOL] A shoreline that is being built seaward by accumulation or deposition. { ˈprɒˈɡrɑːd-ɪŋ ˈʃɔːr,lɪn }

progressive metamorphism [GEOL] Systematic change in metamorphic grade from lower to higher in any metamorphic terrain. { prəˈɡres-ɪv ˌmed-əˈmɔːr,fɪz-əm }

progressive sand wave [GEOL] A sand wave characterized by downcurrent migration. { prəˈɡres-ɪv ˈsɑːnd ˌwɑːv }

progressive sorting [GEOL] Sorting of sedimentary particles in the downcurrent direction, resulting in a systematic downcurrent decrease in the mean grain size of the sediment. { prəˈɡres-ɪv ˈsɔːrd-ɪŋ }

Progymnospermopsida [PALEON] A class of plants intermediate between ferns and gymnosperms; comprises the Devonian genus *Archaeopteris*. { prɒˈʃɪm-nɔːspərˈmɑːp-səd-ə }

projection net See net. { prəˈʃek-shən ˌnet }

Prolacertiformes [PALEON] A suborder of extinct terrestrial reptiles in the order Eosuchia distinguished by reduction of the lower temporal arcade. { prɒˈlɑːs-ər-dəˈfɔːr,mɛz }

prolapsed bedding [GEOL] Bedding characterized by a series of flat folds with near-horizontal axial planes contained entirely within a bed which has undisturbed boundaries. { ˈprɒˌlɑːpst ˈbed-ɪŋ }

proluvium [GEOL] A complex, friable, deltaic sediment accumulated at the foot of a slope as a result of an occasional torrential washing of fragmental material. { prɒˈlʊːv-ē-əm }

promontory [GEOL] **1.** A high, prominent projection or point of land, or a rock cliff, jutting out boldly into a body of water. **2.** A cape, either low-lying or of considerable height, with a bold termination. **3.** A bluff or prominent hill overlooking or projecting into a lowland. { ˈprɒm-ən-tɔːr-ē }

prong reef [GEOL] A wall reef that has developed irregular buttresses normal to its axis in both leeward and (to a smaller degree) seaward directions. { prɒŋ ˌrɛf }

propaedeutic stratigraphy See prostratigraphy. { ˌprɒˈpiːdʊd-ɪk strəˈtɪɡ-rəˈfɛ }

propylite [PETR] A modified andesite, altered by hydrothermal processes, resembling a greenstone and consisting of calcite, epidote, serpentine, quartz, pyrite, and iron ore. { ˈprɒˌpə,lɪt }

propylization [PETR] A hydrothermal process by which propylite is formed from andesite by the introduction of or replacement by an assemblage of minerals. { ˌprɒˌpəl-əˈzɑː-shən }

Prorastominae [PALEON] A subfamily of extinct dugongs (Dugongidae) which occur in the Eocene of Jamaica. { ˌprɒr-əˈstəm-ə-nē }

Prosauropoda [PALEON] A division of the extinct reptilian suborder Sauropodomorpha; they possessed blunt teeth, long forelimbs, and extremely large claws on the first finger of the forefoot. { ˌprəˈsɔːrəp-əd-ə }

prosopite [MINERAL] $\text{CaAl}_2(\text{F},\text{OH})_6$ A colorless mineral composed of basic calcium aluminum fluoride. { ˈprəs-ə,pɪt }

Protosuchia

- prostratigraphy** [GEOL] Preliminary stratigraphy, including lithologic and paleontologic studies, without consideration of the time factor. Also known as propaedeutic stratigraphy; protostratigraphy. { ,prə·strə'tig·rə·fē }
- protactinium-ionium age method** [GEOL] A method of calculating the ages of deep-sea sediments formed during the last 150,000 years from measurements of the ratio of protactinium-231 to ionium (thorium-230), based on the gradual change of this ratio over time because of the difference in half-lives. { |prəd,ak'tin·ē·əm t'ō·nē·əm 'āj ,meth·əd }
- protalus rampart** [GEOL] An arcuate ridge consisting of boulders and other coarse debris marking the downslope edge of an existing or melted snowbank. { prō'tal·əs 'ram,pärt }
- protectite** [PETR] A rock formed by the crystallization of a primary magma. { prə'tek,tīt }
- Protosuchia** [PALEON] A suborder of moderate-sized thecodont reptiles with lightly built triangular skulls, downturned snouts, and palatal teeth. { ,prəd·ə·rō'sü·kē·ə }
- Protheroheriidae** [PALEON] A group of extinct herbivorous mammals in the order Litopterna which displayed an evolutionary convergence with the horses in their dentition and in reduction of the lateral digits of their feet. { ,prəd·ə·rō·thə'rī·ə,dē }
- Proterozoic** [GEOL] Geologic time between the Archean and Paleozoic eras, that is, from 2500 million to 550 million years ago. Also known as Algonkian. { |prəd·ə·rə'zō·ik }
- Protoceratidae** [PALEON] An extinct family of pecoran ruminants in the superfamily Traguloidea. { |prəd·ō·sə'rad·ə,dē }
- protoclastic** [PETR] Of igneous rocks, characterized by granulation and deformation of the earlier-formed minerals due to differential flow of the magma before solidification. { |prəd·ō|klas·tik }
- protodolomite** [MINERAL] A crystalline calcium-magnesium carbonate with a disordered lattice in which the metallic ions occur in the same crystallographic layers instead of in alternate layers as in the dolomite mineral. { |prəd·ō'dō·lə,mīt }
- Protodonata** [PALEON] An extinct order of huge dragonflylike insects found in Permian rocks. { |prəd·ō·dā'nād·ə }
- protoenstatite** [MINERAL] An artificial, unstable, altered form of MgSiO₃ produced by thermal decomposition of talc; convertible to enstatite by grinding or heating to a high temperature. { |prəd·ō'en·stə,tīt }
- Protoeumalacostraca** [PALEON] The stem group of the crustacean series Eumalacostraca. { ,prəd·ō,yū·mə·lə'kās·trə·kə }
- protointraclast** [GEOL] A limestone component that resulted from a premature attempt at resedimentation while it was still in an unconsolidated and viscous or plastic state, and that never existed as a free clastic entity. { ,prəd·ō'in·trə,klast }
- protolith** [PETR] The original, unmetamorphosed rock from which a given metamorphic rock is formed. { 'prəd·ə,lith }
- protomylonite** [PETR] A mylonitic rock that develops from contact-metamorphosed rock; granulation and flowage are caused by overthrusts following the contact surfaces between the intrusion and the country rock. { ,prəd·ō'mī·lə,nīt }
- Protopteridales** [PALEOBOT] An extinct order of ferns, class Polypodiatae. { ,prəd·ō,ter·ə'dā·lez }
- protoquartzite** [PETR] A well-sorted sandstone that is intermediate in composition between subgraywacke and orthoquartzite, consisting of 75–95% quartz and chert, with less than 15% detrital clay matrix and 5–25% unstable materials in which there is a greater abundance of rock fragments than feldspar grains. Also known as quartzose subgraywacke. { |prəd·ō'kwört,sīt }
- Protosireniae** [PALEON] An extinct superfamily of sirenian mammals in the family Dugongidae found in the middle Eocene of Egypt. { ,prəd·ō·sə'ren·ə,nē }
- protostratigraphy** See prostratigraphy. { |prəd·ō·strə'tig·rə·fē }
- Protosuchia** [PALEON] A suborder of extinct crocodylians from the Late Triassic and Early Jurassic. { |prəd·ō'sü·kē·ə }

proustite

- proustite** [MINERAL] Ag_3AsS_3 A cochineal-red mineral that crystallizes in the rhombohedral system, consists of silver arsenic sulfide, is isomorphous with pyrrargyrite, and occurs massively and in crystals. Also known as light-red silver ore; light-ruby silver. { 'prū,sīt }
- provenance** [GEOLOGY] The location, topography, and composition of the source area for any sedimentary rock. Also known as source area; source land. { 'präv·ə·nəns }
- provincial series** [GEOLOGY] A time-stratigraphic series recognized only in a particular region and involving a major division of time within a period. { 'präv·in·chəl 'sir·ēz }
- provitrain** [GEOLOGY] Vitrain in which some plant structure can be discerned by microscope. Also known as telain. { 'prö'vi,trä'n }
- provitrinite** [GEOLOGY] A variety of vitrinite characteristic of provitrain and including the varieties periblinite, suberinite, and xylinite. { 'prö'vi·trä,nīt }
- proximal** [GEOLOGY] Of a sedimentary deposit, composed of coarse clastics and formed near the source. { 'präk·sə·mə'l }
- Psamment** [GEOLOGY] A suborder of the soil order Entisol, characterized by a texture of loamy fine sand or coarser sand, and by a coarse fragment content of less than 35. { 'sa,ment }
- psammite** See arenite. { 'sa,mīt }
- psammitic** See arenaceous. { sə'mid·ik }
- Psammodontidae** [PALEONTOLOGY] A family of extinct cartilaginous fishes in the order Brachyodonti in which the upper and lower dentitions consisted of a few large quadrilateral plates arranged in two rows meeting in the midline. { ,sam·ə'dänt·ə,dē }
- psephicity** [GEOLOGY] A coefficient of roundability of a pebble- or sand-size mineral fragment, expressed as the ratio of specific gravity to hardness (as measured in the air) or the quotient of specific gravity minus one divided by hardness (as measured in water). { sə'fis·əd·ē }
- pséphite** [GEOLOGY] A sediment or sedimentary rock composed of fragments that are coarser than sand and which are set in a qualitatively and quantitatively varying matrix; equivalent to a rudite or, generally, a conglomerate. { sə,fit }
- pséphyte** [GEOLOGY] A lake-bottom deposit consisting mainly of coarse, fibrous plant remains. { sə,fit }
- pseudoallochem** [GEOLOGY] An object resembling an allochem but produced in place within a calcareous sediment by a secondary process such as recrystallization. { ,sü·dö'al·ə,kem }
- Pseudoborniales** [PALEOBOTANY] An order of fossil plants found in Middle and Upper Devonian rocks. { ,sü·dö,bör·nē'a·lēz }
- pseudobreccia** [PETROLOGY] Limestone that is partially and irregularly dolomitized and is characterized by a mottled, breccialike appearance. Also known as recrystallization breccia. { ,sü·dö'brech·ə }
- pseudobrookite** [MINERAL] Fe_2TiO_5 A brown or black mineral consisting of iron titanium oxide and occurring in orthorhombic crystals; specific gravity is 4.4–4.98. { ,sü·dö'brü,kīt }
- pseudocannel coal** [GEOLOGY] Cannel coal that contains much humic matter. Also known as humic-cannel coal. { ,sü·dö|kan·əl 'köl }
- pseudochrysolite** See moldavite. { ,sü·dö'kris·ə,līt }
- pseudocol** [GEOLOGY] A landform represented by a constriction of a stream valley diverted by a glacial ponding, formed by the cutting through of a cover of drift and subsequent exposure of a former col. { 'süd·ə,kól }
- pseudoconcretion** [GEOLOGY] A subspherical, secondary sedimentary structure resembling a true concretion but not formed by orderly precipitation of mineral matter in the pores of a sediment. { ,sü·dö·kän'krē·shən }
- pseudoconformity** See paraconformity. { ,sü·dö·kän'fö'r·mäd·ē }
- pseudoconglomerate** [GEOLOGY] A rock that resembles, or may easily be mistaken for, a true or normal (sedimentary) conglomerate. { ,sü·dö·kän'gläm·ə·rət }
- pseudocottunnite** [MINERAL] K_2PbCl_4 A yellow or yellowish-green, orthorhombic mineral consisting of a potassium lead chloride. { ,sü·dö·kə'tə,nīt }
- pseudo cross-bedding** [GEOLOGY] 1. An inclined bedding produced by deposition in

pseudotillite

response to ripple-mark migration and characterized by foreset beds that appear to dip into the current. **2.** A structure resembling cross-bedding, caused by distortion-free slumping and sliding of a semiconsolidated mass of sediments (such as sandy shales). { 'sü-dō 'krōs ,bed-iŋ }

pseudodiffusion [GEOL] Mixing of thin superpositioned layers of slowly accumulated marine sediments by the action of water motion or subsurface organisms. { 'sü-dō-di'fyü-zhən }

pseudofault [GEOL] A faultlike feature resulting from weathering along joint, shrinkage, or bedding planes. { 'sü-d-ə,fólt }

pseudofibrous peat [GEOL] Peat that is fibrous in texture but is plastic and incoherent. { 'sü-dō'fī-brəs 'pēt }

pseudogalena See sphalerite. { 'sü-do-gə'lē-nə }

pseudogley [GEOL] A densely packed, silty soil that is alternately waterlogged and rapidly dried out. { 'sü-dō,glā }

pseudogradational bedding [GEOL] A structure in metamorphosed sedimentary rock in which the original textural gradation (coarse at the base, finer at the top) appears to be reversed because of the formation of porphyroblasts in the finer-grained part of the rock. { 'sü-dō-grā'dā-shən-əl 'bed-iŋ }

pseudokarst [GEOL] A topography that resembles karst but that is not formed by the dissolution of limestone; usually a rough-surfaced lava field in which ceilings of lava tubes have collapsed. { 'sü-d-ə,kārst }

pseudokettle See pingo remnant. { 'sü-dō'ked-əl }

pseudoleucite [MINERAL] A pseudomorph after leucite consisting of a mixture of nepheline, orthoclase, and analcime. { 'sü-dō'lū,sīt }

pseudomalachite [MINERAL] $\text{Cu}_5(\text{PO}_4)_2(\text{OH})_4 \cdot \text{H}_2\text{O}$ An emerald green to dark green and blackish-green, monoclinic mineral consisting of a hydrated basic copper phosphate. Also known as tagillite. { 'sü-dō'mal-ə,kīt }

pseudomicroseism [GEOPHYS] A microseism due to instrumental effects. { 'sü-dō'mī-kra,sīz-əm }

pseudomorph [MINERAL] An altered mineral whose crystal form has the outward appearance of another mineral species. Also known as false form. { 'sü-d-ə,mōrf }

pseudomountain [GEOL] A mountain formed by differential erosion, in contrast to one produced by uplift. { 'sü-dō;maunt-ən }

pseudonodule [GEOL] A primary sedimentary structure consisting of a ball-like mass of sandstone enclosed in shale or mudstone; characterized by a rounded base with upturned or inrolled edges and resulting from the settling of sand into underlying clay or mud which has welled up between isolated sand masses. Also known as sand roll. { 'sü-dō'nāj,ül }

pseudo-oolith [GEOL] A spherical or roundish pellet or particle (generally less than 1 millimeter in diameter) in a sedimentary rock, externally resembling an oolith in size or shape but of secondary origin and amorphous or crypto- or microcrystalline, and lacking the radial or concentric internal structure of an oolith. Also known as false oolith. { 'sü-dō'ō,ō,līth }

pseudoporphyrific [PETR] Pertaining to a rock that is not a true porphyry, but resembles one because of rapid growth of some of the crystals. { 'sü-dō,pōr-fə'rid-ik }

pseudo ripple mark [GEOL] A bedding-plane feature that resembles a ripple mark but is formed by lateral pressure caused by slumping or by local, small-scale tectonic deformation. { 'sü-dō 'rip-əl ,märk }

pseudospharolith [MINERAL] A spherulite consisting of two minerals, one with parallel and one with inclined extinction, growing from the same center. { 'sü-dō'sfar-ə,līth }

pseudostratification See sheeting structure. { 'sü-dō,strad-ə-fə'kā-shən }

Pseudosuchia [PALEON] A suborder of extinct reptiles of the order Thecodontia comprising bipedal, unarmored or feebly armored forms which resemble dinosaurs in many skull features but retain a primitive pelvis. { 'sü-dō'sü-kē-ə }

pseudotachylite [PETR] A black rock that resembles tachylite; carries fragmental enclosures and shows evidence of having been at high temperature. { 'sü-dō'tak-ə,līt }

pseudotillite [GEOL] A nonglacial tillite-like rock, such as a pebbly mudstone, formed

pseudounconformity

on land by the flow of nonglacial mud or deposited by a subaqueous turbidity flow. { 'sü-dō'däd-əl,īt }

pseudounconformity [GEOL] A stratigraphic relationship that appears unconformable but is characterized by a superabundance or an excess accumulation of sediment, due to factors like submarine slumping which occurs penecontemporaneously with sedimentation off the sides of a rising anticline or dome. { 'sü-dō-kän'fōr-mäd-ē }

pseudovitrinite [GEOL] A maceral of coal that is superficially similar to vitrinite but that is higher in reflectance from polished surfaces in oil immersion and has slitted structure, remnant cellular structures, uncommon fracture patterns, higher relief, and paucity or absence of pyrite inclusions. { 'sü-dō'vi-trə,nīt }

pseudovitrinoid [GEOL] Pseudovitrinite occurring in bituminous coal. { 'sü-dō'vi-trə,nōid }

pseudovolcano [GEOL] A large crater or circular hollow believed not to be associated with recent volcanic activity, such as a crater which is the result of cauldron subsidence or of a phreatic explosion in the distant past. { 'sü-dō-väl'kə-nō }

psilomelane [MINERAL] $BaMn_6O_{16}(OH)_4$ A massive, hard, black, botryoidal manganese oxide mineral mixture with a specific gravity ranging from 3.7 to 4.7. { ,sī-lō'me,län }

Psilophytales [PALEOBOT] A group formerly recognized as an order of fossil plants. { ,sī-lō,fr'tā-lēz }

Psilophytineae [PALEON] The equivalent name for Rhyniopsida. { ,sī-lō,fr'tin-ē,ē }

psittacinite See mottramite. { sə'tas-ə,nīt }

Pteridophytic See Paleophytic. { tər'id-ə'fid-ik }

Pteridospermae [PALEOBOT] Seed ferns, a class of the Cycadicae comprising extinct plants characterized by naked seeds borne on large fernlike fronds. { ,ter-ə-dō'spər,mē }

Pteridospermophyta [PALEOBOT] The equivalent name for Pteridospermae. { ,ter-ə-dō'spər'mäf-əd-ē }

pterodactyl [PALEON] The common name for members of the extinct reptilian order Pterosauria. { 'ter-əd'ak-təl }

Pterodactyloidea [PALEON] A suborder of Late Jurassic and Cretaceous reptiles in the order Pterosauria distinguished by lacking tails and having increased functional wing length due to elongation of the metacarpals. { 'ter-əd'ak-təl'ōid-ē-ə }

pteropod ooze [GEOL] A pelagic sediment containing at least 45% calcium carbonate in the form of tests of marine animals, particularly pteropods. { 'ter-ə,päd 'üz }

Pterosauria [PALEON] An extinct order of flying reptiles of the Mesozoic era belonging to the subclass Archosauria; the wing resembled that of a bat, and a large heeled sternum supported strong wing muscles. { ,ter-ə'sōr-ē-ə }

Ptilodontoidea [PALEON] A suborder of extinct mammals in the order Multituberculata. { 'til-ō-dän'tōid-ē-ə }

ptilolite See mordenite. { 'til-ə,līt }

PTRM See partial thermoremanent magnetization.

Ptyctodontida [PALEON] An order of Middle and Upper Devonian fishes of the class Placodermi in which both the head and trunk shields are present, and the joint between them is a well-differentiated and variable structure. { ,tik-tə'dänt-əd-ə }

ptygma [GEOL] Pegmatitic material with migmatite or gneiss, resembling disharmonic folds. Also known as ptygmatic fold. { 'tig-mə }

ptygmatic fold See ptygma. { 'tig'mad-ik 'föld }

pucherite [MINERAL] $BiVO_4$ A reddish-brown orthorhombic mineral composed of bismuth vanadate, occurring as small crystals. { 'pü-kə,rīt }

pudding ball See armored mud ball. { 'püd-īŋ ,ból }

puddingstone [GEOL] In the United Kingdom, a conglomerate consisting of rounded pebbles whose colors are in marked contrast with the matrix, giving a section of the rock the appearance of a raisin pudding. { 'püd-īŋ ,stōn }

puff cone See mud cone. { 'pəf ,kōn }

pulaskite [PETR] A light-colored, feldspathoid-bearing, granular or trachytoid alkali syenite composed chiefly of orthoclase, soda pyroxene, arfvedsonite, and nepheline. { 'pü'las,kīt }

Pyrenean orogeny

- pull-apart** [GEOL] A precompaction sedimentary structure having the appearance of boudinage and consisting of beds that have been stretched and pulled apart into relatively short slabs. { 'pʊl ə,pärt }
- pulverite** [PETR] A sedimentary rock composed of silt- or clay-sized aggregates of non-clastic origin with a texture simulating a lutite of clastic origin. { 'pəl·və,rɪt }
- pumice** [GEOL] A rock froth, formed by the extreme puffing up of liquid lava by expanding gases liberated from solution in the lava prior to and during solidification. Also known as foam; pumice stone; pumicite; volcanic foam. { 'pəm·əs }
- pumice fall** [GEOL] Pumice falling from a volcano eruption cloud. { 'pəm·əs ,fɒl }
- pumiceous** [GEOL] Pertaining to the texture of a pyroclastic rock, such as pumice, characterized by numerous small cavities presenting a spongy, frothy appearance. { pyü'mish·əs }
- pumice stone** See pumice. { 'pəm·əs ,stɒn }
- pumicite** See pumice. { 'pəm·ə,sɪt }
- pumilith** [GEOL] A lithified deposit of volcanic ash. { 'pəm·ə,lɪθ }
- pumpellyite** [MINERAL] $\text{Ca}_2\text{Al}_3\text{Si}_3\text{O}_{12}(\text{OH})$ A greenish epidote-like mineral that is probably related to clinozoisite. Also known as lotrite; zonochlorite. { ,pəm'pel·ē,ɪt }
- pumpellyite-prehnite-quartz facies** [PETR] A variety of low-temperature, moderate-pressure metamorphism. { ,pəm'pel·ē,ɪt 'prā,nɪt 'kwɔrts 'fā·shēz }
- Purbeckian** [GEOL] A stage of geologic time in the United Kingdom: uppermost Jurassic (above Bononian, below Cretaceous). { pər'bek·ē·ən }
- pure coal** See vitrain. { 'pyûr 'kɔl }
- purple blende** See kermesite. { 'pər:pəl 'blend }
- purpurite** [MINERAL] $(\text{Mn},\text{Fe})\text{PO}_4$ A dark-red or purple mineral composed of ferric-manganic phosphate; it is isomorphous with heterosite. { 'pər:pyə,rɪt }
- push moraine** [GEOL] A broad, smooth, arc-shaped ridge consisting of material mechanically pushed or shoved along by an advancing glacier. Also known as push-ridge moraine; shoved moraine; thrust moraine; upset moraine. { 'pʊʃ mə,ræn }
- push-ridge moraine** See push moraine. { 'pʊʃ 'rɪj mə,ræn }
- Pustulosa** [PALEON] An extinct suborder of echinoderms in the order Phanerozonia found in the Paleozoic. { ,pəs·chə'lɔ·sə }
- pyu** [GEOL] A small, remnant volcanic cone. { pwē }
- P wave** [GEOPHYS] A body wave that can pass through all layers of the earth. It is fastest of all seismic waves, traveling at a velocity of 3–4 miles (5–7 kilometers) per second in the crust and 5–6 miles (8–9 kilometers) per second in the upper mantle. Also known as compressional wave; longitudinal wave; primary wave. { 'pē ,wāv }
- pycnite** [MINERAL] A variety of topaz occurring in massive columnar aggregations. { 'pɪk,nɪt }
- pycnocline** [GEOPHYS] A change in density of ocean or lake water or rock with displacement in some direction, especially a rapid change in density with vertical displacement. { 'pɪk·nə,klɪn }
- Pycnodontiformes** [PALEON] An extinct order of specialized fishes characterized by a laterally compressed, disk-shaped body, long dorsal and anal fins, and an externally symmetrical tail. { ,pɪk·nə,dänt·ə'fɔr,mēz }
- Pygasteridae** [PALEON] The single family of the extinct order Pygasteroidea. { ,pɪ·gə'ster·ə,dē }
- Pygasteroidea** [PALEON] An order of extinct echinoderms in the superorder Diadematacea having four genital pores, noncrenulate tubercles, and simple ambulacral plates. { ,pɪ·gə'stə'rɔɪd·ə }
- pyrargyrite** [MINERAL] Ag_3SbS_3 A deep ruby-red to black mineral, crystallizing in the hexagonal system, occurring in massive form and in disseminated grains, and having an adamantine luster; hardness is 2.5 on Mohs scale, and specific gravity is 5.85; an important silver ore. Also known as dark-red silver ore; dark ruby silver. { pɪ'rär·jə,rɪt }
- Pyrenean orogeny** [GEOL] A short-lived orogeny that occurred during the late Eocene, between the Bartonian and Ludian stages. { ,pɪr·ə'nē·ən ɔ'räj·ə·nē }

pyrite

- pyrite** [MINERAL] FeS_2 A hard, brittle, brass-yellow mineral with metallic luster, crystallizing in the isometric system; hardness is 6–6.5 on Mohs scale, and specific gravity is 5.02. Also known as common pyrite; fool's gold; iron pyrites; mundic. { 'pɪ,ɹɪt }
- pyritization** [GEOL] A common process of hydrothermal alteration involving introduction of or replacement by pyrite. { ,pɪ,ɹɪd·ə'zā·ʃən }
- pyritobitumen** [GEOL] Any of various dark-colored, relatively hard, nonvolatile hydrocarbon substances often associated with mineral matter, which decompose upon heating to yield bitumens. Also known as pyrobitumen. { pə,ɹɪd·ɔ̄·bə'tü·mən }
- pyroaurite** [MINERAL] $\text{Mg}_6\text{Fe}_2(\text{OH})_{16}\cdot\text{CO}_3\cdot 4\text{H}_2\text{O}$ A goldlike or brownish rhombohedral mineral composed of hydrous basic magnesium iron carbonate. { 'pɪ·rɔ̄'ò,rɪt }
- pyrobelonite** [MINERAL] $\text{PbMn}(\text{VO}_4)(\text{OH})$ A fire-red to deep brilliant-red mineral composed of basic vanadate of manganese and lead, occurring as crystal needles. { 'pɪ·rɔ̄'bel·ə,nɪt }
- pyrobiolite** [PETR] An organic rock containing organic remains that have been altered by volcanic action. { 'pɪ·rɔ̄'bɪ·ə,lɪt }
- pyrobitumen** See pyritobitumen. { 'pɪ·rɔ̄·bə'tü·mən }
- pyroborate** See borax. { 'pɪ·rɔ̄'bɔ̄,ræt }
- pyrochlore** [MINERAL] $(\text{Na,Ca})_2(\text{Nb,Ta})_2\text{O}_6(\text{OH,F})$ Pale-yellow, reddish, brown, or black mineral, crystallizing in the isometric system, and occurring in pegmatites derived from alkalic igneous rocks. Also known as pyrrhite. { 'pɪ·rə,klɔ̄r }
- pyrochroite** [MINERAL] $\text{Mn}(\text{OH})_2$ A hexagonal mineral composed of naturally occurring manganese hydroxide; it is white when fresh, but darkens upon exposure. { ,pɪ·rə'krɔ̄,ɪt }
- pyroclast** [GEOL] An individual pyroclastic fragment or clast. { 'pɪ·rə,klɑ̄st }
- pyroclastic flow** [GEOL] Ash flow not involving high-temperature conditions. { 'pɪ·rə,klɑ̄s·tɪk 'flɔ̄ }
- pyroclastic-flow deposit** See ignimbrite. { ,pɪ·rə,klɑ̄s·tɪk 'flɔ̄ dɪ,pəz·ət }
- pyroclastic ground surge** [GEOL] The relatively thin mantle of rock found around a volcanic vent; the thickness is not uniform, the internal stratification is not parallel to the top and bottom of the layer, and the extent is a few kilometers from the source. { 'pɪ·rə,klɑ̄s·tɪk 'graʊnd ,sɜ̄rʃ }
- pyroclastic rock** [PETR] A rock that is composed of fragmented volcanic products ejected from volcanoes in explosive events. { 'pɪ·rə,klɑ̄s·tɪk 'rɑ̄k }
- pyrogenesis** [GEOL] The intrusion and extrusion of magma and its derivatives. { ,pɪ·rɔ̄'jen·ə·səs }
- pyrogenetic mineral** [MINERAL] An anhydrous mineral of an igneous rock, usually crystallized at high temperature in a magma containing relatively few volatile components. { 'pɪ·rɔ̄·jə'ned·ɪk 'mɪn·rəl }
- pyrolusite** [MINERAL] MnO_2 An iron-black mineral that crystallizes in the tetragonal system and is the most important ore of manganese; hardness is 1–2 on Mohs scale, and specific gravity is 4.75. { ,pɪ·rə'lü,sɪt }
- pyromagma** [GEOL] A highly mobile lava, oversaturated with gases, that exists at shallower depths than hypomagma. { ,pɪ·rɔ̄'mɑ̄g·mə }
- pyromelane** See brookite. { 'pɪ·rɔ̄'me,lān }
- pyrometamorphism** [PETR] Contact metamorphism at temperatures near the melting points of the component minerals. { 'pɪ·rɔ̄,med·ə'mòr,fɪz·əm }
- pyrometasomatism** [PETR] Forming of contact-metamorphic mineral deposits at high temperatures by emanations from the intrusive rock, involving replacement of the enclosing rock with the addition of materials. { 'pɪ·rɔ̄,med·ə'sɔ̄·mə,tɪz·əm }
- pyromorphite** [MINERAL] $\text{Pb}_3(\text{PO}_4)_3\text{Cl}$ A green, yellow, brown, gray, or white mineral of the apatite group, crystallizing in the hexagonal system; a minor ore of lead. Also known as green lead ore. { 'pɪ·rɔ̄'mòr,fɪt }
- pyrope** [MINERAL] $\text{Mg}_3\text{Al}_2(\text{SiO}_4)_3$ A mineral species of the garnet group characterized by a deep fiery-red color and occurring in basic and ultrabasic igneous rocks. { 'pɪ,rɔ̄p }
- pyrophanite** See fire opal. { 'pɪ·rə,fān }
- pyrophanite** [MINERAL] MnTiO_3 A blood-red rhombohedral mineral consisting of manganese titanate; it is isomorphous with ilmenite. { 'pɪ'rɑ̄f·ə,nɪt }

pyrrhotite

- pyrophyllite** [MINERAL] $\text{AlSi}_2\text{O}_5(\text{OH})$ A white, greenish, gray, or brown phyllosilicate mineral that resembles talc and occurs in a foliated form or in compact masses in quartz veins, granites, and metamorphic rocks. Also known as pencil stone. { ,pī-rō'fi,līt }
- pyroretinite** [MINERAL] A type of retinite found in the brown coals of Aussig (Usti and Labem), in the Czech Republic. { ,pī-rō'ret-ən,līt }
- pyroschist** [PETR] A schist or shale that has a sufficiently high carbon content to burn with a bright flame or to yield volatile hydrocarbons when heated. { 'pī-rə,ʃɪst }
- pyrosmalite** [MINERAL] $(\text{Mn,Fe})_4\text{Si}_3\text{O}_7(\text{OH,Cl})_6$ A colorless, pale-brown, gray, or gray-green mineral composed mainly of basic iron manganese silicate with chlorine. { pī'rāz-mə,līt }
- pyrosphere** [GEOL] The zone of the earth below the lithosphere, consisting of magma. Also known as magmosphere. { 'pī-rə,sfɪr }
- pyrostibite** *See* kermesite. { ,pī-rə'sti,bīt }
- pyrostilpnite** [MINERAL] Ag_3SbS_3 A hyacinth-red mineral composed of silver antimony sulfide, occurring in monoclinic crystal tufts; it is polymorphous with pyrargirite. { ,pī-rə'stilp,nīt }
- Pyrotheria** [PALEON] An extinct monofamilial order of primitive, mastodonlike, herbivorous, hoofed mammals restricted to the Eocene and Oligocene deposits of South America. { ,pī-rō'thɪr-ē-ə }
- Pyrotheriidae** [PALEON] The single family of the Pyrotheria. { ,pī-rō-thə'rī-ə,dē }
- pyroxene** [MINERAL] A family of diverse and important rock-forming minerals having infinite (Si_2O_6) single inosilicate chains as their principal motif; colors range from white through yellow and green to brown and greenish black; hardness is 5.5–6 on Mohs scale, and specific gravity is 3.2–4.0. { pə'rək,sēn }
- pyroxene alkali syenite** [GEOL] A quartz-poor (less than 20%) member of the charnockite series, characterized by the presence of microperthite. { pə'rək,sēn 'al-kə,lī'sī-ə,nīt }
- pyroxene monzonite** [GEOL] A quartz-poor (less than 20%) member of the charnockite series, containing approximately equal amounts of microperthite and plagioclase. { pə'rək,sēn 'mān-zə,nīt }
- pyroxene syenite** [GEOL] A quartz-poor (less than 20%) member of the charnockite series, containing more microperthite than plagioclase. { pə'rək,sēn 'sī-ə,nīt }
- pyroxenite** [PETR] A heavy, dark-colored, phaneritic igneous rock composed largely of pyroxene with smaller amounts of olivine and hornblende, and formed by crystallization of gabbroic magma. { pə'rək-sə,nīt }
- pyroxenoids** [MINERAL] A mineral group (including wollastonite and rhodonite) compositionally similar to pyroxene, but SiO_4 tetrahedrons are connected in rings rather than chains. { pə'rək-sə,noidz }
- pyrrhite** *See* pyrochlore. { 'pɪ,rɪt }
- pyrrhotite** [MINERAL] Fe_{1-x}S A common reddish-brown to brownish-bronze mineral that occurs as rounded grains to large masses, more rarely as tabular pseudohexagonal crystals and rosettes; hardness is 4 on Mohs scale, and specific gravity is 4.6 (for the composition Fe_7S_8). { 'pɪr-ə,tɪt }

Q

- Quadrijugatoridae** [PALEON] A monomorphic family of extinct ostracods in the superfamily Hollinacea. { 'kwä·drä,jü·gə'tör·ə,dē }
- quake sheet** [GEOL] A well-defined bed resembling a slump sheet but produced by an earthquake and resulting in the formation of a load cast without horizontal slip. { kwäk ,shēt }
- quaking bog** [GEOL] A peat bog floating or growing over water-saturated land which shakes or trembles when walked on. { 'kwäk·iŋ 'bäg }
- quantitative geomorphology** [GEOL] The assignment of dimensions of mass, length, and time to all descriptive parameters of landform geometry and geomorphic processes, followed by the derivation of empirical mathematical relationships and formulation of rational mathematical models relating these parameters. { 'kwän·ə·täd·iv ,jē·ō·mör'fäl·ə·jē }
- quantum mineralogy** [MINERAL] A branch of mineralogy concerned with the application of quantum mechanics to mineralogical systems. { 'kwän·təm ,min·ə'räl·ə·jē }
- quaquaversal** [GEOL] Of strata and geologic structures, dipping outward in all directions away from a central point. { 'kwä·kwə'vær·səl }
- quarrying** [GEOL] See plucking. { 'kwär·ē·iŋ }
- quartz** [MINERAL] SiO₂ A colorless, transparent rock-forming mineral with vitreous luster, crystallizing in the trigonal trapezohedral class of the rhombohedral subsystem; hardness is 7 on Mohs scale, and specific gravity is 2.65; the most abundant and widespread of all minerals. { kwörts }
- quartzarenite** [PETR] A quartz-rich sandstone with framework grains separated predominantly by cement rather than matrix; essentially an orthoquartzite. { kwört'sar·ə,nīt }
- quartz basalt** [PETR] An igneous rock with more than 5% quartz. { 'kwörts bə'sölt }
- quartz-bearing diorite** See quartz diorite. { 'kwörts ,ber·iŋ 'dī·ə,rīt }
- quartz crystal** [MINERAL] See rock crystal. { 'kwörts 'krist·əl }
- quartz diorite** [PETR] A group of plutonic rocks having the composition of diorite but with large amounts of quartz (greater than 20%). Also known as quartz-bearing diorite; tonalite. { 'kwörts 'dī·ə,rīt }
- quartz-flooded limestone** [PETR] A limestone characterized by an abundance of quartz particles that had been imported suddenly from a nearby source by wind or water currents, but that gradually become sparser in an upward direction and completely disappear within a few centimeters. { 'kwörts ,fləd·əd 'līm,stōn }
- quartz graywacke** [PETR] A graywacke containing abundant grains of quartz and chert and less than 10% each of feldspars and rock fragments. { 'kwörts 'grā,wak·ə }
- quartzite** [PETR] A granoblastic metamorphic rock consisting largely or entirely of quartz; most quartzites are formed by metamorphism of sandstone. { 'kwört,sīt }
- quartzitic sandstone** [PETR] Sandstone consisting of 100% quartz grains cemented with silica. { kwört'sid·ik 'san,stōn }
- quartz lattice** See rhodacite. { 'kwörts 'lad·əs }
- quartz monzonite** [PETR] Granitic rock in which 10–50% of the felsic constituents are quartz, and in which the ratio of alkali feldspar to total feldspar is between 35% and 65%. Also known as adamellite. { 'kwörts 'män·zə,nīt }

quartzose

- quartzose** [GEOL] Referring to a substance which contains quartz as a principal constituent. { 'kwört,sōs }
- quartzose arkose** [PETR] A sandstone containing 50–85% quartz, chert, and metamorphic quartzite, 15–25% feldspars and feldspathic crystalline rock fragments, and 0–25% micas and micaceous metamorphic rock fragments. { 'kwört,sōs 'är,kōs }
- quartzose chert** [PETR] A vitreous, sparkly, shiny chert, which under high magnification shows a heterogeneous mixture of pyramids, prisms, and faces of quartz, but also includes chert in which the secondary quartz is largely anhedral. { 'kwört,sōs 'chært }
- quartzose graywacke** [PETR] **1.** A sandstone containing 50–85% quartz, chert, and metamorphic quartzite, 15–25% micas and micaceous metamorphic rock fragments, and 0–25% feldspars and feldspathic crystalline rock fragments. **2.** A graywacke that has lost its micaceous constituents through abrasion and thus tends to approach an orthoquartzite. { 'kwört,sōs 'grā,wak·ə }
- quartzose sandstone** [PETR] Sandstone consisting of more than 95% clear quartz grains and less than 5% matrix. Also known as quartz sandstone. { 'kwört,sōs 'san,stōn }
- quartzose shale** [PETR] A green or gray shale composed predominantly of rounded quartz grains of silt size, commonly associated with highly mature sandstones (orthoquartzites), representing the reworking of residual clays as transgressive seas encroached on old land areas. { 'kwört,sōs 'shāl }
- quartzose subgraywacke** See protoquartzite. { 'kwört,sōs 'səb,grā,wak·ə }
- quartz-pebble conglomerate** See orthoquartzitic conglomerate. { 'kwörts ,peb·əl kən'glām·ə·rət }
- quartz porphyry** [PETR] A porphyritic extrusive or hypabyssal rock containing quartz and alkali feldspar phenocrysts embedded in a microcrystalline or cryptocrystalline matrix. Also known as granite porphyry. { 'kwörts 'pör·fə·rē }
- quartz sandstone** See quartzose sandstone. { 'kwörts 'san,stōn }
- quartz schist** [PETR] A schist whose foliation is due mainly to streaks and lenticles of nongranular quartz. { 'kwörts 'shist }
- quartz syenite** [PETR] A group of plutonic rocks having the characteristics of syenite but with a greater amount of quartz (5–20%). { 'kwörts 'sī·ə,nīt }
- quartz topaz** See citrine. { 'kwörts 'tō,paz }
- quasi-cratonic** [GEOL] Pertaining to a part of oceanic crust marginal to the continent which is considered to be former continental material that stretched and foundered during expansion. Also known as semicratonic. { 'kwä·zē krə'tän·ik }
- quasi-equilibrium** [GEOL] The state of balance or grade in a stream cross section, whereby conditions of approximate equilibrium tend to be established in a reach of the stream as soon as a rather smooth longitudinal profile has been established in that reach, even though downcutting may go on. { 'kwä·zē ,ē·kwə'lib·rē·əm }
- Quaternary** [GEOL] The second period of the Cenozoic geologic era, following the Tertiary, and including the last 2–3 million years. { 'kwät·ən,er·ē }
- queenslandite** See Darwin glass. { 'kwēnz·lən,dīt }
- Queenston shale** [GEOL] A red bed series from the Ordovician found in Niagara Gorge; it is composed of deltaic red shale. { 'kwēnz·tən 'shāl }
- queenstonite** See Darwin glass. { 'kwēn·stə,nīt }
- quenite** [PETR] A fine-grained, dark-colored hypabyssal rock composed of anorthite, chrome diopside, with less olivine and a small amount of bronzite. { 'kwe,nīt }
- quenselite** [MINERAL] $\text{PbMnO}_2(\text{OH})$ A pitch black mineral consisting of an oxide of lead and manganese; occurs in tabular form. { 'kwens·əl,īt }
- quenstedtite** [MINERAL] $\text{Fe}_2(\text{SO}_4)_3 \cdot 10\text{H}_2\text{O}$ A pale violet to reddish-violet, triclinic mineral consisting of hydrated ferric sulfate; occurs in aggregates of crystals. { 'kwen,ste,tīt }
- quick** [GEOL] **1.** Referring to a sediment that, when mixed with or absorbing water, becomes extremely soft, incoherent, or loose, and is capable of flowing easily under load or by force of gravity. **2.** Referring to a soil in which a decrease in effective stress allows water to flow upward with sufficient velocity to reduce significantly the

quilted surface

soil's bearing capacity. **3.** Referring to a highly porous soil that readily absorbs heat. { kwik }

quick clay [GEOL] Clay that loses its shear strength after being disturbed. { 'kwik,klā }

quicksand [GEOL] A highly mobile mass of fine sand consisting of smooth, rounded grains with little tendency to mutual adherence, usually thoroughly saturated with upward-flowing water; tends to yield under pressure and to readily swallow heavy objects on the surface. Also known as running sand. { 'kwik,sand }

quickstone [PETR] A consolidated rock that flowed under the influence of gravity before lithification. { 'kwik,stōn }

quilted surface [GEOL] A land surface characterized by broad, rounded, uniformly convex hills separating valleys that are comparatively narrow. { 'kwil·təd 'sər·fəs }

R

- radar interferometry** [GEOPHYS] A microwave remote sensing method for combining imagery collected over time by radar systems on board airplane or satellite platforms to map the elevations, movements, and changes of the earth's surface. Such detectable changes include earthquakes, volcanoes, glaciers, landslides, and underground explosions, as well as fires, floods, forestry operations, moisture changes, and vegetation growth. { |rā,dār ,in·tər·fə'räm·ə·trē }
- radial drainage pattern** [GEOL] A drainage pattern characterized by radiating streams diverging from a high central area. Also known as centrifugal drainage pattern. { 'rād·ē·əl 'drān·ij ,pad·ərŋ }
- radial faults** [GEOL] Faults arranged like the spokes of a wheel, radiating from a central point. { 'rād·ē·əl 'fòls }
- radiation budget** [GEOPHYS] A quantitative statement of the amounts of radiation entering and leaving a given region of the earth. { ,rād·ē'ā·shən ,bəj·ət }
- radiation chart** [GEOPHYS] Any chart or diagram which permits graphical solution of the (generally unintegrable) flux integrals arising in problems of atmospheric infrared radiation transfer. { ,rād·ē'ā·shən ,chärt }
- radioactive mineral** [MINERAL] Any mineral species that contains uranium or thorium as an essential part of the chemical composition; examples are uraninite, pitchblende, carnotite, coffinite, and autunite. { |rād·ē·ō'ak·tiv 'min·rəl }
- radiochronology** [GEOL] An absolute-age dating method based on the existing ratio between radioactive parent elements (such as uranium-238) and their radiogenic daughter isotopes (such as lead-206). { |rad·ē·ō·krə'näl·ə·jē }
- radiogeology** [GEOCHEM] The study of the distribution patterns of radioactive elements in the earth's crust and the role of radioactive processes in geologic phenomena. { |rād·ē·ō·jē'äl·ə·jē }
- radioglaciology** [GEOPHYS] The study of glacier ice by means of radar, especially the sounding of ice depth. { |rād·ē·ō,glä·sē'äl·ə·jē }
- radiolarian chert** [GEOL] A homogeneous cryptocrystalline radiolarite with a well-developed matrix. { |rād·ē·ō|lar·ē·ən 'chert }
- radiolarian earth** [GEOL] A porous, unconsolidated siliceous sediment formed from the opaline silica skeletal remains of Radiolaria; formed from radiolarian ooze. { |rād·ē·ō|lar·ē·ən 'ərth }
- radiolarian ooze** [GEOL] A siliceous ooze containing the skeletal remains of the Radiolaria. { |rād·ē·ō|lar·ē·ən 'üz }
- radiolarite** [GEOL] **1.** A whitish, hard, consolidated equivalent of radiolarian earth. **2.** Radiolarian ooze that has been indurated. { ,rād·ē·ō'la,rīt }
- radiolitic** [PETR] **1.** Pertaining to the texture of an igneous rock, characterized by radial, fanlike groupings of acicular crystals, resembling sectors of spherulites. **2.** Referring to limestones in which the components radiate from central points, with the cement making up less than 50% of the total rock. { |rād·ē·ō'lid·ik }
- radiometric age** [GEOL] Geologic age expressed in years determined by quantitatively measuring radioactive elements and their decay products. { |rād·ē·ō|me·trik 'āj }
- Radstockian** [GEOL] A European stage of geologic time forming the upper Upper Carboniferous, above Staffordian and below Stephanian, equivalent to uppermost Westphalian. { rad'stāk·ē·ən }

rafaelite

- rafaelite** [PETR] A nepheline-free orthoclase-bearing hypabyssal rock that also contains analcime and calcic plagioclase. { 'raf·ē·ə,līt }
- raft** [GEOL] **1.** A rock fragment caught up in a magma and drifting freely, more or less vertically. **2.** See float coal. { raft }
- rafting** [GEOL] Transporting of rock by floating ice or floating organic materials (such as logs) to places not reached by water currents. { 'raft·iŋ }
- raft tectonics** See plate tectonics. { 'raft tek,tän·iks }
- rag** [PETR] Any of various hard, coarse, rubbly, or shell rocks that weather with a rough, irregular surface, such as a flaggy sandstone or limestone used as a building stone. Also known as ragstone. { rag }
- raglanite** [PETR] A nepheline syenite composed of oligoclase, nepheline, and corundum with minor amounts of mica, calcite, magnetite, and apatite. { 'rag·lə,nīt }
- ragstone** See rag. { 'rag,stōn }
- rainbow granite** [PETR] A type of granite having either a black or dark-green background with pink, yellowish, or reddish mottling, or a pink background with dark mottling. { 'rān,bō'gran·ət }
- raindrop impressions** See rain prints. { 'rān,drāp im'pres'hənz }
- raindrop imprints** See rain prints. { 'rān,drāp 'im,prins }
- rain pillar** [GEOL] A minor landform consisting of a column of soil or soft rock capped and protected by pebbles or concretions, produced by the differential erosion from the impact of falling rain. { 'rān ,pil·ər }
- rain prints** [GEOL] Small, shallow depressions formed in soft sediment or mud by the impact of falling raindrops. Also known as raindrop impressions; raindrop imprints. { 'rān ,prins }
- rainwash** [GEOL] **1.** The washing away of loose surface material by rainwater after it has reached the ground but before it has been concentrated into definite streams. **2.** Material transported and accumulated, or washed away, by rainwater. { 'rān,wāsh }
- raised beach** [GEOL] An ancient beach raised to a level above the present shoreline by uplift or by lowering of the sea level; often bounded by inland cliffs. { 'rāzd 'bečh }
- rake** See plunge. { rāk }
- ralstonite** [MINERAL] $\text{NaMgAl}_3\text{F}_{12}(\text{OH})_6 \cdot 3\text{H}_2\text{O}$ A colorless, white, or yellowish mineral composed of hydrous basic sodium magnesium aluminum fluoride, occurring in octahedral crystals. { 'rəl·stə,nīt }
- Ramapithecinae** [PALEON] A subfamily of Hominidae including the protohominids of the Miocene and Pliocene. { ,rām·ə·pə'thes·ən,ē }
- Ramapithecus** [PALEON] The genus name given to a fossilized upper jaw fragment found in the Siwalik hills, India; closely related to the human family. { ,rām·ə'pith·ə·kəs }
- rambla** [GEOL] A dry ravine, or the dry bed of an ephemeral stream. { 'ram·blə }
- ramdohrite** [MINERAL] $\text{Pb}_3\text{Ag}_3\text{Sb}_6\text{S}_{13}$ A dark-gray mineral composed of a lead silver antimony sulfur compound. { 'rām,dō,rīt }
- rammelsbergite** [MINERAL] NiAs_2 A gray mineral composed of nickel diarsenide; it is dimorphous with parammelsbergite. Also known as white nickel. { 'ram·əlz,bər,gīt }
- rampart** [GEOL] **1.** A narrow, wall-like ridge, 3–7 feet (1–2 meters) high, built up by waves along the seaward edge of a reef flat, and consisting of boulders, shingle, gravel, or reef rubble, commonly capped by dune sand. **2.** A wall-like ridge of unconsolidated material formed along a beach by the action of strong waves and current. **3.** A crescentic or ringlike deposit of pyroclastics around the top of a volcano. { 'ram,pärt }
- rampart wall** [GEOL] A rimming wall formed along the outer or seaward margin of a terrace, as on various high limestone Pacific islands. { 'ram,pärt 'wɔl }
- ramp valley** [GEOL] A trough between faults, forced downward by lateral pressure. { 'ramp ,val·ē }
- ramsdellite** [MINERAL] MnO_2 An orthorhombic mineral composed of manganese dioxide; it is dimorphous with pyrolusite. { 'ramz·de,līt }

- Rancholabrean** [GEOL] A stage of geologic time in southern California, in the upper Pleistocene, above the Irvingtonian. { ,ran·chō·lā·brā·ən }
- randannite** [MINERAL] An earthy form of opal. { ran'da,nīt }
- rang** [PETR] A unit of subdivision in the C.I.P.W. (Cross-Iddings-Pirsson-Washington) classification of igneous rocks. { rāŋ }
- range zone** [GEOL] Formal biostratigraphic zone made up of a body of strata comprising the total horizontal (geographic) and vertical (stratigraphic) range of occurrence of a specified taxon of a group of taxa. { 'rāŋ ,zōn }
- rank** [GEOL] **1.** A coal classification based on degree of metamorphism. **2.** See stack. { raŋk }
- rankinite** [MINERAL] $\text{Ca}_3\text{Si}_2\text{O}_7$ A monoclinic mineral composed of calcium silicate. { 'raŋ·kə,nīt }
- ransomite** [MINERAL] $\text{Cu}(\text{Fe,Al})_2(\text{SO}_4)_4 \cdot 7\text{H}_2\text{O}$ A sky-blue mineral composed of hydrous copper iron aluminum sulfate. { 'ran·sə,mīt }
- rapakivi** [PETR] Granite or quartz monzonite characterized by orthoclase phenocrysts mantled with plagioclase. Also known as wiborgite. { 'rā·pə'kē·vē }
- rapakivi texture** [PETR] An igneous and metamorphic rock texture in which spherical potassium feldspar crystals are surrounded by a rim of sodium feldspar, both within a finer-grained matrix. { 'rā·pə'kē·vē 'teks·chər }
- rare-earth mineral** [MINERAL] A mineral containing lanthanides and yttrium as essential constituents. The total atomic ratio of lanthanides and yttrium is greater than any other element within at least one crystallographic site. Examples are monazite, xenotime, and bastnaesite. { 'rer ,ərth 'min·rəl }
- rasorite** See kernite. { 'rā·zə,rīt }
- raspite** [MINERAL] PbWO_4 A yellow or brownish-yellow mineral composed of lead tungstate, occurring as monoclinic crystals. { 'ra,spīt }
- rate-of-change map** [GEOL] A derived stratigraphic map that shows the rate of change of structure, thickness, or composition of a given stratigraphic unit. { 'rāt əv 'chāŋj ,map }
- rate of sedimentation** [GEOL] The amount of sediment accumulated in an aquatic environment over a given period of time, usually expressed as thickness of accumulation per unit time. Also known as sedimentation rate. { 'rāt əv ,sed·ə·mən'tā·shən }
- rathite** [MINERAL] $\text{Pb}_{13}\text{As}_{18}\text{S}_{40}$ A dark-gray mineral with metallic luster composed of sulfide of lead and arsenic; occurs as orthorhombic crystals. { 'rā,tīt }
- ratio map** [GEOL] A facies map that depicts the ratio of thicknesses between rock types in a given stratigraphic unit. { 'rā·shō ,map }
- rattlesnake ore** [GEOL] A gray, black, and yellow mottled ore of carnotite and vanoxite; its spotted appearance resembles that of a rattlesnake. { 'rad·əl,snāk ,ər }
- rattle stone** [GEOL] A concretion composed of concentric laminae of different compositions, in which the more soluble layers have been removed by solution, leaving the central part detached from the outer part, such as a concretion of iron oxide filled with loose sand that rattles on shaking. Also known as klapperstein. { 'rad·əl ,stōn }
- rauhagite** [PETR] A carbonatite that contains ankerite. { raü'haü,gīt }
- Rauracian** [GEOL] A substage of Upper Jurassic geologic time in Great Britain forming the middle Lusitanian, above the Argovian and below the Sequanian. { raü'rā·shən }
- ravelly ground** [GEOL] Rock that breaks into small pieces when drilled and tends to cave or slough into the hole when the drill string is pulled, or binds the drill string by becoming wedged or locked between the drill rod and the borehole wall. { 'rav·lē 'graünd }
- ravinement** [GEOL] **1.** The formation of a ravine or ravines. **2.** An irregular junction which marks a break in sedimentation, such as an erosion line occurring where shallow-water marine deposits have cut down into slightly eroded underlying beds. { rə'ven·mənt }
- raw humus** See ectohumus. { 'rō 'hyü·məs }
- raw map** [GEOPHYS] A seismic map in which the z coordinate is time. { 'rō 'map }

Rayleigh wave

- Rayleigh wave** [GEOPHYS] In seismology, a surface wave with a retrograde, elliptical motion at the free surface. Also known as R wave. { 'rā·lē ,wāv }
- ray parameter** [GEOPHYS] A function p that is constant along a given seismic ray, given by $p = rv^{-1} \sin i$, where r is the distance from the center O of the earth, v is the velocity, and i is the angle that the ray at a point P makes with the radius OP. { 'rā pə ,ram·əd·ər }
- razorback** [GEOL] A sharp, narrow ridge. { 'rā·zər ,bak }
- razor stone** See novaculite. { 'rā·zər ,stōn }
- reaction border** See reaction rim. { rē'ak·shən ,bōrd·ər }
- reaction pair** [MINERAL] Any two minerals, one of which is formed at the expense of the other by reaction with liquid. { rē'ak·shən ,pər }
- reaction principle** [MINERAL] The concept of a reaction series for the principal rock-forming minerals. { rē'ak·shən ,prin·sə·pəl }
- reaction rim** [PETR] A surficial rim around one mineral produced by the reaction of the core mineral with the surrounding magma. Also known as reaction border. { rē'ak·shən ,rīm }
- reaction series** [MINERAL] Any series of minerals in which early formed varieties react with the melt to yield new minerals; two different types of reaction series exist, continuous and discontinuous. { rē'ak·shən ,sir·ēz }
- reigar** [MINERAL] AsS A red to orange mineral crystallizing in the monoclinic system, having a resinous luster and found in short, vertical striated crystals; specific gravity is 3.48, and hardness is 1.5–2 on Mohs scale. Also known as red arsenic; red orpiment; sandarac. { rē'al ,gār }
- rebound** [GEOL] The isostatic readjustment upward of a landmass depressed by glacial loading. { 'rē ,baʊnd }
- Recent** See Holocene. { 'rē·sənt }
- recess** [GEOL] **1.** An indentation occurring in a surface, bounded by a straight line. **2.** An area having the axial traces of folds concave toward the outer edge of the folded belt. { 'rē ,ses }
- recession** [GEOL] **1.** The backward movement, or retreat, of an eroded escarpment. **2.** A continuing landward movement of a shoreline or beach undergoing erosion. Also known as retrogression. **3.** The withdrawal of a body of water (as a sea or lake), thereby exposing formerly submerged areas. { ri'sesh·ən }
- recessional moraine** [GEOL] **1.** An end moraine formed during a temporary halt in the final retreat of a glacier. **2.** A moraine formed during a minor readvance of the ice front during a period of glacial recession. Also known as stadial moraine. { ri'sesh·ən·əl mə'rān }
- reclined fold** See recumbent fold. { ,ri'klɪnd 'fōld }
- recomposed granite** [PETR] An arkose composed of consolidated feldspathic residue that has been reworked and decomposed so slightly that upon cementation the rock resembles granite except that its grain is less even and it contains a greater percentage of quartz. Also known as reconstructed granite. { ,rē·kəm'pōzd 'gran·ət }
- recomposed rock** [PETR] A rock produced in place by the cementation of the fragmental products of surface weathering; for example, a recomposed granite. { ,rē·kəm'pōzd 'rāk }
- reconstitution** [GEOL] The formation of new chemicals, minerals, or structures under the influence of metamorphism. { rē ,kän·stə'tü·shən }
- reconstructed granite** See recomposed granite. { ,rē·kən'strəkt·əd 'gran·ət }
- recrystallization** [PETR] The formation of new mineral grains in crystalline form in a rock under the influence of metamorphic processes. { rē ,krist·əl·ə'zā·shən }
- recrystallization breccia** See pseudobreccia. { rē ,krist·əl·ə'zā·shən ,brech·ə }
- recrystallization flow** [GEOL] Flow in which there is molecular rearrangement by solution and redeposition, solid diffusion, or local melting. { rē ,krist·əl·ə'zā·shən ,flō }
- rectangular cross ripple mark** [GEOL] An oscillation cross ripple mark consisting of two sets of ripples which intersect at right angles, enclosing a rectangular pit. { rek'taŋ·gyəl·ər 'krōs 'rip·əl ,mārk }

red oxide of zinc

- rectangular drainage pattern** [GEOL] A drainage pattern characterized by many right-angle bends in both the main streams and their tributaries. Also known as lattice drainage pattern. { rek'taŋ·gʏə-lər 'dræn·ij ,pad·ərn }
- rectification** [GEOL] The simplification and straightening of the outline of an initially irregular and crenulate shoreline through the cutting back of headlands and offshore islands by marine erosion, and through deposition of waste from erosion or of sediment brought down by neighboring rivers. { ,rek-tə·fə'kā·shən }
- rectilinear shoreline** [GEOL] A long, relatively straight shoreline. { ,rek-tə'lin·ē·ər 'shōr,līn }
- rectorite** [GEOL] A white clay-mineral mixture with a regular interstratification of two mica layers (pyrophyllite and vermiculite) and one or more water layers. Also known as alleverdite. { 'rek-tə,rīt }
- recumbent fold** [GEOL] An overturned fold with a nearly horizontal axial surface. Also known as reclined fold. { ri'kəm·bənt 'föld }
- recurrent folding** [GEOL] A type of folding due to periodic deformation or subsidence and characterized by thinning or possible disappearance of formations at the crest. Also known as revived folding. { ri'kər·ənt 'föld·iŋ }
- red antimony** See kermesite. { 'red 'an·tə,mō·nē }
- red arsenic** See realgar. { 'red 'ärs·ən·ik }
- redbed** [GEOL] Continentally deposited sediment composed principally of sandstone, siltstone, and shale; red in color due to the presence of ferric oxide (hematite). Also known as red rock. { 'red,bed }
- red clay** [GEOL] A fine-grained, reddish-brown pelagic deposit consisting of relatively large proportions of windblown particles, meteoric and volcanic dust, pumice, shark teeth, manganese nodules, and debris transported by ice. Also known as brown clay. { 'red 'klā }
- red cobalt** See erythrite. { 'red 'kō,bōlt }
- red copper ore** See cuprite. { 'red 'kəp·ər ,ör }
- Reddish-Brown Lateritic soil** [GEOL] One of a zonal, lateritic group of soils developed from a mottled red parent material and characterized by a reddish-brown surface horizon and underlying red clay. { 'red-ish |bräun ,lad·ə'rid·ik 'sōil }
- Reddish-Brown soil** [GEOL] A group of zonal soils having a reddish, light brown surface horizon overlying a heavier, more reddish horizon and a light-colored lime horizon. { 'red-ish |bräun 'sōil }
- red earth** [GEOL] Leached, red, deep, clayey soil that is characteristic of a tropical climate. Also known as red loam. { 'red ,əρθ }
- redeposition** [GEOL] Formation into a new accumulation, such as the deposition of sedimentary material that has been picked up and moved (reworked) from the place of its original deposition, or the solution and reprecipitation of mineral matter. { rē,dep·ə'zish·ən }
- red hematite** See hematite. { 'red 'hē·mə,tīt }
- redingtonite** [MINERAL] (Fe,Mg,Ni)(Cr,Al)₂(SO₄)₄·22H₂O A pale-purple mineral composed of a hydrous sulfate of iron, magnesium, nickel, chromium, and aluminum. { 'red-iŋ·tə,nīt }
- red iron ore** See hematite. { 'red 'ī·ərn ,ör }
- red lead ore** See crocoite. { 'red 'led ,ör }
- red loam** See red earth. { 'red 'lōm }
- red magnetism** [GEOPHYS] The magnetism of the north-seeking end of a freely suspended magnet; this is the magnetism of the earth's south magnetic pole. { 'red 'mag·nə,tiz·əm }
- red mud** [GEOL] A reddish terrigenous mud composed of up to 25% calcium carbonate and deriving its color from the presence of ferric oxide; found on the sea floor near deserts and near the mouths of large rivers. { 'red 'məd }
- red ochre** See hematite. { 'red 'ō·kər }
- red orpiment** See realgar. { 'red 'ör·pə·mənt }
- red oxide of zinc** See zincite. { 'red 'äk,sid əv 'zīŋk }

redoxomorphic stage

- redoxomorphic stage** [GEOCHEM] The earliest geochemical stage of diagenesis characterized by mineral changes primarily due to oxidation and reduction reactions. { ri'dæk·sə|mòr·fik ,stāj }
- red rock** See redbed. { 'red ,ræk }
- redruthite** See chalcocite. { red'rú,thIt }
- redstone** [PETR] **1.** Any reddish sedimentary rock, such as red-colored sandstone. **2.** A deep-red, clayey sandstone or silt-stone representing a floodplain micaceous arkose. { 'red,stõn }
- reduction** [GEO] The lowering of a land surface by erosion. { ri'dæk·shən }
- reduction index** [GEO] The rate of wear of a sedimentary particle subject to abrasion, expressed as the difference between the mean weight of the particle before and after transport divided by the product of mean weight before transport and the distance traveled. { ri'dæk·shən ,in ,deks }
- reduction sphere** [GEO] A white, leached, spheroidal mass produced in a reddish or brownish sandstone by a localized reducing environment, commonly surrounding an organic nucleus or a pebble and ranging in size from a poorly defined speck to a large, perfect sphere more than 10 inches (25 centimeters) in diameter. { ri'dæk·shən ,sfir }
- reduzate** [GEO] A sediment accumulated under reducing conditions and consequently rich in organic carbon and in iron sulfide minerals; examples are coal and black shale. { 'rej·yə,zāt }
- Red-Yellow Podzolic soil** [GEO] Any of a group of acidic, zonal soils having a leached, light-colored surface layer and a subsoil containing clay and oxides of aluminum and iron, varying in color from red to yellowish red to a bright yellowish brown. { 'red 'yel·õ päd'zäl·ik 'sõil }
- red zinc ore** See zincite. { 'red 'zɪŋk ,õr }
- reedmergnerite** [MINERAL] NaBSi_3O_8 A colorless, triclinic borate mineral that represents the boron analog of albite. { rēd'mær·nyə,rIt }
- reef** [GEO] **1.** A ridge- or moundlike layered sedimentary rock structure built almost exclusively by organisms. **2.** An offshore chain or range of rock or sand at or near the surface of the water. { rēf }
- reef breccia** [PETR] A rock formed by the consolidation of limestone fragments broken off from a reef by the action of waves and tides. { 'rēf 'brech·ə }
- reef cap** [GEO] A deposit of fossil-reef material overlying or covering an island or mountain. { 'rēf ,kæp }
- reef cluster** [GEO] A group of reefs of wholly or partly contemporaneous growth, found within a circumscribed area or geologic province. { 'rēf ,klæs·tər }
- reef complex** [GEO] The solid reef core and the heterogeneous and contiguous fragmentary material derived from it by abrasion. { 'rēf ,käm ,pleks }
- reef conglomerate** See reef talus. { 'rēf kən ,gläm·ə·rət }
- reef core** [GEO] The rock mass constructed in place, and within the rigid growth lattice formed by reef-building organisms. { 'rēf ,kõr }
- reef debris** See reef detritus. { 'rēf də ,brē }
- reef detritus** [GEO] Fragmental material derived from the erosion of an organic reef. Also known as reef debris. { 'rēf di ,trɪd·əs }
- reef edge** [GEO] The seaward margin of the reef flat, commonly marked by surge channels. { 'rēf ,ej }
- reef flank** [GEO] The part of the reef that surrounds, interfingers with, and locally overlies the reef core, often indicated by massive or medium beds of reef talus dipping steeply away from the reef core. { 'rēf ,flæŋk }
- reef flat** [GEO] A flat expanse of dead reef rock which is partly or entirely dry at low tide; shallow pools, potholes, gullies, and patches of coral debris and sand are features of the reef flat. { 'rēf ,flæt }
- reef front** [GEO] The upper part of the outer or seaward slope of a reef, extending to the reef edge from above the dwindle point of abundant living coral and coralline algae. { 'rēf ,frɒnt }
- reef-front terrace** [GEO] A shelflike or benchlike eroded surface, sometimes veneered

- with organic growth, sloping seaward to a depth of 8–15 fathoms (15–27 meters). { 'rɛf ,frənt ,ter·əs }
- reef knoll** [GEOL] 1. A bioherm or fossil coral reef represented by a small, prominent, rounded hill, up to 330 feet (100 meters) high, consisting of resistant reef material, being either a local exhumation of an original reef feature or a feature produced by later erosion. 2. A present-day reef in the form of a knoll; a small reef patch developed locally and built upward rather than outward. { 'rɛf ,nɒl }
- reef limestone** [PETR] Limestone composed of the remains of sedentary organisms such as sponges, and of sediment-binding organic constituents such as calcareous algae. Also known as coral rock. { 'rɛf 'lɪm,stɒn }
- reef milk** [GEOL] A very-fine-grained matrix material of the back-reef facies, consisting of white, opaque microcrystalline calcite derived from abrasion of the reef core and reef flank. { 'rɛf ,mɪlk }
- reef patch** [GEOL] A single large colony of coral formed independently on a shelf at depths less than 220 feet (70 meters) in the lagoon of a barrier reef or of an atoll. Also known as patch reef. { 'rɛf ,pætʃ }
- reef pinnacle** [GEOL] A small, isolated spire of rock or coral, especially a small reef patch. { 'rɛf ,pɪn·ə·kəl }
- reef rock** [PETR] A hard, unstratified rock composed of sand, shale, and the calcareous remains of sedentary organisms, cemented by calcium carbonate. { 'rɛf ,rɪk }
- reef segment** [GEOL] A part of an organic reef lying between passes, gaps, or channels. { 'rɛf ,seg·mənt }
- reef slope** [GEOL] The face of a reef rising from the sea floor. { 'rɛf ,slɒp }
- reef talus** [GEOL] Massive inclined strata composed of reef detritus deposited along the seaward margin of an organic reef. Also known as reef conglomerate. { 'rɛf ,tāl·əs }
- reef tufa** [GEOL] Drusy, prismatic, fibrous calcite deposited directly from supersaturated water upon the void-filling internal sediment of the calcite mudstone of a reef knoll. { 'rɛf ,tʊf·ə }
- reef wall** [GEOL] A wall-like upgrowth of living coral and the skeletal remains of dead coral and other reef-building organisms, which reaches an intertidal level and acts as a partial barrier between adjacent environments. { 'rɛf ,wɔl }
- reentrant** [GEOL] A prominent, generally angular indentation into a coastline. { rɛ'en·trənt }
- reevesite** [MINERAL] $\text{Na}_6\text{Fe}_2(\text{OH})_6(\text{CO}_3)\cdot 4\text{H}_2\text{O}$ Hydrous oxide mineral known only in meteorites. { 'rɛv,zɪt }
- reference locality** [GEOL] A locality containing a reference section, established to supplement the type locality. { 'ref-rəns lɒ'kal·əd·ē }
- reference section** [GEOL] A rock section, or group of sections, designated to supplement the type section, or sometimes to supplant it (as where the type section is no longer exposed), and to afford a standard for correlation for a certain part of the geologic column. { 'ref-rəns ,sek·ʃən }
- reflected buried structure** [GEOL] The distortion of surface beds that reflect a similar structural distortion of underlying formations. { rɪ'flek·təd 'ber·əd 'strʌk·tʃər }
- reflector** [GEOPHYS] A layer or horizon that reflects seismic waves. { rɪ'flek·tər }
- refolding** [GEOL] A process by which folds of one generation are subjected to and stressed by a force of different orientation. { rɛ'fɒld·ɪŋ }
- refoliation** [GEOL] A foliation that is subsequent to and oriented differently from an earlier foliation. { rɪ,fɒ·lɛ'ə·ʃən }
- Refugian** [GEOL] A North American stage of geologic time in the Eocene and Oligocene, above the Fresnian and below the Zemorrian. { rə'fju·jē·ən }
- reg** [GEOL] An extensive, nearly level, low desert plain from which fine sand has been removed by wind, leaving a sheet of coarse, smoothly angular, wind-polished gravel and small stones lying on an alluvial soil, strongly cemented by mineralized solutions to form a broad desert pavement. Also known as gravel desert. { reg }
- regime** [GEOL] The existence in a stream channel of a balance between erosion and deposition over a period of years. { rə'zhɛm }

regional dip

- regional dip** [GEOL] The nearly uniform and generally low-angle inclination of strata over a wide area. Also known as normal dip. { 'rɛj·ən·əl 'dɪp }
- regional geology** [GEOL] The geology of a large region, treated from the viewpoint of the spatial distribution and position of stratigraphic units, structural features, and surface forms. { 'rɛj·ən·əl jə'l·ə·jɛ }
- regional metamorphism** [GEOL] Geological metamorphism affecting an extensive area. { 'rɛj·ən·əl ,med·ə'mɔr,fiz·əm }
- regional metasomatism** [GEOL] Metasomatic processes affecting extensive areas whereby the introduced material may be derived from partial fusion of the rocks involved from deep-seated magmatic sources. { 'rɛj·ən·əl ,med·ə'sɔ·mə,tiz·əm }
- regional slope** [GEOL] The generally uniform dip of rock strata or land surface over a wide area. { 'rɛj·ən·əl 'slɒp }
- regional slope deposit** [GEOL] A sedimentary deposit widely distributed as a thin sheet over a regional slope. { 'rɛj·ən·əl 'slɒp di,pəz·ət }
- regional unconformity** [GEOL] A continuous unconformity extending throughout a wide region that may be nearly continentwide, and usually represents a long period of time. { 'rɛj·ən·əl ,ən·kən'fɔr·məd·ē }
- regmagensis** [GEOL] Diastrophic production of regional strike-slip displacements. { ,rɛg·mə'jen·əsəs }
- regmaglypt** [GEOL] Any of various small, well-defined, characteristic indentations or pits on the surface of meteorites, frequently resembling the imprints of fingertips in soft clay. Also known as pezograph; piezoglypt. { 'rɛg·mə'glɪpt }
- regolith** [GEOL] The layer rock or blanket of unconsolidated rocky debris of any thickness that overlies bedrock and forms the surface of the land. Also known as mantle rock. { 'rɛg·əl,lɪθ }
- Regosol** [GEOL] In early United States soil classification systems, one of an azonal group of soils that form from deep, unconsolidated deposits and have no definite genetic horizons. { 'rɛg·ə,səl }
- regradation** [GEOL] The formation by a stream of a new profile of equilibrium, as when the former profile, after gradation, became deformed by crustal movements. { ,rɛ·grə'dā·shən }
- regression** [GEOL] The theory that some rivers have sources on the rainier sides of mountain ranges and gradually erode backward until the ranges are cut through. { ri'grɛsh·ən }
- regression conglomerate** [GEOL] A coarse sedimentary deposit formed during a retreat (recession) of the sea. { ri'grɛsh·ən kən,glə'm·ə·rət }
- regressive metamorphism** See retrograde metamorphism. { ri'grɛs·ɪv ,med·ə'mɔr ,fiz·əm }
- regressive overlap** See offlap. { ri'grɛs·ɪv 'o·vər,ləp }
- regressive reef** [GEOL] One of a series of nearshore reefs or bioherms superimposed on basinal deposits during the rising of a landmass or the lowering of the sea level, and developed more or less parallel to the shore. { ri'grɛs·ɪv 'rɛf }
- regressive ripple** [GEOL] An asymmetric ripple mark formed by a current but oriented in a direction opposite to the general movement of current flow (steep side facing upcurrent). { ri'grɛs·ɪv 'rɪp·əl }
- regressive sediment** [GEOL] A sediment deposited during the retreat or withdrawal of water from a land area or during the emergence of the land, and characterized by an offlap arrangement. { ri'grɛs·ɪv 'sed·ə'mənt }
- regur** [GEOL] One of a group of calcareous, intrazonal soils characterized by dark color and a high clay content. Also known as black cotton soil. { 'rɛg·ər }
- Reichenbach's lamellae** [GEOL] Thin, platy inclusions of foreign minerals (usually troilite, schreibersite, or chromite) occurring in iron meteorites. { 'rɪ·kən,bäks lə'mel·ē }
- rejuvenate** [GEOL] The act of stimulating a stream to renewed erosive activity either by tectonic uplift or a drop in sea level. { ri'jü·və,nāt }
- rejuvenated fault scarp** [GEOL] A fault scarp revived by renewed movement along an

relict texture

- old fault line after partial dissection or erosion of the initial scarp. Also known as revived fault scarp. { ri'jü-və,näd-əd 'fölt ,skärp }
- rejuvenation** [GEOL] The restoration of youthful features to fluvial landscapes; the renewal of youthful vigor to low-gradient streams is usually caused by regional upwarping of broad areas formerly at or near base level. { ri,jü-və'nä-shən }
- rejuvenation head** See knickpoint. { ri,jü-və'nä-shən ,hed }
- relative age** [GEOL] The geologic age of a fossil organism, rock, or geologic feature or event defined relative to other organisms, rocks, or features or events rather than in terms of years. { 'rel-əd-iv 'äj }
- relative chronology** [GEOL] Geochronology in which the time order is based on superposition or fossil content rather than on an age expressed in years. { 'rel-əd-iv krä'näl-ə-jē }
- relative dating** [GEOL] The proper chronological placement of a feature, object, or happening in the geologic time scale without reference to its absolute age. { 'rel-əd-iv 'däd-ŋ }
- relative geologic time** [GEOL] Nonabsolute geological time in which events may be placed relatively to one another. { 'rel-əd-iv ,jē-ə,läj-ik 'tīm }
- relative permeability** [GEOL] Specific permeability of a porous rock formation to a particular phase (oil, water, gas) at a particular saturation and a particular saturation distribution; for example, ratio of effective permeability to a specified phase to the rock's absolute permeability. { 'rel-əd-iv ,pär-mē-ə'bil-əd-ē }
- relative relief** See local relief. { 'rel-əd-iv ri'lēf }
- relative time** [GEOL] Geologic time determined by the placing of events in a chronologic order of occurrence, especially time as determined by organic evolution or superposition. { 'rel-əd-iv 'tīm }
- relaxation** [GEOL] In experimental structural geology, the diminution of applied stress with time, as the result of any of various creep processes. { ,rē,lak'sä-shən }
- released mineral** [MINERAL] A mineral formed during the crystallization of a magma due to failure of an earlier phase to react with the liquid portion of the magma. { ri'lēst 'min-rəl }
- release fracture** [GEOL] A fracture formed as a result of a decrease in the maximum principal stress. { ri'lēs ,frak-chər }
- release joint** See sheeting structure. { ri'lēs ,jōint }
- relic** [GEOL] **1.** A landform that remains intact after decay or disintegration or that remains after the disappearance of the major portion of its substance. **2.** A vestige of a particle in a sedimentary rock, such as a trace of a fossil fragment. { 'rel-ik }
- relict** [GEOL] **1.** Referring to a topographic feature that remains after other parts of the feature have been removed or have disappeared. **2.** Pertaining to a mineral, structure, or feature of a rock which represents features of an earlier rock and which persists in spite of processes tending to destroy it, such as metamorphism. { 'rel-ikt }
- relict dike** [GEOL] In a granitized mass, a tabular, crystalloblastic body that represents a dike which was emplaced prior to, and which was relatively resistant to, the granitization process. { 'rel-ikt 'dīk }
- relict mineral** [MINERAL] A mineral of a rock that persists from an earlier rock. { 'rel-ikt 'min-rəl }
- relict permafrost** [GEOL] Permafrost formed in the past which persists in areas where it would not form today. { 'rel-ikt 'pär-mə,fröst }
- relict sediment** [GEOL] A sediment which was in equilibrium with its environment when first deposited but which is unrelated to its present environment even though it is not buried by later sediments, such as a shallow-marine sediment on the deep ocean floor. { 'rel-ikt 'sed-ə-mənt }
- relict soil** [GEOL] A soil formed on a preexisting landscape but not subsequently buried under younger sediments. { 'rel-ikt 'sōil }
- relict texture** [GEOL] In mineral deposits, an original texture that persists after partial replacement. { 'rel-ikt 'teks-chər }

relief limonite

- relief limonite** [MINERAL] Indigenous limonite that is porous and cavernous in texture. { ri'lēf 'līm·ə,nīt }
- Relizean stage** [GEOL.] A subdivision of the Miocene in the California-Oregon-Washington area. { rə'lē·zē·ən ,stāj }
- remanent magnetization** [GEOPHYS] That component of a rock's magnetization whose direction is fixed relative to the rock and which is independent of moderate, applied magnetic fields. { 'rem·ə·nənt ,mag·nə·tə'zā·shən }
- remolded soil** [GEOL.] Soil that has had its natural internal structure modified or disturbed by manipulation so that it lacks shear strength and gains compressibility. { rē'mōl·dəd 'sōil }
- remolding index** [GEOL.] The ratio of the modulus of deformation of a soil in the undisturbed state to that of a soil in the remolded state. { rē'mōld·iŋ ,iŋ ,deks }
- renardite** [MINERAL] $\text{Pb}(\text{UO}_2)_4(\text{PO}_4)_2(\text{OH})_4 \cdot 7\text{H}_2\text{O}$ A yellow mineral composed of hydrous basic lead uranyl phosphate. { rə'när,dīt }
- Rendoll** [GEOL.] A suborder of the soil order Mollisol, formed in highly calcareous parent materials, mostly restricted to humid, temperate regions; the soil profile consists of a dark upper horizon grading to a pale lower horizon. { 'ren,däl }
- Rendzina** [GEOL.] One of an intrazonal, calcimorphic group of soils characterized by a brown to black, friable surface horizon and a light-gray or yellow, soft underlying horizon; found under grasses or forests in humid to semiarid climates. { rent'sin·ə }
- rensselaerite** [PETR.] A soft, compact, fibrous talc pseudomorphous after pyroxene and found in Canada and northern New York. { 'ren·sə·lə,rīt }
- repeated reflection** See multiple reflection. { ri'pēd·əd ri'flek·shən }
- repetition** [GEOL.] The duplication of certain stratigraphic beds at the surface or in any specified section owing to disruption and displacement of the beds by faulting or intense folding. { ,rep·ə'tiʃ·ən }
- Repettian** [GEOL.] A North American stage of lower Pliocene geologic time, above the Delmontian and below the Venturian. { rə'pesh·ən }
- replacement** [GEOL.] Growth of a new or chemically different mineral in the body of an old mineral by simultaneous capillary solution and deposition. [PALEON] Substitution of inorganic matter for the original organic constituents of an organism during fossilization. { ri'plās·mənt }
- replacement deposit** [MINERAL] A mineral deposit formed by the in-position replacement of one mineral for another. { ri'plās·mənt di,pāz·ət }
- replacement dike** [GEOL.] A dike which is made by gradual transformation of wall rock by solutions along fractures or permeable zones. { ri'plās·mənt ,dīk }
- replacement texture** [GEOL.] The texture exhibited where one mineral has replaced another. { ri'plās·mənt ,teks·chər }
- replacement vein** [GEOL.] A mineral vein formed by the gradual transformation of an original vein by secondary fluids. { ri'plās·mənt vān }
- replenishment** [GEOL.] The stage in development of a cavern in which the presence of air in the passages allows the deposition of speleothems. { ri'plen·iʃ·mənt }
- resedimentation** [GEOL.] **1.** Sedimentation of material derived from a preexisting sedimentary rock, that is, redeposition of sedimentary material. **2.** Mechanical deposition of material in cavities of postdepositional age, such as the deposition of carbonate muds and silts by internal mechanical erosion or solution of a limestone. **3.** The general process of subaqueous, downslope movement of sediment under the influence of gravity, such as the formation of a turbidity-current deposit. { rē,sed·ə·mən'tā·shən }
- resequent** [GEOL.] Referring to a geologic or topographic feature that resembles or agrees with a consequent feature but that developed from the feature at a later date. { rē'sē·kwənt }
- resequent fault-line scarp** [GEOL.] A fault-line scarp which faces in the same direction as the original fault scarp or in which the downthrown block is topographically lower than the upthrown block. { rē'sē·kwənt 'fōlt ,līn ,skärp }

resinous luster

- reservoir** [GEOL] **1.** A subsurface accumulation of crude oil or natural gas under adequate trap conditions. **2.** An area covered by névé where snow collects to form a glacier. **3.** A space within the earth that is occupied by magma. { 'rez·əv,wär }
- reservoir fluid** [GEOL] The subterranean fluid trapped by a reservoir formation; can include natural gas, liquid and vapor petroleum hydrocarbons, and interstitial water. { 'rez·əv,wär ,flü·əd }
- reservoir pressure** [GEOL] **1.** The pressure on fluids (water, oil, gas) in a subsurface formation. Also known as formation pressure. **2.** The pressure under which fluids are confined in rocks. { 'rez·əv,wär ,presh·ər }
- reservoir rock** [GEOL] Friable, porous sandstone containing deposits of oil or gas. { 'rez·əv,wär ,ræk }
- residual** [GEOL] **1.** Of a mineral deposit, formed by either mechanical or chemical concentration. **2.** Pertaining to a residue left in place after weathering of rock. **3.** Of a topographic feature, representing the remains of a formerly great mass or area and rising above the surrounding surface. { rə'zjɪ·ə·wəl }
- residual anticline** [GEOL] In salt tectonics, a relative structural high resulting from the depression of two adjacent rim synclines. Also known as residual dome. { rə'zjɪ·ə·wəl 'ant·i,kli:n }
- residual clay** [GEOL] Very finely divided clay material formed in place by weathering of rock. Also known as primary clay. { rə'zjɪ·ə·wəl 'klā }
- residual compaction** [GEOL] The difference between the amount of compaction that will ultimately occur for a given increase in applied stress, and that which has occurred at a specified time. { rə'zjɪ·ə·wəl kəm'pak·shən }
- residual dome** See residual anticline. { rə'zjɪ·ə·wəl 'dɔ:m }
- residual kame** [GEOL] A ridge or mound of sand or gravel formed by the denudation of glaciofluvial material that had been deposited in glacial lakes or on the flanks of hills of till. { rə'zjɪ·ə·wəl 'kām }
- residual liquid** [GEOL] The volatile components of a magma that remain in the magma chamber after much crystallization has taken place. { rə'zjɪ·ə·wəl 'lik·wəd }
- residual liquor** See rest magma. { rə'zjɪ·ə·wəl 'lik·ər }
- residual map** [GEOL] A stratigraphic map that displays the small-scale variations (such as local features in the sedimentary environment) of a given stratigraphic unit. { rə'zjɪ·ə·wəl 'map }
- residual material** [GEOL] Unconsolidated or partly weathered parent material of a soil, presumed to have developed in place (by weathering) from the consolidated rock on which it lies. { rə'zjɪ·ə·wəl mə'tir·ē·əl }
- residual mineral** [GEOL] A mineral that has been concentrated in place by weathering and leaching of rock. { rə'zjɪ·ə·wəl 'min·rəl }
- residual ochre** [GEOL] An earthy, red, yellow, or brownish iron oxide powder of iron oxide (usually the mineral limonite) produced during chemical weathering. { rə'zjɪ·ə·wəl 'ɔ:kər }
- residual sediment** See resistate. { rə'zjɪ·ə·wəl 'sed·ə·mənt }
- residual stress field** See ambient stress field. { rə'zjɪ·ə·wəl 'stres ,fēld }
- residual swelling** [GEOL] The difference between the original prefreezing level of the ground and the level reached by the settling after the ground is completely thawed. { rə'zjɪ·ə·wəl 'swel·ɪŋ }
- residual valley** [GEOL] An intervening trough between uplifted mountains. { rə'zjɪ·ə·wəl 'val·ē }
- residue** [GEOL] The in-place accumulation of rock debris which remains after weathering has removed all but the least soluble constituent. { 'rez·ə,dü }
- resinite** [GEOL] A variety of exinite composed of resinous compounds, often in elliptical or spindle-shaped bodies. { 'rez·ən,ɪt }
- resin opal** [MINERAL] A wax-, honey-, or ochre-yellow variety of common opal with a resinous luster or appearance. { 'rez·ən 'ɔ:pəl }
- resinous coal** [GEOL] Coal in which large proportions of resinous material are contained in the attritus. { 'rez·ən·əs 'kɔ:l }
- resinous luster** [GEOL] The luster on the fractured surfaces of certain minerals (such

resin tin

- as opal, sulfur, amber, and sphalerite) and rocks (such as pitchstone) that resemble the appearance of resin. { 'rez·ən·əs 'læs·tər }
- resin tin** See rosin tin. { 'rez·ən ,tin }
- resistate** [GEOL] A sediment consisting of minerals that are chemically resistant and are enriched in the residues of weathering processes. Also known as residual sediment. { ri'ziz,tāt }
- resistivity factor** See formation factor. { ,rē,zis'tiv·əd·ē ,fak·tər }
- resorbed reef** [GEOL] A reef characterized by embayed margins and by the numerous isolated patches of reef that are closely distributed about the main mass. { rē'sərbd 'rēf }
- resorption** [PETR] The process by which a magma redissolves previously crystallized minerals. { rē'sórp·shən }
- rest hardening** [GEOL] The increase of strength, with time, of a clay subsequent to its deposition, remodeling, or modification by the application of shear stress. { 'rest ,hārd·ən·iŋ }
- rest magma** [GEOL] The part of magma that remains after many minerals have crystallized from it during a long series of differentiations. Also known as residual liquor. { 'rest ,mag·mə }
- restricted** [GEOL] Referring to tectonic transport or movement in which elongation of particles is transverse to the direction of movement. { ri'strik·təd }
- restricted basin** [GEOL] A depression in the floor of the ocean in which the water circulation is topographically restricted and therefore generally is oxygen-depleted. Also known as barred basin; silled basin. { ri'strik·təd 'bās·ən }
- resurgent** [GEOL] Referring to magmatic water or gases that were derived from sources on the earth's surface, from its atmosphere, or from country rock of the magma. { ri'sər·jənt }
- resurgent cauldron** [GEOL] A cauldron in which the cauldron block has been uplifted following subsidence, usually in the form of a structural dome. { ri'sər·jənt 'kól·drən }
- resurrected** [GEOL] Pertaining to a surface, landscape, or feature (such as a mountain, peneplain, or fault scarp) that has been restored by exhumation to its previous status in the existing relief. Also known as exhumed. { 'rez·ə'rek·təd }
- retgersite** [MINERAL] NiSO₄·6H₂O A deep emerald green, tetragonal mineral consisting of a hydrated nickel sulfate. { 'ret·gər,sīt }
- reticular** See reticulate. { re'tik·yə·lər }
- reticulate** [GEOL] **1.** Referring to a vein or lode with netlike texture. **2.** Referring to rock texture in which crystals are partly altered to a secondary material, forming a network that encloses the remnants of the original mineral. Also known as mesh texture; reticular; reticulated. { rə'tik·yə·lət }
- reticulated** See reticulate. { rə'tik·yə·ləd·əd }
- reticulated bar** [GEOL] One of a group of slightly submerged sandbars in two sets, both of which are diagonal to the shoreline, forming a crisscross pattern. { rə'tik·yə·ləd·əd 'bār }
- Reticulosa** [PALEON] An order of Paleozoic hexactinellid sponges with a branching form in the subclass Hexasterophora. { rə'tik·yə'lō·sə }
- retinalite** [MINERAL] A massive, honey-yellow or greenish serpentine mineral with a waxy or resinous luster; a variety of chrysolite. { 'ret·ən·əl,īt }
- retinasphalt** [MINERAL] A light-brown variety of retinite usually found with lignite. { ,ret·ən'a,sfólt }
- retinite** [MINERAL] A fossil resin, such as glessite, krantzite, muckite, and ambrite, composed of 6–15% oxygen, lacking succinic acid, and found in brown coals and peat. { 'ret·ən,īt }
- retrograde metamorphism** [PETR] Formation of metamorphic minerals of a lower grade of metamorphism at the expense of minerals which are characteristic of a higher grade. Also known as diaphthoresis; retrogressive metamorphism. { 're·trə,grād ,med·ə'mór,fiz·əm }
- retrograde reservoir** [GEOL] Hydrocarbon reservoir in which hydrocarbons are initially

rhabdophane

- in the vapor phase; as pressure is reduced, the bubble-point line is passed and liquids are formed; upon further pressure reduction, a vapor phase is again formed. { 're·trə·grād 'rez·əv·wār }
- retrograding shoreline** [GEOL] A shoreline that is being moved landward by wave erosion. { 're·trə·grād·iŋ 'shòr,līn }
- retrogression** [GEOL] See recession. { ,re·trə'grəsh·ən }
- retrogressive metamorphism** See retrograde metamorphism. { |'re·trə'gres·iv ,med·ə'mór,fiz·əm }
- return** [GEOPHYS] Any of those surface waves on the record of a large earthquake which have traveled around the earth's surface by the long (greater than 180°) arc between epicenter and station, or which have passed the station and returned after traveling the entire circumference of the earth. { ri'tərn }
- return stroke** See return streamer. { ri'tərn ,strök }
- retzian** [MINERAL] $Mn_2Y(AsO_4)(OH)_4$ A chocolate brown to chestnut brown, orthorhombic mineral consisting of a basic arsenate of calcium, rare earths, and manganese. { 'ret·sē·ən }
- reversal of dip** [GEOL] Change in the dip direction of bedding near a fault such that the beds curve toward the fault surface in a direction exactly opposite that of the drag folds. Also known as dip reversal. { ri'vər·səl əv 'dip }
- reversed** See overturned. { ri'vərst }
- reversed arc** [GEOL] A curved belt of islands which is concave toward the open ocean, the opposite of most island arcs. { ri'vərst 'ärk }
- reversed polarity** [GEOPHYS] Natural remanent magnetism opposite that of the present geomagnetic field. { ri'vərst pə'lär·əd·ē }
- reverse fault** See thrust fault. { ri'vərs 'fölt }
- reverse-flowage fold** [GEOL] A fold in which flow from deformation has thickened the anticlinal crests and thinned the synclinal troughs, contrary to the normal flow pattern of a flow fold. { ri'vərs 'flō·ij 'föld }
- reverse saddle** [GEOL] A mineral deposit associated with the trough of a synclinal fold and following the bedding plane. Also known as trough reef. { ri'vərs 'səd·əl }
- reverse similar fold** [GEOL] A fold whose strata are thickened on the limbs and thinned on the axes, contrary to the pattern of a similar fold. { ri'vərs 'sim·əl·lər 'föld }
- reverse slip fault** See thrust fault. { ri'vərs 'slip ,fölt }
- reverse slope** [GEOL] A hill descending away from a ridge. { ri'vərs 'slöp }
- reversing dune** [GEOL] A dune that tends to develop unusual height but migrates only a limited distance because seasonal shifts in dominant wind direction cause it to move alternately in nearly opposite directions. { ri'vərs·iŋ ,dün }
- revet-crag** [GEOL] One of a series of narrow, pointed outliers or ridges of eroded strata inclined like a revetment against a mountain spur. { rə'vet ,kræg }
- revived fault scarp** See rejuvenated fault scarp. { ri'vīvd 'fölt ,skärp }
- revived folding** See recurrent folding. { ri'vīvd 'föld·iŋ }
- revolution** [GEOL] A little-used term to describe a time of profound crustal movements, on a continentwide or worldwide scale, which led to abrupt geographic, climatic, and environmental changes that were related to changes in forms of life. { ,rev·ə'lü·shən }
- rework** [GEOL] Any geologic material that has been removed or displaced by natural agents from its origin and incorporated in a younger formation. { 'rē,wərk }
- rezbanyite** [MINERAL] $Pb_3Cu_2Bi_{10}S_{19}$ A metallic-gray mineral composed of sulfide of lead, copper, and bismuth. { rez'ban,yīt }
- rhabdite** [MINERAL] See schreibersite. { 'rab,dīt }
- rhabdoglyph** [PALEON] A trace fossil consisting of a presumable worm trail appearing on the undersurface of flysch beds (sandstones) as a nearly straight bulge with little or no branching. { 'rab·də·glif }
- rhabdophane** [MINERAL] $(Ce,Y,La,Di)(PO_4)·H_2O$ A brown, pinkish, or yellowish-white mineral consisting of a hydrated phosphate of cerium, yttrium, and rare earths. { 'rab·də·fän }

Rhachitomi

- Rhachitomi** [PALEON] A group of extinct amphibians in the order Temnospondyli in which pleurocentra were retained. { rə'kid·ə,mī }
- Rhaetian** [GEOL] A European stage of geologic time; the uppermost Triassic (above Norian, below Hettangian of Jurassic). Also known as Rhaetic. { 'rē·shən }
- Rhaetic** See Rhaetian. { 'rēd·ik }
- Rhamphorhynchoidea** [PALEON] A Jurassic suborder of the Pterosauria characterized by long, slender tails with an expanded tip. { ,ram·fə·rɪŋ'kɔid·ē·ə }
- rhegmagenesis** [GEOL] Orogeny characterized by the development of large-scale strike-slip faults. { ,reg·mə'jen·ə·səs }
- rheid** [GEOL] A substance (below its melting point) which deforms by viscous flow during applied stress at an order of magnitude at least three times that of elastic deformation under similar circumstances. { 'rē·əd }
- rheid fold** [GEOL] A fold whose strata deform by viscous flow as if they were fluid. { 'rē·əd ,fɔld }
- rheidity** [GEOL] Relaxation time of a substance, divided by 1000. { rē'id·əd·ē }
- Rhenanida** [PALEON] An order of extinct marine fishes in the class Placodermi distinguished by mosaics of small bones between the large plates in the head shield. { re'nan·ə·də }
- rheoignimbrite** [GEOL] An ignimbrite, on the slope of a volcanic crater, that has developed secondary flowage due to high temperatures. { ,rē·ō'ig·nim·brɪt }
- rheomorphic intrusion** [PETR] The injection of country rock that has become mobilized into the igneous intrusion that caused the rheomorphism. { ,rē·ə'mɔr·fik in'trū·zhən }
- rheomorphism** [PETR] Mobilization of a rock by at least partial fusion accompanied by, and sometimes promoted by, addition of new material by diffusion. { ,rē·ə'mɔr ,fiz·əm }
- rhexistasy** [GEOL] The mechanical breaking up and transport of old soils or other surface residual materials. { rek'sis·tə·sē }
- rhizoconcretion** See root cast. { ,rɪ·zɔ'kən'krē·shən }
- Rhizodontidae** [PALEON] An extinct family of lobefin fishes in the order Osteolepiformes. { ,rɪ·zɔ'dənt·ə,dē }
- rhizosphere** [GEOL] The soil region subject to the influence of plant roots and characterized by a zone of increased microbiological activity. { 'rɪ·zə,sfɪr }
- Rhodanian orogeny** [GEOL] A short-lived orogeny that occurred at the end of the Miocene Period. { rɔ'dən·ē·ən ɔ'rəj·ə·nē }
- Rhodesian man** [PALEON] A type of fossil man inhabiting southern and central Africa during the late Pleistocene; the skull was large and low, marked by massive brow-ridges, with a cranial capacity of 1300 cubic centimeters or less. { rɔ'dē·zhən 'man }
- rhodite** [MINERAL] A mineral consisting of a native alloy of rhodium (about 40) and gold. { 'rɔ,dɪt }
- rhodizite** [MINERAL] $\text{CsAl}_2\text{Be}_4\text{B}_{11}\text{O}_{25}(\text{OH})_4$ A white mineral composed of a basic borate of cesium, aluminum, and beryllium, occurring as isometric crystals. { 'rɔd·ə,zɪt }
- rhodochrosite** [MINERAL] MnCO_3 A rose-red to pink or gray mineral form of manganese carbonate with hexagonal symmetry but occurring in massive or columnar form; isomorphous with calcite and siderite, has a hardness of 3.5–4 on Mohs scale, and a specific gravity of 3.7; a minor ore of manganese. { ,rɔd·ə'krɔ,sɪt }
- rhodolite** [MINERAL] A violet-red garnet species composed of a mixture of almandite and pyrope in about a 3:1 ratio. { 'rɔd·əl,ɪt }
- rhodonite** [MINERAL] MnSiO_3 A pink or brown mineral inosilicate crystallizing in the triclinic system and commonly found in cleavable to compact masses or in embedded grains; luster is vitreous, hardness is 5.5–6 on Mohs scale, and specific gravity is 3.4–3.7. { 'rɔd·ən,ɪt }
- Rhombifera** [PALEON] An extinct order of Cystoidea in which the thecal canals crossed the sutures at the edges of the plates, so that one-half of any canal lay in one plate and the other half on an adjoining plate. { rəm'bɪf·ə·rə }
- rhombochasm** [GEOL] A parallel-sided gap in the sialic crust occupied by simatic crust, probably caused by spreading and separation. { 'rəm·bə,kaz·əm }

rhythmic succession

- rhomboclase** [MINERAL] $\text{HFe}^{3+}(\text{SO}_4)_2 \cdot 4\text{H}_2\text{O}$ A colorless mineral composed of hydrous acid ferric sulfate, occurring in rhombic plates. { 'räm·bæ,kläs }
- rhombohedral iron ore** See hematite; siderite. { |rä·bö|hē·dräl 't·ørn ,ör }
- rhomboid ripple mark** [GEOL] An aqueous current ripple mark characterized by a reticular arrangement of diamond-shaped tongues of sand, with each tongue having two acute angles, one pointing upcurrent and the other pointing downcurrent. { 'räm ,böid 'rip·əl ,märk }
- rhomboporoid cryptostome** [PALEON] Any of a group of extinct bryozoans in the order Cryptostomata that built twiglike colonies with zoecia opening out in all directions from the central axis of each branch. { |rä·bö|pör,öid 'krip·tə,söm }
- rhomb-porphyr** [PETR] A porphyritic alkaline syenite composed of an alkali feldspar groundmass with augites having rhombohedral cross sections as the principal phenocryst minerals. { 'räm'pör·fə·rē }
- rhourd** [GEOL] A pyramid-shaped sand dune, formed by the intersection of other dunes. { 'rörd }
- rhyacolite** See sanidine. { r'ak·ə,lit }
- Rhynchosauridae** [PALEON] An extinct family of generally large, stout, herbivorous lepidosaurian reptiles in the order Rhynchocephalea. { ,riŋ·kə'sör·ə,dē }
- Rhynchotheriinae** [PALEON] A subfamily of extinct elephantoid mammals in the family Gomphotheriidae comprising the beak-jawed mastodonts. { ,riŋ·kə·thə'rī·ə,nē }
- Rhyniatae** See Rhyniopsida. { r'ni·ə,dē }
- Rhyniophyta** [PALEOBOT] A subkingdom of the Embryobionta including the relatively simple, uppermost Silurian-Devonian vascular plants. { ,rī·nē'äf·əd·ə }
- Rhyniopsida** [PALEOBOT] A class of extinct plants in the subkingdom Rhyniophyta characterized by leafless, usually dichotomously branched stems that bore terminal sporangia. { ,rī·nē'äp·səd·ə }
- rhyodacite** [PETR] A group of extrusive porphyritic igneous rocks containing quartz, plagioclase, and biotite phenocrysts in a fine-grained to glassy groundmass composed of alkali feldspar and silica minerals. Also known as dellenite; quartz lattice. { r'äd·ə,sit }
- rhyolite** [PETR] A light-colored, aphanitic volcanic rock composed largely of alkali feldspar and free silica with minor amounts of mafic minerals; the extrusive equivalent of granite. { 'rī·ə,lit }
- rhyolitic glass** [GEOL] Volcanic glass that is chemically equivalent to rhyolite. { |rī·ə|lid·ik 'glas }
- rhyolitic lava** [GEOL] A highly viscous, silica-rich lava. { |rī·ə|lid·ik 'lä·və }
- rhyolitic magma** [PETR] A type of magma formed by differentiation from basaltic magma in combination with assimilation of siliceous material, or by melting of portions of the earth's sialic layer. { |rī·ə|lid·ik 'mag·mə }
- rhyolitic tuff** [GEOL] A tuff composed of fragments of rhyolitic lava. { |rī·ə|lid·ik 'təf }
- rhythmic accumulations** [GEOL] Regular patterns of ripples and cusps in sediment on the beach or the sea floor, formed by currents and waves. { 'riθ·mik ə,kyü·mə'lä·shənz }
- rhythmic crystallization** [PETR] In igneous rocks, a phenomenon in which different minerals crystallize in concentric layers, giving rise to orbicular texture. { 'riθ·mik ,krist·əl'ä·shən }
- rhythmic layering** [GEOL] A type of layering in an igneous intrusion which is easily observable and in which there is repetition of zones of varying composition. { 'riθ·mik 'lä·ər·iŋ }
- rhythmic sedimentation** [GEOL] A repetitious, regular sequence of rock units formed by sedimentary succession and indicating a frequent, predictable recurrence of the same sequence of conditions. { 'riθ·mik ,sed·ə·men'tä·shən }
- rhythmic stratification** [GEOL] The occurrence of sediment layers in repetitive patterns, such as a regular alternation of layers of lime and clay. { 'riθ·mik ,sträd·ə·fä'kä·shən }
- rhythmic succession** [GEOL] A succession of rock units showing continual and repeated changes of lithology. { 'riθ·mik sək'sesh·ən }

rhythmite

- rhythmite** [GEOL] An independent unit of a rhythmic succession or of beds that were developed by rhythmic sedimentation. { 'rɪθ.mɪt }
- rib** [GEOL] A layer or dike of rock forming a small ridge on a steep mountainside. { rib }
- rib-and-furrow** [GEOL] The bedding-plane expression for micro-cross-bedding, consisting of sets of small, transverse arcuate markings confined to long, narrow, parallel grooves oriented parallel to the current flow and separated by narrow ridges. { 'rɪb.ən 'fɜː.ɔ } }
- riband jasper** See ribbon jasper. { 'rɪb.ənd 'jɑː.pər }
- ribbed moraine** [GEOL] One of a group of irregularly subparallel, locally branching, generally smoothly rounded and arcuate ridges that are convex in the downstream direction of a glacier but that curve upstream adjacent to eskers. { 'rɪbd mə'ræn }
- ribble** See ripple till. { 'rɪb.əl }
- ribbon** [PETR] One of a set of parallel bands in a rock or mineral. { 'rɪb.ən }
- ribbon banding** [PETR] A banding produced in the bedding of a sedimentary rock by thin strata of contrasting colors, giving the rock an appearance which suggests bands of ribbons. { 'rɪb.ən ,bændɪŋ }
- ribbon bomb** [GEOL] An elongate and flattened volcanic bomb derived from ropes of lava. { 'rɪb.ən ,bɒm }
- ribbon diagram** [GEOL] A continuous geologic cross section that is drawn in perspective along a curved or sinuous line. { 'rɪb.ən ɪdɪ.ə.ɡrɑm }
- ribbon jasper** [GEOL] Banded jasper with parallel, ribbonlike stripes of alternating colors or shades of color. Also known as riband jasper. { 'rɪb.ən ,jɑː.pər }
- ribbon reef** [GEOL] A linear reef within the Great Barrier Reef off the northeast coast of Australia, having inwardly curved extremities, and forming a festoon along the precipitous edge of the continental shelf. { 'rɪb.ən ,rɛf }
- ribbon rock** [PETR] A rock showing a succession of thin layers of differing composition or appearance. { 'rɪb.ən ,rɒk }
- ribbon slate** [PETR] Slate produced by incomplete metamorphism of clearly visible residual bedding planes that cut across the cleavage surface. { 'rɪb.ən ,slæt }
- ribbon structure** [GEOL] A succession of thin layers of different mineralogy and texture often contorted and deformed. { 'rɪb.ən ,strɜːk.tʃər }
- ribbon vein** See banded vein. { 'rɪb.ən ,vaɪn }
- rice coal** [GEOL] Anthracite that will pass through circular holes in a screen, the holes measuring 5/16 inch (7.9 millimeters), but not 3/16 inch (4.8 millimeters), in diameter. { 'rɪs ,kɔl }
- richellite** [MINERAL] $\text{Ca}_3\text{Fe}_{10}(\text{PO}_4)_8(\text{OH},\text{F})_{12}\cdot n\text{H}_2\text{O}$ A yellow mineral composed of hydrous basic iron calcium fluophosphate; occurs in masses. { rə'sheɪlɪt }
- Richmondian** [GEOL] A North American stage of geologic time: Upper Ordovician (above Maysvillian, below Lower Silurian). { rɪch'mɒn.dɛ.ən }
- richterite** [MINERAL] $(\text{Na},\text{K})_2(\text{Mg},\text{Mn},\text{Ca})_6\text{Si}_8\text{O}_{22}(\text{OH})_2$ A brown, yellow, or rose-red monoclinic mineral composed of basic silicate of sodium, potassium, magnesium, manganese, and calcium; a member of the amphibole group. { 'rɪk.tərɪt }
- Richter scale** [GEOPHYS] A scale of numerical values of earthquake magnitude ranging from 1 to 9. { 'rɪk.tər ,skɑl }
- rickardite** [MINERAL] Cu_4Te_3 A deep-purple mineral composed of copper telluride, occurring in masses. { 'rɪk.ər,dɪt }
- ricolettaite** [PETR] A dark-colored syenite-gabbro containing anorthite as the plagioclase, along with olivine and augite. { ,rɪk.ə'led.əɪt }
- rideau** [GEOL] A small ridge or mound of earth, or a slightly elevated piece of ground. { rɪ'dɔ } }
- ridge** [GEOL] An elongate, narrow, steep-sided elevation of the earth's surface or the ocean floor. { rɪdʒ }
- ridge fault** [GEOL] A fault structure that is a set of two faults bounding a horst. { 'rɪdʒ ,fɔlt }
- ridge-top trench** [GEOL] A trench, occasionally found at or near the crest of high, steep-sided mountain ridges, formed by the creep displacement of a large slab of

rimming wall

- rock along shear surfaces more or less parallel with the side slope of the ridge. { 'ri: ,təp ,trenʃ }
- riebeckite** [MINERAL] $\text{Na}_2(\text{Fe,Mg})_5\text{Si}_9\text{O}_{22}(\text{OH})_2$ A blue or black monoclinic amphibole occurring as a primary constituent in some acid- or sodium-rich igneous rocks. { 'rē ,be ,kɪt }
- riebugsbreccia** [GEOL] A breccia developed during folding. { 'rē·bənʒ ,brech·ə }
- Riecke's principle** [MINERAL] The principle that solution of a mineral occurs most readily at points of greatest external pressure, and crystallization occurs most readily at points of least external pressure; applied to recrystallization in metamorphic rock. { 'rē·kəz ,prin·sə·pəl }
- riedenite** [PETR] An igneous rock composed of large tabular biotite crystals in a granular groundmass of nosean, biotite, pyroxene, and small amounts of sphene and apatite. { 'rēd·ən ,ɪt }
- riegel** [GEOL] A low, traverse ridge of bedrock on the floor of a glacial valley. Also known as rock bar; threshold; verrou. { 'rē·gəl }
- rift** [GEOL] **1.** A narrow opening in a rock caused by cracking or splitting. **2.** A high, narrow passage in a cave. { rift }
- rift-block mountain** [GEOL] A mountain range which is a horst block bounded by normal faults. { 'rɪft |blæk 'maʊnt·ən }
- rift-block valley** [GEOL] A valley which occupies a graben. { 'rɪft |blæk 'val·ē }
- rift lake** See sag pond. { 'rɪft ,læk }
- rift valley** [GEOL] A deep, central cleft with a mountainous floor in the crest of a midoceanic ridge. Also known as central valley; midocean rift. { 'rɪft ,val·ē }
- rift-valley lake** See sag pond. { 'rɪft |val·ē 'læk }
- right-lateral fault** See dextral fault. { 'rɪt |lad·ə·rəl 'fəʊlt }
- right-lateral slip fault** See dextral fault. { 'rɪt |lad·ə·rəl 'slɪp ,fəʊlt }
- right side up** See right way up. { 'rɪt 'sɪd 'əp }
- right-slip fault** See dextral fault. { 'rɪt ,slɪp ,fəʊlt }
- right way up** [GEOL] The state of strata where the present upward succession of layers is the original (normal) order of deposition. Also known as right side up. { 'rɪt 'wā 'əp }
- rill** [GEOL] A small, transient runnel. { ril }
- rillenstein** [GEOL] A pattern of tiny solution grooves of about 1 millimeter or less in width, formed on the limestone surface of a karstic region. { 'ril·ən ,stɪn }
- rill erosion** [GEOL] The formation of numerous, closely spaced rills due to the uneven removal of surface soil by streamlets of running water. Also known as rilling; rill wash; rillwork. { 'ril ɪ'rɒ-zən }
- rilling** See rill erosion. { 'ril·ɪŋ }
- rill mark** [GEOL] A small, dendritic channel formed on beach mud or sand by a rill, especially if on the lee side of a partially buried obstruction. { 'ril ,mɑ:k }
- rillstone** See ventifact. { 'ril ,stɒn }
- rill wash** See rill erosion. { 'ril ,wɑ:ʃ }
- rillwork** See rill erosion. { 'ril ,wɜ:k }
- rima** [GEOL] A long, narrow aperture, cleft, or fissure. { 'rɪ·mə }
- rim cement** [GEOL] A thin layer of calcium carbonate, hematite, or silica developed on the surface of detrital grains during diagenesis. { 'rɪm sɪ ,mɛnt }
- rim gypsum** [GEOCHEM] Gypsum in thin films between anhydrite crystals, believed to have been introduced in solution rather than produced by replacement. { 'rɪm ,ɪp·səm }
- rimmed kettle** [GEOL] A morainal depression with raised edges. { 'rɪmd 'ked·əl }
- rimmed solution pool** [GEOL] A pool in rock with a hardened rim resulting from deposition of lime during evaporation at low tide. { 'rɪmd sə'lju·ʃən ,pʊl }
- rimming wall** [GEOL] A steep, ridgelike erosional remnant of continuous layers of porous, permeable, poorly cemented, detrital limestones, believed to form under tropical or subtropical conditions by surface-controlled secondary cementation of an original steep slope and followed by differential erosion that brings the cemented zone into relief. { 'rɪm·ɪŋ ,wɔ:l }

rimpyllite

- rimpyllite** [MINERAL] A group name for several green and brown hornblendes with high contents of (Al,Fe)₂O₃. { 'rim·pə,lɪt }
- rim ridge** [GEOL] A minor ridge of till defining the edge of a moraine plateau. { 'rim ,rɪd }
- rimrock** [GEOL] A top layer of resistant rock on a plateau outcropping with vertical or near vertical walls. { 'rim,ræk }
- rimstone** [GEOL] A calcium-containing deposit ringing an overflowing basin such as a hot spring. { 'rim,stōn }
- rim syncline** [GEOL] In salt tectonics, a local depression that develops as a border around a salt dome, as the salt in the underlying strata is displaced toward the dome. Also known as peripheral sink. { 'rim 'sɪn,kliːn }
- rincon** [GEOL] **1.** A small, secluded valley. **2.** A bend in a stream. { rɪŋ'kɒn }
- ring complex** [GEOL] An association of two ring-shaped igneous intrusive forms, ring dikes and cone sheets. { 'rɪŋ ,kəm,pleks }
- ring current** [GEOPHYS] A westward electric current which is believed to circle the earth at an altitude of several earth radii during the main phase of geomagnetic storms, resulting in a large worldwide decrease in the geomagnetic field horizontal component at low latitudes. { 'rɪŋ ,kə·rɒnt }
- ring depression** [GEOL] The annular, structurally depressed area surrounding the central uplift of a cryptoexplosion structure; faulting and folding may be involved in its formation. Also known as peripheral depression; ring syncline. { 'rɪŋ dɪ,presh·ən }
- ring dike** [GEOL] A roughly circular dike that is vertical or inclined away from the center of the arc. Also known as ring-fracture intrusion. { 'rɪŋ ,dɪk }
- ring fault** [GEOL] **1.** A fault that bounds a rift valley. **2.** A steep-sided fault pattern that is cylindrical in outline and associated with cauldron subsidence. Also known as ring fracture. { 'rɪŋ ,fɔlt }
- ring fissure** [GEOL] A roughly circular desiccation crack formed on a playa around a point source (generally a phreatophyte). { 'rɪŋ ,fɪʃ·ər }
- ring fracture** See ring fault. { 'rɪŋ ,frak·chər }
- ring-fracture intrusion** See ring dike. { 'rɪŋ ,frak·chər ɪn,trɪ·zhən }
- ring-fracture stoping** [GEOL] Large-scale magmatic stoping that is associated with cauldron subsidence. { 'rɪŋ ,frak·chər ,stɒp·ɪŋ }
- ringite** [GEOL] An igneous rock formed by the mixing of silicate and carbonatite magmas. { 'rɪŋ,ɪt }
- ring silicate** See cyclosilicate. { 'rɪŋ 'sɪl·ə·kət }
- ring structure** [GEOL] A formation on the surface of the earth, moon, or a planet, having a ring-shaped trace in plan. { 'rɪŋ ,stræk·chər }
- ring syncline** See ring depression. { 'rɪŋ 'sɪn,kliːn }
- rinkite** See mosandrite. { 'rɪŋ,kɪt }
- rinkolite** See mosandrite. { 'rɪŋ·kə,lɪt }
- rinneite** [MINERAL] NaK₃FeCl₆ A colorless, pink, violet, or yellow mineral composed of sodium potassium iron chloride, occurring in granular masses. { 'rɪn·ē,ɪt }
- rip channel** [GEOL] A channel, often more than 2 meters (6.6 feet) deep, carved on the shore by a rip current. { 'rɪp ,chan·əl }
- ripe** [GEOL] Referring to peat, in an advanced state of decay. { rɪp }
- ripidolite** [MINERAL] (Mg,Fe²⁺)₉Al₆Si₅O₂₀(OH)₁₆ A mineral of the chlorite group; consists of basic magnesium iron aluminum silicate. Also known as aphrosiderite. { rə'pɪd·əl,ɪt }
- ripple** [GEOL] A very small ridge of sand resembling or suggesting a ripple of water and formed on the bedding surface of a sediment. { 'rɪp·əl }
- ripple bedding** [GEOL] A bedding surface characterized by ripple marks. { 'rɪp·əl ,bed·ɪŋ }
- ripple biscuit** [GEOL] A bedding structure produced by lenticular lamination of sand in a bay or lagoon. { 'rɪp·əl ,bɪs·kət }
- ripple drift** [GEOL] A pattern of cross-lamination formed by sedimentary deposits on both sides of a migrating ripple. { 'rɪp·əl ,drɪft }

riverwash

- ripple index** [GEOL] On a rippled surface, the ratio of the crest-to-crest distance to the crest-to-trough distance. { 'rip·əl ,in,deks }
- ripple lamina** [GEOL] An internal sedimentary structure formed in sand or silt by currents or waves, as opposed to a ripple mark formed externally on a surface. { 'rip·əl ,lam·ə·nə }
- ripple load cast** [GEOL] A load cast of a ripple mark showing evidence of penecontemporaneous deformation in the accumulation of its trough and crest and in the oversteepening of the component laminae. { 'rip·əl 'löd ,kast }
- ripple mark** [GEOL] **1.** A surface pattern on incoherent sedimentary material, especially loose sand, consisting of alternating ridges and hollows formed by wind or water action. **2.** One of the ridges on a ripple-marked surface. { 'rip·əl ,märk }
- ripple scour** [GEOL] A shallow, linear trough with transverse ripple marks. { 'rip·əl ,skaür }
- ripple symmetry index** [GEOL] A measure of the degree of symmetry of a ripple mark, equal to the ratio of the length of the gentle (upcurrent) side to the steep (downcurrent) side. { 'rip·əl 'sim·ə·trē ,in,deks }
- ripple till** [GEOL] A till sheet containing low, winding smooth-topped ridges lying at right angles to the direction of ice movement, and grouped into narrow belts up to 48 miles (80 kilometers) long that are generally parallel to the direction of ice movement. Also known as ribble. { 'rip·əl 'til }
- rise** [GEOL] A long, broad elevation which rises gently from its surroundings, such as the sea floor. { 'rīz }
- rise pit** [GEOL] A pit through which an underground stream rises to the surface with a calm and steady flow. { 'rīz ,pit }
- riser** [GEOL] A steplike topographic feature, such as a steep slope between terraces. { 'rīz·ər }
- Riss** [GEOL] **1.** A European stage of geologic time: Pleistocene (above Mindel, below Würm). **2.** The third stage of glaciation of the Pleistocene in the Alps. { ris }
- Rissoacea** [PALEON] An extinct superfamily of gastropod mollusks. { ,ris·ə'wās·ē·ə }
- Riss-Würm** [GEOL] The third interglacial stage of the Pleistocene in the Alps, following the Riss glaciation and preceding the Würm glaciation. { 'ris'virm }
- river bar** [GEOL] A ridgelike accumulation of alluvium in the channel, along the banks, or at the mouth of a river. { 'riv·ər ,bär }
- river basin** [GEOL] The area drained by a river and all of its tributaries. { 'riv·ər ,bäs·ən }
- riverbed** [GEOL] The channel which contains, or formerly contained, a river. { 'riv·ər ,bed }
- river bottom** [GEOL] The low-lying alluvial land along a river. Also known as river flat. { 'riv·ər ,bäd·əm }
- river-deposition coast** [GEOL] A deltaic coast characterized by lobate seaward bulges crossed by river distributaries and bordered by lowlands. { 'riv·ər ,dep·ə'zish·ən ,köst }
- river drift** [GEOL] Rock material deposited by a river in one place after having been moved from another. { 'riv·ər ,drift }
- river flat** See river bottom. { 'riv·ər ,flat }
- river morphology** [GEOL] The study of the channel pattern and the channel geometry at several points along a river channel, including the network of tributaries within the drainage basin. Also known as channel morphology; fluviomorphology; stream morphology. { 'riv·ər mór'fäl·ə·jē }
- river plain** See alluvial plain. { 'riv·ər ,plān }
- river run gravel** [GEOL] Natural gravel as found in deposits that have been subjected to the action of running water. { 'riv·ər 'rən ,grav·əl }
- river terrace** See stream terrace. { 'riv·ər ,ter·əs }
- riverwash** [GEOL] **1.** Soil material that has been transported and deposited by rivers. **2.** An alluvial deposit in a river bed or flood channel, subject to erosion and deposition during recurring flood periods. { 'riv·ər ,wāsh }

riving

- riving** [GEOL] The splitting off, cracking, or fracturing of rock, especially by frost action. { 'rɪv·ɪŋ }
- road** [GEOL] One of a series of erosional terraces in a glacial valley, formed as the water level dropped in an ice-dammed lake. { rɒd }
- roaring sand** [GEOL] A sounding sand, found on a desert dune, that sets up a low roaring sound that sometimes can be heard for a distance of 1200 feet (400 meters). { 'rɔːr-ɪŋ 'sænd }
- robinsonite** [MINERAL] $Pb_7Sb_{12}S_{25}$ A mineral composed of lead antimony sulfide. { 'rɒb·ən·sə,nɪt }
- rocdrumlin** See rock drumlin. { 'rɒk|drəm·lən }
- roche moutonnée** [GEOL] A small, elongate hillock of bedrock sculptured by a large glacier so that its long axis is oriented in the direction of ice movement; the upstream side is gently inclined, smoothly rounded, but striated, and the downstream side is steep, rough, and hackly. { 'rɒç |mʊt·ən|ə }
- rock** [PETR] **1.** A consolidated or unconsolidated aggregate of mineral grains consisting of one or more mineral species and having some degree of chemical and mineralogic constancy. **2.** In the popular sense, a hard, compact material with some coherence, derived from the earth. { rɒk }
- rock asphalt** See asphalt rock. { 'rɒk 'as,fɒlt }
- rock association** [PETR] A group of igneous rocks within a petrographic province that are related chemically and petrographically, generally in a systematic manner such that chemical data for the rocks plot as smooth curves on variation diagrams. Also known as rock kindred. { 'rɒk ə,sɔː·shē|ə·shən }
- rock bar** See riegel. { 'rɒk ,bær }
- rock bench** See structural bench. { 'rɒk ,bentʃ }
- rockbridgeite** [MINERAL] $Fe^{2+}Fe_6^{3+}(PO_4)_4(OH)_8$ A basic phosphate mineral containing iron; isomorphous with frondelite. { 'rɒk,bri,dʒɪt }
- rock-bulk compressibility** [GEOL] One of three types of rock compressibility (matrix, bulk, and pore); the fractional change in volume of the bulk volume of the rock with a unit change in pressure. { 'rɒk ,bɜːk kəm,pres·ə'bil·əd·ɪ }
- rock cave** See shelter cave. { 'rɒk ,kæv }
- rock cleavage** [PETR] The capacity of a rock to split along certain parallel surfaces more easily than along others. { 'rɒk ,klē·vɪj }
- rock control** [GEOL] The influences of differences in earth materials on development of landforms. { 'rɒk kən,troʊl }
- rock cork** See mountain cork. { 'rɒk ,kɔːk }
- rock creep** [GEOL] A form of slow flowage in rock materials evident in the downhill bending of layers of bedded or foliated rock and in the slow downslope migration of large blocks of rock away from their parent outcrop. { 'rɒk ,krēp }
- rock crystal** [MINERAL] A transparent, colorless form of quartz with low brilliance; used for lenses, wedges, and prisms in optical instruments. Also known as berg crystal; crystal; mountain crystal; pebble; quartz crystal. { 'rɒk ,krist·əl }
- rock cycle** [GEOL] The interrelated sequence of events by which rocks are initially formed, altered, destroyed, and reformed as a result of magmatism, erosion, sedimentation, and metamorphism. { 'rɒk ,sɪ·kəl }
- rock-defended terrace** [GEOL] **1.** A river terrace having a ledge or outcrop of resistant rock at its base which serves as protection against undermining. **2.** A marine terrace having a mass of resistant rock at the base of the cliff which protects against wave erosion. { 'rɒk dɪfən·dəd 'ter·əs }
- rock desert** [GEOL] An upland desert in which bedrock is either exposed or is covered with a thin veneer of coarse rock fragments. { 'rɒk ,dez·ərt }
- rock drum** See rock drumlin. { 'rɒk |drəm }
- rock drumlin** [GEOL] A smooth, streamlined hill modeled by glacial erosion, which has a core of bedrock usually veneered with a layer of glacial till and which resembles a true drumlin in outline and form but is generally less symmetrical and less regularly shaped. Also known as drumlinoid; false drumlin; rocdrumlin; rock drum. { 'rɒk |drəm·lən }

rock pillar

- rock element** [PETR] The coherent, intact piece of rock that is the basic constituent of the rock system and which has physical, mechanical, and petrographic properties that can be described or measured by laboratory tests. { 'ræk ,el·ə·mənt }
- rocket lightning** [GEOPHYS] A rare form of lightning whose luminous channel seems to advance through the air with only the speed of a skyrocket. { 'ræk·ət ,līt·niŋ }
- rock failure** [GEOL] Fracture of a rock that has been stressed beyond its ultimate strength. { 'ræk ,fæl·yər }
- rockfall** [GEOL] 1. The fastest-moving landslide; free fall of newly detached bedrock segments from a cliff or other steep slope; usually occurs during spring thaw.
2. The rock material moving in or moved by a rockfall. { 'ræk ,fɔl }
- rock fan** [GEOL] A fan-shaped bedrock surface whose apex is where a mountain stream debouches upon a piedmont slope, and which occupies an area where a pediment meets the mountain slope. { 'ræk ,fan }
- rock-floor robbing** [GEOL] A form of sheetflood erosion in which sheetfloods remove crumbling debris from rock surfaces in desert mountains. { 'ræk ,flɔr ,rəb·iŋ }
- rock flour** [GEOL] A fine, chemically unweathered powder of rock-forming minerals produced by pulverization of rock fragments during natural transport or crushing. Also known as glacial flour. { 'ræk ,flaü·ər }
- rockforming** [GEOL] Referring to any minerals which commonly occur in important proportions in common rocks. { 'ræk ,fórm·iŋ }
- rock fragment** [PETR] A component of a sedimentary rock consisting of polymineralic or polygranular sand grains that are abraded particles of igneous, sedimentary, or metamorphic rocks. { 'ræk ,frag·mənt }
- rock glacier** [GEOL] Boulders and fine material cemented by ice about a meter below the surface. Also known as talus glacier. { 'ræk ,glä·shər }
- rock-glacier creep** [GEOL] A rapid talus creep of tongues of debris in a cold region, caused by the expansive force of the alternate freeze and thaw of ice in the interstices of the debris. { 'ræk ,glä·shər ,krēp }
- rock gypsum** [MINERAL] Massive, coarsely crystalline to earthy, finely granular type of gypsum found in gyp rock. { 'ræk ,jip·səm }
- rocking stone** [GEOL] A stone or boulder, often of great size, so finely poised upon its foundation (as on the side of a hill or cliff) that it can be moved slightly backward and forward with little force (as with the hand) and still retain its original position. Also known as roggan. { 'ræk·iŋ ,stɔn }
- rock island** See meander core. { 'ræk ,ī·lənd }
- rock kindred** See rock association. { 'ræk ,kin·drəd }
- rock magnetism** [GEOPHYS] The natural remanent magnetization of igneous, metamorphic, and sedimentary rocks resulting from the presence of iron oxide minerals. { 'ræk 'mag·nə,tiz·əm }
- rock matrix compressibility** [GEOL] One of three types of rock compressibility (matrix, bulk, and pore); the fractional change in volume of the solid rock material (grains) with a unit change in pressure. { 'ræk ,mä·triks kəm,pres·ə'bil·əd·ē }
- rock meal** See rock milk. { 'ræk ,mēl }
- rock mechanics** [GEOPHYS] Application of the principles of mechanics and geology to quantify the response of rock when it is acted upon by environmental forces, particularly when human-induced factors alter the original ambient forces. { 'ræk mi,kan·iks }
- rock milk** [MINERAL] A soft, white, earthy or powdery variety of calcite. Also known as agaric mineral; bergmehl; forril farina; rock meal. { 'ræk ,milk }
- rock pedestal** See pedestal. { 'ræk ,ped·ə·stəl }
- rock pediment** [GEOL] A pediment formed on the surface of bedrock. { 'ræk ,ped·ə·mənt }
- rock permeability** [GEOL] The ability of a rock to receive, hold, or pass fluid materials (oil, water, and gas) by nature of the interconnections of its internal porosity. { 'ræk ,pər·mē·ə'bil·əd·ē }
- rock phosphate** See phosphorite. { 'ræk 'fä,sfät }
- rock pillar** [GEOL] 1. A column of rock produced by differential weathering or erosion,

rock pool

- as along a joint plane. **2.** In a cave, a pillar-type structure that is residual bedrock rather than a stalactostalagmite. { 'ræk ,pil·ər }
- rock pool** [GEOL] A tidal pool formed along a rocky shoreline. { 'ræk ,pül }
- rock pressure** [GEOPHYS] **1.** Stress in underground geologic material due to weight of overlying material, residual stresses, and pressures resulting from swelling clays. **2.** See ground pressure. { 'ræk ,presh·ər }
- rock river** [GEOL] A very long and narrow rock stream. { 'ræk ,riv·ər }
- rock salt** See halite. { 'ræk ,sölt }
- rock shelter** [GEOL] A cave that is formed by a ledge of overhanging rock. { 'ræk ,shel·tər }
- rock silk** [MINERAL] A silky variety of asbestos. { 'ræk ,silk }
- rockslide** [GEOL] The sudden, rapid downward movement of newly detached bedrock segments over a surface of weakness, such as of bedding, jointing, or faulting. Also known as rock slip. { 'ræk ,slid }
- rock slip** See rockslide. { 'ræk ,slip }
- rock stack** [GEOL] A rocky crag that has been uplifted from an old sea floor. { 'ræk ,stak }
- rock step** See knickpoint. { 'ræk ,step }
- rock-stratigraphic unit** [GEOL] A lithologically homogeneous body of strata characterized by certain observable physical features, or by the dominance of a certain rock type or combination of rock types; rock-stratigraphic units include groups, formations, members, and beds. Also known as geolith; lithologic unit; lithostratic unit; lithostratigraphic unit; rock unit. { 'ræk |strad·ə'graf·ik 'yü·nət }
- rock stream** [GEOL] Rocks moving (or already moved) in a mass down a slope under the influence of their own weight. { 'ræk ,strēm }
- rock system** [GEOPHYS] In rock mechanics, all natural environmental factors that can influence the behavior of that portion of the earth's crust that will become part of an engineering structure. { 'ræk ,sis·təm }
- rock terrace** [GEOL] A stream terrace on the side of a valley composed of resistant bedrock which remains during erosion of weaker overlying and underlying beds. { 'ræk ,ter·əs }
- rock type** [PETR] **1.** One of the three major rock groups: igneous, sedimentary, metamorphic. **2.** A rock having a unique, identifiable set of characters, such as basalt. { 'ræk ,tīp }
- rock unit** See rock-stratigraphic unit. { 'ræk ,yü·nət }
- rock varnish** [GEOL] A dark coating on rock surfaces exposed to the atmosphere. It is composed of about 30% manganese and iron oxides, up to 70% clay minerals, and over a dozen trace and rare-earth minerals. Although found in all terrestrial environments, it is mostly developed and best preserved in arid regions. Also known as desert varnish. { 'ræk ,vər·nəʃ }
- rock wood** See mountain wood. { 'ræk ,wüd }
- rod** [GEOL] A rodlike sedimentary particle characterized by a width-length ratio less than 2/3 and a thickness-width ratio more than 2/3. Also known as roller. { 'räd }
- rodding** [PETR] In metamorphic rocks, a linear structure in which the stronger parts, such as vein quartz or quartz pebbles, have been shaped into parallel rods. { 'räd·iŋ }
- rodingite** [PETR] A medium- to coarse-grained, commonly calcium-enriched gabbroic rock containing grossular and diallage as essential minerals. { 'röd·iŋ ,gīt }
- rodite** See diogenite. { 'rö ,dīt }
- roedderite** [MINERAL] $(\text{Na},\text{K})_2(\text{Mg},\text{Fe})_3\text{Si}_{12}\text{O}_{30}$ A silicate meteorite mineral. { 'räd·ə ,rīt }
- roemerite** [MINERAL] $\text{FeFe}_2(\text{SO}_4)_4 \cdot 14\text{H}_2\text{O}$ A rust-brown to yellow mineral composed of hydrous ferric and ferrous iron sulfate. { 'räm·ə ,rīt }
- roesslerite** [MINERAL] $\text{MgH}(\text{AsO}_4) \cdot 7\text{H}_2\text{O}$ A monoclinic mineral composed of hydrous acid magnesium arsenate; it is isomorphous with phosphorroesslerite. { 'res·lə ,rīt }
- roestone** See oolite. { 're ,stön }
- rofla** [GEOL] An extremely narrow, tortuous gorge, frequently formed by meltwater streams flowing from a glacier. { 'rö·flə }

- rogenstein** [GEOL] An oolite in which the ooliths are united by argillaceous cement. { 'rō·gən,stɪn }
- roggan** See rocking stone. { 'ræg·ən }
- roll** [GEOL] A primary sedimentary structure produced by deformation involving subaqueous slump or vertical foundering. { rōl }
- roller** See rod. { 'rō·lær }
- rolling beach** [GEOL] At the base of a sea cliff, the upper part of an accumulation of boulder sand pebbles which is being ground to sand and finer particles. { 'rōl·iŋ 'bēch }
- Romanche trench** [GEOL] A 24,320-foot-deep (7370-meter) trench in the Mid-Atlantic Ridge near the equator. { rō'mänsh 'trench }
- romeite** [MINERAL] $(Ca,Fe,Mn,Na)_2(Sb,Ti)_2O_6(O,OH,F)$ A honey-yellow to yellowish-brown mineral composed of oxide of calcium, iron, manganese, sodium, antimony, and titanium, occurring in minute octahedrons. { 'rō·mē,īt }
- rongstockite** [GEOL] A medium- to fine-grained plutonic rock composed of zoned plagioclase, orthoclase, some cancrinite, augite, mica, hornblende, magnetite, sphene, and apatite. { rəŋ'stāk,īt }
- roof** [GEOL] **1.** The rock above an orebody. **2.** The country rock bordering the upper surface of an igneous intrusion. { ruf }
- roofed dike** [GEOL] A dike that has an upward termination. { ''rūft 'dīk }
- roof foundering** [GEOL] Collapse of overlying rock into a magma chamber following excavation of a large quantity of magma. { 'ruf ,faun·drɪŋ }
- roof pendant** [GEOL] Downward projection or sag into an igneous intrusion of the country rock of the roof. Also known as pendant. { 'ruf ,pen·dənt }
- room** [GEOL] An open area in a cave. { rüm }
- rooseveltite** [MINERAL] $BiAsO_4$ A gray mineral consisting of bismuth arsenate; occurs as thin botryoidal crusts. { 'rōz·vəl,īt }
- root** [GEOL] **1.** The lower limit of an ore body. Also known as bottom. **2.** The part of a fold nappe that was originally linked to its root zone. { rüt }
- root cast** [GEOL] A slender, tubular, near-vertical, and commonly downward-branching sedimentary structure formed by the filling of a tubular opening left by a root. Also known as rhizoconcretion. { 'rüt ,kast }
- root clay** See underclay. { 'rüt ,klä }
- rootless vent** [GEOL] A source of lava that is not directly connected to a volcanic vent or magma source. { 'rüt·ləs 'vent }
- root sheath** [GEOL] A hollow root cast. { 'rüt ,shēth }
- root zone** [GEOL] **1.** The area where a low-angle thrust fault steepens and descends into the crust. **2.** The source of the root of a fold nappe. { 'rüt ,zōn }
- ropy lava** See pahoehoe. { 'rō·pə 'lä·və }
- rosasite** [MINERAL] $(Cu,Zn)_2(OH)_2(CO_3)$ A green to bluish-green and sky blue mineral consisting of a carbonate-hydroxide of copper and zinc. { 'rō·zə,sīt }
- roscherite** [MINERAL] $(Ca,Mn,Fe)_2Al(PO_4)(OH)·2H_2O$ A dark-brown mineral composed of hydrous basic phosphate of aluminum, calcium, manganese, and iron, occurring as monoclinic crystals. { rəsh·ə,īt }
- roscoelite** [MINERAL] $K(V,Al,Mg)_3Si_3O_{10}(OH)_2$ Tan, grayish-brown, or greenish-brown vanadium-bearing mica mineral occurring in minute scales or flakes. { 'rə,skō,īt }
- rose diagram** [GEOL] A circular graph indicating values in several classes of vector properties of rocks such as cross-bedding direction. { 'rōz 'dī·ə,gram }
- roselite** [MINERAL] $(Ca,Co)_2(Co,Mg)(AsO_4)_2·2H_2O$ A pink or rose-colored, monoclinic mineral consisting of a hydrated arsenate of calcium, cobalt, and magnesium. { 'rōz·ə,īt }
- rose opal** [MINERAL] An opaque variety of common opal having a fine red color. { 'rōz 'ō·pəl }
- rose quartz** [MINERAL] A pink variety of crystalline quartz, commonly massive and used as a gemstone. Also known as Bohemian ruby. { 'rōz 'kwōrts }
- rosette** [MINERAL] Rose-shaped, crystalline aggregates of barite, marcasite, or pyrite formed in sedimentary rock. { rō'zet }

rosieresite

- rosieresite** [MINERAL] A yellow to brown mineral composed of hydrous aluminum phosphate containing lead and copper, occurring in stalactitic masses. { 'rɔ,zɛ'ɛr·ə,sɪt }
- rosin tin** [MINERAL] A red or yellow variety of cassiterite. Also known as resin tin. { 'rəz·ən 'tɪn }
- Rosival analysis** [PETR] A quantitative method of estimating the volume percentages of the minerals in a rock, in which thin sections of a rock are examined under a microscope which has a micrometer to measure the linear intercepts of each mineral along a particular set of lines. { 'rəz·ə,wɒl ə,nal·ə'səs }
- rossite** [MINERAL] $\text{CaV}_2\text{O}_6 \cdot 4\text{H}_2\text{O}$ A yellow, triclinic mineral consisting of a hydrated calcium vanadate. { 'rɔ,sɪt }
- rosterite** See vorobyevite. { 'rə·stə,rɪt }
- rosthornite** [MINERAL] A brown to garnet-red variety of retinite with a low (4.5) oxygen content, found in lenticular masses in coal. { 'rəs·thər,nɪt }
- rotary fault** [GEOL] A fault in which displacement is downward at one point and upward at another point. Also known as pivotal fault; rotational fault. { 'rɒd·ə're 'fɔlt }
- rotational bomb** [GEOL] A bomb whose shape is formed by spiral motion or rotation during flight. { rɒ'tā·shən·əl 'bʌm }
- rotational fault** See rotary fault. { rɒ'tā·shən·əl 'fɔlt }
- rotational landslide** [GEOL] A landslide in which shearing takes place on a well-defined, curved shear surface, concave upward in cross section, producing a backward rotation in the displaced mass. { rɒ'tā·shən·əl 'lan,sɪld }
- rotational movement** [GEOL] Apparent fault-block displacement in which the blocks have rotated relative to one another, so that alignment of formerly parallel features is disturbed. { rɒ'tā·shən·əl 'mjuv·mənt }
- rotational wave** See shear wave; S wave. { rɒ'tā·shən·əl 'wæv }
- Rotligende** [GEOL] A European series of geologic time: Lower and Middle Permian. { 'rɒt,lɛ·gən·də }
- rotten spot** See pothole. { 'rɒt·ən ,spɒt }
- rougemontite** [GEOL] A coarse-grained igneous rock composed of anorthite, titanite, and small amounts of olivine and iron ore. { 'rʊzh,mən,tɪt }
- roundness** [GEOL] The degree of abrasion of sedimentary particles; expressed as the radius of the average radius of curvature of the edges or corners to the radius of curvature of the maximum inscribed sphere. { 'raʊnd·nəs }
- roundstone** [GEOL] Any naturally rounded rock fragment of any size larger than a sand grain (diameter greater than 2 millimeters), such as a boulder, cobble, pebble, or granule. { 'raʊnd,stɒn }
- routivarite** [GEOL] A fine-grained igneous rock containing orthoclase, plagioclase, quartz, and garnet. { 'rʊd·ə'va,rɪt }
- rouvillite** [GEOL] A light-colored thevalite composed predominantly of labradorite and nepheline, with small amounts of titanite, hornblende, pyrite, and apatite. { 'rʊv·ə,lɪt }
- rouvite** [MINERAL] $\text{CaU}_2\text{V}_{12}\text{O}_{36} \cdot 20\text{H}_2\text{O}$ A purplish- to bluish-black mineral consisting of a hydrated vanadate of calcium and uranium; occurs as dense masses, crusts, and coatings. { 'rʊ,vɪt }
- roweite** [MINERAL] (Mn,Mg,Zn) $\text{Ca}(\text{BO}_2)_2(\text{OH})_2$ A light-brown mineral composed of basic borate of calcium, manganese, magnesium, and zinc. { 'rɔ,ɪt }
- R tectonite** [PETR] A tectonite in which the fabric is believed to have resulted from rotation. { 'ər 'tek·tə,nɪt }
- rubble** [GEOL] **1.** A loose mass of rough, angular rock fragments, coarser than sand. **2.** See talus. { 'rʌb·əl }
- rubble drift** [GEOL] **1.** A rubbly deposit (or congeliturbate) formed by solifluction under periglacial conditions. **2.** A coarse mass of angular debris and large blocks set in an earthy matrix of glacial origin. { 'rʌb·əl ,drɪft }
- rubble tract** [GEOL] The part of the reef flat immediately behind and on the lagoon side of the reef front, paved with cobbles, pebbles, blocks, and other coarse reef fragments. { 'rʌb·əl ,trakt }

- rubellite** [MINERAL] The red to red-violet variety of the gem mineral tourmaline; hardness is 7–7.5 on Mohs scale, and specific gravity is near 3.04. { 'rū·bē,lɪt }
- rubicelle** [MINERAL] A yellow or orange-red gem variety of spinel. { 'rū·bə'sel }
- rubidium-strontium dating** [GEOL] A method for determining the age of a mineral or rock based on the decay rate of rubidium-87 to strontium-87. { 'rū'bid·ē·əm 'strän·chəm 'dād·ɪŋ }
- ruby** [MINERAL] The red variety of the mineral corundum; in its finest quality, the most valuable of gemstones. { 'rū·bē }
- ruby copper ore** See cuprite. { 'rū·bē 'kæp·ər 'ɔr }
- ruby mica** [MINERAL] The finest grade of Indian mica; used for electrical capacitors. { 'rū·bē 'mɪ·kə }
- ruby silver** [MINERAL] Either of two red silver sulfide minerals: pyrrogrite (dark-ruby silver) and proustite (light-ruby silver). { 'rū·bē 'sil·vər }
- ruby spinel** [MINERAL] A clear-red gem variety of spinel, containing small amounts of chromium and having the color but none of the other attributes of true ruby. { 'rū·bē spə'nel }
- ruby zinc** See zincite. { 'rū·bē 'zɪŋk }
- rudaceous** [PETR] Of or pertaining to a sedimentary rock composed of a large quantity of fragments that are larger than sand grains (diameter greater than 2 millimeters). { 'rū'dā·shəs }
- rudistids** [PALEON] Fossil sessile bivalves that formed reefs during the Cretaceous in the southern Mediterranean or the Tethyan belt. { 'rū'dis·tædz }
- rudite** [GEOL] A sedimentary rock composed of fragments coarser than sand grains. { 'rū,dɪt }
- Rudzki anomaly** [GEOPHYS] A gravity anomaly calculated by replacing the surface topography by its mirror image within the geoid. { 'rūd·skē a,nəm·ə'lē }
- ruffle** [GEOL] A ripple mark produced by an eddy. { 'rəf·əl }
- ruffled groove cast** [GEOL] A groove cast with a feather pattern, consisting of a groove with lateral wrinkles that join the main cast in the downcurrent direction at an acute angle. { 'rəf·əld 'grʊv ,kɑst }
- ruggedness number** [GEOL] A dimensionless number that expresses the geometric characteristics of a drainage system; derived from the product of maximum basin relief and drainage density within the drainage basin. { 'rəg·əd·nəs ,nəm·bər }
- Rugosa** [PALEON] An order of extinct corals having either simple or compound skeletons with internal skeletal structures consisting mainly of three elements, the septa, tabulae, and dissepiments. { ,rū'gō·sə }
- ruin agate** [MINERAL] A brown variety of agate displaying, on a polished surface, markings that resemble or suggest the outlines of ruins or ruined buildings. { 'rū·ən 'ag·ət }
- ruin marble** [PETR] A brecciated limestone that, when cut and polished, gives a mosaic effect suggesting the appearance of ruins or ruined buildings. { 'rū·ən 'mār·bəl }
- rule of V's** [GEOL] The outcrop of a formation that crosses a valley forms an acute angle (a V) that points in the direction in which the formation lies underneath the stream. { 'rūl əv 'vɛz }
- run** [GEOL] **1.** A ribbonlike, flat-lying, irregular orebody following the stratification of the host rock. **2.** A branching or fingerlike extension of the feeder of an igneous intrusion. { rən }
- runite** See graphic granite. { 'rū,nɪt }
- runnel** [GEOL] A troughlike hollow on a tidal sand beach which carries water drainage off the beach as the tide retreats. { 'rən·əl }
- running sand** See quicksand. { 'rən·ɪŋ ,sænd }
- run-up** See swash. { 'rən·əp }
- runway** [GEOL] The channel of a stream. { 'rən,wā }
- Rupelian** [GEOL] A European stage of middle Oligocene geologic time, above the Tongrian and below the Chattian. Also known as Stampian. { 'rū'pel·jən }
- rupture** See fracture. { 'rəp·chər }

rupture zone

rupture zone [GEOL] The region immediately adjacent to the boundary of an explosion crater, characterized by excessive in-place crushing and fracturing where the stresses produced by the explosion have exceeded the ultimate strength of the medium. { 'rəp·chər ,zɒn }

russellite [MINERAL] Bi_2WO_6 A pale yellow to greenish, tetragonal mineral consisting of an oxide of bismuth and tungsten; occurs as fine-grained compact masses. { 'rəs·ə,lɪt }

rusting [GEOL] The formation of red, yellow, or brown iron oxide minerals by oxidation of mineral deposits. { 'rəst·ɪŋ }

rutherfordine [MINERAL] $(\text{UO}_2)(\text{CO}_3)$ A yellow mineral composed of uranyl carbonate, occurring as masses of fibers. { 'rətʃ·ər·fər,dēn }

rutilated quartz [MINERAL] Sagenitic quartz characterized by the presence of enclosed needlelike crystals of rutile. Also known as Venus hairstone. { 'rüd·əl,əd·əd 'kwɔrts }

rutile [MINERAL] TiO_2 A reddish-brown tetragonal mineral common in acid igneous rocks, in metamorphic rocks, and as residual grain in beach sand. { 'rüt,təl }

rutterite [PETR] A medium-grained, equigranular, dark-pink plutonic rock composed chiefly of microperthite, microcline, and albite, with small amounts of nepheline, biotite, amphibole, graphite, and magnetite. { 'rəd·ə,rɪt }

R wave See Rayleigh wave. { 'är ,wæv }

S

- Saalic orogeny** [GEOL] A short-lived orogeny that occurred early in the Permian period, between the Autunian and Saxonian stages. { 'sä·lik ó'räj·ə·nē }
- sabach** *See* caliche. { ,sä,bäk }
- Sabinas** [GEOL] A North American (Gulf Coast) provincial series in Upper Jurassic geologic time, below the Coahuilan. { sə'bēn·əs }
- sabkha** *See* sebkha. { 'sab·kə }
- sabulous** *See* arenaceous. { 'sab·yə·ləs }
- saccharoidal** [PETR] The texture of a rock that is crystalline or granular. Also known as sucrosic; sugary. { 'sak·ə'rōid·əl }
- saccus** *See* vesicle. { 'sak·əs }
- sackungen** [GEOL] Deep-seated rock creep which has produced a ridge-top trench by gradual settlement of a slablike mass into an adjacent valley. { 'sa,kùŋ·ən }
- saddle** [GEOL] **1.** A gap that is broad and gently sloping on both sides. **2.** A relatively flat ridge that connects the peaks of two higher elevations. **3.** That part along the surface axis or axial trend of an anticline that is a low point or depression. { 'sad·əl }
- saddleback** [GEOL] A hill or ridge with a concave outline along its crest. { 'sad·əl,bak }
- saddle fold** [GEOL] A flexural fold perpendicular to the parent fold and having an additional flexure at its crest. { 'sad·əl ,fōld }
- saddle point** *See* col. { 'sad·əl ,pōint }
- saddle reef** [GEOL] A mineral deposit associated with the crest of an anticlinal fold and following the bedding plane, usually found in vertical succession. Also known as saddle vein. { 'sad·əl ,rēf }
- saddle vein** *See* saddle reef. { 'sad·əl ,vān }
- safflorite** [MINERAL] CoAs_2 A cobalt arsenide mineral that occurs in tin-white masses, and is dimorphous with smaltite; found in Canada, Morocco, and the United States. { 'saf·lə,rīt }
- sag** [GEOL] **1.** A pass or gap in a ridge or mountain range shaped like a saddle. **2.** A shallow depression in a relatively flat land surface. **3.** A regional basin with gently sloping sides. { sag }
- sagenite** [MINERAL] A variety of rutile that is acicular and occurs in reticulated twin groups of crystals crossing at 60° . { 'saj·ə,nīt }
- sagenitic** [GEOL] Containing acicular minerals. { ,saj·ə'nid·ik }
- Sagenocrinida** [PALEON] A large order of extinct, flexible crinoids that occurred from the Silurian to the Permian. { 'saj·ə·nō'krī·nə·də }
- Saghatiinae** [PALEON] An extinct subfamily of hyracoids in the family Procaviidae. { ,sag·ə'thī·ə,nē }
- sag pond** [GEOL] A small body of water occupying an enclosed depression or sag formed where active or recent fault movement has impounded drainage. Also known as fault-trough lake; rift lake; rift-valley lake. { 'sag ,pänd }
- sahlinite** [MINERAL] $\text{Pb}_{14}(\text{AsO}_4)_2\text{O}_6\text{Cl}_4$ A pale sulfur-yellow, monoclinic mineral consisting of a basic chloride-arsenate of lead; occurs in aggregates of small scales. { 'sä·lə,nīt }
- sahlite** *See* salite. { 'sä,līt }
- Saint Peter sandstone** [GEOL] An artesian aquifer of early Lower Paleozoic age which

Sakmarian

- underlies part of Minnesota, Wisconsin, Iowa, Illinois, and Indiana. { 'sänt 'pēd-ər 'san,stōn }
- Sakmarian** [GEOL] A European stage of geologic time; the lowermost Permian, above Stephanian of Carboniferous and below Artinskian. { säk'mär-ē-ən }
- sal** See sial. { 'sal }
- Salado formation** [GEOL] A red-bed formation from the Permian found in southeast New Mexico; contains rock salt and potash salts. { sə'lä-dō för,mä-shən }
- salammoniac** [MINERAL] NH_4Cl A white, isometric, crystalline mineral composed of native ammonium chloride. { ,sal-ə'mō-nē,ak }
- salband** See selvage. { 'sal,bänd }
- salcrete** [GEOL] A thin, hard crust of salt-cemented sand grains, occurring on a marine beach that is occasionally or periodically saturated by saline water. { 'sal,kret }
- salééite** [MINERAL] $\text{Mg}(\text{UO}_2)_2(\text{PO}_4)_2 \cdot 10\text{H}_2\text{O}$ A lemon-yellow mineral composed of hydrous phosphate of magnesium and uranium. { sə'lā,īt }
- salesite** [MINERAL] $\text{Cu}(\text{IO}_3)(\text{OH})$ A bluish-green mineral composed of basic iodate of copper. { 'säl,zīt }
- salfemic rock** [GEOL] An igneous rock in which the ratio of salic to femic minerals is greater than 3:5 and less than 5:3. { sal'fē-mik 'räk }
- salic** [GEOL] A soil horizon enriched with secondary salts, at least 2 percent, and measuring at least 6 inches (15 centimeters) in thickness. [MINERAL] Pertaining to certain light-colored minerals, such as quartz and feldspars, that are rich in silica or magnesium and commonly occur in igneous rock. { 'sal-ik }
- salient** [GEOL] **1.** A landform that projects or extends outward or upward from its surroundings. **2.** An area in which the axial traces of folds are convex toward the outer edge of the folded belt. { 'säl-yənt }
- saliferous stratum** [GEOL] A stratum that contains, produces, or is impregnated with salt. Also known as saliniferous stratum. { sə'lif-ə-rəs 'strad-əm }
- salina** [GEOL] An area, such as a salt flat, in which deposits of crystalline salts are formed or found. { sə'lē-nə }
- salinastone** [GEOL] A sedimentary rock composed mostly of saline minerals which are usually precipitated but may be fragmental. { sə'lē-nə,stōn }
- saline-alkali soil** [GEOL] A salt-affected soil with a content of exchangeable sodium greater than 15, with much soluble salts, and with a pH value usually less than 9.5. { 'sä,lēn 'al-kä,lī ,sōil }
- salinelle** [GEOL] A mud volcano erupting saline mud. { ,sa-lə'nel }
- saline soil** [GEOL] A nonalkali, salt-affected soil with a high content of soluble salts, with exchangeable sodium of less than 15, and with a pH value less than 8.5. { 'sä,lēn ,sōil }
- saliniferous stratum** See saliferous stratum. { ,sal-ə'nif-ə-rəs 'strad-əm }
- salinization** [GEOL] In a soil of an arid, poorly drained region, the accumulation of soluble salts by the evaporation of the waters that bore them to the soil zone. { ,sal-ən-ə'zä-shən }
- salite** [MINERAL] $(\text{Mg},\text{Fe})_2\text{Si}_2\text{O}_6$ A grayish-green to black mineral variety of diopside containing more magnesium than iron; member of the clinopyroxene group. Also spelled sahlite. { 'sa,līt }
- salitrite** [PETR] A lamprophyre composed chiefly of titanite and diopside with acmite, accessory apatite, microcline, and occasionally anorthoclase and baddeleyite. { 'sal-ə,trīt }
- salmonsite** [MINERAL] A buff-colored mineral composed of hydrous phosphate of manganese and iron occurring in cleavable masses. { 'sam-ən,zīt }
- salt-affected soil** [GEOL] A general term for a soil that is not suitable for the growth of crops because of an excess of salts, exchangeable sodium, or both. { 'sölt i'fek-təd 'sōil }
- salt-and-pepper sand** [GEOL] A sand composed of a mixture of light- and dark-colored grains. { 'sölt ən 'pēp-ər 'sand }
- salt anticline** [GEOL] A structure like a salt dome but with a linear salt core. Also known as salt wall. { 'sölt 'ant-i,klin }

- saltation** [GEOL] Transport of a sediment in which the particles are moved forward in a series of short intermittent bounces from a bottom surface. {sól'tā-shən }
- saltation load** [GEOL] The part of the bed load that is bouncing along the stream bed or is moved, directly or indirectly, by the impact of bouncing particles. {sól'tā-shən ,lōd }
- salt bottom** [GEOL] A flat piece of relatively low-lying ground encrusted with salt. { 'sòlt ,bäd·əm }
- salt burst** [GEOL] Rock destruction caused by crystallization of soluble salts that enter the pores. { 'sòlt ,bərst }
- salt dome** [GEOL] A diapiric or piercement structure in which there is a central, equidimensional salt plug. { 'sòlt ,dōm }
- salt-dome breccia** [GEOL] A breccia found in deep shale sequences and occurring as a dome-shaped mass in a broad zone surrounding a salt plug. { 'sòlt'dōm 'brech·ə }
- salt field** [GEOL] An area overlying a usually workable salt deposit of economic value. { 'sòlt ,fēld }
- salt flat** [GEOL] The level, salt-encrusted bottom of a lake or pond that is temporarily or permanently dried up. { 'sòlt ,flat }
- salt glacier** [GEOL] A gravitational flow of salt down the slopes of a salt plug, following the preexisting structure. { 'sòlt ,glā-shər }
- salt hill** [GEOL] An abrupt hill of salt, with sinkholes and pinnacles at its summit. { 'sòlt ,hil }
- saltierra** [GEOL] A deposit of salt left by evaporation of a shallow salt lake. { ,sal·tē'er·ə }
- salt pan** [GEOL] **1.** An undrained, usually small and shallow, natural depression or hollow in which water accumulates and evaporates, leaving a salt deposit. **2.** A shallow lake of brackish water occupying such a depression. { 'sòlt ,pan }
- salt peter cave** [GEOL] A cave in which there are deposits of salt peter earth. { 'sòlt'pēd·ər ,kāv }
- salt peter earth** [GEOL] A deposit containing calcium nitrate and found in caves. { 'sòlt 'pēd·ər ,ərth }
- salt pillow** [GEOL] An embryonic salt dome rising from its source bed, still at depth. { 'sòlt ,pil·ō }
- salt pit** [GEOL] A pit in which sea water is received and evaporated and from which salt is obtained. { 'sòlt ,pit }
- salt plug** [GEOL] The salt core of a salt dome. { 'sòlt ,plæg }
- salt polygon** [GEOL] A surface of salt on a playa, having three to eight sides marked by ridges of material formed as a result of the expansive forces of crystallizing salt, and ranging in width from an inch or so to 100 feet (30 meters). { 'sòlt 'päl·i,gän }
- salt stock** [GEOL] An immature salt dome comprising a pluglike salt diapir that has pierced the overlying strata. { 'sòlt ,stāk }
- salt tectonics** [GEOL] The study of the structure and mechanism of emplacement of salt domes. Also known as halokinesis. { 'sòlt tek'tän·iks }
- salt wall** *See* salt anticline. { 'sòlt ,wól }
- salt weathering** [GEOL] The granular disintegration or fragmentation of rock material produced by saline solutions or by salt-crystal growth. { 'sòlt ,weθ·ə·rɪŋ }
- samaraskite** [MINERAL] (Y,Ce,U,Ca,Fe,Pb,Th)(Nb,Ta,Ti,Sn)₂O₆ A velvet-black to brown metamict orthorhombic mineral with splendid vitreous to resinous luster occurring in granite pegmatites. Also known as amfangabeite; uranotantalite. { sə'mär ,skīt }
- sampleite** [MINERAL] NaCaCu₃(PO₄)₄Cl·5H₂O A blue mineral composed of hydrous phosphate and chloride of sodium, calcium, and copper. { 'sam·pə,līt }
- samsonite** [MINERAL] Ag₄MnSb₂S₆ A black mineral composed of sulfide of silver, manganese, and antimony occurring in monoclinic prismatic crystals. { 'sam·sə,nīt }
- sanbornite** [MINERAL] BaSi₂O₅ A white triclinic mineral composed of barium silicate. { 'san,bör,nīt }
- sanakite** [PETR] A glassy andesite composed of bronzite, augite, magnetite, and a few large plagioclase and garnet crystals. { 'san·ə,kīt }

sand

- sand** [GEOL] Unconsolidated granular material consisting of mineral, rock, or biological fragments between 63 micrometers and 2 millimeters in diameter, usually produced primarily by the chemical or mechanical breakdown of older source rocks, but may also be formed by the direct chemical precipitation of mineral grains or by biological processes. { sand }
- sand apron** [GEOL] A deposit of sand along the shore of a lagoon or a reef. { 'sand ,ā·prən }
- sandarac** See realgar. { 'san·də,rak }
- sand avalanche** [GEOL] Movement of large masses of sand down a dune face when the angle of repose is exceeded or when the dune is disturbed. { 'sand ,av·ə,lanch }
- sandbag** [GEOL] In the roof of a coal seam, a deposit of glacial debris formed by scour and fill subsequent to coal formation. { 'san,bag }
- sandbank** [GEOL] A deposit of sand forming a mound, hillside, bar, or shoal. { 'san,ban̩k }
- sandbar** [GEOL] A bar or low ridge of sand bordering the shore and built up, or near, to the surface of the water by currents or wave action. Also known as sand reef. { 'san,bār }
- sandblasting** [GEOL] Abrasion affected by the action of hard, windblown mineral grains. { 'san,blast·iŋ }
- sand cay** See sandkey. { 'san ,kē }
- sand cone** [GEOL] **1.** A cone-shaped deposit of sand, produced especially in an alluvial cone. **2.** A low debris cone whose protective veneer consists of sand. { 'san ,kōn }
- sand crystal** [GEOL] A large crystal loaded up to 60% with detrital sand inclusions formed in a sandstone during or as a result of cementation. { 'san ,krist·əl }
- sand dike** [GEOL] A sedimentary dike consisting of sand that has been squeezed or injected upward into a fissure. { 'san ,dīk }
- sand drift** [GEOL] **1.** Movement of windblown sand along the surface of a desert or shore. **2.** An accumulation of sand against the leeward side of a fixed obstruction. { 'san ,drift }
- sand drip** [GEOL] A rounded or crescentic surface form on a beach sand, resulting from the sudden absorption of overwash. { 'san ,drip }
- sand dune** [GEOL] A mound of loose windblown sand commonly found along low-lying seashores above high-tide level. { 'san ,dūn }
- sandfall** See slip face. { 'san,fəl }
- sand flat** [GEOL] A sandy tidal flat barren of vegetation. { 'san ,flat }
- sand flood** [GEOL] A vast body of sand moving or borne along a desert, as in the Arabian deserts. { 'san ,fləd }
- sand gall** See sand pipe. { 'san ,gól }
- sand glacier** [GEOL] **1.** An accumulation of sand that is blown up the side of a hill or mountain and through a pass or saddle, and then spread out on the opposite side to form a wide, fan-shaped plain. **2.** A horizontal plateau of sand terminated by a steep talus slope. { 'san ,glā·shər }
- sand hill** [GEOL] A ridge of sand, especially a sand dune in a desert region. { 'san ,hil }
- sand hole** [GEOL] A small pit (7–8 millimeters in depth and a little less wide than deep) with a raised margin, formed on a beach by waves expelling air from a formerly saturated mass of sand. { 'san ,hōl }
- sand horn** [GEOL] A pointed sand deposit extending from the shore into shallow water. { 'san ,hōrn }
- sandkey** [GEOL] A small sandy island parallel with the shore. Also known as sand cay. { 'san,kē }
- sand levee** See whaleback dune. { 'san ,lev·ē }
- sand lobe** [GEOL] A rounded sand deposit extending from the shore into shallow water. { 'san ,lōb }
- sand pavement** [GEOL] A sandy surface derived from coarse-grained sand ripples, developed on the lower, windward slope of a dune or rolling sand area during a period of intermittent light, variable winds. { 'san ,pāv·mənt }

sandy chert

- sand pipe** [GEOL] A pipe formed in sedimentary rocks, filled with considerable sand and some gravel. Also known as sand gall. { 'san ,pīp }
- sand plain** [GEOL] A small outwash plain formed by deposition of sand transported by meltwater streams flowing from a glacier. { 'san ,plān }
- sand reef** *See* sandbar. { 'san ,rēf }
- sand ridge** [GEOL] **1.** Any low ridge of sand formed at some distance from the shore, and either submerged or emergent, such as a longshore bar or a barrier beach. **2.** One of a series of long, wide, extremely low, parallel ridges believed to represent the eroded stumps of former longitudinal sand dunes. **3.** A crescent-shaped landform found on a sandy beach, such as a beach cusp. **4.** *See* sand wave. { 'san ,rij }
- sand river** [GEOL] A river that deposits much of its sand load along its middle course, to be subsequently removed by the wind. { 'san ,riv-ər }
- sandrock** [GEOL] A field term for a sandstone that is not firmly cemented. { 'san ,rāk }
- sand roll** *See* pseudonodule. { 'san ,rōl }
- sand run** [GEOL] **1.** A fluidlike motion of dry sand. **2.** A mass of dry sand in motion. { 'san ,rən }
- sand sea** [GEOL] **1.** An extensive assemblage of sand dunes of several types in an area where a great supply of sand is present; characterized by an absence of travel lines, or directional indicators, and by a wavelike appearance of dunes separated by troughs. **2.** The flat, rain-smoothed plain of volcanic ash and other pyroclastics on the floor of a caldera. { 'san 'sē }
- sand shadow** [GEOL] A lee-side accumulation of sand, as a small turret-shaped dune, formed in the shelter of, and immediately behind, a fixed obstruction, such as clumps of vegetation. { 'san ,shad-ō }
- sandshale** [GEOL] A sedimentary deposit consisting of thin alternating beds of sandstone and shale. { 'san ,shāl }
- sand-shale ratio** [GEOL] The ratio between the thickness or percentage of sandstone and that of shale in a geologic section. { 'san 'shāl 'rā-shō }
- sand sheet** [GEOL] A thin accumulation of coarse sand or fine gravel having a flat surface. { 'san ,shēt }
- sandspit** [GEOL] A spit consisting principally of sand. { 'san ,spit }
- sand splay** [GEOL] A floodplain splay consisting of coarse sand particles. { 'san ,splā }
- sandstone** [PETR] A detrital sedimentary rock consisting of individual grains of sand-size particles 0.06 to 2 millimeters in diameter either set in a fine-grained matrix (silt or clay) or bonded by chemical cement. { 'san ,stōn }
- sandstone dike** [GEOL] A dike made of sandstone or lithified sand. { 'san ,stōn 'dīk }
- sandstone sill** [GEOL] A tabular mass of sandstone that has been emplaced by sedimentary injection parallel to the structure or by bedding of preexisting rock in the manner of an igneous sill. { 'san ,stōn 'sil }
- sand streak** [GEOL] A low, linear ridge formed at the interface of sand and air or water, oriented parallel to the direction of flow, and having a symmetric cross section. { 'san ,strēk }
- sand stream** [GEOL] A small sand delta spread out at the mouth of a gully, or a deposit of sand along the bed of a small creek, formed by a torrential rain. { 'san ,strēm }
- sand strip** [GEOL] A long, narrow ridge of sand extending for a long distance downwind from each horn of a dune. { 'san ,strip }
- sandur** *See* outwash plain. { 'san -dər }
- sandwash** [GEOL] A sandy or gravel stream bed, devoid of vegetation, containing water only during a sudden and heavy rainstorm. { 'san ,wāsh }
- sand wave** [GEOL] A large, ridgelike primary structure resembling a water wave on the upper surface of a sedimentary bed that is formed by high-velocity air or water currents. Also known as sand ridge. { 'san ,wāv }
- sand wedge** [GEOL] A wedge-shaped accumulation of sand with the apex downward formed by the filling in of winter contraction cracks. { 'san ,wej }
- sandy bentonite** *See* arkosic bentonite. { 'san -dē 'bent-ən,īt }
- sandy chert** [PETR] Chert formed in sandy beds by replacement of cement, or the filling of pore spaces, with silica. { 'san -dē 'chert }

Sangamon

- Sangamon** [GEOL] The third interglacial stage of the Pleistocene epoch in North America, following the Illinoian glacial and preceding the Wisconsin. { 'saŋ·gə,mən }
- sanidal** [GEOL] Pertaining to the continental shelf. { 'san·əd·əl }
- sanidine** [MINERAL] $KAlSi_3O_8$ An alkali feldspar mineral occurring in clear, glassy crystals embedded in unaltered acid volcanic rocks; a high-temperature, disordered form. Also known as glassy feldspar; ice spar; rhyacolite. { 'san·əd·ēn }
- sanidinite** [PETR] A type of igneous rock composed chiefly of sanidine. { sə'nid·ən,īt }
- sanmartinite** [MINERAL] $ZnWO_4$ A mineral composed of zinc tungstate. { san'mart·ən,īt }
- sannaite** [PETR] An extrusive rock containing phenocrysts of barkevikite, pyroxene, and biotite (in order of decreasing abundance) in a fine-grained to dense groundmass of alkali feldspar, acmite, chlorite, calcite, and pseudomorphs of mica after nepheline. { 'san·ə,īt }
- sansicl** [GEOL] An unconsolidated sediment, consisting of a mixture of sand, silt, and clay, in which no component forms 50% or more of the whole aggregate. { 'san ,sik·əl }
- Santonian** [GEOL] A European stage of geologic time in the Upper Cretaceous, above the Coniacian and below the Campanian. { san'tō·nē·ən }
- santorinite** [PETR] **1.** A light-colored extrusive rock containing approximately 60–65% silica and calcic plagioclase (labradorite to anorthite) as the only feldspar. **2.** A hypersthene andesite containing plagioclase crystals that have labradorite cores and sodic rims and a groundmass with microlites of sodic oligoclase. { san'tōr·ə,nīt }
- sanukite** [PETR] An andesite characterized by orthopyroxene as the mafic mineral, andesine as the plagioclase, and a glassy groundmass. { 'san·ə,kīt }
- saponite** [MINERAL] A soft, soapy, white or light-buff to bluish or reddish trioctahedral montmorillonitic clay mineral consisting of hydrous magnesium aluminosilicate and occurring in masses in serpentine and basaltic rocks. Also known as bowlingite; mountain soap; piotine; soapstone. { 'sap·ə,nīt }
- sappare** See kyanite. { 'sa,per }
- sapphire** [MINERAL] Any of the gem varieties of the mineral corundum, especially the blue variety, except those that have medium to dark tones of red that characterize ruby; hardness is 9 on Mohs scale, and specific gravity is near 4.00. { 'sa,fīr }
- sapphire quartz** [MINERAL] An indigo-blue opaque variety of quartz. { 'sa,fīr 'kwōrts }
- saphirine** [MINERAL] $(MgFe)_{15}(Al,Fe)_{34}Si_7O_{80}$ A green or pale-blue mineral composed of silicate and oxide of magnesium, iron, and aluminum; usually occurs in granular form. { 'saf·ə,rēn }
- sapping** [GEOL] Erosion along the base of a cliff by the wearing away of softer layers, thus removing the support for the upper mass which breaks off into large blocks and falls from the cliff face. Also known as undermining. { 'sap·iŋ }
- Saprist** [GEOL] A suborder of the soil order Histosol consisting of residues in which plant structures have been largely obliterated by decay; saturated with water most of the time. { 'sa,prist }
- saprogenous ooze** [GEOL] Ooze formed of putrefying organic matter. { sə'präj·ə·nəs 'üz }
- saprolite** [GEOL] A soft, earthy red or brown, decomposed igneous or metamorphic rock that is rich in clay and formed in place by chemical weathering. Also known as saprolith; sathrolith. { 'sap·rə,līt }
- saprolith** See saprolite. { 'sap·rə,lith }
- sapropel** [GEOL] A mud, slime, or ooze deposited in more or less open water. { 'sap·rə,pel }
- sapropel-clay** [GEOL] A sedimentary deposit in which the amount of clay is greater than that of sapropel. { 'sap·rə,pel ,klā }
- sapropelic coal** [GEOL] Coal formed by putrefaction of organic matter under anaerobic conditions in stagnant or standing bodies of water. Also known as sapropelite. { 'sap·rə,pel·ik 'kōl }
- sapropelite** See sapropelic coal. { 'sap·rə,pel,īt }
- sapropel-peat** See peat-sapropel. { 'sap·rə,pel ,pēt }

- sarcopsid** [MINERAL] $(\text{Fe,Mn,Mg})_3(\text{PO}_4)_2$ A mineral composed of a phosphate of manganese, magnesium, and iron. {sär'kăp·səd }
- sard** [MINERAL] A translucent brown, reddish-brown, or deep orange-red variety of chalcedony. Also known as sardine; sardius. {sărd }
- Sardic orogeny** [GEOLOGY] A short-lived orogeny that occurred near the end of the Cambrian period. { 'săr·dik ò'răj·ə·nē }
- sardine** See sard. {săr'dēn }
- sardius** See sard. { 'săr·dē·əs }
- sardonyx** [MINERAL] An onyx characterized by parallel layers of sard, a deep orange-red variety of chalcedony, and a mineral of different color. {săr'dän·iks }
- sarkinite** [MINERAL] $\text{Mn}_2(\text{AsO}_4)(\text{OH})$ A flesh-red monoclinic mineral composed of hydrous manganese arsenate, occurring in crystals. { 'săr·kə,nīt }
- Sarmatian** [GEOLOGY] A European stage of geologic time: the upper Miocene, above Tortonian, below Pontian. {săr'mā·shən }
- sarmientite** [MINERAL] $\text{Fe}_2(\text{AsO}_4)(\text{SO}_4)(\text{OH})\cdot 5\text{H}_2\text{O}$ A yellow mineral composed of basic hydrous arsenate and sulfate of iron; it is isomorphous with diadochite. {,săr·mē'en,tīt }
- sarnaite** [GEOLOGY] A feldspathoid-bearing syenite composed of cancrinite and acmite. { 'săr·nə,tīt }
- sarospatakite** [GEOLOGY] A micaceous clay mineral composed of mixed layers of illite and montmorillonite. {,sar·ə'spād·ə,kīt }
- sartorite** [MINERAL] PbAs_2S_4 A dark-gray monoclinic mineral, occurring in crystalline form. { 'săr·də,rīt }
- sassoline** See sassolite. { 'sas·ə,lēn }
- sassolite** [MINERAL] H_3BO_3 A white or gray mineral consisting of native boric acid usually occurring in small pearly scales as an incrustation or as tabular triclinic crystals. Also known as sassoline. { 'sas·ə,līt }
- satellitic crater** See secondary crater. { 'sad·ə'lid·ik 'kräd·ər }
- sathrolith** See sapolite. { 'sath·rə,lith }
- satin spar** [MINERAL] A white, translucent, fine fibrous variety of gypsum having a silky luster. Also known as satin stone. { 'sat·ən 'spär }
- satin stone** See satin spar. { 'sat·ən 'stōn }
- saturated mineral** [MINERAL] A mineral that forms in the presence of free silica. { 'sach·ə,räd·əd 'min·rəl }
- saturated permafrost** [GEOLOGY] Permafrost that contains no more ice than the ground could hold if the water were in the liquid state. { 'sach·ə,räd·əd 'pər·mə·frōst }
- saturated rock** [PETROLOGY] An igneous rock composed principally of saturated minerals. { 'sach·ə,räd·əd 'rāk }
- saturation curve** [GEOLOGY] A curve showing the weight of solids per unit volume of a saturated soil mass as a function of water content. {,sach·ə'rā·shən }kərv }
- saturation line** [PETROLOGY] The line, on a variation diagram of an igneous rock series, that represents saturation with respect to silica; rocks to the right of the line are oversaturated and those to the left, undersaturated. {,sach·ə'rā·shən }līn }
- Saucesian** [GEOLOGY] A North American stage of geologic time in the Oligocene and Miocene, above the Zemorrian and below the Relizian. {sò'sē·zhən }
- saucnite** [MINERAL] The zinc-bearing end member of the montmorillonite group; a trioctahedral clay mineral. { 'sò·kə,nīt }
- saucyte** [PETROLOGY] A glassy rhyolitic rock composed of large sanidine phenocrysts in a groundmass of orthoclase microlites and minute crystals of biotite, augite, sphene, zircon, and magnetite. { 'sò·sē,tīt }
- Saurichthyidae** [PALEONTOLOGY] A family of extinct chondrosteian fishes bearing a superficial resemblance to the Aspidorhynchiformes. {,sòr·ək'thī·ə,dē }
- Saurischia** [PALEONTOLOGY] The lizard-hipped dinosaurs, an order of extinct reptiles in the subclass Archosauria characterized by an unspecialized, three-pronged pelvis. {sò'ris·kē·ə }
- Sauropoda** [PALEONTOLOGY] A group of fully quadrupedal, seemingly herbivorous dinosaurs

Sauropodomorpha

from the Jurassic and Cretaceous periods in the suborder Sauropodomorpha; members had small heads, spoon-shaped teeth, long necks and tails, and columnar legs. {sò'rāp·əd·ə}

Sauropodomorpha [PALEON] A suborder of extinct reptiles in the order Saurischia, including large, solid-limbed forms. {sò'rāp·əd·ə'mòr·fə}

Sauropterygia [PALEON] An order of Mesozoic marine reptiles in the subclass Euryapsida. {sò,rāp·tə'rjij·ē·ə}

saussurite [MINERAL] A white or grayish, tough, compact mineral aggregate composed chiefly of a mixture of albite or oligoclase and zoisite or epidote. {'sò·sə,rīt}

saussuritization [GEOL] A metamorphic process involving replacement of plagioclase in basalts and gabbros by a fine-grained aggregate of zoisite, epidote, albite, calcite, sericite, and zeolites. {sò'sür·əd·ə'zā·shən}

savic orogeny [GEOL] A short-lived orogeny that occurred in late Oligocene geologic time, between the Chattian and Aquitanian stages. {'sav·ik ó'rāj·ə·nē}

saw-cut [GEOL] A large canyon that cuts abruptly across a terrace, so that it is visible only from locations near its edge. {'sò ,kət}

Saxonian [GEOL] A European stage of geologic time in the Middle Permian, above the Autonian and below the Thuringian. {sak'sò·nē·ən}

saxonite [PETR] A peridotite composed chiefly of olivine and orthopyroxene. {'sak·sə,nīt}

scabland [GEOL] Elevated land that is essentially flat-lying and covered with basalt and has only a thin soil cover, sparse vegetation, and usually deep, dry channels. {'skab,land}

scabrock [GEOL] **1.** An outcropping of scabland. **2.** Weathered material of a scabland surface. {'skab,räk}

scacchite [MINERAL] $MnCl_2$ A mineral composed of native manganese chloride, found in volcanic regions. {ska,kīt}

scaglia [GEOL] A dark, very-fine-grained, somewhat calcareous shale usually developed in the Upper Cretaceous and Lower Tertiary periods of the northern Apennines. {'skal·yə}

scallop See scalloping. {'skäl·əp}

scalloped upland [GEOL] The region near or at the divide of an upland into which glacial cirques have cut from opposite sides. {'skäl·əpt 'əp·lənd}

scalloping [GEOL] A sedimentary structure superficially resembling an oscillation ripple mark, and having a concave side that is always oriented toward the top of the bed. Also known as scallop. {'skäl·ə·piŋ}

scalped anticline See breached anticline. {'skalpt 'ant·i·klīn}

scapolite [MINERAL] A white, gray, or pale-green complex aluminosilicate of sodium and calcium belonging to the tectosilicate group of silicate minerals; crystallizes in the tetragonal system and is vitreous; hardness is 5–6 on Mohs scale, and specific gravity is 2.65–2.74. Also known as wernerite. {'skap·ə,līt}

scapolitization [GEOL] Introduction of or replacement by scapolite. {skap·ə,lid·ə'zā·shən}

scar [GEOL] **1.** A steep, rocky eminence, such as a cliff or precipice, where bare rock is well exposed. Also known as scaur; scaw. **2.** See shore platform. {skär}

scarp See escarpment. {skärp}

scarped plain [GEOL] A terrain characterized by a succession of faintly inclined or gently folded strata. {'skärpt 'plān}

scarp face See scarp slope. {'skärp ,fäs}

scarplet See piedmont scarp. {'skärp·lət}

scarpline [GEOL] A relatively straight line of cliffs of considerable extent, produced by faulting or erosion along a fault. {'skärp,līn}

scarp slope [GEOL] The steep face of a cuesta, or asymmetric ridge, facing in an opposite direction to the dip of the strata. Also known as front slope; inface; scarp face. {'skärp ,slōp}

scatter diagram [PETR] See point diagram. {'skad·ər ,df·ə,gram}

scaur See scar. {skär}

schriesheimite

- scaw** See scar. { skò }
- schafarzikite** [MINERAL] $\text{Fe}_3\text{Sb}_4\text{O}_{11}$ A red to brown mineral composed of iron antimony oxide. { 'shä·fär,zi,kīt }
- schairerite** [MINERAL] $\text{Na}_3(\text{SO}_4)(\text{F,Cl})$ A colorless rhombohedral mineral composed of sodium sulfate with fluorine and chlorine, occurring in crystals. { 'shī·rä,rīt }
- schalstein** [PETR] A slaty rock formed by shearing basaltic or andesitic tuff or lava. { 'shäl,stīn }
- scheelite** [MINERAL] CaWO_4 A yellowish-white mineral crystallizing in the tetragonal system and occurring in tabular or massive form in pneumatolytic veins associated with quartz; an ore of tungsten. { 'shā,līt }
- schefflerite** [MINERAL] $(\text{Ca,Mn})(\text{Mg,Fe,Mn})\text{Si}_2\text{O}_6$ Brown to black variety of pyroxene that crystallizes in the monoclinic system and contains manganese and frequently iron. { 'shēf·lērīt }
- scheteligite** [MINERAL] $(\text{Ca,Y,Sb,Mn})_2(\text{Ti,Ta,Nb,W})_2\text{O}_6(\text{O,OH})$ A mineral composed of oxide of calcium, rare-earth metals, antimony, manganese, titanium, columbium, and tantalum. { shə'tel·ə,gīt }
- schirmerite** [MINERAL] $\text{PbAg}_4\text{Bi}_4\text{S}_9$ A mineral composed of lead, silver, and bismuth sulfide. { 'shər·mərīt }
- schist** [GEOL] A large group of coarse-grained metamorphic rocks which readily split into thin plates or slabs as a result of the alignment of lamellar or prismatic minerals. { shist }
- schist-arenite** [PETR] A light-colored sandstone containing more than 20% rock fragments derived from an area of regionally metamorphosed rocks. { 'shist 'a·rənīt }
- schistose** [GEOL] Pertaining to rocks exhibiting schistosity. { 'shis,tōs }
- schistosity** [GEOL] A type of cleavage characteristic of metamorphic rocks, notably schists and phyllites, in which the rocks tend to split along parallel planes defined by the distribution and parallel arrangement of platy mineral crystals. { shis'täs·əd·ē }
- schizolite** [MINERAL] A light-red variety of pectolite containing manganese. { 'skiz·əlīt }
- schlieren** [PETR] Irregular streaks with shaded borders in some igneous rocks, representing the segregation of light and dark minerals or altered inclusions, elongated by flow. { 'shlir·ən }
- schlieren arch** [GEOL] An intrusive igneous body with flow layers which occur along its borders but which are poorly developed or absent in its interior. { 'shlir·ən ,ärch }
- schlieren dome** [GEOL] An intrusive body more or less completely outlined by flow layers which culminate in one central area. { 'shlir·ən ,döm }
- Schmidt net** [GEOL] A coordinate or reference system used to plot a Schmidt projection. { 'shmit ,net }
- Schmidt projection** [GEOL] A Lambert azimuthal equal-area projection of the lower hemisphere of a sphere onto the plane of a meridian; used in structural geology. { 'shmit prə'jek·shən }
- schöepite** [MINERAL] $\text{UO}_3 \cdot 2\text{H}_2\text{O}$ A yellow secondary mineral composed of hydrous uranium oxide. { 'ske,pīt }
- schönfelsite** [PETR] A form of basalt containing embedded crystals of olivine and augite in a complex, dense fine-grained groundmass. { 'shən,fe'l,zīt }
- schorl** See schorlite. { shōrl }
- schorlite** [MINERAL] The black, iron-rich, opaque variety of tourmaline. Also known as schorl. { 'shōr,līt }
- schorlomite** [MINERAL] $\text{Ca}_3(\text{Fe,Ti})_2(\text{Si,Ti})_3\text{O}_{12}$ A black mineral of the garnet group that has a vitreous luster and usually occurs in masses; hardness is 7–7.5 on Mohs scale, and specific gravity is 3.81–3.88. { 'shōr·lō,mīt }
- schreibersite** [MINERAL] $(\text{Fe,Ni})_3\text{P}$ A silver-white to tin-white magnetic meteorite mineral crystallizing in the tetragonal system and occurring in tables or plates as oriented inclusions in iron meteorites. Also known as rhabdite. { 'shri·bər,sīt }
- schriesheimite** [PETR] An amphibole peridotite that contains diopside. { 'shrē·shē·əl,mīt }

schroeckingerite

- schroeckingerite** [MINERAL] $\text{NaCa}_2(\text{UO}_2)(\text{CO}_3)(\text{SO}_4)\text{F}\cdot 10\text{H}_2\text{O}$ A yellowish secondary mineral composed of hydrous sodium calcium uranyl carbonate, sulfate, and fluoride. { 'shrek·iŋ·ə,rīt }
- schrötterite** [MINERAL] An opaline variety of allophane that is rich in aluminum. { 'shräd·ə,rīt }
- schrund line** [GEOL] The base of the bergschrund, or deep crevasse, at a late stage in the excavation of a cirque; the schrund line separates the steep slope of the cirque wall from the gentler slope below. { 'shründ ,līn }
- Schubertellidae** [PALEON] An extinct family of marine protozoans in the superfamily Fusulinacea. { ,shü·bər'tel·ə,dē }
- schultenite** [MINERAL] PbHAsO_4 A colorless mineral composed of lead hydrogen arsenate occurring in tabular orthorhombic crystals. { 'shült·ən,līt }
- schungite** [GEOL] Amorphous carbon-rich material occurring in Precambrian schists. { 'shüŋ,gīt }
- schuppen structure** See imbricate structure. { 'shüp·ən ,stræk·chər }
- Schwagerinidae** [PALEON] A family of fusulinacean protozoans that flourished during the Early and Middle Pennsylvanian and became extinct during the Late Permian. { ,shwäg·ə'rīn·ə,dē }
- schwartzembergite** [MINERAL] $\text{Pb}_5(\text{IO}_3)\text{Cl}_3\text{O}_3$ A mineral composed of lead iodate, chloride, and oxide. { 'shwört·səm,bər,gīt }
- scissors fault** [GEOL] A fault on which the offset or separation along the strike increases in one direction from an initial point and decreases in the other direction. Also known as differential fault. { 'siz·ərz ,fölt }
- sclerotinite** [GEOL] A variety of inertinite composed of fungal sclerotia. { 'skler·ə·tə,nīt }
- scolecite** [MINERAL] $\text{CaAl}_2\text{Si}_3\text{O}_{10}$ A zeolite mineral that occurs in delicate, radiating groups of white fibrous or acicular crystals; sometimes shows wormlike motion upon heating. { 'skäl·ə,sīt }
- scolecodont** [PALEON] Any of the paired, pincerlike jaws occurring as fossils of annelid worms. { skō'lē·kə,dänt }
- solite** [GEOL] Any of the small tubes in rock believed to be the fossilized burrows of worms. { 'skō,līt }
- scopolite** [GEOL] A crystallite in the form of a rod with terminal brush or plume. { 'sköp·yə,līt }
- score** See scoring. { skór }
- scoria** [GEOL] Vesicular, cindery, dark lava formed by the escape and expansion of gases in basaltic or andesitic magma; generally denser and darker than pumice. { 'skör·ē·ə }
- scoria cone** [GEOL] A volcanic cone composed of a vesicular, cindery crust on the surface of lava that is basaltic or andesitic in nature. { 'skör·ē·ə ,kōn }
- scoria mound** [GEOL] A volcanic knoll composed of vesicular, cindery crust on the surface of lava that is basaltic or andesitic in nature. { 'skör·ē·ə ,maünd }
- scoria tuff** [GEOL] A deposit of fragmented scoria in a fine-grained tuff matrix. { 'skör·ē·ə ,təf }
- scoring** [GEOL] 1. The formation of parallel scratches, lines, or grooves in a bedrock surface by the abrasive action of rock fragments transported by a moving glacier.
2. A scratch, line, or groove produced by this process. Also known as score. { 'skör-iŋ }
- scorodite** [MINERAL] $\text{FeAsO}_4\cdot 2\text{H}_2\text{O}$ A pale leek-green or liver-brown orthorhombic mineral consisting of ferric arsenate; isomorphous with mansfieldite and represents a minor ore of arsenic. { 'skör·ə,dīt }
- scorzalite** [MINERAL] $\text{FeAl}_2(\text{PO}_4)_2(\text{OH})_2$ A blue mineral composed of basic iron aluminum phosphate; it is isomorphous with lazulite. { 'skör·zə,līt }
- Scotch-type volcano** [GEOL] A volcanic form characterized by concentric cuestas and produced by cauldron subsidence. { 'skäch ,tīp vāl'kā·nō }
- scour** See tidal scour. { 'skau·ər }
- scour and fill** [GEOL] The process of first digging out and then refilling a channel

sea-floor spreading

instigated by the action of a stream or tide; refers particularly to the process that occurs during a period of flood. { 'skaü·ər ən 'fil }

scour channel [GEOL] A large, groove-like erosional feature produced in sediments by scour. { 'skaü·ər ,chan·əl }

scour depression [GEOL] A crescent-shaped hollow in the stream bed near the outside of the stream's bend, caused by water that scours below the grade of the stream. { 'skaü·ər di,presh·ən }

scouring [GEOL] **1.** An erosion process resulting from the action of the flow of air, ice, or water. **2.** See glacial scour. { 'skaür·iŋ }

scouring velocity [GEOL] The velocity of water which is necessary to dislodge stranded solids from the stream bed. { 'skaür·iŋ və,läs·əd·ē }

scour lineation [GEOL] A smooth, low, narrow (2–5 centimeters or 1–2 inches wide) ridge formed on a sedimentary surface and believed to result from the scouring action of a current of water. { 'skaü·ər ,lin·ē,ā·shən }

scour mark [GEOL] A mark produced by the cutting or scouring action of a current flowing over the bottom of a river or body of water. { 'skaü·ər ,mark }

scourway [GEOL] A channel created by a powerful water current, particularly the temporary channels formed by streams on the edge of a Pleistocene ice sheet. { 'skaü·ər,wā }

scratch hardness test [MINERAL] A determination of the resistance of a mineral to scratching by testing it with minerals on the Mohs scale. { 'skrach 'härd·nəs ,test }

scree [GEOL] **1.** A mound of loose, angular material, less than 4 inches (10 centimeters). **2.** See talus. { skrē }

scroll [GEOL] One of a series of crescent-shaped sediments on the inner bank of a moving channel, deposited there by the stream. { skröl }

scroll meander [GEOL] A type of forced-cut meander, in which the scrolls built on the inner bank cause erosion of the outer bank. { 'skröl mē'an·dər }

scyelite [PETR] A coarse-grained ultramafic igneous rock characterized by poikilitic texture resulting from the inclusion of olivine crystals in crystals of other minerals, especially amphiboles. { 'stī·ə,līt }

Scythian stage [GEOL] A stage in the lesser Triassic series of the alpine facies. Also known as Werfenian stage. { 'sith·ē·ən ,stāj }

sea arch [GEOL] An opening through a headland, formed by wave erosion or solution (as by the enlargement of a sea cave, or by the meeting of two sea caves from opposite sides), which leaves a bridge of rock over the water. Also known as marine arch; marine bridge; sea bridge. { 'sē ,ärch }

seabeach [GEOL] A beach along the margin of the sea. { 'sē,bēch }

seabed See sea floor. { 'sē,bed }

sea bottom See sea floor. { 'sē ,bäd·əm }

sea bridge See sea arch. { 'sē ,brij }

sea cave [GEOL] A split or hollow opening, usually at sea level, in the base of a sea cliff, formed by waves acting on weak parts of the weathered rock. Also known as marine cave; sea chasm. { 'sē ,kāv }

sea channel [GEOL] A long, narrow, U-shaped or V-shaped shallow depression of the sea floor, usually occurring on a gently sloping plain or fan. { 'sē ,chan·əl }

sea chasm See sea cave. { 'sē ,kaz·əm }

sea cliff [GEOL] An erosional landform, produced by wave action, which is either at the seaward edge of the coast or at the landward side of a wave-cut platform and which denotes the inner limit of the beach erosion. { 'sē ,klif }

sea fan See submarine fan. { 'sē ,fan }

sea floor [GEOL] The bottom of the ocean. Also known as seabed; sea bottom. { 'sē ,flör }

sea-floor spreading [GEOL] The hypothesis that the ocean floor is spreading away from the midoceanic ridges and is being conveyed landward by convective cells in the earth's mantle, carrying the continental blocks as passive passengers; the ocean floor moves away from the midoceanic ridge at the rate of 0.4 to 4 inches (1 to 10 centimeters) per year and provides the source of power in the hypothesis of plate

sea-foam

- tectonics. Also known as ocean-floor spreading; spreading concept; spreading floor hypothesis. { 'sē ,flōr ,spred-iŋ }
- sea-foam** *See* sepiolite. { 'sē ,fōm }
- sea gully** *See* slope gully. { 'sē ,gəl-ē }
- sea knoll** *See* knoll. { 'sē ,nōl }
- sea level** [GEOL] The level of the surface of the ocean; especially, the mean level halfway between high and low tide, used as a standard in reckoning land elevation or sea depths. { 'sē ,lev-əl }
- sealing-wax structure** [GEOL] A primary sedimentary flow structure produced by slumping, characterized by the lack of a sharply defined slip plane at the base or a contemporaneous erosion plane at the top, and occupying a zone of highly fluid contortion in an otherwise normal sedimentary succession. { 'sēl-iŋ ,waks ,strək-čər }
- seam** [GEOL] **1.** A stratum or bed of coal or other mineral. **2.** A thin layer or stratum of rock. **3.** A very narrow coal vein. { sēm }
- seamanite** [MINERAL] $Mn_3(PO_4)(BO_3) \cdot 3H_2O$ A pale- to wine-yellow orthorhombic mineral that is a phosphate and borate of manganese; occurs in crystals. { 'sē-mə,nīt }
- seamount** [GEOL] A mountain rising from the ocean floor as a result of submarine volcanism. { 'sē,maunt }
- seamount chain** [GEOL] Several seamounts in a line with bases separated by a relatively flat sea floor. { 'sē,maunt ,čhān }
- seamount group** [GEOL] Several closely spaced seamounts not in a line. { 'sē ,maunt ,grüp }
- seamount range** [GEOL] Three or more seamounts having connected bases and aligned along a ridge or rise. { 'sē,maunt ,rānj }
- sea mud** [GEOL] A rich, slimy deposit in a salt marsh or along a seashore, sometimes used as a manure. Also known as sea ooze. { 'sē ,məd }
- sea ooze** *See* sea mud. { 'sē ,üz }
- sea peak** [GEOL] A peaked elevation of the sea floor, rising 3300 feet (1000 meters) or more from the floor. { 'sē ,pēk }
- seaquake** [GEOPHYS] An earth tremor whose epicenter is beneath the ocean and can be felt only by ships in the vicinity of the epicenter. Also known as submarine earthquake. { 'sē,kwāk }
- searlesite** [MINERAL] $NaB(SiO_3)_2 \cdot H_2O$ A white mineral composed of hydrous sodium borosilicate occurring as spherulites. { 'sərl,zīt }
- seascarp** [GEOL] A submarine cliff that is relatively long, high, and straight. { 'sē,skärp }
- seashore** [GEOL] **1.** The strip of land that borders a sea or ocean. Also known as seaside; shore. **2.** The ground between the usual tide levels. Also known as sea-strand. { 'sē,shór }
- seaside** *See* seashore. { 'sē,sīd }
- sea slope** [GEOL] The slope of land toward the sea. { 'sē ,slōp }
- seasonally frozen ground** [GEOL] Ground that is frozen during low temperatures and remains so only during the winter season. Also known as frost zone. { 'sēz-ən-lē ,frō-zən 'graünd }
- seastrand** *See* seashore. { 'sē,strand }
- seat clay** *See* underclay. { 'sēt ,klā }
- seat earth** *See* underclay. { 'sēt ,ərth }
- sea terrace** *See* marine terrace. { 'sē ,ter-əs }
- sea valley** [GEOL] A relatively shallow, wide depression with gentle slopes in the sea floor, the bottom of which grades continuously downward. { 'sē ,val-ē }
- seawall** [GEOL] A steep-faced, long embankment situated by powerful storm waves along a seacoast at high-water mark. { 'sē,wōl }
- sebastianite** [PETR] A plutonic rock composed of euhedral anorthite, biotite, and some augite and apatite, but without feldspatroids and quartz. { si'bas-čə,nīt }
- sebcha** *See* sebkha. { 'seb-kə }
- sebka** *See* sebkha. { 'seb-kə }

secretion

- sebka** [GEOL] A geologic feature, in North Africa, which is a smooth, flat, plain usually high in salt; after a rain the plain may become a marsh or a shallow lake until the water evaporates. Also known as sabkha; sebcha; sebka; sibjet. { 'seb·kə }
- secondary** [GEOL] A term with meanings that changed from early to late in the 19th century, when the term was confined to the entire Mesozoic era; it was finally replaced by Mesozoic era. { 'sek·ən,der·ē }
- secondary clay** [GEOL] A clay that has been transported from its place of formation and redeposited elsewhere. { 'sek·ən,der·ē 'klā }
- secondary coast** [GEOL] A relatively stable seacoast or shoreline whose features are the result of present-day marine processes. { 'sek·ən,der·ē 'kōst }
- secondary consolidation** [GEOL] Consolidation of sedimentary material, at essentially constant pressure, resulting from internal processes such as recrystallization. { 'sek·ən,der·ē kən,säl·ə'dā·shən }
- secondary crater** [GEOL] An impact crater produced by the relatively low-velocity impact of fragments ejected from a large primary crater. Also known as satellitic crater. { 'sek·ən,der·ē 'krād·ər }
- secondary enlargement** [MINERAL] Overgrowth by chemical deposition on a mineral grain of additional material of identical composition in optical and crystallographic continuity with the original grain; crystal faces characteristic of the original mineral often result. Also known as secondary growth. { 'sek·ən,der·ē in'lärj·mənt }
- secondary enrichment** [GEOL] The addition to a vein or ore body of material that originated later in time from the oxidation of decomposed ore masses that overlie the vein. { 'sek·ən,der·ē in'rich·mənt }
- secondary geosyncline** [GEOL] A geosyncline appearing at the culmination of or after geosynclinal orogeny. { 'sek·ən,der·ē ,jē·ō'sin,klīn }
- secondary growth** *See* secondary enlargement. { 'sek·ən,der·ē 'grōth }
- secondary interstices** [GEOL] Openings in a rock that formed after the enclosing rock was formed. { 'sek·ən,der·ē in'tər·stə,sēz }
- secondary limestone** [PETR] Limestone deposited from solution in cracks and cavities of other rocks. { 'sek·ən,der·ē 'līm,stōn }
- secondary mineral** [MINERAL] A mineral produced in an enclosing rock after the rock was formed as a result of weathering or metamorphic or solution activity, and usually at the expense of a primary material that came into existence earlier. { 'sek·ən,der·ē 'min·rəl }
- secondary porosity** [GEOL] The interstices that appear in a rock formation after it has formed, because of dissolution or stress distortion taking place naturally or artificially as a result of the effect of acid treatment or the injection of coarse sand. { 'sek·ən,der·ē pə'räs·əd·ē }
- secondary reflection** *See* multiple reflection; shoot. { 'sek·ən,der·ē ri'flek·shən }
- secondary stratification** [GEOL] The layering that occurs when sediments that were at one time deposited are resuspended and redeposited. Also known as indirect stratification. { 'sek·ən,der·ē ,strəd·ə'fə'kā·shən }
- secondary stratigraphic trap** *See* stratigraphic trap. { 'sek·ən,der·ē ,strəd·ə'graf·ik 'trap }
- secondary structure** [GEOL] A structure such as a fault, fold, or joint resulting from tectonic movement that started after the rock in which it is found was emplaced. [PALEON] A coarse structure usually between the thin sheets in the protective wall of a tintinnid. { 'sek·ən,der·ē 'strāk·chər }
- secondary tectonite** [GEOL] A tectonite having a deformation fabric. { 'sek·ən,der·ē 'tek·tə,nīt }
- secondary wave** *See* S wave. { 'sek·ən,der·ē 'wāv }
- second bottom** [GEOL] The first terrace rising over a floodplain. { 'sek·ənd 'bäd·əm }
- second-derivative map** [GEOPHYS] A map of the second vertical derivative of a potential field such as the earth's gravity or magnetic field. { 'sek·ənd də'riv·əd·iv 'map }
- secretion** [GEOL] A secondary structure formed of material deposited (from solution) within an empty cavity in any rock, especially a deposit formed on or parallel to the walls of the cavity, the first layer being the outer one. { si'krē·shən }

sectile

- sectile** [MINERAL] Pertaining to a mineral whose texture is tenacious enough to be cut with a knife. { 'sek·təl }
- section** [GEOL] **1.** An inclined or vertical surface that is uncovered either naturally (as a sea cliff or stream bank) or artificially (as a strip mine or road cut) through a part of the earth's crust. **2.** A description or scale drawing of the successive rock units or geologic structures shown by the exposed surface, or their appearance if cut through by any intersecting plane. **3.** See columnar section; geologic section; type section; thin section. { 'sek·shən }
- secular variation** [GEOPHYS] The changes, measured in hundreds of years, in the magnetic field of the earth. Also known as geomagnetic secular variation. { 'sek·yə·lər ,ver·ē'ā·shən }
- secundine dike** [GEOL] A dike which has been intruded into hot country rock. { 'sek·ən,dīn 'dīk }
- sedentary soil** [GEOL] Soil that still lies on the rock from which it was formed. { 'sed·ən,ter·ē 'sōil }
- sedifluction** [GEOL] The subaquatic or subaerial movement of material in unconsolidated sediments, occurring in the primary stages of diagenesis. { ,sed·ə'flək·shən }
- sediment** [GEOL] **1.** A mass of organic or inorganic solid fragmented material, or the solid fragment itself, that comes from weathering of rock and is carried by, suspended in, or dropped by air, water, or ice; or a mass that is accumulated by any other natural agent and that forms in layers on the earth's surface such as sand, gravel, silt, mud, fill, or loess. **2.** A solid material that is not in solution and either is distributed through the liquid or has settled out of the liquid. { 'sed·ə·mənt }
- sedimentary breccia** [PETR] A rock composed of fragments that are larger than 2 millimeters in diameter and are the result of sedimentary processes; characterized by imperfect mechanical sorting of its materials and by a higher concentration of fragments from one local source or by a wide variety of materials mixed together in no particular pattern. Also known as sharpstone conglomerate. { 'sed·ə'men·trē 'brech·ə }
- sedimentary cycle** See cycle of sedimentation. { 'sed·ə'men·trē 'sī·kəl }
- sedimentary differentiation** [GEOL] The progressive separation (by erosion and transportation) of a well-defined rock mass into physically and chemically unlike products that are resorted and deposited as sediments in more or less separate areas. { 'sed·ə'men·trē ,dif·ə,ren·chē'ā·shən }
- sedimentary dike** [GEOL] A tabular mass of sedimentary material that cuts across the structure or bedding of preexisting rock in the manner of an igneous dike and that is formed by the filling of a crack or fissure by forcible injection or intrusion of sediments under abnormal pressure, or by simple infilling of sediments. { 'sed·ə'men·trē 'dīk }
- sedimentary facies** [GEOL] A stratigraphic facies differing from another part or parts of the same unit in both lithologic and paleontologic characters. { 'sed·ə'men·trē 'fā·shēz }
- sedimentary injection** See injection. { 'sed·ə'men·trē in'jek·shən }
- sedimentary insertion** [GEOL] The emplacement of sedimentary material among deposits or rocks already formed, such as by infilling, injection, or intrusion, or through localized subsidence due to solution of underlying rock. { 'sed·ə'men·trē in'sər·shən }
- sedimentary intrusion** See intrusion. { 'sed·ə'men·trē in'trū·zhən }
- sedimentary laccolith** [GEOL] An intrusion of plastic sedimentary material (such as clayey salt breccia) forced up under high pressure and penetrating parallel or nearly parallel to the bedding planes of the invaded formation; characterized by a very irregular thickness. { 'sed·ə'men·trē 'lak·ə,lith }
- sedimentary lag** [GEOL] Delay between the formation of potential sediment by weathering and its removal and deposition. { 'sed·ə'men·trē 'lag }
- sedimentary petrography** [PETR] The description and classification of sedimentary rocks. Also known as sedimentography. { 'sed·ə'men·trē pə'træg·rə·fē }

- sedimentary petrology** [PETR] The study of the composition, characteristics, and origin of sediments and sedimentary rocks. { 'sed·ə'men·trē pə'träl·ə·jē }
- sedimentary quartzite** See orthoquartzite. { 'sed·ə'men·trē 'kwört,sīt }
- sedimentary rock** [PETR] A rock formed by consolidated sediment deposited in layers. Also known as derivative rock; neptunic rock, stratified rock. { 'sed·ə'men·trē 'rāk }
- sedimentary structure** [GEOL] A structure in sedimentary rocks, such as cross-bedding, ripple marks, and sandstone dikes, produced either contemporaneously with deposition (primary sedimentary structures) or shortly after deposition (secondary sedimentary structures). { 'sed·ə'men·trē 'stræk·chər }
- sedimentary tectonics** [GEOL] Folding and deformation in geosynclinal basins caused by subsidence and buckling of strata. { 'sed·ə'men·trē tek'tän·iks }
- sedimentary trap** [GEOL] An area in which sedimentary material accumulates instead of being transported farther, as in an area between high-energy and low-energy environments. { 'sed·ə'men·trē 'trap }
- sedimentary tuff** [GEOL] A tuff containing a small amount of nonvolcanic detrital material. { 'sed·ə'men·trē 'tʌf }
- sedimentary volcanism** [GEOL] The expelling, extruding, or breaking through of overlying formations by a mixture of sediment, water, and gas, driven by the gas under pressure. { 'sed·ə'men·trē 'väl·kə,niz·əm }
- sedimentation** [GEOL] 1. The act or process of accumulating sediment in layers. 2. The process of deposition of sediment. { ,sed·ə·mən'tä·shən }
- sedimentation basin** [GEOL] A depression in the ocean floor with a wide, flat bottom in which sediment accumulates. { ,sed·ə·mən'tä·shən ,bäs·ən }
- sedimentation curve** [GEOL] A curve showing cumulatively, and in successive units of time, the amount of sediment accumulated or removed from an originally uniform suspension. { ,sed·ə·mən'tä·shən ,kərv }
- sedimentation diameter** [GEOL] The diameter of a sedimentary particle, determined from the measurement of a hypothetical sphere of the same gravity and settling velocity as those of a given sedimentary particle in the same fluid. { ,sed·ə·mən'tä·shən dī'am·əd·ər }
- sedimentation radius** [GEOL] One-half of the sedimentation diameter. { ,sed·ə·mən'tä·shən ,räd·ē·əs }
- sedimentation rate** See rate of sedimentation. { ,sed·ə·mən'tä·shən ,rät }
- sedimentation trend** [GEOL] The direction in which sediments were laid down. { ,sed·ə·mən'tä·shən ,trend }
- sedimentation trough** [GEOL] A depression in the ocean floor with a narrow U- or V-shaped bottom in which sediment accumulates. { ,sed·ə·mən'tä·shən ,tróf }
- sedimentation unit** [GEOL] A sedimentary deposit formed during one distinct act of sedimentation. { ,sed·ə·mən'tä·shən ,yü·nət }
- sediment-delivery ratio** [GEOL] The ratio of sediment yield of a drainage basin to the total amount of sediment moved by sheet erosion and channel erosion. { 'sed·ə·mənt dī'liv·ə·rē ,rā·shō }
- sedimentography** See sedimentary petrography. { ,sed·ə·mən'täg·rə·fē }
- sedimentology** [GEOL] The science concerned with the description, classification, origin, and interpretation of sediments and sedimentary rock. { ,sed·ə·mən'täl·ə·jē }
- sediment-production rate** [GEOL] Sediment yield per unit of drainage area, derived by dividing the annual sediment yield by the area of the drainage basin. { 'sed·ə·mənt prə'dæk·shən ,rät }
- sediment vein** [GEOL] A sedimentary dike formed by the filling of a fissure from above with sedimentary material. { 'sed·ə·mənt ,vān }
- sediment yield** [GEOL] The amount of material eroded from the land surface by runoff and delivered to a stream system. { 'sed·ə·mənt ,yēld }
- seed fern** [PALEOBOT] The common name for the extinct plants classified as Pteridospermae, characterized by naked seeds borne on large, fernlike fronds. { 'sēd ,fərn }
- Seelandian** [GEOL] A European stage of geologic time in the lowermost Paleocene. { zä'län·dē·ən }

seep

- seep** [GEOL] An area, generally small, where water, or another liquid such as oil, percolates slowly to the land surface. { sēp }
- seepage face** [GEOL] A belt on a slope, such as the bank of a stream, along which water emerges at atmospheric pressure and flows down the slope. { 'sēp·ij ,fās }
- segregated vein** [GEOL] A fissure filled with mineral matter derived from country rock by the action of percolating water. Also known as exudation vein. { 'seg·rə,gād·əd 'vān }
- segregation** [GEOL] The formation of a secondary feature within a sediment after deposition due to chemical rearrangement of minor constituents. { ,seg·rə'gā·shən }
- segregation banding** [PETR] A compositional band in gneisses that is the result of segregation of material from an originally homogeneous rock. { ,seg·rə'gā·shən ,band·iŋ }
- seif dune** [GEOL] A large, tapering, longitudinal dune or chain of sand dunes with a sharp crest that in profile consists of a succession of peaks and cols. { 'sāf ,dūn }
- seismic activity** See seismicity. { 'sīz·mik ək,tiv·əd·ē }
- seismic anisotropy** [GEOPHYS] The dependence of seismic velocity on the direction of propagation. { 'sīz·mik ,ən·ə'sā·trə·pē }
- seismic area** See earthquake zone. { 'sīz·mik ,er·ē·ə }
- seismic belt** [GEOPHYS] An elongate seismic zone, such as that in the Circum-Pacific. { 'sīz·mik ,belt }
- seismic discontinuity** [GEOPHYS] **1.** A surface at which velocities of seismic waves change abruptly. **2.** A boundary between seismic layers of the earth. Also known as interface; velocity discontinuity. { 'sīz·mik ,dis·kənt·ən'ü·əd·ē }
- seismic efficiency** [GEOPHYS] The proportion of the total available strain energy which is radiated as seismic waves. { 'sīz·mik i'fish·ən·sē }
- seismic-electric effect** [GEOPHYS] The variation of resistivity with elastic deformation of rocks. { 'sīz·mik i'lek·trik i,fekt }
- seismic event** [GEOPHYS] An earthquake or a somewhat similar transient earth motion caused by an explosion. { 'sīz·mik i,vent }
- seismic gradient** [GEOPHYS] The variation of seismic velocity with distance in a specified direction. Also known as velocity gradient. { 'sīz·mik 'grād·ē·ənt }
- seismic hazard** [GEOPHYS] Any physical phenomenon, such as ground shaking or ground failure, that is associated with an earthquake and that may produce adverse effects on human activities. { 'sīz·mik 'haz·ərd }
- seismic intensity** [GEOPHYS] The average rate of flow of seismic-wave energy through a unit section perpendicular to the direction of propagation. { 'sīz·mik in'ten·səd·ē }
- seismicity** [GEOPHYS] The phenomena of earth movements. Also known as seismic activity. { sīz'mis·əd·ē }
- seismic map** [GEOPHYS] A contour map constructed from seismic data, the z coordinate of which could be either time or depth. { 'sīz·mik 'map }
- seismic prospecting** [GEOPHYS] Geophysical prospecting based on the analysis of elastic waves generated in the earth by artificial means. { 'sīz·mik 'prəs,pek·tiŋ }
- seismic ray** [GEOL] The path along which seismic energy travels. { 'sīz·mik 'rā }
- seismic reflector** [GEOPHYS] A subsurface profile that is generated by seismic data and indicates a distinctive type of sediment geometry produced by sea-level changes; used to correlate stratigraphic sequences. { 'sīz·mik ri'flek·tər }
- seismic risk** [GEOPHYS] **1.** An assortment of earthquake effects that range from ground shaking, surface faulting, and landsliding to economic loss and casualties. **2.** The probability that social or economic consequences of earthquakes will equal or exceed specified values at a site, at several sites, or in an area, during a specified exposure time. { 'sīz·mik 'risk }
- seismic stratigraphy** [GEOL] A branch of stratigraphy in which sediments and sedimentary rocks are interpreted in a geometrical context from seismic reflectors. { 'sīz·mik strə'tig·rə·fē }
- seismic tomography** [GEOPHYS] The estimation of seismic wave velocities throughout a region of interest from the travel times of either transmitted or reflected waves,

- generally through numerical models and iterative procedures. { 'sɪz,mɪk tɔ'mæg-rə-fē }
- seismic velocity** [GEOPHYS] The rate of propagation of an elastic wave, usually measured in kilometers per second. { 'sɪz,mɪk və'lās-əd-ē }
- seismic vertical** [GEOLOGY] **1.** The point on the earth's surface directly over the point within the earth from which an earthquake impulse originates. **2.** The vertical line between the surface point and the point of origin. { 'sɪz,mɪk 'vərd-ə-kəl }
- seismology** [GEOPHYS] **1.** The study of earthquakes. **2.** The science of strain-wave propagation in the earth. { sɪz'mäl-ə-jē }
- sekaninaite** [MINERAL] A violet variety of cordierite in which magnesium is largely replaced by ferrous iron. Also known as iron cordierite. { sə'kän-ən-ə,ɪt }
- selagite** [PETROLOGY] A mica trachyte characterized by abundant tabular biotite crystals in a holocrystalline groundmass of orthoclase and diopside, and possibly quartz and olivine. { 'sel-ə,ɪt }
- selective fusion** [GEOLOGY] The fusion of only a portion of a mixture, such as a rock. { si'lek-tiv 'fyü-zhən }
- selective replacement** [GEOLOGY] The replacement of one mineral by another, preferentially within an altered rock mass. { si'lek-tiv ri'pläs-mənt }
- selenite** [MINERAL] The clear, colorless variety of gypsum crystallizing in the monoclinic system and occurring in crystals or in crystal mass. Also known as spectacle stone. { 'sel-ə,nɪt }
- selenite butte** [GEOLOGY] A small tabular mound, rising 3.3–10 feet (1–3 meters) above a playa, composed of lake sediments capped with a veneer of selenite formed by deflation of the playa or by the effects of rising groundwater. { 'sel-ə,nɪt 'byüt }
- self-reversal** [GEOPHYS] Acquisition by a rock of a natural remanent magnetization opposite to the ambient magnetic field direction at the time of rock formation. { 'self ri'vər-səl }
- self-rising ground** [GEOLOGY] The puffy, irregular, surface or near-surface zone of certain playas, formed by the effects of capillary rise of groundwater. { 'self 'rɪz-ɪŋ 'graʊnd }
- seligmannite** [MINERAL] PbCuAsS₃ A metallic gray orthorhombic mineral, occurring in crystals. { 'sel-əg-mə,nɪt }
- sellaite** [MINERAL] MgF₂ A colorless mineral composed of magnesium fluoride occurring in tetragonal prismatic crystals. { 'sel-ə,ɪt }
- selvage** [PETROLOGY] The marginal zone of an igneous mass, generally characterized by a fine-grain, or sometimes glassy, texture. Also known as salband. { 'sel-vɪj }
- semianthracite** [GEOLOGY] Coal which is between bituminous coal and anthracite in metamorphic rank, and which has a fixed-carbon content of 86–92%. { ,sem-ē'an-thrə,sɪt }
- semibituminous coal** [GEOLOGY] Coal that is harder and more brittle than bituminous coal, has a high fuel ratio, contains 10–20% volatile matter, and burns without smoke; ranks between bituminous and semianthracite coals. { ,sem-i-bə'tü-mənəs 'kɔl }
- semibolson** [GEOLOGY] A wide desert basin or valley whose central playa is absent or poorly developed, and which is drained by an intermittent stream that flows through canyons at each end and reaches a surface outlet. { ,sem-i'bɔls-ən }
- semibright coal** [GEOLOGY] A type of banded coal defined microscopically as consisting of between 80 and 61% bright ingredients such as vitrain, clarain, and fusain, with clarodurain and durain composing the remainder. { 'sem-i,bɹɪt 'kɔl }
- semicratonic** See quasi-cratonic. { ,sem-i-krə'tän-ɪk }
- semicrystalline** See hypocrystalline. { ,sem-i'kɹɪst-əl-ən }
- semidull coal** [GEOLOGY] A type of banded coal consisting mainly of clarodurain and durain, with from 40 to 21% bright ingredients such as vitrain, clarain, and fusain. { 'sem-i,dəl 'kɔl }
- semifusinite** [GEOLOGY] A coal maceral with a well-defined woody structure and optical properties intermediate between those of nitrinite and those of fusinite. { ,sem-i'fyüz-ən,ɪt }
- semischist** [PETROLOGY] A partly metamorphosed sedimentary rock, exhibiting some foliation. { 'sem-i,ʃɪst }

semisplint coal

- semisplint coal** [GEOL] Banded coal that is intermediate between bright-banded and splint coal, and has 20–30% opaque attritus and more than 5% anthraxylon. {sem-i'splint 'kɔl }
- semseyite** [MINERAL] $Pb_9Sb_8S_{21}$ A gray to black mineral composed of lead antimony sulfide. { 'sem·sē,ɪt }
- senaitite** [MINERAL] (Fe,Mn,Pb)TiO₃ A black mineral consisting of a lead- and manganese-bearing ilmenite; occurs as rough crystals and rounded fragments. { 'sen·ə,ɪt }
- senarmontite** [MINERAL] Sb₂O₃ A colorless or grayish mineral composed of native antimony trioxide occurring in masses or as octahedral crystals. { ,sen·ər'män,tɪt }
- Senecan** [GEOL] A North American provincial series of geologic time, forming the lower part of the Upper Devonian, above the Erian and below the Chautauquan. { 'sen·i·kən }
- senescence** [GEOL] The part of the erosion cycle at which the stage of old age begins. { si'nes·əns }
- senesland** [GEOL] A land surface intermediate between a matureland and a peneplain. { 'sen·əs,land }
- sengierite** [MINERAL] $Cu(UO_2)_2(VO_4)_2 \cdot 8-10H_2O$ A yellowish-green mineral composed of hydrous copper uranyl vanadate. { 'seŋ·ē·ərɪt }
- senile** [GEOL] Pertaining to the stage of senility of the cycle or erosion. { 'sē,nɪl }
- senility** [GEOL] The stage of the cycle of erosion in which erosion of a land surface has reached a minimum, most of the hills have disappeared, and base level has been approached. { si'nɪl·əd·ē }
- Senonian** [GEOL] A European stage of geologic time, forming the Upper Cretaceous, above the Turonian and below the Danian. { sə'nɒ·nē·ən }
- sensitive clay** [GEOL] A clay whose shear strength is reduced to a very small fraction of its former value on remolding at constant moisture content. { 'sen·səd·iv 'klā }
- sensitivity** [GEOL] The effect of remolding on the consistency of a clay or cohesive soil, regardless of the physical nature of the causes of the change. { ,sen·sə'tiv·əd·ē }
- separate** *See* soil separate. { 'sep·rət }
- separation** [GEOL] The apparent relative displacement on a fault, measured in any given direction. { ,sep·ər'ɹā·ʃən }
- sepiolite** [MINERAL] $Mg_4(Si_2O_5)_3(OH)_2 \cdot 6H_2O$ A soft, lightweight, absorbent, white to light-gray or light-yellow clay mineral, found principally in Asia Minor; used for tobacco pipe bowls and ornamental carvings. Also known as meerschaum; sea-foam. { 'sē·pē·əlɪt }
- septarian** [GEOL] Pertaining to the irregular polygonal pattern of internal cracks developed in septaria. { sep'tar·ē·ən }
- septarian boulder** *See* septarium. { sep'tar·ē·ən 'bɔl·dər }
- septarian nodule** *See* septarium. { sep'tar·ē·ən 'näj·l } }
- septarium** [GEOL] A large (32–36 inches or 80–90 centimeters in diameter), spheroidal concretion, usually composed of argillaceous carbonate, characterized by internal cracking into irregular polygonal blocks that become cemented together by crystalline minerals. Also known as beetle stone; septarian boulder; septarian nodule; turtle stone. { sep'tar·ē·əm }
- Sequanian** [GEOL] Upper Lower Jurassic (Upper Lusitanian) geologic time. Also known as Astartian. { sə'kwā·nē·ən }
- sequence** [GEOL] **1.** A sequence of geologic events, processes, or rocks, arranged in chronological order. **2.** A geographically discrete, major informal rock-stratigraphic unit of greater than group or supergroup rank. Also known as stratigraphic sequence. **3.** A body of rock deposited during a complete cycle of sea-level change. { 'sē·kwəns }
- sequence stratigraphy** [GEOL] A branch of stratigraphy that subdivides the sedimentary record along continental margins and in interior basins into a succession of depositional sequences as regional and interregional correlative units. { 'sē·kwəns strə'tɪg·rə·fē }
- sequential landform** [GEOL] One of an orderly succession of smaller landforms that are

shadow zone

- developed by the erosion, weathering, and mass wasting of larger initial landforms. { si'kwen-chəl 'land,fórm }
- serandite** [MINERAL] $\text{Na}(\text{Mn,Ca})_2\text{Si}_3\text{O}_8(\text{OH})$ A rose-red mineral composed of a basic silicate of manganese, lime, potash, and soda occurring in monoclinic crystals. { 'ser·ən,dīt }
- seriate** [GEOL] Having crystals that vary gradually in size. { 'sir·ē,āt }
- sericite** [MINERAL] A white, fine-grained potassium mica, usually muscovite in composition, having a silky luster and found as small flakes in various metamorphic rocks. { 'ser·ə,sīt }
- sericitic sandstone** [PETR] A sandstone in which sericite (derived by decomposition of feldspar) intermingles with finely divided quartz and fills the voids between quartz grains. { 'ser·ə'sīd·ik 'san,stōn }
- sericitization** [GEOL] A hydrothermal or metamorphic process involving the introduction of or replacement by sericite. { ,ser·ə,sīd·ə'zā·shən }
- series** [GEOL] **1.** A number of rocks, minerals, or fossils that can be arranged in a natural sequence due to certain characteristics, such as succession, composition, or occurrence. **2.** A time-stratigraphic unit, below system and above stage, composed of rocks formed during an epoch of geologic time. { 'sir·ēz }
- serpentine** [MINERAL] $(\text{Mg,Fe})_3\text{Si}_2\text{O}_5(\text{OH})_4$ A group of green, greenish-yellow, or greenish-gray ferromagnesian hydrous silicate rock-forming minerals having greasy or silky luster and a slightly soapy feel; translucent varieties are used for gemstones as substitutes for jade. { 'sər·pən,tēn }
- serpentine jade** [MINERAL] A variety of the mineral serpentine resembling jade in appearance and used as an ornamental stone. { 'sər·pən,tēn 'jäd }
- serpentine rock** See serpentinite. { 'sər·pən,tēn 'rāk }
- serpentinite** [PETR] A rock composed almost entirely of serpentine minerals. Also known as serpentine rock. { 'sər·pən,tē,nīt }
- serpentinization** [GEOL] A hydrothermal process by which magnesium-rich silicate minerals are converted into or replaced by serpentine minerals. { ,sər·pən,tē·nə'zā·shən }
- serpent kame** See esker. { 'sər·pənt 'kām }
- serpierite** [MINERAL] $(\text{Cu,Zn,Ca})_5(\text{SO}_4)_2(\text{OH})_6 \cdot 3\text{H}_2\text{O}$ A bluish-green mineral composed of hydrous basic sulfate of copper, zinc, and calcium; occurs in tabular crystals and tufts. { 'sər·pē·ə,rīt }
- serrate** [GEOL] Pertaining to topographic features having a notched or toothed edge, or a saw-edge profile. { 'se,rāt }
- serrate ridge** See arête. { 'se,rāt 'rij }
- Serridentinae** [PALEON] An extinct subfamily of elephantoids in the family Gomphotheriidae. { ,ser·ə'dent·ən,ē }
- set** [GEOL] A group of essentially conformable strata or cross-strata, separated from other sedimentary units by surfaces of erosion, nondeposition, or abrupt change in character. { set }
- settlement** [GEOL] The subsidence of surficial material (such as coastal sediments) due to compaction. { 'sed·əl·mənt }
- settling** [GEOL] The sag in outcrops of layered strata, caused by rock creep. Also known as outcrop curvature. { 'set·liŋ }
- Sevier orogeny** [GEOL] The deformation that occurred along the eastern edge of the Great Basin in Utah (eastern edge of the Cordilleran miogeosyncline) during times intermediate between the Nevadan orogeny to the west and the Laramide orogeny to the east, culminating early in the Late Cretaceous. { se'vyā ō'rāj·ə·nē }
- seybertite** See clintonite. { 'sī·bər,dīt }
- Seymouriamorpha** [PALEON] An extinct group of labyrinthodont Amphibia of the Upper Carboniferous and Permian in which the intercentra were reduced. { sē,mòr·ē·ə'mòr·fə }
- shadow zone** [GEOPHYS] The zone, between 103 and 143° from the epicenter of an earthquake, in which direct seismic waves do not arrive because of refraction and absorption by the earth's core. { 'shad·ō ,zōn }

shaft

- shaft** [GEOL] A passage in a cave that is vertical or nearly vertical. { shaft }
- shake wave** See S wave. { 'shāk ,wāv }
- shale** [PETR] A fine-grained laminated or fissile sedimentary rock made up of silt- or clay-size particles; generally consists of about one-third quartz, one-third clay materials, and one-third miscellaneous minerals, including carbonates, iron oxides, feldspars, and organic matter. { shāl }
- shale ball** [GEOL] A meteorite partly or wholly converted to iron oxides by weathering. Also known as oxidite. { 'shāl ,ból }
- shale break** [GEOL] A thin layer or parting of shale between harder strata or within a bed of sandstone or limestone. { 'shāl ,brāk }
- shale crescent** [GEOL] A crescent formed by the filling of a ripple-mark trough by shale. { 'shāl ,kres·ənt }
- shale reservoir** [GEOL] Underground hydrocarbon reservoir in which the reservoir rock is a brittle, siliceous, fractured shale. { 'shāl 'rez·əv,wär }
- shalification** [GEOL] The formation of shale. { ,shāl·ə·fə'kā·shən }
- shallow-focus earthquake** [GEOPHYS] An earthquake whose focus is located within 70 kilometers of the earth's surface. { 'shal·ō 'fō·kəs 'ərθ,kwāk }
- shallow inland seas** [GEOL] Epeiric seas which periodically cover cratonic areas as a result of continental subsidence or eustatic rises in sea level. { 'shal·ō 'in·lənd 'sēz }
- shallow marginal seas** [GEOL] Epeiric seas along the cratonic margins. { 'shal·ō 'märij·ən·əl 'sēz }
- shaly** [GEOL] Pertaining to, composed of, containing, or having the properties of shale, especially readily split along close-spaced bedding planes. { 'shāl·ē }
- shaly bedding** [GEOL] Laminated bedding varying between 2 and 10 millimeters in thickness. { 'shāl·ē 'bed·iŋ }
- shandite** [MINERAL] Ni₃Pb₂S₂ A rhombohedral mineral composed of nickel lead sulfide, occurring in crystals. { 'shan,dīt }
- shantung** [GEOL] A monadnock in the process of burial by huangho deposits. { shan'təŋ }
- Shantung soil** See Noncalic Brown soil. { shan'təŋ ,sɔil }
- shard** [GEOL] A vitric fragment in pyroclastics, having a characteristically curved surface of fracture. { shärd }
- sharkskin pahoehoe** [GEOL] A type of pahoehoe displaying numerous tiny spines or spicules on the surface. { 'shärk,skin pə'hō·ē,hō·ē }
- shark-tooth projection** [GEOL] Sharp pointed projections several centimeters in length, formed by the pulling apart of plastic lava. { 'shärk 'tūtθ prə'jek·shən }
- sharpite** [MINERAL] (UO₂)(CO₃)·H₂O A greenish-yellow mineral composed of hydrous basic uranyl carbonate. { 'shär,pīt }
- sharp sand** [GEOL] An angular-grain sand free of clay, loam, and other foreign particles. { 'shärp 'sand }
- sharpstone** [GEOL] Any rock fragment having angular edges and corners and being more than 2 millimeters in diameter. { 'shärp,stön }
- sharpstone conglomerate** See sedimentary breccia. { 'shärp,stön kən'gläm·ə·rət }
- shatter breccia** [PETR] A tectonic breccia composed of angular fragments that show little rotation. { 'shad·ər 'brech·ə }
- shatter cone** [GEOL] A striated conical rock fragment along which fracturing has occurred. { 'shad·ər ,kōn }
- shatter zone** [GEOL] An area of randomly fissured or cracked rock that may be filled by mineral deposits, forming a network pattern of veins. { 'shad·ər ,zōn }
- shattuckite** [MINERAL] Cu₅(SiO₃)₄H₂O A blue mineral composed of basic copper silicate, occurring in fibrous masses. { 'shad·ə,kīt }
- sheaf structure** [GEOL] A bundled arrangement of crystals that is characteristic of certain fibrous minerals, such as stibnite. { 'shēf ,strək·chər }
- shear cleavage** See slip cleavage. { 'shir ,klē·vij }
- shear fold** [GEOL] A similar fold whose mechanism is shearing or slipping along closely spaced planes that are parallel to the fold's axial surface. Also known as glide fold; slip fold. { 'shir ,fōld }

sheetwash

- shear-gravity wave** [GEOPHYS] A combination of gravity waves and a Helmholtz wave on a surface of discontinuity of density and velocity. { 'shir 'grav·əd·ē ,wāv }
- shear joint** [GEOL] A joint that is a shear fracture; it is a potential plane of shear. Also known as slip joint. { 'shir ,jōint }
- shear moraine** [GEOL] A debris-laden surface or zone found along the margin of any ice sheet or ice cap, dipping in toward the center of the ice sheet but becoming parallel to the bed at the base. { 'shir mə'rān }
- shear plane** *See* shear surface. { 'shir ,plān }
- shear slide** [GEOL] A landslide, especially a slump, produced by shear failure usually along a plane of weakness such as a bedding or cleavage plane. { 'shir ,slīd }
- shear sorting** [GEOL] Sorting of sediments in which the smaller grains tend to move toward the zone of greatest shear strain, and the larger grains toward the zone of least shear. { 'shir ,sōrd·iŋ }
- shear structure** [GEOL] A local structure in which earth stresses have been relieved by many small, closely spaced fractures. { 'shir ,strək·chər }
- shear surface** [GEOL] A surface along which differential movement has taken place parallel to the surface. Also known as shear plane. { 'shir ,sər·fæs }
- shear wave** *See* S wave. { 'shir ,wāv }
- shear zone** [GEOL] A tabular area of rock that has been crushed and brecciated by many parallel fractures resulting from shear strain; often becomes a channel for underground solutions and the seat of ore deposition. { 'shir ,zōn }
- sheer** [GEOL] A steep face of a cliff. { shir }
- sheet** [GEOL] **1.** A thin flowstone coating of calcite in a cave. **2.** A tabular igneous intrusion, especially when concordant or only slightly discordant. { shēt }
- sheet crack** [GEOL] A planar crack attributed to shrinkage of sediment due to dewatering. { 'shēt ,krak }
- sheet deposit** [GEOL] A stratiform mineral deposit that is more or less horizontal and extensive relative to its thickness. { 'shēt di,pāz·ət }
- sheet drift** [GEOL] An evenly spread deposit of glacial drift that did not significantly alter the form of the underlying rock surface. { 'shēt ,drift }
- sheeted fissure** [GEOL] A closely spaced fissure. { 'shēd·əd 'fish·ər }
- sheeted vein** [GEOL] A vein filling a shear zone. { 'shēd·əd 'vān }
- sheeted zone** [GEOL] An area of mineral deposits consisting of sheeted veins. { 'shēd·əd 'zōn }
- sheet erosion** [GEOL] Erosion of thin layers of surface materials by continuous sheets of running water. Also known as sheetflood erosion; sheetwash; surface wash; unconcentrated wash. { 'shēt i,rō·zhən }
- sheetflood erosion** *See* sheet erosion. { 'shēd,fləd i,rō·zhən }
- sheeting** [GEOL] The process by which thin sheets, slabs, scales, plates, or flakes of rock are successively broken loose or stripped from the outer surface of a large rock mass in response to release of load. Also known as exfoliation. { 'shēd·iŋ }
- sheeting plane** [PETR] In igneous rocks, the primary cleavage plane or parting. { 'shēd·iŋ ,plān }
- sheeting structure** [GEOL] A fracture or joint formed by pressure-release jointing or exfoliation. Also known as exfoliation joint; expansion joint; pseudostratification; release joint; sheet joint; sheet structure. { 'shēd·iŋ ,strək·chər }
- sheet joint** *See* sheeting structure. { 'shēt ,jōint }
- sheet mineral** *See* phyllosilicate. { 'shēt ,mīn·rəl }
- sheet sand** *See* blanket sand. { 'shēt ,sand }
- sheet sandstone** [GEOL] A thin, blanket-shaped deposit of sandstone of regional extent. { 'shēt 'san,stōn }
- sheet silicate** *See* phyllosilicate. { 'shēt 'sil·ə·kət }
- sheet spar** [GEOL] A sheet crack filled with spar. { 'shēt ,spär }
- sheet structure** *See* sheeting structure. { 'shēt ,strək·chər }
- sheetwash** [GEOL] **1.** The detritus deposited by a sheetflood. **2.** *See* sheet erosion. { 'shēt ,wāsh }

shelf

- shelf** [GEOL] **1.** Solid rock beneath alluvial deposits. **2.** A flat, projecting ledge of rock. **3.** See continental shelf. { shelf }
- shelf break** [GEOL] An obvious steepening of the gradient between the continental shelf and the continental slope. { 'shelf ,brāk }
- shelf channel** [GEOL] A valley formed in a shelf by erosion. { 'shelf ,chan·əl }
- shelf edge** [GEOL] The demarcation, without dramatic change in gradient, between continental shelf and continental slope. { 'shelf ,ej }
- shelf facies** [GEOL] A sedimentary facies characterized by carbonate rocks and fossil shells and produced in the neritic environments of marginal shelf seas. Also known as foreland facies; platform facies. { 'shelf ,fā·shēz }
- shelfstone** [GEOL] A speleothem formed at the water's edge as a horizontally projecting ledge. { 'shelf ,stōn }
- shell** [GEOL] **1.** The crust of the earth. **2.** A thin hard layer of rock. { shel }
- shell marl** [GEOL] A light-colored calcareous deposit formed on the bottoms of small fresh-water lakes, composed largely of uncemented mollusk shells and precipitated calcium carbonate, along with the hard parts of minute organisms. { 'shel ,mārl }
- shell sand** [GEOL] A loose aggregate that is largely composed of shell fragments of sand size. { 'shel ,sand }
- shelly** [GEOL] **1.** Pertaining to a sediment or sedimentary rock containing the shells of animals. **2.** Pertaining to land abounding in or covered with shells. { 'shel·ē }
- shelly facies** [GEOL] A nongeosynclinal sedimentary facies that is commonly characterized by abundant calcareous fossil shells, dominant carbonate rocks (limestones and dolomites), mature orthoquartzitic sandstones, and a paucity of shales. { 'shel·ē 'fā·shēz }
- shelly pahoehoe** [GEOL] A type of pahoehoe characterized by open tubes and blisters on the surface. { 'shel·ē pā'hō·ē ,hō·ē }
- shelter cave** [GEOL] A cave which extends only a short way underground, and whose roof of overlying rock usually extends beyond its sides. Also known as rock cave. { 'shel·tər ,kāv }
- shelter porosity** [GEOL] A type of primary interparticle porosity created by the sheltering effect of relatively large sedimentary particles which prevent the infilling of pore space by finer clastic particles. { 'shel·tər pər'rās·əd·ē }
- shergottite** [GEOL] An achondritic stony meteorite that is composed chiefly of pigeonite and maskelynite. { 'shər·gə ,tīt }
- sheridanite** [MINERAL] $(\text{Mg,Al})_6(\text{Al,Si})_4\text{O}_{10}(\text{OH})_8$ Pale-green to colorless talclike mineral composed of basic magnesium aluminum silicate. { 'shər·ə·dā ,nīt }
- sherry topaz** [MINERAL] A brownish-yellow to yellow-brown variety of topaz resembling sherry wine in color. { 'sher·ē 'tō ,paz }
- shield** [GEOL] **1.** The very old, rigid core of relatively stable rocks within a continent around which younger sedimentary rocks have been deposited. Also known as continental shield. **2.** See palette. { shēld }
- shield basalt** [GEOL] A basaltic lava flow from a group of small, close-spaced shield-volcano vents that coalesced to form a single unit. { shēld bə'sōlt }
- shield cone** [GEOL] A cone or dome-shaped volcano built up by successive outpourings of lava. { shēld ,kōn }
- shielding factor** [GEOPHYS] The ratio of the strength of the magnetic field at a directional compass to its strength if there were no disturbing material; usually expressed as a decimal. { 'shēld·iŋ ,fak·tər }
- shield volcano** [GEOL] A broad, low volcano shaped like a flattened dome and built of basaltic lava. Also known as basaltic dome; lava dome. { 'shēld vāl ,kā·nō }
- shift** [GEOL] The relative displacement of the units affected by a fault but outside the fault zone itself. { shift }
- shifting** [GEOL] The movement of the crest of a divide away from a more actively eroding stream (as on the steeper slope of an asymmetric ridge) toward a weaker stream on the gentler slope. { 'shift·iŋ }
- shingle** [GEOL] Pebbles, cobble, and other beach material, coarser than ordinary gravel

- but roughly the same size and occurring typically on the higher parts of a beach. { 'shɪŋ·gəl }
- shingle barchan** [GEOL] A dunelike ridge formed of shingle perpendicular to the beach in shallow water. { 'shɪŋ·gəl bär'kän }
- shingle beach** [GEOL] A narrow beach composed of shingle and commonly having a steep slope on both its landward and seaward sides. Also known as cobble beach. { 'shɪŋ·gəl ,bēch }
- shingle-block structure** See imbricate structure. { 'shɪŋ·gəl 'bläk 'sträk·chər }
- shingle rampart** [GEOL] A rampart of shingle built along a reef on the seaward edge. { 'shɪŋ·gəl 'ram,pärt }
- shingle ridge** [GEOL] A steeply sloping bank of shingle heaped upon and parallel with the shore. { 'shɪŋ·gəl ,rɪj }
- shingle structure** See imbricate structure. { 'shɪŋ·gəl ,sträk·chər }
- shingling** See imbrication. { 'shɪŋ·glɪŋ }
- shoal** [GEOL] A submerged elevation that rises from the bed of a shallow body of water and consists of, or is covered by, unconsolidated material, and may be exposed at low water. { 'shöl }
- shoal breccia** [PETR] A breccia formed by the action of waves and tides on a shoal, and resulting from diastrophism or aggradation. { 'shöl ,breç·ə }
- shoal reef** [GEOL] A reef formed in irregular masses amid submerged shoals of calcareous reef detritus. { 'shöl ,rēf }
- shock breccia** [PETR] A fragmental rock formed by the action of shock waves, such as suevite formed by meteorite impact. { 'shäk ,breç·ə }
- shock lithification** [GEOL] The conversion of originally loose fragmental materials into coherent aggregates by the action of shock waves, such as those generated by explosions or meteorite impacts. { 'shäk ,lɪth·ə'fä,kä·shən }
- shock loading** [GEOPHYS] The process of subjecting material to the action of high-pressure shock waves generated by artificial explosions or by meteorite impact. { 'shäk ,löd·ɪŋ }
- shock melting** [GEOPHYS] Fusion of material as a result of the high temperatures produced by the action of high-pressure shock waves. { 'shäk ,melt·ɪŋ }
- shock metamorphism** [PETR] The complete permanent changes (physical, chemical, mineralogic, morphologic) in rocks caused by transient high-pressure shock waves that act over short-time intervals, ranging from a few microseconds to a fraction of a minute. { 'shäk ,med·ə'mör,fiz·əm }
- shock zone** [GEOL] A volume of rock in or around an impact or explosion crater in which a distinctive shock-metamorphic deformation or transformation effect is present. { 'shäk ,zön }
- shoestring** [GEOL] A long, relatively straight and narrow sedimentary body having a width/thickness ratio of less than 5:1, usually 1:1. { 'shü,striŋ }
- shoestring rill** [GEOL] One of several long, narrow, uniform channels, closely spaced and roughly parallel with one another, that merely score the homogeneous surface of a relatively steep slope of bare soil or weak, clay-rich bedrock, and that develop wherever overland flow is intense. { 'shü,striŋ ,rɪl }
- shoestring sand** [GEOL] A shoestring composed of sand and usually buried in mud or shale, usually a sandbar or channel fill. { 'shü,striŋ ,sænd }
- shonkinite** [PETR] A dark-colored syenite composed principally of augite and orthoclase with some olivine, hornblende, biotite, and nepheline. { 'shän·kə,nɪt }
- shoot** [GEOL] See ore shoot. [GEOPHYS] The energy that goes up through the strata from a seismic profiling shot and is reflected downward at the surface or at the base of the weathering; appears either as a single wave or unites with a wave train that is traveling downward. Also known as secondary reflection. { 'shüt }
- shore** [GEOL] **1.** The narrow strip of land immediately bordering a body of water. **2.** See seashore. { 'shör }
- shore drift** See littoral drift. { 'shör ,drɪft }
- shoreface** [GEOL] The narrow, steeply sloping zone between the seaward limit of the shore at low water and the nearly horizontal offshore zone. { 'shör,fäs }

shoreface terrace

- shoreface terrace** [GEOL] A wave-built terrace in the shoreface region, composed of gravel and coarse sand swept from the wave-cut bench into deeper water. { 'shòr,fás ,ter·əs }
- shoreline** [GEOL] The intersection of a specified plane of water, especially mean high water, with the shore; a limit which changes with the tide or water level. Also known as strandline; waterline. { 'shòr,līn }
- shoreline cycle** [GEOL] The cycle of changes through which sequential forms of coastal features pass during shoreline development, from the establishment of a water level to the time when the water can do no more work. { 'shòr,līn ,sī·kəl }
- shoreline-development ratio** [GEOL] A ratio indicating the degree of irregularity of a lake shoreline, given as the length of the shoreline to the circumference of a circle whose area is equal to that of the lake. { 'shòr,līn di'vel·əp·mənt ,rā·shō }
- shoreline of depression** [GEOL] A shoreline of submergence that implies an absolute subsidence of the land. { 'shòr,līn əv di'presh·ən }
- shoreline of elevation** [GEOL] A shoreline of emergence that implies an absolute rise of the land. { 'shòr,līn əv ,el·ə'vā·shən }
- shoreline of emergence** [GEOL] A straight or gently curving shoreline formed by the dominant relative emergence of the floor of an ocean or a lake. Also known as emerged shoreline; negative shoreline. { 'shòr,līn əv i'mər·jəns }
- shoreline of submergence** [GEOL] A shoreline, characterized by bays, promontories, and other minor features, formed by the dominant relative submergence of a land-mass. Also known as positive shoreline; submerged shoreline. { 'shòr,līn əv səb'mər·jəns }
- shore platform** [GEOL] The horizontal or gently sloping surface produced along a shore by wave erosion. Also known as scar. { 'shòr ,plat,fòrm }
- shore terrace** [GEOL] **1.** A terrace produced along the shore by wave and current action. **2.** See marine terrace. { 'shòr ,ter·əs }
- shortite** [MINERAL] $\text{Na}_2\text{Ca}_2(\text{CO}_3)_3$ A mineral composed of sodium and calcium carbonate. { 'shòr,tīt }
- shoshonite** [PETR] A basaltic rock composed of olivine and augite phenocrysts in a groundmass of labradorite with orthoclase rims, olivine, augite, a small amount of leucite, and some dark-colored glass. { shə'shō,nīt }
- shot copper** [GEOL] Small, rounded particles of native copper, molded by the shape of vesicles in basaltic host rock, and resembling shot in size and shape. { 'shät ,kəp·ər }
- shoulder** [GEOL] **1.** A short, rounded spur protruding laterally from the slope of a mountain or hill. **2.** The sloping segment below the summit of a mountain or hill. **3.** A bench on the flanks of a glaciated valley, located at the sharp change of slope where the steep sides of the inner glaciated valley meet the more gradual slope above the level of glaciation. **4.** A joint structure on a joint face produced by the intersection of plume-structure ridges with fringe joints. { 'shōl·dər }
- shoved moraine** See push moraine. { 'shəvd mə'rān }
- shrinkage** [GEOL] The decrease in volume of soil, sediment, fill, or excavated earth due to the reduction of voids by mechanical compaction, superimposed loads, natural consolidation, or drying. { 'shriŋ·kiŋ }
- shrinkage crack** [GEOL] A small crack produced in fine-grained sediment or rock by the loss of contained water during drying or dehydration. { 'shriŋ·kiŋ ,krak }
- shrinkage index** [GEOL] The numerical difference between the plastic limit of a material and its shrinkage limit. { 'shriŋ·kiŋ ,in,deks }
- shrinkage limit** [GEOL] That moisture content of a soil below which a decrease in moisture content will not cause a decrease in volume, but above which an increase in moisture will cause an increase in volume. { 'shriŋ·kiŋ ,lim·ət }
- shrinkage pore** [GEOL] An irregular pore formed in muddy sediment by shrinkage. { 'shriŋ·kiŋ ,pòr }
- shrinkage ratio** [GEOL] The ratio of a volume change to the moisture-content change above the shrinkage limit. { 'shriŋ·kiŋ ,rā·shō }

- shrub-coppice dune** [GEOLOGY] A small dune formed on the leeward side of bush-and-clump vegetation. { 'shrəb 'kəp-əs 'dün }
- shungite** [GEOLOGY] A hard, black, amorphous, coal-like material composed of more than 98% carbon. { 'shəŋ,ɪt }
- shutterridge** [GEOLOGY] A ridge formed by vertical, lateral, or oblique displacement of a fault traversing a ridge-and-valley topography with the displaced part of a ridge shutting in the adjacent ravine or canyon. { 'shəd-ə,ri:dʒ }
- sial** [PETROLOGY] A petrologic term for the silica- and alumina-rich upper rock layers of the earth's crust; gives rise to granite magma; the bulk of the continental blocks is sialic. Also known as granitic layer; sal. { 'si,əl }
- siberite** [MINERAL] A violet-red or purplish lithian variety of tourmaline. { 'si,bi,ri:t }
- sibjet** See sebkha. { 'si,bjət }
- sicklerite** [MINERAL] (Li,Mn)(PO₄) A dark-brown mineral composed of hydrous lithium manganese phosphate occurring in cleavable masses. { 'sik,lə,ri:t }
- side canyon** [GEOLOGY] A ravine or other valley smaller than a canyon, through which a tributary flows into the main stream. { 'sid ,kan-yən }
- sideraerolite** See stony-iron meteorite. { 'sid-ə-rə,er-ə,lɪt }
- siderite** [MINERAL] FeCO₃ A brownish, gray, or greenish rhombohedral mineral composed of ferrous carbonate; hardness is 4 on Mohs scale, and specific gravity is 3.9. Also known as chalybite; iron spar; rhombohedral iron ore; siderose; sparry iron; spathic iron; white iron ore. { 'sid-ə,ri:t }
- sideroferrite** [GEOLOGY] A variety of native iron occurring as grains in petrified wood. { ,sid-ə-rə'fe,ri:t }
- siderogel** [MINERAL] A mineral consisting of truly amorphous FeO(OH) and occurring in some bog iron ores. { 'sid-ə-rə,jel }
- siderolite** See stony-iron meteorite. { 'sid-ə-rə,lɪt }
- sideromelane** [MINERAL] Any iron-rich mafic mineral. { ,sid-ə-rə'me,lān }
- sideronatrite** [MINERAL] Na₂Fe(SO₄)(OH)·3H₂O A yellow mineral composed of basic hydrous sodium iron sulfate occurring in fibrous masses. { ,sid-ə-rə'nā,tri:t }
- sideronitic texture** [GEOLOGY] In mineral deposits, a mesh of silicate minerals so shattered and pressed as to force out solutions and other volatiles. { 'sid-ə-rə'nid-ik 'teks-çər }
- siderophyllite** [MINERAL] An iron-rich variety of biotite. { ,sid-ə-rə'fil,ɪt }
- siderophyre** [GEOLOGY] A stony-iron meteorite containing bronzite and tridymite crystals in a nickel-iron network. Also known as siderophyre. { 'sid-ə-rə,fɪr }
- siderophyre** See siderophyre. { ,sid-ə-rə'fɪr-ə-rē }
- siderose** See siderite. { 'sid-ə,rōs }
- siderosphere** See inner core. { 'sid-ə-rə,sfɪr }
- siderotil** [MINERAL] (Cu,Fe)SO₄·5H₂O A white to yellowish or pale greenish-white mineral consisting of ferrous sulfate pentahydrate; occurs as fibrous crusts and groups of needlelike crystals. { 'sid-ə-rə,til }
- sideswipe** [GEOPHYSICS] **1.** A phenomenon wherein two cross reflections come from a single seismograph, due to the almost simultaneous arrival of reflection energy from both limbs of a syncline or from two nearby, steeply dipping fault scarps. **2.** In refraction shooting, the lateral deflection of a minimum-time path to include a nearby, steeply dipping, high-velocity boundary such as a flank of a salt dome. { 'sɪd,swɪp }
- siegenite** [MINERAL] (Co,Ni)₂S₄ A mineral composed of nickel cobalt sulfide. { 'sē-gə,nɪt }
- sierozem** [GEOLOGY] A soil found in cool to temperate arid regions, characterized by a brownish-gray surface on a lighter layer based on a carbonate or hardpan layer. { 'si,ə,zem }
- sieve deposition** [GEOLOGY] The formation of coarse-grained lobate masses on an alluvial fan whose material is sufficiently coarse and permeable to permit complete infiltration of water before it reaches the toe of the fan. { 'siv ,dep-ə,zɪʃ-ən }
- sieve lobe** [GEOLOGY] A coarse-grained lobate mass produced by sieve deposition on an alluvial fan. { 'siv ,ləb }
- sieve texture** See poikiloblastic. { 'siv ,teks-çər }

sigmoidal dune

- sigmoidal dune** [GEOL] A dune with an S-shaped ridge crest formed by the merger of crescentic dunes. { sig'moid·əl 'dün }
- sigmoidal fold** [GEOL] A recumbent fold having an axial surface which resembles the Greek letter sigma. { sig'moid·əl 'föld }
- silcrete** [GEOL] A conglomerate of sand and gravel cemented by silica. { 'sil,krēt }
- silix** [MINERAL] A pure or finely ground quartz. { 'sī,leks }
- silixite** [GEOL] Chert occurring in calcareous beds. [PETR] Igneous rock composed mainly of primary quartz. { sī'lek,sīt }
- silica** [MINERAL] SiO₂ Naturally occurring silicon dioxide; occurs in five crystalline polymorphs (quartz, tridymite, cristobalite, coesite, and stishovite), in cryptocrystalline form (as chalcedony), in amorphous and hydrated forms (as opal), and combined in silicates. { 'sil·ə·kə }
- silica sand** [GEOL] Sand having a very high percentage of silicon dioxide; a source of silicon. { 'sil·ə·kə |sənd }
- silica stone** [PETR] A sedimentary rock composed of siliceous minerals. { 'sil·ə·kə |stōn }
- silicate** [MINERAL] Any of a large group of minerals whose crystal lattice contains SiO₄ tetrahedra, either isolated or joined through one or more of the oxygen atoms. { 'sil·ə·kət }
- silication** [GEOL] The conversion to or the replacement by silicates. { ,sil·ə'kā·shən }
- siliceous** [PETR] Describing a rock containing abundant silica, especially free silica. { sə'lish·əs }
- siliceous earth** [GEOL] A loose, friable, soft, porous, lightweight, fine-grained, and usually white siliceous sediment, usually derived from the remains of organisms. { sə'lish·əs 'ərth }
- siliceous limestone** [PETR] **1.** A dense, dark, commonly thin-bedded limestone representing an intimate admixture of calcium carbonate and chemically precipitated silica that are believed to have accumulated simultaneously. **2.** A silicified limestone, bearing evidence of replacement of calcite by silica. { sə'lish·əs 'līm,stōn }
- siliceous ooze** [GEOL] An ooze composed of siliceous skeletal remains of organisms, such as radiolarians. { sə'lish·əs 'ūz }
- siliceous sediment** [GEOL] Fine-grained sediment and sedimentary rock mainly composed of the microscopic remains of the unicellular, silica-secreting plankton diatoms and radiolarians. Minor constituents include extremely small shards of sponge spicules and other microorganisms such as silicoflagellates. Siliceous sedimentary rock sequences are often highly porous and can form excellent petroleum source and reservoir rocks. { sə'lish·əs 'sed·ə·mənt }
- siliceous shale** [PETR] A hard, fine-grained rock with the texture of shale and with as much as 85% silica. { sə'lish·əs 'shāl }
- siliceous sinter** [MINERAL] A white, lightweight, porous, opaline variety of silica, deposited by a geyser or hot spring. Also known as fiorite; geyserite; pearl sinter; sinter. { sə'lish·əs 'sin·tər }
- silicic** [PETR] Describing magma or igneous rock rich in silica (usually at least 65); granite is a silicic rock. Also known as oversaturated; persilicic. { sə'lis·ik }
- siliciclastic** See siliclastic. { ,sil·ə·si'klas·tik }
- silicification** [GEOL] Introduction of or replacement by silica. Also known as silification. { sə,lis·ə·fə'kā·shən }
- silicified wood** [GEOL] A material formed by the silicification of wood, generally in the form of opal or chalcedony, in such a manner as to preserve the original form and structure of the wood. Also known as agatized wood; opalized wood; petrified wood; woodstone. { sə'lis·ə·fid 'wūd }
- silicinate** [GEOL] Pertaining to the silica cement of a sedimentary rock. { sə'lis·ən,āt }
- siliclastic** [PETR] Pertaining to clastic noncarbonate rocks which are almost exclusively silicon-bearing, either as forms of quartz or as silicates. Also known as siliciclastic. { ,sil·ə'klas·tik }
- silicomagnesium fluoride** [MINERAL] Ca₄Mg₃Si₂O₅(OH)₂F₁₀ A mineral composed of basic calcium magnesium fluoride and silicate. { |sil·ə·kō·mag,nē·zē·ō'flūr,īt }

- silification** *See* silicification. { 'sil·ə·fə·kā·shən }
- silk** [GEOL] Microscopic needle-shaped crystalline inclusions of rutile in a natural gem from which subsurface reflections produce a whitish sheen resembling that of a silk fabric. { silk }
- sill** [GEOL] **1.** Submarine ridge in relatively shallow water that separates a partly closed basin from another basin or from an adjacent sea. **2.** A tabular igneous intrusion that is oriented parallel to the planar structure of surrounding rock. { sil }
- silled basin** *See* restricted basin. { 'sild 'bās·ən }
- sillenite** [MINERAL] Bi_2O_3 A mineral composed of native bismuth oxide, is polymorphous with bismite, and occurs as earthy masses. { 'sil·ə·nīt }
- sillimanite** [MINERAL] Al_2SiO_5 A brown, pale-green, or white neosilicate mineral with vitreous luster crystallizing in the orthorhombic system; commonly occurs in slender crystals, often in fibrous aggregates; hardness is 6–7 on Mohs scale, and specific gravity is 3.23. Also known as fibrolite. { 'sil·ə·mə·nīt }
- silt** [GEOL] **1.** A rock fragment or a mineral or detrital particle in the soil having a diameter of 0.002–0.05 millimeter that is, smaller than fine sand and larger than coarse clay. **2.** Sediment carried or deposited by water. **3.** Soil containing at least 80% silt and less than 12% clay. { silt }
- silting** [GEOL] The deposition or accumulation of stream-deposited silt that is suspended in a body of standing water. { 'silt·iŋ }
- siltite** *See* siltstone. { 'sil,tīt }
- silt loam** [GEOL] A soil containing 50–88% silt, 0–27% clay, and 0–50% sand. { 'silt ,lōm }
- silt shale** [PETR] A consolidated sediment consisting of no more than 10% sand and having a silt/clay ratio greater than 2:1. { 'silt ,shāl }
- silt soil** [GEOL] A soil containing 80% or more of silt, and not more than 12% of clay and 20% of sand. { 'silt ,sōil }
- siltstone** [GEOL] Indurated silt having a shale-like texture and composition. Also known as siltite. { 'silt,stōn }
- silttil** [GEOL] A chemically decomposed and eluviated till consisting of a friable, brownish, open-textured silt that contains a few small siliceous pebbles. { 'sil,tīl }
- Silurian** [GEOL] **1.** A period of geologic time of the Paleozoic era, covering a time span of between 430–440 and 395 million years ago. **2.** The rock system of this period. { si'lūr·ē·ən }
- silver glance** *See* argentite. { 'sil·vər 'glans }
- sima** [PETR] A petrologic term for the lower layer of the earth's crust, composed of silica- and magnesia-rich rocks; source of basaltic magma; sima is equivalent to the lower part of the continental crust and the bulk of the oceanic crust. Also known as intermediate layer. { 'sī·mə }
- similar fold** [GEOL] A fold in deformed beds in which the successive folds resemble each other. { 'sim·ə·lər 'fōld }
- simple crater** [GEOL] A meteorite impact crater of relatively small diameter, characterized by a uniformly concave-upward shape and a maximum depth in the center, and lacking a central uplift. { 'sim·pəl 'krād·ər }
- simple cross-bedding** [GEOL] Cross-bedding in which the lower bounding surfaces are nonerosional surfaces. { 'sim·pəl 'krōs ,bed·iŋ }
- simple dike** [PETR] An igneous dike emplaced in a single episode. { 'sim·pəl 'dīk }
- simple ore** [GEOL] An ore of a single metal. { 'sim·pəl 'ōr }
- simple shear** [GEOPHYS] Strain caused by differential movements on one set of parallel planes which results in internal rotation of fabric elements. { 'sim·pəl 'shir }
- simple valley** [GEOL] A valley that maintains a constant relation to the general structure of the underlying strata. { 'sim·pəl 'val·ē }
- simpsonite** [MINERAL] AlTaO_4 A hexagonal mineral composed of aluminum tantalum oxide and occurring in short crystals. { 'sim·sə·nīt }
- sincosite** [MINERAL] $\text{Ca}(\text{VO})_2(\text{PO}_4)_2 \cdot 5\text{H}_2\text{O}$ A leek-green mineral composed of hydrous calcium vanadyl phosphate and occurring in tetragonal scales or plates. { 'siŋ·kə·sīt }

Sinemurian

- Sinemurian** [GEOL] A European stage of geologic time; Lower Jurassic, above Hattangian and below Pliensbachian. { 'sin-ə'myūr-ē-ən }
- singing sand** See sounding sand. { 'siŋ-iŋ 'sænd }
- single-cycle mountain** [GEOL] A fold mountain that has been destroyed without reevaluation of any of its important parts. { 'siŋ-gəl 'sī-kəl 'maunt-ən }
- sinhalite** [MINERAL] $MgAl(BO_4)$ A mineral composed of magnesium aluminum borate; sometimes used as a gem. { 'sin-ə,līt }
- sinistral fault** See left lateral fault. { 'sin-əs-trəl 'fölt }
- sinistral fold** [GEOL] An asymmetric fold whose long limb, when viewed along its dip, appears to have a leftward offset. { 'sin-əs-trəl 'föld }
- sink** [GEOL] **1.** A circular or ellipsoidal depression formed by collapse on the flank of or near to a volcano. **2.** A slight, low-lying desert depression containing a central playa or saline lake with no outlet, as where a desert stream comes to an end or disappears by evaporation. { 'siŋk }
- sinkhole** [GEOL] Closed surface depressions in regions of karst topography produced by solution of surface limestone or the collapse of cavern roofs. { 'siŋk,həl }
- sinkhole plain** [GEOL] A regionally extensive plain or plateau characterized by well-developed karst features. { 'siŋk,həl ,plān }
- sinoite** [MINERAL] Si_2N_2O A nitride mineral known only in meteorites. { 'sīn-ə,wīt }
- sinople** [MINERAL] A blood-red or brownish-red (with a tinge of yellow) variety of quartz containing inclusions of hematite. { 'sin-ə-pəl }
- sinter** [MINERAL] See siliceous sinter. [PETR] A chemical sedimentary rock deposited by precipitation from mineral waters, especially siliceous sinter and calcareous sinter. { 'sin-tər }
- siphon** [GEOL] A passage in a cave system that connects with a water trap. { 'sī-fən }
- Siphonotretacea** [PALEON] A superfamily of extinct, inarticulate brachiopods in the suborder Acrotretidina of the order Acrotretida having an enlarged, tear-shaped, apical pedicle valve. { 'sī-fə-nō-trə'tās-ē-ə }
- siserskite** [MINERAL] A light steel gray mineral consisting of an alloy of osmium and iridium; occurs in tabular form. { 'sis-ər,kīt }
- sitaparite** See bixbyite. { sə'tap-ə,rīt }
- size analysis** See particle-size analysis. { 'sīz ə,nal-ə-səs }
- size-frequency analysis** See particle-size analysis. { 'sīz 'frē-kwən-sē ə,nal-ə-səs }
- sjogrenite** [MINERAL] $Mg_6Fe_2(OH)_{16}(CO_3) \cdot 4H_2O$ A hexagonal mineral composed of hydrous basic magnesium iron carbonate. { 'shō-grə,nīt }
- skarn** [GEOL] A lime-bearing silicate derived from nearly pure limestone and dolomite with the introduction of large amounts of silicon, aluminum, iron, and magnesium. { 'skärn }
- skeleton grain** [GEOL] A relatively stable and not readily translocated grain of soil material, concentrated or reorganized by soil-forming processes. { 'skel-ət-ən ,grän }
- skeleton texture** [PETR] Descriptive of the texture of limestone that consists of an in-place accumulation of skeletal material, that is, the hard parts secreted by organisms. { 'skel-ət-ən ,teks-čar }
- skerry** [GEOL] A low, small, rugged and rocky island or reef. { 'sker-ē }
- skialith** [PETR] A vague remnant of country rock assimilated in granite. { 'skī-ə,lith }
- skid boulder** [GEOL] An isolated angular block of stone resting on the floor of a playa, derived from an outcrop near the playa margin, and associated with a trail or mark indicating that the boulder has recently slid across the mud surface. { 'skid ,bōl-dər }
- Skiddavin** See Arenigian. { skə'dav-ən }
- skiou** See morvan. { skyō }
- skip cast** [GEOL] The cast of a skip mark. { 'skip ,kast }
- skip mark** [GEOL] A crescent-shaped mark that is one of a linear pattern of regularly spaced marks made by an object that skipped along the bottom of a stream. { 'skip ,märk }
- skleropelite** [PETR] An argillaceous or allied rock which has been indurated by low-grade metamorphism, is more massive and dense than shale, and differs from slate by the absence of cleavage. { sklə'röp-ə,līt }

slip face

- skolite** [MINERAL] A scaly, dark-green variety of glauconite rich in aluminum and calcium and deficient in ferric iron. { 'skō,līt }
- skomerite** [PETR] A fine-grained, compact extrusive rock containing microscopic grains and crystals of augite, olivine, and phenocrysts of decomposed plagioclase (probably albite) in a groundmass of plagioclase, thought to be more calcic than the phenocrysts. { 'skām·ə,rīt }
- skutterudite** [MINERAL] (Co,Ni)As₃ A tin-white mineral with metallic luster composed of cobalt and nickel arsenides; crystallizes in the isometric system but commonly is massive; hardness is 5.5–6 on Mohs scale, and specific gravity is 6.6; it is a minor ore of cobalt and nickel. { 'skəd·ə,rə,dīt }
- slab** [GEOL] A cleaved or finely parallel jointed rock, which splits into tabular plates from 1 to 4 inches (2.5 to 10 centimeters) thick. Also known as slabstone. { slab }
- slab jointing** [GEOL] Jointing produced in rock by the formation of numerous cleaved or closely spaced parallel fissures dividing the rock into thin slabs. { 'slab ,jōint·iŋ }
- slab pahoehoe** [GEOL] A pahoehoe whose surface consists of a jumbled arrangement of slabs of flow crust. { 'slab pə'hō·ē,hō·ē }
- slabstone** See slab. { 'slab,stōn }
- slack** [GEOL] A hollow or depression between lines of shore dunes or in a sandbank or mudbank on a shore. { slak }
- slaking** [GEOL] 1. Crumbling and disintegration of earth materials when exposed to air or moisture. 2. The breaking up of dried clay when saturated with water. { 'slāk·iŋ }
- slate** [PETR] A group name for various very-fine-grained rocks derived from mudstone, siltstone, and other clayey sediment as a result of low-degree regional metamorphism; characterized by perfect fissility or slaty cleavage which is a regular or perfect planar schistosity. { slāt }
- slate ribbon** [GEOL] A relict ribbon structure on the cleavage surface of slate, in which varicolored and straight, wavy, or crumpled stripes cross the cleavage surface. { 'slāt ,rib·ən }
- slaty cleavage** See flow cleavage. { 'slād·ē 'klē·vij }
- slavikite** [MINERAL] MgFe₃³⁺(SO₄)₄(OH)₃·18H₂O A greenish-yellow mineral composed of hydrous basic magnesium ferric sulfate and occurring as rhombohedral crystals. { 'slav·ə,kīt }
- slice** [GEOL] An arbitrary section of some uniform standard, such as thickness of a stratigraphic unit that is otherwise indivisible for purposes of analytic study. { slīs }
- slickens** [GEOL] A layer of fine silt deposited by a flooding stream. { 'slik·ənz }
- slickenside** [GEOL] A surface that is polished and smoothly striated and results from slippage along a fault plane. { 'slik·ən,sīd }
- slickolite** [GEOL] A vertically discontinuous slip-scratch surface made by slippage and shearing and developed on sharply dipping bedding planes of limestone that shapes the wall of a solution cavity. { 'slik·ə,līt }
- slide** [GEOL] 1. A vein of clay intersecting and dislocating a vein vertically, or the vertical dislocation itself. 2. A rotational or planar mass movement of earth, snow, or rock resulting from failure under shear stress along one or more surfaces. { slīd }
- sliding** See gravitational sliding. { 'slīd·iŋ }
- slip** [GEOL] The actual relative displacement along a fault plane of two points which were formerly adjacent on either side of the fault. Also known as actual relative movement; total displacement. { slīp }
- slip bedding** [GEOL] Convolute bedding formed as the result of subaqueous sliding. { 'slīp ,bed·iŋ }
- slip block** [GEOL] A separate rock mass that has slid away from its original position and come to rest down the slope without undergoing much deformation. { 'slīp ,blāk }
- slip cleavage** [GEOL] Cleavage that is superposed on slaty cleavage or schistosity, characterized by spaced cleavage with thin tabular bodies of rock between the cleavage planes. Also known as close-joints cleavage; crenulation cleavage; shear cleavage; strain-slip cleavage. { 'slīp ,klē·vij }
- slip face** [GEOL] The steeply sloping leeward surface of a sand dune. Also known as sandfall. { 'slīp ,fās }

slip fold

slip fold *See* shear fold. { 'slip ,föld }

slip joint [GEOL] *See* shear joint. { 'slip ,jòint }

slip-off slope [GEOL] The long, low, gentle slope on the inside of the downstream face of a stream meander. { 'slip ,òf ,slòp }

slip plane [GEOL] A planar slip surface. { 'slip ,plān }

slip sheet [GEOL] A stratum or rock on the limb of an anticline that has slid down and away from the anticline; a gravity collapse structure. { 'slip ,shēt }

slip surface [GEOL] The displacement surface of a landslide. { 'slip ,sər·fəs }

slope [GEOL] The inclined surface of any part of the earth's surface. { slòp }

slope correction [GEOL] A tape correction applied to a distance measured on a slope in order to reduce it to a horizontal distance, between the vertical lines through its end points. Also known as grade correction. { 'slòp kə ,rek·shən }

slope failure [GEOL] The downward and outward movement of a mass of soil beneath a natural slope or other inclined surface; four types of slope failure are rockfall, rock flow, plane shear, and rotational shear. { 'slòp ,fāl·yər }

slope gully [GEOL] A small, discontinuous submarine valley, usually formed by slumping along a fault scarp or the slope of a river delta. Also known as sea gully. { 'slòp ,gəl·ē }

slope stability [GEOL] The resistance of an inclined surface to failure by sliding or collapsing. { 'slòp stə ,bil·əd·ē }

slope wash [GEOL] **1.** The mass-wasting process, assisted by nonchanneled running water, by which rock and soil is transported down a slope, specifically, sheet erosion.

2. The material that is or has been transported. { 'slòp ,wəsh }

slud [GEOL] **1.** Muddy material which has moved downslope by solifluction. **2.** Ground that behaves as a viscous fluid, including material moved by solifluction and by mechanisms not limited to gravitational flow. { sləd }

sludge [GEOL] A soft or muddy bottom deposit as on tideland or in a stream bed. { sləj }

sludging *See* solifluction. { 'sləj·iŋ }

slump [GEOL] A type of landslide characterized by the downward slipping of a mass of rock or unconsolidated debris, moving as a unit or several subsidiary units, characteristically with backward rotation on a horizontal axis parallel to the slope; common on natural cliffs and banks and on the sides of artificial cuts and fills. { sləmp }

slump ball [GEOL] A relatively flattened mass of sandstone resembling a large concretion, measuring from 0.8 inch to 10 feet (2 centimeters to 3 meters) across, commonly thinly laminated with internal contortions and a smooth or lumpy external form, and formed by subaqueous slumping. { 'sləmp ,bòl }

slump basin [GEOL] A shallow basin near the base of a canyon wall and on a shale hill or ridge, formed by small, irregular slumps. { 'sləmp ,bās·ən }

slump bedding [GEOL] Also known as slurry bedding. **1.** A disturbed bedding. **2.** Convolute bedding produced by subaqueous slumping or lateral movement of newly deposited sediment. { 'sləmp ,bed·iŋ }

slump fault *See* normal fault. { 'sləmp ,fòlt }

slump fold [GEOL] An intraformational fold produced by slumping of soft sediments, as at the edge of the continental shelf. { 'sləmp ,fòld }

slump overfold [GEOL] A fold consisting of hook-shaped masses of sandstone produced during slumping. { 'sləmp 'ò·vər ,fòld }

slump scarp [GEOL] A low cliff or rim of thin solidified lava occurring along the margins of a lava flow and against the valley walls or around steepoets after the central part of the lava crust collapsed due to outflow of still-molten underlying layers. { 'sləmp ,skärp }

slump sheet [GEOL] A well-defined bed of limited thickness and wide horizontal extent, containing slump structures. { 'sləmp ,shēt }

slump structure [GEOL] Any sedimentary structure produced by subaqueous slumping. { 'sləmp ,strək·chər }

slurry bedding *See* slump bedding. { 'slər·ē ,bed·iŋ }

- slurry slump** [GEOL] A slump in which the incoherent sliding mass is mixed with water and disintegrates into a quasiliquid slurry. { 'slər-ē ,sləmp }
- slush avalanche** [GEOL] A rapid and far-reaching downslope transport of rock debris released by snow supersaturated with meltwater and marking the catastrophic opening of ice- and snow-dammed brooks to the spring flood. { 'sləʃ 'av-ə,ləntʃ }
- smallite** [MINERAL] $(\text{Co,Ni})\text{As}_{3-x}$ A metallic-gray isometric mineral composed of nickel cobalt arsenide. { 'smɒl,tɪt }
- smaragd** See emerald. { 'smɑ,rəgd }
- smaragdite** [MINERAL] A green amphibole mineral that is pseudomorphous after pyroxene in rocks such as eclogite. { smə'rag,dɪt }
- smectite** [MINERAL] Dioctahedral (montmorillonite) and trioctahedral (saponite) clay minerals, and their chemical varieties characterized by swelling properties and high cation-exchange capacities. { 'smɛk,tɪt }
- smithite** [MINERAL] AgAsS_2 A red monoclinic mineral composed of silver arsenic sulfide and occurring as small crystals. { 'smi,θɪt }
- smithsonite** [MINERAL] ZnCO_3 White, yellow, gray, brown, or green secondary carbonate mineral associated with sphalerite and commonly reniform, botryoidal, stalactitic, or granular; hardness is 5 on Mohs scale, and specific gravity is 4.30–4.45; it is an ore of zinc. Also known as calamine; dry-bone ore; szaskaite; zinc spar. { 'smɪθ-sə,nɪt }
- smokestone** See smoky quartz. { 'smɒk,stɒn }
- smoky quartz** [MINERAL] A smoky-yellow, smoky-brown, or brownish-gray, often transparent variety of crystalline quartz containing inclusions of carbon dioxide; may be used as a semiprecious stone. Also known as cairngorm; smokestone. { 'smɒk-ē 'kwɔrts }
- smooth chert** [GEOL] A hard, dense, homogeneous chert (insoluble residue) characterized by a conchoidal-to-even fracture surface that is devoid of roughness and by a lack of crystallinity, granularity, or other distinctive structure. { 'smu:θ 'tʃɜrt }
- smooth phase** [GEOL] The part of stream traction whereby a mass of sediment travels as a sheet with gradually increasing density from the surface downward. { 'smu:θ ,fāz }
- smothered bottom** [GEOL] A sedimentary surface on which complete, well-preserved, and commonly very fragile and delicate fossils were saved by an influx of mud that buried them instantly. { 'sməθ-əd 'bɒd-əm }
- SMOW** See standard mean ocean water. { sməʊw or 'es'em'ɒ'dəb-əl,yu }
- SNC group** [GEOL] A group of meteorites comprising the shergottites, nakhlites, and chassignites, which are all believed to have originated from Mars. { 'ʃes'en'se ,grʊp }
- snowflake obsidian** [PETR] An obsidian that contains white, gray, or reddish spherulites ranging in size from microscopic to a meter or more in diameter. { 'snɒ,flæk əb'sɪd-ē-ən }
- snowflush** [GEOL] An accumulation of drifted snow, windblown soil, and wind-transported seeds on a lee slope, characteristically marked during the winter by a dark patch of soil. { 'snɒ,fləʃ }
- snow niche** See nivation hollow. { 'snɒ ,nɪtʃ }
- snow patch erosion** See nivation. { 'snɒ 'pætʃ i,rɒ-zhən }
- soaprock** See soapstone. { 'sɒp,ræk }
- soapstone** [MINERAL] **1.** A mineral name applied to steatite or to massive talc. Also known as soaprock. **2.** See saponite. [PETR] A metamorphic rock characterized by massive, schistose, or interlaced fibrous texture and a soft unctuous feel. { 'sɒp,stɒn }
- sodaclase** See albite. { 'sɒd-əl,kləs }
- soda-granite** [PETR] **1.** A granite in which soda is more abundant than potash. **2.** A granite that contains soda-plagioclase instead of the orthoclase found in normal granite. { 'sɒd-ə ,græn-ət }
- sodalite** [MINERAL] $\text{Na}_2\text{Al}_3\text{Si}_3\text{O}_{12}\text{Cl}$ A blue or sometimes white, gray, or green mineral tectosilicate of the feldspathoid group, crystallizing in the isometric system, with vitreous luster, hardness of 5 on Mohs scale, and specific gravity of 2.2–2.4; used as an ornamental stone. { 'sɒd-əl,tɪt }

soda mica

soda mica See paragonite. { 'söd·ə 'mī·kə }

soda microcline See anorthoclase. { 'söd·ə 'mī·krə,klīn }

soda niter [MINERAL] NaNO_3 A colorless to white mineral composed of sodium nitrate, crystallizing in the rhombohedral division of the hexagonal system; hardness is $1\frac{1}{2}$ to 2 on Mohs scale and specific gravity is 2.266. Also known as nitratine; Peru saltpeter. { 'söd·ə 'nīd·ər }

soddyite [MINERAL] $(\text{UO}_2)_{12}\text{Si}_2\text{O}_{22}\cdot 14\text{H}_2\text{O}$ A pale-yellow orthorhombic mineral composed of hydrous uranium silicate and occurring in fine-grained aggregates or crystals. { 'säd·ē,īt }

sodium-calcium feldspar See plagioclase. { 'söd·ē·əm 'kal·sē·əm 'fel,spär }

sodium feldspar See albite. { 'söd·ē·əm 'fel,spär }

sodium illite See brammalite. { 'söd·ē·əm 'i,līt }

soffione [GEOL] A jet of steam and other vapors issuing from the ground in a volcanic area. { ,sä·fē'ō·nē }

soffiosian knob See frost mound. { sə'fō·zhən 'näb }

soft coal See bituminous coal. { 'söft 'köl }

soft rock [PETR] **1.** A broad designation for sedimentary rock. **2.** A rock that is relatively nonresistant to erosion. { 'söft 'rāk }

Sohm Abyssal Plain [GEOL] A basin in the North Atlantic, about 2400 fathoms (4390 meters) deep, between Newfoundland and the Mid-Atlantic Ridge. { 'söm ə'bis·əl 'plān }

soil [GEOL] **1.** Unconsolidated rock material over bedrock. **2.** Freely divided rock-derived material containing an admixture of organic matter and capable of supporting vegetation. { söil }

soil air [GEOL] The air and other gases in spaces in the soil; specifically, that which is found within the zone of aeration. Also known as soil atmosphere. { 'söil ,er }

soil atmosphere See soil air. { 'söil ,at·mə'sfir }

soil blister See frost mound. { 'söil ,blis·tər }

soil chemistry [GEOCHEM] The study and analysis of the inorganic and organic components and the life cycles within soils. { 'söil 'kem·ə·strē }

soil colloid [GEOL] Colloidal complex of soils composed principally of clay and humus. { 'söil ,kä,löid }

soil complex [GEOL] A mapping unit used in detailed soil surveys; consists of two or more recognized classifications. { 'söil 'käm,pleks }

soil creep [GEOL] The slow, steady downhill movement of soil and loose rock on a slope. Also known as surficial creep. { 'söil ,krēp }

soil element [GEOL] A unit that represents an arbitrarily small volume of soil within a soil mass. { 'söil ,el·ə·mənt }

soil erosion [GEOL] The detachment and movement of topsoil by the action of wind and flowing water. { 'söil i,röz·h·ən }

soil flow See solifluction. { 'söil ,flō }

soil fluction See solifluction. { 'söil ,flək·shən }

soil formation See soil genesis. { 'söil ,fōr·mä·shən }

soil genesis [GEOL] The mode by which soil originates, with particular reference to processes of soil-forming factors responsible for the development of true soil from unconsolidated parent material. Also known as pedogenesis; soil formation. { 'söil ,jen·ə·səs }

soil physics [GEOPHYS] The study of the physical characteristics of soils; concerned also with the methods and instruments used to determine these characteristics. { 'söil ,fiz·iks }

soil profile [GEOL] A vertical section of a soil, showing horizons and parent material. { 'söil ,prō,fil }

soil science [GEOL] The study of the formation, properties, and classification of soil; includes mapping. Also known as pedology. { 'söil ,st·əns }

soil separate [GEOL] Any of a group of rock or mineral particles, separated from a soil sample, having diameters less than 0.8 inch (2 millimeters) and ranging within the

Soloth soil

- limits of one of the standard classifications of soil particle size. Also known as separate. { 'sɔɪl ,sep·rət }
- soil series** [GEOL] A family of soils having similar profiles, and developing from similar original materials under the influence of similar climate and vegetation. { 'sɔɪl ,sɪr·ez }
- soil shear strength** [GEOL] The maximum resistance of a soil to shearing stresses. { 'sɔɪl 'shɪr ,streŋkθ }
- soil stripes** [GEOL] Alternating bands of fine and coarse material in a soil structure. { 'sɔɪl ,strips }
- soil structure** [GEOL] Arrangement of soil into various aggregates, each differing in the characteristics of its particles. { 'sɔɪl ,strək·chər }
- soil survey** [GEOL] The systematic examination of soils, their description and classification, mapping of soil types, and the assessment of soils for various agricultural and engineering uses. { 'sɔɪl 'sər,və }
- soil-water belt** See belt of soil water. { 'sɔɪl 'wɔd·ər ,belt }
- soil-water zone** See belt of soil water. { 'sɔɪl 'wɔd·ər ,zɔn }
- sole** [GEOL] **1.** The bottom of a sedimentary stratum. **2.** The middle and lower portion of the shear surface of a landslide. **3.** The underlying fault plane of a thrust nappe. Also known as sole plane. { sɔl }
- sole injection** [GEOL] An igneous intrusion that was put in place along a thrust plane. { 'sɔl ɪn,jek·shən }
- sole mark** [GEOL] An irregularity or penetration on the undersurface of a sedimentary stratum. { 'sɔl ,mɑrk }
- Solenopora** [PALEOBOT] A genus of extinct calcareous red algae in the family Solenoporaceae that appeared in the Late Cambrian and lasted until the Early Tertiary. { ,sɔl·ə'nɒp·rə }
- Solenoporaceae** [PALEOBOT] A family of extinct red algae having compact tissue and the ability to deposit calcium carbonate within and between the cell walls. { sɔl·ɪn·ə·pə'ræs·ē,ē }
- sole plane** See sole. { 'sɔl ,plæn }
- solfatar** [GEOL] A fumarole from which sulfurous gases are emitted. { ,sɔl·fə'tär·ə }
- solifluction** [GEOL] A rapid soil creep, especially referring to downslope soil movement in periglacial areas. Also known as sludging; soil flow; soil fluction. { 'sɔl·ə'flək·shən }
- solifluction lobe** [GEOL] An isolated, tongue-shaped feature of the land surface with a steep front and a smooth upper surface formed by more rapid solifluction on certain sections of the slope. Also known as solifluction tongue. { 'sɔl·ə'flək·shən 'lɒb }
- solifluction mantle** [GEOL] The locally derived, unsorted material moved downslope by solifluction. Also known as flow earth. { 'sɔl·ə'flək·shən 'mant·əl }
- solifluction sheet** [GEOL] A broad deposit of a solifluction mantle. { 'sɔl·ə'flək·shən 'shet }
- solifluction stream** [GEOL] A narrow, streamlike deposit of a solifluction mantle. { 'sɔl·ə'flək·shən 'strēm }
- solifluction tongue** See solifluction lobe. { 'sɔl·ə'flək·shən 'tʌŋ }
- solodize** [GEOL] To improve a soil by removing alkalies from it. { 'sɔ·lə,dɪz }
- Solod soil** See Soloth soil. { 'sɔ·ləd ,sɔɪl }
- Solo man** [PALEON] A relatively late but primitive form of fossil man from Java; this form had a small brain, heavy horizontal browridges, and a massive cranial base. { 'sɔ·lə 'man }
- Solonchak soil** [GEOL] One of an intrazonal, balamorphic group of light-colored soils rich in soluble salts. { 'sɔl·ən'çäk ,sɔɪl }
- Solonetz soil** [GEOL] One of an intrazonal group of black alkali soils having a columnar structure. { 'sɔl·ə'nets ,sɔɪl }
- Soloth soil** [GEOL] One of an intrazonal halomorphic group of soils formed from saline material; the surface layer is soft and friable, and overlies a light-colored leached horizon which, in turn, overlies a dark horizon. Also known as Solod soil. { 'sɔ·lət ,sɔɪl }

solum

- solum** [GEOL] The upper part of a soil profile, composed of A and B horizons in mature soil. Also known as true soil. { 'sō·ləm }
- solution groove** [GEOL] One of a series of continuous, subparallel furrows developed on an inclined or vertical surface of a soluble and homogeneous rock (such as the limestone walls of a cave) by the slow corroding action of trickling water. { sə'lü·shən ,grüv }
- solution pool** [GEOL] A pool in a rock that is formed by the dissolution of the rock in ocean water. { sə'lü·shən ,pül }
- solution potholes** [GEOL] Potholes produced in carbonate rocks by dissolution. { sə'lü·shən ,pät,hölz }
- solution transfer** [GEOL] A process whereby pressure solution of detrital mineral grains at contact areas is followed by recrystallization on the less strained parts of the grain surfaces. { sə'lü·shən ,tranz·fər }
- somma** [GEOL] The rim of a volcano. { 'säm·ə }
- sordawallite** See tachylite. { sör'dä·wə,līt }
- sorosilicate** [MINERAL] A structural type of silicate whose crystal lattice has two SiO₄ tetrahedra sharing one oxygen atom. { 'sör·ō'sil·ə·kət }
- sorotiite** [GEOL] A type of meteorite similar to the pallasites, with troilite substituting for olivine. { sə'räd·ē,īt }
- sorted** [GEOL] **1.** Pertaining to a nongenetic group of patterned-ground features displaying a border of stones, including boulders, commonly alternating with very small particles, including silt, sand, and clay. **2.** Pertaining to an unconsolidated sediment or a cemented detrital rock consisting of particles of essentially uniform size or of particles lying within the limits of a single grade. { 'sörd·əd }
- sorted polygon** [GEOL] A patterned ground having a sorted appearance due to a border of stones and characterized by a polygonal mesh. Also known as stone polygon. { 'sörd·əd 'päl·i,gän }
- sorting** [GEOL] The process by which similar in size, shape, or specific gravity sedimentary particles are selected and separated from associated but dissimilar particles by the agent of transportation. { 'sörd·ij }
- sorting coefficient** [GEOL] A sorting index equal to the square root of the ratio of the larger quartile (the diameter having 25% of the cumulative size-frequency distribution larger than itself) to the smaller quartile (the diameter having 75% of the cumulative size-frequency distribution larger than itself). { 'sörd·ij ,kō·i,fish·ənt }
- sorting index** [GEOL] A measure of the degree of sorting in a sediment based on the statistical spread of the frequency curve of particle sizes. { 'sörd·ij ,in,deks }
- sounding sand** [GEOL] Sand that emits musical, humming, or crunching sounds when disturbed. Also known as singing sand. { 'saünd·ij ,sand }
- source area** See provenance. { 'sørs ,er·ē·ə }
- source bed** [GEOL] The original stratigraphic horizon from which secondary sulfide minerals were derived. { 'sørs ,bed }
- sourceland** See provenance. { 'sørs ,land }
- source rock** [GEOL] **1.** Rock from which fragments have been derived which form a later, usually sedimentary rock. Also known as mother rock; parent rock. **2.** Sedimentary rock, usually shale and limestone, deposited together with organic matter which was subsequently transformed to liquid or gaseous hydrocarbons. { 'sørs ,rāk }
- South African jade** See Transvaal jade. { 'saüth 'af·ri·kən 'jäd }
- south geomagnetic pole** [GEOPHYS] The geomagnetic pole in the Southern Hemisphere at approximately 78.5°S, longitude 111°E, 180° from the north geomagnetic pole. Also known as south pole. { 'saüth 'jē·ō·mag'ned·ik ,pöl }
- south pole** [GEOPHYS] See south geomagnetic pole. { 'saüth 'pöl }
- souzalite** [MINERAL] (Mg,Fe)₃(Al,Fe)₄(PO₄)₄(OH)₆·2H₂O A green mineral composed of hydrous basic phosphate of magnesium, iron, and aluminum. { 'sō·zə,līt }
- spall** [GEOL] **1.** A fragment removed from the surface of a rock by weathering. **2.** A relatively thin, sharp-edged fragment produced by exfoliation. **3.** A rock fragment produced by chipping with a hammer. { spól }

Sphaeractinoidea

- spalling** [GEOL] The chipping or fracturing with an upward heaving, of rock caused by a compressional wave at a free surface. { 'spól·iŋ }
- spangolite** [MINERAL] $\text{Cu}_6\text{Al}(\text{SO}_4)(\text{OH})_{12}\text{Cl}\cdot 3\text{H}_2\text{O}$ A dark-green hexagonal mineral composed of hydrous basic sulfate and chloride of aluminum and copper and occurring as crystals. { 'spaŋ·gə,līt }
- spar** [MINERAL] Any transparent or translucent, nonmetallic, light-colored, readily cleavable, crystalline mineral; examples are calespar and fluorspar. { spär }
- sparagmite** [GEOL] Late Precambrian fragmental rocks of Scandinavia, characterized by high proportions of microcline. { spə'rag,mīt }
- sparite** See sparry calcite. { 'spä,rīt }
- Sparnacean** [GEOL] A European stage of geologic time; upper upper Paleocene, above Thanetian, below Ypresian of Eocene. { spär'näsh·ən }
- sparry calcite** [MINERAL] A clean, coarse-grained calcite crystal. Also known as calc-sparite; sparite. { 'spär·ē 'kal,sīt }
- sparry cement** [GEOL] Clear, relatively coarse-grained calcite in the interstices of any sedimentary rock. { 'spär·ē si'ment }
- sparry iron** See siderite. { 'spär·ē 'ī·ərn }
- spartalite** See zincite. { 'spärd·əl,īt }
- spathic iron** See siderite. { 'spath·ik 'ī·ərn }
- spatter cone** [GEOL] A low, steep-sided cone of small pyroclastic fragments built up on a fissure or vent. Also known as agglutinate cone; volcanello. { 'spad·ər ,kōn }
- spatter rampart** [GEOL] A low, circular ridge of pyroclastics built up around the margins of small volcanoes. { 'spad·ər ,ram,pärt }
- specific retention** [GEOL] The ratio of the volume of water that a given body of rock or soil will retain after saturation, and the pull of gravity to the volume of the body itself. { spə'sif·ik ri'ten·chən }
- spectacle stone** See selenite. { 'spek·tə·kəl ,stōn }
- specular hematite** [MINERAL] A variety of hematite with a blue-gray color and bright metallic luster. { 'spek·yə·lər 'hē·mə,tīt }
- specular iron** See specularite. { 'spek·yə·lər 'ī·ərn }
- specularite** [MINERAL] A black or gray variety of hematite with brilliant metallic luster, occurring in micaceous or foliated masses, or in tabular or disklike crystals. Also known as gray hematite; iron glance; specular iron. { 'spek·yə·lə,rīt }
- spelean** [GEOL] Of or pertaining to a feature in a cave. { spə'lē·ən }
- speleology** [GEOL] The study and exploration of caves. { ,spē·lē'äl·ə·jē }
- speleothem** [GEOL] A secondary mineral deposited in a cave by the action of water. Also known as cave formation. { 'spē·lē·ə,them }
- spencerite** [MINERAL] $\text{Zn}_4(\text{PO}_4)_2(\text{OH})_2\cdot 3\text{H}_2\text{O}$ A pearly white monoclinic mineral composed of hydrous basic zinc phosphate and occurring in scaly masses and small crystals. { 'spen·sə,rīt }
- spending beach** [GEOL] In a wave basin, the beach on which the entering waves spend themselves, except for the small remainder entering the inner harbor. { 'spend·iŋ ,bēch }
- spengenite** [GEOL] A biocalcarene containing oolites and fossil debris and having a maximum quartz content of 10%. Also known as Bedford limestone; Indiana limestone. { 'spər·jə,nīt }
- sperrylite** [MINERAL] PtAs_2 A tin-white isometric mineral composed of platinum arsenide; the only platinum compound known to occur in nature; hardness is 6–7 on Mohs scale, and specific gravity is 10.60. { 'sper·ē,līt }
- spessartite** [MINERAL] $\text{Mn}_3\text{Al}_2(\text{SiO}_4)_3$ A mineral composed of manganese aluminum silicate with small amounts of iron, magnesium, or other elements. [PETR] A lamprophyre composed of a sodic plagioclase groundmass in which green hornblende phenocrysts are embedded; also contains accessory olivine, biotite, apatite, and opaque oxides. { 'spes·ər,tīt }
- Sphaeractinoidea** [PALEON] An extinct group of fossil marine hydrozoans distinguished in part by the relative prominence of either vertical or horizontal trabeculae and by the presence of long, tabulate tubes called autotubes. { sfir,ak·tə'nōid·ē·ə }

sphaerite

- sphaerite** [MINERAL] Light-gray or bluish mineral composed of hydrous aluminum phosphate and occurring in global concretions. { 'sfir,ɪt }
- sphaerolitic** See spherulitic. { |sfir-ə|lid-ik }
- sphalerite** [MINERAL] (Zn,Fe)S The low-temperature form and common polymorph of zinc sulfide; a usually brown or black mineral that crystallizes in the hextetrahedral class of the isometric system, occurs most commonly in coarse to fine, granular, cleanable masses, has resinous luster, hardness of 3.5 on Mohs scale, and specific gravity of 4.1. Also known as blende; false galena; jack; lead marcasite; mock lead; mock ore; pseudogalena; steel jack. { 'sfal-ə,rɪt }
- Sphenacodontia** [PALEON] A suborder of extinct reptiles in the order Pelycosauria which were advanced, active carnivores. { sfə,näk-ə'dän-chə }
- sphene** [MINERAL] CaTiSiO₅ A brown, green, yellow, gray, or black neosilicate mineral common as an accessory mineral in igneous rocks; it is monoclinic and has resinous luster; hardness is 5–5.5 on Mohs scale; specific gravity is 3.4–3.5. Also known as grothite; titanite. { sfēn }
- sphenochasm** [GEOL] A triangular gap of oceanic crust separating two continental blocks and converging to a point. { ,sfē-nə'kaz-əm }
- sphenolith** [GEOL] A wedgelike igneous intrusion that is partly concordant and partly discordant. { 'sfēn-əl,ɪθ }
- Sphenyllopsida** [PALEOBOT] An extinct class of embryophytes in the division Equisetophyta. { ,sfēn-əl'äp-səd-ə }
- spherical weathering** See spheroidal weathering. { 'sfir-ə:kəl 'weth-ə-rɪŋ }
- spheroidal recovery** [GEOPHYS] The hypothetical return of the earth to spheroid form after it has been distorted. { 'sfir'oid-əl rɪ'kəv-ə-rē }
- spheroidal weathering** [GEOL] Chemical weathering in which concentric or spherical shells of decayed rock are successively separated from a block of rock; commonly results in the formation of a rounded boulder of decomposition. Also known as concentric weathering; spherical weathering. { 'sfir'oid-əl 'weth-ə-rɪŋ }
- spherulite** [GEOL] A spherical body or coarsely crystalline aggregate having a radial internal structure arranged about one or more centers. { 'sfir-ə,lɪt }
- spherulitic** [PETR] Relating to the texture of a rock composed of numerous spherulites. Also known as globular; sphaerolitic. { |sfir-ə|lid-ik }
- Sphinctozoa** [PALEON] A group of fossil sponges in the class Calcarea which have a skeleton of massive calcium carbonate organized in the form of hollow chambers. { ,sfiŋk-tə'zō-ə }
- spiculite** [PETR] A spindle-shaped belonite thought to have formed by the coalescence of globulites. { 'spɪk-əl,ɪt }
- spilite** [PETR] An altered basalt containing albitized feldspar accompanied by low-temperature, hydrous crystallization products such as chlorite, calcite, and epidote. { 'spɪ,lɪt }
- spinel** [MINERAL] **1.** MgAl₂O₄ A colorless, purplish-red, greenish, yellow, or black mineral, usually forming octahedral crystals, and characterized by great hardness; used as a gemstone. **2.** A group of minerals of general formula AB₂O₄, where A is magnesium, ferrous iron, zinc, or manganese, or a combination of them, and B is aluminum, ferric iron, or chromium. { spə'nel }
- spinodal decomposition** [MINERAL] An unmixing process in which crystals with bulk composition in the central region of the phase diagram undergo exsolution. { spɪ'nōd-əl də,käm-pə'zɪsh-ən }
- Spiriferida** [PALEON] An order of fossil articulate brachiopods distinguished by the spirillum, a pair of spirally coiled ribbons of calcite supported by the crura. { ,spɪ-rə'fer-əd-ə }
- Spiriferidina** [PALEON] A suborder of the extinct brachiopod order Spiriferida including mainly ribbed forms having laterally or ventrally directed spires, well-developed interareas, and a straight hinge line. { spɪ,rɪf-ə-rə'di-nə }
- splash erosion** [GEOL] Erosion resulting from the impact of falling raindrops. { 'splash ɪ,rōzh-ən }
- splent coal** See splint coal. { 'splent |kɔl }

- spliced** [GEOL] Relating to veins that pinch out and are overlapped at that point by another parallel vein. { splɪst }
- splint** See splint coal. { splɪnt }
- splint coal** [GEOL] A hard, dull, blocky, grayish-black, banded bituminous coal characterized by an uneven fracture and a granular texture; burns with intense heat. Also known as splent coal; splint. { 'splɪnt ,kɔl }
- split** [GEOL] A coal seam that cannot be mined as a single unit because it is separated by a parting of other sedimentary rock. Also known as coal split; split coal. { split }
- split coal** See split. { 'split 'kɔl }
- spodic horizon** [GEOL] A soil horizon characterized by illuviation of amorphous substances. { 'spɔd-ɪk hə'rɪz-ən }
- Spodosol** [GEOL] A soil order characterized by accumulations of amorphous materials in subsurface horizons. { 'spɔd-ə,sɔl }
- spodumene** [MINERAL] $\text{LiAlSi}_2\text{O}_6$ A white to yellowish-, purplish-, or emerald-green clinopyroxene mineral occurring in prismatic crystals; hardness is 6.5–7 on Mohs scale, and specific gravity 3.13–3.20; an ore of lithium. Also known as triphane. { 'spɔ-ɪə,mēn }
- spongework** [GEOL] A pattern of small irregular interconnecting cavities on walls of limestone caves. { 'spɔŋ,wɜrk }
- Spongiomorphida** [PALEON] A small, extinct Mesozoic order of fossil colonial Hydrozoa in which the skeleton is a reticulum composed of perforate lamellae parallel to the upper surface and of regularly spaced vertical elements in the form of pillars. { ,spɔŋ-ɪə-ə'mɔr-fə-də }
- Spongiomorphidae** [PALEON] The single family of extinct hydrozoans comprising the order Spongiomorphida. { ,spɔŋ-ɪə-ə'mɔr-fə,dē }
- spongolite** [GEOL] A rock or sediment composed chiefly of the remains of sponges. Also known as spongolith. { 'spɔŋ-gə,lɪt }
- spongolith** See spongolite. { 'spɔŋ-gə,lɪt }
- sporinite** [GEOL] A variety of exinite composed of spore exines which have been compressed parallel to the stratification. { 'spɔr-ə,nɪt }
- spotted phyllite** [PETR] A phyllite rock containing dark spots that represent the beginning of porphyroblast development. { 'spɔd-əd 'fɪ,lɪt }
- spotted slate** [PETR] A type of slate containing dark spots that represent the beginning of porphyroblast development. { 'spɔd-əd 'slæt }
- spouting horn** [GEOL] A sea cave with a rearward or upward opening through which water spurts or sprays after waves enter the cave. Also known as chimney; oven. { 'spaʊd-ɪŋ 'hɔrn }
- spreading concept** See sea-floor spreading. { 'spred-ɪŋ ,kən,sept }
- spreading-floor hypothesis** See sea-floor spreading. { 'spred-ɪŋ 'flɔr hɪ,pəθ-ə-səs }
- spur** [GEOL] A ridge or rise projecting from a larger elevational feature. { spɜr }
- spurrite** [MINERAL] $\text{Ca}_5(\text{SiO}_4)_2(\text{CO}_3)$ A light-gray mineral occurring in granular masses. { 'spɜr,ɪt }
- stability** [GEOL] **1.** The resistance of a structure, spoil heap, or clay bank to sliding, overturning, or collapsing. **2.** Chemical durability, resistance to weathering. { stə'bil-əd-ē }
- stack** [GEOL] An erosional, coastal landform that is a steep-sided, pillarlike rocky island or mass that has been detached by wave action from a shore made up of cliffs; applies particularly to a stack that is columnar in structure and has horizontal stratifications. Also known as marine stack; rank. { stæk }
- stade** [GEOL] A substage of a glacial stage marked by a secondary advance of glaciers. { stād }
- stadial moraine** See recessional moraine. { 'stād-ē-əl mə'ræn }
- Staffellidae** [PALEON] An extinct family of marine protozoans (superfamily Fusulinacea) that persisted during the Pennsylvanian and Early Permian. { sta'fel-ə,dē }
- Staffordian** [GEOL] A European stage of geologic time forming the middle Upper Carboniferous, above Yorkian and below Radstockian, equivalent to part of the upper Westphalian. { sta'fɔrd-ē-ən }

stage

- stage** [GEOL] **1.** A developmental phase of an erosion cycle in which landscape features have distinctive characteristic forms. **2.** A phase in the historical development of a geologic feature. **3.** A major subdivision of a glacial epoch. **4.** A time-stratigraphic unit ranking below series and above chronozone, composed of rocks formed during an age of geologic time. { stāj }
- stainerite** See heterogenite. { 'stī·nē·ə, rīt }
- stalactite** [GEOL] A conical or roughly cylindrical speleothem formed by dripping water and hanging from the roof of a cave; usually composed of calcium carbonate. { stə'lak,tīt }
- stalacto-stalagmite** [GEOL] A columnar deposit formed by the union of a stalactite with its complementary stalagmite. Also known as column; pillar. { stə'lak-tō stə'lag,mīt }
- stalagmite** [GEOL] A conical speleothem formed upward from the floor of a cave by the action of dripping water; usually composed of calcium carbonate. { stə'lag,mīt }
- Stampian** See Rupelian. { 'stam·pē·ən }
- standard mean ocean water** [GEOL] An international reference standard used to determine oxygen and hydrogen isotopic content. Abbreviated SMOW. { 'stan·dərd ,mēn 'ō·shən ,wōd·ər }
- standard mineral** [MINERAL] A mineral that, on the basis of chemical analyses, is theoretically capable of being present in a rock. Also known as normative mineral. { 'stan·dərd 'mīn·rəl }
- stanfieldite** [MINERAL] $\text{Ca}_4(\text{Mg},\text{Fe},\text{Mn})_5(\text{PO}_4)_6$ A phosphate mineral found only in meteorites. { 'stan,fēl,dīt }
- stannite** [MINERAL] $\text{Cu}_2\text{FeSnS}_4$ A steel-gray or iron-black mineral crystallizing in the tetragonal system and occurring in granular masses; luster is metallic, hardness is 4 on Mohs scale, and specific gravity is 4.3–4.53. Also known as bell-metal ore; tin pyrites. { 'sta,nīt }
- star ruby** [MINERAL] An asteriated variety of ruby with normally six chatoyant rays. { 'stär 'rū·bē }
- star sapphire** [MINERAL] A variety of sapphire exhibiting a six-pointed star resulting from the presence of microscopic crystals in various orientations within the gemstone. { 'stär 'sa,flr }
- starved basin** [GEOL] A sedimentary basin in which rate of subsidence exceeds rate of sedimentation. { 'stärvd 'bās·ən }
- static granitization** [PETR] The formation of a granitic rock by a metasomatic process in the absence of compressive forces or strains. { 'stad·ik ,gran·əd·ə'zā·shən }
- static metamorphism** [GEOL] Regional metamorphism caused by heat and solvents at high lithostatic pressures. Also known as load metamorphism. { 'stad·ik ,med·ə'mór,fiz·əm }
- staurolite** [MINERAL] $\text{FeAl}_4(\text{SiO}_4)_2(\text{OH})_2$ A reddish-brown to black neosilicate mineral that crystallizes in the orthorhombic system, has resinous to vitreous luster, hardness is 7–7.5 on Mohs scale, and specific gravity is 3.7. Also known as cross-stone; fairy stone; grenatite; staurotide. { 'stór·ə,līt }
- staurotide** See staurolite. { 'stór·ə,tīd }
- steatite** [PETR] A compact, massive, fine-ground rock composed principally of talc, but with much other material. { 'stē·ə,tīt }
- steatization** [GEOL] Introduction of or replacement by talc or steatite. { stē,əd·ə'zā·shən }
- S tectonite** [PETR] A tectonite whose fabric is dominated by planar surfaces of formation or deformation, such as slate. { 'es 'tek·tə,nīt }
- steel jack** See sphalerite. { 'stēl 'jak }
- Stegodontinae** [PALEON] An extinct subfamily of elephantoid proboscideans in the family Elephantidae. { ,steg·əd'dänt·ə,nē }
- Stegosauria** [PALEON] A suborder of extinct reptiles of the order Ornithischia comprising the plated dinosaurs of the Jurassic which had tiny heads, great triangular plates arranged on the back in two alternating rows, and long spikes near the end of the tail. { ,steg·ə'sór·ē·ə }

- steigerite** [MINERAL] $4\text{AlVO}_4 \cdot 13\text{H}_2\text{O}$ A canary-yellow mineral composed of hydrous aluminum vanadate and occurring in masses. { 'stī·gə·rīt }
- Steinheim man** [PALEON] A prehistoric man represented by a skull, without mandible, found near Stuttgart, Germany; the browridges are massive, the face is relatively small, and the braincase is similar in shape to that of *Homo sapiens*. { 'sh̄tīn,hīm ,man }
- steinkern** [GEOL] **1.** Rock material formed from consolidated mud or sediment that filled a hollow organic structure, such as a fossil shell. **2.** The fossil formed after dissolution of the mold. Also known as endocast; internal cast. { 'sh̄tīn,kərn }
- Stenomasteridae** [PALEON] An extinct family of Euechinoidea, order Holasteroidea, comprising oval and heart-shaped forms with fully developed pore pairs. { ,stēn·ə·mas'ter·ə,dē }
- Stensioellidae** [PALEON] A family of Lower Devonian placoderms of the order Petalichthyida having large pectoral fins and a broad subterminal mouth. { ,stēn·shō'el·ə,dē }
- Stenurida** [PALEON] An order of Ophiuroidea, comprising the most primitive brittlestars, known only from Paleozoic sediments. { stə'nūr·əd·ə }
- step** [GEOL] A hitch or dislocation of the strata. { step }
- step fault** [GEOL] One of a set of closely spaced, parallel faults. Also known as distributive fault; multiple fault. { 'step ,fɔlt }
- Stephanian** [GEOL] A European stage of Upper Carboniferous geologic time, forming the Upper Pennsylvanian, above the Westphalian and below the Sakmarian of the Permian. { stə'fān·ē·ən }
- stephanite** [MINERAL] Ag_3SbS_4 An iron-black mineral crystallizing in the orthorhombic system and having a metallic luster; an ore of silver. Also known as black silver; brittle silver ore; goldschmidtine. { 'stef·ə,nīt }
- step-out time** [GEOPHYS] In seismic prospecting, the time differentials in arrivals of a given peak or trough of a reflected or refracted event for successive detector positions on the earth's surface. { 'step |əut ,tīm }
- steptoe** [GEOL] An isolated protrusion of bedrock, such as the summit of a hill or mountain, in a lava flow. { 'step,tō }
- stercorite** [MINERAL] $\text{Na}(\text{NH}_4)\text{H}(\text{PO}_4) \cdot 4\text{H}_2\text{O}$ A white to yellowish and brown, triclinic mineral consisting of a hydrated acid phosphate of sodium and ammonium. { 'stər·kə,rīt }
- stereographic net** See net. { 'ster·ē·ə|graf·ik 'net }
- Stereospondyli** [PALEON] A group of labyrinthodont amphibians from the Triassic characterized by a flat body without pleurocentra and with highly developed intercentra. { ,ster·ē·ə'spän·də,lī }
- sternbergite** [MINERAL] AgFe_2S_3 A dark-brown or black mineral composed of silver iron sulfide and occurring as tabular crystals or flexible laminae. { 'stərn,bərgīt }
- sterrettite** See kolbeckite. { 'ster·ə,tīt }
- stewartite** [GEOL] A steel-gray, iron-containing variety of bort that has magnetic properties. [MINERAL] $\text{Mn}_3(\text{DO})_2 \cdot 4\text{H}_2\text{O}$ A brownish-yellow mineral composed of hydrous manganese phosphate occurring in minute crystals or fibrous tufts in pegmatites. { 'stü·ər,tīt }
- Sthenurinae** [PALEON] An extinct subfamily of marsupials of the family Diprotodontidae, including the giant kangaroos. { sthə'nūr·ə,nē }
- stibiconite** [MINERAL] $\text{Sb}_2\text{O}_6(\text{OH})$ A pale yellow to yellowish- or reddish-white mineral consisting of a basic or hydrated oxide of antimony; occurs in massive form, as a powder, and in crusts. { 'stib·ə·kə,nīt }
- stibicolumbite** [MINERAL] $\text{Sb}(\text{Nb,Ta,Cb})\text{O}_4$ A dark brown to light yellowish- or reddish-brown, orthorhombic mineral consisting of an oxide of antimony and tantalum-columbium. { 'stib·ē·ə'kəl·əm,bt }
- stibium** See antimonite. { 'stib·ē·əm }
- stibnite** See antimonite. { 'stib,nīt }
- stichtite** [MINERAL] $\text{Mg}_6\text{Cr}_2(\text{CO}_3)(\text{OH})_{16} \cdot 4\text{H}_2\text{O}$ A lilac-colored rhombohedral mineral composed of hydrous basic carbonate of magnesium and chromium. { 'sti,kīt }
- stilbite** [MINERAL] $\text{Ca}(\text{Al}_2\text{Si}_7\text{O}_{18}) \cdot 7\text{H}_2\text{O}$ A white, brown, or yellow mineral belonging to

stillstand

the zeolite family of silicates; crystallizes in the monoclinic system, occurs in sheaflike aggregates of tabular crystals, and has pearly luster; hardness is 3.5–4 on Mohs scale, and specific gravity is 2.1–2.2. Also known as desmine. { 'stil,bīt }

stillstand [GEOL] A period during which a land area, a continent, or an island remains stationary with respect to the interior of the earth or to sea level. { 'stil,stand }

stilpnomelane [MINERAL] $K(\text{Fe,Mg,Al})_3\text{Si}_4\text{O}_{10}(\text{OH})_2 \cdot \text{H}_2\text{O}$ A black or greenish-black mineral composed of basic hydrous potassium iron magnesium aluminum silicate; occurs as fibers, incrustations, and foliated plates. { ,stilp·nō'me,lān }

stinkstone [GEOL] A stone containing decomposing organic matter that gives off an offensive odor when rubbed or struck. { 'stɪŋk,stōn }

stipoverite See stishovite. { stə'päv·ə,rīt }

stishovite [MINERAL] SiO_2 A polymorph of quartz, a dense, fine-grained mineral formed under very high pressure (about 1×10^6 pounds per square inch or 7×10^9 pascals); it is the only mineral in which the silicon atom has a coordination number of six; specific gravity is 4.28. Also known as stipoverite. { 'stish·ə,vīt }

stock [GEOL] See pipe. [PETR] A usually discordant, batholithlike body of intrusive igneous rock not exceeding 40 square miles (103.6 square kilometers) in surface exposure and usually discordant. { stāk }

stockwork [GEOL] A mineral deposit in the form of a network of veinlets diffused in the country rock. { 'stāk,wɔrk }

stokesite [MINERAL] $\text{CaSnSi}_3\text{O}_9 \cdot 2\text{H}_2\text{O}$ A colorless orthorhombic mineral composed of hydrous calcium tin silicate occurring in crystals. { 'stök,sīt }

stolzite [MINERAL] PbWO_4 A tetragonal mineral composed of native lead tungstate; it is isomorphous with wulfenite and dimorphous with raspite. { 'stöl,zīt }

stone [GEOL] **1.** A small fragment of rock or mineral. **2.** See stony meteorite. { stōn }

stone bubble See lithophysa. { 'stōn 'bäb·əl }

stone coal See anthracite. { 'stōn ,köl }

stone polygon See sorted polygon. { 'stōn 'päl·i,gän }

stone ring [GEOL] A ring of stones surrounding a central area of finer material; characteristic of sorted circle and sorted polygon. { 'stōn 'rɪŋ }

stony-iron meteorite [GEOL] Any of the rare meteorites containing at least 25% of both nickel-iron and heavy basic silicates. Also known as iron-stony meteorite; lithosiderite; sideraerolite; siderolite; syssiderite. { 'stō·nē 'fj·ərn 'mēd·ē·ə,rīt }

stony meteorite [GEOL] Any meteorite composed principally of silicate minerals, especially olivine, pyroxene, and plagioclase. Also known as aerolite; asiderite; meteoric stone; meteorolite; stone. { 'stō·nē 'mēd·ē·ə,rīt }

storm beach [GEOL] A ridge composed of gravel or shingle built up by storm waves at the inner margin of a beach. { 'stōrm ,bēč }

storm delta See washover. { 'stōrm ,del·tə }

storm microseism [GEOPHYS] A microseism lasting 25 or more seconds, caused by ocean waves. { 'stōrm 'mɪ·krə,sɪz·əm }

stoss [GEOL] Of the side of a hill, knob, or prominent rock, facing the upstream side of a glacier. { stäs }

stoss-and-lee topography [GEOL] A type of glaciated landscape in which small hills or other landforms exhibit gentle eroded slopes on the up-glacier or upstream side and less eroded, steeper slopes on the lee side. { 'stäs ənd 'lɛ tə'päg:rə·fē }

strain shadow See pressure shadow. { 'strän ,shad·ō }

strain-slip [GEOL] A rock fracture resulting in a slight displacement. { 'strän ,slɪp }

strain-slip cleavage See slip cleavage. { 'strän 'slɪp ,klē·vij }

strand [GEOL] A beach bordering a sea or an arm of an ocean. { strand }

strand flat See wave-cut platform. { 'strand ,flat }

strandline [GEOL] **1.** A beach raised above the present sea level. **2.** The level at which a body of standing water meets the land. **3.** See shoreline. { 'strand,lɪn }

strath [GEOL] **1.** A broad, elongate depression with steep sides on the continental shelf. **2.** An extensive remnant of a broad, flat valley floor that has undergone degradation following uplift. { strath }

stream-built terrace

- strath terrace** [GEOL] An extensive remnant of a strath from a former erosion cycle. { 'strath ,ter-əs }
- stratification** [GEOL] An arrangement or deposition of sedimentary material in layers, or of sedimentary rock in strata. { ,strad-ə-fə'kā-shən }
- stratification index** [GEOL] A measure of the beddedness of a stratigraphic unit, expressed as the number of beds in the unit per 100 feet (30 meters) of section. { ,strad-ə-fə'kā-shən ,in,deks }
- stratification plane** [GEOL] A demarcation between two layers of sedimentary rock, often signifying that the layers were deposited under different conditions. { ,strad-ə-fə'kā-shən ,plān }
- stratified drift** [GEOL] Fluvio-glacial drift composed of material deposited by a meltwater stream or settled from suspension. { 'strad-ə,fɪd 'drift }
- stratified rock** *See* sedimentary rock. { 'strad-ə,fɪd 'rāk }
- stratiform** [GEOL] **1.** Descriptive of a layered mineral deposit of either igneous or sedimentary origin. **2.** Consisting of parallel bands, layers, or sheets. { 'strad-ə,fɔrm }
- stratigrapher** [GEOL] A geologist who deals with stratified rocks, for example, the classification, nomenclature, correlation, and interpretation of rocks. { strə'tig-rə-fər }
- stratigraphic geology** *See* stratigraphy. { 'strad-ə'graf-ik jē'äl-ə-jē }
- stratigraphic map** [GEOL] A map showing the areal distribution, configuration, or aspect of a stratigraphic unit or surface, such as an isopach map or a lithofacies map. { 'strad-ə'graf-ik 'map }
- stratigraphic oil fields** [GEOL] Hydrocarbon reserves in stratigraphic (sedimentary) traps formed by the positioning of clastic materials through chemical deposition. { 'strad-ə'graf-ik 'oil ,fēlz }
- stratigraphic separation** *See* stratigraphic throw. { 'strad-ə'graf-ik ,sep-ə'rā-shən }
- stratigraphic sequence** *See* sequence. { 'strad-ə'graf-ik 'sē-kwəns }
- stratigraphic throw** [GEOL] The thickness of the strata which originally separated two beds brought into contact at a fault. Also known as stratigraphic separation. { 'strad-ə'graf-ik 'thrō }
- stratigraphic trap** [GEOL] Sealing of a reservoir bed due to lithologic changes rather than geologic structure. Also known as porosity trap; secondary stratigraphic trap. { 'strad-ə'graf-ik 'trap }
- stratigraphic unit** [GEOL] A stratum of rock or a body of strata classified as a unit on the basis of character, property, or attribute. { 'strad-ə'graf-ik 'yü-nət }
- stratigraphy** [GEOL] A branch of geology concerned with the form, arrangement, geographic distribution, chronologic succession, classification, correlation, and mutual relationships of rock strata, especially sedimentary. Also known as stratigraphic geology. { strə'tig-rə-fē }
- stratotype** [GEOL] A specifically bounded type section of rock strata to which a time-stratigraphic unit is ascribed, ideally consisting of a complete and continuously exposed and deposited sequence of correlatable strata, and extending from a readily identifiable basal boundary to a readily identifiable top boundary. { 'strad-ə,tɪp }
- stratovolcano** [GEOL] A volcano constructed of lava and pyroclastics, deposited in alternating layers. Also known as composite volcano. { 'strad-ō-väl'kā-nō }
- stratum** [GEOL] A mass of homogeneous or gradational sedimentary material, either consolidated rock or unconsolidated soil, occurring in a distinct layer and visually separable from other layers above and below. { 'strad-əm }
- stray** [GEOL] A lenticular rock formation encountered unexpectedly in drilling an oil or a gas well; it differs from an adjacent persistent formation in lithology and hardness. { strā }
- stray sand** [GEOL] A stray composed of sandstone. { 'strā 'sand }
- streak** [MINERAL] The color of a powdered mineral, obtained by rubbing the mineral on a streak plate. { strēk }
- stream-built terrace** *See* alluvial terrace. { 'strēm 'bilt 'ter-əs }

stream capacity

- stream capacity** [GEOL] The ability of a stream to carry detritus, measured at a given point per unit of time. { 'strēm kə,pas·əd·ē }
- stream channel** [GEOL] A long, narrow, sloping troughlike depression where a natural stream flows or may flow. Also known as streamway. { 'strēm ,chan·əl }
- stream-channel form ratio** [GEOL] The mathematical relationship between a stream channel width, depth, and channel perimeter. { 'strēm ,chan·əl 'fōrm ,rā·shō }
- stream erosion** [GEOL] The progressive removal of exposed matter from the surface of a stream channel by a stream. { 'strēm i,rō·zhən }
- stream frequency** [GEOL] A measure of topographic texture expressed as the ratio of the number of streams in a drainage basin to the area of the basin. Also known as channel frequency. { 'strēm ,frē·kwən·sē }
- stream gradient** [GEOL] The angle, measured in the direction of flow, between the water surface (for large streams) or the channel flow (for small streams) and the horizontal. Also known as stream slope. { 'strēm ,grād·ē·ənt }
- stream-gradient ratio** [GEOL] Ratio of the stream gradient of a stream channel of one order to the stream gradient of the next higher order channel in the same drainage basin. Also known as channel gradient ratio. { 'strēm ,grād·ē·ənt ,rā·shō }
- stream load** [GEOL] Solid material transported by a stream. { 'strēm ,lōd }
- stream morphology** See river morphology. { 'strēm mōr'fāl·ə·jē }
- streamsink** [GEOL] An opening in the surface of the earth down which a stream disappears underground. { 'strēm,sɪŋk }
- stream slope** See stream gradient. { 'strēm ,slōp }
- stream terrace** [GEOL] One of a series of level surfaces on a stream valley flanking and parallel to a stream channel and above the stream level, representing the uneroded remnant of an abandoned floodplain or stream bed. Also known as river terrace. { 'strēm ,ter·əs }
- stream tin** [GEOL] The mineral cassiterite occurring as pebbles in alluvial deposits. { 'strēm ,tɪn }
- stream transport** [GEOL] Movement of rock material in and by a stream. { 'strēm 'tranz,pōrt }
- streamway** See stream channel. { 'strēm,wā }
- strengite** [MINERAL] $\text{FePO}_4 \cdot 2\text{H}_2\text{O}$ A pale-red mineral crystallizing in the orthorhombic system, isomorphous with variscite and dimorphous with phosphosiderite, and specific gravity 2.87. { 'streŋ,ɪt }
- stress mineral** [MINERAL] Any mineral whose formation in metamorphosed rock is favored by shearing stress. { 'stres ,mɪn·rəl }
- stretched pebbles** [GEOL] Pebbles in a sedimentary rock which have been elongated from their original shape by deformation. { 'strecht 'peb·əlz }
- stretch fault** See stretch thrust. { 'strech ,fōlt }
- stretch thrust** [GEOL] A reverse fault developed as a result of shear in the middle limb of an overturned fold. Also known as stretch fault. { 'strech ,θrəst }
- striated ground** See striped ground. { 'strī,ād·əd 'graund }
- striation** [GEOL] One of a series of parallel or subparallel scratches, small furrows, or lines on the surface of a rock or rock fragment; usually inscribed by rock fragments embedded at the base of a moving glacier. [MINERAL] One of a series of parallel, shallow depressions or narrow bands on the cleavage face of a mineral caused either by growth twinning or oscillatory growth of different crystal faces. { 'strī'ā·shən }
- strigovite** [MINERAL] $\text{Fe}_3(\text{Al,Fe})_3\text{Si}_3\text{O}_{11}(\text{OH})_7$ A dark-green mineral of the chlorite group, composed of basic aluminum iron silicate; occurs as crystalline incrustations. { 'strig·ə,vīt }
- strike** [GEOL] The direction taken by a structural surface, such as a fault plane, as it intersects the horizontal. Also known as line of strike. { 'strɪk }
- strike fault** [GEOL] A fault whose strike is parallel with that of the strata involved. { 'strɪk ,fōlt }
- strike joint** [GEOL] A joint that strikes parallel to the bedding or cleavage of the constituent rock. { 'strɪk ,jōint }

structural contour map

- strike separation** [GEOL] The distance of separation on either side of a fault surface of two formerly adjacent beds. { 'strɪk ,sep·ə,rā·shən }
- strike-separation fault** See lateral fault. { 'strɪk ,sep·ə;rā·shən ,fɔlt }
- strike-slip fault** See strike-slip fault. { 'strɪk 'slɪft ,fɔlt }
- strike slip** [GEOL] The component of the slip of a fault that is parallel to the strike of the fault. Also known as horizontal displacement; horizontal separation. { 'strɪk ,slɪp }
- strike-slip fault** [GEOL] A fault whose direction of movement is parallel to the strike of the fault. Also known as strike-shift fault. { 'strɪk 'slɪp ,fɔlt }
- string** [GEOL] A very small vein, either independent or occurring as a branch of a larger vein. Also known as stringer. { strɪŋ }
- stringer** [GEOL] See string. { 'strɪŋ·ər }
- stringer lode** [GEOL] A lode that consists of many narrow veins in a mass of country rock. { 'strɪŋ·ər ,lɒd }
- striped ground** [GEOL] A pattern of alternating stripes formed by frost action on a sloping surface. Also known as striated ground; striped soil. { 'stript 'graʊnd }
- striped soil** See striped ground. { 'stript 'sɔɪl }
- stripped illite** See degraded illite. { 'stript 'ɪl,ɪt }
- stripped plain** [GEOL] The upper, exposed surface of a resistant stratum that forms a stripped structural surface when extended over a considerable area. { 'stript 'plān }
- stripped structural surface** [GEOL] An erosion surface formed in an area underlain by horizontal or gently sloping strata of unequal resistance where the overlying softer beds have been removed by erosion. Also known as stripped surface. { 'stript ,strək·chə·rəl 'sər·fəs }
- stripped surface** See stripped structural surface. { 'stript 'sər·fəs }
- stromatite** [GEOL] Chorismite having flat or folded parallel layers of two or more textural elements. Also known as stromatolith. { 'strɒ·mə,tɪt }
- stromatolite** [GEOL] A structure in calcareous rocks consisting of concentrically laminated masses of calcium carbonate and calcium-magnesium carbonate which are believed to be of calcareous algal origin; these structures are irregular to columnar and hemispheroidal in shape, and range from 1 millimeter to many meters in thickness. Also known as callenia. { strə'mad·əl,ɪt }
- stromatolith** [GEOL] **1.** A complex sill-like igneous intrusion interfingering with sedimentary strata. **2.** See stromatite. { strə'mad·əl,ɪth }
- Stromatoporoidea** [PALEON] An extinct order of fossil colonial organisms thought to belong to the class Hydrozoa; the skeleton is a coenosteum. { strə,mad·ə·pə,rɔɪd·ē·ə }
- Strombacea** [PALEON] An extinct superfamily of gastropod mollusks in the order Prosobranchia. { sträm'bäs·ē·ə }
- strombolian** [GEOL] A type of volcanic eruption characterized by fire fountains of lava from a central crater. { sträm'bɒ·lē·ən }
- stromeyerite** [MINERAL] CuAgS A metallic-gray orthorhombic mineral with a blue tarnish composed of silver copper sulfide occurring in compact masses. { 'strɒ,mɪ·ə,rɪt }
- strontianite** [MINERAL] SrCO₃ A pale-green, white, gray, or yellowish mineral of the aragonite group having orthorhombic symmetry and occurring in veins or as masses; hardness is 3.5 on Mohs scale, and specific gravity is 3.76. { 'strän·chē·ə,nɪt }
- Strophomenida** [PALEON] A large diverse order of articulate brachiopods which first appeared in Lower Ordovician times and became extinct in the Late Triassic. { ,strə·fə'men·əd·ə }
- Strophomenidina** [PALEON] A suborder of extinct, articulate brachiopods in the order Strophomenida characterized by a concavo-convex shell, the pseudodeltidium and socket plates disposed subparallel to the hinge. { ,strə·fə,men·əd'ɪ·nə }
- structural analysis** [PETR] See structural petrology. { 'strək·chə·rəl ə'nal·ə·səs }
- structural bench** [GEOL] A bench typifying the resistant edge of a terrace that is being reduced by erosion. Also known as rock bench. { 'strək·chə·rəl 'benʃ }
- structural contour map** [GEOL] A map representation of a subsurface stratigraphic

structural fabric

- unit; depicts the configuration of a rock surface by means of elevation contour lines. { 'stræk·chə·rəl 'kän,tür ,map }
- structural fabric** See fabric. { 'stræk·chə·rəl 'fab·rik }
- structural geology** [GEOL] A branch of geology concerned with the form, arrangement, and internal structure of the rocks. { 'stræk·chə·rəl jē'al·ə·jē }
- structural high** [GEOL] Any of various structural features such as a crest, culmination, anticline, or dome. { 'stræk·chə·rəl 'hī }
- structural low** [GEOL] Any of various structural features such as a basin, a syncline, a saddle, or a sag. { 'stræk·chə·rəl 'lō }
- structural petrology** [PETR] The study of the internal structure of a rock to determine its deformational history. Also known as fabric analysis; microtectonics; petrofabric analysis; petrofabrics; petrogeometry; petromorphology; structural analysis. { 'stræk·chə·rəl pi'träl·ə·jē }
- structural terrace** [GEOL] A terracelike landform developed where generally steeply inclined and otherwise uniformly dipping strata locally flatten. { 'stræk·chə·rəl 'ter·əs }
- structural trap** [GEOL] Containment in a reservoir bed of oil or gas due to flexure or fracture of the bed. { 'stræk·chə·rəl 'trap }
- structural valley** [GEOL] A valley whose form and origin is attributable to the underlying geologic structure. { 'stræk·chə·rəl 'val·ē }
- structure** [GEOL] **1.** An assemblage of rocks upon which erosive agents have been or are acting. **2.** The sum total of the structural features of an area. [MINERAL] The form taken by a mineral, such as tabular or fibrous. [PETR] A macroscopic feature of a rock mass or rock unit, best seen in an outcrop. { 'stræk·chər }
- structure contour** [GEOL] A contour that portrays a structural surface, such as a fault. Also known as subsurface contour. { 'stræk·chər ,kän,tür }
- structure-contour map** [GEOL] A map that uses structure contour lines to portray subsurface configuration. Also known as structure map. { 'stræk·chər 'kän,tür ,map }
- structure map** See structure-contour map. { 'stræk·chər ,map }
- structure section** [GEOL] A vertical section showing the observed or inferred geologic structure on a vertical surface or plane. { 'stræk·chər ,sek·shən }
- struvite** [MINERAL] $Mg(NH_4)PO_4 \cdot 6H_2O$ A colorless to yellow or pale-brown mineral consisting of a hydrous ammonium magnesium phosphate, and occurring in orthorhombic crystals; hardness is 2 on Mohs scale, and specific gravity is 1.7. { 'strü,vīt }
- stuffed mineral** [MINERAL] A mineral having extra ions of a foreign element within its larger interstices. { 'stəft 'min·rəl }
- sturtite** [MINERAL] A black mineral composed of hydrous silicate of iron, manganese, calcium, and magnesium; occurs in compact masses. { 'stərd,īt }
- stylolite** [GEOL] An irregular surface, generally parallel to a bedding plane, in which small toothlike projections on one side of the surface fit into cavities of complementary shape on the other surface; interpreted to result diagenetically by pressure solution. { 'stī·lə,īt }
- stylotypite** See tetrahedrite. { 'stī·lə,tī,pīt }
- S-type magma** [GEOL] Magma formed from sedimentary source material. { 'es ,tīp 'mag·mə }
- subaerial** [GEOL] Pertaining to conditions and processes occurring beneath the atmosphere or in the open air, that is, on or adjacent to the land surface. { 'səb'er·ē·əl }
- subage** [GEOL] A subdivision of a geologic age. { 'səb,āj }
- subalkaline** [GEOCHEM] Pertaining to a soil in which the pH is 8.0 to 8.5, usually in a limestone or salt-marsh region. { 'səb'al·kə,līn }
- subaqueous dune** [GEOL] A dune resulting from entrainment of grains by the flow of moving water. { 'səb'ä·kwē·əs 'dün }
- subarkose** [GEOL] Sandstone that is intermediate in composition between arkose and pure quartz sandstone; it contains less feldspar than arkose. { səb'är,kös }
- subbituminous coal** [GEOL] Black coal intermediate in rank between lignite and bituminous coal; has more carbon and less moisture than lignite. { 'səb·bə'tü·mə·nəs 'kōl }

submarine isthmus

- subbottom reflection** [GEOPHYS] The return of sound energy from a discontinuity in material below the surface of the sea bottom. { 'səb' bəd·əm ri'flek·shən }
- subcapillary interstice** [GEOL] An interstice in which the molecular attraction of its walls extends across the entire opening; it is smaller than a capillary interstice. { 'səb' kap·ə, lər·ē in'tər·stəs }
- subconchoidal** [GEOL] Pertaining to a fracture that is partly or vaguely conchoidal in shape. { 'səb·kən'koid·əl }
- subcrop** [GEOL] An occurrence of strata beneath the subsurface of an inclusive stratigraphic unit that succeeds an unconformity on which there is marked overstep. { 'səb,krəp }
- subduction** [GEOL] The process by which one crustal block descends beneath another, such as the descent of the Pacific plate beneath the Andean plate along the Andean Trench. { səb'dək·shən }
- subduction zones** [GEOL] Regions where portions of the earth's tectonic plates are diving beneath other plates, into the earth's interior. They are defined by deep oceanic trenches, lines of volcanoes parallel to the trenches, and zones of large earthquakes that extend from the trenches landward. { səb'dək·shən ,zōnz }
- suberinite** [GEOL] A variety of provitrite composed of corky tissue. { sū'ber·ə,nīt }
- subfeldspathic** [GEOL] Referring to mature lithic wacke or arenite containing an abundance of quartz grains with less than 10% feldspar grains. { 'səb·fel'spəth·ik }
- subgelisol** [GEOL] Unfrozen ground beneath permafrost. { 'səb'jel·ə,sól }
- subglacial** [GEOL] Pertaining to the area in or at the bottom of, or immediately beneath, a glacier. { 'səb'glā·shəl }
- subglacial moraine** See ground moraine. { 'səb'glā·shəl mə'rān }
- subgraywacke** [PETR] An argillaceous sandstone with a composition intermediate between graywacke and orthoquartzite; a clay matrix is usually present but it amounts to less than 15%. { 'səb'grā,wak·ə }
- subhedral** [MINERAL] **1.** Pertaining to an individual mineral crystal that is partly bounded by its own crystal faces and partly bounded by surfaces formed against preexisting crystals. **2.** Descriptive of a crystal having partially developed crystal faces. { 'səb'hē·drəl }
- subidiomorphic** See hypidiomorphic. { 'səb,id·ē·ə'mōr·fik }
- subjacent** [GEOL] Being lower than but not directly underneath. { ,səb'jās·ənt }
- subjacent igneous body** [GEOL] An igneous intrusion under a known floor, and which presumably enlarges downward. { ,səb'jās·ənt 'ig·nē·əs 'bəd·ē }
- sublacustrine** [GEOL] Existing or formed on the bottom of a lake. { 'səb·lə'kəs·trən }
- sublacustrine channel** [GEOL] A channel eroded in a lake bed either before the lake existed or by a strong current in the lake. { 'səb·lə'kəs·trən ,chan·əl }
- sublimation vein** [GEOL] A vein of mineral that has condensed from a vapor. { ,səb·lə'mā·shən 'vān }
- sublitharenite** [PETR] A sandstone which contains between 5 and 25% rock fragments and in which the rock fragments are more abundant than feldspar grains. { 'səb·li'thar·ə,nīt }
- submarine canyon** [GEOL] Steep-sided valleys winding across the continental shelf or continental slope, probably originally produced by Pleistocene stream erosion, but presently the site of turbidity flows. { 'səb·mə'rən 'kan·yən }
- submarine cave** See submarine fan. { 'səb·mə'rən 'kāv }
- submarine delta** See submarine fan. { 'səb·mə'rən 'del·tə }
- submarine earthquake** See seaquake. { 'səb·mə'rən 'ərth,kwāk }
- submarine fan** [GEOL] A shallow marine sediment that is fan- or cone-shaped and lies off the seaward opening of large rivers and submarine canyons. Also known as abyssal cave; abyssal fan; sea fan; submarine cave; submarine delta; subsea apron. { 'səb·mə'rən 'fan }
- submarine geology** See geological oceanography. { 'səb·mə'rən jē'əl·ə·jē }
- submarine isthmus** [GEOL] A submarine elevation joining two land areas and separating two basins or depressions by a depth less than that of the basins. { 'səb·mə'rən 'is·məs }

submarine peninsula

- submarine peninsula** [GEOL] An elevated portion of the submarine relief resembling a peninsula. { 'səb·mə'rēn pə'nin-sə-lə }
- submarine pit** [GEOL] A cavity on the bottom of the sea. Also known as submarine well. { 'səb·mə'rēn 'pit }
- submarine relief** [GEOL] Relative elevations of the ocean bed, or the representation of them on a chart. { 'səb·mə'rēn ri'lēf }
- submarine topography** [GEOL] Configuration of a surface such as the sea bottom or of a surface of given characteristics within the water mass. { 'səb·mə'rēn tə'pəg·rə·fē }
- submarine trough** See trough. { 'səb·mə'rēn 'trɒf }
- submarine valley** See valley. { 'səb·mə'rēn 'val·ē }
- submarine weathering** [GEOL] A slow alteration of the form, texture, and composition of the sea floor from chemical, thermal, and biological causes. { 'səb·mə'rēn 'weth·ə·rɪŋ }
- submarine well** See submarine pit. { 'səb·mə'rēn 'wel }
- submerged coastal plain** [GEOL] The continental shelf as the seaward extension of a coastal plain on the land. Also known as coast shelf. { səb'mərɪd 'kɒst·əl 'plæn }
- submerged lands** [GEOL] Lands covered by water at any stage of the tide, as distinguished from tidelands which are attached to the mainland or an island and are covered or uncovered with the tide; tidelands presuppose a high-water line as the upper boundary, submerged lands do not. { səb'mərɪd 'lɑnz }
- submerged shoreline** See shoreline of submergence. { səb'mərɪd 'ʃɒr,lɪn }
- submergence** [GEOL] A change in the relative levels of water and land either from a sinking of the land or a rise of the water level. { səb'mər·jəns }
- subsea apron** See submarine fan. { 'səb,sē 'ā·prən }
- subsequent** [GEOL] Referring to a geologic feature that followed in time the development of a consequent feature of which it is a part. { 'səb·sə·kwənt }
- subsequent fold** See cross fold. { 'səb·sə·kwənt 'fɒld }
- subsequent valley** [GEOL] A valley eroded by a stream developed subsequent to the system of which it is a part. { 'səb·sə·kwənt 'val·ē }
- subsidiary fracture** See tension fracture. { səb'sid·ē,er·ē 'frak·chər }
- subsoil** [GEOL] **1.** Soil underlying surface soil. **2.** See B horizon. { 'səb,sɔil }
- substratum** [GEOL] Any layer underlying the true soil. { 'səb'strad·əm }
- subsurface contour** See structure contour. { 'səb'sər·fəs 'kän,tʊr }
- subsurface geology** [GEOL] The study of geologic features beneath the land or sea-floor surface. Also known as underground geology. { 'səb'sər·fəs jē'äl·ə·jē }
- Subulitacea** [PALEON] An extinct superfamily of gastropod mollusks in the order Prosobranchia which possessed a basal fold but lacked an apertural sinus. { ,səb·yə·lə'tās·ē·ə }
- succession** [GEOL] A group of rock units or strata that succeed one another in chronological order. { sək'sesh·ən }
- succinite** [MINERAL] An amber-colored variety of grossularite. { 'sək,sə,nɪt }
- sucrosic** See saccharoidal. { sū'krō·sik }
- sudburite** [GEOL] A basic basalt composed of hypersthene, augite, and magnetite, among other minerals. { 'səd·bərɪt }
- sudden commencement** [GEOPHYS] Magnetic storms which start suddenly (within a few seconds) and simultaneously all over the earth. { 'səd·ən kə'mens·mənt }
- suevite** [GEOL] A grayish or yellowish fragmental rock associated with meteorite impact craters; resembles tuff breccia or pumiceous tuff but is of nonvolcanic origin. { 'swā,vɪt }
- sugary** See saccharoidal. { 'shūg·ə·rē }
- sulfate mineral** [MINERAL] A mineral compound characterized by the sulfate radical SO₄. { 'səl,fāt 'mɪn·rəl }
- sulfide mineral** [MINERAL] A mineral compound characterized by the linkage of sulfur with a metal or semimetal. { 'səl,fɪd 'mɪn·rəl }
- sulfoborate** [MINERAL] Mg₆H₄(BO₃)₄(SO₄)₂·7H₂O A mineral composed of hydrous acid sulfate and borate of magnesium. { ,səl·fə'bɔrɪt }

supratidal sediment

- sulfonation** [GEOCHEM] Oxidation of sulfur and sulfur compounds into sulfates, occurring in soils by the agency of bacteria. { ,səl·fə·fə'kā·shən }
- sulfosalite** [MINERAL] $\text{Na}_6(\text{SO}_4)_2\text{FCl}$ A mineral composed of sulfate, chloride, and fluoride of sodium. { 'səl·fō'ha,līt }
- sulfophile element** [GEOCHEM] An element occurring preferentially in an oxygen-free mineral. Also known as thiophile element. { 'səl·fə'fil ,el·ə·mənt }
- sulfur** [MINERAL] A yellow orthorhombic mineral occurring in crystals, masses, or layers, and existing in several allotropic forms; the native form of the element. { 'səl·fər }
- sulfur ball** [GEOL] A bubble of hot volcanic gas encased in a sulfurous mud skin that solidified on contact with air. { 'səl·fər ,ból }
- sulfur-mud pool** See mud pot. { 'səl·fər 'məd ,pül }
- sullage** [GEOL] Mud, silt, or other sediments carried and deposited by flowing water. { 'səl·ij }
- sulvanite** [MINERAL] Cu_3VS_4 A bronze-yellow mineral composed of copper vanadium sulfide occurring in masses. { 'səl·və,nīt }
- summit plain** See peak plain. { 'səm·ət ,plān }
- sun crack** See mud crack. { 'sən ,krak }
- sundtite** See andorite. { 'sən,tīt }
- sun opal** See fire opal. { 'sən ,ō·pəl }
- sunstone** [MINERAL] An aventurine feldspar containing minute flakes of hematite; usually brilliant and translucent, it emits reddish or golden billowy reflection. Also known as heliolite. { 'sən ,stōn }
- supercapillary interstice** [GEOL] An interstice that is too large to hold water above the free water surface by surface tension; it is larger than a capillary interstice. { 'sü·pər'kəp·ə,ler·ē in'tər·stəs }
- supercontinent** [GEOL] A large continental mass, such as Pangea, that existed early in geologic time and from which smaller continents formed and separated by fragmentation and drifting. { 'sü·pər,känt·ən·ənt }
- surficial deposit** See surficial deposit. { 'sü·pər'fish·əl di'pəz·ət }
- supergene** [MINERAL] Referring to mineral deposits or enrichments formed by descending solutions. Also known as hypergene. { 'sü·pər,jen }
- supergroup** [GEOL] A lithostratigraphic material unit of the highest order. { 'sü·pər,grüp }
- superimposed** [GEOL] Pertaining to layered or stratified rocks. { 'sü·pər·im'pözd }
- superimposed fan** [GEOL] An alluvial fan developed on, and having a steeper gradient than, an older fan. { 'sü·pər·im'pözd 'fan }
- superimposed fold** See cross fold. { 'sü·pər·im'pözd 'föld }
- superimposed glacier** [GEOL] A glacier whose course is maintained despite different preexisting structures and lithologies as the glacier erodes downward. { 'sü·pər·im'pözd 'glä·shər }
- superimposed valley** [GEOL] A valley eroded by or containing a superimposed stream. { 'sü·pər·im'pözd 'val·ē }
- superincumbent** [GEOL] Pertaining to a superjacent layer, especially one that is situated so as to exert pressure. { 'sü·pər·in'kəm·bənt }
- superjacent** [GEOL] Pertaining to a stratum situated immediately upon or over a particular lower stratum or above an unconformity. { 'sü·pər'jä·sənt }
- supermature** [GEOL] Pertaining to a texturally mature clastic sediment whose grains have become rounded. { 'sü·pər·mə'chür }
- superposed stream** See consequent stream. { 'sü·pər'pözd 'strēm }
- superposition** [GEOL] **1.** The order in which sedimentary layers are deposited, the highest being the youngest. **2.** The process by which the layering occurs. { ,sü·pər·pə'zish·ən }
- superprint** See overprint. { 'sü·pər,print }
- supracrustal rocks** [GEOL] Rocks that overlie basement rock. { 'sü·prə'krəst·əl 'räks }
- supratidal sediment** [GEOL] The sediment deposited immediately above the high-tide level. { 'sü·prə'tid·əl 'sed·ə·mənt }

supratidal zone

- supratidal zone** [GEOL] Pertaining to the shore area immediately marginal to and above the high-tide level. { 'sü·prə'tid·əl zōn }
- surface creep** [GEOL] A stage of the wind erosion process in which grains of sand move each other along the surface. { 'sər·fəs ,krēp }
- surface deposit** See surficial deposit. { 'sər·fəs di,pāz·ət }
- surface geology** [GEOL] The scientific study of the features at the surface of the earth. { 'sər·fəs jē,äl·ə·jē }
- surface phase** [GEOCHEM] A thin rock layer differing in geochemical properties from those of the volume phases on either side. Also known as volume phase. { 'sər·fəs ,fāz }
- surface soil** [GEOL] The soil extending 5 to 8 inches (13 to 20 centimeters) below the surface. { 'sər·fəs ,sōil }
- surface wash** See sheet erosion. { 'sər·fəs ,wāsh }
- surficial creep** See soil creep. { sər'fish·əl 'krēp }
- surficial deposit** [GEOL] Unconsolidated alluvial, residual, or glacial deposits overlying bedrock or occurring on or near the surface of the earth. Also known as superficial deposit; surface deposit. { sər'fish·əl di'pāz·ət }
- surficial geology** [GEOL] The scientific study of surficial deposits, including soils. { sər'fish·əl jē'äl·ə·jē }
- surf ripple** [GEOL] A ripple mark formed on a sandy beach by wave-generated currents. { 'sərf ,rip·əl }
- sursassite** [MINERAL] $Mn_5Al_3Si_5O_{21} \cdot 3H_2O$ A mineral which is composed of hydrous manganese aluminum silicate. { ,sər'sa,sīt }
- susannite** [MINERAL] $Pb_4(SO_4)(CO_3)_2(OH)_2$ A greenish or yellowish, rhombohedral mineral that is dimorphous with leadhillite. { sū'za,nīt }
- suspended load** [GEOL] The part of the stream load that is carried for a long time in suspension. Also known as suspension load. { sə'spen·dəd 'lōd }
- suspension load** See suspended load. { sə'spen·shən 'lōd }
- sussexite** [MINERAL] $MnBO_2OH$ A white mineral composed of basic manganese borate occurring in fibrous veins. { 'səs·iks,īt }
- sutured** [PETR] Referring to rock texture in which mineral grains or irregularly shaped crystals interfere with their neighbors, producing interlocking, irregular contacts without interstitial spaces. { 'sü·chərd }
- svabite** [MINERAL] $Ca_5(AsO_4)_3F$ A colorless, yellow, rose, or reddish-brown mineral composed of fluoride-arsenate of calcium. { 'sfä,bīt }
- svanbergite** [MINERAL] $SrAl_2(PO_4)(SO_4)(OH)_6$ A colorless to yellow mineral composed of basic phosphate and sulfate of strontium and aluminum; it is isomorphous with corkite, hinsdalite, and woodhouseite. { 'sfän,bər,gīt }
- swale** [GEOL] **1.** A slight depression, sometimes swampy, in the midst of generally level land. **2.** A shallow depression in an undulating ground moraine due to uneven glacial deposition. **3.** A long, narrow, generally shallow, troughlike depression which lies between two beach ridges and is aligned roughly parallel to the coastline. { swäl }
- swallow hole** [GEOL] An opening that occurs occasionally at the bottom of a sinkhole which permits direct drainage from the surface into an underground channel. { 'swäl·ō ,hōl }
- Swanscombe man** [PALEON] A partial skull recovered in Swanscombe, Kent, England, which represents an early stage of *Homo sapiens* but differing in having a vertical temporal region and a rounded occipital profile. { 'swanz·kəm 'man }
- swartzite** [MINERAL] $CaMg(UO_2)(CO_3)_3 \cdot 12H_2O$ A green monoclinic mineral composed of hydrous carbonate of calcium, magnesium, and uranium. { 'swört,sīt }
- swash** [GEOL] **1.** A narrow channel or ground within a sand bank, or between a sand bank and the shore. **2.** A bar over which the sea washes. { swāsh }
- swash mark** [GEOL] A fine, wavy or arcuate line or minute ridge consisting of fine sand, seaweed, and other debris on a beach; marks the farthest advance of wave uprush. Also known as debris line; wave line; wavemark. { 'swāsh ,märk }
- S wave** [GEOPHYS] A seismic body wave propagated in the crust or mantle of the earth

synantectic

by a shearing motion of material; speed is 1.9–2.5 miles (3–4 kilometers) per second in the crust and 2.7–2.9 miles (4.4–4.6 kilometers) in the mantle. Also known as distortional wave; equivolumental wave; rotational wave; secondary wave; shake wave; shear wave; tangential wave; transverse wave. { 'es ,wāv }

swedenborgite [MINERAL] $\text{NaBe}_4\text{SbO}_7$ A colorless to wine-yellow mineral composed of sodium beryllium antimony oxide. { 'swēd·ən,bôr,gīt }

swell [GEOL] **1.** The volumetric increase of soils on being removed from their compacted beds due to an increase in void ratio. **2.** A local enlargement or thickening in a vein or ore deposit. **3.** A low dome or quaquaversal anticline of considerable areal extent; long and generally symmetrical waves contribute to the mixing processes in the surface layer and thus to its sound transmission properties. **4.** Gently rising ground, or a rounded hill above the surrounding ground or ocean floor. { swel }

swelled ground [GEOL] A soil or rock that expands when wetted. { 'sweld 'graund }

swelling clay [GEOL] Clay that can absorb large amounts of water, such as bentonite. { 'swel·iŋ 'klā }

swinestone [PETR] Limestone containing black bituminous matter, which gives off an objectionable odor when rubbed. { 'swīn,stōn }

Sycidales [PALEON] A group of fossil aquatic plants assigned to the Charophyta, characterized by vertically ribbed gyrogonites. { ,sis·ə'dā·lēz }

syenite [PETR] A visibly crystalline plutonic rock with granular texture composed largely of alkali feldspar, with subordinate plagioclase and mafic minerals; the intrusive equivalent of trachyte. { 'sī·ə,nīt }

syenodiorite [PETR] Plutonic rock consisting of acid plagioclase, orthoclase, and a ferromagnesian mineral. { 'sī·ə·nō'dī·ə,rīt }

syenogabbro [PETR] Plutonic rock consisting of basic plagioclase, orthoclase, and a dark mineral such as augite. { 'sī·ə·nō'ga,brō }

sylvanite [MINERAL] $(\text{Au,Ag})\text{Te}_2$ A steel-gray, silver-white, or brass-yellow mineral that crystallizes in the monoclinic system and often occurs in implanted crystals. Also known as goldschmidtite; graphic tellurium; white tellurium; yellow tellurium. { 'sil·və,nīt }

sylvine See sylvite. { 'sil,vīn }

sylvite [MINERAL] KCl A salty-tasting, white or colorless isometric mineral, occurring in cubes or crystalline masses or as a saline residue; the chief ore of potassium. Also known as leopoldite; sylvine. { 'sil,vīt }

symmetrical fold [GEOL] A fold whose limbs have approximately the same angle of dip relative to the axial surface. Also known as normal fold. { sə'me·trə·kəl 'fōld }

symmetric ripple mark [GEOL] A ripple mark whose cross-section profile is symmetric. { sə'me·trik 'rip·əl ,mārk }

Symmetrodonta [PALEON] An order of the extinct mammalian infraclass Pantotheria distinguished by the central high cusp, flanked by two smaller cusps and several low minor cusps, on the upper and lower molars. { ,sīm·ə·trə'dänt·ə }

symmict [GEOL] Referring to a sedimentation unit that is structureless and in which coarse- and fine-grained particles are mixed more extensively in the lower part. { 'sīm·ikt }

symmictite [PETR] An eruptive breccia that is homogenized and is made up of a mixture of country rock and intrusive rock. { sə'mik,tīt }

symmicton See diamicton. { sə'mikt·ən }

symplectite See symplektite. { sim'plek,tīt }

symplektite [MINERAL] An intimate intergrowth of two different minerals. Also spelled symplectite. { sim'plek,tīt }

symplesite [MINERAL] $\text{Fe}_2(\text{AsO}_4)_3 \cdot 8\text{H}_2\text{O}$ A blue to bluish-green triclinic mineral composed of hydrous iron arsenate. { 'sīm·plə,sīt }

synadelphite [MINERAL] $(\text{Mn,Mg,Ca,Pb})(\text{AsO}_4)(\text{OH})_5$ A black mineral composed of basic arsenate of manganese, often with magnesium, calcium, lead, or other metals. { ,sīn·ə'del,fīt }

synantectic [MINERAL] Refers to a mineral that was formed by the reaction of two other minerals. { 'sīn·ən'tek·tik }

synantexis

- synantexis** [GEOL] Deuteric alteration. { 'sɪn·ən|tek·səs }
- synchisite** *See* synchysite. { 'sɪŋ·kə,sɪt }
- synchronous** [GEOL] Geological rock units or features formed at the same time. { 'sɪŋ·krə·nəs }
- synchronous pluton** [GEOL] Any pluton whose time of emplacement coincides with a major orogeny. { 'sɪŋ·krə·nəs 'plü,tän }
- synchysite** [MINERAL] (Ce,La)Ca(CO₃)₂F A mineral composed of fluoride and carbonate of calcium, cerium, and lanthanum. Also spelled synchisite. { 'sɪŋ·kə,sɪt }
- synclinal axis** *See* trough surface. { sin'klɪn·əl 'ak·səs }
- synclinal valley** [GEOL] Pertaining to a topographic valley whose sides coincide with a synclinal fold. { sin'klɪn·əl 'val·ē }
- syncline** [GEOL] A fold having stratigraphically younger rock material in its core; it is concave upward. { 'sɪn,klɪn }
- synclinorium** [GEOL] A composite synclinal structure in a region of lesser folds. { ,sɪn·klə'nɔr·ē·əm }
- syngensis** [GEOL] In place formation of unconsolidated sediments. { sin'jen·ə·səs }
- syngenetic** [GEOL] **1.** Pertaining to a primary sedimentary structure formed contemporaneously with sediment deposition. **2.** Pertaining to a mineral deposit formed contemporaneously with the enclosing rock. Also known as ideogenous. { 'sɪn·jə'nɛd·ɪk }
- syngenite** [MINERAL] K₂Ca(SO₄)₂·H₂O A colorless or white mineral composed of hydrous potassium calcium sulfate occurring in tabular crystals. { 'sɪn·jə,nɪt }
- synkinematic** *See* syntectonic. { 'sɪn,kin·ə'mad·ɪk }
- synorogenic** [GEOL] Referring to a geologic process occurring at the same time as orogenic activity. { 'sɪn,ɔr·ə'jen·ɪk }
- syntaxial overgrowth** [MINERAL] A crystallographically oriented overgrowth of two alternating, chemically identical substances. { sin'tak·sē·əl 'ɔ·vər,grɔθ }
- syntectic** [GEOL] *See* syntexis. { sin'tek·tɪk }
- syntectonic** [GEOL] Refers to a geologic process or event occurring during tectonic activity. Also known as synkinematic. { 'sɪn·tek'tän·ɪk }
- syntexis** [GEOL] Magma made by the melting of two or more rock types and the assimilation of country rock. Also known as syntectic. { sin'tek·səs }
- synthem** [GEOL] A chronostratigraphic unit that defines an unconformity-bounded regional body of sediments and represents a cycle of sedimentation in response to changes in relative sea level or tectonics. { 'sɪn,them }
- Syntrophiidina** [PALEON] A suborder of extinct articulate brachiopods of the order Pentamerida characterized by a strong dorsal median fold. { sin,träf·ē·ə'dɪ·nə }
- Synxiphosura** [PALEON] An extinct heterogeneous order of arthropods in the subclass Merostomata possibly representing an explosive proliferation of aberrant, terminal, and apparently blind forms. { 'sɪn,zɪf·ə'sür·ə }
- Syringophyllidae** [PALEON] A family of extinct corals in the order Tabulata. { sə,rɪŋ·gɔ'fil·ə,dē }
- syrinx** [PALEON] A tube surrounding the pedicle in certain fossil brachiopods. { 'sɪr·ɪŋks }
- syserskite** [MINERAL] Mineral composed of an alloy of osmium (50–80%) and iridium (20–50%). { 'sɪs·ər,skɪt }
- yssiderite** *See* stony-iron meteorite. { sə'sɪd·ə,rɪt }
- system** [GEOL] **1.** A major time-stratigraphic unit of worldwide significance, representing the basic unit of Phanerozoic rocks. **2.** A group of related structures, such as joints. **3.** A chronostratigraphic unit, below erathem and above series. { 'sɪs·təm }
- systematic joints** [GEOL] Joints occurring in patterns or sets and oriented perpendicular to the boundaries of the constituent rock unit. { ,sɪs·tə'mad·ɪk 'jɔɪns }
- systems tract** [GEOL] A discrete package of distinctive sediment types (facies) that are laid down during different phases of a cycle of sea-level change. { 'sɪs·təmz ,trakt }
- szaibelyite** [MINERAL] (Mn,Mg)(BO₂)(OH) A white to buff or straw yellow, orthorhombic mineral consisting of a basic borate of manganese and magnesium; occurs as veinlets, masses, or embedded nodules. { sə'bel,yɪt }

szomolnokite

szaskaite *See* smithsonite. { sə'skɑ,ɪt }

szmikite [MINERAL] $\text{MnSO}_4 \cdot \text{H}_2\text{O}$ A monoclinic mineral composed of hydrous manganese sulfate. { 'smi,kɪt }

szomolnokite [MINERAL] $\text{FeSO}_4 \cdot \text{H}_2\text{O}$ A yellow or brown monoclinic mineral composed of hydrous ferrous sulfate. { sə'mɑl·nə,kɪt }

T

- tabbyite** [MINERAL] A variety of solid asphalt found in the western United States; used as rubber filler and with roofing materials. { 'tɑ·bē,īt }
- tabetisol** *See* talik. { tɑ'bed·ə,səl }
- tablemount** *See* guyot. { 'tā·bəl,maunt }
- table reef** [GEOL] A small, isolated organic reef which has a flat top and does not enclose a lagoon. { 'tā·bəl ,rēf }
- tabula** [PALEON] A transverse septum that closes off the lower part of the polyp cavity in certain extinct corals and hydroids. { 'tab·yə·lə }
- tabular** [GEOL] Referring to a sedimentary particle whose length is two to three times its thickness. { 'tab·yə·lər }
- tabular spar** *See* wollastonite. { 'tab·yə·lər 'spär }
- Tabulata** [PALEON] An extinct Paleozoic order of corals of the subclass Zoantharia characterized by an exclusively colonial mode of growth and by secretion of a calcareous exoskeleton of slender tubes. { ,tab·yə'lād·ə }
- tachyhydrite** [MINERAL] $\text{CaMg}_2\text{Cl}_6 \cdot 12\text{H}_2\text{O}$ A honey yellow, hexagonal mineral consisting of a hydrated chloride of calcium and magnesium; occurs in massive form. { ,tak·ə'hī,drīt }
- tachylite** [GEOL] A black, green, or brown volcanic glass formed from basaltic magma. Also known as basalt glass; basalt obsidian; hyalobasalt; jaspoid; sordawalite; wichtisite. { 'tak·ə,līt }
- Taconian orogeny** [GEOL] A process of formation of mountains in the latter part of the Ordovician period, particularly in the northern Appalachians. Also known as Taconic orogeny. { tɑ'kō·nē·ən ɔ'räj·ə·nē }
- Taconic orogeny** *See* Taconian orogeny. { tɑ'kän·ik ɔ'räj·ə·nē }
- taconite** [GEOL] The siliceous iron formation from which high-grade iron ores of the Lake Superior district have been derived; consists chiefly of fine-grained silica mixed with magnetite and hematite. { 'tak·ə,nīt }
- tactite** [PETR] A rock with a complex mineralogical composition, formed by contact metamorphism and metasomatism of carbonate rocks. { 'tak,tīt }
- taele** *See* frozen ground. { 'tā·lə }
- Taeniodonta** [PALEON] An order of extinct quadrupedal land mammals, known from early Cenozoic deposits in North America. { ,tē·nē·ə'dänt·ə }
- Taeniolabidoidea** [PALEON] An advanced suborder of the extinct mammalian order Multituberculata having incisors that were self-sharpening in a limited way. { ,tē·nē·ə,lab·ə'dōid·ē·ə }
- taeniolite** [MINERAL] $\text{KLiMg}_2\text{Si}_4\text{O}_{10}\text{F}_2$ A white or colorless mica mineral. { 'tē·nē·ə,līt }
- taenite** [MINERAL] A meteoritic mineral consisting of a nickel-iron alloy, with a nickel content varying from about 27 to 65%. { 'tē,nīt }
- tagilite** *See* pseudomalachite. { 'tag·ə,līt }
- Tahuian** [GEOL] A local Eocene time subdivision in Australia whose identification is based on foraminiferans. { tɑ'wī·ən }
- talc** [MINERAL] $\text{Mg}_3\text{Si}_4\text{O}_{10}(\text{OH})_2$ A whitish, greenish, or grayish hydrated magnesium silicate mineral crystallizing in the monoclinic system; it is extremely soft (hardness is 1 on Mohs scale) and has a characteristic soapy or greasy feel. { talk }

talcoses rock

- talcoses rock** [PETR] A rock having a soft and soapy feel, that is, resembling talc. { 'tal,kōs ,rāk }
- talcs schist** [PETR] A schist in which talc is the dominant schistose material. { 'talk ,shist }
- talik** [GEOL] A Russian term applied to permanently unfrozen ground in regions of permafrost; usually applies to a layer which lies above the permafrost but below the active layer, that is, when the permafrost table is deeper than the depth reached by winter freezing from the surface. Also known as tabetisol. { 'tä·lik }
- talus** [GEOL] Also known as rubble; scree. **1.** Coarse and angular rock fragments derived from and accumulated at the base of a cliff or steep, rocky slope. **2.** The accumulated heap of such fragments. { 'tal·əs }
- talus creep** [GEOL] The slow, downslope movement of talus. { 'tal·əs ,krēp }
- talus glacier** See rock glacier. { 'tal·əs ,glā·shər }
- talus slope** [GEOL] A steep, concave slope consisting of an accumulation of talus. Also known as debris slope. { 'tal·əs ,slōp }
- tamarugite** [MINERAL] $\text{NaAl}(\text{SO}_4)_2 \cdot 6\text{H}_2\text{O}$ A colorless, monoclinic mineral consisting of a hydrated sulfate of sodium and aluminum; occurs as crystals and masses. { ,tam·ə'ru,gīt }
- tangeite** See calciovollborthite. { 'tan·jē,līt }
- tangential wave** See S wave. { 'tan'jen·chəl 'wāv }
- tantalite** [MINERAL] $(\text{Fe,Mn})\text{Ta}_2\text{O}_6$ An iron-black mineral that crystallizes in the orthorhombic system and commonly occurs in short prismatic crystals; luster is submetallic, hardness is 6 on Mohs scale, and specific gravity is 7.95; principal ore of tantalum. { 'tant·əl,līt }
- tanteuxenite** [MINERAL] $(\text{Y,Ce,Ca})(\text{Ta,Nb},\text{O})_2(\text{O},\text{OH})_6$ A brown or black variety of euxenite with tantalum substituting for niobium. Also known as delorenzite; eschweg-eite. { tan'tyūk·sə,nīt }
- taphocoenosis** See thanatocoenosis. { ,taf·ō·sē'nō·səs }
- taphonomy** [PALEON] The study of fossil preservation, including all events during the transition of organisms from the biosphere to the lithosphere. { tə'fän·ə·mē }
- taphrogenesis** See taphrogeny. { ,taf·rə'jen·ə·səs }
- taphrogeny** [GEOL] The formation of rift or trench phenomena, characterized by block faulting and associated subsidence. Also known as taphrogenesis. { tə'fräj·ə·nē }
- taphrogeosyncline** [GEOL] A geosyncline formed as a rift basin between faults. { ,taf·rō,jē·ō'sin,klīn }
- tapiolite** [MINERAL] $\text{Fe}(\text{Ta,Nb})_2\text{O}_6$ A mineral that is isomorphous with mossite; occurs in pegmatites or detrital deposits; an ore of tantalum. { 'tap·ē·əl,līt }
- taranakite** [MINERAL] $\text{KAl}_2(\text{PO}_4)_2(\text{OH}) \cdot 9\text{H}_2\text{O}$ A white, gray, or yellowish-white mineral consisting of a hydrated basic phosphate of potassium and aluminum. { ,tar·ə'nä,kīt }
- tarapacaite** [MINERAL] K_2CrO_4 A bright canary yellow, orthorhombic mineral consisting of potassium chromate; occurs in tabular form. { ,tar·ə·pə'kä,līt }
- tarbuttite** [MINERAL] $\text{Zn}_2(\text{PO}_4)(\text{OH})$ A triclinic mineral of varying color, consisting of basic zinc phosphate. { 'tär·bə,tīt }
- tarnish** [MINERAL] The altered color and luster of a mineral surface; characteristic of copper-bearing minerals. { 'tär·nish }
- tar sand** [GEOL] A type of oil sand; a sand whose interstices are filled with asphalt that remained after the escape of the lighter fractions of crude oil. { 'tär ,sand }
- tar seep** [GEOL] Natural tar that, because of its close proximity to the ground surface, seeps from cracks in the earth or from between rocks, often forming pits or pools. { 'tär ,sēp }
- tasmanite** [GEOL] An impure coal, transitional between cannel coal and oil shale. Also known as combustible shale; Mersey yellow coal; white coal; yellow coal. { 'taz·mə,nīt }
- tavistockite** [MINERAL] $\text{Ca}_3\text{Al}_2(\text{PO}_4)_2(\text{OH})_6$ A white, orthorhombic mineral consisting of a basic phosphate of calcium and aluminum. { 'tav·ə,stä,kīt }

- Taxocrinida** [PALEON] An order of flexible crinoids distributed from Ordovician to Mississippian. { 'tak·sə'krɪ·nəd·ə }
- taylorite** See bentonite. { 'tā·lə,rɪt }
- Tchernozem** See Chernozem. { 'chər·nə,zem }
- teallite** [MINERAL] PbSnS₂ A grayish-black, orthorhombic mineral consisting of lead tin sulfide. { 'tē,lɪt }
- tear fault** [GEOL] A very steep to vertical fault associated with and perpendicular to the strike of an overthrust fault. { 'tar ,fólt }
- tektite** See tektite. { 'tek,tɪt }
- tectofacies** [GEOL] A lithofacies that is interpreted tectonically. { 'tek·tə'fā·shēz }
- tectogene** [GEOL] A long, relatively narrow downward fold of sialic crust considered to be an early phase in mountain-building processes. Also known as geotectogene. { 'tek·tə,jēn }
- tectogenesis** See orogeny. { 'tek·tə'jen·ə·səs }
- tectonic analysis** See petrotectonics. { tek'tän·ik ə'nal·ə·səs }
- tectonic breccia** [PETR] A breccia developed from brittle rocks, formed as a result of crustal movements and produced by lateral or vertical pressure. Also known as dynamic breccia; pressure breccia. { tek'tän·ik 'brech·ə }
- tectonic conglomerate** See crush conglomerate. { tek'tän·ik kən'glām·ə·rət }
- tectonic cycle** [GEOL] The orogenic cycle which relates larger crustal features, such as mountain belts, to a series of stages of development. Also known as geosynclinal cycle. { tek'tän·ik 'sɪ·kəl }
- tectonic framework** [GEOL] The relationship in space and time of subsiding, stable, and rising tectonic elements in a sedimentary source area. { tek'tän·ik 'frām,wɜrk }
- tectonic land** [GEOL] Linear fold ridges and volcanic islands which existed for a short time in the interior sections of an orogenic belt during the geosynclinal phase. { tek'tän·ik 'land }
- tectonic lens** [GEOL] An elongate, sausage-shaped body of rock formed by distortion of a continuous incompetent layer enclosed between competent layers, similar to a boudin, but genetically distinct. { tek'tän·ik 'lenz }
- tectonic map** [GEOL] A map which shows the architecture of the upper portion of the earth's crust. { tek'tän·ik 'map }
- tectonic moraine** [GEOL] An aggregation of boulders incorporated in the base of an overthrust mass. { tek'tän·ik mə'rān }
- tectonic patterns** [GEOL] The arrangement of the large structural units of the earth's crust, such as mountain systems, shields or stable areas, basins, arches, and volcanic archipelagoes. { tek'tän·ik 'pəd·ərnz }
- tectonic plate** [GEOL] Any one of the internally rigid crustal blocks of the lithosphere which move horizontally across the earth's surface relative to one another. Also known as crustal plate. { tek'tän·ik 'plāt }
- tectonic rotation** [GEOL] Internal rotation of a tectonite in the direction of transport. { tek'tän·ik rō'tā·shən }
- tectonics** [GEOL] A branch of geology that deals with regional structural and deformational features of the earth's crust, including the mutual relations, origin, and historical evolution of the features. Also known as geotectonics. { tek'tän·iks }
- tectonite** [PETR] A rock in which the history of its deformation is reflected in its fabric. { 'tek·tə,nɪt }
- tectonomagnetism** [GEOPHYS] Study of magnetic anomalies due to tectonic stress. { 'tek·tə·nō'mag·nə,tiz·əm }
- tectonophysicist** [GEOPHYS] One who studies elastic deformation of flow and rupture of constituent materials of the earth's crust and makes deductions concerning the forces that cause these deformations. { 'tek·tə·nō'fiz·ə,sɪst }
- tectonophysics** [GEOPHYS] A branch of geophysics dealing with the physical processes involved in forming geological structures. { 'tek·tə·nō'fiz·iks }
- tectosilicate** [MINERAL] A structural type of silicate in which all four oxygen atoms of the silicate tetrahedra are shared with neighboring tetrahedra; tectosilicates include

tectosome

- quartz, the feldspars, the feldspathoids, and zeolites. Also known as framework silicate. { 'tek·tō'sil·ə,kāt }
- tectosome** [GEOL] A body of strata representing a tectotope. { 'tek·tə,sōm }
- tectosphere** [GEOL] The region of the earth's crust occupied by the tectonic plates. { 'tek·tə,sfir }
- teepelite** [MINERAL] $\text{Na}_2\text{BO}_2\text{Cl}\cdot 2\text{H}_2\text{O}$ A mineral composed of hydrous chloride and borate of sodium. { 'te·pə,līt }
- teineite** [MINERAL] $\text{CuTeO}_3\cdot 2\text{H}_2\text{O}$ A greenish to yellowish, probably triclinic mineral consisting of a hydrated sulfate-tellurate of copper; occurs as crystals. { 'tä,nīt }
- tektite** [GEOL] A collective term applied to certain objects of natural glass of debatable origin that are widely strewn over the land and in sediments under the oceans; composition and size vary, and overall shapes resemble splash forms; most tektites are believed to be of extraterrestrial origin. Also known as obsidianite; tectite. { 'tek,tīt }
- telain** *See* provitrain. { 'te,lān }
- telemagmatic** [GEOL] Pertaining to a hydrothermal mineral deposit that is distant from its magmatic source. { 'tel·ə·mag'mad·ik }
- Telosauridae** [PALEON] A family of Jurassic reptiles in the order Crocodylia characterized by a long snout and heavy armor. { 'tel·ə·sōr·ə,dē }
- telescope structure** [GEOL] An alluvial fan structure characterized by younger fans with flatter gradients spreading out between older fans with steeper gradients. { 'tel·ə,skōp ,strək·chər }
- teleseism** [GEOPHYS] An earthquake that is far from the recording station. { 'tel·ə,sīz·əm }
- teleseismology** [GEOPHYS] The aspect of seismology dealing with records made at a distance from the source of the impulse. { ,tel·ə·sīz'mäl·ə·jē }
- telothermal** [GEOL] Pertaining to a hydrothermal mineral deposit precipitated at a shallow depth and at a mild temperature. { 'tel·ə'thər·məl }
- telinite** [GEOL] A variety of provitrainite composed of plant cell-wall material. { 'tē·lə,nīt }
- telluric current** *See* earth current. { tə'lūr·ik ,kə·rənt }
- tellurics** [GEOPHYS] A geophysical exploration technique that measures variations in the conductivity (or resistivity) of rocks; often used for metallic mineral prospecting. { tə'lūr·iks }
- tellurite** [MINERAL] TeO_2 A white or yellowish orthorhombic mineral consisting of tellurium dioxide, and occurring in crystals; it is dimorphous with paratellurite. { 'tel·yə,rīt }
- tellurium glance** *See* nagyagite. { tə'lūr·ē·əm 'glans }
- tellurobismuthite** [MINERAL] Bi_2Te_3 A pale lead gray, hexagonal mineral consisting of a bismuth and tellurium compound; occurs as irregular plates or foliated masses. { 'tel·yə·rō'biz·mə,thīt }
- Temnospondyli** [PALEON] An order of extinct amphibians in the subclass Labyrinthodontia having vertebrae with reduced pleurocentra and large intercentra. { ,tem·nō'spän·də,lī }
- temporal unit** [GEOL] A stratigraphic unit defined in terms of time-related characteristics. { 'tem·prəl ,yü·nət }
- temporary base level** [GEOL] Any base level, other than sea level, below which a land area temporarily cannot be reduced by erosion. Also known as local base level. { 'tem·pə,rer·ē 'bās ,lev·əl }
- tennantite** [MINERAL] $(\text{Cu},\text{Fe})_{12}\text{As}_4\text{S}_{13}$ A lead-gray mineral crystallizing in the isometric system; it is isomorphous with tetrahedrite; an important ore of copper. { 'ten·ən,tīt }
- tenorite** [MINERAL] CuO A triclinic mineral that occurs in small, shining, steel-gray scales, in black powder, or in black earthy masses; an ore of copper. { 'ten·ə,rīt }
- tension crack** [GEOL] An extension fracture caused by tensile stress. { 'ten·chən ,krak }

terrestrial sediment

- tension fault** [GEOL] A fault in which crustal tension is a factor, such as a normal fault. Also known as extensional fault. { 'ten·chən ,fólt }
- tension fracture** [GEOL] A minor rock fracture developed at right angles to the direction of maximum tension. Also known as subsidiary fracture. { 'ten·chən ,frak·chər }
- tension joint** [GEOL] A joint that is a tension fracture. { 'ten·chən ,jóint }
- tepee structure** [GEOL] A disharmonic sedimentary structure consisting of a fold that resembles an inverted depressed V in cross section. { 'tē·pē ,strək·chər }
- tepetate** See caliche. { ,tēp·ə'tād·ē }
- tephra** [GEOL] All pyroclastics of a volcano. { 'tēf·rə }
- tephrite** [PETR] A group of basaltic extrusive rocks composed chiefly of calcic plagioclase, augite, and nepheline or leucite, with some sodic sanidine. { 'tē,frīt }
- tephrochronology** [GEOL] The dating of different layers of volcanic ash for the establishment of a sequence of geologic and archeologic occurrences. { 'tēf·rō·krə'näl·ə·jē }
- tephroite** [MINERAL] Mn_2SiO_4 An olivine mineral that occurs with zinc and manganese minerals. { 'tēf·rō,īt }
- tephrostratigraphy** [GEOL] The use of pyroclastic layers, in particular volcanic ash, as a correlational tool in the study of stratigraphic sequences. { ,tēf·rō·strə'tig·rə·fē }
- Teratornithidae** [PALEON] An extinct family of vulturelike birds of the Pleistocene of western North America included in the order Falconiformes. { ,ter·ə·tōr'nith·ə·de }
- Terebratellidina** [PALEON] An extinct suborder of articulate brachiopods in the order Terebratulida in which the loop is long and offers substantial support to the side arms of the lophophore. { ,ter·ə·brə,tel·ə'dm·ə }
- terlinguaite** [MINERAL] Hg_2OCl A sulfur yellow to greenish-yellow, monoclinic mineral consisting of an oxychloride of mercury. { tər'liŋ·gwə,īt }
- terminal moraine** [GEOL] An end moraine that extends as an arcuate or crescentic ridge across a glacial valley; marks the farthest advance of a glacier. Also known as marginal moraine. { 'tər·mən·əl mə'rān }
- ternary diagram** [PETR] A triangular diagram that graphically depicts the composition of a three-component mixture or ternary system. { 'tər·nə·rē 'dī·ə,gram }
- Ternifine man** [PALEON] The name for a fossil human type, represented by three lower jaws and a parietal bone discovered in France and thought to be from the upper part of the middle Pleistocene. { 'tər·nə,fen 'man }
- terrace** [GEOL] **1.** A horizontal or gently sloping embankment of earth along the contours of a slope to reduce erosion, control runoff, or conserve moisture. **2.** A narrow coastal strip sloping gently toward the water. **3.** A long, narrow, nearly level surface bounded by a steeper descending slope on one side and by a steeper ascending slope on the other side. **4.** A benchlike structure bordering an undersea feature. { 'ter·əs }
- terracette** [GEOL] A small steplike form developed on the surface of a slumped soil mass along a steep grassy incline. { ,tē·ə'set }
- terra miraculosa** See bole. { 'ter·ə mi,rak·yə'lō·sə }
- terrane** [GEOL] A rock formation, a cluster of rock formations, or the general area of outcrops. { tər'rān }
- terra rossa** [GEOL] A reddish-brown soil overlying limestone bedrock. { 'ter·ə 'rōs·ə }
- terrestrial electricity** [GEOPHYS] Electric phenomena and properties of the earth; used in a broad sense to include atmospheric electricity. Also known as geoelectricity. { tər'res·trē·əl ,i,lek'tris·əd·ē }
- terrestrial gravitation** [GEOPHYS] The effect of gravitational attraction of the earth. { tər'res·trē·əl ,grav·ə'tā·shən }
- terrestrial magnetism** See geomagnetism. { tər'res·trē·əl 'mag·nə,tiz·əm }
- terrestrial radiation** [GEOPHYS] Electromagnetic radiation originating from the earth and its atmosphere at wavelengths determined by their temperature. Also known as earth radiation; irradiation. { tər'res·trē·əl ,rād·ē'ā·shən }
- terrestrial sediment** [GEOL] A sedimentary deposit on land above tidal reach. { tər'res·trē·əl 'sed·ə·mənt }

terrigenous sediment

terrigenous sediment [GEOL] Shallow marine sedimentary deposits composed of eroded terrestrial material. { tə'rij-ə-nəs 'sed-ə-mənt }

Tertiary [GEOL] The older major subdivision (period) of the Cenozoic era, extending from the end of the Cretaceous to the beginning of the Quaternary, from 70,000,000 to 2,000,000 years ago. { 'tər-shē,er-ē }

teschemacherite [MINERAL] $(\text{NH}_4)\text{HCO}_3$ A colorless to white or yellowish, orthorhombic mineral consisting of ammonium bicarbonate; occurs as compact, crystalline masses. { 'tेश-ə,māk-ə,rīt }

teschenite [PETR] A granular hypabyssal rock composed principally of calcic plagioclase, augite, and sometimes hornblende, with some brotite and analcime. { 'tेश-ə,nīt }

Tethys [GEOL] **1.** A sea which existed for extensive periods of geologic time between the northern and southern continents of the Eastern Hemisphere. **2.** A composite geosyncline from which many structures of the present Alpine-Himalayan orogenic belt were formed. { 'tē-thəs }

Tetracorallia [PALEON] The equivalent name for Rugosa. { ,te-trə-kə'ral-yə }

tetradymite [MINERAL] $\text{Bi}_2\text{Te}_2\text{S}$ A pale steel-gray mineral that usually occurs in foliated masses in auriferous veins; has metallic luster, hardness of 1.5–2 on Mohs scale, and specific gravity of 7.2–7.6. { tə'trad-ə,mīt }

tetrahedrite [MINERAL] $(\text{Cu,Fe,Zn,Ag})_{12}\text{Sb}_4\text{S}_{13}$ A grayish-black mineral crystallizing in the isometric system as tetrahedrons and occurring in massive or granular form; luster is metallic, hardness is 3.5–4 on Mohs scale, and specific gravity is 4.6–5.1; an important ore of copper. Also known as fahlore; gray copper ore; panabase; stylvotypite. { ,te-trə'hē,drīt }

Tetralophodontinae [PALEON] An extinct subfamily of proboscidean mammals in the family Gomphotheridae. { 'te-trə,läf-ə'dänt-ə,dē }

texture [GEOL] The physical nature of the soil according to composition and particle size. [PETR] The physical appearance or character of a rock; applied to the megascopic or microscopic surface features of a homogeneous rock or mineral aggregate, such as grain size, shape, and arrangement. { 'teks-chər }

thalassocratic [GEOL] **1.** Pertaining to a thalassocraton. **2.** Referring to a period of high sea level in the geologic past. { thə'lās-ə'krad-ik }

thalassocraton [GEOL] A craton that is part of the oceanic crust. { ,thal-ə'säk-rə,tān }

thalassophile element [GEOCHEM] An element that is relatively more abundant in sea water than in normal continental waters, such as sodium and chlorine. { thə'lās-ə,fīl ,el-ə-mənt }

Thalattosauria [PALEON] A suborder of extinct reptiles in the order Eosuchia from the Middle Triassic. { thə,lād-ə'sör-ē-ə }

thalweg [GEOL] **1.** A line connecting the lowest points along a stream bed or a valley. Also known as valley line. **2.** A line crossing all contour lines on a land surface perpendicularly. { 'täl,veg }

thanatocoenosis [PALEON] The assemblage of dead organisms or fossils that occurred together in a given area at a given moment of geologic time. Also known as death assemblage; taphocoenosis. { ,than-ə-tō-sə'nō-səs }

Thanetian [GEOL] A European stage of geologic time; uppermost Paleocene, above Montian, below Ypresian of Eocene. { thə'nē-shən }

Thecideidina [PALEON] An extinct suborder of articulate brachiopods doubtfully included in the order Terebratulida. { thə,sid-ē-ə'dīn-ə }

Thecodontia [PALEON] An order of archosaurian reptiles, confined to the Triassic and distinguished by the absence of a supratemporal bone, parietal foramen, and palatal teeth, and by the presence of an antorbital fenestra. { ,thek-ə'dän-chə }

thenardite [MINERAL] Na_2SO_4 A colorless, grayish-white, yellowish, yellow-brown, or reddish, orthorhombic mineral consisting of sodium sulfate. { thə'när,dīt }

theralite [PETR] A dark-colored, visibly crystalline rock composed chiefly of pyroxene with smaller amounts of calcic plagioclase and nepheline. { 'ther-ə,līt }

Therapsida [PALEON] An order of mammal-like reptiles of the subclass Synapsida which

tholeiite

- first appeared in mid-Permian times and persisted until the end of the Triassic. { 'thə'rap-səd-ə }
- thermal aureole** See aureole. { 'thər-məl 'ör-ē,ōl }
- thermal gradient** [GEOPHYS] The rate of temperature change with distance; for example, its increase with depth below the surface of the earth. { 'thər-məl 'grād-ē-ənt }
- thermal metamorphism** [PETR] Metamorphism that results from temperature-controlled and induced chemical reconstitution of preexisting rocks, with little influence of pressure. Also known as thermometamorphism. { 'thər-məl 'med-ə'mör,fiz-əm }
- thermal structure** [PETR] A distinct structural pattern, such as a dome or anticline, defined by the arrangement of metamorphic zones of increasing grade. { 'thər-məl 'strək-chər }
- thermocline** [GEOPHYS] **1.** A temperature gradient as in a layer of sea water, in which the temperature decrease with depth is greater than that of the overlying and underlying water. Also known as metalimnion. **2.** A layer in a thermally stratified body of water in which such a gradient occurs. { 'thər-mə,klin }
- thermokarst topography** [GEOL] An irregular land surface formed in a permafrost region by melting ground ice. { 'thər-mə,kärs't tə'päg-rə-fē }
- thermometamorphism** See thermal metamorphism. { 'thər-mō'med-ə'mör,fiz-əm }
- thermonatrite** [MINERAL] $\text{Na}_2\text{CO}_3 \cdot \text{H}_2\text{O}$ A colorless to white, grayish, or yellowish, orthorhombic mineral consisting of sodium carbonate monohydrate; occurs as a crust or efflorescence. { , 'thər-mə'nä, trīt }
- thermoremanent magnetization** [GEOPHYS] The permanent magnetization of igneous rocks, acquired at the time of cooling from the molten state. { 'thər-mō'rem-ə-nənt ,mäg-nəd-ə'zä-shən }
- Theropoda** [PALEON] A suborder of carnivorous bipedal saurischian reptiles which first appeared in the Upper Triassic and culminated in the uppermost Cretaceous. { thi'räp-əd-ə }
- Theropsidea** [PALEON] An order of extinct mammal-like reptiles in the subclass Synapsida. { thi'räp-səd-ə }
- thick-bedded** [GEOL] Pertaining to a sedimentary bed that ranges in thickness from 60 to 120 centimeters (2–4 feet). { 'thik ,bed-əd }
- thick-skinned structure** [GEOL] Any large-scale structure, such as a fold or fault, believed to have originated as a result of basement movement beneath overlying rocks. { 'thik 'skind 'strək-chər }
- thill** See underclay. { thil }
- thin-bedded** [GEOL] Pertaining to a sedimentary bed that ranges in thickness from 2 inches to 2 feet (5 to 60 centimeters). { 'thin ,bed-əd }
- thin-out** [GEOL] Gradual thinning of a stratum, vein, or other body of rock until the upper and lower surfaces meet and the rock disappears. { 'thin'äüt }
- thin section** [GEOL] A piece of rock or mineral specifically prepared to study its optical properties; the sample is ground to 0.03-millimeter thickness, then polished and placed between two microscope slides. Also known as section. { 'thin 'sek-shən }
- thin-skinned structure** [GEOL] Any large-scale structure, such as a fold or fault, confined to and originating within a thin layer of rocks above a surface of décollement. { 'thin 'skind 'strək-chər }
- thiophile element** See sulfophile element. { 'thī-ə,fil ,el-ə-mənt }
- thiospinel** [MINERAL] Any mineral with the spinel structure having the general formula AR_2S_4 . { 'thī-ō-spə'nel }
- thixotropic clay** [GEOL] A clay that weakens when disturbed and increases in strength upon standing. { 'thik-sə'trəp-ik 'klā }
- Thlipsuridae** [PALEON] A Paleozoic family of ostracod crustaceans in the suborder Platycopta. { thlip'sūr-ə,dē }
- tholeiite** [PETR] **1.** A group of basalts composed principally of plagioclase, pyroxene, and iron oxide minerals as phenocrysts in a glassy groundmass. **2.** Any rock in the group. { thō'lē-ə,īt }

thomsenolite

- thomsenolite** [MINERAL] $\text{NaCaAlF}_6 \cdot \text{H}_2\text{O}$ A colorless to white, monoclinic mineral consisting of a hydrated aluminofluoride of sodium and calcium; it is dimorphous with pachnolite. { 'täm·sə·nə,līt }
- thomsonite** [MINERAL] $\text{NaCa}_2\text{Al}_5\text{Si}_5\text{O}_{20} \cdot 6\text{H}_2\text{O}$ Snow-white zeolite mineral forming orthorhombic crystals and occurring in masses of radiating crystals; hardness is 5–5.5 on Mohs scale. { 'täm·sə,nīt }
- thoreaulite** [MINERAL] SnTa_2O_7 A brown, monoclinic mineral consisting of an oxide of tin and tantalum; occurs as rough, prismatic crystals. { 'thō·rə,līt }
- thorianite** [MINERAL] ThO_2 A radioactive mineral that crystallizes in the isometric system, occurs in worn cubic crystals, is brownish black to reddish brown in color, and has resinous luster; hardness is 7 on the Mohs scale, and specific gravity is 9.7–9.8. { 'thór·ē·ə,nīt }
- thorite** [MINERAL] ThSiO_4 A brownish-yellow to brownish-black and black radioactive mineral that is tetragonal in crystallization; hardness is about 4.5 on Mohs scale, and specific gravity is 4.3–5.4. { 'thór,īt }
- thorogummite** [MINERAL] A silicate mineral and chemical variant of thorium silicate, with similar properties; isostructural with thorite and zircon; it is deficient in silica and contains small amounts of OH in substitution for oxygen. { ,thór·ə'gə,mīt }
- thortveitite** [MINERAL] $(\text{Sc,Y})_2\text{Si}_2\text{O}_7$ A grayish-green mineral occurring in orthorhombic crystals; a source of scandium. { tórt'vī,tīt }
- thread** [GEOLOGY] An extremely small vein, even thinner than a stringer. { thred }
- thread-lace scoria** [GEOLOGY] Scoria whose vesicle walls have collapsed and are represented only by a network of threads. { 'thred,lās 'skór·ē·ə }
- three-point method** [GEOLOGY] A method used to determine the dip and strike of a structural surface from three points of varying elevation along the surface. { 'thrē,'póint 'meth·əd }
- threshold** [GEOLOGY] See riegel. { 'thresh,höld }
- threshold velocity** [GEOPHYSICS] The minimum velocity at which wind or water begins to move particles of soil, sand, or other material at a given place under specified conditions. { 'thresh,höld və,lās·əd·ē }
- through valley** [GEOLOGY] **1.** A depression eroded across a divide by glacier ice or meltwater streams. **2.** A valley excavated by a through glacier. { 'thrū,'val·ē }
- throw** [GEOLOGY] The vertical component of dip separation on a fault, or generally the amount of vertical displacement on any fault. { thrō }
- thrust** [GEOLOGY] Overriding movement of one crystal unit over another. Also known as mountain thrust. { thrəst }
- thrust block** See thrust nappe. { 'thrəst,'blāk }
- thrust fault** [GEOLOGY] A low-angle (less than a 45° dip) fault along which the hanging wall has moved up relative to the footwall. Also known as reverse fault; reverse slip fault; thrust slip fault. { 'thrəst,'fólt }
- thrust moraine** See push moraine. { 'thrəst mə·rān }
- thrust nappe** [GEOLOGY] The body of rock that makes up the hanging wall of a thrust fault. Also known as thrust block; thrust plate; thrust sheet; thrust slice. { 'thrəst,'nap }
- thrust plate** See thrust nappe. { 'thrəst,'plāt }
- thrust sheet** See thrust nappe. { 'thrəst,'shēt }
- thrust slice** See thrust nappe. { 'thrəst,'slīs }
- thrust slip fault** See thrust fault. { 'thrəst,'slip,'fólt }
- thucolite** [GEOLOGY] Concentrations of carbonaceous matter in ancient sedimentary rocks. { 'thü·kə,līt }
- thulite** [MINERAL] A pink, rose-red, or purplish-red variety of epidote that contains manganese; used as an ornamental stone. { 'thü,līt }
- Thuringian** [GEOLOGY] A European stage of Upper Permian geologic time, above the Saxonian and below the Triassic. { thə'rin·jē·ən }
- Thylacoleonidae** [PALEONTOLOGY] An extinct family of carnivorous marsupials in the superfamily Phalangerioidea. { ,thī·lə,kō·lē'än·ə,dē }
- tidal delta** [GEOLOGY] A sand bar or shoal formed in the entrance of an inlet by the action of reversing tidal currents. { 'tīd·əl 'del·tə }

tin pyrites

- tidal flat** [GEOL] A marshy, sandy, or muddy nearly horizontal coastal flatland which is alternately covered and exposed as the tide rises and falls. { 'tīd·əl 'flat }
- tidal inlet** [GEOL] A natural inlet maintained by tidal currents. { 'tīd·əl 'in·lət }
- tidalite** [GEOL] Any sediment transported and deposited by tidal currents. { 'tīd·əl,īt }
- tidal scour** [GEOL] Sea-floor erosion caused by strong tidal currents, resulting in removal of inshore sediments and formation of deep holes and channels. Also known as scour. { 'tīd·əl 'skaür }
- tie bar** [GEOL] *See* tombolo. { 'tī ,bär }
- tiemannite** [MINERAL] HgSe A steel gray to blackish-lead gray mineral consisting of mercuric selenide; commonly occurs in massive form. { 'tē·mə,nīt }
- tiger's-eye** [MINERAL] A yellowish-brown crystalline variety of quartz; a translucent, fibrous, broadly chatoyant gemstone that may be dyed other colors. { 'tī·gəz ,ī }
- tight fold** *See* closed fold. { 'tīt 'föld }
- tight sand** [GEOL] A sand whose interstices are filled with finer grains of the matrix material, thus effectively destroying porosity and permeability. Also known as close sand. { 'tīt 'sand }
- tillasite** [MINERAL] CaMg(AsO₄)F A gray, gray-violet, olive green, or apple green, monoclinic mineral consisting of a fluorarsenate of calcium and magnesium. { 'tīl·ə,sīt }
- till** [GEOL] Unsorted and unstratified drift consisting of a heterogeneous mixture of clay, sand, gravel, and boulders which is deposited by and underneath a glacier. Also known as boulder clay; glacial till; ice-laid drift. { til }
- till billow** [GEOL] An undulating mass of glacial drift that is disposed in an irregular pattern with regard to the direction of movement of the ice. { 'tīl ,bil·ō }
- tilleyite** [MINERAL] Ca₅(Si₂O₇)(CO₃)₂ A white mineral consisting of a carbonate and silicate of calcium. { 'tīl·ē,īt }
- tillite** [PETR] A sedimentary rock formed by lithification of till, especially pre-Pleistocene till. { 'tī,līt }
- Tillodontia** [PALEON] An order of extinct quadrupedal land mammals known from early Cenozoic deposits in the Northern Hemisphere and distinguished by large, rodentlike incisors, blunt-cuspid cheek teeth, and five clawed toes. { ,tīl·ə'dän·chə }
- tilloid** [GEOL] A nonglacial till-like deposit. [PETR] A rock of uncertain origin which resembles tillite. { 'tī,lóid }
- till plain** [GEOL] An extensive, relatively flat area overlying a till. { 'tīl ,plān }
- till sheet** [GEOL] A sheet, layer, or bed of till. { 'tīl ,shēt }
- tilt block** [GEOL] A tilted fault block. { 'tīlt ,bläk }
- tilted interface** [GEOL] Oil-water interface in which water moves in a generally linear direction under an oil accumulation which is, for instance, in an anticline. { 'tīl·təd 'in·tər,fās }
- tilth** [GEOL] The physical condition of a soil as expressed in terms of fitness for growth of specified plants or crops. { tilth }
- time correlation** [GEOL] A correlation of age or mutual time relations between stratigraphic units in separated areas. { 'tīm ,kär·ə'lā·shən }
- time line** [GEOL] 1. A line that indicates equal geologic age in a correlation diagram. 2. A rock unit represented by a time line. { 'tīm ,līn }
- time-rock unit** *See* time-stratigraphic unit. { 'tīm 'rāk ,yü·nət }
- time-stratigraphic facies** [GEOL] A stratigraphic facies based on the amount of geologic time during which deposition and nondeposition of sediment occurred. { 'tīm 'strad·ə'graf·ik ,fā·shēz }
- time-stratigraphic unit** [GEOL] A stratigraphic unit based on geologic age or time of origin. Also known as chronolith; chronolithologic unit; chronostratic unit; chronostratigraphic unit; time-rock unit. { 'tīm 'strad·ə'graf·ik ,yü·nət }
- time-transgressive** *See* diachronous. { 'tīm tranz,gres·iv }
- tincal** *See* borax. { 'tīn,kal }
- tincalconite** [MINERAL] Na₂B₄O₇·5H₂O A colorless to dull-white mineral, crystallizing in the rhombohedral system; one of the principal ores of borax and boron compounds. Also known as mohavite; octahedral borax. { 'tīn'kal·kə,nīt }
- tin pyrites** *See* stannite. { 'tīn 'pī,rīts }

tin stone

tin stone *See* cassiterite. { 'tin ,stɒn }

tinticite [MINERAL] $\text{Fe}_3(\text{PO}_4)_2(\text{OH})_3 \cdot 3\frac{1}{2}\text{H}_2\text{O}$ A creamy white mineral with a yellowish-green tint, consisting of a hydrated basic iron phosphate. { 'tin-ti,kɪt }

titanaugite [MINERAL] $\text{Ca}(\text{Mg},\text{Fe},\text{Ti})(\text{Si},\text{Al})_2\text{O}_6$ A variety of augite rich in titanium and occurring in basaltic rocks. { 'tɪt·ən'ɔ,gɪt }

titanic iron ore *See* ilmenite. { tɪ'tan-ɪk 'ɪ·ərən ,ɔr }

titanite *See* sphene. { 'tɪt·ən,ɪt }

Titanoideidae [PALEON] A family of extinct land mammals in the order Pantodonta. { ,tɪt·ən·ɔi'dē·ə,dē }

titanothera [PALEON] Any member of the family Brontotheriidae. { tɪ'tan·ə,θɪr }

Thithonian [GEOL] Southern European equivalent of the Portlandian stage (uppermost Jurassic) of geologic time. { tɪ'thɔ·nē·ən }

tjale *See* frozen ground. { 'chā-lē }

Toarcian [GEOL] A European stage of geologic time; Lower Jurassic (above Pliensbachian, below Bajocian). { tɔ'är·shən }

tobacco jack *See* wolframite. { tə'bak·ɔ ,jak }

todorokite [GEOL] A hydrated manganese oxide mineral containing calcium, barium, potassium, sodium, and sometimes magnesium; a major constituent of manganese nodules, which occur in large quantities ($>10^{12}$ tons) on the ocean floors. { tɔ'dɔr·ə,kɪt }

toe [GEOL] The leading edge of a thrust nappe. { tɔ }

tombolo [GEOL] A sand or gravel bar or spit that connects an island with another island or an island with the mainland. Also known as connecting bar; tie bar; tying bar. { 'täm·bə,lɔ }

tombolo cluster *See* complex tombolo. { 'täm·bə,lɔ ,kläs·tər }

tombolo series *See* complex tombolo. { 'täm·bə,lɔ ,sir·ēz }

tonalite *See* quartz diorite. { 'tɒn·əl,ɪt }

Tongrian [GEOL] A European stage of geologic time; lower Oligocene (above Ludian of Eocene, below Rupelian). Also known as Lattorfian. { 'täŋ·grē·ən }

tongue [GEOL] **1.** A minor rock-stratigraphic unit of limited geographic extent; it disappears laterally in one direction. **2.** A lava flow branching from a larger flow. { tɒŋ }

tonstein [GEOL] Kaolinitic bands in certain coalfields which have characteristic fossil fauna from short-lived but widespread marine invasions. { 'tän,shtɪn }

tool mark [GEOL] Any of the wide variety of current marks, such as groove marks, prod marks, and skip marks, produced by the continuous contact or intermittent impact of solid, current-borne objects against a muddy bottom. { 'tül ,märk }

top *See* overburden. { täp }

topaz [MINERAL] $\text{Al}_2\text{SiO}_4(\text{F},\text{OH})$ A red, yellow, green, blue, or brown neosilicate mineral that crystallizes in the orthorhombic system and commonly occurs in prismatic crystals with pyramidal terminations; hardness is 8 on Mohs scale, and specific gravity is 3.4–3.6; used as a gemstone. { 'tɔ,paz }

topaz quartz *See* citrine. { 'tɔ,paz 'kwɔrtz }

topographic infancy *See* infancy. { 'täp·ə'graf-ɪk 'ɪn·fən·sē }

topographic maturity *See* maturity. { 'täp·ə'graf-ɪk mə'chür·əd·ē }

topographic old age *See* old age. { 'täp·ə'graf-ɪk 'ɔld 'āj }

topographic profile *See* profile. { 'täp·ə'graf-ɪk 'prɔ,fil }

topographic youth *See* youth. { 'täp·ə'graf-ɪk 'yüth }

topset bed [GEOL] One of the nearly horizontal sedimentary layers deposited on the top surface of an advancing delta. { 'täp,set 'bed }

topsoil [GEOL] **1.** Soil presumed to be fertile and used to cover areas of special planting. **2.** Surface soil, usually corresponding with the A horizon, as distinguished from subsoil. { 'täp,sɔil }

torbanite [GEOL] A variety of coal that resembles a carbonaceous shale in outward appearance; it is fine-grained, black to brown, and tough. Also known as bitumenite; kerosine shale. { 'tɔr·bə,nɪt }

torbernite [MINERAL] $\text{Cu}(\text{UO}_2)_2(\text{PO}_4)_2 \cdot 8\text{H}_2\text{O}$ A green radioactive mineral crystallizing

transcurrent fault

- in the tetragonal system and occurring in tabular crystals or in foliated form. Also known as chalcolite; copper uranite; cuprouranite; uran-mica. { 'tór·bær,nít }
- torose load cast** [GEOL] One of a group of elongate load casts with alternate contractions and swellings, which may terminate down current in bulbous, teardrop, or spiral forms. { 'tò,ròs 'lòd ,kast }
- Torrert** [GEOL] A suborder of the soil order Vertisol; it is the driest soil of the order and forms cracks that tend to remain open; occurs in arid regions. { 'tór·ært }
- torreyite** [MINERAL] (Mg,Mn,Zn)₇(SO₄)(OH)₁₂·4H₂O A bluish-white mineral consisting of a hydrated basic sulfate of magnesium, manganese, and zinc; occurs in massive form. { 'tór·ē,ít }
- Torrox** [GEOL] A suborder of the soil order Oxisol that is low in organic matter, well drained, and dry most of the year; believed to have been formed under rainier climates of past eras. { 'tór,äks }
- torsion fault** See wrench fault. { 'tór·shən ,fòlt }
- torso mountain** See monadnock. { 'tór·sò ,maünt·ən }
- Tortonian** [GEOL] A European stage of geologic time: Miocene (above Helvetian, below Sarmatian). { tór'tò·nē·ən }
- total displacement** See slip. { 'tòd·əl di'spläs·mənt }
- total porosity** [GEOL] The ratio of total void space in porous oil-reservoir rock to the bulk volume of the rock itself. { 'tòd·əl pə'räs·əd·ē }
- total slip** See net slip. { 'tòd·əl 'slip }
- tourmaline** [MINERAL] (Na,Ca)(Al,Fe,Li,Mg)₃Al₆(BO₃)₂Si₆O₁₈(OH)₄ Any of a group of cyclosilicate minerals with a complex chemical composition, vitreous to resinous luster, and variable color; crystallizes in the ditrigonal-pyramidal class of the hexagonal system, has piezoelectric properties, and is used as a gemstone. { 'túr·mə,lēn }
- Tournaisian** [GEOL] European stage of lowermost Carboniferous time. { tūr'nā·zhən }
- Toxasteridae** [PALEON] A family of Cretaceous echinoderms in the order Spatangoida which lacked fascioles and petals. { ,tāk·sə'ster·əd·ē }
- Toxodontia** [PALEON] An extinct suborder of mammals representing a central stock of the order Notoungulata. { ,tāk·sə'dän·chə }
- trace** [GEOL] The intersection of two geological surfaces. { trās }
- trace element** [GEOCHEM] An element found in small quantities (usually less than 1.0%) in a mineral. Also known as accessory element; guest element. { 'trās ,el·ə·mənt }
- trace fossil** [GEOL] A trail, track, or burrow made by an animal and found in ancient sediments such as sandstone, shale, or limestone. Also known as ichnofossil. { 'trās ,fäs·əl }
- trace slip** [GEOL] That component of the net slip in a fault which is parallel to the trace of an index plane on a fault plane. { 'trās ,slip }
- trace-slip fault** [GEOL] A fault whose net slip is trace slip. { 'trās ,slip ,fòlt }
- trachybasalt** [PETR] An extrusive rock characterized by calcic plagioclase and sanidine, with augite, olivine, and possibly minor analcime or leucite. { 'tra·kē·bəs'òlt }
- trachyte** [PETR] The light-colored, aphanitic rock (the volcanic equivalent of syenite), composed largely of alkali feldspar with minor amounts of mafic minerals. { 'tra,kít }
- trachytoid texture** [GEOL] The texture of a phaneritic extrusive igneous rock in which the microlites of a mineral, not necessarily feldspar, in the groundmass have a subparallel or randomly divergent alignment. { 'trak·ə,tòid ,teks·chər }
- traction** [GEOL] Transport of sedimentary particles along and parallel to a bottom surface of a stream channel by rolling, sliding, dragging, pushing, or saltation. { 'trak·shən }
- trail** [GEOL] A line of rock fragments that were picked up by glacial ice at a localized outcropping and left scattered along a fairly well-defined tract during the movement of a glacier. { trāl }
- trajectory** [GEOPHYS] The path followed by a seismic wave. { trə'jek·trē }
- transcurrent fault** [GEOL] A strike-slip fault characterized by a steeply inclined surface. Also known as transverse thrust. { 'tranz'kə·rənt 'fòlt }

transform fault

transform fault [GEOL] A strike-slip fault with offset ridges characteristic of a midoceanic ridge. { 'tranz,fɔrm ,fɔlt }

transgression [GEOL] Geologic evidence of landward extension of the sea. Also known as invasion; marine transgression. { tranz'grɛʃ·ən }

transgressive deposit [GEOL] Sediment deposited during transgression of the sea or during subsidence of the land. { tranz'grɛs·iv di'pɛz·ət }

transgressive overlap *See* onlap.

transition zone [GEOL] **1.** A region within the upper mantle bordering the lower mantle, at a depth of 246–600 miles (410–1000 kilometers), characterized by a rapid increase in density of about 20% and an increase in seismic wave velocities. **2.** A region within the outer core, transitional to the inner core. { tran'zish·ən ,zɔn }

translational fault [GEOL] A fault in which there has been uniform movement in one direction and no rotational component of movement. Also known as translatory fault. { tran'slā·shən·əl 'fɔlt }

translational movement [GEOL] Movement, as of fault blocks, that is uniform, without rotation, so that parallel features maintain their orientation. { tran'slā·shən·əl 'müv·mənt }

translatory fault *See* translational fault. { 'tran·slə,tɔr·ē 'fɔlt }

translucent attritus [GEOL] Attritus composed principally of transparent humic degradation matter. Also known as humodurite. { tran'slūs·əns ə'trɪd·əs }

transportation [GEOL] A phase of sedimentation concerned with movement by natural agents of sediment or any loose or weathered material from one place to another. { ,tranz·pərt'ā·shən }

Transvaal jade [MINERAL] A mineral that is not a true jade but a green grossularite garnet. Also known as South African jade. { trans'vāl 'jād }

transverse bar [GEOL] A slightly submerged sand bar extending perpendicular to the shoreline. { trans'vɔrs 'bār }

transverse basin *See* exogeosyncline. { trans'vɔrs 'bās·ən }

transverse dune [GEOL] A sand dune with a nearly straight ridge crest formed by the merger of crescentic dunes; elongated at right angles to the direction of prevailing winds, with a gentle windward slope and a steep leeward slope. { trans'vɔrs 'dün }

transverse fault [GEOL] A fault whose strike is more or less perpendicular to the general structural trend of the region. { trans'vɔrs 'fɔlt }

transverse fold *See* cross fold. { trans'vɔrs 'fɔld }

transverse joint *See* cross joint. { trans'vɔrs 'jɔint }

transverse ripple mark [GEOL] A ripple mark formed nearly perpendicular to the direction of the current. { trans'vɔrs 'rip·əl ,märk }

transverse thrust *See* transcurrent fault. { trans'vɔrs 'thrɛst }

transverse valley [GEOL] **1.** A valley perpendicular to the general strike of the underlying strata. **2.** A valley cutting perpendicularly across a ridge, range, or chain of mountains. Also known as cross valley. { trans'vɔrs 'val·ē }

transverse wave *See* S wave. { trans'vɔrs 'wāv }

trap [GEOL] *See* oil trap. [PETR] Any dark-colored, fine-grained, nongranitic, hypabyssal or extrusive rock. Also known as trappide; trap rock. { trap }

trapdoor fault [GEOL] A circular fault that is hinged at one end. { 'trap'dɔr ,fɔlt }

trappide *See* trap. { 'tra,pɪd }

trap rock *See* trap. { 'trap,'ræk }

traveling dune *See* wandering dune. { 'trav·əl·ɪŋ 'dün }

travel-time curve [GEOPHYS] A plot of P-, S-, and L-wave travel times used by seismologists to locate earthquakes. { 'trav·əl ,tɪm ,kərv }

traverse [GEOL] A line of survey or sampling across a thin section of geological region. { tra'vɔrs }

travertine [GEOL] Concretionary limestone deposited at the mouth of a hot spring. { 'trav·ər,tēn }

treatonite *See* allanite. { 'trā·nə,rɪt }

Trematosauria [PALEON] A group of Triassic amphibians in the order Temnospondyli. { ,trem·əd·ə'sɔr·ē·ə }

- tremolite** [MINERAL] $\text{Ca}_2\text{Mg}_5\text{Si}_8\text{O}_{22}(\text{OH})_2$ Magnesium-rich monoclinic calcium amphibole that forms one end member of a group of solid-solution series with iron, sodium, and aluminum; occurs in long blade-shaped or short stout prismatic crystals and also in masses or compound aggregates. { 'trem·ə,līt }
- tremor** [GEOPHYS] A minor earthquake. Also known as earthquake tremor; earth tremor. { 'trem·ər }
- trench** [GEOLOG] A long, narrow, deep depression of the sea floor, with relatively steep sides. Also known as submarine trench. { trench }
- trend** [GEOLOG] The direction of an outcrop of a layer, vein, fold, or other kind of geologic feature. Also known as direction. { trend }
- Trentonian** [GEOLOG] A North American stage of geologic time; Middle Ordovician (above Wilderness, below Edenian); equivalent to the upper Mohawkian. { tren'tō·nē·ən }
- Trepostomata** [PALEON] An extinct order of ectoproct bryozoans in the class Stenolae-mata characterized by delicate colonies composed of tightly packed zoecia with solid calcareous zoecial walls. { ,trep·ə'stō·məd·ə }
- treptomorphism** See isochemical metamorphism. { ,trep·tə'mór,fiz·əm }
- triangular facet** [GEOLOG] A triangular-shaped steep-sloped hill or cliff formed usually by the erosion of a fault-truncated hill. { trī'anj·gyə·lər 'fas·ət }
- Triassic** [GEOLOG] The first period of the Mesozoic era, lying above Permian and below Jurassic, 180–225 million years ago. { trī'a,sik }
- tributary glacier** [GEOLOG] A glacier that flows into a larger glacier. { 'trib·yə,ter·ē 'glā·shər }
- Triceratops** [PALEON] Herbivorous dinosaur, 30 feet (9 meters) long and weighing 6 tons, from the Late Cretaceous Period that had long sharp horns over each eye and a short horn on its nose. { trī'ser·ə,täps }
- trichalcite** [MINERAL] $\text{Cu}_5\text{Ca}(\text{AsO}_4)_2(\text{CO}_3)(\text{OH})_4 \cdot 6\text{H}_2\text{O}$ A verdigris green to blue-green, orthorhombic mineral consisting of hydrated copper arsenate. Also known as tyro-lite. { trī'kal,sīt }
- trichite** [PETR] A black, straight or curved, hairlike crystallite. { 'tri,kīt }
- Triconodonta** [PALEON] An extinct mammalian order of small flesh-eating creatures of the Mesozoic era having no angle or a pseudoangle on the lower jaw and triconodont molars. { trī,kän·ə'dänt·ə }
- tridymite** [MINERAL] SiO_2 A white or colorless crystal occurring in minute, thin, tabular crystals or scales; a high-temperature polymorph of quartz. { 'trid·ə,mīt }
- trigonite** [MINERAL] $\text{MnPb}_3\text{H}(\text{AsO}_3)_3$ A sulfur yellow to yellowish-brown or dark brown, monoclinic mineral consisting of an acid arsenite of lead and manganese; occurs in domatic form. { 'trī·gə,nīt }
- Trigonostylopoidea** [PALEON] A suborder of Paleocene-Eocene ungulate mammals in the order Astrapotheria. { ,trig·ə·nō,stil·ə'pōid·ē·ə }
- Trilobita** [PALEON] The trilobites, a class of extinct Cambrian-Permian arthropods characterized by an exoskeleton covering the dorsal surface, delicate biramous appendages, body segments divided by furrows on the dorsal surface, and a pygidium composed of fused segments. { ,trī·lə'bīd·ə }
- Trilobitoidea** [PALEON] A class of Cambrian arthropods that are closely related to the Trilobita. { ,trī·lə·bə'tōid·ē·ə }
- Trimerellacea** [PALEON] A superfamily of extinct inarticulate brachiopods in the order Lingulida; they have valves, usually consisting of calcium carbonate. { trə,mer·ə'lās·ē·ə }
- Trimerophytatae** See Trimerophytopsida. { trə,mer·ə'fīd·ə,tē }
- Trimerophytopsida** [PALEOBOT] A group of extinct land vascular plants with leafless, dichotomously branched stems that bear terminal sporangia. { trə,mer·ə·fə'täp·səd·ə }
- triphane** See spodumene. { 'trī,fān }
- triphylite** [MINERAL] $\text{Li}(\text{Fe}^{2+},\text{Mn}^{2+})\text{PO}_4$ A grayish-green or bluish-gray mineral crystallizing in the orthorhombic system; it is isomorphous with lithiophilite. { 'trif·ə,līt }

triplite

- triplite** [MINERAL] $(\text{Mn,Fe,Mg,Ca})_2(\text{PO})_4(\text{F,OH})$ A dark brown, chestnut brown, reddish-brown, or salmon pink, monoclinic mineral consisting of a fluophosphate of iron, manganese, magnesium, and calcium; occurs in massive form. { 'trip,liṭ }
- triplite** [MINERAL] $(\text{Mn,Fe,Mg,Ca})_2(\text{PO})_4(\text{F,OH})$ A dark brown, chestnut brown, reddish-brown, or salmon pink, monoclinic mineral consisting of a fluophosphate of iron, manganese, magnesium, and calcium; occurs in massive form. { 'trip,liṭ }
- tripoli** [GEOLOGY] A lightweight, porous, friable, siliceous sedimentary rock that may have a white, gray, pink, red, or yellow color; used for polishing metals and stones. { 'trip-ə-lē }
- triplite** See diatomaceous earth. { 'trip-ə,liṭ }
- trippkeite** [MINERAL] CuAs_2O_4 A greenish-blue, tetragonal mineral consisting of copper arsenite. { 'trip-kē,īt }
- tripuhyite** [MINERAL] FeSb_2O_6 A greenish-yellow to dark brown mineral consisting of iron antimonate; occurs as microcrystalline aggregates. { 'trip-ə'wē,īt }
- Trochacea** [PALEONTOLOGY] A recent subfamily of primitive gastropod mollusks in the order Aspidobranchia. { trō'kash-ē-ə }
- Trochiliscals** [PALEOBOTANY] A group of extinct plants belonging to the Charophyta in which the gyrogonites are dextrally spiraled. { trā,kil-ə'skā-lēz }
- troctolite** [PETROLOGY] A gabbro composed principally of calcic plagioclase and olivine. Also known as forellenstein. { 'trāk-tə,liṭ }
- troegerite** [MINERAL] $(\text{UO}_2)_3(\text{AsO}_4)_2 \cdot 12\text{H}_2\text{O}$ A lemon yellow, tetragonal mineral consisting of a hydrated uranium arsenate. { 'treg-ə,rīt }
- troilite** [MINERAL] FeS A meteorite mineral crystallizing in the hexagonal system; a variety of pyrrhotite. { 'trōi,liṭ }
- trolley** [GEOLOGY] A basin-shaped depression in strata. Also known as lum. { 'träl-ē }
- trona** [MINERAL] $\text{Na}_2(\text{CO}_3) \cdot \text{Na}(\text{HCO}_3) \cdot 2\text{H}_2\text{O}$ A gray-white or yellowish-white mineral that crystallizes in the monoclinic system and occurs in fibrous or columnar layers or masses. Also known as urao. { 'trō-nə }
- Tropept** [GEOLOGY] A suborder of the order Inceptisol, characterized by moderately dark A horizons with modest additions of organic matter, B horizons with brown or reddish colors, and slightly pale C horizons; restricted to tropical regions with moderate or high rainfall. { 'trā,pept }
- tropospheric duct** See duct. { 'tröp-ə'sfir-ik 'dakt }
- trough** [GEOLOGY] **1.** A small, straight depression formed just offshore on the bottom of a sea or lake and on the landward side of a longshore bar. **2.** Any narrow, elongate depression in the surface of the earth. **3.** An elongate depression on the sea floor that is wider and shallower than a trench. Also known as submarine trench. **4.** The line connecting the lowest points of a fold. { tróf }
- trough crossbedding** [GEOLOGY] A variety of crossbedding in which the lower crossbedding surfaces are smoothly curved, rather than planar. { 'tróf 'krós,bed-iŋ }
- trough fault** [GEOLOGY] One of a set of two faults bounding a graben. { 'tróf ,fólt }
- trough plane** See trough surface. { 'tróf ,plān }
- trough reef** See reverse saddle. { 'tróf ,rēf }
- trough surface** [GEOLOGY] A surface or plane connecting the troughs of the bed of a syncline. Also known as synclinal axis; trough plane. { 'tróf ,sær-fæs }
- trough valley** See U-shaped valley. { 'tróf ,val-ē }
- Trucherognathidae** [PALEONTOLOGY] A family of conodonts in the order Conodontophorida in which the attachment scar permits the conodont to rest on the jaw ramus. { ,trü-chə-räg'nath-ə,dē }
- trudellite** [MINERAL] $\text{Al}_{10}(\text{SO}_4)_2\text{Cl}_{12}(\text{OH})_{12} \cdot 30\text{H}_2\text{O}$ An amber yellow, hexagonal mineral consisting of a hydrated basic sulfate-chloride of aluminum; occurs as compact masses. { 'trü'de,liṭ }
- true crater** [GEOLOGY] The primary depression formed by impact or explosion before modification by slumping or by deposition of ejected material. Also known as primary crater. { 'trü 'kräd-ər }
- true dip** See dip. { 'trü 'dip }
- true formation resistivity** [GEOPHYSICS] Electrical resistivity of a clean (nonshaly) porous reservoir formation containing hydrocarbons and formation water; value is greater than the resistivity when there is added water incursion. { 'trü fôr'mā-shən ,rē-zis'tiv-əd-ē }

- true soil** *See* solum. { 'trū 'sōil }
- Tryblidiidae** [PALEON.] An extinct family of Paleozoic mollusks. { ,trib·lə'dī·ə,dē }
- tschermakite** [MINERAL] $\text{Ca}_2\text{Mg}_3(\text{Al},\text{Fe}^{3+})_2(\text{Al}_2\text{Si}_6)\text{O}_{22}(\text{OH},\text{F})_2$ An amphibole mineral. { 'chər·mə,kīt }
- tsumebite** [MINERAL] $\text{Pb}_2\text{Cu}(\text{PO}_4)(\text{SO}_4)(\text{OH})$ An emerald green, monoclinic mineral consisting of a hydrated basic phosphate and sulfate of lead and copper. { 'tsū·mə,bīt }
- tsunamiite** [GEOL] **1.** A sedimentary deposit resulting from a tsunami generated by an asteroid or comet impact. **2.** Rock deposited by a tsunami. Also known as tsunamiite. { tsū'nām·ē,īt }
- tsunamite** *See* tsunamiite. { 'tsū·nə,mīt }
- tube** [GEOL] A passage in a cave having smooth sides and an elliptical to nearly circular cross section. { 'tüb }
- tufa** [GEOL] A spongy, porous limestone formed by precipitation from evaporating spring and river waters, often onto leaves and stems of neighboring plants. Also known as calcareous sinter; calcareous tufa. { 'tū·fə }
- tuffaceous** [GEOL] Pertaining to or similar to tufa. { tū'fā·shəs }
- tuff** [GEOL] [MINERAL] Consolidated volcanic ash, composed largely of fragments (less than 4 millimeters) produced directly by volcanic eruption; much of the fragmented material represents finely comminuted crystals and rocks. { tʌf }
- tuffaceous** [GEOL] Pertaining to sediments which contain up to 50% tuff. { tʌ'fā·shəs }
- tuff ball** *See* mud ball. { 'tʌf ,bɒl }
- tuff lava** *See* welded tuff. { 'tʌf ,lāv·ə }
- tuft** *See* mound. { tʌft }
- tumuli lava** [GEOL] A type of lava flow forming ovoid mounds, a few feet high and a few tens of feet long, caused by buckling up of the crust. { 'tū·myə,lī 'lä·və }
- tungstate** [MINERAL] Any species of mineral containing the radical WO_4 , such as wolframite. { 'tʌŋ,stāt }
- tungstenite** [MINERAL] WS_2 A dark lead gray mineral consisting of tungsten disulfide; occurs in massive form, in scaly or feathery aggregates. { 'tʌŋ·stə,nīt }
- tungstite** [MINERAL] $\text{WO}_3\cdot\text{H}_2\text{O}$ A bright yellow, golden yellow, or yellowish-green mineral thought to consist of hydrated tungsten oxide; occurs in massive form and as platy crystals. { 'tʌŋ,stīt }
- tunnel cave** *See* natural tunnel. { 'tʌn·əl ,kāv }
- turanite** [MINERAL] $\text{Cu}_5(\text{VO}_4)_2(\text{OH})_4$ An olive green, orthorhombic mineral consisting of basic copper vanadate; occurs as reniform crusts and spherical concretions. { 'tūr·ə,nīt }
- turbidite** [GEOL] Any sediment or rock transported and deposited by a turbidity current, generally characterized by graded bedding, large amounts of matrix, and commonly exhibiting a Bouma sequence. { 'tər·bə,dīt }
- turbidity factor** [GEOPHYS] A measure of the atmospheric transmission of incident solar radiation; if I_0 is the flux density of the solar beam just outside the earth's atmosphere, I the flux density measured at the earth's surface with the sun at a zenith distance which implies an optical air mass m , and $I_{m,w}$ the intensity which would be observed at the earth's surface for a pure atmosphere containing 1 centimeter of precipitable water viewed through the given optical air mass, then turbidity factor θ is given by $\theta = (\ln I_0 - \ln I) / (\ln I_0 - \ln I_{m,w})$. { tər'bid·əd·ē ,fak·tər }
- Turkey stone** *See* turquoise. { 'tər·kē ,stɒn }
- Turonian** [GEOL] A European stage of geologic time: Upper or Middle Cretaceous (above Cenomanian, below Coniacian). { tū'rō·nē·ən }
- turquoise** [MINERAL] $\text{CuAl}_6(\text{PO}_4)_4(\text{OH})_8\cdot 4\text{H}_2\text{O}$ A semitranslucent sky-blue, bluish-green, apple-green, or greenish-gray mineral that crystallizes in the triclinic system and occurs in veinlets or as crusts of massive, concretionary, and stalactite shapes; an important gem mineral. Also known as calaite; Turkey stone. { 'tər,kwɔiz }
- turtle stone** *See* septarium. { 'tərd·əl ,stɒn }
- tychite** [MINERAL] $\text{Na}_6\text{Mg}_2(\text{SO}_4)(\text{CO}_3)_4$ A white, isometric mineral consisting of a sulfate-carbonate of sodium and magnesium. { 'tī,kīt }
- tying bar** *See* tombolo. { 'tī·ŋ ,bār }

type C1 carbonaceous chondrite

type C1 carbonaceous chondrite [GEOL] A type of carbonaceous chondrite that is strongly magnetic, has a lower density than the other two types, contains sulfates, and has a carbon content of about 3.5%. { 'tɪp ʃsɛɪwɒn ˌkɑːbəˈnɑːʃəs 'kɑːndrɪt }

type C2 carbonaceous chondrite [GEOL] A type of carbonaceous chondrite that is weakly magnetic or nonmagnetic, has most of its sulfur present as free sulfur, and contains about 2.5% carbon. { 'tɪp ʃsɛɪtʊ ˌkɑːbəˈnɑːʃəs 'kɑːndrɪt }

type C3 carbonaceous chondrite [GEOL] A type of carbonaceous chondrite that has a lower percentage of water and a higher density than the other two types, and usually consists largely of olivine. { 'tɪp ʃsɛɪθrɛ ˌkɑːbəˈnɑːʃəs 'kɑːndrɪt }

type locality [GEOL] **1.** The place at which a stratigraphic unit is typically displayed and from which it derives its name. **2.** The place where a geologic feature was first recognized and described. { 'tɪp lɔːkəl·əd·ē }

type section [GEOL] That sequence of strata identified as the original sequence for a location or area; the standard against which other stratigraphy of parts of the area are compared. Also known as section. { 'tɪp ˌsek·ʃən }

Typotheria [PALEON] A suborder of extinct rodentlike herbivores in the order Notoungulata. { ˌtɪ·pəˈθɪr·ē·ə }

Tyrannosaur [PALEON] A large carnivorous theropod dinosaur 40 feet (12 meters) long and weighing 6 tons, from the Late Cretaceous Period that had powerful hindlimbs, short forelimbs, a large skull (4 feet long), and very powerful jaws. { təˈræn·əˌsɔːr }

tyrolite See trichalcite. { ˈtɪr·əɪlɪt }

tyuyamunite [MINERAL] $\text{Ca}(\text{UO}_2)_2(\text{VO}_4)_2 \cdot 5\text{-}8\text{H}_2\text{O}$ A yellow orthorhombic mineral occurring in incrustations as a secondary mineral; an ore of uranium. Also known as calciocarnotite. { ˌtɪyü·əˈmüˌnɪt }

U

- Udalf** [GEOL] A suborder of the soil order Alfisol; brown soil formed in a udic moisture regime and in a mesic or warmer temperature regime. { 'ü,dälf }
- Udert** [GEOL] A suborder of the soil order Vertisol; formed in a humid region so that surface cracks remain open only for 2–3 months. { 'üd,ært }
- Udoll** [GEOL] A suborder of the Mollisol soil order; found in humid, temperate, and warm regions where maximum rainfall comes during growing season; has thick, very dark A horizons, brown B horizons, and paler C horizons. { 'üd,öl }
- Uduft** [GEOL] A suborder of the soil order Ultisol; organic-carbon content is low, argillic horizons are reddish or yellowish; formed in a udic moisture regime. { 'üd,əlt }
- U figure** *See* U index. { 'yü ,fig-yər }
- uhligite** [MINERAL] A black, pseudoisometric mineral consisting of an oxide of titanium and calcium, with zirconium and aluminum replacing titanium. { ü·lə,gīt }
- U index** [GEOPHYS] The difference between consecutive daily mean values of the horizontal component of the geomagnetic field. Also known as U figure. { 'yü ,in,dəks }
- Uintatheriidae** [PALEON] The single family of the extinct mammalian order Dinocerata. { yü,wın·tə·thə'ri·ə,dē }
- Uintatheriinae** [PALEON] A subfamily of extinct herbivores in the family Uintatheriidae including all horned forms. { yü,wın·tə·thə'ri·ə,nē }
- Ulatisian** [GEOL] A mammalian age in a local stage classification of the Eocene in use on the Pacific Coast based on foraminifers. { ,yü·lə'tē·zhən }
- ulexite** [MINERAL] $\text{NaCaB}_5\text{O}_9 \cdot 8\text{H}_2\text{O}$ A white mineral that crystallizes in the triclinic system and forms rounded reniform masses of extremely fine acicular crystals. Also known as cotton ball. { 'ü·lək,sīt }
- ullmannite** [MINERAL] NiSbS A steel-gray to black mineral consisting of nickel antimonide and sulfide, usually with a little arsenic, occurring massive, and having a metallic luster. Also known as nickel-antimony glance. { 'əl·mə,nīt }
- ulmic acid** *See* ulmin. { 'əl·mik 'as·əd }
- ulmin** [GEOL] Alkali-soluble organic substances derived from decaying vegetable matter; occurs as amorphous brown to black gel material. Also known as carbohumic; fundamental jelly; fundamental substance; gelose; humin; humogelite; jelly; ulmic acid; vegetable jelly. { 'əl·mən }
- ulrichite** *See* uraninite. { 'əl·rə,kīt }
- Ultisol** [GEOL] A soil order characterized by typically moist soils, with horizons of clay accumulation and a low supply of bases. { 'əl·tə,söl }
- ultrabasic** [PETR] Of igneous rock, having a low silica content, as opposed to the higher silica contents of acidic, basic, and intermediate rocks. { 'əl·trə'bā·sik }
- ultrabasicite** *See* diaphorite. { 'əl·trə'bā,sīt }
- ultralow-velocity zone** [GEOPHYS] Thin, mushy layer detected in some places along the earth's core-mantle boundary where seismic waves slow down. { ,əl·trə·lō və'lās·əd·ē ,zōn }
- ultramafic** [PETR] Referring to igneous rock composed principally of mafic minerals, such as olivine and pyroxene. { 'əl·trə'maf·ik }
- ultravulcanian** [GEOL] A type of volcanic eruption characterized by periodic violent gaseous explosions of lithic dust and solid blocks, with little if any fiery scoria. { 'əl·trə·vəl'kā·nē·ən }

umangite

- umangite** [MINERAL] Cu_2Se_2 A dark cherry red mineral consisting of copper selenide; occurs in massive form, in small grains or fine granular aggregates. { 'ü'maŋ,gīt }
- Umbrept** [GEOL] A suborder of the Inceptisol soil order; has dark A horizon more than 10 inches (25 centimeters) thick, brown B horizons, and slightly paler C horizons; soil is strongly acid, and clay minerals are crystalline; occurs in cool or temperate climates. { 'əm,brept }
- unaka** [GEOL] A large residual mass rising above a peneplain that is less well developed than one having a monadnock. { 'ü'näk·ə }
- unakite** [PETR] An altered igneous rock composed principally of epidote, pink orthoclase, and quartz. { 'ü'nək,kit }
- unconcentrated wash** See sheet erosion. { 'ʊn'kəns·ən,träð·əd 'wəʃ }
- unconformable** [GEOL] Pertaining to strata that do not conform in position, dip, or strike to the older underlying rocks. { 'ʊn·kən'fɔr·mə·bəl }
- unconformity** [GEOL] The relation between adjacent rock strata whose time of deposition was separated by a period of nondeposition or of erosion; a break in a stratigraphic sequence. { 'ʊn·kən'fɔr·məd·ē }
- unconsolidated material** [GEOL] Loosely arranged or unstratified sediment whose particles are not cemented together. { 'ʊn·kən'säl·ə,däd·əd mə'tir·ē·əl }
- underclay** [GEOL] A layer of clay or other fine-grained detrital material underlying a coal bed or comprising the floor of a coal seam. Also known as coal clay; root clay; seat clay; seat earth; thill; underearth; warrant. { 'ən·dər,klä }
- underclay limestone** [GEOL] A thin, fresh-water limestone that is relatively free of fossils and is dense and nodular; found in underlying coal deposits. { 'ən·dər,klä 'līm,stɔn }
- undercliff** [GEOL] A subordinate cliff or terrace formed by material which has fallen or slid from above. { 'ən·dər,klif }
- underconsolidation** [GEOL] Less than normal consolidation of sedimentary material for the existing overburden. { 'ən·dər·kən,säl·ə'dä·shən }
- undercutting** [GEOL] Erosion of material at the base of a steep slope, cliff, or other exposed rock. { 'ən·dər'kəd·iŋ }
- underearth** See underclay. { 'ən·dər,ərth }
- underflow conduit** [GEOL] A permeable deposit underlying a surface stream channel. { 'ən·dər,flō 'kän,dü·ət }
- underground geology** See subsurface geology. { 'ən·dər'graünd jē'äl·ə·jē }
- underlie** [GEOL] To lie or be situated under; to occupy a lower position, or to pass beneath. { 'ən·dər,li }
- undermining** See sapping. { 'ən·dər,mīn·iŋ }
- undersaturated** [PETR] Pertaining to igneous rock composed of unsaturated minerals, that is, without free silica. { 'ən·dər'sach·ə,räd·əd }
- underthrust** [GEOL] A thrust fault in which the lower, active rock mass has been moved under the upper, passive rock mass. { 'ən·dər'thrəst }
- unfreezing** [GEOL] The upward movement of stones to the surface as a result of repeated freezing and thawing of the containing soil. { 'ən'frēz·iŋ }
- ungemachite** [MINERAL] $\text{K}_3\text{Na}_9\text{Fe}(\text{SO}_4)_6(\text{OH})_3 \cdot 9\text{H}_2\text{O}$ A colorless to pale yellow, hexagonal mineral consisting of a hydrated basic sulfate of potassium, sodium, and iron; occurs in tabular form. { 'əŋ·gə,mä,kit }
- uniformitarianism** [GEOL] Classically, the concept that the present is the key to the past; the principle that contemporary geologic processes have occurred in the same regular manner and with essentially the same intensity throughout geologic time, and that events of the geologic past can be explained by phenomena observable today. Also known as actualism; principle of uniformity. { 'yü·nə,fɔr·mə'ter·ē·ə,niz·əm }
- unsaturated** [MINERAL] Referring to a mineral that will not form in the presence of free silica. { 'ən'sach·ə,räd·əd }
- unsaturated zone** See zone of aeration. { 'ən'sach·ə,räd·əd 'zɔn }
- uphole time** [GEOPHYS] The time that a seismic pulse requires to travel from an explosion at some depth in a shot hole to the surface of the earth. { 'əp,höl ,tīm }

- upper** [GEOL.] Pertaining to rocks or strata that normally overlie those of earlier formations of the same subdivision of rocks. { 'əp·ər }
- Upper Cambrian** [GEOL.] The latest epoch of the Cambrian period of geologic time, beginning approximately 510 million years ago. { 'əp·ər 'kam-brē·ən }
- Upper Carboniferous** [GEOL.] The European epoch of geologic time equivalent to the Pennsylvanian of North America. { 'əp·ər ,kär-bə'nif-ə-rəs }
- Upper Cretaceous** [GEOL.] The late epoch of the Cretaceous period of geologic time, beginning about 90 million years ago. { 'əp·ər kri'tā-shəs }
- Upper Devonian** [GEOL.] The latest epoch of the Devonian period of geologic time, beginning about 365 million years ago. { 'əp·ər də'vō-nē·ən }
- Upper Huronian** *See* Animikean. { 'əp·ər hyù'rō-nē·ən }
- Upper Jurassic** [GEOL.] The latest epoch of the Jurassic period of geologic time, beginning approximately 155 million years ago. { 'əp·ər jü'ras-ik }
- upper mantle** [GEOL.] The portion of the mantle lying above a depth of about 600 miles (1000 kilometers). Also known as outer mantle; peridotite shell. { 'əp·ər 'mant·əl }
- Upper Mississippian** [GEOL.] The latest epoch of the Mississippian period of geologic time. { 'əp·ər ,mis-ə'sip-ē·ən }
- Upper Ordovician** [GEOL.] The latest epoch of the Ordovician period of geologic time, beginning approximately 440 million years ago. { 'əp·ər ,ör-də'vish-ən }
- Upper Pennsylvanian** [GEOL.] The latest epoch of the Pennsylvanian period of geologic time. { 'əp·ər ,pen-səl'vā-nyən }
- Upper Permian** [GEOL.] The latest epoch of the Permian period of geologic time, beginning about 245 million years ago. { 'əp·ər 'pər-mē·ən }
- Upper Silurian** [GEOL.] The latest epoch of the Silurian period of geologic time. { 'əp·ər sə'lür-ē·ən }
- Upper Triassic** [GEOL.] The latest epoch of the Triassic period of geologic time, beginning about 200 million years ago. { 'əp·ər trī'as-ik }
- upsetted moraine** *See* push moraine. { ʔəp'sed·əd mə'rān }
- upthrow** [GEOL.] **1.** The fault side that has been thrown upward. **2.** The amount of vertical fault displacement. { 'əp,thrō }
- upwarp** [GEOL.] A broad anticline with gently sloping limbs formed as a result of differential uplift. { 'əp,wōrp }
- Uralean** [GEOL.] A stage of geologic time in Russia: uppermost Carboniferous (above Gzhelian, below Sakmarian of Permian). { yù'räl-ē·ən }
- uralite** [MINERAL] A green variety of secondary amphibole; it is usually fibrous or acicular and is formed by alteration of pyroxene. { 'yür-ə,lit }
- uralitization** [GEOL.] **1.** A process of replacement whereby pyroxene undergoes alteration resulting in uralite. **2.** Development of amphibole from pyroxene. { yə,räl-əd-ə'zā-shən }
- uraninite** [MINERAL] UO_2 A black, brownish-black, or dark-brown radioactive mineral that is isometric in crystallization; often contains impurities such as thorium, radium, cerium, and yttrium metals, and lead; the chief ore of uranium; hardness is 5.5–6 on Mohs scale, and specific gravity of pure UO_2 is 10.9, but that of most natural material is 9.7–7.5. Also known as coracite; urlichite. { 'yür-ə-nə,nīt }
- uranium age** [GEOL.] The age of a mineral as calculated from the numbers of ionium atoms present originally, now, and when equilibrium is established with uranium. { yə'rā-nē·əm ,āj }
- uranium-lead dating** [GEOL.] A method for calculating the geologic age of a material in years based on the radioactive decay rate of uranium-238 to lead-206 and of uranium-235 to lead-207. { yə'rā-nē·əm 'led 'dād-ɪŋ }
- uranium ocher** *See* gummite. { yə'rā-nē·əm 'ō-kər }
- uran-mica** *See* torbernite. { 'yür,an 'mī-kə }
- uranocircite** [MINERAL] $\text{Ba}(\text{UO}_2)_2(\text{PO}_4)_2 \cdot 8\text{H}_2\text{O}$ A yellow-green, tetragonal mineral consisting of a hydrated phosphate of barium and uranium; occurs as crystals. { ,yür-ə-nō'sər,sīt }

uranophane

- uranophane** [MINERAL] $\text{Ca}(\text{UO}_2)_2\text{Si}_2\text{O}_7 \cdot 6\text{H}_2\text{O}$ A yellow or orange-yellow radioactive secondary mineral; it is dimorphous with β -uranophane. Also known as uranotile. { yə'ran-ə,fān }
- uranopilite** [MINERAL] $(\text{UO}_2)_6(\text{SO}_4)(\text{OH})_{10} \cdot 12\text{H}_2\text{O}$ A bright yellow, lemon yellow, or golden yellow, monoclinic mineral consisting of a hydrated basic sulfate of uranium; occurs as encrustations and masses. { ,yür-ə-nō'pt,īt }
- uranosphaerite** [MINERAL] $\text{Bi}_2\text{O}_3 \cdot 2\text{UO}_3 \cdot 3\text{H}_2\text{O}$ An orange-yellow or brick red, orthorhombic mineral consisting of a hydrated oxide of bismuth and uranium. { ,yür-ə-nō'sfi,rīt }
- uranospinite** [MINERAL] $\text{Ca}(\text{UO}_2)_2(\text{AsO}_4)_2 \cdot 8\text{H}_2\text{O}$ A lemon yellow to siskin green, tetragonal mineral consisting of a hydrated arsenate of calcium and uranium; occurs in tabular form. { ,yür-ə'näs-pə,nīt }
- uranotantalite** See samarskite. { ,yür-ə-nō'tant-əl,īt }
- uranothorite** [MINERAL] A uranium-bearing variety of thorite. { ,yür-ə-nō'thōr,īt }
- uranotile** See uranophane. { yə'ran-ə,tīl }
- urao** See trona. { 'yü-raü }
- urban geology** [GEOL] The study of geological aspects of planning and managing high-density population centers and their surroundings. { 'ər-bən jē'äl-ə-jē }
- ureilite** [GEOL] An achondritic stony meteorite consisting principally of olivine and clinobronzite, with some nickel-iron, troilite, diamond, and graphite. { yə'rē-ə,īt }
- ureyite** [MINERAL] $\text{NaCrSi}_2\text{O}_6$ A meteoritic mineral of the pyroxene group. Also known as cosmochlore; kosmochlor. { 'yür-ē,īt }
- urstromthal** [GEOL] A large channel cut by a stream of water from melting ice, flowing along the edge of an ice sheet. { 'ür,ström,täl }
- U-shaped valley** [GEOL] A type of valley with a broad floor and steep walls produced by glacial erosion. Also known as trough valley; U valley. { 'yü 'shāpt 'val-ē }
- Ustalf** [GEOL] A suborder of the soil order Alfisol; red or brown soil formed in a ustic moisture regime and in a mesic or warmer temperature regime. { 'üst,älf }
- Ustert** [GEOL] A suborder of the Vertisol soil order; has a faint horizon and is dry for an appreciable period or more than one period of the year. { 'üst,ərt }
- Ustoll** [GEOL] A suborder of the soil order Mollisol; formed in a ustic moisture regime and in a mesic or warmer temperature regime; may have a calcic, petrocalcic, or gypsic horizon. { 'üst,öl }
- Ustox** [GEOL] A suborder of the soil order Oxisol that is low to moderate in organic matter, well drained, and dry for at least 90 cumulative days each year. { 'üst,äks }
- Ustult** [GEOL] A suborder of the soil order Ultisol; brownish or reddish, with low to moderate organic-carbon content; a well-drained soil of warm-temperate and tropical climates with moderate or low rainfall. { 'üst,əlt }
- utahite** See jarosite. { 'yü-tò,īt }
- U valley** See U-shaped valley. { 'yü ,val-ē }
- uvanite** [MINERAL] $\text{U}_2\text{V}_6\text{O}_{21} \cdot 15\text{H}_2\text{O}$ A brownish-yellow, orthorhombic mineral consisting of a hydrated uranium vanadate; occurs as crystalline masses and coatings. { 'yü-və,nīt }
- uvarovite** [MINERAL] $\text{Ca}_3\text{Cr}_2(\text{SiO}_4)_3$ The emerald-green, calcium-chromium end member of the garnet group. Also known as ouvarovite; uwarowite. { ü'var-ə,vīt }
- uwarowite** See uvarovite. { ü'var-ə,vīt }

V

- vacuole** *See* vesicle. { 'vak·yə,wōl }
- vadose zone** *See* zone of aeration. { 'vā,dōs ,zōn }
- vaesite** [MINERAL] NiS₂ An isometric mineral with pyrite structure composed of sulfide of nickel. { 'vā,sīt }
- valencianite** [MINERAL] A variety of potassium feldspar from Mexico. { və'len·chə,nīt }
- valentinite** [MINERAL] Sb₂O₃ A colorless to snow white mineral consisting of antimony trioxide. { 'val·ən,tē,nīt }
- vallerite** [MINERAL] CuFeS₂ A sulfide mineral found in meteorites. { və'lir,īt }
- valley** [GEOL] A relatively shallow, wide depression of the sea floor with gentle slopes. Also known as submarine valley. { 'val·ē }
- valley bottom** *See* valley floor. { 'val·ē ,bād·əm }
- valley fill** [GEOL] Unconsolidated sedimentary deposit which fills or partly fills a valley. { 'val·ē ,fil }
- valley flat** [GEOL] The small plain at the bottom of a narrow valley with steep sides. { 'val·ē ,flat }
- valley floor** [GEOL] The broad, flat bottom of a valley. Also known as valley bottom; valley plain. { 'val·ē ,flōr }
- valley plain** *See* valley floor. { 'val·ē ,plān }
- valley train** [GEOL] A long, narrow body of outwash, deposited by meltwater far beyond the margin of an active glacier and extending along the floor of a valley. Also known as outwash train. { 'val·ē ,trān }
- Valvatacea** [PALEON] A superfamily of extinct gastropod mollusks in the order Prosobranchia. { ,val·və'tā·shə }
- vanadate** [MINERAL] Any of several mineral compounds characterized by pentavalent vanadium and oxygen in the anion; an example is vanadinite. { 'van·ə,dāt }
- vanadinite** [MINERAL] Pb₃(VO₄)₃Cl A red, yellow, or brown opatite mineral often occurring as globular masses encrusting other minerals in lead mines; an ore of vanadium and lead hardness is 2.75–3 on Mohs scale, and specific gravity is 6.66–7.10. { və'nād·ən,īt }
- vandenbrandite** [MINERAL] CuO·UO₃·2H₂O A dark green to black mineral consisting of a hydrated oxide of copper and uranium; occurs in small crystals and massive form. { ,van·dən'bran,dīt }
- vanoxite** [MINERAL] (V₄)⁴⁺(V₂)⁵⁺O₁₃·8H₂O A black mineral consisting of a hydrous oxide of vanadium; occurs as microscopic crystals and in massive form. { va'nāk,sīt }
- vanthoffite** [MINERAL] Na₆Mg(SO₄)₄ A colorless mineral consisting of a sulfate of sodium and magnesium; occurs in massive form. { van'tō,fit }
- vapor-dominated hydrothermal reservoir** [GEOL] Any geothermal system mainly producing dry steam; the Geysers area of northern California and the Larderelle region of Italy are two examples. { 'vā·pər 'dom·ə,nād·əd 'hi·drə'thər·mə'l 'rez·əv,wär }
- variation** *See* declination. { ,ver·ē'ā·shən }
- variation diagram** [PETR] A diagram constructed by plotting the chemical compositions of rocks in an igneous rock series in order to show the genetic relationships and the nature of the processes that have affected the series. Also known as Harker diagram. { ,ver·ē'ā·shən ,dī·ə,gram }
- variation of latitude** [GEOPHYS] Change of the latitude of a place on earth because of

variation per day

- the irregular movement of the north and south poles; the movement is caused by the earth's shifting on its axis. { ,ver-ē'ā-shən əv 'lad-ə,tüd }
- variation per day** [GEOPHYS] The change in the value of any geophysical quantity during 1 day. { ,ver-ē'ā-shən pər 'dā }
- variation per hour** [GEOPHYS] The change in the value of any geophysical quantity during 1 hour. { ,ver-ē'ā-shən pər 'aür }
- variation per minute** [GEOPHYS] The change in the value of any geophysical quantity during 1 minute. { ,ver-ē'ā-shən pər 'min-ət }
- variole** [GEOL] A spherule the size of a pea, usually consisting of radiating plagioclase or pyroxene crystals. { 'ver-ē,öl }
- variolitic** [PETR] Referring to the texture of basic igneous rock composed of varioles in a finer-grained matrix. { 'ver-ē-ə'lid-ik }
- Variscan orogeny** [GEOL] The late Paleozoic orogenic era in Europe, extending through the Carboniferous and Permian. Also known as Hercynian orogeny. { vɑ'ris-kən ó'räj-ə-nē }
- varulite** [MINERAL] $(\text{Na,Ca})(\text{Mn,Fe})_2(\text{PO}_4)_2$ An olive green, orthorhombic mineral consisting of a phosphate of sodium, calcium, manganese, and iron; occurs in massive form. { 'vår-ə,lit }
- varve** [GEOL] A sedimentary bed, layer, or sequence of layers deposited in a body of still water within a year's time, and usually during a season. Also known as glacial varve. { 'värv }
- varve clay** See varved clay. { 'värv ,klā }
- varved clay** [GEOL] A lacustrine sediment of distinct layers consisting of varves. Also known as varve clay. { 'värvd ,klā }
- vashegyite** [MINERAL] $2\text{Al}_4(\text{PO}_4)_3(\text{OH})_3 \cdot 27\text{H}_2\text{O}$ A white or pale green to yellow and brownish mineral consisting of a hydrous basic aluminum phosphate; occurs in massive and microcrystalline forms. { 'väsh,he,jit }
- vaterite** [MINERAL] CaCO_3 A rare hexagonal mineral consisting of unstable calcium carbonate; it is trimorphous with calcite and aragonite. { 'väd-ə,nit }
- vauquelinite** [MINERAL] $\text{Pb}_2\text{Cu}(\text{CrO}_4)\text{PO}_4(\text{OH})$ A monoclinic mineral of varying color, consisting of a basic chromate-phosphate of lead and copper. { 'vök-lə,nit }
- vauxite** [MINERAL] $\text{FeAl}_2(\text{PO}_4)_2(\text{OH})_2 \cdot 7\text{H}_2\text{O}$ A sky blue to Venetian blue, triclinic mineral consisting of a hydrated basic phosphate of iron and aluminum. { 'vök,sit }
- veatchite** [MINERAL] $\text{Sr}_2\text{B}_{11}\text{O}_{16}(\text{OH})_5 \cdot \text{H}_2\text{O}$ A white mineral consisting of hydrous strontium borate. { 'vē,cht }
- Vectian** See Aptian. { 'vek-chən }
- vectorial structure** See directional structure. { vek'tór-ē-əl 'strək-chər }
- vegetable jelly** See ulmin. { 'vej-tə-bəl ,jel-ē }
- vein** [GEOL] A mineral deposit in tabular or shell-like form filling a fracture in a host rock. { vān }
- veined gneiss** [PETR] A composite gneiss with irregular layering. { 'vänd 'nts }
- veinite** [GEOL] A genetic type of veined gneiss in which the vein material was secreted from the rock itself. { 'vā,nit }
- vein quartz** [PETR] A rock composed chiefly of sutured quartz crystals of pegmatitic or hydrothermal origin of variable size. { 'vān ,kwörtz }
- Velociraptor** [PALEON] A carnivorous theropod dinosaur, 7 feet (2 meters) long, with birdlike features from the Late Cretaceous that had strong grasping hands with claws, powerful hindlimbs, and jaws containing sharp teeth. { və'lās-ə,rəp-tər }
- velocity discontinuity** See seismic discontinuity. { və'lās-əd-ē dis,kānt-ən'ü-əd-ē }
- velocity gradient** [GEOPHYS] See seismic gradient. { və'lās-əd-ē ,grād-ē-ənt }
- venite** [PETR] Migmatite having mobile portions which were formed by exudation from the rock itself. { 'vē,nit }
- vent** [GEOL] The opening of a volcano on the surface of the earth. { vent }
- ventifact** [GEOL] A stone or pebble whose shape, wear, faceting, cut, or polish is the result of sandblasting. Also known as glyptolith; rillstone; wind-cut stone; wind-grooved stone; wind-polished stone; wind-scoured stone; wind-shaped stone. { 'ven-tə,fakt }

- Venturian** [GEOL] A North American stage of middle Pliocene geologic time, above Repettian and below Wheelerian. { ven'chūr·ē·ən }
- Venus hairstone** See rutilated quartz. { 'vē·nəs 'her,stōn }
- Verbeekiniidae** [PALEON] A family of extinct marine protozoans in the superfamily Fusulinacea. { ,ver,bā'kin·ə,dē }
- vergence** [GEOL] The direction of overturning or of inclination of a fold. { 'vər·jəns }
- vermiculite** [MINERAL] $(\text{Mg,Fe,Al})_3(\text{Al,Si})_4\text{O}_{10}(\text{OH})_2 \cdot 4\text{H}_2\text{O}$ A clay mineral constituent similar to chlorite and montmorillonite, and consisting of trioctahedral mica sheets separated by double water layers; sometimes used as a textural material in painting, or as an aggregate in certain plaster formulations used in sculpture. { vər'mik·yə,līt }
- vernadskite** See antlerite. { vər'nadz,kīt }
- vernal** [GEOPHYS] Pertaining to spring. { 'vərn·əl }
- verrou** See riegel. { vər'rū }
- vertical dip slip** See vertical slip. { 'vərd·ə·kəl 'dip ,slip }
- vertical intensity** [GEOPHYS] The magnetic intensity of the vertical component of the earth's magnetic field, reckoned positive if downward, negative if upward. { 'vərd·ə·kəl in'ten·səd·ē }
- vertical separation** [GEOL] The vertical component of the dip slip in a fault. { 'vərd·ə·kəl ,sep·ə'rā·shən }
- vertical slip** [GEOL] The vertical component of the net slip in a fault. Also known as vertical dip slip. { 'vərd·ə·kəl 'slip }
- Vertisol** [GEOL] A soil order formed in regoliths high in clay; subject to marked shrinking and swelling with changes in water content; low in organic content and high in bases. { 'vərd·ə,sōl }
- vesicle** [GEOL] A cavity in lava formed by entrapment of a gas bubble during solidification. Also known as air sac; bladder; saccus; vacuole; wing. { 'ves·ə·kəl }
- vesicular structure** [PETR] A structure that is common in many volcanic rocks and which forms when magma is brought to or near the earth's surface; may form a structure with small cavities, or produce a pumiceous structure or a scoriaceous structure. { və'sik·yə·lār 'strək·chər }
- vesuvian** See leucite; vesuvianite. { və'sü·vē·ən }
- Vesuvian eruption** See Vulcanian eruption. { və'sü·vē·ən i'rəp·shən }
- Vesuvian garnet** See leucite. { və'sü·vē·ən 'gär·nət }
- vesuvianite** [MINERAL] $\text{Ca}_{10}\text{Mg}_2\text{Al}_4(\text{SiO}_4)_5(\text{Si}_2\text{O}_7)_2(\text{OH})_4$ A brown, yellow, or green mineral found in contact-metamorphosed limestones. Also known as idocrase; vesuvian. { və'sü·vē·ə,nīt }
- veszelyite** [MINERAL] $(\text{Cu,Zn})_3(\text{PO}_4)(\text{OH})_3 \cdot 2\text{H}_2\text{O}$ A greenish-blue to dark blue, monoclinic mineral consisting of a hydrated basic phosphate of copper and zinc. { 'ves·əl,yīt }
- villiaumite** [MINERAL] NaF A carmine, isometric mineral consisting of sodium fluoride; occurs in massive form. { vē'yō,mīt }
- Vindobonian** [GEOL] A European stage of geologic time, middle Miocene. { ,vin·də'bō·nē·ən }
- violarite** [MINERAL] Ni_2FeS_4 A violet-gray mineral of the linnaeite group consisting of a sulfide of nickel and iron; found in meteorites. { vī'ō·lə,rīt }
- viscous magnetization** See viscous remanent magnetization. { 'vis·kəs ,mag·nəd·ə'zā·shən }
- viscous remanent magnetization** [GEOPHYS] A process in which grains of magnetic minerals, which are either too small or too finely divided by undergrowths of different chemical composition to retain a permanent magnetization indefinitely, acquire a new direction of magnetization when the direction of the earth's magnetic field changes. Abbreviated VRM. Also known as viscous magnetization. { 'vis·kəs 'rem·ə·nənt ,mag·nəd·ə'zā·shən }
- Viséan** [GEOL] A European stage of lower Carboniferous geologic time forming the lowermost Upper Mississippian, above Tournaisian and below lower Namurian. { vi'sā·ən }
- visor tin** [MINERAL] Twin crystals of cassiterite characterized by a notch. { 'vī·zər 'tin }

vitavite

vitavite *See* moldavite. { 'vɪd·ə,vɪt }

vitrain [GEOLOGY] A brilliant black coal lithotype with vitreous luster and cubical cleavage. Also known as pure coal. { 'vi,tɹæn }

vitreous copper *See* chalcocite. { 'vi-trē-əs 'kæp·ər }

vitreous silver *See* argentite. { 'vi-trē-əs 'sil·vər }

vitric [GEOLOGY] Referring to a pyroclastic material which is characteristically glassy, that is, contains more than 75% glass. { 'vi·trɪk }

vitric tuff [GEOLOGY] Tuff composed principally of volcanic glass fragments. { 'vi·trɪk 'tʌf }

vittrification [GEOLOGY] Formation of a glassy or noncrystalline material. { ,vi·trə·fə'kæ·ʃən }

vitrinite [GEOLOGY] A maceral group that is rich in oxygen and composed of humic material associated with peat formation; characteristic of vitrain. { 'vi·trə,nɪt }

vitrinoid [GEOLOGY] Vitrinite occurring in bituminous coking coals; characterized by a reflectance of 0.5–2.0%. { 'vi·trə,nɔɪd }

vitriol stone [MINERAL] A hard, crystalline material, mainly a mixture of ferric sulfate and aluminum sulfate, that is extracted from weathered pyritic schist and used in the manufacture of sulfuric acid. { 'vi-trē-əl ,stɒn }

vitrophyre [PETROLOGY] Any porphyritic igneous rock whose groundmass is glassy. Also known as glass porphyry. { 'vi·trə,fɪr }

vivianite [MINERAL] $\text{Fe}_3(\text{PO}_4)_2 \cdot 8\text{H}_2\text{O}$ A colorless, blue, or green mineral in the unaltered state (darkens upon oxidation); crystallizes in the monoclinic system and occurs in earth form and as globular and encrusting fibrous masses. Also known as blue iron earth; blue ocher. { 'vi·vĕ·ə,nɪt }

vogesite [PETROLOGY] A syenitic lamprophyre composed of phenocrysts of hornblende in a groundmass of orthoclase and hornblende. { 'vɔ·gə,sɪt }

voglite [MINERAL] An emerald green to grass green, triclinic mineral consisting of a hydrated carbonate of calcium, copper, and uranium; occurs as coatings of scales. { 'vɔ,gɪt }

volatile component [GEOLOGY] A component of magma whose vapor pressures are high enough to allow them to be concentrated in any gaseous phase. Also known as volatile flux. { 'vɔl·əd·əl kəm'pə·nənt }

volatile flux *See* volatile component. { 'vɔl·əd·əl 'flʌks }

volborthite [MINERAL] $\text{Cu}_3(\text{UO}_4)_2 \cdot 3\text{H}_2\text{O}$ An olive green to green and yellowish-green, monoclinic mineral consisting of hydrated copper vanadate. { 'vɔl,bɔr,θɪt }

volcanello *See* spatter cone. { ,vɔl·kə'nel·ə }

volcanic ash [GEOLOGY] Fine pyroclastic material; particle diameter is less than 4 millimeters. { vɔl'kan·ɪk 'æʃ }

volcanic bombs [GEOLOGY] Pyroclastic ejecta; the lava fragments, liquid or plastic at the time of ejection, acquire rounded forms, markings, or internal structure during flight or upon landing. { vɔl'kan·ɪk 'bɔmz }

volcanic breccia [PETROLOGY] A pyroclastic rock that is composed of angular volcanic fragments having a diameter larger than 2 millimeters and that may or may not have a matrix. { vɔl'kan·ɪk 'breʃ·ə }

volcanic foam *See* pumice. { vɔl'kan·ɪk 'fəʊm }

volcanic gases [GEOLOGY] Volatile matter composed principally of about 90% water vapor, and carbon dioxide, sulfur dioxide, hydrogen, carbon monoxide, and nitrogen, released during an eruption of a volcano. { vɔl'kan·ɪk 'gæs·əz }

volcanic glass [GEOLOGY] Natural glass formed by the cooling of molten lava, or one of its liquid fractions, too rapidly to allow crystallization. { vɔl'kan·ɪk 'glæs }

volcanicity *See* volcanism. { ,vɔl·kə'nɪs·əd·ē }

volcaniclastic rock [PETROLOGY] Clastic rock containing volcanic material in any proportion. { vɔl'kan·ə'klas·tɪk 'ræk }

volcanic mud [GEOLOGY] Sediment containing large quantities of ash from a volcanic eruption, mixed with water. { vɔl'kan·ɪk 'mʌd }

volcanic mudflow [GEOLOGY] The flow of volcanic mud down the slope of a volcano. { vɔl'kan·ɪk 'mʌd,flo }

V valley

- volcanic neck** [GEOL] A residual remnant of the pipe or throat of a volcano that was filled with solidified lava after its final eruption. { vāl'kan·ik 'nek }
- volcanic rift zone** [GEOL] A zone comprising volcanic fissures with underlying dike assemblages; occurs in Hawaii. { vāl'kan·ik 'rift ,zōn }
- volcanic rock** [GEOL] Finely crystalline or glassy igneous rock resulting from volcanic activity at or near the surface of the earth. Also known as extrusive rock. { vāl'kan·ik 'rāk }
- volcanics** [PETR] Igneous rocks that solidified after reaching or nearing the earth's surface. { vāl'kan·iks }
- volcanic vent** [GEOL] The channelway or opening of a volcano through which magma ascends to the surface; two general types are fissure and pipelike vents. { vāl'kan·ik 'vent }
- volcanism** [GEOL] The movement of magma and its associated gases from the interior into the crust and to the surface of the earth. Also known as volcanicity. { 'vāl·kə,niz·əm }
- volcano** [GEOL] **1.** A mountain or hill, generally with steep sides, formed by the accumulation of magma erupted through openings or volcanic vents. **2.** The vent itself. { vāl'kə·nō }
- volcanology** [GEOL] The branch of geology that deals with volcanism. { ,vāl·kə'näl·ə·jē }
- voltaite** [MINERAL] A greenish-black to black, isometric mineral consisting of a hydrated potassium iron sulfate. { 'vāl·tə,īt }
- voltzite** [MINERAL] Zn_2S_4O A rose red, yellowish, or brownish mineral consisting of an oxysulfide of zinc; occurs in implanted spherical globules and as a crust. { 'vält,sīt }
- volume phase** See surface phase. { 'väl·yəm ,fāz }
- vorobievite** See vorobyevite. { və'rō,bē·ə,vīt }
- vorobyevite** [MINERAL] A rose-red, purplish-red, or pinkish cesium-containing variety of beryl; used as a gem. Also known as morganite; roosterite; vorobievite; vorobieffite. { və'rō,bē·ə,vīt }
- vougesite** [PETR] A lamprophyre having an orthoclase and hornblende groundmass in which are embedded hornblende phenocrysts. { 'vüzh,sīt }
- vrbaite** [MINERAL] $Tl_4Hg_3Sb_2As_8S_{20}$ A dark gray-black, orthorhombic mineral that occurs in small crystals. { 'vər·bə,īt }
- VRM** See viscous remanent magnetization.
- V-shaped valley** [GEOL] A valley having a cross-sectional profile in the form of the letter V, commonly produced by stream erosion. Also known as V valley. { 'vē 'shäpt 'val·ē }
- vug** [PETR] A small cavity in a vein or rock usually lined with minerals differing in composition from those of the enclosing rock. Also known as bughole. { vөг }
- Vulcanian eruption** [GEOL] A volcanic eruption characterized by periodic explosive events. Also known as paroxysmal eruption; Plinian eruption; Vesuvian eruption. { ,vəl·kə·nē·ən i'röp·shən }
- V valley** See V-shaped valley. { 'vē ,val·ē }

W

- wacke** [PETR] Sandstone composed of a mixture of angular and unsorted or poorly sorted fragments of minerals and rocks and an abundant matrix of clay and fine silt. { 'wak·ə }
- wackestone** [PETR] A limestone composed of mud (micrite) containing more than 10% particles (grains) with diameters greater than 20 micrometers scattered throughout. { 'wak·ə, stōn }
- wad** [MINERAL] A massive, generally soft, amorphous, earthy, dark-brown or black mineral composed principally of manganese oxides with some other minerals, and formed by decomposition of manganese minerals. Also known as black ocher; bog manganese; earthy manganese. { wād }
- Wadati-Benioff zone** See Benioff zone. { 'wā'dä·tē 'ben·ē, of , zōn }
- wadi** [GEOL] In the desert regions of southwestern Asia and northern Africa, a stream bed or channel, or a steep-sided ravine, gully, or valley, which carries water only during the rainy season. Also spelled wady. { 'wäd·ē }
- wady** See wadi. { 'wäd·ē }
- wagnerite** [MINERAL] $Mg_2(PO_4)F$ A yellow, grayish, flash-red, or greenish, monoclinic mineral consisting of magnesium fluophosphate. { 'väg·nə, rīt }
- wairakite** [MINERAL] $CaAl_2Si_4O_{12} \cdot 2H_2O$ A zeolite mineral that is isostructural with analcime. { 'wī·rə, kīt }
- wall** [GEOL] The side of a cave passage. { wól }
- wall reef** [GEOL] A linear, steep-sided coral reef constructed on a reef wall. { 'wól 'rēf }
- wall rock** [GEOL] Rock that encloses a vein. { 'wól 'rāk }
- wall-rock alteration** [GEOL] Alteration of wall rock adjacent to hydrothermal veins by the fluid responsible for formation of the mineral deposit. { 'wól 'rāk, ol·tə·rā·shən }
- walpurkite** [MINERAL] $Bi_4(UO_2)(AsO_4)_2O_4 \cdot 3H_2O$ A wax yellow to straw yellow, triclinic mineral consisting of a hydrated arsenate of bismuth and uranium. Also known as waltherite. { wäl'pər,jīt }
- waltherite** See walpurkite. { 'väl·tə, rīt }
- wander** See apparent wander. { 'wän·də } }
- wandering dune** [GEOL] A sand dune that has moved as a unit in the leeward direction of the prevailing winds, and that is characterized by the lack of vegetation to anchor it. Also known as migratory dune; traveling dune. { 'wän·də·riŋ 'dün }
- want** See nip. { wānt }
- wardite** [MINERAL] $Na_2CaAl_2(PO_4)_8(OH)_{18} \cdot 6H_2O$ A blue-green to pale green, tetragonal mineral consisting of a hydrated basic phosphate of sodium, calcium, and aluminum. { 'wör,dīt }
- warp** [GEOL] **1.** An upward or downward flexure of the earth's crust. **2.** A layer of sediment deposited by water. { 'wɔrp }
- warrant** See underclay. { 'wär·ənt }
- warringtonite** See brochantite. { 'wär·iŋ·tə,nīt }
- warwickite** [MINERAL] $(Mg,Fe)_3Ti(BO_4)_2$ A dark brown to dull black, orthorhombic mineral consisting of a titanoborate of magnesium and iron; occurs as prismatic crystals. { 'wör·i,kīt }
- wash** [GEOL] **1.** An alluvial placer. **2.** A piece of land washed by a sea or river. **3.** See alluvial cone. { wāsh }

wash-built terrace

- wash-built terrace** See alluvial terrace. { 'wāsh 'bɪlt 'ter-əs }
- wash load** [GEOL] The finer part of the total sediment load of a stream which is supplied from bank erosion or an external upstream source, and which can be carried in large quantities. { 'wāsh ,lɒd }
- washover** [GEOL] Material deposited by overwash, especially a small delta produced by storm waves and built on the landward side of a bar or barrier. Also known as storm delta; wave delta. { 'wāsh, ɔ-vər }
- wash plain** See outwash plain. { 'wāsh ,plān }
- wash slope** [GEOL] The gentle slope on a hillside occurring below the gravity slope and lying at the foot of an escarpment or steep rock face; usually covered by an accumulation of talus. Also known as haldenhang. { 'wāsh ,slɒp }
- waste plain** See alluvial plain. { 'wāst ,plān }
- water-bearing strata** [GEOL] Ground layers below the standing water level. { 'wɔd-ər 'ber-ɪŋ 'strad-ə }
- water gap** [GEOL] A deep and narrow pass that cuts to the base of a mountain ridge, and through which a stream flows; the Delaware Water Gap is an example. { 'wɔd-ər ,gap }
- waterline** See shoreline. { 'wɔd-ər, lɪn }
- water opal** See hyalite. { 'wɔd-ər ,ɔ-pəl }
- water trap** [GEOL] A chamber or part of a cave system that is filled with water, due to the dipping of the roof or ceiling below the water level. { 'wɔd-ər ,trap }
- watvilleite** [MINERAL] $\text{Na}_2\text{Ca}(\text{SO}_4)_2 \cdot 4\text{H}_2\text{O}$ A snow white mineral consisting of a hydrated sulfate of sodium and calcium; occurs as aggregates of acicular or hairlike crystals. { 'wät-vɪ,lɪt }
- wave-built platform** See alluvial terrace. { 'wāv 'bɪlt 'plat,fɔrm }
- wave-built terrace** See alluvial terrace. { 'wāv 'bɪlt 'ter-əs }
- wave-cut bench** [GEOL] A level or nearly level narrow platform produced by wave erosion and extending outward from the base of a wave-cut cliff. Also known as beach platform; high-water platform. { 'wāv 'kət 'bench }
- wave-cut cliff** [GEOL] A cliff formed by the erosive action of waves on rock. { 'wāv 'kət 'klɪf }
- wave-cut notch** [GEOL] An indentation cut into a sea cliff at water level by wave action. { 'wāv 'kət 'näch }
- wave-cut plain** See wave-cut platform. { 'wāv 'kət 'plān }
- wave-cut platform** [GEOL] A gently sloping surface which is produced by wave erosion and which extends into the sea for a considerable distance from the base of the wave-cut cliff. Also known as cut platform; erosion platform; strand flat; wave-cut plain; wave-cut terrace; wave platform. { 'wāv 'kət 'plat,fɔrm }
- wave-cut terrace** See wave-cut platform. { 'wāv 'kət 'ter-əs }
- wave delta** See washover. { 'wāv ,del-tə }
- wave erosion** See marine abrasion. { 'wāv i,rɔ-zhən }
- wave line** See swash mark. { 'wāv ,lɪn }
- wavellite** [MINERAL] $\text{Al}_3(\text{PO}_4)_2(\text{OH})_3 \cdot 5\text{H}_2\text{O}$ A white to yellow, green, or black mineral crystallizing in the orthorhombic system and occurring in small hemispherical aggregates. { 'wā-və,lɪt }
- wavemark** See swash mark. { 'wāv,märk }
- wave platform** See wave-cut platform. { 'wāv 'plat,fɔrm }
- wave ripple mark** See oscillation ripple mark. { 'wāv 'rɪp-əl ,märk }
- waxy** [MINERAL] A type of mineral luster that is soft like that of wax. { 'wak-sē }
- weathered layer** [GEOPHYS] The zone of the earth which lies immediately below the surface and is characterized by low wave velocities. { 'weth-əd ,lā-ər }
- weathering** [GEOL] Physical disintegration and chemical decomposition of earthy and rocky materials on exposure to atmospheric agents, producing an in-place mantle of waste. Also known as clastation; demorphism. { 'weth-ə,rɪŋ }
- weathering correction** [GEOPHYS] A velocity correction which is applied to seismic data, necessitated by the diminished velocity of seismic wave propagation in weathered rock. { 'weth-ə,rɪŋ kə,rek-shən }

wherryite

- weathering-potential index** [GEOL] A measure of the susceptibility of a rock or mineral to weathering. { 'weth·ə,riŋ pə'ten·chəl ,in,deks }
- weathering rind** [GEOL] The outer layer of a pebble, boulder, or other rock fragment that has formed as a result of chemical weathering. { 'weth·ər·iŋ ,riŋd }
- weathering velocity** [GEOPHYS] The velocity of propagation of seismic waves through weathered rock. { 'weth·ə,riŋ və,läs·əd·ē }
- weather pit** [GEOL] A shallow depression (depth up to 6 inches or 15 centimeters) on the flat or gently sloping summit of large exposures of granite or granitic rocks, attributed to strongly localized solvent action of impounded water. { 'weth·ər ,pit }
- weberite** [MINERAL] $\text{Na}_2\text{MgAlF}_7$ A light gray, orthorhombic mineral consisting of an aluminofluoride of sodium and magnesium; occurs as grains and masses. { 'və·bə,ri:t }
- websterite** See aluminite. { 'web·stə,ri:t }
- weddellite** [MINERAL] $\text{Ca}_2\text{O}_4 \cdot 2\text{H}_2\text{O}$ A colorless to white or yellowish-brown to brown, tetragonal mineral consisting of calcium oxalate dihydrate. { wə'de,lit }
- wehrlite** [MINERAL] BiTe A mineral that is a native alloy of bismuth and tellurium. Also known as mirror glance. [PETR] A peridotite composed principally of olivine and clinopyroxene with accessory opaque oxides. { 'wer,lit }
- weibullite** [MINERAL] $\text{Pb}_4\text{Bi}_6\text{S}_9\text{Se}_4$ A steel gray mineral consisting of lead bismuth sulfide with selenium replacing the sulfide; occurs in indistinct prismatic crystals in massive form. { 'wī,bū,lit }
- weinschenkite** [MINERAL] **1.** $\text{YPO}_4 \cdot 2\text{H}_2\text{O}$ A white mineral consisting of a hydrous yttrium phosphate. Also known as churchite. **2.** A dark-brown variety of hornblende high in ferric iron, aluminum, and water. { 'vīn,shɛŋ,kit }
- weissite** [MINERAL] Cu_5Te_3 A dark bluish-black mineral consisting of copper telluride; occurs in massive form. { 'wī,sīt }
- welded tuff** [PETR] A pyroclastic deposit hardened by the action of heat, pressure from overlying material, and hot gases. Also known as tuff lava. { 'wel·dəd 'tʌf }
- welding** [GEOL] Consolidation of sediments by pressure; water is squeezed out and cohering particles are brought within the limits of mutual molecular attraction. { 'weld·iŋ }
- well-sorted** [GEOL] Referring to a sorted sediment that consists of particles of approximately the same size and has a sorting coefficient of less than 2.5. { 'wel 'sɔ:rd·əd }
- Wenlockian** [GEOL] A European stage of geologic time: Middle Silurian (above Taranon, below Ludlovian). { wen'læk·ē·ən }
- Wentworth classification** [GEOL] A logarithmic grade for size classification of sediment particles starting at 1 millimeter and using the ratio of 1/2 in one direction (and 2 in the other), providing diameter limits to the size classes of 1, 1/2, 1/4, etc. and 1, 2, 4, etc. { 'went,wərth ,klas·ə·fə'kā·shən }
- Wentworth scale** [GEOL] A geometric grade scale for sedimentary particles ranging from clay particles (diameter less than 1/250 millimeter) to boulders (diameters greater than 256 millimeters), in which the size classes are related to one another by a constant ratio of 1/2 (4, 2, 1, 1/2, etc.). { 'went,wərth ,skāl }
- Wernerian stage** See Scythian stage. { wɛr'fē·nē·ən ,stāj }
- wernerite** See scapolite. { 'wɛr·nə,ri:t }
- Westphalian** [GEOL] A European stage of Upper Carboniferous geologic time, forming the Middle Pennsylvanian, above upper Namurian and below Stephanian. { west 'fāl·yən }
- wetted perimeter** [GEOL] The portion of the perimeter of a steam channel cross section which is in contact with the water. { 'wed·əd pə'rɪm·əd·ər }
- whaleback dune** [GEOL] A smooth, elongated mound or hill of desert sand shaped generally like a whale's back; formed by passage of a succession of longitudinal dunes along the same path. Also known as sand levee. { 'wāl,bak ,dün }
- Wheelerian** [GEOL] A North American stage of upper Pliocene geologic time, above the Venturian and below the Hallian. { wē'lir·ē·ən }
- wherryite** [MINERAL] A light green mineral consisting of a basic carbonate-sulfate of lead and copper; occurs in massive form. { 'wer·ē,ri:t }

whewellite

- whewellite** [MINERAL] $\text{Ca}(\text{C}_2\text{O}_4)\cdot\text{H}_2\text{O}$ A colorless or yellowish or brownish, monoclinic mineral consisting of calcium oxalate monohydrate; occurs as crystals. { 'hyü·ə, līt }
- white clay** See kaolin. { 'wīt 'klä }
- white coal** See tasmanite. { 'wīt 'köl }
- white cobalt** See cobaltite. { 'wīt 'kō, bōlt }
- white feldspar** See albite. { 'wīt 'fel, spār }
- white garnet** See leucite. { 'wīt 'gär·nət }
- white iron ore** See siderite. { 'wīt 'T·ərn, 'ör }
- white mica** See muscovite. { 'wīt 'mī·kə }
- white nickel** See rammelsbergite. { 'wīt 'nik·əl }
- white olivine** See forsterite. { 'wīt 'äl·ə, vën }
- Whiterock** [GEOL] A North American stage of lowermost Middle Ordovician geologic time, above lower Ordovician and below Marmor. { 'wīt, räk }
- white schorl** See albite. { 'wīt 'shórl }
- white tellurium** See sylvanite. { 'wīt tə'lür·ē·əm }
- whitleyite** [GEOL] An achondritic stony meteorite consisting essentially of enstatite with fragments of black chondrite. { 'wit·lē, it }
- whitlockite** [MINERAL] $\text{Ca}_9(\text{Mg}, \text{Fe})\text{H}(\text{PO}_4)_7$ A rare mineral that forms hexagonal crystals. { 'wit, lä, kit }
- wiborgite** See rapakivi. { 'wī, bōr, gīt }
- wichtsite** See tachylite. { 'wik·tə, sīt }
- Widmanstätten patterns** [GEOL] Characteristic figures that appear on the surface of an iron meteorite when the meteorite is cut, polished, and etched with acid. { 'vit·mən, shtät·ən, 'pad·ərnz }
- Wiik classification** [GEOL] A classification of carbonaceous chondrites into three types, C₁, C₂, and C₃. { 'wik, klas·ə·fə'kə·shən }
- Wilderness** [GEOL] A North American stage of Middle Ordovician geologic time, above Porterfield and below Trentonian. { 'wil·dər·nəs }
- wildflysch** [GEOL] A type of flysch facies that represents a stratigraphic unit with irregularly sorted boulders resulting from fragmentation, and twisted, confused beds resulting from slumping or sliding due to the influence of gravity. { 'vilt, flish }
- wilkeite** [MINERAL] $\text{Ca}_5(\text{SiO}_4, \text{PO}_4, \text{SO}_4)_3(\text{O}, \text{OH}, \text{F})$ A rose red or yellow, hexagonal mineral consisting of a basic sulfate-silicate-phosphate of calcium. { 'wil·kē, it }
- willemite** [MINERAL] Zn_2SiO_4 A white, greenish-yellow, green, reddish, or brown mineral that forms rhombohedral crystals and exhibits intense bright-yellow fluorescence in ultraviolet light; a minor ore of zinc. { 'wil·ə, mīt }
- Williamsoniaceae** [PALEOBOT] A family of extinct plants in the order Cycadeoidales distinguished by profuse branching. { ,wil·yəm, sō·nē'ās·ē, ē }
- wind-cut stone** See ventifact. { 'win 'kət 'stōn }
- wind erosion** [GEOL] Detachment, transportation, and deposition of loose topsoil or sand by the action of wind. { 'wind i, rō·zhən }
- wind gap** [GEOL] A shallow, relatively high-level notch in the upper part of a mountain ridge, usually an abandoned water gap. Also known as air gap; wind valley. { 'win ,gap }
- wind-grooved stone** See ventifact. { 'win 'grüvd 'stōn }
- window** [GEOL] A break caused by erosion of a thrust sheet or a large recumbent anticline that exposes the rocks beneath the thrust sheet. Also known as fenster. [GEOPHYS] Any range of wavelengths in the electromagnetic spectrum to which the atmosphere is transparent. { 'win·dō }
- wind-polished stone** See ventifact. { 'win 'päl·əsht 'stōn }
- windrow** [GEOL] Any accumulation of material formed by wind or tide action. { 'win, drō }
- wind-scoured stone** See ventifact. { 'win 'skaürd 'stōn }
- wind-shaped stone** See ventifact. { 'win 'shäpt 'stōn }
- wind valley** See wind gap. { 'win ,val·ē }
- wing** See vesicle. { 'wiŋ }
- winter-talus ridge** [GEOL] A wall-like arcuate ridge on the floor of a cirque formed by

- freezing activity that dislodged boulders from a cirque wall covered with a snowbank. Also known as nivation ridge. { 'win·tər 'tā-ləs ,ri } }
- Wisconsin** [GEOL] Pertaining to the fourth, and last, glacial stage of the Pleistocene epoch in North America; followed the Sangamon interglacial, beginning about 85,000 ± 15,000 years ago and ending 7000 years ago. { wi'skän·sən }
- witherite** [MINERAL] BaCO₃ A yellowish- or grayish-white mineral of the aragonite group that has orthorhombic symmetry, hardness of 3 1/4 on Mohs scale, and specific gravity 4.3. { 'with·ə,rīt }
- wittichenite** [MINERAL] Cu₃BiS₃ A steel gray to tin white, orthorhombic mineral consisting of copper bismuth sulfide; occurs in tabular and massive form. { 'wid·ə·kə,nīt }
- wittite** [MINERAL] Pb₅Bi₆(S,Se)₁₄ A light lead gray, orthorhombic or monoclinic mineral consisting of a sulfide of lead and bismuth. { 'wi,tīt }
- wolfachite** [MINERAL] Ni(As,Sb)S A silver white to tin white mineral consisting of nickel, arsenic, and antimony sulfide; occurs in small crystals and in aggregates. { 'vōl,fäk,īt }
- Wolfcampian** [GEOL] A North American provincial series of geologic time; lowermost Permian (below Leonardian, above Virgilian of Pennsylvania). { wūl'kam·pē·ən }
- wolfeite** [MINERAL] (Fe,Mn)₂(PO₄)(OH) A pinkish, wine yellow to yellowish-brown or reddish-brown, monoclinic mineral consisting of a basic phosphate of iron and manganese. { 'wūl,fīt }
- wolfram** See wolframite. { 'wūl·frəm }
- wolframine** See wolframite. { 'wūl·frə,mēn }
- wolframite** [MINERAL] (Fe,Mn)WO₄ A brownish- or grayish-black mineral occurring in short monoclinic, prismatic, bladed crystals; the most important ore of tungsten. Also known as tobacco jack; wolfram; wolframine. { 'wūl·frə,mīt }
- wollastonite** [MINERAL] CaSiO₃ A white to gray inosilicate mineral (a pyroxenoid) that crystallizes in the triclinic system in tabular crystals and has a pearly or silky luster on the cleavages; hardness is 5–5.5 on Mohs scale, and specific gravity is 2.85. Also known as tabular spar. { 'wūl·ə·stə,nīt }
- wood coal** See bituminous wood. { 'wūd 'kōl }
- wood copper** See olivenite. { 'wūd 'kəp·ər }
- woodhouseite** [MINERAL] CaAl₃(PO₄)(SO₄)(OH)₆ A colorless to flesh-colored or white, hexagonal mineral consisting of a basic sulfate-phosphate of calcium and aluminum; occurs in small crystals and tabular form. { 'wūd,haū,sīt }
- woodstone** See silicified wood. { 'wūd,stōn }
- wood tin** [MINERAL] A riniiform, brownish variety of cassiterite with fibers radiating concentrically and resembling dry wood. Also known as dneprovskite. { 'wūd 'tin }
- woodwardite** [MINERAL] Cu₄Al₂(SO₄)(OH)₁₂·2·4H₂O A greenish-blue to turquoise blue mineral consisting of a hydrated basic sulfate of copper and aluminum; occurs as botryoidal concretions and in spherulitic form. { 'wūd·wər,dīt }
- woody lignite** See bituminous wood. { 'wūd·ē 'lig,nīt }
- world rift system** [GEOL] The system of interconnected midocean ridges which is the locus of tensional splitting and magma upwelling believed responsible for sea-floor spreading. { 'wərd 'rift ,sis·təm }
- worobieffite** See vorobyevite. { wə'rō·bē·ə,fīt }
- wrench fault** [GEOL] A lateral fault with a more or less vertical fault surface. Also known as basculating fault; torsion fault. { 'rench ,fōlt }
- wulfenite** [MINERAL] PbMoO₄ A yellow, orange, orange-yellow, or orange-red tetragonal mineral occurring in tabular crystals or granular masses; an ore of molybdenum. Also known as yellow lead ore. { 'wūl·fə,nīt }
- Würm** [GEOL] **1.** A European stage of geologic time: uppermost Pleistocene (above Riss, below Holocene). **2.** Pertaining to the fourth glaciation of the Pleistocene epoch in the Alps, equivalent to the Wisconsin glaciation in North America, following the Riss-Würm interglacial. { wūrm }
- wurtzilite** [GEOL] A black, massive, sectile, infusible, asphaltic pyrobitumen derived from the metamorphosis of petroleum. { 'wərt·sə,līt }

wurtzite

wurtzite [MINERAL] (Zn,Fe)S A brownish-black hexagonal mineral consisting of zinc sulfide and occurring in hemimorphic pyramidal crystals, or in radiating needles and bundles. { 'wɜrt,sɪt }

wustite [MINERAL] FeO Iron oxide. { 'wʊs,tɪt }

Wynyardiidae [PALEON] An extinct family of herbivorous marsupial mammals in the order Diprotodonta. { ,wɪn·yər'dɪ·ə,dē }

X

- xanthochroite** *See* greenockite. {zan·thrə'krō,īt }
- xanthoconite** [MINERAL] Ag_3AsS_3 A dark red to dull orange to clove brown mineral consisting of silver arsenic sulfide. {zan'thāk·ə,nīt }
- xanthophyllite** *See* clintonite. {zan·thə'fi,līt }
- xanthosiderite** *See* goethite. {zan·thō'sī·dē,rīt }
- xanthoxenite** [MINERAL] $\text{Ca}_2\text{Fe}(\text{PO}_4)_2(\text{OH})\cdot 1\frac{1}{2}\text{H}_2\text{O}$ A pale yellow to brownish-yellow, monoclinic or triclinic mineral consisting of a hydrated basic phosphate of calcium and iron; occurs as masses and crusts. {zan,thāk·sə,nīt }
- xenoblast** [MINERAL] A mineral which has grown during metamorphism without development of its characteristic crystal faces. Also known as allotrioblast. {'zēn·ə,blast }
- xenolith** [PETR] An inclusion in an igneous rock which is not genetically related, such as an unmelted fragment of country rock. Also known as accidental inclusion; exogenous inclusion. {'zēn·ə,lith }
- xenomorph** *See* allotriomorph. {'zēn·ə'mōr·fik }
- xenothermal** [MINERAL] Pertaining to a mineral deposit formed at high temperature but at shallow to moderate depth. {'zēn·ə'thər·mə'l }
- xenotime** [MINERAL] $\text{Y}(\text{PO}_4)$ A tetragonal mineral of varying color, consisting of yttrium phosphate. {'zēn·ə,tīm }
- Xenungulata** [PALEON] An order of large, digitigrade, extinct, tapirlike mammals with relatively short, slender limbs and five-toed feet with broad, flat phalanges; restricted to the Paleocene deposits of Brazil and Argentina. {zə,nūŋ·gyə 'läd·ə }
- Xeralf** [GEOL] A suborder of the soil order Alfisol, having good drainage, and found in regions with rainy winters and dry summers in mediterranean climates; the surface horizons tend to become massive and hard during the dry seasons, with some soils having duripans that interfere with root growth. {'zir,älf }
- Xerert** [GEOL] A suborder of the soil order Vertisol, formed in a Mediterranean climate; wide surface cracks open and close once a year. {'zir,ərt }
- Xeroll** [GEOL] A suborder of the soil order Mollisol, formed in a xeric moisture regime; may have a calcic, petrocalcic, or gypsic horizon, or a duripan. {'zir,öl }
- xerothermal period** *See* xerothermic period. {'zir·ə'thər·mə'l 'pir·ē·əd }
- xerothermic period** [GEOL] A postglacial interval of a warmer, drier climate. Also known as xerothermal period. {'zir·ə'thər·mik 'pir·ē·əd }
- Xerult** [GEOL] A suborder of the soil order Ultisol, formed in a xeric moisture regime; brownish or reddish soil with a low to moderate organic-carbon content. {'zir,əlt }
- Xiphodontidae** [PALEON] A family of primitive tylopod ruminants in the superfamily Anaplotherioidea from the late Eocene to the middle Oligocene of Europe. {'zif·ə'dänt·ə,dē }
- xylinite** [GEOL] A variety of provitrinite consisting of xylem or lignified tissue. {'zī·lə,nīt }
- xyloid coal** *See* bituminous wood. {'zī,lōid 'kōl }
- xyloid lignite** *See* bituminous wood. {'zī,lōid 'lig,nīt }

Y

- yardang** [GEOL] A long, irregular ridge with a sharp crest sited between two round-bottomed troughs that have been carved by wind erosion in a desert region. { 'yär,dəŋ }
- yardang trough** [GEOL] A long, shallow, round-bottomed groove, furrow, or trough cut into a desert floor by wind erosion and separated by a yardang from the neighboring trough. { 'yär,dəŋ 'tröf }
- Yarmouth interglacial** [GEOL] The second interglacial stage of the Pleistocene epoch in North America, following the Kansan glacial stage and before the Illinoian. { 'yär-məθ 'in-tər'glä-shəl }
- yellow arsenic** See orpiment. { 'yel-ō 'ärs-ən-ik }
- yellow coal** See tasmanite. { 'yel-ō 'köl }
- yellow copperas** See copiapite. { 'yel-ō 'kəp-rəs }
- yellow lead ore** See wulfenite. { 'yel-ō 'led ,ör }
- yellow mud** [GEOL] Mud containing sediment having a characteristic yellow color, resulting from certain iron compounds. { 'yel-ō 'məd }
- yellow pyrite** See chalcopyrite. { 'yel-ō 'pī,rīt }
- yellow quartz** See citrine. { 'yel-ō 'kwörts }
- yellow tellurium** See sylvanite. { 'yel-ō tə'lür-ē-əm }
- yoked basin** See zeugogeosyncline. { 'yökt 'bäs-ən }
- Yorkian** [GEOL] A European stage of geologic time forming part of the lower Upper Carboniferous, above Lanarkian and below Staffordian, equivalent to part of the lower Westphalian. { 'yör-kē-ən }
- Younginiformes** [PALEON] A suborder of extinct small lizardlike reptiles in the order Eosuchia, ranging from the Middle Permian to the Lower Triassic in South Africa. { ,yöŋ-gə-nə'förmēz }
- youth** [GEOL] The first stage of the cycle of erosion in which the original surface or structure is the dominant topographic feature; characterized by broad, flat-topped interstream divides, numerous swamps and shallow lakes, and progressive increase of local relief. Also known as topographic youth. { 'yüth }
- yttrrocrosite** [MINERAL] (Y,Th,U,Ca)₂Ti₄O₁₁ A black, orthorhombic mineral consisting of an oxide of rare earths and titanium. { ,i-trə'krä,sīt }
- ytrotantalite** [MINERAL] (Y,U,Fe)(Ta,Nb)O₄ A black or brown, orthorhombic mineral consisting of an oxide of iron, yttrium, uranium, columbium, and tantalum; occurs in prismatic and tabular form. { ,i-trə'tant-əl,īt }
- yugawaralite** [MINERAL] CaAl₂Si₆O₁₆·4H₂O A zeolite mineral consisting of hydrous calcium aluminum silicate. { ,yü-gə'wär-əl,īt }

Z

- Zalambdalestidae** [PALEON] A family of extinct insectivorous mammals belonging to the group Proteutherea; they occur in the Late Cretaceous of Mongolia. { zə,lam-də'les-tə,dē }
- zaratite** [MINERAL] $\text{Ni}_3(\text{CO}_3)(\text{OH})_4 \cdot 4\text{H}_2\text{O}$ An emerald-green mineral consisting of a hydrous basic nickel carbonate and occurring in incrustations or compact masses. { 'zär-ə,tīt }
- Zechstein** [GEOLOG] A European series of geologic time, especially in Germany: Upper Permian (above Rothliegende). { 'zek,shtīn }
- Zemorrian** [GEOLOG] A North American stage of Oligocene and Miocene geologic time, above Refugian and below Saucian. { zə'mór-ē-ən }
- zeolite** [MINERAL] **1.** A group of white or colorless, sometimes red or yellow, hydrous tectosilicate minerals characterized by an aluminosilicate tetrahedral framework, ion-exchangeable large cations, and loosely held water molecules permitting reversible dehydration. **2.** Any mineral of the zeolite group, such as analcime, chabazite, natrolite, and stilbite. { 'zē-ə,līt }
- zeolite facies** [PETRO] Metamorphic rocks formed in the transitional period from diagenesis to metamorphism, at pressures of about 2000–3000 bars and temperatures of 200–300°C. { 'zē-ə,līt 'fā-shēz }
- zeolitization** [GEOLOG] Introduction of or replacement by a zeolite mineral. { zē,əl-əd-ə'zā-shən }
- zero curtain** [GEOLOG] The layer of ground between the active layer and permafrost where the temperature remains nearly constant at 0°C. { 'zīr-ō ,kərt-ən }
- zeugogeosyncline** [GEOLOG] A geosyncline in a craton or stable area, within which is also an uplifted area, receiving clastic sediments. Also known as yoked basin. { 'zū-gō|jē-ō'sin,klīn }
- zeunerite** [MINERAL] $\text{Cu}(\text{UO}_2)_2(\text{AsO}_4)_2 \cdot 10\text{-}16\text{H}_2\text{O}$ A green secondary mineral of the autunite group consisting of a hydrous copper uranium arsenate; it is isomorphous with uranospinite. { 'zoi-nə,rīt }
- zeylanite** See ceylonite. { 'zā-lə,nīt }
- zincaluminite** [MINERAL] $\text{Zn}_6\text{Al}_6(\text{SO}_4)_2(\text{OH})_{26} \cdot 5\text{H}_2\text{O}$ A white to bluish-white and pale blue mineral consisting of a basic hydrated sulfate of zinc and aluminum; occurs in tufts and crusts. { 'ziŋk-ə|lū-mə,nīt }
- zincite** [MINERAL] (Zn,Mn)O A deep-red to orange-yellow brittle mineral; an ore of zinc. Also known as red oxide of zinc; red zinc ore; ruby zinc; spartalite. { 'ziŋ,kīt }
- zinckenite** See zinkenite. { 'ziŋk-kə,nīt }
- zinc spar** See smithsonite. { 'ziŋk 'spār }
- zinc spinel** See gahnite. { 'ziŋk spə'nel }
- zinkenite** [MINERAL] $\text{Pb}_6\text{Sb}_4\text{S}_{27}$ A steel-gray orthorhombic mineral consisting of a lead antimony sulfide and occurring in crystals and in masses; has metallic luster, hardness of 3–3.5 on Mohs scale, and specific gravity of 5.30–5.35. Also spelled zinckenite. { 'ziŋ-kə,nīt }
- zinnwaldite** [MINERAL] $\text{K}_2(\text{Li,Fe,Al})_6(\text{Si,Al})_8\text{O}_{20}(\text{OH,F})_4$ A pale-violet, yellowish, brown, or dark-gray mica mineral; an iron-bearing variety of lepidolite; the characteristic mica of greisens. { 'tsin,väl,dīt }

zippeite

- zippeite** [MINERAL] $(\text{UO}_2)_2(\text{SO}_4)(\text{OH})_2 \cdot n\text{H}_2\text{O}$ An orange-yellow, orthorhombic mineral consisting of a hydrated basic sulfate of uranium. { 'tsip·ə,ɪt }
- zircon** [MINERAL] ZrSiO_4 A brown, green, pale-blue, red, orange, golden-yellow, grayish, or colorless nesosilicate mineral occurring in tetragonal prisms; it is the chief source of zirconium; the colorless varieties provide brilliant gemstones. Also known as hyacinth; jacinth; zirconite. { 'zər,kən }
- zirconite** See zircon. { 'zər-kə,nɪt }
- zirkelite** [MINERAL] A black mineral consisting of an oxide of zirconium, titanium, calcium, ferrous iron, thorium, uranium, and rare earths. { 'zər-kə,lɪt }
- zodiacal pyramid** [GEOPHYS] The pattern formed by the zodiacal light. Also known as zodiacal cone. { zɔ'di·ə·kəl 'pɪr·ə·mɪd }
- zoisite** [MINERAL] $\text{Ca}_2\text{Al}_3\text{Si}_3\text{O}_{12}(\text{OH})$ A white, gray, brown, green, or rose-red orthorhombic mineral of the epidote group consisting of a basic calcium aluminum silicate and occurring massive or in prismatic crystals. { 'zɔɪ,sɪt }
- zonal soil** [GEOL] In early classification systems in the United States, a soil order including soils with well-developed characteristics that reflect the influence of agents of soil genesis. Also known as mature soil. { 'zɔn·əl 'sɔɪl }
- zonal theory** [GEOL] A theory of the formation of mineral deposition and sequence patterns, based on the changes in a mineral-bearing fluid as it passes upward from a magmatic source. { 'zɔn·əl 'thē·ə·rē }
- zonation** [GEOL] The condition of being arranged in zones. { zɔ'nā·shən }
- zone** [GEOL] A belt, layer, band, or strip of earth material such as rock or soil. { zɔn }
- zone of accumulation** See B horizon. { 'zɔn əv ə,kjū·mə'lā·shən }
- zone of aeration** [GEOL] The subsurface sediment above the water table containing air and water. Also known as unsaturated zone; vadose zone; zone of suspended water. { 'zɔn əv e'rā·shən }
- zone of cementation** [GEOL] The layer of the earth's crust in which unconsolidated deposits are cemented by percolating water containing dissolved minerals from the overlying zone of weathering. Also known as belt of cementation. { 'zɔn əv ,sē,mən'tā·shən }
- zone of illuviation** See B horizon. { 'zɔn əv i,lju·vē'ā·shən }
- zone of soil water** See belt of soil water. { 'zɔn əv 'sɔɪl ,wɔd·ər }
- zone of suspended water** See zone of aeration. { 'zɔn əv sə'spen·dəd ,wɔd·ər }
- zonochlorite** See pumpellyite. { ,zɔ·nɔ'klɔr,ɪt }
- zorsite** [MINERAL] $\text{Ca}_2\text{Al}_3\text{Si}_3\text{O}_{12}(\text{OH})$ White, gray, brown, green, or rose-red orthorhombic mineral of the epidote group; an essential constituent of saussurite. { 'zɔr,sɪt }
- Zosterophyllatae** See Zosterophyllopsida. { |zäs·tə·rɔ'fil·ə,tē }
- Zosterophyllopsida** [PALEOBOT] A group of early land vascular plants ranging from the Lower to the Upper Devonian; individuals were leafless and rootless. { |zäs·tə·rɔ·fə'läp·səd·ə }
- Zwischengebirge** See median mass. { 'tsfɪsh·ən,gə'bir·gə }

Appendix

Equivalents of commonly used units for the U.S. Customary System and the metric system

1 inch = 2.5 centimeters (25 millimeters)
 1 foot = 0.3 meter (30 centimeters)
 1 yard = 0.9 meter
 1 mile = 1.6 kilometers

1 centimeter = 0.4 inch
 1 meter = 3.3 feet
 1 meter = 1.1 yards
 1 kilometer = 0.62 mile

1 inch = 0.083 foot
 1 foot = 0.33 yard (12 inches)
 1 yard = 3 feet (36 inches)
 1 mile = 5280 feet (1760 yards)

1 acre = 0.4 hectare
 1 acre = 4047 square meters

1 hectare = 2.47 acres
 1 square meter = 0.00025 acre

1 gallon = 3.8 liters
 1 fluid ounce = 29.6 milliliters
 32 fluid ounces = 946.4 milliliters

1 liter = 1.06 quarts = 0.26 gallon
 1 milliliter = 0.034 fluid ounce

1 quart = 0.25 gallon (32 ounces; 2 pints)
 1 pint = 0.125 gallon (16 ounces)
 1 gallon = 4 quarts (8 pints)

1 quart = 0.95 liter
 1 ounce = 28.35 grams
 1 pound = 0.45 kilogram
 1 ton = 907.18 kilograms

1 gram = 0.035 ounce
 1 kilogram = 2.2 pounds
 1 kilogram = 1.1×10^{-3} ton

1 ounce = 0.0625 pound
 1 pound = 16 ounces
 1 ton = 2000 pounds

$$^{\circ}\text{F} = (1.8 \times ^{\circ}\text{C}) + 32$$

$$^{\circ}\text{C} = (^{\circ}\text{F} - 32) \div 1.8$$

Conversion factors for the U.S. Customary System, metric system, and International System
A. Units of length

Units	<i>cm</i>	<i>m</i>	<i>in.</i>	<i>ft</i>	<i>yd</i>	<i>mi</i>
1 cm	= 1	0.01	0.3937008	0.03280840	0.01093613	6.213712×10^{-6}
1 m	= 100.	1	39.37008	3.280840	1.093613	6.213712×10^{-4}
1 in.	= 2.54	0.0254	1	0.08333333...	0.02777777...	1.578283×10^{-5}
1 ft	= 30.48	0.3048	12.	1	0.3333333...	$1.893939... \times 10^{-4}$
1 yd	= 91.44	0.9144	36.	3.	1	$5.681818... \times 10^{-4}$
1 mi	= 1.609344×10^5	1.609344×10^3	6.336×10^4	5280.	1760.	1

B. Units of area

Units	<i>cm</i> ²	<i>m</i> ²	<i>in.</i> ²	<i>ft</i> ²	<i>yd</i> ²	<i>mi</i> ²
1 cm ²	= 1	10^{-4}	0.1550003	1.076391×10^{-3}	1.195990×10^{-4}	3.861022×10^{-11}
1 m ²	= 10^4	1	1550.003	10.76391	1.195990	3.861022×10^{-7}
1 in. ²	= 6.4516	6.4516×10^{-4}	1	$6.944444... \times 10^{-3}$	7.716049×10^{-4}	2.490977×10^{-10}
1 ft ²	= 929.0304	0.09290304	144.	1	0.11111111...	3.587007×10^{-8}
1 yd ²	= 8361.273	0.8361273	1296.	9.	1	3.228306×10^{-7}
1 mi ²	= 2.589988×10^{10}	2.589988×10^6	4.014490×10^9	2.78784×10^7	3.0976×10^6	1

C. Units of volume

Units	m^3	cm^3	liter	$in.^3$	ft^3	qt	gal
1 m^3	= 1	10^6	10^3	6.102374×10^4	35.31467×10^{-3}	1.056688	264.1721
1 cm^3	= 10^{-6}	1	10^{-3}	0.06102374	3.531467×10^{-5}	1.056688×10^{-3}	2.641721×10^{-4}
1 liter	= 10^{-3}	1000.	1	61.02374	0.03531467	1.056688	0.2641721
1 $in.^3$	= 1.638706×10^{-5}	16.38706	0.01638706	1	5.787037×10^{-4}	0.01731602	4.329004×10^{-3}
1 ft^3	= 2.831685×10^{-2}	28316.85	28.31685	1728.	1	2.992208	7.480520
1 qt	= 9.463529×10^{-4}	946.3529	0.9463529	57.75	0.03342014	1	0.25
1 gal (U.S.)	= 3.785412×10^{-3}	3785.412	3.785412	231.	0.1336806	4.	1

D. Units of mass

Units	g	kg	oz	lb	metric ton	ton
1 g	= 1	10^{-3}	0.03527396	2.204623×10^{-3}	10^{-6}	1.102311×10^{-6}
1 kg	= 1000.	1	35.27396	2.204623	10^{-3}	1.102311×10^{-3}
1 oz (avdp)	= 28.34952	0.02834952	1	0.0625	2.834952×10^{-5}	3.125×10^{-5}
1 lb (avdp)	= 453.5924	0.4535924	16.	1	4.535924×10^{-4}	$5. \times 10^{-4}$
1 metric ton	= 10^6	1000.	35273.96	2204.623	1	1.102311
1 ton	= 907184.7	907.1847	32000.	2000.	0.9071847	1

Conversion factors for the U.S. Customary System, metric system, and International System (cont.)
E. Units of density

Units	$g \cdot cm^{-3}$	$g \cdot L^{-1}, kg \cdot m^{-3}$	$oz \cdot in.^{-3}$	$lb \cdot in.^{-3}$	$lb \cdot ft^{-3}$	$lb \cdot gal^{-1}$
1 $g \cdot cm^{-3}$	= 1	1000.	0.5780365	0.03612728	62.42795	8.345403
1 $g \cdot L^{-1}, kg \cdot m^{-3}$	= 10^{-3}	1	5.780365×10^{-4}	3.612728×10^{-5}	0.06242795	8.345403×10^{-3}
1 $oz \cdot in.^{-3}$	= 1.729994	1729.994	1	0.0625	108.	14.4375
1 $lb \cdot in.^{-3}$	= 27.67991	27679.91	16.	1	1728.	231.
1 $lb \cdot ft^{-3}$	= 0.01601847	16.01847	9.259259×10^{-3}	5.787037×10^{-4}	1	0.1336806
1 $lb \cdot gal^{-1}$	= 0.1198264	119.8264	4.749536×10^{-3}	4.329004×10^{-3}	7.480519	1

F. Units of pressure

Units	$Pa, N \cdot m^{-2}$	$dyn \cdot cm^{-2}$	<i>bar</i>	<i>atm</i>	$kgf \cdot cm^{-2}$	<i>mmHg (torr)</i>	<i>in. Hg</i>	$lbf \cdot in.^{-2}$
1 Pa, 1 $N \cdot m^{-2}$	= 1	10	10^{-5}	9.869233×10^{-6}	1.019716×10^{-5}	7.500617×10^{-3}	2.952999×10^{-4}	1.450377×10^{-4}
1 $dyn \cdot cm^{-2}$	= 0.1	1	10^{-6}	9.869233×10^{-7}	1.019716×10^{-6}	7.500617×10^{-4}	2.952999×10^{-5}	1.450377×10^{-5}
1 bar	= 10^5	10^6	1	0.9869233	1.019716	750.0617	29.52999	14.50377
1 atm	= 101325	1013250	1.01325	1	1.033227	760.	29.92126	14.69595
1 $kgf \cdot cm^{-2}$	= 98066.5	980665	0.980665	0.9678411	1	735.5592	28.95903	14.22334
1 mmHg (torr)	= 133.3224	1333.224	1.333224×10^3	1.315789×10^{-3}	1.359510×10^{-3}	1	0.03937008	0.01933678
1 in. Hg	= 3386.388	33863.88	0.03386388	0.03342105	0.03453155	25.4	1	0.4911541
1 $lbf \cdot in.^{-2}$	= 6894.757	68947.57	0.06894757	0.06804596	0.07030696	51.71493	2.036021	1

G. Units of energy

Units	$\frac{g \text{ mass}}{\text{(energy equiv)}}$	J	eV	cal	cal _{IT}	Btu _{IT}	kWh	hp-h	ft-lbf	ft ³ · lbf · in. ⁻²	liter-atm
1 g mass (energy equiv)	= 1	8.987552 × 10 ¹³	5.609589 × 10 ³²	2.148076 × 10 ³	2.146640 × 10 ¹³	8.518555 × 10 ¹⁰	2.496542 × 10 ⁷	3.347918 × 10 ⁷	6.628878 × 10 ¹³	4.603388 × 10 ¹¹	8.870024 × 10 ¹¹
1 J	= 1.112650 × 10 ⁻¹⁴	1	6.241510 × 10 ¹⁸	0.2390057	0.2388459	9.478172 × 10 ⁻⁴	2.777777... × 10 ⁻⁷	3.725062	0.7375622	5.121960 × 10 ⁻³	9.869233 × 10 ⁻³
1 eV	= 1.782662 × 10 ⁻³³	1.602176 × 10 ⁻¹⁹	1	3.829293 × 10 ⁻²⁰	3.826733 × 10 ⁻²⁰	1.518570 × 10 ⁻²²	4.450490 × 10 ⁻²⁶	5.968206 × 10 ⁻²⁶	1.181705 × 10 ⁻¹⁹	8.206283 × 10 ⁻²²	1.581225 × 10 ⁻²¹
1 cal	= 4.655328 × 10 ⁻¹⁴	4.184	2.611448 × 10 ¹⁹	1	0.9993312	3.965667 × 10 ⁻³	1.1622222... × 10 ⁻⁶	1.558562 × 10 ⁻⁶	3.085960	2.143028 × 10 ⁻²	0.04129287
1 cal _{IT}	= 4.658443 × 10 ⁻¹⁴	4.1868	2.613195 × 10 ¹⁹	1.000669	1	3.968321 × 10 ⁻³	1.163 × 10 ⁻⁶	1.559609 × 10 ⁻⁶	3.088025	2.144462 × 10 ⁻²	0.04132050
1 Btu _{IT}	= 1.173908 × 10 ⁻¹¹	1055.056	6.585141 × 10 ²¹	252.1644	251.9958	1	2.930711 × 10 ⁻⁴	3.930148 × 10 ⁻⁴	778.1693	5.403953	10.41259
1 kWh	= 4.005540 × 10 ⁻⁸	3600000.	2.246944 × 10 ²⁵	860420.7	859845.2	3412.142	1	1.341022	2655224.	18349.06	35529.24
1 hp-h	= 2.986931 × 10 ⁻⁸	2384519.	1.675545 × 10 ²⁵	641615.6	641186.5	2544.33	0.7456998	1	1980000.	13750.	26494.15
1 ft-lbf	= 1.508551 × 10 ⁻¹⁴	1.355818	8.462351 × 10 ¹⁸	0.3240483	0.3238315	1.285067 × 10 ⁻³	3.766161 × 10 ⁻⁷	5.050505... × 10 ⁻⁷	1	6.944444... × 10 ⁻³	0.01338088
1 ft ³ lbf · in. ⁻²	= 1.172313 × 10 ⁻¹²	195.2378	1.218579 × 10 ²¹	46.66295.	46.63174	0.1850497	5.423272 × 10 ⁻⁵	7.272727... × 10 ⁻⁵	144.	1	1.926847
1 liter-atm	= 1.127393 × 10 ⁻¹²	101.325	6.324210 × 10 ²⁰	24.21726	24.20106	0.09603757	2.814583 × 10 ⁻⁵	3.774419 × 10 ⁻⁵	74.73349	0.5189825	1

Periodic table

(The atomic numbers are listed above the symbols identifying the elements. The heavy line separates metals from nonmetals.)

1s

	1	2
	H	He
	Hydrogen	Helium

p

	13	14	15	16	17	18
	B	C	N	O	F	Ne
	Boron	Carbon	Nitrogen	Oxygen	Fluorine	Neon
	13	14	15	16	17	18
	Al	Si	P	S	Cl	Ar
	Aluminum	Silicon	Phosphorus	Sulfur	Chlorine	Argon
	31	32	33	34	35	36
	Ga	Ge	As	Se	Br	Kr
	Gallium	Germanium	Arsenic	Selenium	Bromine	Krypton
	49	50	51	52	53	54
	In	Sn	Sb	Te	I	Xe
	Indium	Tin	Antimony	Tellurium	Iodine	Xenon
	81	82	83	84	85	86
	Tl	Pb	Bi	Po	At	Rn
	Thallium	Lead	Bismuth	Polonium	Astatine	Radon
	113	114	115	116	117	118

d

	3	4	5	6	7	8	9	10	11	12
	21	22	23	24	25	26	27	28	29	30
	Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn
	Scandium	Titanium	Vanadium	Chromium	Manganese	Iron	Cobalt	Nickel	Copper	Zinc
	39	40	41	42	43	44	45	46	47	48
	Y	Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd
	Yttrium	Zirconium	Niobium	Molybdenum	Technetium	Ruthenium	Rhodium	Palladium	Silver	Cadmium
	71	72	73	74	75	76	77	78	79	80
	Lu	Hf	Ta	W	Re	Os	Ir	Pt	Au	Hg
	Lutetium	Hafnium	Tantalum	Tungsten	Rhenium	Osmium	Iridium	Platinum	Gold	Mercury
	103	104	105	106	107	108	109	110	111	112
	Lr	Rf	Db	Sg	Bh	Hs	Mt			
	Lawrencium	Rutherfordium	Dubnium	Seaborgium	Bohrium	Hassium	Meltherium			

f

	57	58	59	60	61	62	63	64	65	66	67	68	69	70
	La	Ce	Pr	Nd	Pm	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb
	Lanthanum	Cerium	Praseodymium	Neodymium	Promethium	Samarium	Europium	Gadolinium	Terbium	Dysprosium	Holmium	Erbium	Thulium	Ytterbium
	89	90	91	92	93	94	95	96	97	98	99	100	101	102
	Ac	Th	Pa	U	Np	Pu	Am	Cm	Bk	Cf	Es	Fm	Md	No
	Actinium	Thorium	Protactinium	Uranium	Neptunium	Plutonium	Americium	Curium	Berkelium	Californium	Einsteinium	Fermium	Mendelevium	Nobelium

s

1	2
3	4
Li	Be
Lithium	Beryllium
11	12
Na	Mg
Sodium	Magnesium
19	20
K	Ca
Potassium	Calcium
37	38
Rb	Sr
Rubidium	Strontium
55	56
Cs	Ba
Cesium	Barium
87	88
Fr	Ra
Francium	Radium

412

Appendix

Principal regions of a standard earth model

<i>Layer</i>	<i>Approximate depth range, mi (km)</i>
Ocean layer	0–1.8 (0–3)
Upper and lower crust	1.8–15 (3–24)
Lithosphere below the crust	15–50 (24–80)
Asthenosphere	50–140 (80–220)
Upper mantle above phase or compositional changes near 240 mi (400 km)	140–240 (220–400)
Transition region between phase or compositional changes near 240 and 416 mi (400 and 670 km)	240–416 (400–670)
Lower mantle above core-mantle boundary layer	416–1703 (670–2741)
Core-mantle boundary layer	1703–1796 (2741–2891)
Outer core	1796–3200 (2891–5150)
Inner core	3200–3959 (5150–6371)

Physical properties of some common rocks

<i>Rock</i>	<i>Specific gravity</i>	<i>Porosity, %</i>	<i>Compressive strength, psi*</i>	<i>Tensile strength, psi*</i>
<i>Igneous</i>				
Granite	2.67	1	30,000–50,000	500–1000
Basalt	2.75	1	25,000–30,000	
<i>Sedimentary</i>				
Sandstone	2.1–2.5	5–30	5,000–15,000	100–200
Shale	1.9–2.4	7–25	5,000–10,000	
Limestone	2.2–2.5	2–20	2,000–20,000	400–850
<i>Metamorphic</i>				
Marble	2.5–2.8	0.5–2	10,000–30,000	700–1000
Quartzite	2.5–2.6	1–2	15,000–40,000	
Slate	2.6–2.8	0.5–5	15,000–30,000	

*1 psi = 6.9 kPa.

Appendix

Approximate concentration of ore elements in earth's crust and In ores		
<i>Element</i>	<i>In average igneous rocks, %</i>	<i>In ores, %</i>
Iron	5.0	50
Copper	0.007	0.5–5
Zinc	0.013	1.3–13
Lead	0.0016	1.6–16
Tin	0.004	0.01*–1
Silver	0.00001	0.05
Gold	0.0000005	0.0000015*–0.01
Uranium	0.0002	0.2
Tungsten	0.003	0.5
Molybdenum	0.001	0.6

*Placer deposits.

Elemental composition of earth's crust based on igneous and sedimentary rock			
<i>Element</i>	<i>Weight %</i>	<i>Atomic %</i>	<i>Volume %</i>
Oxygen	46.71	60.5	94.24
Silicon	27.69	20.5	0.51
Titanium	0.62	0.3	0.03
Aluminum	8.07	6.2	0.44
Iron	5.05	1.9	0.37
Magnesium	2.08	1.8	0.28
Calcium	3.65	1.9	1.04
Sodium	2.75	2.5	1.21
Potassium	2.58	1.4	1.88
Hydrogen	0.14	3.0	

Some historical volcanic eruptions

<i>Volcano</i>	<i>Year</i>	<i>Estimated casualties</i>	<i>Principal causes of death</i>
Merapi (Indonesia)	1006	>1,000	Explosions
Kelut (Indonesia)	1586	10,000	Lahars (mudflows)
Vesuvius (Italy)	1631	18,000	Lava flows, mudflows
Etna (Italy)	1669	10,000	Lava flows, explosions
Merapi (Indonesia)	1672	>300	Nuées ardentes, lahars
Awu (Indonesia)	1711	3,200	Lahars
Papandayan (Indonesia)	1772	2,957	Explosions
Laki (Iceland)	1783	10,000	Lava flows, volcanic gas, starvation*
Asama (Japan)	1783	1,151	Lava flows, lahars
Unzen (Japan)	1792	15,000	Lahars, tsunami
Mayon (Philippines)	1814	1,200	Nuées ardentes, lava flows
Tambora (Indonesia)	1815	92,000	Starvation*
Galunggung (Indonesia)	1822	4,000	Lahars
Awu (Indonesia)	1856	2,800	Lahars
Krakatau (Indonesia)	1883	36,000	Tsunami
Awu (Indonesia)	1892	1,500	Nuées ardentes, lahars
Mont Pelée, Martinique (West Indies)	1902	36,000	Nuées ardentes
Soufrière, St. Vincent (West Indies)	1902	1,565	Nuées ardentes
Taal (Philippines)	1911	1,332	Explosions
Kelut (Indonesia)	1919	5,000	Lahars
Lamington (Papua New Guinea)	1951	3,000	Nuées ardentes, explosions
Merapi (Indonesia)	1951	1,300	Lahars
Agung (Indonesia)	1963	3,800	Nuées ardentes, lahars
Taal (Philippines)	1965	350	Explosions
Mount St. Helens (United States)	1980	57	Lateral blast, mudflows
El Chichón (Mexico)	1982	>2,000	Explosions, nuées ardentes
Nevado del Ruiz (Colombia)	1985	>25,000	Mudflows
Unzen (Japan)	1991	41	Nuées ardentes
Pinatubo (Philippines)	1991	>300	Nuées ardentes, mudflows, ash fall (roof collapse)
Merapi (Indonesia)	1994	>41	Nuées ardentes from dome collapse
Soufrière Hills, Montserrat (West Indies)	1997	19	Nuées ardentes

*Deaths directly attributable to the destruction or reduction of food crops, livestock, agricultural lands, pasturage, and other disruptions of food chain.

Compositions of important rock types in the earth's crust and the average continental crust

<i>Composition</i>	<i>Anorthosite</i>	<i>Peridotite</i>	<i>Oceanic basalt</i>	<i>Andesite</i>	<i>Dacite</i>	<i>Granodiorite</i>	<i>Granite</i>	<i>Gray-wacke</i>	<i>Sandy shale</i>	<i>Continental crust upper 9 mi (15 km)</i>
Chemical										
	<i>Weight, %</i>									
SiO ₂	54.0	44.0	50.0	60.0	65.5	66.0	70.5	64.0	65.5	66.0
TiO ₂	.8	.2	1.5	.8	.3	0.5	.3	.5	.5	0.5
Al ₂ O ₃	24.0	2.5	15.5	17.5	15.0	15.5	14.6	14.5	14.0	15.5
Fe ₂ O ₃	.8	1.0	1.5	3.0	.8	2.0	1.6	1.5	3.5	2.0
FeO	2.5	8.0	8.0	3.2	2.5	2.6	1.8	3.5	2.0	3.0
MgO	1.5	40.0	7.0	2.8	2.0	2.0	.8	2.2	1.7	2.0
CaO	10.0	2.5	10.5	6.0	3.7	4.0	2.0	2.6	2.5	4.2
Na ₂ O	4.5	.1	2.9	3.5	3.8	3.6	3.5	3.2	1.5	3.5
K ₂ O	.1	.02	.25	3.0	2.4	2.8	4.3	2.0	4.0	3.0
Mineralogical										
	<i>Approximate volume</i>									
Olivine	—	*	†	—	—	—	—	—	—	—
Fe, T, Mg oxides	†	†	†	—	—	—	—	—	—	†
Pyroxene	†	*	—	*	—	—	—	—	—	—
Amphibole	—	—	—	*	†	†	—	—	—	†
Plagioclase	*	—	*	*	*	*	†	*	†	*
K-feldspar	—	—	—	†	†	*	*	†	*	*
Micas	—	—	—	—	*	†	*	*	*	*
Quartz	—	—	—	—	—	*	*	*	*	*
Chlorites	—	—	—	—	—	—	—	*	*	—
Clay minerals	—	—	—	—	—	—	—	†	*	—

*Major constituent.

†Subordinate mineral.

Appendix

Dental formulas of some mammals					
<i>Animal</i>	<i>Teeth</i>				<i>Total</i>
	I	C	Pm	M	
Human	2/2	1/1	2/2	3/3	32
Cony	3/3	1/1	4/4	4/4	48
Beaver	1/1	0/0	1/1	3/3	20
Cat	3/3	1/1	3/2	1/1	30
Dog	3/3	1/1	4/4	2/3	42
Sheep	0/3	0/1	3/3	3/3	32
Lynx	3/3	1/1	2/2	1/1	28
Rat	1/1	0/0	0/0	3/3	16
Horse	3/3	1/1	4/4	3/3	44
Mole	3/3	1/1	4/4	3/3	44
Squirrel	1/1	0/0	2/1	3/3	22
Reindeer	0/3	0/1	3/3	3/3	32
Pig	3/3	1/1	4/4	3/3	44
Common seal	3/2	1/1	4/4	1/1	34
Skunk	3/3	1/1	3/3	1/2	34
Raccoon	3/3	1/1	4/4	2/2	40
Bear	3/3	1/1	4/4	2/3	42

Appendix

Geologic column and scale of time						
<i>Eon</i>	<i>Era</i>	<i>Period</i>	<i>Epoch</i>	<i>Dates (10⁴ years before present)</i>		
Phanerozoic ↑ ↓	Cenozoic ↑ ↓	Quaternary ↑ ↓	Holocene	0.01		
			Pleistocene			
		Tertiary ↑ ↓	Pliocene ↑ ↓	Pliocene	1.8	
				Miocene		
				Oligocene		
				Eocene		
				Paleocene		
	Mesozoic ↑ ↓	Cretaceous ↑ ↓	Cretaceous	65		
			Jurassic			
			Triassic			
		Paleozoic ↑ ↓	Permian ↑ ↓		Permian	144
					Pennsylvanian	
					Mississippian	
					Devonian	
	Proterozoic* ↑ ↓	No subdivisions in wide use	Silurian	208		
			Ordovician			
			Cambrian			
	Archean* ↑ ↓	No subdivisions in wide use		245		
	Hadean ↑ ↓	No subdivisions		286		
			325			
			360			
			410			
			440			
			505			
			544			
			544			
			2500			
			3800			
			4500			

*Proterozoic plus Archean also called Precambrian.

Appendix

Types of volcanic structure	
<i>Name</i>	<i>Characteristics</i>
Shield	Low height, broad area; formed by successive fluid flows accumulating around a single, central vent
Cinder cone	Cone of moderate size with apex truncated; circular in plan, gently sloping sides; composed of pyroclastic particles, usually poorly consolidated
Spatter cone	Small steep-sided cone with well-defined crater composed of pyroclastic particles, well consolidated (agglomerate)
Composite cone	Composed of interlayered flows and pyroclastics; flows from sides (flank flows) common, as are radial dike swarms; slightly concave in profile, with central crater
Caldera	Basins of great size but relatively shallow; formed by explosive decapitation of stratocones, by collapse into underlying magma chamber, or both
Plug dome	Domal piles of viscous (usually rhyolitic) lava, growing by subsurface accretion and accompanied by outer fragmentation
Cryptovolcanic structures	Circular areas of highly fractured rocks in regions generally free of other structural disturbances; believed to have formed either by subsurface explosions or by sinking of cylindrical rock masses over magma chambers

Mohs scale*			
<i>Hardness</i>	<i>Mineral</i>	<i>Hardness</i>	<i>Mineral</i>
1	Talc	6	Orthoclase
2	Gypsum	7	Quartz
3	Calcite	8	Topaz
4	Fluorite	9	Corundum
5	Apatite	10	Diamond

*Hardness or resistance to scratching is defined by comparison with 10 selected minerals, which are numbered in order of increasing hardness. Minerals lower in the scale are scratched by those with higher numbers.

Appendix

Hardness, specific gravity, and refractive indices of gem materials			
<i>Gem material</i>	<i>Hardness (Mohs scale)</i>	<i>Specific gravity</i>	<i>Refractive index</i>
Amber	2–2 1/2	1.05	1.54
Beryl	7 1/2–8	2.67–2.85	1.57–1.58
Synthetic emerald	7 1/2–8	2.66–2.7	1.56–1.563 to 1.57–1.58
Chrysoberyl and synthetic	8 1/2	3.73	1.746–1.755
Corundum and synthetic	9	4.0	1.76–1.77
Diamond			
Synthetic cubic	10	3.52	2.42
Zirconia	8 1/2	5.80	2.15
Feldspar	6–6 1/2	2.55–2.75	1.5–1.57
Garnet			
Almandite	7 1/2	4.05	1.79
Pyrope	7–7 1/2	3.78	1.745
Rhodolite	7–7 1/2	3.84	1.76
Andradite	6 1/2–7	3.84	1.875
Grossularite	7	3.61	1.74
Spessartite	7–7 1/2	4.15	1.80
Hematite	5 1/2–6 1/2	5.20	
Jade			
Jadeite	6 1/2–7	3.34	1.66–1.68
Nephrite	6–6 1/2	2.95	1.61–1.63
Lapis lazuli	5–6	2.4–3.05	1.50
Malachite	3 1/2–4	3.34–3.95	1.66–1.91
Opal	5–6 1/2	2.15	1.45
Pearl	3–4	2.7	
Peridot	6 1/2–7	3.34	1.654–1.690
Quartz			
Crystalline and synthetic	7	2.66	1.54–1.55
Chalcedony	6 1/2–7	2.60	1.535–1.539
Spinel and flux synthetic	8	3.60	1.718
Synthetic spinel, flame	8	3.64	1.73
Spodumene	6–7	3.18	1.66–1.676
Topaz	8	3.53	1.61–1.63
Tourmaline	7–7 1/2	3.06	1.62–1.64
Turquoise	5–6	2.76	1.61–1.65
Zircon	7 1/2	4.70	1.925–1.98
Metamict	7	4.00	1.81
Zoisite (tanzanite)	6–7	3.35	1.691–1.70