Gems, Gemology,
Jewels, Precious Stones

Prepared by Robert G. Bedrosian

Wikipedia:

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George Frederick Kunz

The Curious Lore of Precious Stones (Philadelphia, 1913), in 534 pdf pages.

The Magic of Jewels and Charms (Philadelphia, 1915), in 564 pdf pages.

Rings for the Finger (Philadelphia, 1917), in 533 pdf pages. From earliest times to the present, describing the origin, early making, materials, archaeology, history, for affection, for love, for engagement, for wedding, commemorative, mourning, etc.

The Book of the Pearl, by George Frederick Kunz and Charles Hugh Stevenson (New York, 1908), in 828 pdf pages.

Ivory and the Elephant in Art, in Archaeology, and in Science (New York, 1916), in 742 pdf pages.

Madstones and Their Magic, in 3 pdf pages, from *Science*, Vol. 18, No. 459 (Nov. 20, 1891), pp. 286-287.

Natal Stones, Sentiments and Supersitions Associated with Precious Stones (New York, 1909), in 39 pdf pages.

China's Foreign Trade in Medieval Times, from *Science*, New Series, Vol. 38, No. 987 (Nov. 28, 1913), pp. 782-783, in 3 pdf pages.

Berthold Laufer

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E. A. Wallis Budge

Two Chapters from Amulets and Superstitions (London, 1930), in 24 pdf pages: Chapter 15, *Stones and Their Prophylactic and Therapeutic Qualities*, and Chapter 25, *The Stones of the Planets and Their Influences*. The entire book is available at Internet Archive here.

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Various:

From *Jewish Encyclopedia* (1906):
Gems, by Emil G. Hirsch.

From *Encyclopaedia Iranica*, multiple authors:
Gems, Google search of Iranica

Gemstones/Jewels/Precious Stones, Google search of Dumbarton Oaks

From The Ancient World Online (AWOL):
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Upenn Online Books:
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Gemstones/Jewels/Precious Stones, Google search of Online Books

Sacred Texts:
Gemstones/Jewels/Precious Stones, Google search of Sacred Texts

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Studies:

Ancient

Luminous Gems, Mythical and Real, from *Scientific Monthly*, Vol. 47, No. 6 (Dec., 1938), pp. 496-505.

A Collection of Gems from Egypt in Private Collections, by Abd El-Mohsen El-Khachab, from *Journal of Egyptian Archaeology*, Vol. 49 (Dec., 1963), pp. 147-156.

The Warren Collection of Engraved Gems, from *Bulletin of the Museum of Fine Arts*, Vol. 26, No. 155 (Jun., 1928), pp. 46-50.

Exhibition of Gems Used as Amulets, etc., by George Frederick Kunz, from *Journal of American Folklore*, Vol. 4, No. 12 (Jan. - Mar., 1891), pp. 29-31.

Engraved Gems in the Collection of the American Numismatic Society, in 137 bookmarked and searchable pdf pages. The four articles in this compilation were published between 1979 and 2006: 1. *Ancient Magical Amulets*, by Frances M. Schwartz, James H. Schwartz, 2. *Intaglios with Eros*, by James H. Schwartz, 3. *Male Deities and Heroes*, by Hélène Guiraud, James H. Schwartz, and 4. *Ancient Magical Amulets, an Addendum*, by James H. Schwartz. At Internet Archive.

Some Hellenistic Carved Gems, by Dorothy Kent Hill, from *Journal of the Walters Art Gallery*, Vol. 6 (1943), pp. 60-69.

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Medieval and Later Engraved Gems in the British Museum-II, by O. M. Dalton, from *The Burlington Magazine for Connoisseurs*, Vol. 24, No. 127 (Oct., 1913), pp. 28-29+31-32.

Compiled by Robert Bedrosian, 2021

CHAPTER XV.

STONES AND THEIR PROPHYLACTIC AND THERAPEUTIC QUALITIES.[1]

AGATE.—Several kinds of agate are known, and all of them are used extensively in the East. The "red agate," which is mentioned by PLINY (*Hist. Nat.*, xxxvii. 54) and known as "blood agate," was a protection against the large spiders and scorpions. The so-called "green agate" is potent in quelling disease of any kind in the eyes. The brown agate, or "tawny agate," is the most powerful of all and the most popular, for it makes the warrior victorious, protects a man against every kind of poisonous reptile, gives a lover favour in the sight of his lady, the sick man who holds it in his hand recovers, and gives a man riches, happiness, health, and long life. It also increases a man's intelligence. It drives away fevers, epilepsy, and madness; stops the flow of rheum in the eye, reduces menstruation, disperses the water in dropsy. In ITALY and PERSIA it protects the wearer against the "Evil Eye." The triangular agate amulets worn in SYRIA on the neck

[1] The best authorities on this subject are:—Groth, *Grundriss der Edelsteinkunde*, Leipzig, 1887; Lorenz, *Die okkulte Bedeutung der Edelsteine*, Leipzig, 1915; Pachinger, *Glaube und Oberglaube im Steinreich*, and of course many of the sections in the works of Dr. S. Seligmann on the Evil Eye (*Der böse Blick*, Berlin, 1910; and *Die Zauberkraft des Auges und das Berufen*, Hamburg, 1922).

keep away intestinal troubles. Black agate, with white stripes, is greatly prized, but green agate is also greatly treasured; for if a woman drinks the water in which a green agate ring has been washed she will never be sterile. The amulets of grey agate which are common in Egypt, and are worn on the neck, prevent stiff-neck and ward off colic and diarrhoea.

Moss-Agate.—This beautiful stone with markings in it resembling trees and vegetation is much prized by the husbandman, who wears a moss-agate on his right upper arm, and places one in the right horn of each of his oxen, so that he may have an abundant harvest.

Alum.—In Persia, Syria, Palestine, Egypt, and westwards along the whole of the northern coast of Africa alum is the favourite means of protection against the Evil Eye; its therapeutic powers were well known to Pliny (*Hist. Nat.*, xxxv. 52). In Morocco both Jewish and Arab magicians use it, mixed with salt, on their patients, the former calling upon the names of Abraham, Isaac, Jacob, and Elisha, and the latter reciting the CXIIth Sûrah of the Ḳur'ân, which declares the absolute unity of God. Pieces of alum, or sticks of alum, are used as house amulets, and in Persia, Turkey, Palestine, and Egypt mothers place bits of alum in one or other of their children's garments, or tie them inside their head-coverings or caps.

Alatuir.—See Amber.

Amber.—Ornaments made of amber were worn by women in the earliest periods of the history of many of the peoples of Asia, Africa, and Europe. When men discovered its electrical properties, which

were known to THEOPHRASTUS, they began to make amulets of it, and men, women, and children wore them on their necks. Amber dust was sometimes mixed with honey and oil of roses and given as a medicine to those who were suffering from ear-ache or failure of sight; amber dust when taken in water relieved pains in the stomach, and helped the kidneys and liver and the larger intestines to perform their functions regularly and effectively. The smell of burnt amber helped women in labour, and an amber ball, if held in the hands, kept a man cool during the hottest days of summer, and reduced the heat in a man suffering from fever. A model of the phallus made of amber was regarded as a most powerful protection against the Evil Eye and any and every attack of evil spirits. Beads made of amber preserved the wearer against rheumatism, toothache, headache, rickets, jaundice, and every kind of internal ailment; a piece of amber placed on the nose stopped excessive bleeding, and an amber amulet tied to the neck made the largest goitre to disappear. In many European countries amber is worn as a protection against witches and warlocks, and even ill-luck. The Arab physicians used amber powder largely in their medicines, and in addition to the diseases and ailments mentioned above, it was given to pregnant women to prevent miscarriage, and to a patient suffering from ulcers, boils, carbuncles, etc. In Eastern Asia amber amulets are made in the form of lions, hares, dogs, frogs, fish, etc., and these are believed to add to the virility of men and the fecundity of women.

AMETHYST, from the Gr. ἀμέθυστος "not drunken," "without drunkenness." This beautiful stone was

believed to possess many qualities valuable to man, and was greatly prized as an ornament and as an amulet. Some of the ancients thought that it was called "amethyst" because it was the colour of violet wine, and protected men from drunkenness; but PLINY (*Hist. Nat.*, xxxvii. 40) does not believe this, and thinks that the stone and the wine have no connection. He mentions that the magicians declared that if the names of the sun and moon were written upon an amethyst, and that if it was tied to the neck with peacocks' hairs and the feathers of a swallow, it would protect a man against sorcery. The man who placed an amethyst under his tongue might drink the contents of a large vessel of wine without becoming intoxicated, and he who drank wine out of a vessel made of amethyst might drink all its contents with impunity. Worn as an amulet it cured a man of gout; placed under the pillow an amethyst gave the sleeper pleasant dreams, and it improved his memory, and made him immune from poison. Some believed that the wearer of the stone became gentle and amiable through its influence, and that by it he was preserved from outbursts of temper and wrath. Its presence in the ring of a bishop was thought to be helpful to the wearer and also to the devotee who kissed it.

ANTIPATHES was either black coral or jet, each of which was supposed to keep the wearer from suffering.

ASBESTOS preserved a man from sorcery and the Evil Eye.

ASPHALT, or bitumen, *mûmîyâ*, was much used in medicine, and that which was taken out from the skulls of Egyptian mummies was believed to possess

special magical powers. It preserved a man from sprains, fractures of the bones, blows, fallings down, headache, epilepsy, dizziness, palpitation of the heart, etc. A cross made with asphalt on a man or beast protected it from witchcraft and the Evil Eye. The AZTEKS tie little bags containing asphalt to the necks of their children to keep away sickness from them.

BERYL protected the bearer against the helplessness caused by fascination. The green variety was used in treating diseases of the eye, and the yellowish-green stone for jaundice and diseases of the liver. It is often called the "stone of St. Thomas."

CARBUNCLE.—This stone protected the wearer against fascination.

CARNELIAN is called a "blood stone," because it acted on the blood, and prevented it from rising in excess to the head. It repressed fluxes of blood, and restrained superfluous menstruation, and stopped bleeding at the nose. A carnelian ring made a man peaceful and slow to anger. Carnelian makes the skin healthy and removes blotches, pimples, and sores. Throughout the Middle Ages it was believed to protect men from fascination, and to this day JEWS, ARABS, TURKS, GREEKS and many other peoples on the shores of the MEDITERRANEAN wear amulets made of it as a defence against the Evil Eye. The opaque variety of carnelian is called SARD.

CATER'S EYE, a dull red stone with a white mark in it, which is supposed to represent the pupil of a cat's eye. It has an evil reputation, and in WESTERN ASIA is regarded as a provoker of strife; the man who sees his wife wearing the stone expects domestic trouble.

Cat's Eye as an amulet is supposed to protect a man from witchcraft and death. The Arabs assign to it a property which caused its wearer to become invisible in battle. Mr. Anderson states that when a man in Kordofân doubts his wife's fidelity, and is about to go on a journey, he makes her drink milk in which a cat's eye has been washed, so that if after his departure she commits adultery, there shall be no children of the union.

Catochitis, a Corsican stone which sticks to the hand like gum, was supposed to guard a man from fascination (Pliny, *Hist. Nat.*, xxvii. 56).

Chalcedony was used in medicine in cases of fever, and was supposed to render the passage of gall stones easy. It was supposed to give a man a peaceful and equable disposition, and protect him from the Evil Eye.

Chalk and other white stones, or plaster of Paris, in Germany and neighbouring countries are regarded as a protection against evil. Crosses made on objects with chalk, and the initial letters of the names of the Three Kings, C. M. B., written with chalk on the doors of houses on the day of the Epiphany, protect them from witchcraft and the danger from fire. C=Caspar, M=Melchior, B=Baltazar.

Cross-Stones (Staurotides) protect children and others from sicknesses caused by witchcraft. They are worn in little bags attached to the neck or in the pockets. In Italy, the stone is called *pietra della croce,* and in Finisterre it is worn as an amulet against shipwreck.

Crystal (Rock-crystal).—According to Pliny (*Hist. Nat.*, xxxvii. 9, 10) the ancients believed that crystal was petrified ice. It was used as a burning-

glass in medical operations, and in powder was administered as a medicine for scrofula, swellings of the glands, diseases of the eyes, heart disease, fever, and intestinal pains. Mixed with honey it increased the milk of the mother who was suckling a child. Little balls of crystal, set in metal bands, are found all over EUROPE, and in ENGLAND and IRELAND; where and why these were made is not known, but they were probably used as amulets. Crystal was held in high esteem by the early Christians who regarded it as a symbol of the Immaculate Conception. And KING, in his *History of Gems* (pp. 104–8), describes a ball of crystal on which was engraved the Gnostic formula ΑΒΛΑΝΑΘΑΝΑΛΒΑ. Crystal has always been greatly prized in Scotland. Several of the Clans possessed crystal balls which were regarded as "stones of victory," and water in which they were washed was given as medicine to sick men and cattle. Crystal amulets protected their wearers against the Evil Eye, and saved them from bad dreams; he who drinks from a crystal vessel will never suffer from dropsy, and a piece of crystal laid on the cheek will drive away toothache and will give relief, in any case, to the sufferer. Some of the Mexican Indians believe that the souls of both living and dead people dwell in crystal. And among some of the tribes in AUSTRALIA and GUINEA the magicians by means of it produce rain, for crystal is the rain-maker *par excellence*.

CORAL.—An amulet against sterility, and it protected its wearer against the Evil Eye. Powdered coral was used in medicine.

DIAMOND. — According to PLINY (*Hist. Nat.*, xxxvii. 15) the diamond rendered all poisons

innocuous and drove away madness, and it was believed to protect a man against fascination, and to keep away from him night spirits and evil dreams. Wine and water in which a diamond was dipped preserved the drinker of it from gout, jaundice, and apoplexy. A diamond worn on the left arm drove away wild beasts, demons, and devils, and evil men, and by its excessive hardness it overcame the Devil himself. It cured every kind of sickness and disease, fortified the mind, and strengthened the body. The water in which the great KÔH-I-NÛR diamond was dipped when in INDIA was believed to heal every sickness. As an amulet the diamond protected a man against plague, and pestilence, and the Evil Eye.

EMERALD.—In ancient times the emerald was believed to cure diseases of the eyes, and later it was worn as an amulet against fascination and the Evil Eye, and epilepsy. The sight of an emerald struck such terror into the viper and cobra that their eyes leaped out of their heads.

EYE-STONE.—A name given to quartz and the eye-agate.

FELDSPAR.—A hard greenstone which was much used in EGYPT for amulets of various kinds. The natives of Kordofân attach a piece of it to their necks to preserve them from sunstroke, headaches, and bleeding of the nose during sleep.

GAGGITIS, so called because it was first found at GAGGE in LYDIA; the name first appears in NIKANDER, *Theriaca*, v. 37. See JET, GALAKTITE. See MILK-STONE.

GARNET.—An amulet of garnet protected a man from evil and terrifying dreams, and when worn

on the body prevented skin diseases. When danger approached it lost its brilliance and became dull. The ITALIANS call it *pietra della vedovanza,* "the stone of widowhood," because widows wear necklaces made of garnet beads, and hairpins ornamented with garnets. The garnet assures to its wearer love and faithfulness, and freedom from wounds.

HAEMATITE, or BLOODSTONE.—The blood-red powder scraped off this stone was used freely as a medicine by the ancients, and was believed to stop bleedings of every kind, whether external or internal. It cleared blood-shot eyes, and dried up rheum in the eyes, and provided a cure for snake-bite, and stopped bleedings in the lungs, and uterus, and gave relief to sufferers from urinary troubles. The Greeks believed that the stone had fallen from heaven. Many modern peoples of EUROPE wear bezels of bloodstone in their rings, and hold the same views as the ancients as to its curative powers; in parts of the Sûdân bloodstone amulets are supposed to protect their wearers from sunstroke and headache, and many of the Mediterranean peoples wear it as a protection against the Evil Eye. The name of BLOODSTONE is also applied to red coral, red agate, red marble, red jasper, carnelian, and HELIOTROPE.

HYACINTH.—Amulets made of this were worn on the neck, and bezels in rings assisted women in childbirth, drove away from men evil spirits and bad dreams, protected them against fascination and lightning, strengthened the members, fortified the heart, restored the appetite, suppressed flatulence, produced sleep, and banished grief and melancholy from the mind.

IRON PYRITES.—Sir HENRY YULE found that the sailors on the IRAWADDY river in Burmah wore this substance as an amulet against crocodiles.

JADE, also known as NEPHRITE, AXE-STONE, KIDNEY-STONE and GREEN JASPER.—Amulets made of this hard and very beautiful stone assisted women in childbirth, and were regarded as rendering unfailing help to those who were suffering from intestinal troubles. Many powers were attributed to this stone. Green jade was a bringer of rain, and drove away wild and evil beasts and spirits. It cured dropsy, abolished thirst, made a man victorious in battle, protected from lightning, and relieved palpitation of the heart. The use of jade as an amulet in WESTERN ASIA dates from the IVth millennium B.C., and is very common among the TURKS, ARABS, and ARMENIANS at the present day. In CHINA, jade is worn on the neck and breast, and the business man when carrying out a weighty transaction holds his amulet in his hand and seeks counsel from it. Nephrite is found in abundance in TEWAHI PUNAMU in NEW ZEALAND, and on the west coast it is called "Punamu Stone." The MAORIS wear figures of their ancestral gods in Nephrite, suspended from their necks. The smooth, soft variety of Jade, or Nephrite, is known as JADEITE.

JASPIS, or JASPER, *i.e.* the green variety of it is almost indistinguishable from Nephrite; when there are flecks of red in it, as we see in Gnostic gems, it is called HELIOTROPE, or Bloodstone. The red variety is often found in amulets. It was supposed to possess many magical qualities, and when powdered it was used in medicine, and we find it

as an ingredient in the preparations made up for women. Like Nephrite, both the red and the jaspis were employed against fascination and the Evil Eye, and they were supposed to increase the milk in women who were suckling children, to drive away night devils, and to help pregnant women. The Egyptians associated red jaspis with the blood of Isis (see page 137), and throughout the Middle Ages it was always used to staunch the bleeding of the nose and of wounds in general, and in cases of excessive menstruation.

JET (GAGGITIS).—Many ancient writers attribute numerous powers to this stone. Burnt in the powdered form it drove away snakes and reptiles; and healed sufferers from epilepsy, toothache, headache, and glandular swellings in the neck; and helped women in labour (if they held a piece of it in their hands); and nullified spells and charms; and alleviated pains in the stomach and assisted the dropsical. In ancient times it was held in high esteem in the BRITISH ISLES, where it was believed to protect people from thunderstorms, devils, poison, demoniacal possession, internal disease caused by devils, witchcraft, failure in bodily strength and snake bite. The Irish housewife burnt jet during her husband's absence to ensure his safety. In ITALY a jet beetle was a protection against the Evil Eye, and the amulet MANO CORNUTA was, and still is, often made of jet. The Sardinian amulet PINNADELLU is also made of jet, which because of its black colour is supposed to be baleful for the Evil Eye. The HEART of jet inscribed with a Latin Cross, and a Cross of jet were two amulets which were held in high esteem among Christians a century

or two ago. The little disks of jet which have been found in INDIA and EGYPT also probably served as amulets against the Evil Eye.

LAPIS LAZULI.—This beautiful stone was highly prized by the earliest inhabitants of INDIA, PERSIA, (IRÂN), and MESOPOTAMIA, and kings and queens and high officials in the last-named country had their cylinder-seals, or seal cylinders made of it. Many very fine examples were discovered by Mr. WOOLLEY at UR of the Chaldees, and some of them are to be seen in the British Museum. Memorial tablets and other objects were made of lapis lazuli ; see Brit. Mus., No. 91013 (tablet of LUGAL-TARSI), No. 91452 (mace-head), No. 174 (pupil of an eye ; see the *Guide*, p. 238). The Egyptians distinguished two kinds of lapis lazuli, the real and the artificial, which was a sort of paste made from the powder of the stone. The real lapis lazuli was used for making scarabs and figures of gods, and beads were made of the blue paste. The SUMERIANS believed that the wearer of a lapis lazuli amulet carried with him the veritable presence of a god, and a text says " his god will rejoice him " (Mr. Gadd's translation). In a powdered form it was administered to patients suffering from gall-stones, melancholy, sleeplessness, and fever. The lapis STAMATOPETRA amulet, *i.e.* " Stop-stone," in use in MACEDONIA at the present time is supposed to prevent miscarriage and abortion, and to ward off calamities of every kind.

MAGNETITE.—Primitive man firmly believed that the magnetic power in this stone was caused by some living being. It possessed the strength of haematite, and dispelled melancholy, and relieved pains in the hands and feet, and assisted women in

labour, and (when attached to the neck) improved the memory, and was a protection against fascination. The MEXICANS carry it in their belts so that it may give them success in their undertakings, and according to SELIGMANN prostitutes prize it highly. The stone is regarded as a living thing, and needs food and drink. It is placed in water on Friday so that it may drink, and it is then laid in the sun and given iron filings to eat. If a man pollutes it he dies. If a man rubs a magnetite knife it becomes poisonous, and he who is wounded by it will assuredly die. As the devil lives in it a man must not carry it when he goes to Mass, and as it attracts lightning it must not be carried during a storm. It heals the body when laid on a wound, but it will not cure sores in the head during rainy weather. Dr. Campbell Thompson has shown that the Assyrians called Magnetite *shadanu ṣabitu, i.e.* the "haematite which attracts, grasps." Before sexual intercourse the man mixed the magnetite with oil and rubbed himself with the mixture. The woman rubbed herself with *parzilli, i.e.* iron powder to increase her power of attraction for the man. See MAN, January, 1928, p. 14.

MALACHITE.—Amulets made of this stone are common both in the East and the West, and when attached to the necks of children, whether in the cradle or out of it, the stone protects them from the Evil Eye, and eases their pain when cutting their teeth. In some parts of EUROPE people believe that if a piece of malachite be tied over the umbilicus of a woman in labour it will facilitate the birth of her child. In ITALY, under the name of *pietra del pavone,* it is supposed to cure diseases of the eyes.

MARBLE.—Amulets made of a kind of limestone like zoned alabaster are, in INDIA, believed to protect the wearer against the Evil Eye.

MELITITE.—Ball-shaped amulets made of this stone are tied to the garments of children to ward off infantile diseases.

MILK-STONE (GALAKTITE).—According to some ancient writers the milk-stone obtained its name because milk flowed from it. Others believed that when taken in the form of a powder mixed with honey it assisted the secretions and flow of milk in women. If the stone was dipped in sea water and rubbed on the backs of sheep it produced abundance of milk in the ewes. As an amulet it protected children from the Evil Eye, and women wore it when suckling their babes; it relieved toothache, and protected the wearer against witchcraft. Light-coloured agate is used as a milk-stone in ITALY. And as the people associate the name of the stone with that of AGATHA, the martyr, whose breasts were cut off, it is supposed to possess extra protective and beneficent powers; for this saint is regarded as the patron of all mothers who are giving suck, and to assist in regularizing all the functions in the bodies of women. In SYRIA and PALESTINE, both Christian and Muslim mothers, when they fear a shortage of milk, dissolve little cakes made of earth taken from the "Milk Grotto" near BETHLEHEM, and bearing the seal of the Holy Sepulchre, in water and drink the mixture, believing that it will increase the secretion of milk in the breasts. They do this because of their faith in an ancient legend concerning the Virgin MARY. According to this, on the night of their flight to Egypt, JOSEPH and MARY and the

CHILD took refuge in the cave, which is now called the "Milk Grotto," and there she suckled our Lord. As she was doing this a drop of her milk fell on the ground, and from that night to the present time the dust from the Grotto has been used as a sure means of increasing the secretion of milk in women and regulating the supply of the same. Beads made from the dust and worn on the neck have the same effect.

MOONSTONE.—Amulets made of this stone protected men against epilepsy, and when hung upon fruit trees produced abundant crops of fruit. It is generally regarded in the East as a "lucky" stone, and like moss agate it assisted all vegetation.

NEPHRITE. See JADE.

ONYX.—Opinion is divided as to the influence of this stone. The onyx is generally declared to be an unlucky stone, and many people, in the East as well as in the West, look upon it with disfavour. Those who hold this view say that it incites to strife, and causes contention between friends, and gives the wearer broken sleep and terrifying dreams, and causes pregnant women to bring forth their children prematurely. On the other hand, many INDIANS and PERSIANS wear it as an amulet to protect them against the Evil Eye. Those who give the stone a good name say that an onyx stone placed near or on a woman in labour reduces the pains of childbirth, and conduces delivery.

OPAL.—Ancient traditions attribute to this remarkable stone a two-fold quality, that is to say, it possesses the baleful influence of the Evil Eye, and also the power to relieve the pains of those who are suffering from diseases of the eye. And some say that as an amulet it makes the wearer immune from

every disease of the eye, and that it increases the powers of the eyes and the mind. As the brilliant colours of the ruby, and carbuncle, and garnet, and emerald and amethyst are seen in its depths, admirers of the stone say that the opal possesses all the prophylactic and therapeutic powers of these stones. The so-called BLACK OPAL is highly prized, and every friend who has possessed one has assured me that it was the "luck stone" of his or her life.

PERIDOT, PERIDOTE, PERIDOTO.—A word of unknown origin, but probably a corruption of some oriental name for OLIVINE. In colour it closely resembles CHRYSOLITE, but its yellowish-green colour is much deeper than that of chrysolite. It was much prized by the ancients, and in modern times by the French jewellers, who probably obtained it from EGYPT. Ancient writers called the stone TOPAZ, and it is now known that it comes from the Jazîrat Zabûgat in the Red Sea, which some have identified with the Topaz Island of Greek writers. The peridot is a comparatively rare stone, and many of those found in shops have been taken from old rings and crosses. One of the finest known is to be seen in the shrine of the Three Kings CASPAR, MELCHIOR and BALTHAZAR in Cologne Cathedral. As an amulet the peridot is said to possess all the virtues of the topaz. Worn on the left arm it protects the wearer against the Evil Eye and because of its yellowish-green colour it was regarded as a palliative for diseases of the liver and dropsy, and it was said to free the mind from envious thoughts.

PUMICE STONE is used as a birth amulet, and is carried by women who are anxious to secure easy labour.

Ruby.—As an amulet it was believed to protect a man from witchcraft of all kinds, plague, pestilence and famine. The water in which a ruby had been washed was administered as a stomachic, and ruby-powder was one ingredient in medicines that were intended to check a flux of blood.

Salt (Rock Salt).—Strictly speaking salt should not be included among precious, and semi-precious, stones, but on account of its colour and its preservative qualities many people have regarded it, if not as a holy, as a sacred substance. Its operations were regarded as both prophylactic and therapeutic. Since salt was acceptable to the gods as an offering, it was held in detestation by the spirits of evil, though from the point of view of its destructive effects on vegetation, it aided them in their wicked deeds. Salt warded off the Evil Eye from a man, and its efficacy was greatly increased if it were heated and sprinkled on human beings and cattle, and if it was mixed with pitch. In the Egyptian Aphrodite mysteries salt is associated with a phallus, which was also a warder-off of evil. Throughout Europe salt was, and probably still is, regarded as a protection against evil spirits and witchcraft, and animals and the farms they lived on were sprinkled with it, no man doubting its efficacy. In many places it is still believed that it is unlucky to spill salt, and the spiller at once takes care to cast a little over his left shoulder. How old this superstition is cannot be said, but it probably dates in the West from the time of the imposition of a salt tax in England, France, and other countries. Why the spiller of salt must cast a little over his left shoulder is obvious. The evil spirits congregated on the

left side of a man, and the salt drove them away and so averted the evil which they are ever ready to do to man. The Ḳabbâlâh regards the Hebrew word for salt, MLḤ, as a sacred word, for the numerical values of its letters $40 + 30 + 8 = 78$ is the same as the numerical values of the letters in the great name of God, YHWH, *i.e.* $10 + 5 + 6 + 5 = 26$ multiplied by 3. Seligmann has shown by the number of examples which he has collected in his book that among all the peoples of the world, both ancient and modern, salt has played a prominent part in all the rites and ceremonies connected with birth, circumcision, initiation, marriage, death and private and public worship. And it has always been believed that it protects both the living and the dead. When Muḥammad the Prophet advised 'Alî "to begin with the salt, and end with the salt, for in it lies the means of healing seventy diseases," he only described briefly the experience of all the savage and civilized peoples of the world of whom we have any knowledge. We may note in passing that in Abyssinia salt has very special importance, for slabs of rock-salt at one time formed the currency of the greater part of the country. The Abyssinians call the slab of salt which takes the place of a coin 'Amôlê. It is from 10 to 12 inches in length, and in width and thickness from $1\frac{1}{2}$ to $2\frac{1}{2}$ inches; its weight is about 17 ounces.

Sapphire.—To what stone this name was given by ancient writers is not certain, for some of them seem to have confounded it with lapis lazuli, the turquoise, and the Hyacinth. In India and Arabia it is worn as a health amulet, and as a protection against the Evil Eye, and plague and pestilence. The healthier the body the least chance have the evil

spirits to do it harm. The amulet also conduced to equability of minds.

SARD.—This stone, often confounded with carnelian, was supposed to help women in labour and assist an easy delivery.

SARDONYX.—This stone was regarded as a protection against witchcraft, and removed rheum from the eyes, and prevented premature childbirth.

SELENITE (MOONSTONE).—Was believed to assist the growth of trees and plants in orchards and gardens, and to protect a man from wandering of the mind, insanity and epilepsy.

SCHIST.—This stone was much used in making amulets by the EGYPTIAN and was supposed to possess magical properties similar to those of haematite.

SERPENTINE.—This stone owes its name to its similarity to the green, speckled skin of the serpent, and amulets made of it were worn against the bites of serpents, and the stings of noxious reptiles generally, and poisons. It was believed that if a poisoned drink was given to a man in a vessel made of serpentine, the outside of the vessel would burst into a sweat. On the other hand a serpentine vessel increased the effect of medicines drunk from it. It regulated the supply of milk in nursing mothers.

STALAGMITES.—Small stones, or perhaps petrified earth, which are found on the floors of stalactite caves; they were carried in little bags and were believed to protect the wearer from witchcraft.

SULPHUR.—Pieces of sulphur have been regarded as amulets against colds, rheumatism, and pains in the body caused by witchcraft, and when powdered and mixed with wine or water it was supposed to

protect the drinker from every kind of evil influence. Fumigation of animals, and dwellings, was supposed to protect them against fascination.

Topaz (Chrysolite). See Peridot.

Travertine, the Italian Travertino (from the Latin *tibertinus lapis*, "Tibur stone"), is a yellowish deposit formed by springs, which in Italy children wear as amulets in little bags to protect them from witchcraft.

Turquoise, *i.e.* the "Turkish" stone, is highly prized all over Asia and in many parts of Africa, not only for its beautiful greenish-blue colour, but for its prophylactic and therapeutic qualities. The Arabs call it *Fayrûz* and *Fîrûzaj*, *i.e.* the "lucky stone," and have no doubt about its benevolent action. It is mounted in rings, and necklaces and ear-rings, and head-ornaments, and when carried as an amulet it protects the wearer from poison, the bites of reptiles, diseases of the eye, and, according to information received in *Arabia*, it warns him of the approach of death by changing its colour. Many Orientals carry it to ward off the Evil Eye. In the Sûdân the water in which it has been dipped or washed is administered as a palliative to those who suffer from retention of the urine. The Buddhists associate it with the Buddha, because of the legend in which a turquoise stone enabled him to destroy a foul monster.

CHAPTER XXV.

THE STONES OF THE PLANETS AND THEIR INFLUENCES.

The old astrologers believed that precious and semi-precious stones were bearers of the influences of the Seven Astrological Stars or Planets. Thus they associated with the—

SUN, yellowish or gold-coloured stones, *e.g.* amber, hyacinth, topaz, chrysolite.

With the MOON, whitish stones, *e.g.* the diamond, crystal, opal, beryl, mother-of-pearl.

With MARS, red stones, *e.g.* ruby, haematite, jasper, blood-stone.

With MERCURY, stones of neutral tints, *e.g.* agate, carnelian, chalcedony, sardonyx.

With JUPITER, blue stones, *e.g.* amethyst, turquoise, sapphire, jasper, blue diamond.

With VENUS, green stones, *e.g.* the emerald and some kinds of sapphires.

With SATURN, black stones, *e.g.* jet, onyx, obsidian, diamond, and black coral.

The astrologers believed that each stone possessed a sort of living personality, which could experience sickness and disease, and could become old and powerless and even die. As has been shown in the section on Babylonian amulets, superstitions of this kind were common in Babylonia in the third millennium B.C., and the Rubrics in the Book of the Dead prove that the same was the case in Egypt. Thus chapter XXX B must be written on a scarab of green stone, and the text of the Isis amulet on

carnelian, and that of the Ṭeṭ of Osiris on gold. The Shamîr gem (diamond ?), which was set in the magic ring of Solomon, was regarded as a living power which preserved him from all harm, and kept him on his throne. To the early Christians the diamond was the symbol of our Lord, and they regarded it as an antidote to both physical and moral evil. Both the pagan astrologers and Christians held the sapphire in high esteem, the former associating it with the planet Venus, and the latter with the Virgin Mary. It was a type of virginity and chastity. Some stones were credited with many powers. Thus the jacinth gave a man health and happiness and wealth and protected him from lightning and the thunderbolt. The turquoise, emerald, and root-of-emerald preserved a man from every kind of accident, and the emerald especially was supposed to stimulate the mental powers. But authorities on such matters did not always agree as to the effect which was produced by certain stones. Thus some thought that an amethyst preserved its wearer from drunkenness, whilst others believed that it made him dream many dreams. Red stones, the ruby, carbuncle, and red jasper were generally believed to make a man strong and sturdy ; some, however, regarded it as a healer of wounds. To stones used in medicine specific qualities were ascribed.

THE SYMBOLISM OF GEMS AND SEMI-PRECIOUS STONES.

AGATE (black).—Courage, boldness, victory in games, prosperity. Agates with unusual markings on them were greatly prized, and special value was attached to them.

AGATE (red).—Calm, peace, protection against the bites of snakes, scorpions, and other insects, and against lightning and the thunderbolt.

AQUAMARINE.—Youth, hope, health. Worn in earrings it gained affection and love for the wearer.

AMBER.—Preserved children from fits.

AMETHYST.—Peace of mind. It prevented its wearer from getting drunk and, if the circle of the sun or moon was engraved on it, from death by poison.

BERYL.—Hope.

CAT'S EYE.—Protection against the Evil Eye. Long life.

CARBUNCLE.—Determination, assurance, energy, Physical well-being.

CARNELIAN.—Friendship. A cure for depression and pessimism.

CHRYSOLITE.—Wisdom, discretion, prudence.

CHRYSOPRASE.—Gaiety, joy.

CORAL (red).—Attachment, devotion, protection against plague and pestilence. It loses its colour when a friend of the wearer is about to die.

CORUNDUM.—Stability of mind.

DIAMOND.—Candour, sincerity, fidelity and affection.

EMERALD.—Faithfulness, unchanging love. Helps the wearer to forecast events.

GARNET.—Energy, devotion, loyalty. Promotes sincerity.

HAEMATITE.—Alertness, vivacity, sexual impulse, success in litigation.

HYACINTH (JACINTH).—Fidelity.

JADE (white).—Quiets intestinal disturbances.

JADE (black).—Strength, power.

Jasper.—Joy, happiness, relief from pain.

Jet.—Grief, mourning.

Lapis lazuli.—Capacity, ability, success, divine favour.

Loadstone.—Honesty, integrity, virility.

Magnetite.—Sexual impulse.

Moonstone.—See Selenite.

Olivine.—Simplicity, modesty, pleasure, happiness.

Onyx.—Destroys nightmare and bad dreams. Perspicacity.

Opal.—Fidelity, religious emotion, prayers, assurance.

Pearl.—Chastity, purity.

Peridot.—Thunderbolt. An aid to friendship.

Ruby.—Love, passion. An aid to firm friendship. Beauty.

Sapphire.—Innocence, truth. A giver of health and a preserver of chastity.

Sardonyx.—Brightness, vivacity. A guide to honour and renown.

Selenite.—Good Luck.

Topaz.—Love, affection. An aid to sweetness of disposition.

Turquoise.—Courage which leads to fulfilment and success.

Turquoise (black-lined).—Love, and a winner of love.

LUMINOUS GEMS, MYTHICAL AND REAL

By Dr. SYDNEY H. BALL
NEW YORK, N. Y.

MARTIUS reports that Bassianus lies dead in "this detested dark blood-drinking pit."

Quintus: If it be dark how dost thou know 'tis he?
Martius: Upon his bloody finger he doth wear
A precious ring that lightens all the hole,
Which, like a taper, in some monument,
Doth shine upon the dead man's earthy cheeks
And shows the rugged entrails of the pit."
—*Shakespeare,* "Titus Andronicus," Act II, Scene 4.

Ancient and medieval histories and the folklore of all time spin many a tale of luminous gems, rubies, garnets, emeralds, olivines and diamonds and even the pearl so bright in many cases as to be a reasonable substitute for a battery of electric light bulbs. The variants of these tales are many, about one hundred being known to the writer.

Some gems indeed do glow in the dark after being excited by friction or heat: if the glow continues beyond the period of excitation, the phenomenon is phosphorescence: if the glow ceases with the excitation, it is fluorescence. Practically all diamonds, if rubbed with a cloth, and a few diamonds, after being exposed to direct rays of the sun, glow in the dark. Again diamonds and white topaz if heated below red heat may phosphoresce. The phosphorescent quality of diamonds when heated by the sun's rays is usually believed to have been first discovered by Albertus Magnus (? 1206–1280) and it was apparently rediscovered by Sir Robert Boyle in 1663. Boyle also found that one diamond when pressed with a steel bodkin emitted light. Praphulla Chandra Ray, however, claims with apparent justice that Bhoja, a Hindoo of the eleventh century, knew that diamonds phosphoresce. Du Fay, in 1735, determined that lapis lazuli and the occasional emerald and aquamarine were luminescent. Wedgewood, in 1792, found that two pieces of rock crystal or of agate, rubbed against one another, phosphoresce. Pott some fifteen years earlier knew of the luminescence of rock crystal. Wedgewood also states that the ruby gives "a beautiful red light of short continuance." Edmond Becquerel, in 1861, reports that ruby fluoresces better than sapphire. Red felspar fluoresces and when some adularia is crushed the powder fairly flames. From the character of the fluorescence produced by cathode rays, the country of source of a genuine ruby can be determined as can the factory from which a synthetic comes. Many other gems glow if treated with ultra-violet, cathode or x-rays, or with radium emanations: but these are all too recent additions to science to have influenced the authors of the myths of luminous gems.

The discovery of the fluorescence of the mineral from which the property gains its name, fluorite, is usually ascribed to Sir David Brewster in 1833. But Philip Skippon[1] states that one Monsieur Lort, of Montpellier, France, a "counterfeiter" of "amethysts, topazes, emeralds, and sapphires" found that on heating "Fluor Smaragdi" "in a pan of coals" and afterwards "putting it in a dark place (it) shines very much: At the same time several other stones were tried but did not shine." Monsieur Lort's

[1] "An Account of a Journey made through Part of the Low Countries, Germany, Italy, and France about 1663–5," "Churchill's Voyages," 1732, Vol. VI, p. 718.

notebooks would make interesting reading to-day. Some fluorspar, particularly the variety chlorophane, is so fluorescent that it becomes luminescent by the heat of one's hand. Gustave Rose, the great German mineralogist, during his travels in Russia is said to have seen among the gravels of the Irtish River, near Krasnojarsk, chlorophane pebbles which shone with brilliancy all night long, merely due to being subjected during the day to the sun's heat. The Reverend C. W. King believed that phosphorescence "must often have attracted the notice of Orientals on entering their gloomy chambers after exposure to their blazing sun and thus have afforded sufficient foundation to the wonderful tales built upon the simple fact by their luxuriant 'imaginations.'" I thoroughly agree that the Orientals must have noted the phenomenon as did undoubtedly many a savage striking quartz fragments together to get fire. While it is therefore not impossible that the inventors of certain of the tales may have been acquainted with the luminosity of gems, in my opinion many of the tales must be of other origin.

Perhaps, however, the discoverer of the luminescence of gem stones may have been an American Indian. In the kivas or shrines of the pueblos of our Southwest, the drum in certain religious ceremonials portrays thunder and in the darkness of the shrine two pieces of quartz rubbed against one another, lightning. A. V. Kidder in the ruins of the Pecos pueblo, San Miguel County, New Mexico, a pueblo long abandoned, found a "lightning stone," a cylinder of rock crystal which was made to revolve in a base with a shallow semi-circular groove, exactly fitting the cylinder. When the cylinder was rapidly revolved on its base, both elements became markedly luminous. Here we have a machine, a highly evolved mechanism, the joint product of the lapidary and the physicist, which we infer to be perhaps 700 years old. The discovery must be many centuries older, probably by an Indian making in some shaded spot an arrow from quartz.

The recital of the principal, and particularly the older, of the folk tales of luminous gems may not be without interest and will suggest whether these tales are of Greek, Roman, Chinese, Hindoo or medieval European origin. The loci of the stories is all Asia, except Siberia, all Europe except Norway and Russia, Borneo, New Guinea, the United States, Canada, certain South American countries and Abyssinia, French Congo and Angola in Africa. I think, however, the American and African myths were introduced by Europeans. The originators of the tales are Hindoos, Chinese, Hebrews, Greeks and Romans, and the European peoples, especially as to the latter, those of the Middle Ages. The earlier tales originated many centuries before the time of Christ and they are still being invented.

Most of the myths center around the carbuncle or ruby, stones not differentiated from one another by the classical and medieval mineralogists, less commonly around other gems, diamonds and pearls and still less commonly around olivine and onyx. Emerald, jade, cat's-eye and marble also appear as the subject of certain tales, as do certain stones which we can not identify, like "aster," "ceraunia," "hibien," "strange stones," the "sleeping stone" and the "stone that attracts stones." The earliest myths center around luminous precious stones (species unnamed), rubies and diamonds, but luminous emeralds, onyxes, pearls and jade have been described for over two thousand years. Strangely enough, fluorspar and certain species of amber, notably that from Sicily, while strongly fluorescent, do not figure in the myths, nor does opal, certain fine examples of which appear to be fairly alive with fire; indeed one fine example is known as the "Fire of Troy." Again lapis lazuli, used

widely as a decorative stone for over five thousand years, is not mentioned, although at least that from Chili phosphoresces when heated below red heat.

We have all, I think, likened the ruddy light of some fine ruby or garnet to a ball of fire, and the Greeks and Romans named them respectively "anthrax" and "carbunculus," each word meaning "glowing coal." Of course from the Greek form our word "anthracite" was derived. Mineralogists still call the beautiful deep-red garnet pyrope ("fire-eyed"). The Hebrew word for carbuncle is "Eqdach," from a root meaning "to light a fire." As to the other stones, perhaps the "fire" of the diamond may be an explanation, and Berthold Laufer notes that the Chinese apply the epithet "ye kuang" ("brilliant at night") to the diamond, an expression which he is inclined to believe originated in the fifth century of our era. Such an explanation can scarcely apply to the emerald and olivine, prized for their color and transparency, or to the pearl, jade, cat's-eye or marble.

Only in China and Japan and among the Jews and the Abyssinians is the pearl luminous. To these wise men of the East, the pearl is a product of the moon or in their mythology represents or is identical with it. Consequently, the night-shining legends of the pearl are logical, and even we to-day can see the similarity of a fine pearl and the full moon at its best. It may be added that after the luminescence of the Bologna stone (impure barite) was discovered by the Bolognese cobbler, Vincenzo Cascariolo, in 1602, it was sometimes called "lapis lunaris," as it gave out in the darkness the light it received from the sun. Imagination, however, was not lacking in the originator of folk-tales any more than in the creator of the latest detective story: scientific phenomenon to a small degree may have been the source of some few of the tales, mnemonic suggestion helped, but imagination predominated, particularly when we find a ruby or a garnet serving as a lighting plant for a large hall. In the Lei-chau peninsula, in Canton Province, famous throughout China for its myths as to thunder showers, after thunder showers "black stones are found emitting light and sonorous sound on being struck." That lightning and luminous stones are not more frequently associated seems strange.

The principal themes of the myths are three in number. First the illumination of buildings, a myth of Hindoo origin, although some of the stories may well have developed independently elsewhere. As variants, we have the lighting of ships, a myth of Hebrew origin and the guiding of lost persons first appearing in Europe in the Middle Ages. Second, we have the gem-mining stories, the gem being located at night due to its light-giving qualities and extracted by day, tales of Greek origin. The third, the serpent or animal theme, is of Hindoo origin: the variant in which the jewel is in the head of a small animal, the carbunculo, is probably a Spanish adaptation of the story and a further variant, that of the Grateful Beast, is probably independently of Chinese and Roman origin.

The writer has elsewhere expressed the belief that the fine gems, the diamond, ruby and sapphire, were first known to the Hindoos between 800 and 600 B.C. About this time appeared the Vishnu Purâna, in which it is stated that Vishnu, in his incarnation as Seshanâga under the name Ananta ("Endless"), "has a thousand heads adorned with the mystical Swâstika and in each head a jewel to give light." The Vedas also hold that the fixed stars have no actual existence, but that the objects which shine by night are couches of gold set with diamonds and rubies on which the inhabitants of paradise repose. The ancient Hindoo book, Mahabharata (perhaps 200 B.C. to 200 A.D.), tells in the story of the Pan-

davas brothers, of the palace of the raja Babhruvâhana with its precious stones that "shone like lamps so that there was no need for any other light in the assembly." In the Buddhacharita (about 100 A.D.) the city of Kapila so shone with the splendor of gems "that darkness like poverty could find no place." So that in India, the earliest country in which fine gems were known, the luminous character of gems was believed in some twenty-five hundred years ago.

Herodotus (approximately 484–420 B.C.) was the first European to describe luminous gems. Two great columns in the temple of Hercules at Tyre, one of gold, the other of smaragdos (green gems including emerald), the latter of which shone with great brilliancy at night, excite his admiration. The wily priests doubtless enclosed a lamp in hollow green glass, to mislead the credulous. "On Rivers" probably written by the grammarian, Parthenius, Vergil's tutor in Greek, in the first century before our era states that in the Sagaris River the "Aster" is found, "which flames in the dark hence called 'Ballen,' the King, by the Phrygians." Pliny in the first century of our era describes the chrysolampis, an eastern gem, "pale by day but of a fiery lustre by night."

The earliest Chinese reference to luminous gems is found in the biography of Li Sen, he who burned the Confucian literature (210 B.C.) under the Emperor Shi Hwang-ti, in which "moon-bright pearls" and a "night shining" jade disk are mentioned.

Talmudic legends (dating from, say, 400 to 600 A.D.) contain rather numerous references to luminous gems: for example, Abraham was so jealous of his wives, and they were not few, that he incarcerated them in a city of iron with walls so high that the poor women saw neither the sun, the moon nor the stars. He generously, however, provided a great bowl filled with jewels which lighted up the whole building.

The best documented of the illumination tales and a characteristic one is that of the luminous carbuncle or ruby of the King of Ceylon, first mentioned by Cosmas Indicopleustes in the sixth century and thereafter described by many travelers, the latest of the seventeenth century. The stone, as big as a pine cone, was in a temple situated on a hill, some state in the Buddha Tooth Temple near Anurajapura. "Its magical brilliance illumines the whole heaven. In the calm of a clear and cloudless night it can be seen by all, even at a distance of 10,000 li" (the equivalent of the old li is so variable that the distance might vary from 3½ to 3,500 miles), says the Chinese Buddhist pilgrim, Hüan Tsang. Others state at night it shines "like a torch"; that it "serves instead of a lamp at night"; that it has "the appearance of a glowing fire" or of that "of a great flame of fire." Due to its luminescence, according to one of these early Chinese travelers, it was called "The Red Palace Illuminator."

In the latter part of the fifteenth century, John Norton, an English alchemist, wrote a poem entitled the "Ordinal or a manual of the chemical art."[2] He proposed to erect over the Thames, at London, a gold bridge, to be lighted by carbuncles set on golden pinnacles, "A glorious thing for men to beholde."

A variant of the illumination theme is that of boats lighted by luminous gems. An old Talmudic legend states that Noah's Ark was illuminated by a carbuncle, and as it shone more brilliant by night than by day, it permitted Noah to tell even in the torrential rains of the flood night from day. According to the Chanson de Roland, dating from the twelfth century, the Saracen ships coming from Africa were lighted by carbuncles. Strangely enough, somewhat over a century ago the idea was incorporated in the Book of the Mormons, sixteen small stones, white and clear,

[2] Elias Ashmole Theatrum Chemicum Britannicum, London, 1652, p. 27.

being touched with the fingers of the Lord so that they might "shine forth in darkness." A stone being placed in either end of each vessel, the Jaredites for the 344 days of their voyage to America had "light continually."

The theme of luminous gems guiding mariners and others originated in Europe in the Middle Ages. The earliest is probably the Scandinavian saga of the Visby garnets. Visby, now but a shadow of the old Hanseatic trade emporium, lies on the island of Gotland, about 150 miles south by east of Stockholm. The ruins of the monastery-church of the Dominicans, St. Nicholas, still stand. In the heyday of Visby's magnificence, huge garnets formed the center of two rose windows on the west gable end of the church, overlooking the Baltic Sea. Sagas say the two gems shone at night as brightly as did the sun at noon and guided mariners safely to the port. The treasures of the Church of St. Nicholas, particularly the garnets, were of such inestimable value that they were guarded night and day by 24 soldiers, and death was meted out to those who approached the church after sundown. In 1361 Valdemar IV, the ambitious and unscrupulous king of Denmark, attacked the town and after a brave defense, it fell. His rich booty, including the sparkling jewels, which he tore from the rose windows, was placed on his own, the largest ship of his fleet. It was wrecked on one of the Karls Islands, and while the king himself was saved, the treasure sank. To-day, in times of calm, devout Gotland fishermen know that the unearthly rose light which wells up from the deeps of the Baltic is but the luminosity of their sacred jewels, now resting on the bottom of the sea.

The wedding ring of the Virgin Mary and Joseph, according to different accounts, set with an onyx or an amethyst or made of a single green jasper was said to have been brought from the Holy Land in 996 A.D. It was placed in the Church of Mustiola, Clusium (modern Chiusi), Italy, and in 1473 transferred to the Franciscan monastery in that city. One of the brothers, Wintherus, a crafty German, stole it. As he fled, night came on: he knelt before the ring, and on promising to return it, it emitted a great light by which he traveled to Perugia. The two cities fought valiantly for the possession of this sacred relic, but in 1486 the Vatican awarded it to Perugia, where it was placed in the Chapel of the Church of St. Lawrence. That matchless raconteur of Western stories, Jim Bridger (do you know his tale of the petrified forest with petrified birds in mid-air with the notes they sing also suspended in the air petrified?), brought the tale to America. A party of whites were so closely pursued by Indians that they perforce hid during the day. For three consecutive nights they traveled by the luminescence of a great diamond in the face of a neighboring mountain.

The mining theme is of Greek origin and was almost simultaneously told a few years before Christ's birth by Diodorus Siculius and by Strabo. The island, Ophiodes, in the Red Sea (present Zebirget) was so called as it was infested with snakes which Ptolemy Philadelphus exterminated so that its olivines, even today the finest in the world, could be mined. Olivine first appears in Egyptian jewelry in the eighteenth century dynasty so that the source was presumably known some 1,500 years before Diodorus's time. The mines were the personal monopoly of the Egyptian king and were worked under the watchful eyes of his representatives. Diodorus says: "All were forbidden to set foot upon that Place: and if any landed there, he was presently put to death by the Keeper of the island. These Keepers were few and lived a most miserable Life; and lest the Stones should be stolen and carry'd off there was not a Ship left

there: and if any by chance pass near these places (out of fear of the King) they sail away as far off as they can." As the island was a barren waste, the miners, provided the provision ships did not arrive, were "driven to the utmost desperation." "The topaz is a transparent stone sparkling with a golden lustre, which, however, is not easy to be distinguished in the day-time," according to Strabo, "on account of the brightness of the surrounding light, but at night the stones are visible to those who collect them." Diodorus more dramatically states the stone "shines bright and glorious in the darkest night and discovers itself at a great distance. The Keepers of the Island disperse themselves into several Places to search for this stone and whenever it appears they mark the Place with a great Vessel of largeness sufficient to cover the sparkling Stone: and then in the Day-time go to the place, cut out the Stone, and deliver it to those that are Artists in polishing of 'em.'" Strangely enough the "topaz" of the legend is in reality our olivine, a stone not luminescent, while the true topaz is. Pliny repeats the same tale about the Carchedonia, probably a garnet from near Carthage; "found they are twinckling against the moonlight and especially when it is in the full."

This tale may well have been told to travelers by astute Egyptian gem merchants anxious to enhance the value of their wares by exaggerating the dangers inherent to procuring the olivines. And yet, to-day, in the tungsten mining industry, the fluorescence of one of its principal ores, scheelite, the calcium tungstate, is turned to advantage at the Mill City mine of the Nevada-Massachusetts Company. Portable ultra-violet lamps for fluorescing scheelite are used underground in geological work and in sampling the ore. The scheelite usually fluoresces a light blue. Fluorescence is also used in testing the quantity of scheelite in the various mill products. The use of ultra-violet lamps in detecting the amount of willemite (zinc orthosilicate) in the ores and mill products at the New Jersey Zinc Company's mine, at Franklin, New Jersey, has been standard practice since 1906.

There is an old Banian legend, the date of which is unknown to me, that to Shuddery, one of the four sons of the first humans, Pourous and Parcoutee, the first diamond mine was disclosed at night by the admirable brightness of its stones; he believed it fire till he found it "wanted the heate." He and his sons "did afterwards travaile to the myne of diamonds . . . and stored themselves with them which ever since have been merchandize of deere estimation." In the Psysiologus written about 125 A.D. it is stated that the diamond is not to be found in the day but only at night.

In 632 A.D. it is stated that the jade of the rivers of Khutan, Chinese Turkestan, being discovered by its shining in the water at night, was procured at low waters by divers.

A curious adaptation of Strabo's story is given as to the gold of the land of Ishmael, east of Nineveh, in the travels of Rabbi Petachia of Ratisbon (1170–87 A.D.). There "the gold grows like herbs. In the night its brightness is seen when a mark is made with dust or lime. They then come in the morning and gather the herbs upon which the gold is found." Lastly in the middle of the sixteenth century, Benvenuto Cellini tells us that one Jacques Cola found a carbuncle in his vineyard by its shining at night.

That snakes carry either in their forehead or in their mouth a most potent jewel is an almost world-wide legend. The legend reached Europe at least by the time of Christ, but is presumably of Hindoo origin, India being the earliest source of fine gems and a country by no means short of snakes. It has been suggested the myth is connected with snake

worship, but perhaps either the reflection of light on the serpent's bead-like eye or the flame color of certain snakes' mouths may be the origin of the myth. In only a relative few of these legends is the stone luminous, this variant being known in India, Ceylon, ancient Greece, Armenia, and strangely enough among our own Cherokee Indians. The myth has affinities with the dragon, the carbunculo and many of the "animal-gratitude" legends.

The serpent has in his head a gem, probably a ruby, which has the brightness of a lamp according to the Hindoo work, Brhatsamhita of Varahamihira (505–587 A.D.). In one of Somadeva's stories (eleventh century), the hero's submarine wanderings in search of the silver-jeweled tree is lighted by the Mani or precious jewel from a snake's head. The fact that in the "Life of Apollonius Tyanceus," by Philostratus (A.D. 170–245), the Greek states that in India stones endowed with a peculiar luster and a wonderful virtue are taken from serpents' heads, suggests that the myth is an ancient one in India. The author naïvely adds that the stone in the ring of Gyges which permitted him to see invisible things was of this nature.

The Ceylonese to-day, and it is said even some Europeans resident in Ceylon, believe the Kantha jewel is found in the mouth of certain, but by no means all, cobras. It is highly luminous, and when the serpent wishes to find anything in the dark it disgorges the jewel and swallows it again when its object has been attained. To obtain this sovereign gem the snake must not be killed, for that would be bad luck, but one must throw upon the disgorged gem a mass of clay, a bag of ashes, a basket or a cloth. The poor confused snake, no longer seeing his gem, finally disconsolately leaves the locality and the gem may be recovered. The cobra dies of grief or commits suicide. Dr. H. Hensoldt states he saw at night a cobra contemplating such a stone: and that later one given him by a native turned out to be chlorophane. He concludes that the stone fluoresces like a female fire-fly (a delicacy from the cobra's view-point): and that this serves as a decoy for gallant male flies, thus scientifically explaining the myth of precious stones in snakes' heads! The myth reached Persia over a thousand years and in the tale of the Rose of Bakawali, the heroic prince plunged the forest into darkness by throwing a lump of clay on the gem and the miserable snake and a dragon, who carried the snake in its own mouth, knocked their heads against rocks and died.

The Coreans worship the epkuron-gi, a snake, the guardian of their penates, who when of venerable age carries on his forehead a glistening jewel "ya-kang-chin." The name is applied to any glittering stone, especially the diamond. According to Armenian legend the serpents of Mt. Ararat are ruled by a queen who destroys her enemies by a magic stone, the Hul, carried in her mouth. This "stone of light" "upon certain nights she tosses in the air, when it shines as the sun. Happy the man who shall catch the stone as it falls."

The Cherokee have a myth, a variant of the Horned Serpent legend so prominent in Iroquois mythology, that upon the head of the prince of rattlesnakes there glittered a gem of magic powers. This was stolen by a cunning warrior successfully encased in leather armor against a host of poisonous fangs. The stone was held in religious awe and was only brought forth on state occasions. The stone or a substitute, said to have been transparent, was once supposed to be in possession of several medicine men and was used in divination and in medicine. No living Cherokee now has such a stone. The legend, first told by Lieutenant Henry Timberlake, in 1765, suggests European influence.

In some legends largely of Chinese

origin, dragons replace snakes. The old Chinese author Li-Shi-chên describes "thunder-beads" dropped from the mouth of a divine dragon which light an entire house by night. An Emperor of China many centuries ago, according to a legend of the Dusuns, a Bornean tribe with certain Chinese affinities, heard of a carbuncle upon the summit of Kinabalu guarded by a dragon. He sent his three sons to get it, vowing that the successful one would be his successor. The youngest stole the stone, but the enraged dragon finally overtook the robbers and destroyed all the junks except the one on which the three princes escaped to China. The other Chinese survivors, having no means of reaching their homeland, intermarried with the Dusun women. A variant is the love story of Po Kong, a young Chinese, and the daughter of a Dusun chief, who, marrying against the chief's wishes, fled from his village. One night they saw on the summit of Kinabalu a strange intermittent light, as the guardian dragon alternately swallowed and spit out an enormous carbuncle. The young couple got two handfuls of mud with which, when the carbuncle was on the ground, they blinded the dragon. Po Kong seized the gem, wrapped it in his coat and there was instant darkness. Po Kong basely deserted his wife, leaped a deep chasm into which the pursuing dragon crashed, and settled in a Tempassuk district town and became the founder of a local line of chieftains. But of his first wife and the carbuncle nothing more is known. Friar Jordanus, who wrote about 1330, states that the dragons of India Tertia (Eastern African, south of Abyssinia?) have on their heads "the lustrous stones which we call carbuncles." In their ill-advised attempts to fly they crash into a river issuing from Paradise. After seventy days the people recover the carbuncle and take it to Prester John, the Emperor of the Ethiopians. Sir John Chardin, writing after his third visit to Persia in 1686, says the Egptian carbuncle was probably "only an Oriental Ruby of higher Colour than usual." The Persians call it "Iceb Chirac, the Flambeau of the Night because of the property and Quality it has of enlightening all things round it." . . . "They tell you that the Carbuncle was bred within the Head of a Dragon, a Griffin, or a Royal Eagle, which was found upon the Mountain of Caf."

Another variant of the snake story is that of the "carbunculo," apparently of medieval European origin and introduced into America by the Spaniards. In the Embassy of the Abyssinian Patriarch, Don John Bermudez, to John III of Portugal, written in 1565, an animal of the Upper Nile is described "which they call of the shadow because it hath a skinne on the head wherewith it covereth a very precious stone which they say it hath in her head." William Finch reports in about 1608 the same animal in Sierra Leone. "The Negros told us of a strange beast (which the interpreter called a carbuncle) oft seene yet only by night, having a stone in his forehead, incredibly shining and giving him light to feed, attentive to the least noyse, which he no sooner heareth, but he presently covereth the same with a filme or skinne given him as a naturall covering that his splendour betray him not." Shortly thereafter the story is transferred to America although the bearer in the earliest version is a snake. The Carib Indians (Charles de Rochefort, The History of the Caribby Islands . . . Rendered into English by John Davies, London, 1666, p. 15) have for a long time entertained their visitors with a tale of a huge snake living in an inaccessible hollow on the island of Dominica, West Indies. "On its head was a very sparkling stone, like a Carbuncle, of inestimable price: That it commonly veil'd that rich Jewel with a thin moving skin, like that of a man's eye-lid: but that when it went

to drink or sported himself in the midst of that deep bottom, he fully discover'd it, and that the rocks and all about receiv'd a wonderful lustre from the fire issuing out of that precious crown."

In the highlands of Peru and Bolivia near Lake Titicaca and to a less extent on the Peruvian coast and in the Montaña the Indians tell extraordinary stories of the carbuncolo. Some claim to have seen it as at night it slinks through the thickets; an animal the size of a fox with long black hair. If followed, the animal opens a flap in his forehead, disclosing a brilliant precious stone which blinds whoever tries to grasp it. The flap is then let down and the animal escapes. I think we all have been startled at night by the apparent luminescence of animals' eyes. Tshudi states the story antedates the Spanish conquest, that the early missionaries were told of it by wild Indians and that the early viceroys officially instructed the missionaries to spare no pains to obtain the jewel. According to A. F. Bandelier, the carbunculo is a species of cat and the jewel of blood-red color. He adds it is supposed to dwell in the high snows of the peak Sajama, near Oruro and that it impedes access to the peak. Notwithstanding the reported age of the myth, I believe that it was introduced by the Conquerors particularly as the Peruvian Indians, while acquainted with many precious and decorative stones, had none that might suggest a luminous object. The existence of the tale among Indians as different as those of Peru and Guatemala is further evidence of the introduction of the story to Latin America by the Spaniards. It should be noted how closely these American versions follow the pattern of the European form.

One of the early groups of legends has as its theme animal gratitude. Luminous gems figure in a number of such tales, which probably originated in China and Rome independently some two thousand years ago.

The earliest of these stories known to me is told by the Chinese philosopher, Huai-man-tse, of the second century B.C. A year after the Marquis of Siu had cured a wounded snake, it returned with a luminous pearl in its mouth. It was an inch in diameter, white, and emitted a light as bright as that of the moon, lighting a room like a torch. The same story is told of the Emperor Ho-ti, the stone in this case being a carbuncle. Laufer cites from the Sou Shên ki the following tale: K'uo i Ts', on having restored to health a crane shot by an archer, released it. One night two cranes—a male and a female—appeared before his door, carrying in their beaks moon-bright pearls to reward him.

The earliest of the Roman forms (AElian) of this legend dates about 222 A.D. and is that of Heraclea, a worthy widow of Tarentum, Italy. She had cured a stork of a broken leg. A year thereafter the grateful bird, as Heraclea sat at the door of her cottage, dropped in her lap a jewel, probably a carbuncle. That night as she awoke she found her chamber flooded with light, the stone shining like a burning torch.

Matthew Paris in his chronicles, written about 1195 A.D., states Richard Coeur de Lion used to tell as a parable the following: a Venetian, Vitalis, was rescued from a horrible death by a ladder being let down into a pit into which he had fallen. A lion and a serpent trapped in the same pit used his ladder to escape, and later the lion in gratitude brought to Vitalis a goat he had killed and the snake a luminous jewel which he carried in his mouth. Later the two animals appeared as his witnesses in a lawsuit which he gained. As Richard is reported to have told the story after his return from the Crusades he may have heard it in the East, as a similar story, without, however, the stone being luminous, is said to occur in the Arabic work, Kalíla wa

Dimna (about 800 A.D.), and the Sanskrit work, Katha-Sarit-Sagara, written by Soma Deva in the twelfth century.

John Gower, writing in the fourteenth century, versifies a similar tale. Bardus, a poor wood chopper, helped from a pit a man, Adrian by name, an ape and a serpent. The man proved ungrateful, but the ape piled up faggots for Bardus, and the snake brought him in his mouth a stone more bright than crystal.

In the introductory paragraphs the early investigators of luminescence have been cited, and in fairness we should praise those who first doubted the exaggerated statements which are the foundation of the above myths. The earliest of these was the Portuguese traveler to India and gem expert, Garcias ab Orta (1563), who, having been told by a jeweler of a luminous carbuncle, doubted its existence. Cleandro Arnobio (1602) had also heard of luminous rubies, but was equally skeptical of their existence. Other doubters were Laet (1647), Robert de Berquen (1661) and Pierre de Rosnel (1668). John Josselyn, Gentleman (New England's Rarities, London, 1672, p. 225–6), after describing a highly luminous stone found by an Indian in New England, correctly adds "But I take it to be but a story." Chardin in 1686 defines the luminous carbuncle as an "imaginary stone," and M. L. Dutens, 1778, adds with a French rapier stroke "such things are not believed to-day." The first to doubt the luminous qualities of the pearl is appropriately a Chinese, Sung Ying-sing, who in 1628 wrote "it is not true that there are pearls emitting light at the hour of the dusk or night."

Luminescence, a property of certain gems and other minerals and one to-day of some practical importance, may well have been observed in India many centuries ago. The myths regarding them, originating in different countries and locally believed even in our day, had their origin however in the main through fancied resemblance of the gems to fire or through symbolic affinities of certain gems to the moon.

A Collection of Gems from Egypt in Private Collections

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A COLLECTION OF GEMS FROM EGYPT IN PRIVATE COLLECTIONS

By ABD EL-MOHSEN EL-KHACHAB

To the memory of my friend Dr. J. R. B. Stewart
Professor of Middle Eastern Archaeology at the University of Sydney

ANCIENT seal-stones bear divine figures and symbols of those deities especially sacred to the people who wore them. Similarly, ancient coins bear the figures or symbols of the public gods of the states who minted them. Hence, gems were decorated with genii or gods with whom their owners had very intimate spiritual relations and to whom they were greatly devoted; just as today some people carry small figures or pictures of saints, e.g. the oval green jasper gem (0·015 m. × 0·011 m.) on which St. George is represented on horseback, facing left, spearing the dragon with his lance (pl. XXV, 1).[1]

In general the representations on gems are drawn from the repertory of mythology, picturing the public gods and the most familiar local deities. Archaeologically it is possible therefore to date these gems by comparing the representations with similar examples on other monuments which can be precisely dated, in particular coins which regularly bear the characteristic deities of their countries.

Excavation in Egypt has yielded enormous quantities of semi-precious engraved stones, mostly of the Graeco-Roman period, decorated with special local Egypto-classical subjects or types. As a group they form a magnificent *tableau* of the typically Egyptian art of the period, that is, the art of Alexandria, which was quite different from contemporary classical art elsewhere. It was a local art of very characteristic type. The gems representative of this art can be dated approximately from the coins minted in Alexandria by the Roman emperors during the first three centuries A.D. From these gems, coins, and the contemporary terracottas much can be learned about the creeds and social life of the period.

The Egyptian Museum in Cairo has few such gems in its collection, but there are many in the possession of private individuals in Egypt.[2] In this article some of the pieces in private hands are described.

I[3]

1. Oval carnelian gem (0·013 m. × 0·011 m.) with a representation of Athena, helmeted and seated, facing right, holding a figure of Nike who presents a wreath to her; beside the throne, a shield (pl. XXV, 2).

[1] This gem belongs to Miss Diradour.

[2] Cf. el-Khachab, 'Une petite collection de pierres gravées', *Ann. Serv.* 50 (1950), 469 ff.

[3] Most of the pieces in this section belong to Mr. Asaad Abd el-Motagly, an amateur who possesses a good collection of Egyptian antiquities; for some of his gold coins see el-Khachab, *Ann. Serv.* 53 (1955), 258 ff.

Athena, being identified with the Egyptian goddess Neith, became in the Graeco-Roman period the goddess of the Saite nome in which the town of Naucratis was situated. The common device of that town therefore was a figure of Athena, helmeted and standing with an owl in one extended hand and a sceptre in the other; as such the goddess was called Athena Archegetis ('founder' of the colony).[1] The subject on this gem is of Greek origin and is found on coins minted in Alexandria, e.g. on the reverse of a coin in billon of year 14 of the Emperor Gallienus (mid-third century A.D.) (pl. XXV, 2 *a*). The people of Alexandria had a particular devotion to the goddess of wisdom as a symbol of the triumph of good over evil.

2. Oval chalcedony gem (0·020 m.×0·016 m.) engraved with a beautiful representation of Dikaiosyne (Justice), standing, facing right and holding a balance and cornucopia (pl. XXV, 3).

This type of representation of Dikaiosyne, the personification of Justice, was common in Graeco-Roman Egypt and is often found on Alexandrian coins, e.g. on the reverse of a billon coin minted in year 2 of Alexander Severus (early third century) (pl. XXV, 3 *a*).

3. Oval carnelian gem (0·016 m.×0·011 m.) with a figure of Elpis (Hope), crowned with laurel, advancing to the right, holding with one hand the skirt of her chiton and in the other a flower (pl. XXV, 4).

This common representation of Elpis is of an Egyptian type, based on a Roman archaic original. As Elpis of Alexandria she is shown turreted. The normal form of representation was commonly used when she was shown in company with Harpocrates of Mendes.[2] The reverse of a bronze coin of year 14 of Hadrian (mid-second century A.D.) bears a figure of Elpis similar to that found on this gem (pl. XXV, 4 *a*). The reverse of a coin in billon of year 11 of Alexander Severus (early third century A.D.) shows a figure of Elpis turreted (pl. XXV, 4 *b*).

4. Oval carnelian gem (0·014 m.×0·011 m.) with a fine representation of Harpocrates, naked and crowned with the double crown, facing right, with the finger of one hand to his mouth, the other hand holding a cornucopia (pl. XXV, 5).

'Nul dieu n'a été plus cher qu'Harpocrates à la piété populaire de l'Égypte gréco-romaine', says Perdrizet.[3] Representations of him were very common at this period: '[elles] se comptent par myriades dans les terres-cuites votives.'[4] Many variant types of representations of this god are found on the coins of Alexandria.[5]

5. Oval carnelian gem (0·015 m.×0·010 m.) with an interesting scene of Heracles struggling with the Nemean lion (pl. XXVI, 1).

This mythical episode formed one of the twelve 'labours' by which the hero-god chose the path of virtue and became the symbol of beneficence for the world;[6] for which

[1] Cf. *Schol.* Aristophanes, *Av.* v, 515: *τῆς Ἀρχηγέτιδος Ἀθηνᾶς τὸ ἄγαλμα γλαῦκα εἰ χεν ἐν τῇ χειρί*, quoted in *B.M. Cat. of Coins of Alexandria and the Nomes*, p. xlv.

[2] Ibid., p. lii.

[3] *Terres-cuites grecques d'Égypte de la collection Fouquet*, I, 27.

[4] Ibid., also P. Graindor, *Terres-cuites de l'Égypte gréco-romaine*, 90, and n. 1.

[5] Cf. el-Khachab, *Ann. Serv.* 50, 421, nos. 2. 3, and pl. 1, nos. 1 *a* and *b*; 476, n. 1.

[6] For the symbolism of the labours cf. Rose, *Handbook of Greek Mythology*, 210: 'Of course the ancient mythologists who made Heracles into a solar hero, saw in it a reference to the twelve signs of the Zodiac';

reason Alexander the Great, a ruler who worked for the welfare of his subjects, was identified with Heracles (pl. XXVI, 2).[1] The struggle with the Nemean lion was a common theme of art and story from early Greek times to late Roman times—in vase-painting (e.g. on a black-figure vase of the sixth century B.C., pl. XXVI, 3),[2] in statuary and reliefs,[3] and on classical Greek and Roman coins (e.g. pl. XXVI, 4).[4]

According to Herodotus[5] the worship of Heracles was known in Egypt in pharaonic times, but archaeological evidence for such worship does not occur before the Graeco-Roman period. Then episodes from the mythology of Heracles were familiar as types in Egyptian coinage: thus the struggle with the Nemean lion on the reverse of an Alexandrian bronze coin issued by Antoninus Pius (mid-second century B.C.) (pl. XXVI, 5). They are also found on gems (pl. XXVI, 6) and as terracotta and bronze statuettes.[6] In the field behind the figure of Heracles on the coin mentioned above, is a bow and quiver, whereas on the gem here discussed there is a club. Otherwise the two representations are very similar and it is probable therefore that the gem is to be dated to the second century A.D.

No doubt the possession of a gem with a figure of Heracles carried the hope expressed by the man who wrote over his door:

ὁ τοῦ Διὸς καλλίνικος Ἡρακλῆς
ἐνθάδε κατοικεῖ. μηδὲν εἰσίτω κακόν.

'Heracles, son of Zeus, gloriously victorious, dwells here: let no evil enter.'[7]

6. Round carnelian gem (0·010 m. in diameter) engraved with a head of Hermes wearing the winged helmet, facing left (pl. XXV, 6).

This representation is of a Roman type not very well known in Egypt.

7. Oval carnelian gem (0·009 m.×0·012 m.) engraved with a very beautiful representation of Nike in a two-horsed chariot (*biga*), going left, holding in her hands the reins and an olive-branch (pl. XXV, 7).

Roscher, p. 2204, for Heracles/Helios and his representations 'im Sonnenbecher durch Okeanos'. The number 12 was first used for Heracles apparently by the poet Peisander, who took the idea from the struggles of Melkart, the Phoenician god, with the hostile beasts of the Zodiac, Seyffart, *Dict. of Class. Ant.* 280. P. Grimal, *Dict. de la myth. gr. et rom.* 190 (s.v. 'Heracles') explains the twelve labours as 'l'épreuve de l'âme qui se libère progressivement de la servitude du corps et des passions jusqu'à l'apothéose finale'. See also F. Brommer, *Herakles. Die zwölf Taten des Helden in antiker Kunst und Literatur* (1953).

[1] A. Savill, *Alexander the Great and his Time*, 79; Roscher, p. 2168.

[2] A. Fairbanks, *Greek Gods and Heroes*, 55, fig. 56; F. Brommer, *Vasenlisten zur griech. Heldensage* (1956), 69.

[3] S. Reinach, *Répertoire de la statuaire gr. et rom.* I, 114, no. 213 A; 463, pl. 785, no. 1977; 467, pl. 792, no. 1977 A; II, pt. 1, 236. 237. A very interesting relief showing this labour was found recently (1959) in a Heraclean sanctuary at Ἄνω Λίμνη Ζοφρά, cf. G. Daux, *BCH* 84 (1960), 655. 656, fig. 2.

[4] E.g. J. Ward, *Greek Cities and their Parents*, 8, no. 44 and pl. 1, a silver stater of Heracleia in Lucania of 380–300 B.C.; on the obverse a head of Athena, helmeted, facing right. Also Gardner, *The Types of Greek Coins*, pl. 5, no. 32 (Heracleia in Lucania, 371–335 B.C.); *B.M. Guide to the Principal Coins of the Greeks*, 14, Period III C, no. 12 and pl. 25 (also Heracleia in Lucania).

[5] II, 43. B. C. Brundage, *JNES* 17 (1958), 225. For other Greek gods of Egyptian origin, cf. Hesiod, II, 91; W. C. Guthrie, *The Greeks and their Gods*, 238; Erman, *Religion der Ägypter*, 335.

[6] Two similar representations on carnelian gems in S. Reinach, *Pierres gravées* (Bibl. des figures gr. et rom.), 25, pl. 18, no. 369; 80, pl. 79 ii, no. 38; Furtwängler, *Antiken Gemmen*, pl. 6, no. 42; pl. 9, no. 48. For the bronze coin, cf. Dattari, *Numi Aug. Alexandrini*, no. 2592 and pl. 15.

[7] Guthrie, op. cit. 240, n. 1 (Diogenes Laertius).

Such scenes were common in the art of the classical period, and the type found here may be traced to Greek sources.

8. Oval carnelian gem (0·012 m.×0·010 m.). A similar representation to the last, but purely Roman in style, with Victory holding a wreath (pl. XXV, 8).

Scenes such as these last two are frequently found on Alexandrian coins, e.g. on the reverse of a coin in billon dated in year 13 of Trajan (early second century A.D.), where Victory holds a branch and a wreath (pl. XXV, 8 *a*, shown larger than actual size). From very ancient times chariot-racing was a popular sport, and victory in the Olympic Games was often commemorated on monuments. Commemoration on coins always indicated an imperial victory.

9. Oval chalcedony gem (0·019 m.×0·014 m.) bearing a figure of Poseidon (Neptune), naked, turning to the right with one foot on a dolphin, holding a sword and the trident (pl. XXV, 9).

Poseidon was worshipped by the Greeks in Alexandria; he was not apparently identified with any Egyptian god.[1] A precisely similar representation is found on the reverse of a coin in billon of year 2 of Claudius II (late third century A.D.) (pl. XXV, 9 *a*).

10. Oval red jasper gem (0·013 m.×0·016 m.) set in a modern gold ring, with a representation of the head of Roma (Minerva), helmeted, facing left (pl. XXV, 10).

11. Oval carnelian gem (0·014 m.×0·011 m.) engraved with a representation of Roma similar to the last, but by a less accomplished hand.

The personifications of the principal cities of antiquity, such as Rome, Athens, Constantinople, and Alexandria, were frequently shown on Greek and Roman coins. An Alexandrian coin in billon of year 13 of Nero (mid-first century A.D.) bears a representation of Roma (pl. XXV, 10 *a*). Sometimes the genii of two different cities might be represented together on coins. In the late Empire, Constantinople and Rome were depicted together on gold coins. In the time of the Roman Republic, Roma, the divine personification of the city, was the symbol of the Roman State. During the Empire she became the goddess of the official cult and was identified with Alexandria, Athena, and Tyche (*dea Roma et Roma aeterna*).[2] The practice of worshipping the genius of a city was used politically for the extension of the domination of that city over others.

12. Oval carnelian gem (0·015 m.×0·012 m.) with a representation of Zeus, father of the gods, seated on a throne, facing right, crowned with laurels and holding a sceptre and patera; in front at his feet, an eagle standing, facing left (pl. XXV, 11).

The form of representation of Zeus with eagle, Greek in origin, is very important, and is found on Alexandrian coins of nearly all the Roman emperors of the first three centuries A.D. It occurs regularly on coins of billon or bronze, minted in support of the official cult of the Great God and rendering homage thereby to him, e.g. on the reverse of a coin in billon struck in year 3 of Gallienus (mid-third century A.D.) (pl. XXV, 11 *a*); on the obverse is a bust of Gallienus' wife, Cornelia Salonina. Gems so engraved were, no doubt, carried by faithful believers in Zeus.

[1] *B.M. Cat. of Coins of Alexandria and the Nomes*, p. xli.

[2] Daremberg and Saglio, s.v. 'Roma'.

13. Oval carnelian gem (0·012 m. × 0·010 m.) engraved with a figure of an eagle, standing, looking right, with closed wings, and with a wreath in its beak (pl. XXV, 12).

The eagle was commonly represented on Alexandrian and Roman coins. In the Ptolemaic Period it was shown standing on a thunderbolt, the symbol of Zeus, father of the gods. In Roman times the same representation occurred, but its primary meaning was lost; the eagle was now a military symbol, the legionary *aquila*.[1] This interpretation of the eagle on this gem is confirmed by the wreath it is shown holding in its beak.

14. Oval chalcedony gem (0·017 m. × 0·010 m.) with the representation of two elegant horses, prancing to the left (pl. XXV, 13).[2]

15. Oval carnelian gem (0·016 m. × 0·011 m.) with a scene showing three dogs, running left; possibly a hunting scene (pl. XXV, 14).[3]

II[4]

16. Oval yellow agate gem (0·009 m. × 0·011 m.) with a very beautiful representation of Isis suckling Harpocrates. The goddess is shown seated, facing right, wearing her characteristic head-dress; she holds her breast to her son who is seated on her lap. He wears a diminutive double-crown head-dress (pl. XXV, 15).

This divine group is very commonly found in Graeco-Roman Egypt, modelled in terracotta and bronze, and often used as a monetary type on the reverses of Alexandrian coins, e.g. on a piece in billon of Antoninus Pius (mid-second century A.D.), minted in year 23 (pl. XXV, 15 *a*). Isis, the goddess of a myriad names, occurs in this representation as the symbol of motherhood, the mother nourishing and giving life to her son whom she protects.[5]

17. Oval carnelian gem (0·015 m. × 0·010 m.) with another fine and interesting representation of Isis—Isis Hygieia—standing, facing left, wearing a modius (the corn-measure symbol of fertility), in one hand an erect serpent, in the other a globe; in front, a flaming altar (pl. XXV, 16 and 16*b*).[6]

Isis Hygieia occurs on the reverse of a bronze Alexandrian coin of year 8 of Antoninus Pius: Isis, standing and facing right, wears the modius above the characteristic vulture-head-dress; in one hand she holds a serpent and in the other a sceptre; behind her stands an Apis bull, facing right. On the obverse is a head of Antoninus Pius, wearing a laurel-wreath and facing right (pl. XXV, 16 *a*).[7]

This gem shows Isis in her interesting role of healer (*sospitatrix*—deliverer, or *restitutrix*—restorer) with the special attributes of the serpent (uraeus) and the altar. As

[1] *B.M. Cat. of Coins of Alexandria and the Nomes*, p. lxxxv.

[2] For galloping horses, cf. R. Lefort des Ylouzes, 'Les Images du galop "ramassé" dans l'antiquité', *Rev. arch.* 6ᵉ série, 14 (1939), 47.

[3] Cf. W. Deonna. 'Êtres monstrueux à organes communs', *Rev. arch.* 5ᵉ série, 31 (1930), 28 ff., who refers to this 'thème de la chasse au lièvre, du lièvre poursuivi par un chien' (p. 33), which persisted as a motif on vases and reliefs from archaic Greek times until the Roman Period.

[4] Most of the items in this part belong to Mr. Abd el-Wahab Mostafa, a discriminating amateur student and collector of gems, cf. nos. 16, 19, 28, 29, and 30.

[5] Cf. D. Magie, 'Egyptian Deities in Asia Minor in Inscriptions and on Coins', *AJA* 57 (1953), 163 ff.; el-Khachab, 'Money and Coins in Egypt', *Egypt Travel Magazine* 49 (Sept. 1958), 21 ff.

[6] The property of Mr. Gamal Salem, a keeper in the Egyptian Museum, Cairo.

[7] Zoëga, *Numi aegyptii imperatorii in Museo Borgiano*, no. 215, p. 188 and pl. 21.

Hygieia she was associated with Serapis (hence the modius) and with Asclepius (hence the serpent and the altar).[1] According to Perdrizet, 'L'uraeus que les statues du culte d'Isis tenaient généralement en main, était sensé remuer la bête à chaque transgression de prescriptions de la déesse'.[2] From Graeco-Roman times many representations of the goddess survive in which she is shown holding serpents in one or both hands (pl. XXV, 16 *a-c*).[3] Like all healing deities she was considered by Orientals as a mistress of the world and hence she is sometimes shown holding a globe, as on this gem. She was certainly a restorer of health, but also a protector of the healthy; her image was held therefore to be very efficient against all evil.[4]

18. Oval carnelian gem (0·012 m.×0·008 m.) inserted in a modern gold ring, with a representation of Salus, naked, seen from the back, seated to the left, holding a serpent which she feeds from a patera in her other hand (pl. XXV, 17).[5]

Salus, the Roman genius of health, is frequently found on bronze coins minted outside Egypt, e.g. the reverse of a coin of Septimius Severus (late second century A.D.) where she is again represented feeding a serpent from a patera (pl. XXV, 17 *a*).[6] It is instructive to compare the two types of the Egyptian Isis Hygieia and of the Roman Salus. Not only is there a marked difference between the gem-representations of the two goddesses, but also between the type of Isis shown on Alexandrian coins and the type of Salus shown on coins minted outside Egypt. The difference consists not only in artistic presentation but also in the underlying ideas and beliefs of the two cults—the oriental and the occidental. It is the difference between a goddess who is *cosmocrateira*, and a mere genius—a difference which was soon to lead to the preponderance of oriental ideas and religious beliefs (particularly Alexandrian or Egyptian) in the Roman world.[7]

19. Oval carnelian gem (0·015 m.×0·011 m.) engraved with the bust of Serapis, facing right, crowned with the modius (pl. XXV, 18).

Serapis formed with Isis and Harpocrates the Alexandrian divine triad. His worship goes back to the time of Ptolemy I who needed, for political reasons, a cult by which his subjects, Greek and Egyptian, could be united. Serapis, or Osiris-Apis, was Osiris for the Egyptians and Zeus for the Greeks; as such he became the eponymous god of Alexandria. The Alexandrian triad[8] achieved universal importance during the Roman

[1] Cf. Daremberg and Saglio, s.v. 'Isis'; Maspero, *Hist. de l'Orient*, I, 33; Milne, 'Lead Tokens from Memphis', *Ancient Egypt*, 1915, 110, on the association of Asclepius and Apis says: 'this is quite possible at Memphis, where Asklepios was worshipped by the Greeks as identified with Imhotep'; cf. ibid. 109. Unfortunately the modius on the goddess's head was broken by the goldsmith. It is illustrated on pl. XXV, 16 *b* in an unbroken state.

[2] Perdrizet, *Terres-cuites grecques d'Égypte de la collection Fouquet*, I, 71 ff.; also Dean, *The Work of the Serpent*, 149, who quotes Juvenal, *Sat.* 6, 538, *et movisse caput visa est argentea serpens*. A gem in the Cabinet des Médailles, Bibliothèque Nationale, Paris, shows a cosmic goddess holding a serpent in each hand, cf. Pesce Gennaro, 'Divinità orientali di epoca romana', *Bull. Soc. arch. d'Alex.*, N.S. 10 (1939), 254, fig. 13.

[3] For a representation of Isis with a serpent, cf. Steindorff, *Cat. of Eg. Sculpture in the Walters Art Gallery*, nos. 416. 417, pp. 110–11, and pl. 72.

[4] Daremberg and Saglio, s.v. 'Isis'; D.Magie, *AJA* 57 (1953), 163 ff.

[5] The property of Mr. Mohammed Foad.

[6] Mattingly, *Cat. of Coins of the Roman Empire in B.M.* V, 357, no. 7, pl. 53, 4.

[7] El-Khachab, *JEA* 47 (1961), 125.

[8] Ibid. 126; cf. above, p. 151, n. 5.

Empire, especially in the third century A.D. under the Antonines. Many Egyptian gods were worshipped throughout the Roman Empire, but none was more popular than Serapis. Like Isis he was held to be *unicus*, having assimilated to himself all other gods. His cult was especially fostered by emperors with despotic intentions, such as Caracalla, who claimed consubstantiality with the god.[1] The modius with which he is usually shown crowned was a symbol of fertility, Serapis being a god of fertility. Figures of the god have been found in very large numbers, many in Egypt, such as the small steatite bust illustrated in fig. 1.[2] He is also often figured on Alexandrian coins, e.g. on the reverse of a bronze coin of year 10 of Hadrian (pl. XXV, 18 *a*).

FIG. 1

20. Oval garnet gem (0·027 m. × 0·017 m.) with another Roman-style representation of Pax seated, facing right, holding in one hand a sceptre transversely across her body, and in the other an olive-branch (?), her seat decorated with horizontal bands (pl. XXV, 19).[3]

This gem is probably Renaissance in date; the manner of representing Pax is not Romano-Egyptian, such as is found on Alexandrian coins, but is like that found on Roman coins minted outside Egypt, e.g. on the reverse of a bronze coin of Trajan (early second century A.D.) (pl. XXV, 19 *a*).[4]

21. Oval haematite gem (0·012 m. × 0·016 m.) with a scene of the punishment of Eros (Cupid) who is shown standing, facing left, his hands chained behind his back to a column surmounted by a griffin (*γρύψ*), facing left with one foot on the wheel of Nemesis; in the field, left, in front of Eros, ΔΙΚΑΙΩΣ (justly) (pl. XXV, 20).[5]

Eros or Cupid, the apparently charming god, was in fact, *invictus*,[6] the most dreadful of the gods (*δεινότατον θέων*)[7] whose work involved the joys and pains of love. The punishment he suffered at the hands of his mother Aphrodite, or of Psyche, formed a popular subject of classical art, in painting, as in the houses called 'casa dell'amore punito' at Pompeii, and on gems.[8] On the gem here discussed the punishment is being

[1] El-Khachab, loc. cit.; also Lafaye, *Culte des divinités d'Alexandrie*, 61; L'Orange, *Apotheosis in Ancient Portraiture*, 82.
[2] In the Department of Coins, Egyptian Museum, Cairo.
[3] The property of Mr. Mamdouh Riad.
[4] Mattingly, op. cit. III, 156, no. 745, pl. 26, 3.
[5] The property of Mr. G. Michailides.
[6] Cf. Sophocles, *Antig.* 781.
[7] Lobel and Page, *Poetarum Lesbiorum Fragmenta*, Alc. no. 327, p. 265 (= Alcée, frag. 13, ed. Reinach).
[8] Daremberg and Saglio, s.v. 'Cupido'.

meted out by Nemesis, the goddess of revenge and punishment, in her form as a griffin.[1] The theme was also sometimes reproduced in terracotta, as in the small figure shown in fig. 2. On the gem the inscription δικαίως expresses the goddess's cry of revenge. According to Perdrizet, the weaker sex, being naturally more revengeful, frequently appeals to Nemesis.[2] Girls, always jealous of each other, often invoke this rancorous deity by writing letters, examples of which can be found among Alciphron's letters.[3] Thus Myrrhina threatened her lover with the wrath of Nemesis because he had forsaken her.[4] This letter, says Perdrizet, 'pourrait être scellée d'une de ces entailles'[5]—such as the scene of Eros' punishment represented on this gem. Again according to Perdrizet the gem should

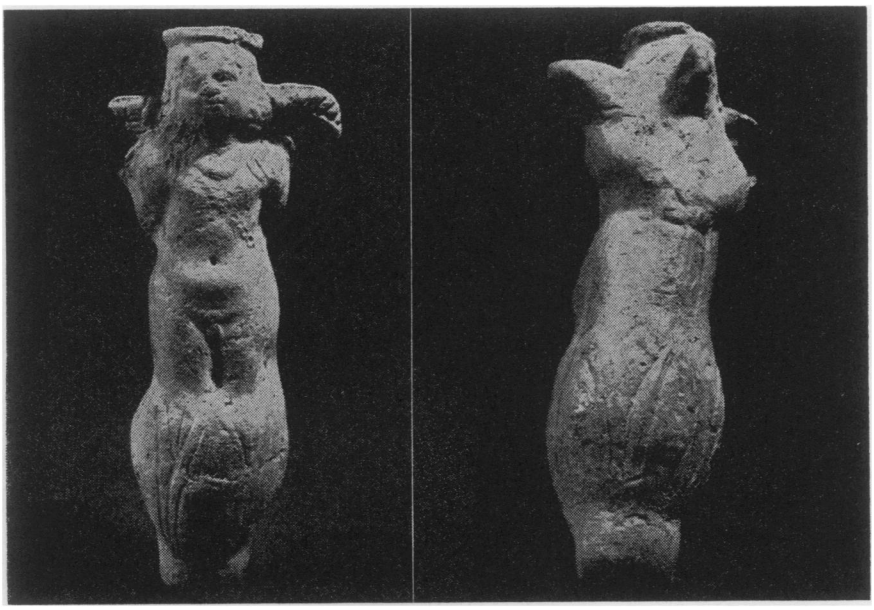


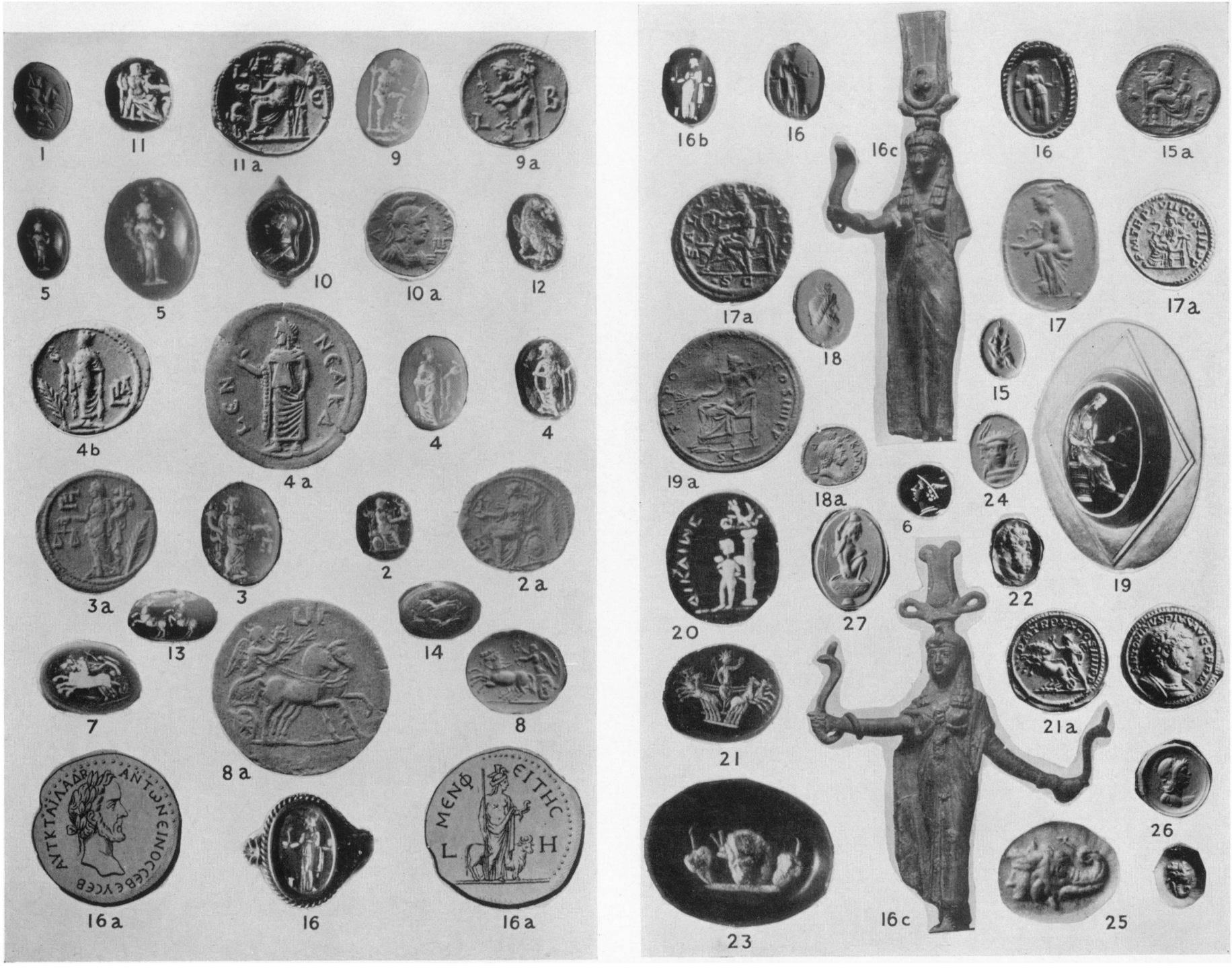
FIG. 2

probably be dated to the Roman Period: 'en général les monuments de la période romaine figurent à côté de Némésis le Griffon (γρύψ) posant la patte sur la roue'.[6]

22. Oval carnelian gem (0·020 m. × 0·015 m.) with a representation of Helios in a quadriga, facing front, with rays around head, holding reins and whip in one hand and raising the other in the gesture of a cosmocrator (pl. XXV, 21).[7]

Sun-worship became particularly important in the Roman Empire in the first and second centuries A.D. with the spread of the worship of Mithras. The creed was fostered by emperors for political reasons: the sun was the royal planet *par excellence*, Ἥλιος ἀνίκητος or *sol invictus*, the cosmocrator or pantocrator, represented on many Roman coins of the period but in a manner different from that of Helios Serapis or Zeus Serapis

[1] Cf. Perdrizet, 'Némésis', *BCH* 36 (1912), 248 ff. [2] Ibid. 249.
[3] E.g. *Epist.* IV, 6: 'The courtesan Thaïs will torment her colleagues not with language but with Nemesis.'
[4] *Epist.* IV. 10, 4. [5] 'Némésis', *BCH* 36 (1912), 249. [6] Ibid. 261.
[7] The property of Mr. Saad Abd el-Hadi from Mallawi.



GEMS FROM EGYPT WITH COMPARATIVE MATERIAL

PLATE XXV

GEMS FROM EGYPT WITH COMPARATIVE MATERIAL

frequently found on the coins of Alexandria.[1] The Roman monetary type was similar to that found on this gem and was used specially under the Antonines and by Caracalla (pl. XXV, 21 *a*) who was particularly devoted to the cult of *sol invictus*.[2] The four horses of the quadriga represented fire, water, earth, and air, the four elements of the universe which were governed by the Sun-god, the cosmocrator.

23. Oval green diorite gem (0·012 m. × 0·008 m.) of Graeco-Roman type, depicting a marvellous head of Dionysus, bearded and facing right, crowned with two vine leaves (pl. XXV, 22).[3]

24. Oval lapis-lazuli gem (0·017 m. × 0·010 m.) engraved with a beautiful representation of the bust of a Roman empress, crowned and facing left (pl. XXVI, 7).[4]

25. Square carnelian gem (0·012 m. square) with a very interesting representation of Harpocrates, standing, holding a short sword and adoring his mother Isis, as Tyche, who stands in front of him holding a cornucopia (pl. XXVI, 8).

This type of scene is Romano-Egyptian of the third century A.D.

26. Round carnelian gem (0·015 m. in diameter) with a head of Athena with three masks, one on the front of the helmet, the second behind it and the third on the goddess's shoulder (pl. XXV, 26).

This gem is probably of Renaissance date.

27. Oval jasper gem (0·020 m. × 0·014 m.) representing Aphrodite naked; seen from the back, with head turned right, bathing in a basket-shaped vessel, her hair hanging down her back. In her hand she holds a bowl with which she pours water over herself (pl. XXV, 27).

This gem, like the last, is probably to be dated to the Renaissance.

28. Oval agate gem (0·010 m. × 0·009 m.) in a modern gold ring, engraved with a very interesting representation of a snail coming out of its shell, moving left, with its two horns erect; on each side a leaf (pl. XXV, 23).

This gem, to be dated to the late Roman or Byzantine Period (which in Egypt was the Coptic Period), bears an amuletic or talismanic device. At this time the mythological subjects of the classical period were replaced by magical or Gnostic motives. The basic meaning of the scene on this gem is 'life', with the snail representing the womb in which the child is conceived. In earlier times Plautus had used the word *concha* for the female organ, and later the snail was considered a symbol of pleasure.[5] According to Pliny the snail was used as a remedy for female illnesses and functional troubles; it was also used to hasten birth.[6] It is still used today for the same purpose in Egypt.[7]

[1] E.g. Mattingly, op. cit. v, 465, no. 195, pl. 73, 2:
Obverse: Bust of the emperor wearing laurel crown, facing right; inscr. ANTONINVS PIVS AUG GERM.
Reverse: Sol standing in quadriga, facing left, with rays round head, one hand raised, the other holding rein and whip; inscr. P· M· TR· P· XX COS IIII P· P·.

[2] Cumont, *Textes et monuments figurés relatifs aux mystères de Mithra*, I, 291; see also the discussion of gem no. 19 above, with notes.

[3] This gem, and nos. 26, 27, are the property of Dr. Ali Askar.

[4] This gem and the next belong to Mrs. Malak Sharawi.

[5] Cf. Pauly-Wissowa, *RE*, s.v. Schneke; Plautus, *Rud.* 704, (Venus) *ex concha natam esse*; also W. Deonna, 'Le murex et la médisance', *Rev. arch.* 1960, tome 2, 142 and n. 8.

[6] Pliny, *NH* xxx, 3–4.

[7] Debono, 'Une utilisation médicinale de l'escargot au Sinaï', *Cah. d'hist. ég.* 9 (1957), 44 ff. speaks of a bedouin recipe used medicinally: 'les bédouins en font une pâte avec du sucre, qui séchée au soleil sera administrée aux femmes en couche.' Also cf. Cabrol, *Dict. ant. chrét.*, s.v. 'Coquillage': 'Les chrétiens prennent l'escargot comme un symbole de tombe.'

29. Oval carnelian gem (0·014 m.×0·011 m.) engraved with a full face of Dionysus flanked on each side by a satyr's mask, the left mask having two goat's horns (representing Pan) (pl. XXV, 24).

This type of combination of masks and of human and animal faces in a pleasant and eccentric way is called a *gryllus*. Their intention, like that of the talismanic gems, was to keep away the evil eye.[1]

30. Oval agate gem (0·012 m.×0·008 m.) bearing a representation of an elephant's head, trunk raised and holding a javelin; the head is backed by an arrangement of three human masks (pl. XXV, 25).[2]

The date of this gem is Graeco-Roman period; elephants are not commonly shown on gems. Furtwängler mentions only one other stone with an elephant's head.[3] The representation on the gem here discussed is another example of a *gryllus*.

[1] Cf. D. M. Robinson, 'The Robinson Coll. of Greek Gems', *Hesperia*, Supplement VIII (1949), 321 and n. 126; G. Richter, *Cat. of Engraved Gems*, pp. lvii–lviii. For the apotropaic purpose of these *grylloi* and of other representations on mosaics, cf. el-Khachab, 'Les Hammams du Kôm Trougah', *Ann. Serv.* 54, esp. p. 120, n. 1; 122.

[2] Mr. Abd el Wahab-Mostafa is the owner of this gem and nos. 28 and 29. Cf. p. 151, n. 4.

[3] *Antiken Gemmen*, II, 223, no. 35; pl. 46, 35: an elephant emerges from a shell. The same representation is found in M. Chabouillet, *Cat. gén. et rais. des camées et pierres gravées de la Bibl. Impér.*

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The Warren Collection of Engraved Gems

THIS famous collection, now for the first time shown publicly in its entirety in the Classical Corridor, has recently been acquired by the Museum from the income of the Francis Bartlett Donation of 1912. It is fitting to recall here that Mr. Bartlett, while imposing no restrictions regarding the use of this gift, expressed his wish that the income for the three years 1912-1914 be devoted to the purchase of works of art "which will add distinction to the collections of classical antiquities and paintings," and his hope that after the expiration of those years the income might be used in the same way.* So far as the Classical Department is concerned, no acquisition could conceivably be made conforming more completely to the wish of this benefactor, whose name is already attached to many of the finest works of Greek art in the Museum.

The art of engraving semi-precious stones with devices to serve as seals has been practiced almost continuously in the nearer Asiatic and western world from early Babylonian times down to the present day. Its technique has remained essentially unchanged; but the subject matter of the designs and the style in which they are treated have naturally varied as much in this as in the other arts of the peoples which produced them. Gem engraving reached its highest development in Greece; and in the extant intaglios the whole history of Greek art can be traced. Made, like coin-dies, to show in imprints as miniature reliefs, such is the perfection of their workmanship that they may be classed as a branch of sculpture rather than as one of the minor arts.

The collecting of engraved gems became popular in ancient times. The cabinet of Mithradates, for example, was carried off to Rome by Pompey; and it is recorded that Julius Cæsar deposited six cabinets of gems in the temple of Venus Genetrix. The potentates of the Renaissance, notably Lorenzo Medici, were zealous collectors of this as well as of other branches of ancient art; and the passion for forming collections of gems continued into the nineteenth century. Interest in antique intaglios and cameos led also to a revival of the art. Renaissance engravers produced skilful renderings of classical subjects in the spirit of their own age. In the eighteenth century ancient models came to be more slavishly imitated, at first by reputable artists who signed their works, but later by forgers who flooded the markets with spurious antiques. The exposure of the notorious Poniatowsky cabinet in 1840 finally put a stop to collecting for a long period.

The interest in gems during the eighteenth century is well illustrated by the history of one of the best-known Græco-Roman intaglios in the present collection, a garnet with a very deeply engraved representation of the frontal head and shoulders of a dog (1). From the rays round the head the animal is identified as Sirius, the dog star. The mouth is open, showing the teeth and tongue. On the collar is the signature of the artist, Gaius. "The deep red stone has a livid bluish hue where it is hollowed thin, which makes the dog's muzzle look pale and

Annual Report, 1912, p. 12.

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moist." Once in the possession of Lord Chesterfield, the gem passed to the Bessborough collection, and thence to the famous cabinet formed by the third Duke of Marlborough. Its earliest recorded ownership is interesting in view of the following passage in a letter from Lord Chesterfield to his son in Rome: "No piping nor fiddling, I beseech you; no days lost in poring upon almost imperceptible *Intaglios* and *Cameos;* and do not become a Virtuoso of small wares. Form a taste of painting, sculpture, and architecture, if you please, by a careful examination of the works of the best ancient and modern artists; those are liberal arts, and a real taste and knowledge of them becomes the man of fashion very well. But beyond certain bounds, the man of taste ends, and the frivolous Virtuoso begins."*

When the above admonition was written, original works of the best Greek periods were practically unknown, and acquaintance with antique art was based upon Græco-Roman copies. But since the transfer of the Elgin marbles to the British Museum and the opening up of Greece to exploration in the early nineteenth century, the excavation of the ancient sanctuaries and cemeteries has brought to light a wealth of new material which has completely revolutionized our conception of Greek art. The present collection covers a wide field historically. It includes a number of Cretan, Mycenæan, Mesopotamian, and Persian seals, some cameos and a Renaissance intaglio. But it is remarkable above all for the preponderance of Greek gems of the sixth, fifth, and fourth centuries, supplemented by Etruscan and Phœnician scarabs of Greek style, and continued by a series of Hellenistic and Græco-Roman intaglios. In artistic quality and historical significance it more than maintains the high standard which Mr. Edward Perry Warren set himself when he brought together the classical collections of this Museum, chiefly during the years 1895 to 1904. It is peculiarly fitting that this collection of gems, representing his crowning achievement, should find a permanent home here.

Many of the gems have long been known to specialists, more than fifty of them being illustrated in Furtwängler's great work, *Die antiken Gemmen.* Professor Beazley's admirable catalogue, *The Lewes House Collection of Ancient Gems,* published in 1920, describes and illustrates one hundred and thirty-nine pieces. But since that year the collection has been enriched by a number of fine intaglios. Including thirty pieces of historical interest added by Mr. Warren as gifts, the total number of gems acquired by the Museum is one hundred and ninety-seven. It is only possible here to call attention to a few of the choicest examples. The illustrations are from photographs of plaster imprints enlarged to two diameters.

A scaraboid of sapphyrine chalcedony (2) is engraved with a representation of a youth curbing

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*Quoted by Beazley, *The Lewes House Collection of Ancient Gems,* p. 116.

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a restive horse, which he holds by the bridle. Minute scrutiny is required to appreciate the wealth of detail in this masterpiece of archaic art. The build and action of the horse show him to be of the same spirited Ionic breed as those on the frieze of the treasury of the Cnidians at Delphi. The lifelike momentary pose of the youth in three-quarter back view with his right leg seen from behind recalls figures in the later archaic vase paintings of about 500 B. C. In the field is the signature Ἐπιμένης ἐποίει. The name of the artist Epimenes is not otherwise known, but two unsigned works have been ascribed to him. One, in the Southesk Collection, shows a youth crouching as he strings his bow; the other is the kneeling archer aiming an arrow, exhibited beside the signed example (3). Slightly earlier in date is the Athena walking, armed with helmet, ægis, spear, and shield, in rosy brown chalcedony (4). A ewe getting up from the ground is a work of the early fifth century, found in the Peloponnese (5). She is shorn save on the neck, where the wool is indicated by pellets in archaic style. The inscription gives the name of the owner, Ἑρμοτίμου εἰμί, "I am (the seal) of Hermotimos." A large sard scaraboid, cut down, has a representation of Achilles slaying the Amazon queen, Penthesilea, remarkable for the pose of the dying Amazon as well as for the elaboration of detail (6).

Archaic Etruscan scarabs are represented in the collection by thirteen pieces, three of which are illustrated here. The figure of a kneeling athlete pouring sand on his thigh (8) is unsurpassed among intaglios of its class. Another scarab shows Herakles bending and drawing water in a pointed amphora from a fountain, the spout of which is in the form of a lion's head; behind him his club and his bow; in the field, his name in Etruscan letters (7). On the third Ajax is represented falling on his sword (9).

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One name stands out preëminent among the gem engravers of all times, that of Dexamenos of Chios, who worked in Athens during the Periclean age. His signature appears on four extant scaraboids. The earliest in style, now in the Fitzwilliam Museum at Cambridge, has a representation of an Athenian woman and her maid. Two others from South Russia in the Hermitage are engraved with exquisite studies of herons, the one in flight, the other standing on one leg, with head turned back, and dropping a grass-hopper from its upraised claw. The fourth signature is on the scaraboid of mottled yellow and jasper illustrated at the top of this article (10). "It is the head of a man somewhat past the prime of life, the outline of whose face does not conform to a strictly classical canon. The head itself is high and round, the forehead large and the chin prominent. A distinct furrow separates the forehead from the spring of the nose, which itself points somewhat downwards and must have been broad at the tip. The eyebrows meet in a bushy tuft. The lips are half opened as if in the act of speaking. Wrinkles are indicated across the massive forehead, at the back corner of the eye, and on the nape of the neck. The hair is thick, crisp and curly behind, but on the fore part of the crown there are signs of incipient baldness and a wisp of hair has been brushed forward to cover the bald place. This dexterous finish to an otherwise elaborate dressing of the hair, as well as the well combed beard, characterize a man of elegant habits."* The stone was found at the foot of Mount Hymettus near Athens. Sir Arthur Evans, arguing that the portrait must be that of an eminent Athenian, has proposed the attractive theory that it represents the statesman Kimon, who was partly of Thracian blood and had thick, curly hair. But most authorities

*Evans, *Revue Archeologique*, 1898, p. 343.

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incline to date the work somewhat later than 450 B. C., the year of Kimon's death. Realistic portraiture is extremely rare among the remains of fifth century Greek art. Two other intaglios with portrait heads are known, but neither approaches this as regards characterization and workmanship. The strongly individualized heads which occur in some Attic vase paintings are not to be regarded as portraits. It is interesting to recall that this seal by Dexamenos, like other Greek masterpieces presenting unexpected features (for example the three-sided fifth century relief in this Museum), was once condemned as a modern product.

The two intaglios figured beside the portrait head belong to a group of seven unsigned stones, which have been attributed with great plausibility to Dexamenos. The first, of chalcedony, sliced from a scaraboid, represents a race-horse walking, with broken reins (11). An inscription gives the name of the owner, Potaneas. Furtwängler considered that this stone "if not by Dexamenos, is by a greater master of the same time and group." With it are to be placed the bolting horse on a scaraboid from Kertch in Petrograd, and the horse attacked by a griffin in the Cabinet des Médailles in Paris. The attribution of the standing heron (12) to Dexamenos rests on its close resemblance to the two signed heron stones in Petrograd. A fourth heron, also probably by the same artist, has been presented to Bowdoin College by Mr. Warren. The remaining two intaglios assigned to Dexamenos are in the British Museum. One represents a flying goose, the other a seated woman playing the harp.

Life-like studies of animals were subjects especially favored by Greek gem engravers. Here, for example, are three of the four representations of stags in the collection (13, 14, 15), the smaller one remarkable for its alert pose, the others extremely delicate renderings of fallow deer grazing. The lioness crouching for the spring, on a sliced barrel of banded agate, is of the later fifth century (16). Examples of more unusual devices are the carrier pigeon on a deep red sard (17) and the hazel nut (18). Of this Mr. Beazley remarks, "Realistic representations of vegetable life are known to be extremely rare in antiquity. A nature study so happy and so unaffected is most readily intelligible in a period not very far removed from that of Dexamenos." A large scaraboid of sapphyrine chalcedony (19) has a spirited rendering of a two-horse chariot wheeling round on the race course, related in style to the splendid chariot scenes on Syracusan coins of the closing fifth century.

Cassandra, taking refuge beside the image of Athena from the attack of Ajax, is the subject of three remarkable intaglios in the collection. On one, a discolored sard of the fourth century (20), the story is dramatically treated. "She has just reached the image. Her garment, snatched up in haste, has fallen on to her legs, and she is trying to fling it round her again. Her rippling hair falls loose down her back." A later version is shown on two large convex stones, one a golden brown sard (21), the other a beryl of the kind called aquamarine (22). The daughter of Priam "kneels with bowed head, a sprig of laurel in her right hand, her left hand clasping the lower part of the image. . . . Cassandra's hair, wreathed with laurel, falls loose on her shoulders. She is naked save for a thin garment covering her left leg and passing behind her left shoulder and over the upper part of her arm." On the beryl "the engraving is not so deep or so precise as in number (21), but no less masterly and of more delicate charm."

Realistic portraiture became common on gems, as on coins, in the Hellenistic period. Two of the three examples illustrated here apparently represent Eastern rulers, for they wear oriental head-dresses (23, 24). The third is a forceful portrait of a Roman (25).

One of the finest Græco-Roman intaglios (26) in the collection shows Augustus, as Neptune, mounting a chariot drawn by four sea-horses over a troubled sea, and escorted by a young Triton and a dolphin. Above is an inscription in Greek letters giving the owner's name, Popilius Albanus. The youthful features of the charioteer bear an unmistakable resemblance to those of Augustus; and the scene has been thought to commemorate the victory over Antony and Cleopatra at Actium in 31 B. C., by which Augustus established himself as emperor.

L. D. C.

Summer Session of the School

THE School of the Museum of Fine Arts will hold a summer session from July 2 to August 10. Instructors will be drawn from the winter faculty and the following subjects offered: drawing from the antique or from life, painting, design, Museum research, modelling, jewelry and metal work. The courses are especially planned to meet the requirements of teachers and of art students who wish to continue their study through vacation. The facilities afforded by the new school building make it possible to offer this additional term of study for which there has long been a demand.

EXHIBITION OF GEMS USED AS AMULETS, ETC.

AT the Annual Meeting of the American Folk-Lore Society, November 28, 1890, Mr. George F. Kunz of New York made an exhibition of certain gems possessing an interest in connection with folk-lore, of which the following is a description.

Star sapphire (asteria,) Ceylon. Light blue sapphire, cut *en cabochon* showing lines of a six-rayed star. In Ceylon these are worn because they are believed to bring good fortune to the wearer and guard him from evil spirits.

Moonstone from Kandy, Ceylon, believed to bring good fortune, and considered holy. These are never sold on any other than cloth of yellow, the sacred color.

Lodestone, a native oxide of iron having magnetic properties. In Europe it was worn for centuries for the power it was supposed to possess, and for the charm it was believed to give the wearer. Large quantities of it are found at Magnet Cove, Arkansas. It is estimated that from one to three tons are annually sold to the negroes of the South, to be used by the voudoos, who employ it as a conjuring stone. In July, 1887, an interesting case was tried in Macon, Georgia, where a negro woman sued a conjurer to recover five dollars which she paid him for a piece of it to serve as a charm to bring back her wandering husband, which it failed to do. As the market value of this stone was only seventy-five cents a pound, the judge ordered the money refunded.

Lodestone (native magnet) worn by the physicians of the fifteenth, sixteenth, seventeenth, and eighteenth centuries.

Tabasheer, bought at the bazaar held at Calcutta, Hindostan, November, 1888; a variety of opal found in the joints of the bamboo, and sold in India for medicinal purposes. This is thought by the writer to have been the snakestone mentioned by Tavernier as possessing the power of neutralizing the bite of the cobra di capello.

Amber circular bead, — very ancient; Cholula, Mexico: believed to be the first noted occurrence of its use as an ornament by the old Mexicans. It was used as an incense in their temples.

Strings of crude amber beads worn by a chief in northern Africa (originally from the Baltic Sea).

Prehistoric beads of garnet, drilled from both sides, — from ancient Bohemian graves.

Small charms made of red and white carnelian, agate, etc., some in the form of rude arrows; found in an ancient Assyrian grave. These are similar in character to those in the Assyrian gallery of the Louvre.

Agate seals, — one containing a Pehlevi inscription, — older than the Persian.

Persian seals, of chalcedony and jasper, not ancient. To every contract is affixed a seal. Nowhere is the use of seals so universal as in Persia, where every mule-driver, or other person who cannot write, carries a seal.

Ancient Assyrian seals, cut in bloodstone, hematite, sard, carnelian, and chalcedony.

Assyrian seals cut in hematite and black slate.

Turquoise talismans, inscribed with inscriptions from the Koran.

Fragment taken from the jade tombstone of Tamerlane, the celebrated Tartar prince, and conqueror of Persia, India, and Egypt. The tombstone is in the mosque Guer Emir at Samarcand. This fragment is from the collection of Dr. Heinrich Fischer. Whoever procured this piece left the remainder of the tombstone for some enterprising American or English collector.

Persian talisman of dark green jade, on which is inscribed the entire first chapter of the Koran.

Mace-head of white jade, said by General Richard Khan (secretary and interpreter of the present Shah of Persia (Nasr-Ed-Din) to have belonged to the great Persian conqueror, Nadir Shah, obtained by him in his loot of India, with other jewels of the treasuries of the kings and moguls of Delhi, which were estimated at the time to be worth £32,250,000. This mace-head is decorated in East Indian style, and contained one hundred and sixty-nine precious stones of fair size, which were removed from it and sold by the descendants of Nadir Shah, who now reside at Teheran, Persia, in a destitute condition.

Votive adze of jadeite, Oaxaca, Mexico. Largest archæological jadeite object known. Weight two hundred and twenty-nine and three-tenths ounces troy. This is of especial interest, because there have been cut from the back two pieces, and an attempt has been made to separate a third portion. Jadeite celts were cut into halves and quarters and then ornamented. This cutting was done to extend the material, owing to its scarcity.

Breastplate of jadeite, ornamented with a Maya face ; taken from a tomb near Santa Lucia, Cotzulmaguapa, Guatemala, near the temples and tombs of the ancient kings of Quiche.

Necklace of emerald-green jadeite beads, and one bead of rock crystal, from the valley of Mexico.

Necklace of beads of emerald-green jadeite, amethyst, green moss agate, serpentine, aragonite, marine shells, etc., from San Juan Teotihuacan, Mexico.

Hei-Tiki fetich charm of Maori chiefs, from South Middle Island,

near Massacre Bay, New Zealand, made of the Oceanic variety of jade, with scalloped circular eyes of the haliotis or abalone shell.

Jade Hei-Tiki fetiches or charms, made of the Oceanic variety of jade; in one the eyes look toward the right, and in the other toward the left.

Chinese armlet of jadeite (imperial jade); — the material mined at Mogung, Burma.

Earring, Maori work, — New Zealand, made of the Oceanic variety of jade.

Aztec pendant of bloodstone (green jasper, with red spots), from Mexico; used by the Aztecs and in Spain in the fifteenth and sixteenth centuries to stanch the flow of blood from a wound.

Gold ornament, star-shaped, with raised representation of the whorl of a shell, from Cholula, Mexico.

Labrets — lip ornaments — made of obsidian, from the valley of Mexico.

Fetich from the Pueblo of Santa Domingo, near Wallace Station, New Mexico, made of gypsum, with eyes of turquoise; used by the medicine men of the Pueblo Indians in their ceremonies to induce rain.

String of beads and a small animal fetich, made of marine shells, to which are attached drilled pieces of turquoise and steatite, from an ancient Zuñi grave near Tempe, Arizona.

A rock-crystal tablet, found in an excavation near Cholula, State of Puebla, Mexico, evidently made to represent an inundation (the whole tablet represents the goddess of water), the lines being the water, and the date of the inundation given as occurring in the "year of four flint."

Lip ornaments, one made of beryl, three inches by one and a half inches; and one of aventurine quartz, worn in the lower lip by the Botacudo Indians of Brazil, Calhau, Brazil, South America.

George Frederick Kunz.

FIGURE 1 WALTERS ART GALLERY

NIKANDER

Head of Berenice II
(Impression of Intaglio, enlarged)

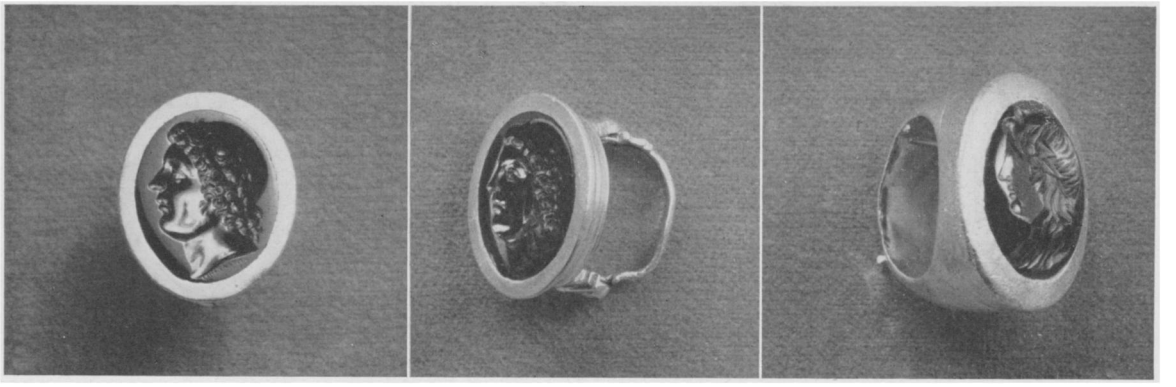

FIGURE 2 WALTERS ART GALLERY

Left and Center: Gold Ring with Intaglio Head of Asander by Apollonios
Right: Gold Ring with Intaglio Head of Young Dionysos

SOME HELLENISTIC CARVED GEMS

BY DOROTHY KENT HILL
The Walters Art Gallery

PERHAPS THE greatest artistic achievement of the Greeks was the first successful representation of space. Their statues, as distinct from those of the Egyptians, Mesopotamians and all other early peoples, were organic, conceived as a whole, solid as in life, and, viewed from any angle, resembled the body. In their drawings relative distances were represented according to a system of perspective and figures were foreshortened. In their relief sculpture a subtle use of overlapping planes and the application of perspective gave depth to the picture as well as bulk to the figures.

This achievement was the work of centuries and was not completed until the Hellenistic age. In all fields—sculpture, painting, and the minor arts—the third dimension was then shown most perfectly. All through the previous centuries artists had been toiling toward this accomplishment. Judged from the historical standpoint, Hellenistic art is the high point. If we of today prefer the earlier Greek art, it is because the control of the third dimension is too easy for us with our thousands of years of knowledge. We feel in early work a striving toward realism, a striving toward something unknown, which is pleasing to the sophisticated taste of those who know what the unknown will be. Although we praise the restraint of early Greek art, what we really admire most is the pressure of mighty minds against restraints, toward full freedom. We naturally admire the design, the patternization, which characterize early work, a sort of compensation device of the artist for what he could not achieve toward his main purpose, but if we want to appreciate

FIGURE 3 WALTERS ART GALLERY
APOLLONIOS
Head of Asander
(Impression of Intaglio, enlarged)

Greek art according to the artist's own standards we must recognize the great works of the Hellenistic age as the best.

In the field of gem cutting this is as true as in any other. The Hellenistic gem cutter beyond any in history excelled in his representation of the third dimension, having developed a technique which simply cannot be equalled. Some gems which have recently been acquired by the Walters Art Gallery will serve to illustrate the characteristics of the work of this age and to emphasize its high quality.

An engraver of intaglios must be meticulous, not only in his cutting, but in his thinking, too. As he cuts into hard stone, he must think how his work will look in reverse when the hollow which he makes in the stone appears as a raised area on the wax impression. The easy way to show a detail is to scratch a line. But will this detail look well as a raised ridge on the impression? The easy way to show the pupil of the eye is to bore a small hole. But then the dot in reverse will protrude, the pupil will pop out. Shall he risk it? Such questions he must decide before cutting each gem.

Of the newly acquired Walters gems, one of the easiest to analyze technically is a portrait gem signed by the artist Apollonios,[1] and believed to represent Asander, king of Bosporos during the first half of the first century B. C. (figs. 2, 3). It is a garnet intaglio, still in its original gold swivel ring (fig. 2, center), and very well preserved because it was placed in a grave while still almost new. As we watch the play of light over the stone, we are struck by two things: the beauty of the surface treatment and the very great depth of the carving. But although the cutting is very deep, the head is not in half round, and yet it is no mere profile drawing, hollowed out in more or less graceful curves. The artist has reproduced the ins and outs of the head, but always in reduced degree. This has caused him no trouble except in the area where nose, eye and forehead meet, but there the reduction of one dimension has necessitated a protruding area in front of the eye, out of proportion to the scale of the rest of the head (fig. 2, left).

We know the tools which the ancient gem engraver had at his disposal.[2] They are the same that are known today: the wheel, the blunt-pointed revolving drill, the tubular drill, and

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[1] Walters Art Gallery no. 57.1698. Collection of Sir Arthur Evans, *An Illustrative Selection of Greek and Greco-Roman Gems Acquired . . . by Sir Arthur Evans* (Oxford, 1938), no. 65, pl. IV. Morrison Collection, *Sale Catalogue* (1898), no. 261, pl. II. A. Furtwängler, *Antike Gemmen* (Leipzig, 1900), I, pl. LXIII, no. 36; II, pp. 285 f.; III, p. 163. Found at Kertch. Length of bezel containing stone: .028 m.

[2] J. H. Middleton, *The Engraved Gems of Classical Times with a Catalogue of the Gems in the Fitzwilliam Museum* (Cambridge, 1891), pp. 103 ff.

the diamond point. The diamond point was used for free-hand incising, a sort of drawing in which the Greek artists developed extraordinary skill, while the other three tools were rotated by the string of a bow, as is the stick in a boy scout's fire-making apparatus, against a gem held fast in place. The rotating wheel could be used in two ways: either to cut a thin straight line with its edge, or to cut a groove by being drawn sidewise under pressure along the surface of the gem. The blunt drill always makes a circular depression, the tubular drill makes a circle or part of a circle. All these tools were used in the presence of emery paste, the cutting really being done by the paste, not by the tool itself. We must suppose a good deal of additional work done free-hand with a blunt tool and emery paste, for the revolving tools will not do everything. However, it is the successful and widespread use of the revolving tools that gives Hellenistic gems their perfection, their really machine-made perfection. As a final task the Hellenistic artist usually polished his work to absolute smoothness, whereas earlier artists were inclined to let their technique be apparent. The fine polish adds as much to Hellenistic gem carving as it does to marble sculpture of the period. As in the other art, it sometimes was used to the point of abuse, the delicate cutting being ruined by general obscuring.

Let us try to see how these tools were used to carve the portrait gem. The gem will not divulge the secret, but we may hazard some opinions. The hollowing of large areas probably was done by the wheel drawn sidewise. That is, the cheeks would be hollowed out by drawing the wheel lengthwise of the gem, and the neck too; while on the neck, greater and lesser pressure on the wheel caused the very slight irregularities, the ridges which delicately suggest the folds on the front of the neck. The

FIGURE 4 WALTERS ART GALLERY

Head of Young Dionysos
(Impression of Intaglio, enlarged)

greater part of the hairy mass would also be cut out as grooves by the wheel dragged across the gem, the front part of the hair being in a deeper groove than the crown of the head. The little gouged lines of the lips and the lowest part of the nose were made either with a very small drill applied at several points or by a very small wheel dragged along the surface. The pupil of the eye was bored with a small drill. The straight lines of the eyelids would be made with the rotating edge of the wheel. The hair is a multitude of curved lines and one suspects these were made by a tubular drill which never left its complete mark, but was always tipped to give an incomplete circle. The finest lines, the side whiskers and the hairs of the eyebrows, were drawn free-hand with the diamond point. A few hairs at top and bottom were allowed to spread beyond the hollowed area

and were cut with the point on the background of the gem. The whole gem was subjected to a final working over and polishing. The artist, proud of his job, cut his name in reverse (Ἀπολλονίου 'of Apollonios') below the neck with the diamond point.

If we now look at the impression which the seal makes on soft material, and we can see this in an enlarged photograph as the artist could not (fig. 3), we forget about the technique and think only of the marvelous style. The contrast between the smooth face and the heavy, turbulent hair makes the gem a striking artistic success.[3] The face is live and full, and the chin and neck, large though they be, are truly beautiful of line. Subtle curves make the face handsome in spite of its fleshiness. The bare suggestion of folds in the neck causes the neck to seem alive, too. The delicate hairs of eyebrows and whiskers are just right in size, and the protruding cornea and pupil of the eye, while not logical, nevertheless are not repulsive. There is no apparent distortion between eye and nose. Apollonios was so thoroughly master of the third dimension that the spectator is absolutely unaware of the mental gyrations necessary to conceive of this head.

A still harder problem the Hellenistic glyptic artists set themselves when they chose to carve heads on stones with convex surfaces. Perhaps they relished the difficulty! We do not know why stones of this form came into fashion, but come they did, and remained for a long time.

An especially beautiful example is a woman's portrait on a hyacinthine sard, a red stone slightly lighter in shade than garnet (fig. 1).[4] This has been broken from its ring and the upper part of the head is lost. It is protected by a modern gold mounting, a broad border. The form of the stone works against the form of the figure at every point. Where the artist is to cut the deepest part of the head, the stone is the thickest; just where he wants to cut the nose, the surface slopes away so fast that he has to bend the nose around a corner to get it in the stone. The corner between eye and nose therefore becomes still more awkward than on the previous piece. He could easily have fitted the shoulder into the shape of the stone if he had turned the bust in true side view, but he insisted upon showing it in three-quarter view. Yet so well did he overcome all these difficulties that we are almost unconscious of them and think only of a plastic portrait which happens to have a curved background.

Technically and stylistically this gem is rather like the other. The cheeks are very smooth and without tool marks. Cheeks, neck, and shoulder may have been made by dragging the wheel vertically up and down the stone, the "mellon mould" hair by parallel horizontal movements of the same tool. The individual hairs were made either by the wheel or by free-hand incision. The chin, and probably the lips and the lower part of the nose, too, were worked with a drill. The eye has the drilled pupil as before, and the beads were made with a drill. The edges of the lips and the eyelids and brows were made with the edge of the wheel. Point work is the extension of the drapery on the back ground of the gem beyond the cutting for the bust. The artist signed the work (Νίκανδρος ἐπόει 'Nikandros made it') with the point on the convex background behind the neck, writing, of course, in reverse.

The impression of this gem is dramatically plastic. The rounded contours of the face with

[3] *Cf.* Furtwängler, *op. cit.*, III, p. 151.

[4] Walters Art Gallery, no. 42.1339. Evans Collection; *op. cit.*, no. 64, pl. IV; Furtwängler, *op. cit.*, I, pl. XXXII, no. 30; II, p. 159; III, p. 163. *Jahrbuch Arch. Inst.*, III (1888), pp. 210 f., pl. 8, no. 14. Story-Maskelyne, *The Marlborough Gems*, (London, 1870), p. xvi, p. 75, no. 447. Middleton, *op. cit.*, p. 74; Burlington Fine Arts Club, *Ancient Greek Art* (London, 1904), p. 173, no. L, 86. H. Brunn, *Geschichte d. gr. Künstler*, II (Braunschweig, 1857), p. 518. Also Deringh Collection. Length preserved: .02 m.

the shadowy suggestion of a double chin, the neck with its delicate folds, catching the light as does the human neck, the graceful exposed shoulder, are all full of life. The delicacy of the rendering of the beads, drapery and hairs is astonishing.

The history of the modern interpretation of this gem is illustrative of the pitfalls which the unwary sometimes dig for themselves. It is one of the best known of all ancient gems, having been in many old collections, including that of

FIGURE 5 PHILADELPHIA, BEMENT COLL.
Gold Coin of Berenice II
(After Descriptive Catalogue)

the Dukes of Marlborough. Sometime during the eighteenth century a gold piece was made to replace the lost upper portion, so that the gem could be used again as a seal. The front of the hair was restored in the gold as a towering pile of curls, a fashion with ladies of the Flavian period. Immediately, the lady looked Flavian, and the portrait was identified as Julia, daughter of the Roman emperor Titus. Then, for more than a century, it was belittled in the somewhat patronizing manner that many adopt toward anything which is Roman rather than Greek, and regarded as second in quality to a true portrait of Julia—a gem which had the merit of being bigger. It was left for Furtwängler, late in the nineteenth century, to recognize this gem for what it is, a Hellenistic Greek portrait of typical form and technique and fine quality. Furtwängler thought it was a portrait of the Ptolemaic queen Berenice I, or of Arsinoë II. Sir Arthur Evans, however, who bought the gem upon the dispersal of the Marlborough collection in 1894, removed the false top of the head so that the gem could be properly appreciated, and, although he first accepted the identification of Furtwängler, he later corrected the label in his own hand to Berenice II, wife of Ptolemy III, Greek king of Egypt from 246 to 221 B. C.

Comparison of the gem with the coins, such as figure 5, which Berenice issued while she acted as regent during her husband's absence on his Syrian campaign, leaves no doubt that this is indeed the correct identification. Our gem shows Berenice's profile.[5] The full chin, the straight nose with just a slight tilt near the tip, the full throat with the delicate creases, these are on the coin too. The details of the presentation also are alike, although the queen on the coin has drawn a veil over the back of her head, while the gem figure wears hers around her shoulders. The necklace, the spreading of the veil on the background, the hair arrangement, all are the same.

Berenice, be it said, was a very able woman and one of the few happily married of all the Ptolemaic line. It is recorded that she dedicated a lock of her hair as a votive offering for her husband's safe return from his campaign, an act of piety which formed the basis of a poem by Callimachus, and which is suggested again by the accident of the missing locks of this portrait gem!

A third large gem is not a portrait, but de-

[5] E. Pfuhl, *Jahrbuch Arch. Inst.*, XLV (1930), p. 41, divides the coins into two groups, one of Ptolemy's wife, the other of his sister. Ours is the wife.

picts the young Dionysos, god of wine, wearing a wreath of ivy leaves about his head (figs. 2 and 4).[6] This stone is a garnet, and has a convex top like the last. One may see how such a stone was worn during the third century B. C., for it is still in its original gold ring, a massive, undecorated affair which overwhelms one with the sheer weight of the hard, cold gold (fig. 2, at the right).

The head, in this case, is not as deeply cut as the last, but it is in the same style and technique. The face is again smooth and soft, the features cut with the same tools as before, except that the lips lack the hard edges. The eye is very large, and the pupil is again rendered plastically. The drapery is skillfully handled; it spreads out on the background as in the Berenice gem, but folds of the drapery are brought forward around the neck, thus establishing by illusion the planes of the neck. The artistic impression is achieved through contrast: contrast of the soft face with the turbulent ivy leaves and the berries on top of the head, and with the hair which on the crown is a plain mass, barely lined, while over the neck are sweeping, deep-cut furrows representing locks marked with individual hairs cut with the point.

But not only in executing large heads on ring-stones did the Hellenistic virtuoso display his skill. On another oval garnet, a very long one with convex surface, he carved one of the most difficult of all subjects, the human figure in front view (fig. 6).[7] The type came from contemporary sculpture, a statue of Aphrodite leaning with one arm on a pillar (as marble goddesses must be supported), holding her low-hung drapery on her hip with the other hand, and gazing straight forward, apparently unaware of her winged child Eros, peaking over her shoulder. The difficulties which made earlier artists shy away from such a presentation—the foreshortening needed to display the delicate curves of the body, and the still greater condensation necessary to handle the projection of the chin from the neck and the forward projection of the bent knee—this artist eagerly grasped. He knew what his tools could do. With a combination of drills and wheel he cut out all the soft areas of the chest and abdomen. For the lower part he first cut the bent leg to great depth, and then he cut the drapery on top of the nude leg, as the sculptor of statues could not do. The sculptor must imagine his drapery in advance and not make the mistake of cutting it off as he works toward the flesh; but the glyptic artist, working in reverse, can make the leg and then add the drapery, working out from it. The style of the drapery is that of statues of the period: creases tightly drawn across the front, and diagonal creases caused by the bent knee, all rendered in rather sketchy, straight lines. For the head, the artist has merely hollowed far into the stone to get depth for the chin, and then made the features as realistic as possible. The child is cut to a lesser depth than the goddess' head. The effect of the whole gem is anything but beautiful, but it is an interesting experiment in doing the hardest thing in the easiest way—chosing a most difficult subject to represent, and then doing it effectively by selecting the best tools and the most important lines, yet nowhere being meticulous.[8]

During the latter part of the Hellenistic age, a sophisticated taste turned in admiration toward the simple art of early times, as it has

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[6] Walters Art Gallery no. 57.1699. Evans Collection; *op. cit.*, no. 76, pl. IV. Morrison Collection, *Sale Catalogue,* no. 255, pl. II; said to be from Tarsus. Furtwängler, *op. cit.*, III, p. 167, fig. 117. Length of bezel containing stone: .032 m.

[7] Walters Art Gallery no. 42.1228. Purchased 1942. Formerly in the private collection of Henry Walters. Probably second century B.C. Length: .025 m.

[8] On the studied carelessness of a whole class of Hellenistic gem cutting, see Furtwängler, *op. cit.*, III, p. 160.

done again in our own day. Artists sought "inspiration" in the works of archaic Greek artists. They failed, as all such efforts must fail, to capture the spirit of another age, although they sometimes repeated works of art almost line for line. This tendency was most pronounced in sculpture, but the gem cutter was not untouched by it. He, however, saw the archaistic movement through the eyes of the sculptor. He imitated early statues and contemporary imitations of them, not early gems. He made no effort to disguise the plastic skill of his own era, to decrease the depth of his carving to the very shallow scratching of early times, to restrict the movement of the figures to the stiff poses of archaic gem cuttings, or to modify the form of his stone to the old style. Rather, he presented in the contemporary, plastic, foreshortened technique on stones of fashionable shape the stiff sculptured figures of another day.

A typical example of this school is a gem with convex top showing the erect figure of Dionysos, holding in one hand his staff (*thyrsos*) tied with a ribbon, and in the other his favorite drinking cup, the *kantharos* (fig. 7).[9] He wears a long, thin, pleated garment with sleeves, and a heavy mantel slung low. His long hair is tied up in a knot and he wears a full beard, and, surprisingly, on his head is the basket usually worn by Zeus-Serapis. One foot rests firmly on a ground line, the other has raised heel. The feet in position for walking on the toes is a favorite mannerism of the period; but one foot in this position renders the god crippled. The sculptured effect of this rather complicated figure has been achieved by cutting a groove for the upper part of the body and one leg, and another groove still deeper for the upper part of the arm, and then adding the details and the hands and attributes with the point. The *thyrsos* was fashioned by means of a multitude of diagonal wheel cuts, so that, not only has it the roughness of a natural trunk, but it seems about to sprout like Tannhäuser's staff. It is

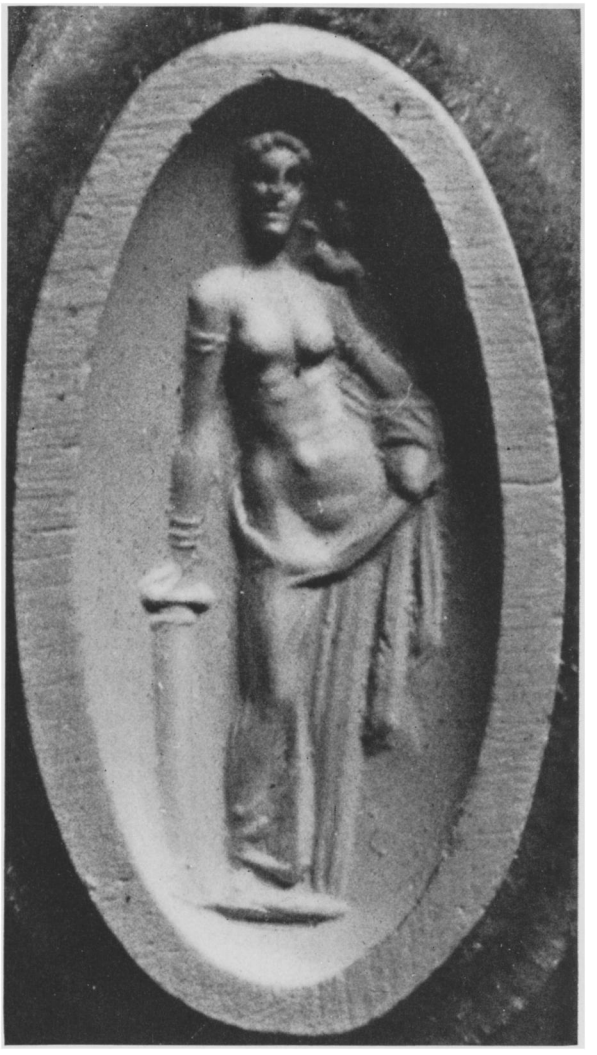

FIGURE 6 WALTERS ART GALLERY

Aphrodite and Eros
(Impression of Intaglio, enlarged)

[9] Walters Art Gallery no. 42.1216. Purchased 1942. Formerly in the private collection of Henry Walters. A light brown stone, difficult to identify. The back is concave. Probably first century B.C. Length: .021 m.

in the rendering of the drapery over the deep-cut leg that the artist shows his skill, the skill that is the antithesis of that of the archaic artist. The lines of the drapery on the sculpture of early times were almost entirely decorative. But here, drawn in perspective, as if seen from the side, they give a perfect curve to the figure, make it seem round and plastic. They could not and would not have been used by the archaic gem carver. By the Hellenistic gem carver's simulation there is achieved an accurate, foreshortened picture of a statue which itself is stiff and lifeless.[10] In such abstractions did the very "modern" Hellenistic mind delight.

FIGURE 7 WALTERS ART GALLERY

Dionysos
(Impression of Intaglio, enlarged)

The archaistic school also made heads, and a favorite type was the head of the bearded Dionysos, of which an example on garnet is shown in figure 8.[11] Beyond all other gods, this one was shown in sculpture as stiff and lifeless, sometimes really as a mask of himself, because he was, in addition to being god of wine, god of the masked drama. It is one of those mask-like sculptural representations that the glyptic artist here copies with great and easy realism. The neck and cheeks are not deep-cut, yet they are round and well modelled. The cutting of nose and lips with a small drill is as usual. Parallel incision with the edge of the revolving wheel produced the corkscrews of the beard and of the long locks at the back of the neck; these are not really spiral, as one is supposed to think, but merely diagonal lines set close together. The hair was made by making a groove with the wheel drawn sidewise across the head, curving up over the ear; then with the diamond point lines were cut to represent locks, following the outline of the groove, and other lines were cut with the point, diverging from the crown of the head. These are some of those extraordinarily fine lines in which the Hellenistic artist excelled. The drapery across the neck also is skillfully made. First it was cut out as a whole, then in this main cutting fine lines were cut with the point, so that in the impression the drapery stands up to a greater height than would be possible for a sculptor who did not work in reverse.[12] The result of all

[10] For the drapery compare a gem with the same subject, Furtwängler, *op. cit.*, I, pl. XXV, no. 23.

[11] Walters Art Gallery no. 42.934. Purchased 1942. Formerly in the private collection of Henry Walters. Second or first century B.C. Length: .017 m.

[12] *Cf.* the neck drapery of a famous Alexander portrait, Furtwängler, *op. cit.*, I, pl. XXXI, no. 17, and a gem formerly in the Evans Collection, *op. cit.*, no. 63, pl. IV; now in the Metropolitan Museum of Art, *Ancient Gems from the Evans and Beatty Collections* (New York, 1942), no. 44.

this is a most effective head, made by the easiest and therefore cheapest method.

All these gems help to reveal the Hellenistic artist as a person of matchless skill and facility and great daring, trying things impossible before his day, making the most of tools at his disposal, a master of the third dimension, eventually losing himself in sophistry and copying because, like the military genius of his age, he could find no more worlds to conquer.

FIGURE 8 WALTERS ART GALLERY

Head of Dionysos
(Impression of Intaglio, enlarged)

THE LATE "ACHAEMENIAN" OR "GRAECO-PERSIAN" GEMS

(PLATES 31-38)

THE ART of Persia in the Achaemenian period—its intrinsic character and its relation to Oriental and to Greek art—is a complex subject which has of late received considerable attention, some authorities upholding the essential originality of Achaemenian art, others stressing its debt to other sources.[1] I myself have tried in a recent article in the *American Journal of Archaeology*[2] to discuss the subject from the Greek viewpoint in the light of recent discoveries; for the building inscription from the palace of Darius in Susa, which specifically mentions foreign workmen[3] (Medes, Babylonians, Egyptians, Sardians, and Ionians), and the preciser dating achieved in archaic Greek art, which demonstrates the priority of Greek over Persian renderings in certain key conventions, have given a new aspect to the whole problem. In this article I shall discuss the "Achaemenian" or "Graeco-Persian" gems, since

[1] I can mention only a few articles and books that have appeared during the last twenty years or so: Moortgat, "Hellas und die Kunst der Achaemeniden," *Mitt. der altorientalischen Gesellschaft*, II, 1926, pp. 3 ff.; Dalton, *The Treasure of the Oxus* (1926); von Bissing, "Ursprung und Wesen der persischen Kunst," *Sitzungsberichte der Bayerischen Akademie der Wissenschaften*, phil.-phil. und hist. Klasse, 1927, 1; Coomaraswamy, *Bulletin, Museum of Fine Arts, Boston*, XXXI, 1933, pp. 21 ff.; Rodenwaldt, "Griechische Reliefs in Lykien," *Sitzungsberichte der preussischen Akademie der Wissenschaften*, phil.-hist. Klasse, XXVII, 1933, pp. 1028-1055; Schefold, "Der skythische Tierstil in Südrussland," *Eurasia Septentrionalis Antiqua*, XII, 1937, pp. 72 ff.; Gadd in Pope, *A Survey of Persian Art*, I, 1938, pp. 383 ff., pls. 123 f.; Frankfort, *Cylinder Seals* (1939), pp. 220 ff.; Luschey, *Die Phiale* (1939), *passim*; Moortgat, *Vorderasiatische Rollsiegel* (1940), nos. 756 ff.; Herzfeld, *Iran in the Ancient East* (1941); Goetze, "Three Achaemenian Tags," *Berytus*, VIII, 2, 1944, pp. 97 ff.; Frankfort, "Achaemenian Sculpture," *American Journal of Archaeology*, L, 1946, pp. 6 ff.; Porada, *Mesopotamian Art in Cylinder Seals* (1946), pp. 68 f., and *Corpus of Ancient Near Eastern Seals*, I, Collection Morgan Library, 1948, pp. 104 ff.

[2] L, 1946, pp. 15 ff.

[3] Scheil, *Mémoires de la Mission archéologique de Perse*, XXI, 1929, pp. 3 ff.; XXIV, 1933, pp. 105 ff.; König, *Mitteilungen der vorderasiatisch-aegyptischen Gesellschaft*, XXXV, 1930, pp. 1 ff.; Weissbach, *Archiv für Orientforschung*, VII, 1931-1932, pp. 37 ff.; R. G. Kent, *Journal of the American Oriental Society*, LI, 1931, pp. 193 ff.; LIII, 1933, pp. 1 ff.; Herzfeld, *Archaeologische Mitteilungen aus Iran*, III, 1931, pp. 29 ff.; and *Altpersische Inschriften* (1938), pp. 13-17; Frankfort, *A.J.A.*, L, 1946, pp. 6 ff.; Richter, *A.J.A.*, L, 1946, pp. 23 ff.

I am happy to say that Dr. Herzfeld, though objecting to certain details in my comments on the Susa building inscription, agreed with me that the sculptures of Persepolis were produced by Greeks. His chief objection was that "since the inscribed terracotta tablets were found in the foundation, below the level of the pavement of the building on the terrace" they cannot refer to the reliefs, but rather to work already done or proceeding at the time they were deposited, such as columns, etc. But the fact that Greek workmen are actually mentioned as employed at Susa is, in his opinion, a more than sufficient basis for my deductions.

they too shed light on the relationship between Persians and Greeks. Inevitably I shall have to go over some of the same ground as in my previous article; but, whereas there the discussion centred on the stone reliefs of Persepolis and Susa of the sixth and fifth centuries B.C., I shall now deal with products of the fifth and fourth centuries B.C.

Regarding the origin of these " Achaemenian " sealstones opinions have varied. Orientalists have generally simply called them Achaemenian, with an occasional concession of " Greek influence." Greek archaeologists have held different opinions. Furtwängler, in 1903, in his epoch making *Antike Gemmen*, divided the stones into two categories—the earlier, archaic ones, which he called *persisch* (but not necessarily executed by Persians), and the later ones which he called *griechisch-persisch*—that is, carved by Greeks for Persian patrons. This became the accepted opinion until Miss Maximova, in 1928, in an article in the *Archaeologische Anzeiger*, claimed Persian workmanship for both the early and later stones.

I have recently been brought face to face with the problem while reinstalling the collection of Greek gems in the Metropolitan Museum. This collection has of late been augmented by a number of " Graeco-Persian " stones—some derived from the Beatty Collection, others through generous loans from private collectors. They fall into the two classes defined by Furtwängler—one with a mixture of Oriental and archaic Greek elements, stylistically datable in the sixth and the early fifth century B.C.,[4] see Plate 31, 1-3 [5] (but apparently continuing practically unchanged, as far as we now know, until the time of Alexander [6]), and another approximating the developed Greek style of the fifth and fourth centuries B.C. (see Plates 31, 4 – 35, 4). I propose to restudy the latter class, using the New York examples for illustrations. Before doing so, however, we must glance also at the stylistically earlier class, for it helps in an understanding of " Achaemenian " art in general.

The subjects in these earlier stones—a king or god subduing wild animals, cult scenes, and mythical creatures of various types— [7] are Oriental and were inherited from the Babylonian-Assyrian repertoire, changed here and there to suit Persian

[4] I am much indebted to Miss Edith Porada for help in my study of these Orientalizing stones.

[5] Plate 31, 1-2 are unpublished; Plate 31, 3 was published by C. H. Gordon, " Western Asiatic Seals in the Walters Art Gallery," *Iraq*, VI, 1939, pp. 31 f., no. 107, WAG, C 24, pl. XIII.

[6] Just as did the representations on some of the coins (cf. Plate 37, 2) and on some of the stone reliefs at Persepolis. On the lack of development of the latter Dr. Herzfeld offered an interesting explanation (in a letter to me dated September 10th, 1946): " Mann kann sagen wenn schon in Susa . . . Griechen mitarbeiteten, um so mehr in Persepolis, wo die Skulpturen ihre Arbeit documentieren. So löst sich auch das " odd phenomenon " das Sie am Ende [of my article *Greeks in Persia*] erwähnen: als es keine griechischen Künstler mehr gab, konnten die ungeübten einheimischen Arbeiter unter Artaxerxes II und III nichts andres thun, als die älteren Werke sklavisch, in ganz inferiorer Technik nachahmen. Die griechische Mitarbeit erklärt also die Schöpfung und den unmittelbaren Verfall."

[7] Furtwängler, *Antike Gemmen*, III, pp. 119 ff. A good selection is given in Pope, *A Survey of Persian Art*, I, pls. 123 f.

beliefs and customs. The style has lost the grandeur of the Oriental prototypes, is softer and livelier, and contains archaic Greek elements, for instance, in the stylization of the drapery. They show in fact the mixture of Oriental and Greek elements that we observed in the reliefs of Persepolis and Susa. And this is only natural. The Persians had in a single generation subdued the ancient Orient including the Egyptians, Medes, Babylonians, Lydians, and Eastern Greeks—most of whom, in contrast to their Persian conquerors, had had a long previous artistic experience. Herodotos (I, 135), writing around the middle of the fifth century, states that "the Persians were of all mankind the readiest to adopt foreign customs, good or bad." Since they lived in Asia, they were surrounded by Oriental conceptions in which endless repetition was the order of the day. The sealstones with their hybrid Oriental-Greek style and uniform renderings exactly reflect these circumstances. Whether the carvers of the sealstones were Orientals (including Persians), or Greeks, or both is a moot question. Until we know more of Neo-Babylonian and Achaemenian art of that period it would be hazardous to be too positive in our statements. On the one hand, we must remember that the Babylonians and the Assyrians had a long tradition in glyptic art and that the motives on the stones are largely Oriental. On the other hand, it is clear from the Greek conventions, particularly in the rendering of the drapery, that the Greeks also had a hand in the production. These Greeks, moreover, had presumably lived in the Orient for some time, and, being adaptable, must to some degree have been influenced by Oriental conceptions. It seems best therefore for the present to recognize the possibility of both Oriental and Greek workmanship and to await further evidence before drawing a definite dividing line.

The "Graeco-Persian" stones of the fifth and the fourth century (see Plates 31, 4-35, 4) present a great contrast to the preceding ones. The subjects are taken from the life of the time and consist of Persians, generally fighting and hunting, or of animals, mostly running at full speed with legs outstretched as if pursued, perhaps intended as excerpts from hunting scenes. Occasionally an Oriental element is introduced, such as the winged disk. The style might be called pure Greek except for a certain "frozen" quality—a uniformity in subject, composition, and rendering. Men in Oriental costume (generally the tiara, sleeved jacket, trousers, shoes), mounted on horses (generally with saddle cloth, top knot, tail tied with a fillet) are shown hunting wild animals—lions, boars, foxes—or in combat with their enemies, all in similar compositions; or they stand at rest, sometimes confronting long-haired women; the women appear also singly, dressed in long, belted tunics, holding objects. Only the animals occasionally show a refreshing diversity, though here too certain types and attitudes predominate.

The scenes shown in Plates 31, 4 – 35, 4 are, unless otherwise stated, on stones exhibited in the Metropolitan Museum and reproduced from photographs by E. Milla by the courtesy of the Metropolitan Museum.

PLATES 31,4 – 32,2. L 46.25.14. 1.5 × 1.9 cm.; th. 1.1 cm. Rose-colored agate cut into ten facets, six of which are engraved: Persian horseman shooting an arrow at a deer, deer, wild goat, hyena, bull, lion. Anonymous loan.

PLATE 32, 3-8. L 1812. 1.5 × 1.5 cm.; th. 0.8 cm. Agate with reddish brown markings cut into ten facets, six of which are engraved; Persian horseman spearing a boar, parrot (?), bear, hyena, fox sniffing grasshopper, lizard. Lent by the American Numismatic Society.

PLATE 33, 1. L 45.56.1. Length 2.7 cm., diam. 1.2 cm. Grayish chalcedony cylinder: Persian horseman shooting an arrow at a lion; winged disk above. Lent by Mrs. E. T. Newell.

PLATE 33, 2. 41.160.431. 2.2 × 2.9 cm.; th. 1.3 cm. Bluish grey chalcedony scaraboid. A Persian horseman has speared a fox and is about to spear another; large chip missing.

PLATE 34, 1. 41.160.433. 1.8 × 2.3 cm.; th. 1.2 cm. Light-brown chalcedony scaraboid. Persian horseman shooting an arrow at a lion.

PLATE 34, 2. 41.160.653. 1.2 × 1.6 cm.; th. 0.7 cm. Plasma scaraboid. Persian horseman spearing a Greek foot soldier, who stabs the horse. The Greek wears chiton and helmet and is armed with sword and round shield.

PLATE 34, 4. L 46.25.15. 1.5 × 1.7 cm. as preserved; th. 0.8 cm. Black jasper scaraboid. Persian horseman spearing a Greek foot soldier. Anonymous loan.

PLATE 34, 6. 25.78.98. 2 × 2.9 cm.; th. 1 cm. Bluish chalcedony scaraboid. Persian lady with ointment vase and cup.

PLATE 34, 3. L 45.56.2. 1.5 × 1.9 cm.; th. 0.7 cm. Carnelian scaraboid, convex on engraved side. Persian lady holding wreath and phiale. Lent by Mrs. E. T. Newell.

PLATE 34, 5. 25.78.100. 1 × 2 cm.; th. 0.8 cm. Agate half barrel, brown with white markings. Persian warrior with quiver, bow, and staff.

PLATE 35, 1. 41.160.443. 2.1 × 2.6 cm.; th. 0.9 cm. Bluish chalcedony scaraboid. Wild boar running.

PLATE 35, 2. 41.160.429. 1.6 × 2.3 cm.; th. 1.7 cm. Bluish chalcedony scaraboid. Antelope running.

PLATE 35, 3. L 45.55.16. 2.4 × 3 cm.; th. 1.3 cm. Bluish chalcedony scaraboid. Griffin devouring hindpart of a deer. Anonymous loan.

PLATE 35, 4. L 46.35.1. 2.7 × 3.6 cm.; th. 1.5 cm. Bluish chalcedony scaraboid. Hound tearing deer. Anonymous loan.

It is helpful to recall the historical background of these stones. The Eastern Greeks had regained their freedom in 480-479 B.C. and henceforth their relation to the Persians was on a different footing. Doubtless the Persians themselves also became less rigid as time progressed. Theirs was a vast empire, and, like the Romans, they inevitably became influenced by association with their gifted neighbors. The Persian empire was divided into provinces, each with a Persian satrap at its head, who naturally employed local skills.[8] We know from Xenophon's *Anabasis* the high standing of Greek mercenaries, and Persian patronage was naturally welcomed also by Greek traders, physicians, and artists, who helped to diffuse the Greek civilization.[9] Though Greece proper had been saved from conquest by her victories at Marathon, Salamis,

[8] In this connection Professor Arthur D. Nock reminds me of the Persians' acceptance of local law as a basis of administration in Judaea and Egypt.

[9] See Furtwängler, *op. cit.*, III, pp. 116 ff.; Rostovtzeff, *Iranians and Greeks*, pp. 61 ff.; von Bissing, *op. cit.*, pp. 11 ff.; Christensen, "Die Iraner," in Müller's *Handbuch der Altertumswissenschaft*, III, 1, iii, 3, 1, 1933, p. 261 and *passim*; Schefold, *op. cit.*, pp. 73 f., and the references there cited; also Herodotos, III, 129 ff., and Diodoros, II, 32.

and Plataea, she too felt the influence of mighty and rich Persia. The latter intervened in the Peloponnesian war and her gold made possible Sparta's victory over Athens in 404 B.C. After the Peace of Antalkidas, in 387 B.C., the Persian suzerainty over the Greeks of Asia Minor was proclaimed. In 332 Alexander of Macedon in his turn conquered the Orient and the Persian power collapsed.

Do not these circumstances sufficiently explain the character of the later "Achaemenian" sealstones—their unmistakable Greek style with the pronounced Persian imprint? The art they illustrate is no longer the hybrid "palace" art of the Susa and Persepolis reliefs, produced by Orientals and Greeks for the "king of kings," they no longer show the archaic conventions observable in the reliefs of Persepolis and Susa, and in the earlier sealstones, but they are worked in the developed style evolved in Greece—and in Greece only—in the fifth and fourth centuries B.C. Persians are represented in their favorite every-day occupations—hunting and fighting.[10] The costumes and accoutrements are Persian—except in the case of the Greek foot soldiers who now and then appear in combats with Persian horsemen (and are always worsted); the breeds of the horses, with curving noses and receding foreheads, are Eastern; the animals—lion, bear, hyena, parrot (?), etc.—were known to Persians; and occasionally a Persian symbol like the winged disk is introduced. This is what one would expect in objects ordered, owned, and used by Persians. The "frozen" quality is sufficiently accounted for by the Persian preference for uniformity which the Greeks, always an adaptable people, had to satisfy. But where else but in Greek works of the fifth and fourth centuries do we find such spontaneity of movement and such naturalism in the renderings? It is true that one of the chief arguments advanced for Persian as against Greek workmanship is the alleged two-dimensional character of the representations in these stones, which corresponds to Oriental rather than Greek concepts.[11] This observation, however, is not quite correct. Three-quarter views do occur—for instance in Plate 32, 3 (the horse's head), Plate 32,1 (bull's head and hindquarters), Plate 34, 6 (further breast of woman)—and they are ably drawn, by an artist evidently used to such renderings, though employing them sparingly to suit the conservative taste of his client. The argument, therefore, advanced against the theory of Greek workmanship, becomes one in its favor.

There are moreover other cogent reasons that point to Greek execution. First the obvious resemblance of the Graeco-Persian stones to the contemporary Ionian ones (cf. Plates 35, 5, 6 – 36, 1-4). In both the prevalent shape is the scaraboid [12] in a relatively large size; the most popular material is the chalcedony, especially that of a

[10] Xenophon in *Anabasis*, I, 2, 7 and *Cyropaedia*, I, 3, 14, describes *paradaisoi* in which wild animals were kept for hunting. According to Herodotos (I, 136) young Persians were taught three things only—to ride, to shoot, and to speak the truth.

[11] Cf. Maximova, *loc. cit.*

[12] On the derivation and use of this form see Furtwängler, *op. cit.*, III, pp. 61, 118; von Bissing, *op. cit.*, p. 17.

bluish tint; there is generally no framing border; and the style is often sketchy with frequent use of the round drill. In fact, when the subject is not specifically Persian—e. g., when animals or monsters are portrayed (see especially Plate 35, 3-4)—it is often impossible to distinguish between the " Graeco-Persian " and Ionian stones (except for a certain spontaneity in some of the Greek stones, as, for instance, in the doe looking round at the snake, Plate 36, 3).[13] How can this marked similarity be explained except by a common authorship?

Furthermore, occasionally in the midst of the Persian subjects, executed if you will in a " frozen " style, there appears on the same stone an animal carved in pure Greek style. The plunging bull with one foreleg raised and head and hind-quarters in three-quarter views shown in Plate 32, 1 occurs not only on Greek gems of the last quarter of the fifth century,[14] but also on the coins of Thourion and elsewhere of that period (cf. Plate 37, 5). And yet on the same stone is a Persian sitting on a Persian horse and shooting an arrow at a deer which speeds away, in the regular " Persian " gallop (Plate 31, 4).

And are not the " Graeco-Persian " sealstones comparable to the coins which were minted in several Persian satrapies during the fifth and fourth centuries? Here too the subjects are Persian—the portrait of a satrap (see Plate 37, 1, 3), or the king shooting an arrow (see Plate 37, 2)—but the style is Greek (contemporary or archaizing); and here the Greek inscriptions and the occasional additions of a purely Greek motive on the reverse of the coin—a kithara, for instance (see Plate 37, 4)—make the Greek origin certain.[15]

Moreover, the same combination of Greek workmanship and Persian elements is found on other monuments. We may call attention to the funerary stele from Ṭchaouch Keui in Phrygia (Plate 38), with its two representations—one a horseman in Persian costume spearing a boar—in the same attitude, with the same accoutrements, the same breed of horse, and carved in the same style as the hunting scenes on the " Graeco-Persian " sealstones—the other a funerary banquet scene in the familiar composition and style of fifth- to fourth-century Greek art.[16] Surely these products are best explained as made by Greeks who on the one hand adapted their style to Persian requirements, on the other knew how to work in their own free,

[13] The gems, for instance, recently discovered at Taxila in India, with a running deer and lions tearing deer, have been called both Ionian and " Persian "; cf. G. M. Young, *Ancient India*, I, 1946, pp. 33 f.

[14] Furtwängler, *op. cit.*, I, pl. XI, 31.

[15] Babelon, *Perses Achéménides*, pp. lxviii ff., and *Traité*, II, pp. 2 ff., pl. LXXXVIII; Head, *H. N.*², pp. 596 ff. I owe the photographs for Plate 37, 1, 3, 4 to the kindness of Mrs. Brett.

[16] Hasluck, *J.H.S.*, XXVI, 1906, p. 26, pl. VI; Macridy, *B.C.H.*, XXXVII, 1913, pp. 355 ff., fig. 7; Mendel, *Catalogue des sculptures à Constantinople*, III, no. 1054. Note that the squire attending the Persian horseman, though in Oriental costume, has the free Greek stance. I owe the photograph from which my Plate 38 is reproduced to the kindness of Asiaf Ogan, the director of the Istanbul Museum.

naturalistic style? After all, we know that Greek artists worked for Lycians, Scythians, and other foreigners, changing their style as occasion demanded.[17] What more natural than that they should have worked also for the rich Persians and that the Persians made use of the distinguished Greek talent ready to their hand.

The known provenances of the "Graeco-Persian" stones include Greece Proper, Asia Minor, Lydia, South Russia, Persia, Babylonia, and India[18]—all places where Greeks as well as Persians would be apt to sojourn or which they might visit in their travels. Sardes, was at one time, we are told by Herodotos (I, 29), the resort of "all the wise men of Hellas," and the American excavations there have brought to light objects in pure Greek fifth-century style. The recent discovery of a mid-fifth-century Greek tomb statue in Persepolis[19] shows once again that Greeks lived and died in that region. In Southern Russia there were many Greek colonies. Alexander's conquests brought Greeks to India. Persians as rulers of Western Asia naturally travelled extensively and we know definitely that they occasionally visited Greece. The provenances of the stones, therefore, are not safe evidence for a centre of manufacture, for sealstones, being private possessions and easily transportable, would be apt to be carried hither and yon by their owners or makers. But if we assume Greek workmanship and Persian ownership, the provenances bear out the surmise.

All these considerations would seem to favor Greek workmanship for the "Graeco-Persian" stones. And what is the alternative? If they were carved by Persians where are the other Persian works of this period executed in a developed, naturalistic style? There are, it is true, a few comparable works called by some authorities Persian, for instance, the hunting scenes on the silver disc and on the gold sheath from the Oxus[20] and that on the gold sword-hilt from the tumulus of Chertomlyk in South Russia.[21] But the Persian workmanship of these objects is open to question. If we claim them as Persian because they resemble the sealstones and the sealstones as Persian because they resemble these objects, are we not arguing in a circle? In Greek art, on the other hand, we have a vast amount of comparable works in different materials produced not only in Greece and Asia Minor but all over the ancient world. Naturally it is possible that the Greek designs were occasionally copied by indigenous Oriental workmen.[22] "But, even if it could be proved that the makers of individual gems and other objects were non-Greek by birth, these products nevertheless belong to the history of

[17] Cf. e. g. Rodenwaldt, *loc. cit.*; Schefold, *loc. cit., passim.*

[18] Furtwängler, *op. cit.*, III, p. 117; Maximova, *Arch. Anz.*, 1928, cols. 649 ff.; Butler, *A.J.A.*, XVI, 1912, p. 478, and *Sardis*, I, p. 85; S. Reinach, *Antiquités du Bosphore, passim*; Goetze, *Berytus*, VIII, 2, 1944, p. 97; G. M. Young, *loc. cit.* Mr. Beazley tells me that a number of the Graeco-Persian stones in the Ashmolean Museum are said to be from Persia.

[19] Schmidt, "Treasury of Persepolis," *Oriental Institute Communications*, no. 21, 1939, pp. 65 ff., fig. 47. It is to be published in the near future by Mrs. Cleta Olmstead Robbins.

[20] Dalton, *The Treasure of the Oxus*, pl. X, no. 24, pl. IX, no. 22.

[21] Minns, *Scythians and Greeks*, p. 163, fig. 51.

[22] I owe this suggestion to Miss Porada.

Greek art, for stylistically they belong to the Greek tradition." (A. D. Nock). On the other hand, the sealstones with Oriental designs that, as we saw, were produced practically without change until the time of Alexander, can be safely assigned to Oriental workmen.

The picture of the ancient world that we obtain from our study of the fifth- to fourth-century "Graeco-Persian" sealstones is revealing. The world had become cosmopolitan. In the East the Persians, by their military prowess and administrative ability, had made themselves absolute masters. The artistic genius of the Greeks, however, their commercial enterprise, their fighting qualities, their adaptability gave them a special status in this world. They travelled, they traded, they fought other people's battles, and, above all, they adapted their art to the taste and requirements of their foreign patrons. As a result their culture spread far and wide. Finally, under Alexander of Macedon, they conquered the mighty East and extended their cultural frontiers to distant India.

STONES ILLUSTRATED ON PLATES 31, 1-3 AND PLATES 35, 5-38

PLATE 31

(From impressions, enlarged)

1-2. Chalcedony cones in a private collection, lent to the Metropolitan Museum, L 46.25.8, L 46.25.7. Courtesy of the Metropolitan Museum of Art.

3. Chalcedony cylinder in the Walters Art Gallery, 42.775. Courtesy of the Walters Art Gallery.

PLATE 35

(From impressions, enlarged)

Ionian Greek sealstones, in the Metropolitan Museum of Art, V-IV century B.C. Courtesy of the Metropolitan Museum of Art.

5. Chalcedony scaraboid, 07.286.121.

6. Carnelian scaraboid, 21.88.40.

PLATE 36

(From impressions, enlarged)

Ionian Greek Sealstones, in the Metropolitan Museum of Art, V-IV century B.C. Courtesy of the Metropolitan Museum of Art.

1-2. Chalcedony scaraboids, 25.78.99, 41.160. 435.

3. Chalcedony seal, lent by a private collector, L 46.25.5.

4. Chalcedony scaraboid, lent by a private collector, L 46.25.13.

PLATE 37

(From casts, some enlarged)

1-2. Silver tetradrachm, Berlin. Tissaphernes (?) and Artaxerxes II. 1 = Lange, *Herrscherkopfe des Altertums im Münzbild*, p. 34; 2 = Babelon, *Traité*, II, pl. 88, no. 10.

3-4. Silver tetradrachm, London. Satrap and kithara. 3 = Hill, *Select Greek Coins*, pl. VII, 8; 4 = Babelon, *Traité*, II, pl. 88, no. 25.

5. Silver distater (?), American Numismatic Society. Bull about to toss. Courtesy of the American Numismatic Society.

PLATE 38

Stele from Tchaouch Keui, Phrygia. Courtesy of the Istanbul Museum.

GISELA M. A. RICHTER

METROPOLITAN MUSEUM OF ART

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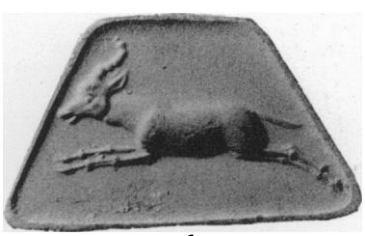

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G. M. A. Richter: Late "Achaemenian" or "Graeco-Persian" Gems

PLATE 32

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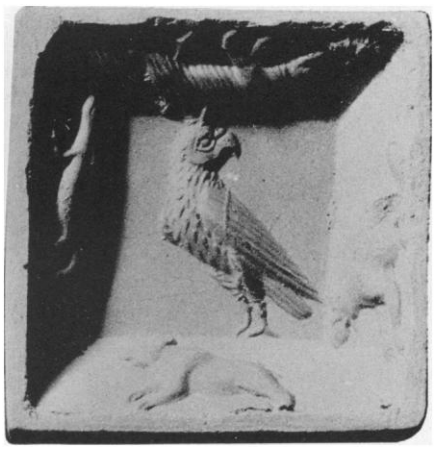

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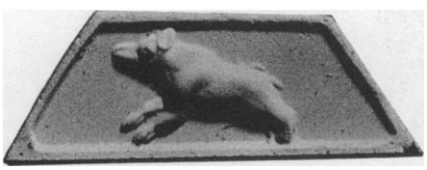

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G. M. A. Richter: Late "Achaemenian" or "Graeco-Persian" Gems

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PLATE 34

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G. M. A. Richter: Late "Achaemenian" or "Graeco-Persian" Gems

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G. M. A. Richter: Late "Achaemenian" or "Graeco-Persian" Gems

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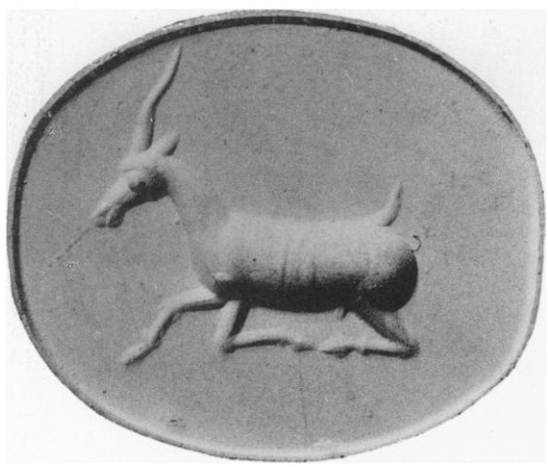

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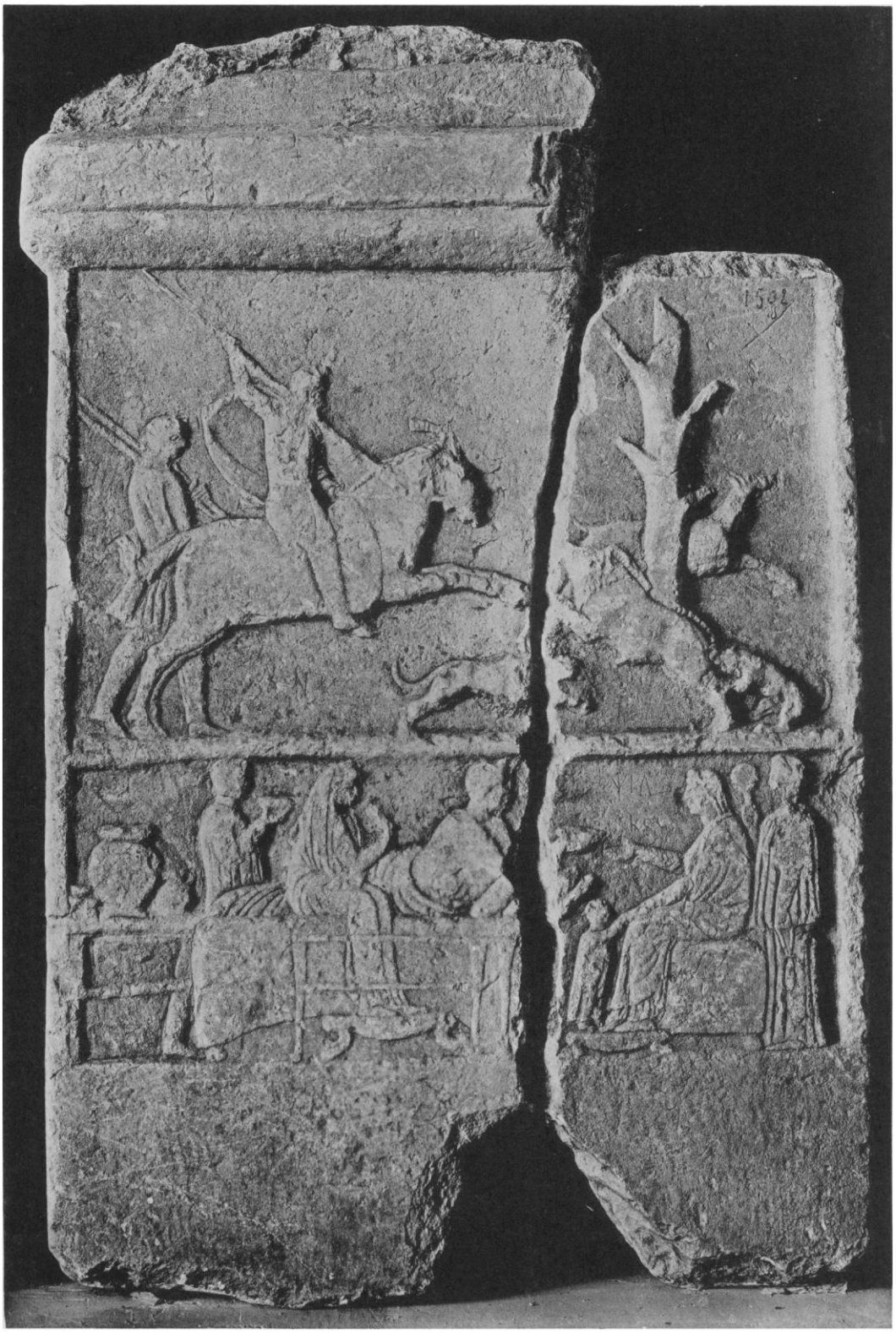
G. M. A. Richter: Late "Achaemenian" or "Graeco-Persian" Gems

PLATE 38



A Collection of Greek and Roman Gems

EIGHTEEN Greek and Roman gems, designs engraved in semi-precious stones, illustrate the development of gem-cutting from 500 B.C. to the end of the ancient Roman Empire, or a period of precisely a thousand years. This collection, recently acquired by the Museum, was formed over a period of twenty years by the late Dr. L. Lahut Uzman, whose untimely death cut short a brilliant career as a professor at the Harvard Medical School. Dr. Uzman, a Visitor to the Classical Department, collected these intaglio gems and moulded glass pastes as an adjunct to his collecting of late Roman and Byzantine coins. His first gem was acquired in his student days in Istanbul, and most of the later additions came from Asia Minor, the neighboring Greek islands or the area around Constantinople. The designs are those most intimately connected with the art of cutting dies for Greek and Roman coins, and in certain instances these gems can be said to be the type of trial designs from which mintmasters in the Greek imperial cities of Asia Minor produced coins.[1]

In the modern world of machine-made coins with flat relief for stacking and for use by vending-machines, in the age of credit cards and photographed checks, it is difficult to understand the importance of engraved gems in antiquity. Most of Dr. Uzman's pieces are ringstones, and as such they were the signatures and signet-rings of governments and private persons in the Greek and Roman world. The art of cutting a gem in hard stone with sharp tools, a wheel and a crystal magnifying-glass is a very demanding one, closely related to the cutting of dies for coins. The trial designs for coins, obverse portraits and reverse compositions, were certainly worked out in the precise medium of the cameo (carving in relief) and the intaglio. Writers such as Pliny the Elder in the first century A.D. have given us the names of important gem-engravers, and a number of their signed stones have come down to us. The best of these artists turned their products into coin-dies for the highly-regarded, skillfully-designed issues of the Greek city-states and the mints of imperial Rome. Lesser artists supplemented their incomes in the mints of Greek cities under the Roman Empire by carving intaglio stones for officials and for private individuals as ornaments and commercial signatures.

The carving of seal-stones was an art of great age in the ancient Near East by 600 B.C. The Greeks also inherited a marvelous tradition of gem-cutting on the highest level from the Minoans on Crete and the Mycenaeans of the Greek mainland in the second millennium B.C. A new impetus to gem-engraving coincided with the development of Greek coinage in western Asia Minor, the islands and Greece in the sixth

century B.C. From that date onwards the two arts march side by side through the high classical and Hellenistic periods into the age of the Roman Empire. After Alexander the Great the art of portraiture develops in the coinage, and it is natural to find a comparable development in the gems. The gems of the Roman Empire reflect preoccupation with naturalistic portraits, religious cults and imperial symbols (the Roman eagle, for instance), as do the coins from 50 B.C. to A.D. 350. When the Roman world became officially Christian about A.D. 325, the number of gems with signs of the Cross increased, although Christians and Jews alike had commissioned stones with symbols of their faiths in the previous centuries.[2]

In Roman times another art grew up alongside the carving of gems. This was the moulding of glass pastes, casts in various colors to imitate those of the semi-precious stones. So precise were many of these casts that it is often difficult to tell them from engraved stones. Glass pastes naturally had the virtue of enabling citizens of modest means to own a ring or seal with an accurate reflection of a famous carving. The same tendency to mass production went on in the imperial mints of the third century A.D., when coin-moulds were made and bronze coins cast from master specimens. Most surviving late Roman terra-cotta moulds for coins come from the dry soil of Egypt, although they were undoubtedly also produced and have occasionally survived elsewhere.[3]

The first gem (Fig. 1) is a round stone engraved on a very convex surface. A wild goat with elegant horns stands proudly on a ground-line. His body has been cut with a bow-drill or buffing wheel, giving him a globular neck and two circles for the body. This stone is Anatolian work of the sixth or fifth centuries B.C., retaining something of the simplicity of gem-cutting in the Greek Geometric Period (down to 700 B.C.) but portraying in slightly provincial fashion the freedom of archaic Greek animals. Perhaps this gem was carved for a Persian, for it has a distinctly oriental flavor. It must be remembered that in the later sixth and fifth centuries the Achemenian empire was all powerful in the Ionian Greek world and in the hinterlands of Phrygia, Caria, and the provinces along the southern coast of modern Turkey. A comparable goat appears on fifth-century electrum coins (staters) of Cyzicus, a major Greek center on the Asiatic coast of the Sea of Marmora, and another graces a silver stater of Kelenderis in Cilicia on the southern coast of Asia Minor (Fig. 1a).

1. Red Sard. *Wild Goat. Circa* 500 B.C. 15 mm. *62.1159*

1a. Stater of Kelenderis in Cilicia. *Circa* 450 B.C. *04.1133. H. L. Pierce Collection*

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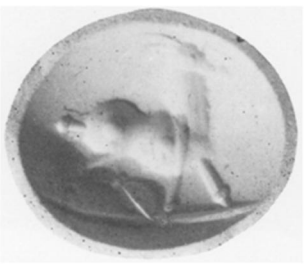
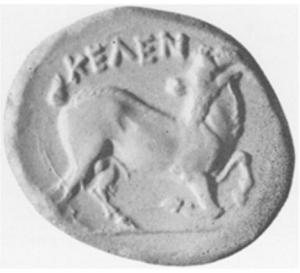


1a



2. Chalcedony. *Griffin. Circa* 425 B.C. 40 mm. *62.1153*

2a. Drachm of Assos in the Troad. *Circa* 460 B.C. *04.970. H. L. Pierce Collection*

2b. Terra-cotta Plaque from Western Asia Minor. 500 B.C. or later. *97.358*
Gift of Edward P. Warren

In size and style, as well as rarity, the treasure of the collection is a scaraboid intaglio in pale blue chalcedony, pierced horizontally for mounting or suspension (Fig. 2). A griffin crouches with beak open, paws extended, wing curled upward and tail arched. The surfaces, slightly convex, are not only perfectly cut but beautifully polished. A Greek artist carved this stone in one of the Aeolic or Ionian cities of western Asia Minor about 425 B.C., the period of struggles between Athens and Sparta. A similar griffin appears as the city-badge on a number of Greek coins of the fifth century, silver drachms of Assos in the Troad (479 to 450 B.C.) (Fig. 2a) and Teos in Ionia (500 B.C.) providing close parallels. A terra-cotta plaque from a building at Sardis or Smyrna provides a monumental parallel in these years (Fig. 2b). As Dr. Uzman observed in his notes, after 400 B.C. the wings of griffins and sphinxes become more natural and feathers curve the other way. Coins of Thracian Abdera early in the fourth century present this less-conceptual form of wing on a griffin otherwise identical with the one seen here.

When the Athenian hero Theseus, slayer of the Minotaur on Crete, reached the age of sixteen, he pushed aside a mighty rock and found his father's sword and sandals beneath. With these he set forth on a career of mighty deeds and narrow escapes above ground, in the underworld and at the bottom of the sea. On a nicolo, a striated brown and white stone, we see Theseus in crested helmet and cloak, holding the sandals in his right hand and pushing up the rock to recover the sword (Fig. 3). Work of the Roman Republican period, the style parallels that in mythological subjects on silver denarii issued by authority of the Roman Consuls. Sir John Beazley has written, "It is easy to understand the popularity of the design: a ring with Theseus examining his sword would make an excellent present for a young man beginning his military career." As this remark indicates, in gems we usually see merely a very ideal Theseus standing contemplating his sword; the rather pictorial subject presented here is reserved for architectural decoration, terra-cotta plaques, of the Augustan period and later. It also occurs in the seventeenth century in a magnificent painting by the French Poussinist Laurent de la Hyre (1616–1658), probably commissioned by Cardinal Richelieu for the Palais Cardinal in 1637 (Fig. 3a). Between the two earlier stones and this, the ancient world has passed from linear decoration and simple emblems through the whole realm of natural figures, foreshortened perspective and landscaped setting.

Gems, like coin designs, often relate to famous works of monumental sculpture, copying masterpieces from earlier ages of Greek art. A bust of a young divinity, carved in honey-colored red carnelian, is an exceptional stone of the Augustan period (Fig. 4). The interior surfaces, face and neck, have been beautifully polished. It is probably Apollo, wearing laurel-wreath and cloak. The type goes back to the time of Alexander the Great in the third quarter of the fourth century B.C., and there is even something of Alexander's portrait in the design. A statue of Alexander the Great as Apollo or as a hero such as one of the Dioskouroi (Castor or Pollux) may have inspired the engraver. Just such a twice-lifesize statue adorned the Earl of Pembroke's collection at Wilton House near Salisbury and is now in the Palazzo dei Conservatori, the municipal collection of Rome.

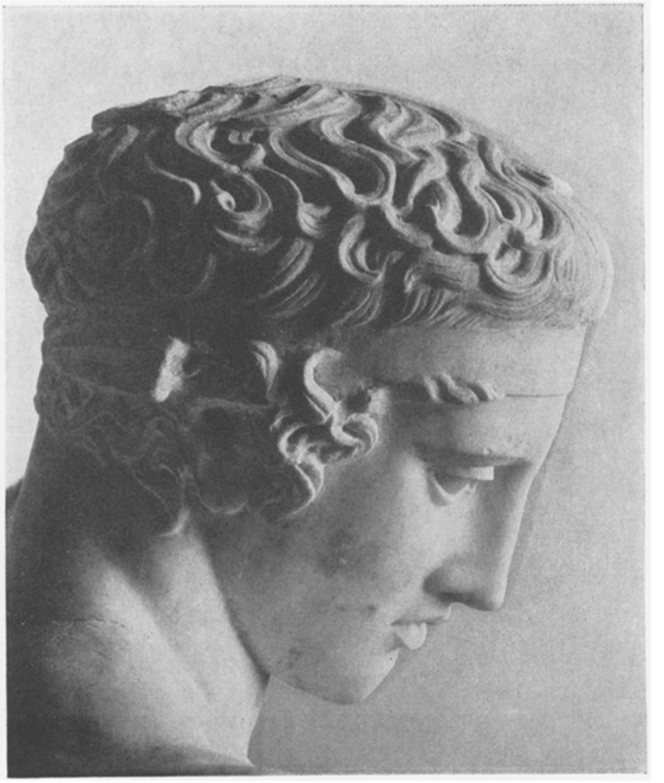
The Diadumenos (or youth binding a victor's fillet in his hair) of Polykleitos, the

3. Nicolo. *Theseus and the Rock. Circa* 100 B.C. 16 mm. *62.1154*

3a. LAURENT DE LA HYRE: *Theseus Discovering his Father's Sword. Courtesy of Wildenstein and Co., New York*

4. Carnelian. *Apollo. Circa* 30 B.C. 13 mm. *62.1150*
5. Carnelian. *Youth with Fillet. Circa* 30 B.C. 16 mm. *62.1151*

5a. *Diadumenos of Polykleitos, New York, Metropolitan Museum of Art. Fletcher Fund, 1925*



greatest sculptor in Greece of the fifth century B.C., inspired the bust carved in intaglio on a light brown carnelian from Asia Minor (Fig. 5). This gem also belongs to the age of Augustus (27 B.C. to A.D. 14), when the bronze statues of Polykleitos were copied in whole or in part in all media and on a variety of scales. The engraver has given us his own, rather free interpretation of the statue of about 440 B.C. (Fig. 5a). He has used a little gouge to make the cuts of hair, and the band in the hair is set rather lower than on the statue. The cold, severe classicism of the stone suits the Augustan period, when a reaction to Hellenistic emotion favored an art of classic Greek clarity and simplicity.

Another famous work of the Argive Polykleitos is reflected in a red-banded carnelian of the best Augustan style (Fig. 6). A head of an ideal youth is presented in profile. The carving shows every mark of great quality – in the subtle freedom of the hair, the strength of profile and the modeling of the bust. The model is, again freely, the Doryphoros or spearbearer of Polykleitos, a statue designed to sum up the sculptor's criteria of perfection in Greek art. Some say the Doryphoros represented the

6. Carnelian. *Youth or Hero. Circa* 30 B.C. 16 mm. *62.1164*

6b. *Head of a Youth.* Stater of Cyzicus in Mysia. 460 to 400 B.C. *01.5531*
C. P. Perkins Collection

6

6b

6a. *Head of Hermes or a Hero,* after Polykleitos. *98.641. H. L. Pierce Collection*

7

8

8a

7. Carnelian. *Persephone or Flora. Circa* A.D. 130. 17 mm. *62.1149*
8. Carnelian. *Asklepios and Hygeia. Circa* A.D. 200. 11 mm. *62.1163*
8a. *Asklepios.* Sestertius of Caracalla. *Circa* A.D. 215. *Boston, Private Collection*

hero Achilles going off to the Trojan Wars. There are many marble or basalt copies of the whole statue, and a bronze bust in Naples reproduces just what the engraver has included here. So also does a Polykleitan head which may represent Hermes (Fig. 6a). The inscription, not in reversed letters and perhaps added later, ZMARAGDOU ("Emerald"), is probably the name of an owner. The name sounds very Asiatic, and a similar head appears on electrum coins of Cyzicus in the fifth century B.C. (Fig 6b).

The bust of Flora or Persephone, goddess of the underworld and recurrent spring, is carved in a honey-colored carnelian (Fig. 7). She has flowing hair caught in a headband across the forehead; the hair is entwined with laurel leaves and flowers. As with the previous stones, there is a very high polish on both the intaglio and the seal surfaces. This is a strongly classical, cold and elegant work, probably of the period of Hadrian (*circa* A.D. 120 to 140), although the type was popular on Roman coins in the last fifty years of the Republic. The engraver's wheel has been used as a short-cut to carving in the hair and on the face, a suggestion that we are on the threshold of the Late Antique. In gems and coin dies of the later Roman Empire, the wheel was used extensively, even on the best stones and medallion dies, to create optic illusions of rounded form and to avoid painstaking carving of details. The results varied from masterpieces of plasticity to lumpy little figures of extremely cursory carving.

We come now to a group of gems which can be called "Roman Imperial" because they are the reverse types of Roman coins, either those from the official imperial mints or those from the quasi-autonomous mints of Greek cities in Greece, the islands, Asia

Minor and the Near East under the Roman Empire. The first stone is a red carnelian (Fig. 8). Hygeia, goddess of health, stands at the right, feeding a snake, and her father Asklepios leans on his serpent-entwined staff and looks at her. A combination of well-known cult images has been effected in this forceful work of the second or third centuries A.D. On a stone with the figures in similar grouping in the Metropolitan Museum,[4] the owner's name "Anthimou" is also inscribed. This composition is known on medallions and coins of Hadrian (A.D. 117 to 138) and his Antonine successors in the mint of Rome (Fig. 8a) and in Asiatic or island cities such as Mysian Pergamon or Cos off the coast of Caria, where the cult of Asklepios flourished in the imperial period.

On a red carnelian with honey tones, Hygeia is almost alone; she stands facing an altar on the left and feeds a serpent coiled around her from a bowl in her outstretched hand (Fig. 9). Figure and complex drapery are well suited to the convex surface of this long, oval stone. The carving is fine and precise work of the imperial period, reproducing a Hygeia of the fourth century B.C. The same model appears on coins from the Flavians (A.D. 69 to 96) well into the third century A.D. (Figs. 9a, 9b). The level of carving on this stone is higher than on the previous, and a die designer in the imperial mint was certainly responsible for this piece. Stones such as these were often set in gilded bronze rings which tend to be more perishable than the stones themselves; thus, a high proportion of stones survive without their settings.

A white onyx, a translucent stone with flat, polished surface, seems to be unfinished, for not all of the details of the Dioskouros (Castor or Pollux) standing beside his horse are filled in (Fig. 10). Castor and Pollux, sons of Zeus or Tyndareus and brothers of fair Helen of Troy, were heroes who brought omens of victory to the Spartans and to the early Roman legions. They were widely worshipped in Asia Minor, where many Spartans migrated in the service of Alexander's successors and where the Romans ruled after 129 B.C. The Dioskouroi were symbols of devoted brotherhood, sharing pleasures and adversities equally. Thus, the design of this onyx was popular on coins of Caracalla and Geta, the sons of Septimius Severus (A.D. 193 to 211). The former murdered the latter in A.D. 212, but during their father's lifetime the imperial brothers were hailed as Castor and Pollux. This stone is very summary work, almost a sketch rather than formal carving. It was probably executed in the later third or fourth centuries, and as such the type finds stylistic and compositional parallels on coins of the emperor Gallienus (A.D. 253 to 267), a heroic and thoughtful youth set unwillingly in a world of crumbling imperium and barbarian adversity.

A yellow carnelian intaglio also relates to the legionary coin-types of Gallienus, and probably saw service as an officer's signet-ring (Fig. 11). At the right a Roman eagle is perched on a column or cippus; at the left a small horse faces the ensemble; and between there is a flaming altar, all set on a minute ground-line. A Latin name, SOSIUS or "Of Sosius," is cut in Greek letters of the Roman period above the horse. The stone comes from Istanbul. The allusion may be to a Roman cavalry unit serving in Asia Minor. Sosius, either a Roman or a Greek with a Latinized name, probably commissioned the stone from an engraver in the city where he was stationed. The similarity to coin-reverses suggests again that the engraver earned his principal living cutting dies for Greek imperial coins.

9

9a

9b

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9. Carnelian. *Hygeia. Circa* A.D. 150. 12 mm. *62.1157*
9a. *Fortuna.* Sestertius of Trajan. *Circa* A.D. 115. *Boston, Private Collection*
9b. *Hygeia-Salus.* Sestertius of Hadrian. *Circa* A.D. 125. *Boston, Private Collection*
10. White Onyx. *Castor or Pollux. Circa* A.D. 275. 13 mm. *62.1147*
11. Carnelian. *Eagle, Altar, and Horse. Circa* A.D. 200. 12 mm. *62.1156*
12. Sard. *Eros and Psyche* (?). *Circa* A.D. 200. 14 mm. *62.1146*

The cults of Eros or Cupid, god of love, and his mother Aphrodite or his bride Psyche were rampant in Asia Minor. At Sardis in Lydia a wealthy local citizen dedicated a number of golden statues of Eros, and the city of Aphrodisias in Caria to the south was obviously a major center of these cults. From this latter city came the Museum's recently-acquired marble group of a satyr and a maenad, revelling followers of the wine-god Dionysos, whirling about in the presence of Eros and his foil Anteros.[5] Like this sculptured group, an oval, red sard ringstone acquired by Dr. Uzman from Asia Minor is probably work of the early third century A.D. (Fig. 12). The design is paralleled on rare bronze coins of five-cent-piece size struck at Aphrodisias at this time. Cupid, winged and with bow and arrow, faces a nude female who may be his mother Aphrodite or his bride Psyche, although the latter is more often shown with butterfly wings. Cupid appears to be stalking the female opposite him. Such mysterious amalgamations and contrasts between love and force or love and beauty were popular in the writings, religions and arts of Asia Minor in the third century A.D. Besides free-standing sculptures, votive inscriptions and coins, marble friezes such as theatre balustrades feature scenes like this. The inscription (INO IERO KLISIAS) refers to the wish of the owner, Klisias, to be associated with the divine force of love.

Rock crystal is rare as a material for classical ringstones. Its popularity, however, increased as the Middle Ages approached, culminating in the giant Lothair crystal of the ninth century in the British Museum. On a tiny stone, rather cursory work of the third century A.D., we see a female head (Fig. 13). A goddess or personification is intended, perhaps the patroness of an Anatolian city. The carving has much of the crudity accorded busts of the personifications of city-senates, in other words of local government, on quasi-autonomous bronze coins struck throughout the imperial provinces of Asia Minor.

Three imperial portrait-gems, or technically one paste and two gems, constitute another source of strength in Dr. Uzman's collection. The first of these, a magenta red glass paste, is of some importance to students of Latin literature and its survival under the Roman Empire (Fig. 14). The draped bust of an elderly, balding man with wrinkled brow, strong nose and thoughtful chin is evidently designed and moulded after a bronze or marble portrait of the last days of the Roman Republic. The immediate prototype may have been a portrait made about A.D. 100 or nearly a century and a half after the man lived. He is the great orator, writer and statesman, Marcus Tullius Cicero. At some point later on in antiquity an owner of this paste has made the identification certain by cutting the letters M.T.C. directly (not reversed) on the sealing surface of the glass. There are other gem-portraits of Cicero, and his features have been identified with certainty from an inscribed marble bust of the second century A.D. in the Duke of Wellington's collection at Apsley House in London (Fig. 14a).[6] As a subject for the arts, Cicero's portrait was popular in the first three centuries of the Roman Empire, not only because his writings were taught to Roman schoolboys but because he was remembered as a champion of constitutional liberties by those aspiring to restore the Roman Republic.

The second portrait is of an unknown man of the second century A.D. Carved in an amethyst, his full hair, incised pupils and light beard are contrasts to the heroic

13

14

14a

15

16

16a

13. Rock Crystal. *Goddess or Personification. Circa* A.D. 250. 11 mm. *62.1148*
14. Red Paste. *Cicero. Circa* A.D. 100. 17 mm. *62.1160*
14a. *Cicero* in the Sculpture Gallery at Woburn Abbey, Bedfordshire
15. Amethyst. *A Roman. Circa* A.D. 125. 15 mm. *62.1152*
16. Yellow Topaz. *Maximus Caesar.* A.D. 235–238. 14 mm. *62.1158*
16a. *Maximus Caesar.* Sestertius. *Boston, Private Collection*

cloak pinned with a brooch on his left shoulder (Fig. 15). The artist has caught all the three-dimensionality of a portrait in the round. It would seem that this is the owner's likeness, made to be worn as a ring. However, this is a face which has a noble familiarity about it, recalling portrait-coins of the period between Caesar's death (44 B.C.) and the accession of Augustus to sole power in the Roman world (31 B.C.), following the deaths of Mark Antony and Cleopatra. Closest to this head are the likenesses of Marcus Junius Brutus, Caesar's assassin, on silver coins of the moneyer L. Servius Sulpicius Rufus, about 43 B.C. In the disturbed days of strife between Caesar's heirs and his murderers, various factions appealed to the army commanders and each other's supporters by placing portraits of the warring leaders on Republican issues. This stone could be contemporary with these coins, or it could be a reflection of his likeness carved a century and a half later for someone longing for the old days of regicides and republicanism.[7]

The emperor Caius Julius Verus Maximinus (A.D. 235 to 238) was a Thracian who rose from the ranks as a result of his superhuman size and strength. He was propelled to the throne after the good emperor Severus Alexander's murder on campaign in Germany. Living by violence and symbolic of military brutality during the Empire's troubled decades, he perished in a revolt which saw some semblance of power returned to the Roman Senate. A topaz of yellow, smoky quartz is a careful likeness of this mighty man, or possibly of his son, Maximus Caesar, who grew to look very like his father (Fig. 16). The engraver has caught as much of the crude face as we see on the numerous coins of father and son (Fig. 16a); this characterization is comparable to the several marble heads which have survived the damnation of their memories and destruction of their portraits in A.D. 238. In the realm of gems, this stone is matched by a carnelian intaglio of Maximinus in the Hapsburg collection at Vienna.[8] As with examples discussed previously, this also must have been a military gem, worn by an official of the emperor's party. No doubt, when Maximinus perished, the officer or magistrate hid the ring, unless he too lost his life from adherence to the emperor's cause. Stylistically, the stone shows the type of severe portrait, with incised-line hair and reduction of facial features, found in monumental bronzes and marbles of the mid-third century A.D.

Two carnelians may be said to be Early Christian in classification. The first, an orange ringstone with convex surface, presents the draped bust of a curly-headed, youngish man in partial to full profile (Fig. 17). His garment is double, a pallium or cloak over a chiton or tunic. In terms of style, such heads, with large eyes, simple curls of hair and stiff drapery adorn the coins portraying the sons and nephews of Constantine the Great, in the middle of the fourth century. This is no imperial portrait, however. The name NOSKERDO, inscribed in reverse on the stone, is undoubtedly that of the owner. Is this his portrait or is this perhaps a bust of Christ, the youthful "Good Shepherd" of Early Christian statuary and sarcophagus reliefs? It is impossible to be certain, for Christian iconography could be very general and symbolic in the early decades of the freedom of the Church. Similar portraits, also inscribed, are among gems classed as Early Christian in the British Museum and elsewhere.[9]

If some doubt exists about the religious significance of this portrait stone, there is no doubt about the final eastern Roman gem in Dr. Uzman's collection. In the

17

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19

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17. Carnelian. *A YoungMan. Circa* A.D. 350. 11 mm. *62.1145*
18. Carnelian. *Christogram. Circa* A.D. 400. 7 mm. *62.1155*
19. Amber Paste. *Omphale.* L. PICHLER (1773 to 1854). *62.1161*
20. Amber Paste. *Venus and Cupid.* L. PICHLER (1773 to 1854). *62.1162*

slightly convex surface of a conical ringstone is inscribed the Christogram, the monogram formed of XP or the first two letters of Christ's name in Greek (Fig. 18). With this gem we have reached the age of the Byzantine Empire, when the Christogram appeared triumphantly on legionary standards, armor, the bases of triumphal columns in Constantinople and coins. These imperial coins were struck throughout the Roman world, or such of it that remained, as barbarians pressed in from the northern frontiers and prepared to sack Rome itself. The traditions of gem-engraving in the ancient world did not die with the fall of the western Roman Empire in A.D. 476. These upheavals left the center of imperial strength and culture for a thousand years to come in Constantinople. Some of the greatest surviving imperial stones, cameo and intaglio, secular and religious, parallel the marvelous traditions of Byzantine illuminated manuscripts, metalwork, ivories or mosaics.

The story of Dr. Uzman's gems would not be complete without discussing two amber pastes of about 1800 (Figs. 19, 20). They are signed PICHLER in Greek letters and thus appear to be the work of Giovanni Pichler (1734 to 1791) or his equally-talented, younger half-brother Luigi (1773 to 1854). Their father had migrated from his native Tyrol to Rome and Naples, leading an extremely long life as a master gem-engraver. The two children, between them, lived through the whole phase of Neo-Classicism in Europe.[10] In the classical revivals stimulated by the rediscovery of Pompeii and Herculaneum, by the imperial activities of Napoleon, or by the birth of republicanism in France and America, gem-engravers held an honored position. The Neo-Classic period was the one age when ancient gems have been forged with success, but it was also a period when men like the Pichlers, or Benedetto Pistrucci in England, commanded high prices for their gems and coin-designs. The ultimate compliment was even paid these talented engravers, for their signed works were forged freely, putting them on a par with the masters of antiquity.

The first of these two pastes shows Omphale walking along, clad in the lion's skin and holding the club of Herakles. The hero had been induced to part with his emblems of power through romantic infatuation. The design is copied from an ancient gem which exists in several versions, one being in the Boston Museum and a well-known piece being in the Hermitage, Leningrad. The subject had struck the fancy of Mannerist engravers, and the Metropolitan Museum possesses a version of the classical composition produced in the middle of the sixteenth century. The second Pichler paste has a truly Neo-Classic theme, the punishment of Eros or Cupid by Aphrodite or Venus. The little love-god has just been chastised by his mother for one of his pranks, and as he rubs away the tears we see Aphrodite reclining in all her beauty in the foreground. The popular "Punishment of Cupid" theme goes back to paintings found in the eighteenth century in the buried Graeco-Roman cities on the bay of Naples, but Pichler has given the theme a modern interpretation. Although classical in subject, proportions and detail, this scene and this paste could never be mistaken for a product of antiquity. It is a Hellenic survival that had parallels in the colossal statues of Antonio Canova or the legends of Lord Byron.

CORNELIUS VERMEULE

Notes

1. Dr. Uzman gave the Museum his catalogue of the collection, and much of what is written here has been compiled from it. The gems were acquired from the Theodora Wilbour Fund in Memory of Zoë Wilbour. Photographs are from impressions in plaster, and the measurements are maximum diameters. Since most intaglio gems were thought of as seals or stamps, like the dies of coins, it is correct to describe their *subjects* from the impressions, while speaking of the *shapes* of the stones themselves.
2. For lack of a modern general history of engraved gems and their techniques in the English language, one may consult the British Museum Catalogues of ancient and post-classical gems, which have full and useful introductions to the general subject. A. Furtwängler's *Die antiken Gemmen* (3 vols., Leipzig, 1900) is the most comprehensive treatise on ancient gems and glass pastes, providing many illustrations from all periods. G. M. A. Richter's *Catalogue of Engraved Gems, Greek, Etruscan, and Roman,* published for the Metropolitan Museum of Art by "L'Erma" di Bretschneider in Rome, 1956, includes in its General Introduction sections dealing with the uses of gems, the technique of gem engraving, materials, collecting of gems, gem engravers and their signatures, and forgeries. Besides the Warren collection in Boston and the many gems in New York, America's best collections of gems are in the Walters Art Gallery, Baltimore, and the University Museum, Philadelphia. An exhibition of the Sommerville gems in Philadelphia was held November to March 1956–57. A fair portion of Edward Perry Warren's gems in the Museum are catalogued by (Sir) John Beazley, *The Lewes House Collection of Ancient Gems,* Oxford, 1920. Important gems were included in the recent D. M. Robinson bequest to the Fogg Art Museum of Harvard (Exhibition Catalogue, nos. 370–404).
3. In 1959 the Museum received six such moulds as a gift from Joseph V. Noble. They are for bronze *folles* of Constantine the Great (307 to 337), Maximinus II (308 to 313), and Licinius I (307 to 324).
4. Richter, *Catalogue,* no. 341.
5. *Acc. no. 62.1;* M.F.A., *Calendar of Events,* June 1962, pp. 2f.
6. The canonical Cicero in gem-engraving is represented by a beautiful garnet ringstone in New York (Richter, *Catalogue,* no. 474) from Edward Perry Warren's collection.
7. There are a number of other gems, contemporary and later, honoring the strategists of the dying Roman Republic. M. – L. Vollenweider has collected a number of them: *Geneva* 8, 1960, pp. 137–152; for their function: *idem, Museum Helveticum* 12, 1955, pp. 96–111.
8. For all his portraits, see B. M. Felletti Maj, *Iconographia romana imperiale da Severo Alessandro a M. Aurelio Carino (222–285 d. C.),* Rome, 1958, pp. 114–121. One of his marble heads, set on a Renaissance bust and drastically reworked, has been in the Museum since 1880, a purchase through Rodolfo Lanciani from the Villa Ludovisi in Rome.
9. British Museum, *Catalogue of Engraved Gems of the Post-Classical Periods,* by O. M. Dalton, London, 1915, nos. 514, 515.
10. Their careers and work are outlined in L. Forrer's classic *Biographical Dictionary of Medallists, Coin-, Gem- and Seal-Engravers,* London, 1904 and later; the introduction to the British Museum *Catalogue* just cited compresses everything about the later phases of gem-engraving into very readable form.

Mary Comstock and Alice Graves have helped to prepare this note. Edward J. Moore has worked very hard over the photographs.

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Classical Gems and Media Interaction

One of the characteristics of Greek art is the strong homogeneity of style that can be observed in every period, regardless of scale and material. The artists seem not as much bound to express the potential of their material, which is what is expected of artists in other periods and places, as to express the idiom of their day, even to the extent sometimes of disguising the properties of the materials in which they worked. There is no serious stylistic difference between a sculptural work in bronze and one in marble, or when these are compared with two-dimensional versions in vase painting, or when they are rendered in miniature for jewelry or engraved gems. In some ways this seems at variance with another characteristic of Greek art, at least until the fourth century B.C., and that is that each medium tends to have its own iconographic repertory. The way a figure or myth is shown in vase painting is likely not to be quite the same as the way it is shown in sculpture, or on gems, or on coins; traditions in iconography are not weakened by homogeneity of style. So although there is total media interaction in terms of style, there is far less in terms of subject treatment, and this is by no means to be explained to any marked degree by differences of scale or function or technique.

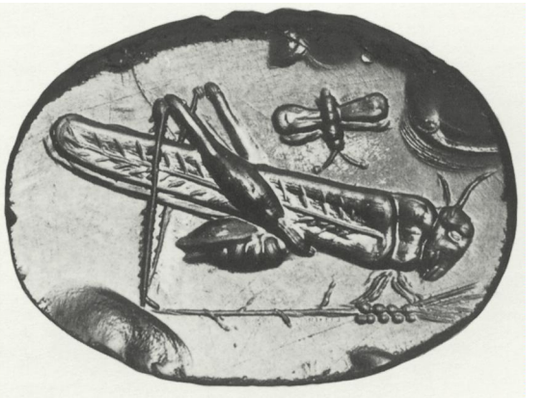
Media interaction is an important element in the subject of this volume: the way gems may either promote or reflect styles and subjects of other media, perhaps sometimes in far later periods. One might well have expected ancient gem engraving to have been a close mirror of works in other media, something which is true of Renaissance art and its classical successors in Europe. But, to start at the beginning, in archaic Greek gem engraving of the sixth and early fifth century B.C., the commonest types are not ones that can be recognized to be of sculptural inspiration, nor are they often matched on vases, our other most prolific figurative medium for the period.[1] Later, the serious cases in which a gem engraver and the maker of a coin die are judged to be the same person are few and far between: exceptions that prove the rule.[2] There are in fact significant differences in technique involved. The record begins to change modestly in the fifth century with gem types that resemble statuary without at first, so far as we can judge, copying any known models. We might have expected this in gem engraving, since there is some reason to think that sculptors worked at both large and small scale. The evidence for this is from texts and not all that easy to interpret. We have perhaps been too eager to try to make our classical artists into Renaissance men with comparable ranges of artistic competence. Very late sources remark that the fifth-century sculptor Pheidias had a reputation also for work in miniature, and the subjects named are a cicada, a bee, and a fly. These and similar bugs (fig. 1: 19 mm long) are certainly subjects for gems of the day, but the sources suggest tiny bronzes. The minia-

ture insect subjects by undated sculptors Kallikrates and Myrmekides also sound more like the tiny insect additives which we find on Greek jewelry from as early as the seventh century, but they do not mention either jewelry or gem engraving as the medium.[3]

Already with the early classical period, in the second quarter of the fifth century, there are a few subjects which look as though they might be inspired by statuary, or even copy it quite closely. Where recognizable statuary types are involved, the subject has been well explored by Gertrud Horster-Platz in her book of 1970.[4] I feel sure that the popularity of the patiently mourning Penelope type on rings (fig. 2: 18 mm high) and gems depends on a sculptural prototype, probably the well-known one represented in the version which was taken or sent to Persepolis (fig. 3), to be overtaken by Alexander's sack, but preserved also in copies made of other ancient replicas which had survived in Greece. It is not really possible to say whether any of the rings or gems could have been made earlier than the sculpture, but it is an odd subject to single out for glyptic otherwise.[5] Also early is an Apollo who still has something of the kouros about him (fig. 4: 18 mm high).[6]

The tendency is one which quickens in the second half of the fifth century and with the fourth, both on gemstones and engraved finger rings. On a few the figures are shown as statues, on bases. One is the famous boxer attributed to the master Dexamenos (fig. 5: 22 mm high).[7] This athlete type is wholly plausible for a mid-century statue, still relatively flat-footed. A second belongs to the next century and shows an archaizing statue of Athena on a base (fig. 6: 20 mm high).[8] And there is an Artemis on a gold intaglio from south Russia (fig. 7: 18 mm high).[9] More crudely, on a gilt ring a frontal statue stands between incense burners with the hint of an arched niche or door within which she was placed.[10] And a Nike-Victory might be added,[11] kneeling on an Ionic capital, since column dedications for statuary are commonplace. I see no reason to doubt that these do represent real statues, at least as well as Greek artists of this period copy anything at all closely.

Some other subjects are very close to known statuary types. Where the statue type itself appears only much later, I do not think that this makes it necessary to assume that



1. Locust and moth, fifth century B.C., carnelian intaglio (scarab)
British Museum, London, Gems 512; photograph: Robert Wilkins

it had existed earlier only in other media, including gem engraving, rather than that the gems offer evidence for its existence earlier than scholarship has previously allowed. A case in question is the well-known if not notorious Aphrodite Kallipygos. We know the statue in Naples, from Nero's Golden House in Rome, and the assumption has been that the statue type is a Hellenistic invention. But the general motif is known earlier in vase painting, and the specific one, as an individual study, on a classical glass gem (fig. 8: 33 mm high).[12] Another mainly Hellenistic type for gems which I suspect goes back to the fourth century is that of the strolling, pensive Omphale, naked but for Herakles' lion skin.[13] For earlier types, when a Greek of the East carves an Athena and Hermes he chooses statuary types (fig. 9: 29 mm high)—a Polyclitan Hermes Logios, and a broadly Pheidian Athena.[14] And there is another Athena which might easily have a statue as its source (fig. 10: 18 mm high).[15] Much of this, of course, simply reflects the fact that by this period the ordinary Greek's view of his gods and heroes is expressed in static statuary figures of this type rather than the action figures which were more familiar in the Archaic period (the threatening Zeus or Herakles).

There is a general tendency at this date to have more divine figures on gems, usually in these static poses which surely derive from statuary types. There are several Herakleses. Another type is of the figure with one foot raised. I doubt whether the famous Lysippan statuary version for Hermes is the earliest, and it appears on gems from the fifth century on—for an Odysseus, and on a fourth-century

2. *Penelope*, fifth century B.C., gold ring intaglio
Cabinet des Médailles, Paris, de Luynes Collection 515; author photograph

3. *Penelope*, fifth century B.C., marble
Tehran Museum. Cast in Basel, Cast Gallery; photograph: Donna Kurtz

4. *Apollo*, fifth century B.C., carnelian intaglio impression (scaraboid)
Boston Museum of Fine Arts 27.691; photograph: Robert Wilkins

ring for Hermes himself (fig. 11: 23 mm high).[16] Other motifs common to gems and statuary of the day are the figures, often divine, which lean on a pillar. Hermes on a ring is an early example, while the woman on another ring is anonymous (fig. 12). The Aphrodite (fig. 13: 23 mm high) probably does not copy a statue, but can only take this pose because of the statuary motif; and when we turn to a fine ring in the same style with a goddess (fig. 14: 20 mm high), we come far more plausibly close to a real statue.[17]

With the Hellenistic period the repertory of subjects for gems narrows to series of heads or of standing figures of divinities all of which broadly resemble statuary types. The version of Lysippus' figure of Eros stringing his bow is a clear case,[18] but most are standing figures, commonly beside columns, with details of the pose and dress probably adjusted to fit a more accommodating relief field (fig. 15: 34 mm high).[19] When we come to portrait heads, the rings with heads of kings and queens, such as Berenike (fig. 16: 25 mm high),[20] may have had a semi-official function which gave them more status than the pieces we have considered so far. They are very likely to depend on the more formal portraits in bronze or marble, or on coins, but it is clear too that in this area the engraver can sometimes claim originality of conception and goes beyond the mere reproduction of an accepted type. Why else would we have the story that Alexander would allow only Pyrgoteles to render his portrait in intaglio, a monopoly concession which in statuary he bestowed on Lysippus?

The evidence for the representation of sculpture on gems may be patchy for the classical and earlier Hellenistic periods, but I think it is certain. It becomes much more apparent in the Roman world of the first century B.C. The motivation was very similar to that which promoted the making of intaglios showing sculpture for collectors on the Grand Tour, but Roman interest in Greek statuary had been prompted by acquisition of it as loot. This of course led to collecting for its own sake, to the vigorous activity of copyists' studios in Italy, and so to the provision of sculptural types in miniature, but, of course, in original intaglios and not, so far as we know, in the sets of casts with which we are familiar from the eighteenth and nineteenth centuries.

5. *Athlete*, fifth century B.C., agate intaglio impression (sliced barrel)
British Museum, London; photograph: Robert Wilkins

6. *Athena*, fourth century B.C., carnelian intaglio impression (scaraboid)
Boston Museum of Fine Arts 23.583; photograph: Robert Wilkins

7. *Artemis*, fourth century B.C., gold intaglio (lion seal)
State Hermitage Museum, Saint Petersburg; author photograph

8. *Aphrodite Kallipygos*, fourth century B.C., glass intaglio impression (scaraboid)
Formerly Mrs. Powell, London; photograph: Robert Wilkins

9. *Hermes and Athena*, fourth century B.C., blue chalcedony intaglio impression (scaraboid)
Istanbul Archaeological Museum; photograph: Robert Wilkins

10. *Athena*, fifth century B.C., carnelian intaglio impression (scaraboid)
British Museum, London; photograph: Robert Wilkins

11. *Hermes*, fourth century B.C., gold ring intaglio
Formerly Harari Collection, London; photograph: Robert Wilkins

12. Woman, fourth century B.C., gold ring intaglio
Museo Archeologico Nazionale, Taranto

13. *Aphrodite and Eros*, fourth century B.C., gold ring intaglio
Kunsthistorisches Museum, Vienna

14. *Goddess*, fourth century B.C., gold ring intaglio
Victoria and Albert Museum, London; photograph: Robert Wilkins

There is no shortage of examples; for instance, Aspasios' detailed study of the head of the Athena Parthenos.[21] There is a special case involving the name Heios with which students of ancient gems are well familiar and which has been well explored by Erika Zwierlein-Diehl. There are many gems, most of them not ancient, however, carrying the name HEIOS, in the genitive, HEIOU. A number of them are certainly genuine, and we must take it that Heios was the engraver. This is a hellenized form of a Roman name, Heius, and it is reasonable to assume that he was a Greek freedman in the Heius family. Archaeologists tend to be skeptical about coincidences but perhaps unduly. We know of a Caius Heius of the right date. He lived in Sicily, at Messana, and became involved in the notorious case conducted by Cicero against the art thief Verres. From the speeches we learn that Caius Heius, who appeared for the defense, had better reason to appear for the prosecution. His own collection of statues and tapestries had been plundered by Verres. It included a marble Eros by Praxiteles, two bronze basket carriers by Polyclitus, and a bronze Herakles by Myron; or at least they were taken to be from the hands of these classical Greek master sculptors, which is what mattered.[22] It seems quite plausible that he should have had a Greek in his household who was a gem engraver, and that he should have carved, whether encouraged by his master or not, gems which show pieces of ancient sculpture or which at the very least are wholly sculptural in theme. The best-known examples are an archaizing Artemis/Diana in London, an Athena of a type which has become known as the Athena Lemnia ascribed to Pheidias, a head of Kodros, the Athenian king, copying an early classical figure, preserved on an ancient glass copy of the stone original (fig. 17), and likened by some to one of the Riace bronzes, and his Asklepios and Hygieia in Vienna which certainly reproduces versions of sculptural types.[23]

This role of gem engraving in antiquity as a mirror to the major arts of the day may be strictly limited, but in its way it anticipates what happens in later centuries, which are more the concern of other papers published here. The role of the craft in disseminating subjects and types within the Greek world was surely limited by its scale and the expense of the materials involved. Outside the

15. *Nymph*, third century B.C., carnelian intaglio impression
Ashmolean Museum, Oxford; photograph: Robert Wilkins

16. *Head of Berenike I*, third century B.C., gold bezel intaglio in iron ring
Ashmolean Museum, Oxford; photograph: Robert Wilkins

Greek world it may have had a more important role since gems and cameos are easily portable, and unlike statuary, they pass readily from hand to hand, and might have served as artist's models as effectively as they did in later centuries in Europe. We have evidence for the collecting of engraved gemstones, within and on the fringes of the Greek world, from the later Hellenistic period on. Such collections were coveted by Romans as much or more than the statues. We know that plaster copies were made of pieces of fine metalwork since hoards of them have been found either close to their homes, as in Egypt, or far away, as in Germany and Afghanistan. It is a little surprising that there are no comparable collections of gem casts, and where we find hoards of clay impressions they are sealings from documents. Yet we know that plaster was used to record intaglios in antiquity. The only possible exception is the hoard found in a fourth-century tomb at Ur in Mesopotamia.[24] It contained clay impressions from Greek and Persian gems and rings as well as casts and impressions of Greek coins. This is the sort of material that we might well imagine to have been of value to an engraver working far from the more important centers of production, but it is so far unique.

It is very likely that gems and cameos, like coins, could have been the messengers of classical motifs far from classical lands, just as they have proved to be for periods far removed from the classical. I would like to end with a possible instance of this, reverting to a subject that I touched on in other lectures in Washington in 1993, and since published. It is a case of a classical subject becoming known in a non-Greek environment, and being misunderstood and reinterpreted. It is at least possible that the difficulty in comprehension was because the model was too small to be explicit in every detail. That it might have been a gem or cameo seems to me at least plausible, because the subject is one which seems to have been peculiar to cameos of the first century B.C., so far as our evidence goes.[25]

I start with one of the cameos, from the Medici collection, now in Naples (fig. 18: 43 mm wide). Two butterfly-winged women pull a cart carrying Dionysos. An Eros on the chariot pole holds the reins and an uplifted torch, while another Eros helps the wheel along. Something like this must have been seen by the maker of a gilt silver dish, somewhere in the eastern areas of the Parthian empire, at least two centuries later (fig. 19:

17. *Head of Kodros*, first century B.C., glass intaglio
Heidelberg University; after Hampe 1971

22.6 cm wide). I would explain the differences in terms of the miniature presentation of a subject which was unfamiliar, but which the artist had reason to wish to use for other purposes. So he did not understand that the winged women were pulling the cart, and he removes the reins, also from Eros' hand, so that he now holds a jug. The reclining figure on the cart has become more Heraklean than Dionysiac, and the chariot or cart is more like an eastern platform throne. It is not clear what the Eros crouching by the wheel thinks he is doing. Whatever the artist was looking at had a dancing satyr behind it in a very familiar pose which could have been seen on anything—there is even a version on a relief jug found in Uzbekistan, and it is of course best known on the Borghese crater. But he thought the animal skin meant Herakles, so he gave the figure a club. The Eros overhead is mysteriously sharing with the one below

18. Dionysos pulled by two winged women, with Erotes, first century B.C., sardonyx cameo
Museo Archeologico Nazionale, Naples, 25840; photograph: Marie-Louise Vollenweider

19. Group with women, Erotes, a god, and satyr, second/third centuries A.D., silver dish
British Museum, London, WA 124086

20. *Ariadne's Chariot*, fifteenth century A.D., relief tondo from the workshop of Donatello
Medici Palace, Florence; after Simon 1965, fig. 11

him a long diademlike object; on his own on an original he would simply have been flying with his own ribbon, as on a cameo of the same period and style, which also provides a model for the small seated companion. The tree in the background is quite nondescript, but very like the way the branches are stylized on cameos, and unlike the real plants in the exergue. There is a further distortion of the subject on two Sasanian dishes, one in the Freer Gallery, which I shall not dwell on except to observe that details have moved yet farther from the originals, with two Erotes now at the wheel, and the reclining male turned into a half-naked woman with a bowl of fruit, who made better sense in the Sasanian context. Of course, the subject might have traveled east in some other way, but that it traveled in miniature would explain readily how it became so distorted. I have cited just two first-century cameos, but there are several others with versions of the scene or figures, and in this form it is not known on any other extant works of art—not, for instance, on the Roman period sarcophagi.

The Medici gem was a famous one. In Florence, Donatello or his studio used it, and others, as models for relief roundels to decorate the Medici Palace (fig. 20). They were in a better position to get details right, living in an environment well provided with classical subjects, but it is interesting to notice that, as on the Sasanian dish, the sex of the central figure has been changed and the fleshy Dionysos has been feminized.[26] It would be interesting to observe whether the miniature character of ancient gems led to other misapprehensions about content when they were copied, in the same or other media, or enlarged, but in a different period and environment.

NOTES

1. For the range of types see John Boardman, *Archaic Greek Gems* (London, 1968), and "Greek Gem Engravers, Their Subjects and Style," in *Ancient Art in Seals*, ed. Edith Porada (Princeton, 1980), 101–116.

2. The prime case is that of Phrygillos, for whom see now Erika Zwierlein-Diehl, "Phrygillos," *Antike Kunst* 35 (1992), 106–117.

3. Johannes Overbeck, *Die antiken Schriftquellen* (Leipzig, 1868), nos. 776–777 (Pheidias); 2192–2201 (Kallikrates and Myrmekides). See Paul Jacobsthal, *Greek Pins* (Oxford, 1956), 76, on the value of such testimonia. For Greek gems with insect devices, see John Boardman, *Greek Gems and Finger Rings* (London, 1970), pls. 469, 502 (our fig. 1), 505, 523, 589, 703; fig. 308; and 445, under "Insects, Locusts." See Malcolm Davies and Jeyaraney Kathirithamby, *Greek Insects* (London, 1986) for representations in various media.

4. Gertrud Horster, *Statuen auf Gemmen* (Bonn, 1970).

5. Horster 1970, 8–9; Boardman 1970, pls. 656, 664, 687 (our fig. 2). On the statue see Werner Gauer, "Penelope, Hellas und der Perserkönig," *Jahrbuch des Deutschen Archäologischen Instituts* 105 (1990), 31–65.

6. Boardman 1970, pl. 455 (Museum of Fine Arts, Boston, Lewes House Gem, no. 47).

7. Boardman 1970, pl. 516 (London, British Museum, Gems 562).

8. Boardman 1970, pl. 599 (Museum of Fine Arts, Boston, Lewes House Gem, no. 57).

9. Boardman 1970, pl. 819 (Saint Petersburg).

10. Boardman 1970, pl. 805 (London Rings 1335).

11. Boardman 1970, pl. 758 (Taranto).

12. Boardman 1970, pl. 650 (once Russell collection); Sotheby's London, 10/11.12.1992, no. 251. On the statue and vase scenes, see Gösta Säflund, *Aphrodite Kallipygos* (Stockholm, 1963); John Boardman, *Greek Sculpture: Late Classical Period* (London, 1995), fig. 82.

13. *Lexicon Iconographicum Mythologiae Classicae*, vol. 7 (Zurich, 1994), under "Omphale," 51–52, type C (John Boardman).

14. Boardman 1970, pl. 855 (Istanbul).

15. Boardman 1970, pl. 486 (London, British Museum, Gems 515).

16. Boardman 1970, pls. 535, 537 (Odysseus); *The Ralph Harari Collection of Finger Rings* (London, 1977), 16, no. 10 (Hermes). For the statue see Roland R.R. Smith, *Hellenistic Sculpture* (London, 1991), fig. 70.

17. Boardman 1970, pls. 663 (Hermes; Museum of Fine Arts, Boston, Lewes House Gem, no. 48), 768 (woman; Taranto 10006; our fig. 12), 734 (Aphrodite; Vienna, Kunsthistorisches Museum 217; our fig. 13), 733 (goddess; Victoria and Albert Museum 552–1910; our fig. 14).

18. Horster 1970, 35–36, pl. 8.1.

19. Boardman 1970, pl. 1002 (Oxford 1892.1515).

20. Boardman 1970, pl. 1009 (Oxford F. 36).

21. Marie-Louise Vollenweider, *Die Steinschneidekunst und ihre Künstler in spätrepublikanischer und augusteischer Zeit* (Baden-Baden, 1966), 31, pl. 22.3–4; Erika Zwierlein-Diehl, *Glaspasten im Martin-von-Wagner Museum der Universität Würzburg*, vol. 1 (Munich, 1986), 99.

22. Cicero, *In Verrem* 4.3–19, 27.

23. Zwierlein-Diehl 1986, 41, and in *Die antiken Gemmen des Kunsthistorischen Museums in Wien*, vol. 1 (Munich, 1973), 87–88. Earlier discussion and illustration in Roland Hampe, *Katalog der Sammlung antiker Kleinkunst des Archäologischen Instituts der Universität Heidelberg*, vol. 2, *Neuerwerbungen 1957–1970* (Mainz, 1971), 111–117, pls. 108, 109 (our fig. 17).

24. Edith Porada, "Greek Coin Impressions from Ur," *Iraq* 22 (1960), 228–234.

25. References and illustrations in John Boardman, *The Diffusion of Greek Art in Antiquity* (Princeton and London, 1994), 94–97, and more fully in *Classical Art in Eastern Translation*, the Seventeenth John L. Myres Memorial Lecture (Oxford, 1993), 16–27.

26. The roundel is discussed by Erika Simon, "Die Reliefmedaillons im Hofe des Palazzo Medici zu Florenz," *Jahrbuch der Berliner Museen* 7 (1965), 70–74, fig. 11.

MAITREYA'S JEWELLED WORLD: SOME REMARKS ON GEMS AND VISIONS IN BUDDHIST TEXTS

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I. INTRODUCTION

There is a common adage heard across Indian religions that the true sage is one who looks upon gold and a lump of earth as essentially the same and displays towards both the same attitude of total indifference. Nonetheless, gold, jewels and precious substances have an important role to play in a variety of Indian religious texts in all the renunciatory traditions. In particular, diamonds and rubies, sapphires and crystal, gold and silver, virtually glitter from the pages of many a Buddhist text.

Typically students first encounter Buddhism in a discussion of the *triratna*, the three jewels of Buddha, samgha and dharma. Jewels as metaphors for all that is most excellent enliven many accounts of Buddhist practice. Buddhist ritual and ethical practice are called "the jewel of practice"; the teacher or *ācārya* is said to be the highest jewel; the desire for enlightenment is called a wishing jewel; even the discipline may be called an excellent jewel. Individual Buddhist virtues are also called jewels; thus compassion, *kṛpā*, is a wishing jewel.[1] One text, the *Ratnaguṇasaṃcayagāthā*, a verse summary of the *Aṣṭasāhasrikaprajñāpāramitā*, describes the wisdom of the Buddha, *prajñā*, as a precious jewel. There in a series of verses that are offered to explain the worship of the Buddha's relics, the body of the Buddha is likened to the jewel box, still viewed with awe even after the jewel has been removed.[2] In the *Mahāyānasūtrālaṇkāra*, chapter 9, omniscience is compared to an open jewel box and Buddhahood to an ocean, the source of all jewels, for it gives rise to various gems such as the Buddhist teaching. The Buddha is also compared to a jewel and his activity to the rays of light that effortlessly stream out from the jewel.[3] The examples could be multiplied and could be drawn from other religious traditions in India as well, where similarly anything worthy of praise may be called a jewel or a wishing jewel.[4]

If we move out of the realm of metaphor, into the more concrete, Buddhist texts are replete with stories that show how real wealth and

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jewels are the result of merit making activities. The *Avadānaśataka* tells many tales of men and women who in previous births performed acts of piety that now have made them rich, handsome, pleasant smelling and of melodious voice.[5] This we hear of Suvarṇābha, who in a past life had seen a mirror that had fallen from a stūpa of the Buddha Vipaśyin. He replaced it and as a result was born with such a radiant complexion that he illumined the entire city of Kapilavastu (pp. 154–157). Having a radiant complexion, as bright as gold, is an attribute in the text of the gods in general and the Buddha in particular, who is said to surpass even the gods in his golden hue. Thus in the *Rāṣṭrapālaparipṛcchā* we are told that the body of the Buddha is luminous like a jewel (10) and that the Buddha's glowing form surpasses even that of the gods Brahmā and Indra (27). The body of the Buddha is said to be like a golden image (40).[6]

The belief that the gods are luminous and have golden bodies is not peculiar to Buddhism. A Jain cosmological text, the *Srī Prajñāpanā Upāṅga* describes the world of the gods, in which all the buildings are made of jewels, and the gods themselves are bright in hue, adorned with every conceivable jewel. Like Suvarṇābha in the *Avadāna Śataka*, they illuminate the ten directions with their radiance.[7] Hindu Purāṇic texts similarly describe the gods as of striking radiance, dwelling in jewelled palaces in jewelled heavens.[8] Perhaps the most famous description of a god in an early Hindu text is that of Kṛṣṇa in the *Bhagavadgītā*; *Bhagavadgītā* 11.12 describes the god as similar in radiance to the radiance of a thousand suns. Kṛṣṇa is said to be a mass of light, glowing in all directions (11.17).

An early description of the palaces of the gods may be found in the *Mahābhārata, Sabhā parvan*, 2.6 ff. Yudhiṣṭhira has had a *sabhā* or court built by the Asura, Maya. The wandering sage Nārada happens by and Yudhiṣṭhira asks if he has ever seen a *sabhā* like his, made of jewels and all aglitter (2.6.10). Nārada replies that such jewelled palaces exist only among the gods. We are also told that the building materials for Yudhiṣṭhira's palace were procured from a marvellous mountain that has gold peaks and is itself made of jewels (2.3.8). Jewels and their radiance are the unique possessions of the gods in later medieval Hindu texts on jewels and their marvellous powers. These texts often begin with a statement that jewels properly once belonged exclusively to the gods; some texts add accounts of how they came to earth. A common account involves the dismemberment of a divine or semi-divine being, whose body parts and fluids become gemstones.[9]

A jewel-like body is not the only reward for pious acts in the *Avadāna Śataka*. In another story a child is born with an actual jewel on his head. His parents name him Sūrya, "The Sun", because the jewel illuminates the entire house. In his past life he had been gambling with a king and had won a jewel that he then put on the stūpa of the Buddha Vipaśyin (p. 170). In yet another story we hear of a child born with a gold coin in each hand, because in a past life he had placed some coins on the stūpa (p. 206). But, these are small prodigies compared to the great wealth that piety may bring. Worshipping a Buddha may even lead to rebirth as a world emperor or Cakravartin, who inhabits a city made entirely of jewels and surrounded by jewelled ramparts.[10] It may also lead to a life of fabulous pleasures among the gods in a jewelled palace, as we learn from the *Vimāna Vatthu* and its commentary.[11]

These jewelled cities of the cakravartins and the mansions of the gods are given further religious meaning in the texts devoted to the jewelled paradises of the various Buddhas. Nonetheless, all of these accounts of acquiring jewels and wealth, including the accounts of coming to live in fabulous jewelled cities, in this world as a world emperor, or in the next world as either a god or a citizen of paradise, share a common belief in jewels as somehow associated with karmic reward. At least one Buddhist text suggests that the association between jewels and karmic reward extends beyond the simple equation of good deeds lead to good results and the truism that everyone desires wealth and jewels. In the story of Sadāprarudita that forms part of the *Aṣṭasāhasrika Prajñāpāramitā*, Sadāprarudita has a vision of numerous Buddhas; but the vision eventually evaporates. The account of Sadāprarudita is in fact fundamentally a visionary quest; it culminates in his finding the city Gandhavatī, which is a typical paradisiacal jewelled city, made of the seven great jewels and surrounded by seven jewelled walls (p. 240), and in a vision of countless Buddhas.[12]

In the city of Gandhavatī there are jewelled trees that bear jewels as fruits. The entire city is surrounded by bells that act like wind chimes and produce a soft sound that delights all the inhabitants. In the moats around the city are jewelled boats that have come into being through the ripening of the good karma of the people there (*pūrvakarmavipākenābhinirvṛttāh*).[13] The gardens of the city boast jewelled flowers and birds of every kind. The gardens, too, are said to have come into being through the good karma of those who now enjoy them. Indeed perhaps it is not unreasonable to generalize from this and assume that the jewelled city in its entirety is a result of good deeds.

That the experience of this marvellous city is part of a larger, visionary experience is clear from what happens there to Sadāprarudita. Sadāprarudita during his quest for the city gains certain *samādhis*, a term often translated by the word "meditation" or "concentration", but which I would prefer to translate here as "visions".[14] One of these *samādhis* is called "*sarvatathāgatadarśī*", "Displaying all of the Tathāgatas" (pp. 242–243). Through the power of this *samādhi*, Sadāprarudita sees countless Buddhas, who instruct him and then vanish. His ultimate religious achievement will also be a final vision of the Buddhas, after he has reached the city and met his mentor Dharmodgata.

At one point in his encounter with Dharmodgata Sadāprarudita asks about the nature of his visions of the Buddhas that he has had along the way to Gandhāvatī. He asks Dharmodgata specifically where all the Buddhas he had seen have gone on the dissolution of the vision (p. 251). Dharmodgata answers with a number of analogies to show that truth or reality cannot come or go. One of the images he uses is of jewels in the ocean:

> It is this way, o son of a good family. It is just like the jewels of the ocean; they do not come from the Eastern direction, nor from the South, nor from the West, nor from the North; they do not come from the intermediate directions, nor from below nor above; indeed they do not come from any place, from any direction, and yet jewels do come into being in that great ocean in response to all the good deeds of living beings. They could not do so without the proper collocation of causes. They come into being through a chain of major causes and ancillary causes. And when those jewels vanish, they do not go anywhere, not to any one of the ten directions. Rather, in the absence of those very causes that brought them into being, those jewels do not appear. It is exactly the same, o son of a good family, with the production of the bodies of the Buddhas. They do not come from any one of the ten directions, nor do they go to any one of the ten directions. And yet the body of the Buddha is not without causes; it is produced through earlier deeds, dependent on major causes and ancillary causes, it is produced through causes, it comes into being because of the ripening of previous karmas (p. 254).

In this passage, jewels are seen to be a particularly apt point of comparison for the visionary Buddha bodies Sadāprarudita has seen because the very existence of jewels in their main source, the ocean, is said to be a response to karma. There is something wonderful about jewels that makes them appropriate as a vehicle to understand the nature of ultimate reality, in this case its seemingly unpredictable and visionary presentation to the spiritual seeker.[15]

This ability of jewels to appear in response to good karma may in part lie behind their importance in certain visionary texts. We shall see below that Maitreya's marvellous palace or *kūṭāgāra* in the *Gaṇḍavyūha* is said to be the result of the ripening of his good karma (p. 360). In addition, we might note here that the many Pure Lands of Mahāyāna Buddhism,

also constructed of fabulous jewels, are primarily described as coming about in response to the vows of the Bodhisattva. In a discussion of how this is possible, one text, the *Akṣobhyatathāgatavyūha Sūtra*, gives an answer that recalls the statement about jewels in the ocean in the *Aṣṭasāhasrika*: it is simply the case that the Pure Land exists as a response to the Bodhisattva vow.[16] I would argue that this statement, far from seeming unusual, might have seemed natural to an audience who believed that the appearance of any and every jewel in its ocean source was itself a response to karma.[17]

That this belief in the appearance of jewels as a response to karma was in fact wide-spread is suggested by a humorous episode in a medieval Jain story. A pious young man has been given a magical jewel by a *vidyādhara*, a creature of supernatural abilities. The *vidyādhara* himself had received the jewel from a god who was pleased with his deeds. Our young man entrusts the jewel to his friend, who decides to steal it. He places an ordinary stone in the hole in which he had hidden the jewel, thinking that if his friend should by chance decide to dig up the jewel and find the stone instead, he would merely assume that the jewel had turned to stone because of his own lack of merit and have no suspicion of any wrong-doing.[18] Thus the wicked young man's trick in the story depends on a shared belief that jewels appear as a response to good karma and can just as simply disappear when there is no merit. Another Jain story explains the mechanism of the change from jewel to ordinary stone, or in this case to lumps of coal. The monk Hemacandra comes to the house of a merchant who has fallen on bad times. His gold has turned to coal. Hemacandra touches the coal and makes it into gold again. The text explains that he does this by driving away the evil demi-god that had been concealing the gold.[19] Other Jain stories make fun of the belief that precious substances come and go according to a person's merit; when a man is cheated of a jewel by his friend and shown a stone in its place, he takes his revenge by inviting the cheater's two sons to dinner and then returning to him two monkeys in their place. When the cheater asks how children can turn into monkeys, the clever friend replies that it was due to their father's lack of merit; for if a jewel can turn into a stone surely a child can turn into a monkey.[20]

To return to our story of Sadāprarudita, Sadāprarudita is further instructed by his mentor and the story concludes in chapter 32 with a final vision of the Buddhas in all the ten directions. I have singled out the story of Sadāprarudita for two reasons. The first is the prevalence of jewels and jewelled objects in this primarily visionary account. There is the city itself, the wonderful jewelled city of the cakravartin

with its jewelled buildings, walls, tree and gardens. There is also a jewelled *kūṭāgāra* that Dharmodgata had caused to be made to enshrine the *Prajñāpāramitā*. The structure is adorned with red sandalwood and surrounded by garlands of pearls. It is made of the seven jewels. In the corners are jewels which serve the function of lamps. In the middle of the *kūṭāgāra* is a jewelled throne made of the seven jewels and a container made of jewels. The *Prajñāpāramitā*, written on gold sheets with *vaiḍūrya* gems, is in this container (p. 249).[21] And most importantly, there is the suggestive statement of Dharmodgata, likening the appearance of the Buddhas in visions to the appearance of jewels in the ocean. Jewels seem to be present here not only because they are valued precious substances, nor merely because of their association with the gods and heavenly cities. The text attests to a particular belief in the ability of jewels to appear as a response to collective and individual merits, making them a parallel to the appearance of the Buddha body in visions.

There were in fact many unusual beliefs about jewels in ancient and medieval India that I would like to suggest made them not only the stuff out of which heavenly palaces were thought to have been made, but also helped determine their importance in visionary texts. I refer specifically to diverse beliefs that associate jewels with a marvellous ability to create or make manifest diverse worlds and diverse objects, either within themselves, or by projecting these objects outside of themselves. There are also some unusual beliefs in jewelled palaces that belong to denizens of the underworld; these jewelled palaces are further associated with magic powers and magic objects. I would like to suggest that such beliefs made jewels a particularly fitting material for religious visions, which themselves seem to come from a different world and to be somehow of a different nature from ordinary experience. In what follows I focus on the religious visions of one specific text, the *Gaṇḍavyūha*, and a complex of ideas about jewels that can be found in this and other texts. I hope ultimately that by focussing on the material aspect of the religions visions and by exploring what texts have to say about the peculiar properties of one ubiquitous material element of visions, namely jewels, we might gain further insight into the power and significance of some of the visions texts like the *Gaṇḍavyūha* describe.[22]

II. MAITREYA'S JEWELLED WORLD: THE VISIONS IN THE *GAṆḌAVYŪHA*

Like the quest of Sadāprarudita, Sudhana's quest may also be understood as a vision quest. His search includes an elaborate vision granted him by Maitreya. The vision takes place in a *kūṭāgāra*, a term we have met in Sadāprarudita's quest.[23] The *kūṭāgāra* of Maitreya is an elaborate structure; it is first described in chapter 53, where it is said to be the result of Maitreya's good deeds as a bodhisattva (*bodhisattvakuśalamūlavipākābhinirvṛtto*, p. 361, line 25) and to have been produced from his vow (*bodhisattvapraṇidhānasamudgata*, p. 360, line 26) and from the power of his special knowledge (*bodhisattvābhijñānabalābhinirvṛtta*, p. 360, line 27).[24] Later, when Sudhana finally sees the structure we are told that it is as vast as the sky (p. 407; *gaganatalāpramāṇam*) and adorned with all kinds of flags and banners (*asaṃkheyacchatradhvajapatākālaṃkāram*) and with innumerable jewels (*asaṃkhyeyaratnālaṁkāram*). It has countless hanging ornaments of jewels and pearls (*asaṃkhyeyamuktāhārapralambitālamkāram*; *asaṃkhyeyaratnahārapralambitālamkāram*). It has jewelled bells and chains and fine gold dust (*asaṃkheyaghaṇṭāmadhuranirghoṣālaṁkāram*; *asaṃkhyeyasuvarṇacūrṇasaṃpravarṣaṇālaṁkāram*); it has countless mirrors and heaps of bricks made of jewels (*asaṃkhyeyādarśamaṇḍalālamkāram*; *asaṃkhyeyaratneṣṭikānicitālamkāram*). Its walls are of jewels (*asaṃkhyeyaratnabhittyalamkāram*) and it has jewelled trees and paths (*ratnavṛkṣa*; *ratnapatha*). There are ponds and lotuses, jewelled steps and all kinds of marvellous jewelled arrangements (*asaṃkhyeyasarvaratnavyūhālamkāra*, p. 408). Once inside Sudhana sees hundreds of thousands of other similar structures. They do not touch each other, but in the manner of reflections they all appear on each and every surface.[25]

Sudhana then sees himself in the *kūṭāgāra*; among other things he sees Maitreya and all the events in Maitreya's religious life. From the hosts of mirrors he sees countless Buddhas, bodhisattvas and Buddha fields. From the rays emitted by the pillars he sees figures emerge; he sees lakes, he sees men and women and children; he sees gods, Śakra and Brahmā and the protectors of the quarters; he sees nāgas and yakṣas, pratyekabuddhas, śrāvakas and bodhisattvas (p. 412). In short, coming from the jewelled rays and the jewelled pillars, from the reflecting surfaces of mirrors and gold he sees every manner of creatures that people the universe. The vision is brought about by the power of Maitreya and the expansion of Sudhana's own consciousness.[26]

The vision disperses at Maitreya's bidding and Sudhana, like Sadāprarudita, is left to wonder where has it gone. Maitreya's answer

is somewhat different from Dharmodgata's reply to Sadāprarudita. He tells him that it is in the very nature of things that they appear in a marvellous way, controlled by the power of the bodhisattva's knowledge, "*esā dharmāṇām dharmatā, aviṣṭhapanapratyupasthānalakṣaṇāḥ kulaputra sarvadharmā bodhisattvajñānādhiṣṭhitāḥ*" (p. 415, line 28).[27]

The text gives a series of analogies to explain Sudhana's visionary experience. I would like to focus for a moment on one of these, because I believe that it can help us to understand how jewels play a role in visions in the text and some of the cultural beliefs that may have contributed to shaping the visions and the way in which they are described. We have already seen above that jewels share one very important characteristic with these visionary structures; jewels and these marvellous buildings are both said to be produced by the ripening of good deeds. But there is another important feature that they seem to have shared in the imaginative world of this and related texts. Jewels are capable of projecting the universe out of themselves or manifesting it within themselves. I begin from a consideration of jewels as magic objects and what this might tell us about one of the many meanings of the visions in the *Gaṇḍavyūha*.

II.A. *Vidhurapaṇḍita's Jewel and Māyā's Body: The Reality of Visions*

At one point (p. 415, lines 13–16) Maitreya tells Sudhana that the appearance of the entire universe in the *kūṭāgāra* may be likened to the appearance of the universes in the *vimāna* or palace of Brahmā. Just as the *kūṭāgāra* of Maitreya was called the *Vairocanavyūhālaṃkāragarbha*, "the *kūṭāgāra* that contained within it all of the manifestations of Vairocana" (p. 407, line 10), so the palace of Brahmā is called *sarvajagadvaravyūhagarbha*, "the palace that has in it all of the most excellent manifestations of the universe" (p. 415, lines 14–15). In this palace of Brahmā, we are told, "*sarvatrisāhasramahāsahasro lokadhātur ābhāsam āgacchati pratibhāsayogena sarvārambaṇāmiśrībhūtaḥ*", "the entire great universe, the entire three-thousand-fold world system appears like a reflection, intimately connected to each and every surface".[28]

In the *Mahābhārata, sabhā parvan*, in which the various palaces or courts (*sabhā*), of the gods are described, the court of Brahmā is distinctive. While it shares with the palaces of the other gods its luminous nature, it is constantly changing in form and so no definite description can be given of it (2.11.9). Maitreya's palace shares with the court of Brahmā its elusive appearance; it seems all things at once so that no single description of it is possible. Thus we are told that from the pillars came rays of light that belong to every type of jewel. At some points

they were dark blue in color; elsewhere they were yellow, or red or white or crystal clear, and in places they were the color of the rainbow; the rays that came from the pillars were at once of every possible color (p. 412). Jain stories know of magical jewels of divine origin which similarly cannot be described by any single characterization. Thus in the story from the *Upamitibhavaprapanakathā* and the untrustworthy friend mentioned earlier, the magic jewel is described as follows:

kiṃ nīlaṃ kimidam raktaṃ kiṃ pītaṃ yadi vā sitam /.
kiṃ kṛṣṇam iti suvyaktaṃ lokadṛṣṭyā na lakṣyate //
dyotitāśeṣadikcakraṃ sarvavarṇavirājiatam/
lasadacchaprabhājālair dikṣu baddhendrakārmukam //

"The common eye could not tell exactly if the jewel was blue or red, yellow, white or black. It illuminated space in every direction around it, and shone with every possible color, casting a rainbow in every direction with its dancing rays" (pp. 749–750).

This magical jewel seems an exact counterpart to the pillars in Maitreya's *kūṭāgāra*. Protean shape, complexity of vision and defiance of the normal laws of nature would appear to be some of the unusual features of the jewelled palaces of the gods and magic jewels themselves. But the closest parallel that I could find to Maitreya's description of Brahmā's palace in which the entire universe appears is in another Buddhist text and concerns not a palace but a single jewel.

The *Vidhurapaṇḍita Jātaka* (545) tells of the efforts of a yakṣa to bring the famous Vidhura to a Nāga king. Vidhura is serving as the minister of a king named Dhanañjayakorabba. The yakṣa knows that the king is fond of gambling. He decides that he must have something with which to tempt the king into playing against him; he intends to win Vidhura in the dice game. He thinks to himself that the king already has a palace full of jewels and won't be tempted by any ordinary gem. He then remembers that there is a special jewel fit for a world emperor that is to be found in a mountain named Vepulla, on the outskirts of the city Rājagaha.[29] He seeks for the jewel and finds it in the middle of one of the mountain peaks (*pabbatakūṭamajjhe*, vs, 1177, p. 272). He takes it with him and goes at once to king Dhanañjayakorabba. At first the king is uninterested in a gambling match for the sake of some jewel, but the yakṣa gives him to understand that the jewel he has brought is no ordinary gemstone. In the shining jewel the king can see the forms of women and men, deer and birds, the king of the Nāgas and the king of the Garuḍas (vs 1186–1187). Even the language of what the king sees in the jewel in these verses recalls the language of Sudhana's vision; both see *vigrahas*, forms or likenesses or images. The king further sees whole armies arrayed for battle (1188–1189). He sees a city surrounded by moats and ramparts. There is the city gate on which different birds

roost. And then the king sees the various dwellings in the city, the market, the wine shops, the district of the courtesans and the artisans. He sees all kinds of musical instruments and various spectacles like wrestling matches in progress; he then moves out of the city to see its surrounding mountains and wild beasts. Then there are rivers with golden sand and finally he sees the very boundaries of the earth ringed by the oceans. Beyond that he sees distant world systems. In short, he can see in this jewel all of the universe and everything that is in it. The magic jewel that came from a *kūṭa* or mountain peak displays to the king the entire world, just as Maitreya's *kūṭāgāra* allows Sudhana to see within it every conceivable creature and the lives and worlds of Buddhas and Bodhisattvas.

Maitreya's *kūṭāgāra* is by no means the only visionary architecture in the *Gaṇḍavyūha*, and in what follows I shall examine some of these other visionary structures. We will see that like Maitreya's *kūṭāgāra*, they are made of shining jewels. Like Maitreya's *kūṭāgāra* and the yakṣa's jewel one looks into them and sees something surprising and marvellous. One of the most unusual chapters in the text is chapter 44, devoted to Māyā, the mother of the Buddha. In this chapter, Sudhana has a vision of a jewelled *kūṭāgāra* (p. 342). First a large jewelled lotus emerges from the earth, its stalk entirely made of diamond. Its leaves are of jewels and it is surrounded by jewelled filaments. In the center of the lotus is a jewelled *kūṭāgāra*. It has thousands of jewelled pillars and is adorned with hanging garlands of pearls. On all sides of it are jewelled stairs. In the middle of the structure is a fabulous seat of rubies and wishing jewels. Sudhana sees Māyā on this throne. She has the ability to display herself in accordance with the mental tendencies of the different observers; thus some see her looking like one of the daughters of Māra, while others see her as a heavenly damsel, an apsarās, and some see her as a beautiful mortal woman (p. 344). Māyā explains to Sudhana that she is the mother of all the Buddhas. She further explains to him how her own body basically becomes a jewelled *kūṭāgāra* upon the descent of the future Buddha into her womb. When the Buddha is about to descend from the Tuṣita heaven he emits rays of light from his body. These rays of light fall on Māyā and enter into her from her head and from all the pores in her skin. At that moment all of her retinue can see on her body the miraculous manifestations of the bodhisattvas. She herself can see the future Buddha seated at the seat of enlightenment; surrounded by a host of bodhisattvas, worshipped by the protectors of the quarters. She can even see the various Buddhas that this future Buddha has worshipped before. This vision almost prefigures

what Sudhana will see in Maitreya's *kūṭāgāra*, where he sees the entire career of Maitreya. Māyā goes on to tell Sudhana that when the Buddha descends into her womb all kinds of beings also go into her womb so that they can see the Buddha; there are the four world protectors and countless bodhisattvas. And despite their presence in her womb she retains her original size.

The textual lineage of this vision is not difficult to uncover. In the *Lalitavistara* the descent of the Buddha from the Tuṣita heaven into the womb of his mother is described in great detail.[30] The text is uncomfortable with the idea that the future Buddha should dwell in the foul-smelling womb of a woman. The compromise is reached that the future Buddha descends in a marvellous pavilion or *kūṭāgāra*; it has three rooms, one inside the other.[31] It is smeared with sandal paste, exactly as is the marvellous *kūṭāgāra* that Dharmodgata is said to have made for the *Prajñāpāramitā* in the story of Sadāprarudita discussed above. We are then told of what the gods do when the future Buddha descends into his mother's body in this structure (p. 52):

tasmin khalu punaḥ kūṭāgāre śakrasya devānām indrasya trāyastriṃśānāṃ devānāṃ ca pratibhāsāḥ saṃdṛśyante sma

"And in that *kūṭāgāra* were seen the reflections of the thirty-three gods and Śakra, the king of the gods".

This statement develops in the *Gaṇḍavyūha* into the elaborate account of Māyā, in which the future Buddha enters her womb along with a vast retinue, including of course Śakra and the gods. We are also told in the *Lalitavistara*, p. 53, that as Māyā looked at her own body, "she could see the bodhisattva in her womb, just as one sees one's own face clearly reflected in a mirror", *yadā ca māyādevī svaṃ dakṣiṇaṃ pārśvaṃ pratyavekṣate sma, tadā paśyati sma bodhisattvaṃ kukṣigatam, tadyathā nāma supariśuddhādarśamaṇḍale mukhamaṇḍalaṃ dṛśyate.* We might add that Māyā's entire body seems to have become transparent like a jewel.

We would appear to have come some distance from the jewel that the yakṣa procured in order to win the minister Vidhura, but I hope I can make some of the intervening steps clearer. The story of Vidhura introduces us to a jewel in which all of the universe exists or can be seen. The actual verb used in the verses is more intriguing; the verses tell us that these things are *nimita* or produced there. The vision of Maitreya in the *Gaṇḍavyūha* tells us of jewelled structures in which all manner of things are seen as if by reflection. And in answer to the question where these visions go, Maitreya tells Sudhana that it is the nature of things that they are magically produced by the power

of the bodhisattva's knowledge. The *Lalitavistara*, I think, helps us with some of the language of these visions; here there are really two "jewelled" structures, the structure in which the future Buddha descends into Māyā's womb and her body itself. In the first structure the gods would seem to be reflected, but the language of Māyā's seeing of the Buddha cautions us against taking the word *pratibhāsa* too literally and too simply as "reflection", meaning "false appearance" for she sees the Buddha in her womb *as she might see her own face reflected in a mirror*, and yet we know that the Buddha is in her womb and not somewhere outside, casting his reflection.[32] The word *pratibhāsa*, then, and the language of reflection seem to indicate here a remarkable presence and clear, limpid seeing. It is the seeing of religious visions. In the developed version of the descent of the Buddha in the *Gaṇḍavyūha* there is, I think, even less room for ambiguity in the understanding of what happens to the gods at the moment of descent of the Buddha, for there we are told how the Buddha descended into Māyā's womb with all the gods and bodhisattvas and how Māyā saw on her own body, which was turned into a jewel-like structure by the rays that came from the descending future Buddha, all of the events in the life of the Buddha, beginning with his birth. We are back, I think, to the *Vidhurapaṇḍita Jātaka* and to the paradigm of a jewel that reveals and contains within itself the wonders of the universe.

The *Gaṇḍavyūha* itself actually has much to say about jewels that can help us in this quest to understand their role in certain religious visions. At one point Maitreya compares *bodhicitta* with various jewels (pp. 399–400). There are some jewels that surpass all others in their brilliance; there are jewels that prevent the ocean from being burnt up by the submarine fire; there are jewels that when thrown into water clear the water of all impurities and jewels that prevent a fisherman from drowning. There are jewels that allow their wearer to enter into the palaces of the nāgas, under the sea. Moonstones release streams of water when touched by moonbeams, while sun stones belch fire on contact with the sun. Another jewel fulfills all the wishes of living beings, while the jewel of the world emperor dispels darkness. Finally we come to something called the *vaśirājamaṇi*, which is capable of displaying the various manifestations of all the heavenly palaces and abodes of the spheres of the sun and moon (p. 400, lines 20–22). Similarly the jewel called *sāgaravyūhagarbha* can display all the many oceans. These two jewels, capable of these different displays, are the highest jewels known and the final points of comparison for the Buddha's omniscience and *bodhicitta*.

From these references, I believe that we can conclude that the author(s) or compiler(s) of the *Gaṇḍavyūha* undoubtedly knew about jewels that like the jewel in the *Vidhurapaṇḍita Jātaka* were capable of giving rise to marvellous appearances. The jewelled *kūṭāgāra* of Maitreya, I would suggest, builds naturally on a complex of beliefs about jewels, namely that jewels appear in response to meritorious deeds and that they have the power to create a visionary world. I would add that such beliefs in the magic power of jewels are pan-Indian and not by any means uniquely Buddhist.

There is a long tradition in story literature of jewelled palaces, in appearance similar to the jewelled palaces of the gods, but belonging to demi-gods, to Asuras or Yakṣas. These are magical palaces, very much like Yudhiṣṭhira's court or *sabhā* in the *Mahābhārata* that I mentioned above and that was said to have been built by an Asura. A wonderful source of medieval stories is Somadeva's *Kathāsaritsāgara*.[33] In the *Kathāsaritsāgara* we are told of the quest of a King Bhūnandana (12.79ff). Bhūnandana falls asleep and has sex with a beautiful woman only to awaken and find her gone. He knows from the marks on his body that the experience was not in fact a dream at all, but a real occurrence. He decides that Śiva has given him the experience and that only by propitiating Śiva can he find the girl again. He gives up his kingdom and goes to a tīrtha known as Kramasaras, made by the foot of Viṣṇu in his dwarf incarnation (96–97). There he performs austerities for twelve years, when an ascetic comes to him and tells him that the woman lives in Pātāla, the underworld, and that he can take the king to her. He explains that there are many holes in the earth that lead to the underworld, but that one of the largest is in Kasmir. The king agrees to follow the ascetic and his disciples. They perform a number of rituals, propitiating the goddess Śarikā, and throwing consecrated mustard sees on the ground. They cross a river to a land of silver sands and divine forests with gold lotuses and trees of coral, sandal and aloe woods (120). In the middle of the forest is a divine temple to Śiva that has a jewelled staircase, gold walls, jewelled pillars and is made of moonstones (120–121). They worship Śiva there and proceed to find a great wall of gold with a jewel-studded gate. Having driven off the guardians of the gate the king and the ascetic enter the jewelled city beyond the wall. The houses are of jewels and gold (133). The king is led into one of the houses by an attendant who is a *daitya kanyā*, a demon girl (142). On the walls of the house are reflected the likenesses of the servant girls, so that the house seems to have living paintings on its walls (143). There the king finally encounters his elusive lover,

only to fail her test and lose her and find himself back at the tīrtha once again. He does more austerities and eventually wins the girl. This jewelled world is a world of magic, peopled with women of exotic and superhuman beauty. In the story that immediately follows this one, another hero, Sudarśana, comes upon a jewelled palace in a forest that belongs to a demi-goddess, a yakṣiṇī, whose feet point backwards. There he receives divine food and drink (243). In yet another tale, an ascetic tells a queen how he had been wandering from tīrtha to tīrtha when he came to lake Mānasa in the Himālayas (6.207). There he sees in the lake as if in a mirror a jewelled house: *ādarśaivāpaśyam antar maṇimayaṃ gṛham* (207). Out of the house comes a man holding a sword in his hand and accompanied by some women. He scampers onto the bank of the lake and proceeds to enjoy himself with the women, until he falls into a drunken stupor. Another man happens on the scene; he explains to the ascetic that he is King Tribhuvana. Once he was duped by a Śaiva monk, a Pāśupata, who had persuaded him to go down a hole and into a jewelled house there to get a magic sword. Tribhuvana also found for himself a beautiful Asura girl there. But the ascetic had tricked him and stolen both. Now he has the chance to take his revenge, for the drunken fellow on the bank is none other than the duplicitous Pāśupata ascetic!

There are several elements in this story that I think are relevant to this discussion. In this story the jewelled house is the abode of women who have magic powers and magic objects; the sword has the power to accomplish all the *siddhis* and is said to grant the power to fly. The jewelled palace also appears in the lake *as if in a mirror*, and yet from it come real beings with special powers. I would like to suggest that at least in some cases the jewelled palaces and appearances in them in the *Gaḍḍavyūha* that are said to be "like reflections" are like reflections in the same way as the jewelled house in this story: that is to say, they are somehow otherwordly structures.[34] Further, I would suggest that these jewelled palaces and Maitreya's jewelled structure have in common a connection with unusual powers.

There are also many references to jewels in medieval philosophy texts which I think can be read as indications of the belief in a strong association between jewels and magical creative properties. The *Spandapradīpikā* of Utpalācārya has a brief discussion on why the soul is called a "wishing gem" or *cintāmaṇi*.[35] Citing the *Śrīpauṣkarā* the text says that although one cannot see anything in a wishing jewel, it produces anything and everything a person wishes; Brahma is the same, capable of doing all things. A verse from the *Paramārthasāra*

says that Brahma appears to a worshipper in whatever the form the worshipper chooses to worship; similarly the wishing jewel comes to a person as he or she desires. The *Jñānasambodha* is quoted as saying that although the power of consciousness is essentially one it becomes many under the influence of desires, just as the beautiful form of a wishing jewel changes in response to wants. In all of these examples it is the creative power of the jewel that is the reason for it serving as the standard of comparison for the soul, which in this text is the active creative source of the world. I would like to suggest that similar beliefs may have motivated these jewelled visions of the *Gaṇḍavyūha*.[36]

Before making further tentative conclusions I would like to examine a few other sections of the *Gaṇḍavyūha* and their visions. By reviewing these examples we see clearly that the culminating vision of Maitreya's *kūṭāgāra* has a familiar context to the reader of the text. It is only one of a host of other visions which involve jewel-like structures or a body of jewel-like purity. Individually they provide us with pieces of information about how the text interprets its visions. In my discussion of the vision of Māyā's body I have stressed the creative/magical properties of jewels and drawn some tentative conclusions about how we might interpret the ontological status of at least some of the visions in our text. In the next section we learn something about the agent of a vision.

II.B. *Muktaka's Jewelled Body and the Mind as a Jewel*

The merchant Muktaka in chapter 6 is an example of a vision that takes place not in some jewelled architectural structure but on a body that has become jewel-like. Muktaka steeps himself in *samādhi*, assisted by the power of the Buddha and Mañjuśrī (p. 64). His body becomes so pure that all the Buddhas in the ten directions along with their Buddha fields and their retinues of Bodhisattvas, along with their former deeds, including their turning of the wheel and instructing all creatures, are seen everywhere on his body (p. 64). We might recall that such a vision of the career of a bodhisattva or Buddha is a component of the vision that Sudhana will later have in Maitreya's *kūṭāgāra*. Sudhana not only sees the Buddhas living out their careers on Muktaka's body; he even hears their preaching (p. 65). Muktaka goes on to explain to Sudhana that he has the power to see the Buddhas in the ten directions whenever he wishes, without going anywhere and without those Buddhas going anywhere. He says that he knows that his mind is like a vessel of clear water and that the Buddhas are like reflections, their words like echoes.[37] The mind, he realizes, has the magical power to make things known the way magic can (*māyopamavijñaptiṃ svacittasya prajānan*,

p. 66, line 32). He adds that it is the power of the mind or perhaps the total control of the mind that is the purification of the Buddha fields.

One of the most pervasive comparisons in Buddhist and indeed non-Buddhist texts is in fact of the mind to a jewel.[38] That the mind plays a major role in the generation of the visions is clear in the chapter on Sudhana's encounter with Maitreya. There by way of explaining how Sudhana can have these visions we find this phrase: *parīttasamjñāgataniruddhacetā vipulamahadgatānāvaraṇabodhisattvasaṃjñāgatavihārī* (p. 414, line 20). I would translate this roughly as follows: "His mind stopped conceiving of things as limited and roamed freely in the knowledge of the bodhisattva, which is vast, expansive and without impediment". The ability to have visions is here related specifically to an expansion of consciousness accomplished by a freeing of the mind from any association with limited objects.[39]

In Muktaka's vision the role of the mind is made even more explicit. The mind has become clear, a reflecting surface, on which the Buddha is reflected. But beyond that, Muktaka tells us that his mind is also associated with a magical ability to create. I would like to suggest that the comparison between the mind and jewel that occurs in this text and numerous other texts captures both of these aspects. A jewel has the ability both to reflect and to project. It is both passive reflecting surface and active creative agent.[40] In Muktaka's vision, I might add, the body and the mind have become indistinguishable in nature and function, both extremely pure, both reflective and creative.

II.C. *Maitrāyaṇī's Palace: The Jewel Palace/Body/Mind as Reflecting Surface*

The final vision I will examine is the vision of Maitrāyaṇī. In chapter 13 Sudhana approaches Maitrāyaṇī, the daughter of King Siṃhaketu. She is in a palace, the Vairocanagarbha palace, that prefigures the name of Maitreya's *kūṭāgāra*, *Vairocanavyūhālaṁkāragarbha*. The palace sits on ground made of crystal and has pillars of vaiḍūrya and walls of diamond. It is adorned with every kind of jewel, and with bells and mirrors (p. 96). When Sudhana asks Maitrāyaṇī how one is to practice the bodhisattva path she tells him to look at the wonderful manifestations coming out of her palace. He looks and sees from every wall, pillar, mirror, every form and shape, every jewel, every golden bell, every jewelled tree, every jewelled garland, all of the tathāgatas enacting the major events of their lives, turning the wheel, passing into nirvāṇa, and so on. The way in which he sees these things is described by a term that is now familiar to us, *pratibhāsayogena*, "in

the manner of reflections" (p. 96, line 31). The text expands on this comparison, "*yathāca ekasmād ārambaṇāt tathā sarvārambaṇebhyaḥ// tadyathāpi nāma udakasarasi svacche 'nāvile viprasanne gaganaṃ candrādityaṃ jyotirgaṇapratimaṇḍitaṃ saṃdṛśyate pratibhāsayogena, evam eva vairocanagarbhaprāsādasya ekaiskasmād ārambaṇād dharmadhātugatās tathāgatāh saṃdṛśyante pratibhāsayogena, yaduta Maitrāyaṇyāḥ kanyāyāh pūrvakuśalamūlaniṣyandena*" (p. 96, line 31 – page 97, line 4), "And just as those things could be seen from one surface so were they seen from every surface. It is like this. Just as in a lake with pure and calm water, undisturbed, the sky and the sun and moon, surrounded by the stars may be seen by way of reflection, just so in this palace known as Vairocanagarbha from each surface all the Buddhas in the entire universe are seen by way of reflection, and all of this is on account of the ripening of the good deeds of the princess Maitrāyaṇī".

Here it is the reflective properties of the jewels that are highlighted. Jewels are the *ārambaṇa*, the support of visions of the Buddhas because they are reflective. The body of the Buddha is like a reflection and needs this reflecting surface, whether it be the mind, a purified body, or some jewelled building. It would take us too far afield to discuss the significance of the body of the Buddha itself as a reflection; I have argued extensively elsewhere that the language of reflection in Indian religions may indicate not the falsehood of the divine body but its greater reality.[41] Here I would only like to point out that in this particular account of a vision it is primarily the passive ability of jewels to serve as reflecting surfaces that is emphasized. In closing I would like to try to summarize what we may learn from putting the information we have gained from these individual visions together.

III. CONCLUSIONS

In this paper I attempted to look at the language of religious visions in one text, the *Gaṇḍavyūha*.[42] I focussed on the role that jewels are accorded in the descriptions of the visions and tried to suggest how the prevalence of jewels in visions is related to general beliefs about jewels that we find attested in a wide range of literary sources. Focussing on the question, why jewels, I hoped might help us to understand the meanings of the visions. In section II.A. I argued that jewels are regarded as active creative agents in a wide variety of texts and appear in a number of stories that deal with magic and magic powers. I proposed at various junctures in the paper that we consider this when we come to interpret

the ontological status of religious visions and the language of reflections in descriptions of visions. The language of jewels, I wanted to suggest, argues against the interpretation of these visions as examples of absolute fictions and in favor of an interpretation of visions as expanded realities.

I also tried to suggest a unity behind the many accounts of visions in the *Gaṇḍavyūha*, achieved through the medium of jewels. We have seen that jewels are ubiquitous in the religious visions of the *Gaṇḍavyūha*. Religious visions are attributed to the agency of the mind, which is likened to a jewel in its creative potential. The perfected body of the aspirant becomes a jewel in which the deeds of the Buddhas and Bodhisattvas are either visible or actually manifested (Muktaka; Māyā); alternatively a jewelled palace is the vehicle of the vision (Maitrāyaṇī; Maitreya). Both these cases, the achievement of the jewelled body and the creation of the jewelled building, are said to be the result of karma. In both of these two cases I argued that it was a combination of the belief in the ability of jewels to respond to karma and the belief in the creative power of jewels that lay behind the language of these visions in which the body becomes jewel-like or the aspirant has a jewelled palace in which various objects and actions are made visible. Additionally, with the visions of Muktaka and Maitrāyaṇī, we add to this complex the notion that the body of the Buddha, a perfected body and thus a jewelled body, is itself a reflection. As a reflection it needs a reflecting surface. Thus the mind of the aspirant as a jewel becomes both the active agent of a vision and its passive recipient; similarly perfected bodies or the jewelled palaces that may be considered to be their further externalizations actively create and passively receive the visionary universe as a reflection. In addition these reflecting surfaces themselves become reflections, for in the language of the text every surface was reflected on every other surface.

Finally I would like to consider the culminating vision of Samantabhadra in which all of these are brought together. Indeed the crowning vision given Sudhana in the *Gaṇḍavyūha* is not the vision of Maitreya's *kūṭāgāra*, which was the starting point of the discussion in this paper, but a vision of the universe on Samantabhadra's body, a vision which was said to appear *pratibhāsayogena*, in the manner of a reflection (p. 424, line 26). Samantabhadra explains that one of the fruits of long term religious practice is the attainment of an extremely pure body which is capable of displaying such manifestations (*anuttaraśca rūpakāyaḥ pariśodhitaḥ. ... Sarvataḥ sarvavikurvitasaṃdarśanaḥ*, pp. 426–427, lines 31, 1–2."And I purified my incomparable physical body which is capable of displaying everywhere every marvellous type of display").

That such a body in which may be seen the bodies of the Buddhas, in the manner of a reflection, is a jewelled body is confirmed by one of the wondrous signs that precedes Sudhana's meeting with Samantabhadra. From every mote of dust in the universe emerge clouds of jewelled images that have reflections of the bodies of the Buddhas on them, (*sarvatathāgatakāyapratibhāsamaṇiratnavigrahameghā*, p. 421, line 22).[43] The Buddha body and the body of Samantabhadra are jewelled bodies. As jewels we know now that they can both manifest within themselves and project beyond themselves the objects of the universe; at the same time they are also reflecting surfaces that can receive the reflections of other objects and they are themselves reflections. The perfected world of the *Gaṇḍavyūha* is a world fittingly of jewels, the only substance in Indian religious and secular literature that is at once reflection, reflecting surface and creative matrix.

NOTES

[1] These references are all from the *Guhyādi Aṣṭasiddhisaṃgraha*, ed. Samdhong Rinpoche and Prof. Vrajvallabha Dwiwedi, Rare Buddhist Texts Project, Sarnath: Central Institute of Higher Tibetan Studies, 1987.

[2] *Ratnaguṇasaṃcayagāthā*, in *Mahāyānasūtra Saṃgraha*, ed. P. L. Vaidya, Buddhist Sanskrit Texts Series no. 17, Darbhanga: Mithila Institute of Post-Graduate Studies and Research in Sanskrit Learning, 1961, p. 359.

[3] Ed. S. Bagchi, Buddhist Sanskrit Texts Series, vol. 13, Darbhanga: Mithila Institute of Post-Graduate Studies and Research in Sanskrit Learning, 1970, p. 37; p. 40.

[4] Numerous examples could be brought in from non-Buddhist religious writing. I give here only a few from Jainism. In an allegorical "autobiography", the *Upamitibhavaprapañcakathā*, the island of jewels is the state of birth as a human being, while the jewels gathered there are the right religious doctrines in a Jain text; beneficial qualities such as knowledge and strength in pursuing the religious path are also called jewels. See the *Upamitibhavaprapañcakathā* of Siddharṣi, chapter VII; Chapter V; Bibliotheca Indica 946, ed. Peter Peterson, Calcutta: Baptist Mission Press, 1899.

[5] The text is edited by P. L. Vaidya, Buddhist Sanskrit Texts, 19, Darbhanga: Mithila Institute of Post-Graduate Studies and Research in Sanskrit Learning, 1958. Again, these are beliefs that are pan-Indian. Poverty is universally associated with lack of merit and wealth is seen as a just reward for pious acts.

[6] *Rāṣṭrapālaparipṛcchā*, in the *Mahāyānasūtra Saṃgraha*, cited above.

[7] The text is edited by Śrī Vijaya Bhuvanabhānusūri, Bangalore: Śrī Ādinātha Jaina Mandir Trust, 1988. See p. 57.

[8] For references see my paper, 'Heaven on Earth: Temples and Temple Cities of Medieval India', forthcoming in a festschrift for Frits Staal.

[9] See the texts collected by Louis Finot, *Les Lapidaires Indiens*, Paris: Bibliotheque de l'Ecole des Hautes Etudes, no. 111, 1896.

[10] See for example the *Rāṣṭrapālaparipṛcchā*, p. 154. The jewelled city of the Cakravartin has been discussed many times. For a recent review see the forthcoming book by Steven Collins, *Nirvāna and Other Buddhist Felicities*. Luis Gomez has drawn attention to the close relationship the jewelled city of the Cakravartin bears to

Buddhist paradises. See *The Land of Bliss: The Paradise of the Buddha of Measureless Light*, Honolulu: University of Hawaii Press, 1996, pp. 52–54.

[11] For a discussion of some of these stories see Collins, cited above.

[12] The actual list of the seven jewels can vary from text to text. See Finot in the introduction to the texts he has edited on jewels, cited above. My references to the *Aṣṭasāhasrikā* are to the edition by P. L. Vaidya, Buddhist Sanskrit Texts, no. 19, Darbhanga: Mithila Institute of Post-Graduate Studies and Research in Sanskrit Learning, 1958.

[13] This clearly connects the city with traditional notions of paradise. The *Vimāna Vatthu* includes episodes which portray the person in paradise seated in a gold boat on a lotus lake. *Vimānavatthu and Petavatthu*, new ed., N. A. Jayawickrama, London: Pali Text Society 1977, the section entitled *Nāvāvimānavtthu*, 'Accounts of the heavenly abode as a boat', pp. 6 ff.

[14] See the comments of David Eckel, who argues that there is no word for visionary experience in the text; Eckel, *To See the Buddha: A Philosopher's Quest for the Meaning of Emptiness*, Princeton: Princeton University Press, 1992, p. 146. I would disagree with Eckel that there is a problem in these texts with the very notion of visions; it is not the case that the *Gaṇḍavyūha* does not allow Sudhana to be the active perceiving subject of the vision as Eckel states; the verb "to see" is not used solely in the causative as he asserts. I also have a different understanding of the vision itself, as this paper will make clear. In my reading Maitreya does not make manifest the peaked dwelling nor does he cause it to disappear; the peaked dwelling exists before the vision and remains after the vision disperses. In chapter 53, for example, Śrīsaṃbhava tells Sudhana about a garden and the peaked dwelling there in which Maitreya resides (p. 360). Eckel's book is a sustained effort to understand the role of visions in the context of Madhyamaka philosophy. While my own aim in this paper is much more limited, I will be arguing that somehow we must understand these visions as integral religious experiences in themselves and not simply as metaphors or didactic tools. On the relationship between *samādhi* and visionary or miraculous manifestations, see the interesting passage in the *Śikṣāsamuccaya* (ed. Cecil Bendall, 's Gravenhage: Mouton & Co., 1957), quoting the *Vimalakīrtinirdeśa Sūtra*, chapter 18, beginning p. 342, where the phrase *samādhivikurvita* appears a number of times. See also Luis Gomez's comments in his thesis, *Selected Verses from the Gaṇḍavyūha: Text, Critical Apparatus and Translation*, Yale University, 1967, pp. 67–68, where he translates *samādhi* as "ecstasy".

[15] With this should be compared statements like those in the *Mahāyānasūtrālankāra*, chapter 9 verse 16 in which it is said that wicked beings cannot see the Buddha, just as the orb of the moon cannot be seen in a pot of water that has been smashed. Thus here too the vision of the Buddha is the result of the good karma of the one who sees it.

[16] Cited by Tai-wo Kwan in his thesis, *A Study of the Teaching Regarding the Pure Land of Aksobhya Buddha in Early Mahayana*, University Microfilms, 1985, p. 49.

[17] It is not only jewels that act in this way. Poison and the drink of immortality have the same ability to turn into each other in response to a person's merit. Thus we read in a medieval Jain version of the *Mahābhārata* how Duryodhana tried to poison Bhīma, but the poison turned into ambrosia because of Bhīma's great merits (*Śatruñjaya Kalpa*, ed. Munirāja Lābhasāgaragaṇi, Āgamoddhāra Granthamālā 41, 1969, p. 25). Similar stories are told in Buddhist literature. For an example from the *Mūlasarvāstivāda Vinaya* see my paper, 'Divine Delicacies: Monks, Images and Miracles in the Contest Between Jainism and Buddhism', in *Images, Miracles, and Authority in Asian Religious Traditions* by Richard Davis, Boulder: Westview Press, 1998, pp. 55–97.

[18] *Upamitibhavaprapañcakathā*, chapter 5, pp. 765–766.

[19] Jinamaṇḍaṇa, *Kumārapālaprabandha*, ed. Muni Caturavijaya, Bhavnagar: Jaina Ātmānanda Sabhā (vol. 34), 1915, p. 11.

[20] Commentary, *Avacūri* to the *Nandisutta* Devachand Lalbhai Pustakoddhāra Series, Bombay, vol. 107, 1969, p. 112.

[21] With this might be compared later Jain descriptions of the marvellous Jina temples in the various realms of the gods. Uddyotani Sūri in his *Kuvalayamālā*, ed. A. N. Upadhyey, Singhi Jain Series, vol. 45, Bombay: Bharatīya Vidyā Bhavan, 1959, p. 95, describes a temple of jewels that contains jewelled images of the Jinas. There the god Padmaprabha worships the Jinas. He then sees a jewelled book on a jewelled throne. The pages of the book are made of crystal and the lettering is made of sapphires. Its binding is of rubies. The book is a summary of the basic tenets of Jainism. Uddyotana Sūri's Prakrit text is dated 779 A.D.

[22] The text is edited by P. L. Vaidya, Buddhist Sanskrit Texts Series, no. 5, Darbhanga: Mithila Institute of Post-Graduate Studies and Research in Sanskrit Learning, 1960.

[23] David Eckel has discussed some of this material in his book, *To see the Buddha*, Princeton: Princeton University Press, 1992, pp. 15 ff. Eckel sees the palaces as symbols in a lesson on the illusory nature of reality. I am trying in this paper to move away from such an interpretation and consider these visions as somehow primary religious experiences that are themselves the goal of religious practice. On *kūṭāgāra* see Willem Bollée, 'Le *kūṭāgāra* ou de la maison des hommes au manoir dans l'Inde orientale et l'Asie du Sud-Est', *Bulletin d'Etudes Indiennes*, 4, 1986, 189–214; K. De Vreese, 'Skt. Kūṭāgāra', *India Antiqua*, Leiden: E.J. Brill, 1947, pp. 323–325.

[24] The statement that Maitreya's *kūṭāgāra* has been produced by his vow makes the structure analogous to the many Pure Lands that are also said to have been produced through the power of the vows of different Bodhisattvas.

[25] The text reads *te cāsya kūṭāgāravyūhā anyonyāsaṃbhinnā anyonāmaitrībhūtā anyonyāsaṃkīrṇāh pratibhāsayogena ābhāsam agaman ekasminnārambaṇe/ yathā ca ekasminn ārambaṇe, tathā śeṣārambaṇeṣu*, p. 406, lines 6–8. I take this to mean that they appear on the surface of the main *kūṭāgāra* into which Sudhana has just entered and then on the surfaces of each and every one of these multiples. I am also interpreting the term *pratibhāsayogena* to mean "in the manner of a reflection"; these are not quite ordinary reflections but are like reflections. Hopefully this reading will be made clearer by what follows.

[26] As the text explains, *bodhisattvādhiṣṭhānena sarvatraidhātukasvapnasamavasaraṇajñānena parīttasaṃjñāgataniruddhacetā vipulamahadgatānāvaraṇabodhisattvasaṃjñāgatavihārī*, p. 414, line 25, "Sudhana, sojourning in the consciousness of the Bodhisattva which is great and vast and free of impediment, his mind no longer stuck in limited knowledge, through the power of the bodhisattva which allowed him to have simultaneous knowledge of the entire universe as in a dream" (tentative translation).

[27] This reads *viṣṭhāpana* for *aviṣṭhāpana*, following Edgerton.

[28] My reading of the last compound is conditioned to some extent by the definition of a reflection given in other texts. I explain this in note 36 below. Another reading would be to take the term to mean that the reflections on every surface remain distinct from each other. While this is a statement often made in the description of the visions in this section of the text, it is grammatically a less likely interpretation of the compound, requiring the reader to supply some term like *anyonya*. In fact this is the reading taken in the new Japanese translation of Kajiyama, *Satori e no Henreki*, Tokyo: Cūō Kōronsha, 1994, vol. 2, p. 402. I thank Jonathan Silk for telling me about the existence of this new translation. For the term *ārambaṇa* I am using

the general meaning of support or surface; for another interpretation see Gomez, *Selected Verses*, pp. 105–106.

[29] Edition of V. Fausboll, Oxford: Pali Text Society, 1990, vol. VI, p. 271.

[30] Edited by P. L. Vaidya, Buddhist Sanskrit Texts Series, vol. 1. Darbhanga: Mithila Institute of Post-Graduate Studies and Research in Sanskrit Learning, 1958, pp. 48 ff.

[31] On the significance of the three-chambered structure and its association with the pursuit of alchemical secrets in the medical texts see Arion Rosu, 'Considerations sur une technique du *Rasāyana* Āyurvédique', *Indo-Iranian Journal*, 17, 1975, pp. 1–29.

[32] I do not mean to imply that the term *pratibhāsa* is never used in Buddhist texts to mean a reflection in the sense of a false appearance; in fact there is probably substantial evidence to prove that false appearance is its more frequent significance, in usages for example such as those in the *Śikṣāsamuccaya*, ed. Cecil Bendall, 'S-Granvenhage: Mouton, 1957, p. 272, line 10 or 204, lines 15, 16. My point in this paper will be that there is a special language of religious visions, of an alternate reality, and that the language of reflections and jewels has a special significance in the context of such visions.

[33] Ed. Paṇḍita Jagadīśalālaśāstrī, Delhi: Motilal Banarsidas, 1970, with variant from Tawney for 6.207.

[34] Stories of the caves of the Asuras and the wonderful palaces and beautiful women in them were apparently popular in Buddhism. One of the best known of these stories was told by Hsüan-tsang of Bhavaviveka. For other references see R. A. Stein, *Grottes-Matrices et Lieux Saints de la Déese en Asie Orientale*, Publications de l'École Francaise d'Extreme-Orient, vol. CLI, Paris, 1977, pp. 24–28. Malcolm David Eckel in his book, *To See the Buddha: A Philosopher's Quest for the Meaning of Emptiness*, Princeton: Princeton University Press, 1992, pp. 11–15, interprets the palace of the Asuras as an illusory palace and compares Hsüan-tsang's stories of Asura's palaces with stories in the *Yogavāsiṣtha* as retold by Wendy O'Flaherty. I would argue that this is not the only possible reading of these stories. As I read them in the context of medieval Indian religious beliefs such as those attested by the *Kathāsaritsāgara*, these palaces are magical and wonderful, but not by any means illusory. The stories discussed by Stein give the same impression of a belief in paradise-like caves of the Asuras, where one may achieve magical powers.

[35] Edited Pandit Vaman Sastri Islampurkar, Benaras: E.J. Lazarus, 1898, p. 3.

[36] There are other analogies used in the text to explain the visionary appearances the bodhisattva both witnesses and creates for others to see that suggest a magical kind of supramundane reality rather than any abstract denial of reality. One persistent comparison is to the way in which the nāgas are said to create rain through a mere act of will or mental effort (vs 154 p. 390 and p. 416. On p. 416 in particular Maitreya is answering Sudhana's question about where the vyūhas have gone. He tells him, *tad yathā kulaputra nāgānāṃ meghajālaṃ na kāyena cittena abhyantarībhūtaṃ na saṃcayasthitaṃ na [ca na] saṃdṛśyate/ nāgacetanāvaśena apramāṇā vāridhārāh pramuñcati nāgaviṣayācintyatayā/ evam eva kulaputra te vyūhā nādhyatmagatā na bahirgatā naca na saṃdṛśyante, bodhisattvādhiṣṭhānavaśena tava ca subhājanatayā/* "It is this way, oh son of a good family; just as the hosts of clouds are neither inside the minds nor the bodies of the snakes and yet are not not seen, and purely through an act of mental exertion on the part of the snakes they release countless streams of rain because of the mysterious ability of the snakes; so these manifestations are neither inside nor outside and yet they are also not not perceived, because of the mysterious power of the bodhisattva and because of your own merits". My emendation makes the line parallel with what follows; it is also possible to read the last *na* before the verb *saṃdṛśyate* as *ca*. The line requires some assistance. The Japanese translation of Kajiyama, p. 404 translates the lines as printed, but I prefer the emendation. The

verse 154 says that the appearance of rain corresponds to the thoughts of the nāgas; similarly the practice of the bodhisattva corresponds to knowledge and vows.

[37] Compare this verse from the *Rāṣtrapālaparipṛcchā: rūpaṃ dṛśyate manoramaṃ jagadarthe/pratibhāsodakacandrasaṃnibhaṃ yatha māyā/ sarvāsveva ca dikṣu dṛśyate jinakāyo/no ca rūpapramāṇu dṛśyate sugatānām//* vs 333, p. 156. "The handsome body of the Buddha is seen, for the sake of the welfare of the world; it is like a reflection, like the moon in water; it is like a display of magic. The body of the Jina is seen in all the directions; there is no limit to the bodies of the Buddhas". I tried to argue in my paper, 'Portraits, Likeness and Looking Glasses' prepared for the Jacob Taubes Center conference in Heidelberg, February 1997, that the reflected body in the terminology of many religious texts is the true body; ascetics who practice asceticism come to have a crystal body in Hindu *purāṇas* and in Jain religious texts the Jina body is said to be a reflection and like a reflection unstained by any physical impurities. This idea is supported by some late Buddhist texts in which the successful aspirant is said to get a *chāyā* body, a body that is a reflection or shadow, the term meaning both. See the *Guhyasiddhi*, *Advayavivaraṇaprajñopāyaviniścayasiddhi*, verse 20, where the body of Vajradhara is said to be pure and shining like a mirror, bearing the major and minor marks of the Buddha. In the *Guhyasiddhi* itself the goal is said to be the attainment of a pure body that is like a reflection and like diamond (5.44). It is with this background in mind that I hesitate to conclude that a reflection is always by definition something false. Compare the comments of Gomez, *Selected Verses*, in his introduction, which attempts to reconcile the magic, creative aspect of the visions with the similes stressing the unreality of the world. Gomez stresses, I think, the illusory nature of the visions and the world. Here I am trying to suggest another interpretation.

[38] Compare the many references in the *Guhyasiddhi* and related texts cited above and the references to bodhicitta as a jewel from the *Gaṇḍavyūha*. The *Yogasūtra* of Patānjali I.41 also compares the mind to a precious jewel that takes on the complexion of objects with which it is in contact.

[39] There is a remarkable parallel to this visionary freedom of the mind in a text that clearly shows Buddhist influence, if not the specific influence of the *Gaṇḍavyūha* itself. In the *Yogavāsiṣtha, Utpatti Prakaraṇa*, chapter 15–68 there is a long account of a queen, Līlā, who prays to the goddess Sarasvatī that her husband may be immortal. When Sarasvatī cannot grant that wish, Līlā asks for a different one. She asks that when her husband dies his soul will never leave her room. This unusual request is granted. Līlā's husband does die and she keeps his corpse carefully in her room. She summons the goddess again and asks to know where her husband has gone. The goddess takes her on a flight over all the universe, where she sees her husband's next birth, his past birth and all her own past births. It is how she makes that flight that enables her to see worlds past and future that concerns us. She makes the flight by giving up limited notions such as "I" and "mine"; by recognizing that objects of perception cannot possible exist or come into being and by rejecting the notion of her gross physical body (chapters 21–22). Līlā does as she is instructed and gains the vision of her own past lives and her husband's past and future births. In another section of the text, the *Nirvāna Prakarana*, a story is told of a queen

by a realization that conceptualizations of limited ordinary objects of experience are false. They are to this extent experiences of a higher, expanded reality.

[40] The creative functions of the mind and its description as an active reflecting surface are frequent topics in Kashmiri Śaiva texts, and I hope in the future to continue studying images of the mind in Kashmiri Śaiva writings. These texts also place considerable emphasis on the generative power of the mind. Creation in fact encompasses a stage that is very much like the visions in the *Gaṇḍavyūha* in that at an early stage of the manifestation of the world of objects from the mind the objects appear as inseparable from their base, the mind; they appear as reflections, the defining characteristic of which is that a reflection is perceived as intimately connected to the reflecting surface. As I note here my reading of the *Gaṇḍavyūha* to some extent has been conditioned by my reading of these later texts from an entirely different tradition. I am looking for a larger context for the visionary language of the *Gaṇḍavyūha*; hopefully I will enrich my reading of the text more than I will distort it in the process. See the *Tantrasāra* of Abhinavagupta (ed. Mukunda Ram Sastri, Delhi: Bani Prakashan 1982, pp. 10–11), chapter 3, for the description of consciousness as a pure reflecting surface on which all things in the universe are reflected. The definition of a reflection is given there as follows: *yat bhedena bhāsitam* (read *bhāsitum*) *aśaktam anyavyāmiśratvenaiva bhāti tat pratibimbam*, "That which is incapable of being perceived as something on its own and only appears as intimately related to another thing is called a reflection". In answer to the question what is the *bimba* or prototype, the answer is that there is none. But there is a cause of the reflections, which is the power of consciousness as the ultimately real. This seems to me tantalizingly close to the language of the *Gaṇḍavyūha*. Compare the statement made to describe Brahmā's *vimāna: tatra sarvatriśāhasramahāsāhasro lokadhātur ābhāsam āgacchati pratibhāsayogena sarvārambaṇāmiśrībhūtah* (p. 415, line 14) I am struck by this last phrase, which I read as *sarvārambaṇa-āmiśribhūtah*, and which I would translate loosely as, "intimately related to all the various reflecting surfaces". This would bring us very close indeed to the language of Abhinavagupta in this text. To complicate the discussion, in his *Paramārthasāra* (Kashmir Sanskrit Texts Series, no. 7, Srinagar, 1916), Abhinavagupta seems to be saying something slightly different. He says there that the reflections in a mirror appear to be both one with the surface of the mirror and distinct from each other and from the mirror itself; similarly the objects of the world are both distinct from each other and from consciousness and one with consciousness. The idea as the commentary explains it is that although the reflections appear to be part of the mirror one is still aware of the mirror as the bearer of the reflections. Similarly when we have knowledge of some object that knowledge bears the form of the objects, but one is also aware of the presence of knowledge as the conscious agent. The commentator further draws this distinction between knowledge and the mirror: the experience of an object in a mirror is an error, while the experience of something in knowledge is not an error because knowledge has the power to create the objects it knows from within itself. This, I have argued in this paper, is a power not attributed in our texts to mirrors, but it is a power that can be attributed to jewels, which makes the jewelled visions of the *Gandavyūha* particularly intriguing to interpret. One might compare with this notion of images that somehow co-mingle and at the same time remain distinctive the description of the eternal jewelled images of the Jinas in heaven in Uddyotana Sūri's *Kuvalayamālā*, p. 95. The images are described as *aṇṇoṇṇa-vaṇṇa-ghaḍie ṇiya-vaṇṇa-pamāṇa-māṇa-nimmāe*, "having blended onto them the colors of all the other images and yet each having its own distinctive color, measure and size".

[41] As I noted above I have written about the jewelled body or the jewel-like body of the Jina with some references to Buddhist and Hindu beliefs in a recent paper that I delivered in Heidelberg at a meeting of the Taubes-Center. The paper, 'Portraits, Likenesses and Looking Glasses: Some Literary and Philosophical Reflections in

Representation in Medieval Indian Religious Art' will be published in the conference volume. The language of reflection when applied to the Buddha body is no doubt more complex than the discussion in that paper indicates. The Buddha body is often referred to as a reflection on the viewer's mind, for example in the *Ratnagotravibhāga*, 4.25, cited John Makransky, *Buddhahood Embodied*, Buffalo: SUNY, 1997, pp. 95–96. I hope to study this further. The language of the *Gaṇḍavyūha* has much in common with texts like the *Ratnagotravibhāga*.

[42] In fact such visions occur in many texts. We have seen above that in the *Aṣṭasāhasrikā* jewelled structures figure prominently in the quest of the Bodhisattva Sadāprarudita. Jewels and the creation of a jewel-like body are also important in the *Daśabhūmikasūtra*, a text frequently cited for its contribution to the development of doctrine (Edited P. L. Vaidya, Buddhist Sanskrit Texts, 7, Darbhanga: Mithila Institute of Post-Graduate Studies and Research in Sanskrit Learning, 1967). The text is replete with the language of religious visions (cf. p. 55). Thus at certain stages of his career the bodhisattva gains the ability to enter certain *samādhis* in one of which, for example, he sees a jewelled lotus appear. He sees himself to have a jewelled body and seated on the lotus. He sees other lotuses on which are seated bodhisattvas. In another case, the Bodhisattva Vajragarbha enters into the *samādhi, sarvabuddhakṣetrakāyasvabhāvasaṃdarśana*, "Displaying the true nature of his body as all the Buddha fields". And no sooner does he enter into this *samādhi*, than the entire assembly of bodhisattvas sees themselves in his body and they see a vast Buddha field there. They see a vast bodhi tree and a marvellous seat and on the seat is the tathāgata Sarvābhijñāmitarāja. Vajragarbha displays this great wonder and then returns the assembly to its former state. The assembly is then told that a bodhisattva in the tenth bhūmi is capable of creating this vision and countless others like it (pp. 62–63). The *Mahāyānasūtrālaṅkāra*, chapter 7, also discusses the perfected Bodhisattva's ability to manifest worlds, including Buddha fields made of crystal and vaiḍūrya gemstone.

[43] Kajiyama's translation p. 416 translates this differently, "from each mote of dust emerged jewelled images that looked like the bodies of all the Buddhas". I prefer my translation because of the consistent use in the text of the term *pratibhāsa* to mean reflection rather than "like". There is of course a third way to read the compound in which the jewelled images are the reflections of the Buddha. This would be perfectly consistent with the text which speaks of the Buddha bodies as reflections and as jewelled bodies. Other religious texts in India speak of special bodies of gods or perfected individuals in the same dual language, as reflections and as jewels. In part I suspect the combination is made possible by the common assumption that a reflection is the reflecting surface. There is also the simple observation that jewels as objects can be reflected in other objects, while their surface properties allow them to serve as reflecting surfaces. Finally there is evidence in some descriptions of wonderful jewelled objects that jewels have the unique ability to reflect off each other in such a way that an observer cannot differentiate the reflection from the reflecting surface.

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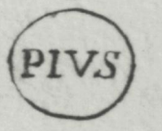

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Early Christian Gems and Their Rediscovery

Late in the third century, Christian communities in the Roman Empire began to use ring stones engraved with specifically Christian motifs. Explicitly Christian inscriptions, such as ΙΧΘΥC ("fish" in Greek but meant as an anagram, the first letters, in Greek, of "Jesus Christ, Son of God, Savior") (fig. 1) and the chi-rho monogram (the initial letters in Greek for *Christos*) (fig. 2), occur with regularity.[1] There are representations of typically early Christian symbols: the fish (sometimes the distinctive symbol of two fish flanking an anchor) (fig. 3) and the Good Shepherd. Old Testament motifs that served as reinterpreted Christian symbols, most commonly Jonah (fig. 4) and Daniel, were sometimes engraved as well, and some gems combine different motifs, such as an example in the British Museum that depicts Jonah, Daniel, and the Good Shepherd, along with Christian monograms (fig. 5).[2] There are also portraits of individuals, presumably the owners of the seals, identified as Christians by the addition of a sign, such as a cross or the chi-rho monogram, or an inscription.[3] Slightly later in date, in the later fourth, fifth, and sixth centuries, narrative scenes from the life of Jesus are admitted, some of which are especially significant in view of their relatively early date; for example, there are several gems depicting the Crucifixion which appear to date no later than the fourth century and so may be the earliest surviving depictions of the scene in Christian art (fig. 6).[4] Although early Christian gems provide a range of iconographical motifs comparable to other, better known, material of similar date, such as catacomb painting, carved marble sarcophagi, and gold glass, the gems remain poorly studied and largely unpublished.

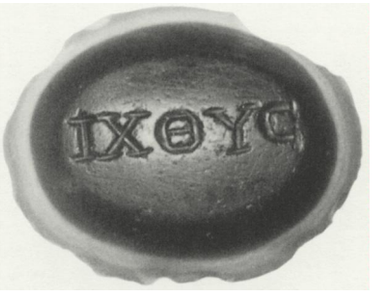
Rather than discuss the various types of Christian gems and the problems of their attribution (which will be the subject of a forthcoming study), this paper seeks to address the question of why there has been to date no careful study of Christian gems and, indeed, little scholarly awareness of their existence. The history of the study of these gems is in fact marked by recurring periods of intense interest followed by years of neglect and loss. Scholarship is usually viewed as progressive, the accumulation of centuries of study and research, but often knowledge is gained only to be lost again (or, if we are fortunate, only misplaced); the study of Christian gems is certainly one of these cases of alternating loss and rediscovery.

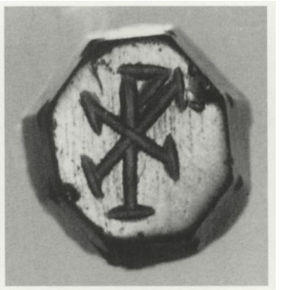
There are two immediately apparent factors that contributed to the neglect of the study of Christian gems. The first is their scarcity. They are far rarer than pagan Roman gems, and it is difficult indeed to study a class of objects if a representative selection cannot be compiled. However, even by the end of the sixteenth century enough examples were known to warrant more attention than they received subsequently.

The second obstacle to study is that Christian archaeology itself has always fallen be-

tween conventional disciplines. From the Renaissance until the present day, scholarly emphasis has always been on the culture of classical Greece and Rome, and the period of the rise of Christianity was seen as a time of artistic decline. In turn, modern Christian archaeology has often preferred to keep its distance from the classical tradition, and the study of the classical influence on early Christian art (or the cultural continuity between pagan and Christian) has received relatively little attention until recent times. But these obvious problems are by no means the only reasons that Christian gems have been neglected by scholars. There has been a great deal of what may best be termed unfortunate timing and bad luck, stretching back nearly five hundred years.

There appears to be no example of an early Christian gem being preserved throughout the Middle Ages specifically for its Christian subject matter. On the other hand, antique Roman gems were often set into seals (most dating from the twelfth through fourteenth centuries) and provided with suitable Christian identities: a group of actors could be identified as the Annunciation; Minerva could be an angel; three theater masks become a symbol of the Trinity; and any head at all could be Christ.[5] However, all these gems are actually pagan, and their reuse and reinterpretation probably do not reflect any sort of antiquarian inquiry; in fact these rediscovered gems too were forgotten—they seem not to have been preserved in Renaissance collections and have received little attention since medieval times. There seems to have been little awareness of early Christian artifacts in the fifteenth century, and I have found no mention of early Christian gems in fifteenth-century collections, although it is certainly possible that they were recognized then, especially in view of the famous passage of the church father Clement of Alexandria, who around A.D. 200 discussed what sort of images on a seal would be appropriate for Christian use (including fish and doves); the passage was cited frequently in scholarly literature from the sixteenth century on and was known to virtually all humanist antiquaries.[6] Although some Renaissance humanists of the late fifteenth and early sixteenth century, such as Andrea Fulvio (c. 1470–1527) and Onofrio Panvinio (1529–1568), took an inter-





1. Banded agate gem inscribed IXΘYC, third–fourth century A.D.
Private collection

2. Carnelian gem with chi-rho monogram, third–fourth century A.D.
Private collection

3. Red jasper gem with two fish, anchor, and IXΘYC inscription, third–fourth century A.D.
Private collection

4. Carnelian gem with the story of Jonah, fourth century A.D.
Private collection

5. Carnelian gem depicting Jonah, the Good Shepherd, Daniel, Noah's dove, and Christian monograms, fourth century A.D.
British Museum, London

6. *Crucifixion*, fourth century A.D., agate gem
British Museum, London

est in early Christian inscriptions, churches, and cemeteries, especially in connection with pilgrimage in Rome,[7] there is no real recognition or understanding of early Christian material before the later part of the sixteenth century. The event that spurred everyone's interest was the rediscovery of the catacombs on the via Salaria Nuova in Rome in 1578.

Unfortunately, the most important of all archaeological discoveries, for the purposes of this study, took place a generation too early to be properly appreciated by scholars (this is the first instance of bad timing). On 4 February 1544, during the papacy of Paul III (Alessandro Farnese), workmen in the now demolished chapel of Saint Petronilla within Saint Peter's in Rome stumbled upon the tomb of Maria, wife of the Roman emperor Honorius (ruled 393–423), who died around the year 400. The contemporary accounts of the discovery vary somewhat, but they agree that within the sarcophagus was a wealth of precious objects, including the remains of the empress' gold-embroidered robe and two silver boxes, one containing miniature vessels carved from semiprecious stone and the other full of jewelry—as many as 150 rings set with gems, a cameo set in a gold pendant (called a *bulla*) engraved with the names of the imperial family, and an "emerald" (*smaragdus*, or *smeraldo*) encased in gold, said to be engraved with the portrait of Emperor Honorius and valued at the time of its discovery at the enormous sum of 500 gold scudi. Only a single piece from this treasure can now be identified—the inscribed cameo naming Honorius, Maria, and her family, set in a gold pendant studded with emeralds and garnets, now in the Louvre.[8] Despite the sensational nature of the discovery, which is reported in several of the mid-sixteenth-century guidebooks to Rome (such as those by Bartolomeo Marliani and Lucio Fauno) and occasionally thereafter, the other rings and gems have gone entirely unrecorded. The only illustration of the find yet identified is a sheet of drawings of the miniature semiprecious stone vases, apparently made later in the sixteenth century for the famous antiquary within the Farnese circle, Fulvio Orsini (1529–1600);[9] one suspects that he would have known more about the treasure, since at least some of the objects should have remained in the Farnese family. Although much of the treasure was said to have been sold to help finance the new construction at Saint Peter's, some gems were used in a papal tiara for Paul III,[10] but nothing appears to survive.

It is to the later sixteenth and early seventeenth century that the formative years of Christian archaeology belong. These years saw an intense, diverse, and sometimes brilliant pursuit of antiquarian studies, culminating in the flurry of activity among the individuals who made up the so-called Republic of Letters that circled around the court of the Barberini pope Urban VIII (1623–1644).[11] For a record of the earliest finds during the period between the rediscovery of the catacombs in 1578 and the more widespread studies of the early seventeenth century we must be grateful for the presence in Rome of a few dedicated individuals. Above all, credit must be given to Antonio Bosio (1575–1629), who systematically explored, recorded, and eventually published the catacombs along with many Christian sarcophagi and a fundamental study of early Christian iconography in his *Roma sotterranea*, the monumental study not completed at the time of his death in 1629 but fortunately (for once) saved by the Barberini circle and published in 1634.[12]

However, even before Bosio began his studies (in 1593 at the age of seventeen), several others were on hand to record the new discoveries in the catacombs: Pompeo Ugonio (died 1613?);[13] the Spanish Dominican monk and church historian Alfonso Chacón (known as Ciaconnius, 1530–1599);[14] and especially the young Flemish traveler Philips van Winghe (1560–1592), who died at the age of only thirty-two in 1592 and was regarded by some as the immediate predecessor of Bosio;[15] a number of manuscripts survive recording their discoveries. They also corresponded with another Flemish scholar, Jean l'Heureux (known as Macarius, 1551?–1614), who left two important works.[16] The first book, not published until 1657, long after his death, is the earliest published work on the large number of engraved gems that served as magical amulets. At this time these magical gems were believed to have been produced by heretical Christian sects and were usually termed "Basilidian" (after the second-century heretic Basileides) or "gnostic"; as such they attracted the attention of Christian historians, and one example belonging to Fulvio

Orsini was illustrated by Cardinal Cesare Baronio (1538–1607) in his *Annales Ecclesiastici* in 1597.[17]

Macarius' other book, *Hagioglypta* (written by 1605), is the first careful study of early Christian iconography, similar in content to the second part of Bosio's work. Macarius often relied on his correspondents in Rome (most notably Chacón and van Winghe) for material, and it is evident that these early scholars had a good eye for archaeological objects. Gems were among them, and Macarius describes in detail two important pieces. One is a nicolo described as being in the collection of Fulvio Orsini and depicting the Raising of Lazarus; surprisingly, the piece survives, preserved in the portion of the Farnese collection that reached Naples (fig. 7).[18] A second gem, said to have belonged to van Winghe, is a sard engraved with episodes from the story of Jonah: Jonah thrown from the ship and swallowed by a whale (as usual in this period depicted as the classical *ketos*, or sea monster), spit out again and rescued, and asleep under the gourds. Although several similar gems are known (see fig. 4), this example is lost, but we can be reasonably certain that a drawing in the Vatican Library shows the same gem described by Macarius (fig. 8).[19] The drawing appears in one of the three extant manuscripts thought to derive from a lost notebook of Chacón or van Winghe.[20] This manuscript and Macarius' work *Hagioglypta* demonstrate how gems were already used along with sarcophagi and other archaeological material as illustrations of early Christian iconography. Unfortunately, this information was quickly forgotten. There is no reference to either of these gems in subsequent literature until very recently. To make matters worse, a typically unfortunate fate met Macarius' *Hagioglypta*: despite a recurrent awareness of the existence of the manuscript over the centuries,[21] it remained unpublished until it was rescued by the great Christian archaeologist Raffaele Garrucci and first published in 1856, 250 years after it was written (and apparently little read since, judging from the scholarly literature).

In Bosio's *Roma sotterranea* itself there are few references to gems. The discovery of Empress Maria's tomb in 1544 is mentioned but quickly passed over.[22] The only gem that is illustrated is an enigmatic, long-lost piece

7. *Raising of Lazarus*, fourth century A.D., cast of a nicolo gem
Museo Archeologico Nazionale, Naples

8. Drawings of a lost carnelian gem and sarcophagi fragments, early seventeenth century
Biblioteca Apostolica Vaticana, Vaticanus latinus 10545, fol. 185v

once in the collection of Cardinal Francesco Barberini.[23] It is a ring carved from solid rock crystal with the bezel engraved with a christogram and apparently the Latin inscription SALVS ("health"). The next edition of Bosio, revised and added to by Paolo Aringhi in 1651, contains a new gem, a Good Shepherd in the collection of that "most illustrious and remarkably pious matron" (*illustrissima . . . conspicuae pietatis matrona*), Felice Rondinini (1593–1667), widow of Alessandro Rondinini (died 1639).[24]

Aringhi also mentions a gem belonging to an important but little known collector and dealer, Ludovico Compagni.[25] The gem had been published for the first time in 1626 by Girolamo Aleandro (1574–1629), who was a papal secretary and a dedicated antiquary. Aleandro's brief book was devoted entirely to the interpretation of the gem, which shows Jesus and Peter walking on the water (as told in Matthew 14:25–31), along with a ship supported by a large fish or whale.[26] Although Aleandro's volume is cited frequently in sub-

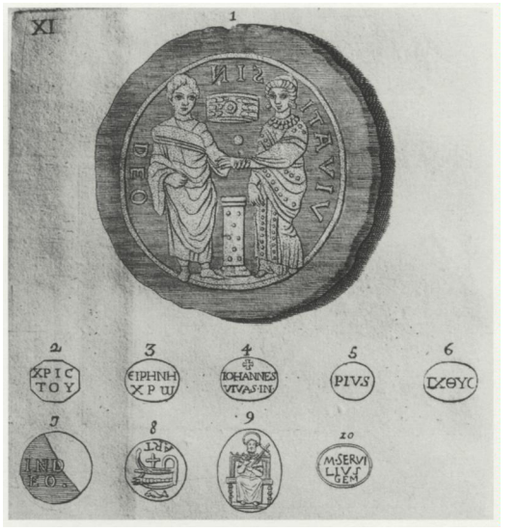
sequent literature, no new research or commentary on the gem appeared. The gem has long been lost, and it is still unclear whether it is an authentic work of the early Byzantine period or a much later work loosely based on Giotto's *Navicella* mosaic in Saint Peter's.

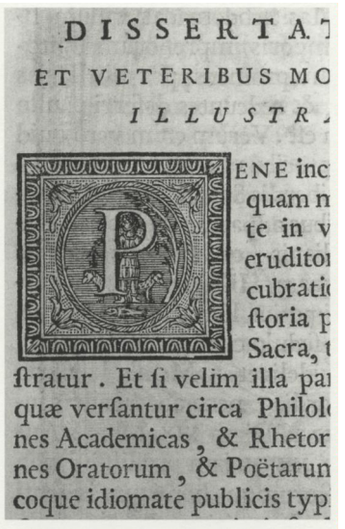
Outside of Rome in the early seventeenth century there were others collecting Christian gems. The Provençal collector and royal antiquary to Henri IV (from 1602), Pierre Antoine de Rascas de Bagarris (1562–1620),[27] not only owned several Christian gems but as early as 1602 corresponded about their meaning with Joseph Justus Scaliger (1540–1609).[28] Bagarris's young countryman, Nicolas-Claude Fabri de Peiresc (1580–1637), who would become one of the central figures in the Republic of Letters and one of the most active antiquaries of the age,[29] recorded several of Bagarris's Christian gems, including a fine example of an intaglio showing the Good Shepherd.[30] Peiresc himself, although generally preferring the classical, was also interested in Christian antiquities. With his usual thoroughness, Peiresc corresponded with the brother of the late Philips van Winghe, knew of Macarius' unpublished *Hagioglypta*, and was also aware of Bosio's *Roma sotterranea* as early as 1615, nearly twenty years before it was published; after the work finally appeared in 1634, he sent copies to his friend the painter Peter Paul Rubens.[31] Peiresc owned at least two hundred Basilidian gems but apparently only one Christian intaglio—another example of Jonah swallowed by the sea monster, accompanied by the Christian inscription IXΘYC; the gem is lost, and no impression or drawing is known. Peiresc bought the piece from a goldsmith in Bordeaux for one scudo, and expresses his great satisfaction in its purchase in a letter to Rubens in 1623 in which he explicitly recognizes it as an unusual record of the early church.[32] Another French collector of the time, Louis Chaduc (1564–1638), had a substantial collection of gems, and although most of them were recent forgeries (this is another story), he not only owned a few genuine Christian gems, including an example of the fish with IXΘYC inscription, now lost, and a fine Byzantine cameo, now in Saint Petersburg, but also left a manuscript catalogue of his gem collection with a clearly defined section devoted to Christian specimens.[33]

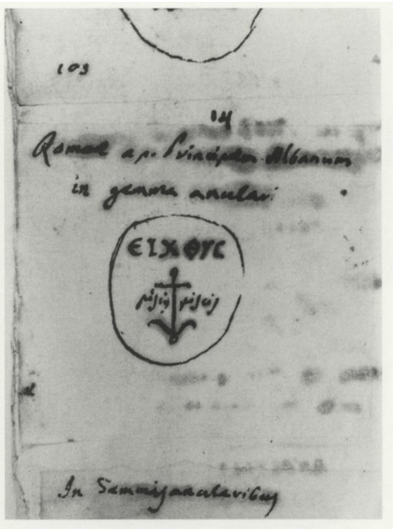
Joannes Smetius (1590–1651?), a church minister in Nijmegen, published in 1644 a gem of the fish-and-cross type, found locally, as evidence for an early Christian settlement in the area. Such an archaeological approach is strikingly modern, and the attribution may well be correct.[34]

Few of these scholarly achievements of the late sixteenth and early seventeenth centuries were published, and nearly all were soon forgotten, remaining only in scattered letters and unpublished manuscripts. The rest of the seventeenth century saw much less interest in this sort of material, despite successive editions of Bosio, and it was only in the final years of the century that a revival occurred. Throughout the eighteenth century, however, Christian archaeology was immensely popular, and for the first time many works on a variety of subjects were published. Books on the finds from the catacombs include those by Giovanni Ciampini (1633–1698)[35] and most notably Marc'Antonio Boldetti (1663–1749),[36] which illustrated many objects from the Roman catacombs. The pioneering archaeologist Filippo Buonarroti (1661–1733) published studies of Christian gold glass and ivories.[37]

Although these works seldom mention early Christian gems (which in fact were not found in the catacombs), gems do turn up with regularity in publications from about the 1730s onward. The work that best utilized Christian gems is not well known—a very fine essay on the fish as a Christian symbol by the Venetian Camaldolite monk Anselmo Costadoni written in 1749.[38] Less competent (but more popular) efforts include several essays by Giovanni Battista Passeri (1699–1780), including one on a famous gem once in the Buonarroti and Stosch collections and now in Berlin, depicting the "holy throne."[39] Christian gems also appear in a number of other works, notably in the highly competent article on inscriptions on gems by Filippo Venuti, presented to the Nobile Accademia Etrusca in Cortona in 1758;[40] an essay on a gem in his own collection by Paolo Maria Paciaudi, perhaps best known as the correspondent and adviser of the French Count de Caylus (who collected gems but seems not to have owned any Christian ones);[41] and a new edition of Bosio by the Vatican prefect Giovanni Bottari, which adds a few more gems.[42] Francesco de' Ficoroni (1664–1747), a collec-







9. Christian gems and gold glass
From Francesco de' Ficoroni, *Gemmae antiquae litteratae* (Rome, 1757), pl. XI

10. Gem depicting the Good Shepherd
From Francesco Vettori, *Sanctorum septem dormientium historia* (Rome, 1737), I

11. Drawing of a gem once in the Albani collection, late eighteenth century
From a notebook of Gaetano Marini, Biblioteca Apostolica Vaticana, Vaticanus latinus 9071, fol. 156

tor, dealer, and one of the most important experts on gems of the early eighteenth century, also recorded a few examples of Christian gems but wrote little about them (fig. 9).[43]

The most important collector and scholar of the period is Francesco Vettori (1693–1770), who set about systematically collecting Christian gems, eventually presenting his collection to Pope Benedict XIV in 1757, and receiving in return the post of prefect of the Christian Museum (now the Museo Sacro) at the Vatican. Vettori published extensively on aspects of Christian archaeology, and illustrations of a number of his own gems appear in his books along with brief commentaries (fig. 10).[44] It is with Vettori that we come tantalizingly close to a careful study of the material, but no such work was ever completed. Again circumstances intervened to make further study difficult: during the French occupation of the Vatican in 1798 the entire collection of gems was plundered and has disappeared almost without trace.[45] Of the collection of over a hundred pieces, I have so far been able to locate only four. Fortunately, wax impressions survive, attached to four wood panels now in the Vatican Medagliere, along with two inventories of the 1760s.[46]

After Vettori, and for nearly a hundred years, there is only a minimal interest in Christian gems.[47] The only notable exception to the silence of the later eighteenth century is the work of the Vatican prefect Gaetano Marini (1742–1815), who published extensively on ancient inscriptions and left a further 132 manuscript volumes in the Vatican Library, thirty-nine of which deal with Christian inscriptions (Vaticani latini 9071–9109); one of these (9071, fols. 154–162) contains his notes on inscribed Christian gems (fig. 11). Rather predictably, this material was never published.[48]

It was not until the mid-nineteenth century that gems were rediscovered again. The second half of the nineteenth century may be regarded as the golden age of Christian archaeology, with the central figures being Giovanni Battista de Rossi (1822–1894), who is still justly honored with a special case full of his many publications on display at the Vatican Library and a marble bust at the entrance to the catacombs of San Calisto in Rome. De Rossi again explored the catacombs of Rome and published his own magisterial work *La Roma sotterranea cristiana* (1864–1867), along with the *Bullettino di archeologia cristiana*, which he founded in 1863, and the first volume of the *Inscriptiones Christianae Urbis Romae*, a project that continues to this day. He did not contribute greatly to the study of gems, although he did compile a list of some inscribed gems in an article as early as 1855.[49] His contemporary Raffaele Garrucci (1812–1885), in addition to publishing Macarius' *Hagioglypta*, produced the prodigious six-volume *Storia dell'arte cristiana nei primi otto secoli della chiesa* (Prato, 1872–1880), illustrating hundreds of Christian monuments large and small along with a highly

erudite commentary. Gems were compiled in a comprehensive manner and illustrated on several plates; and Garrucci himself owned at least two important examples (now lost).[50]

The format of Garrucci's work copied an even more sumptuous (though rather less scholarly) six-volume edition by Louis Perret, *Les catacombes de Rome* (Paris, 1851), which also contained several full plates of gems. The other key figure in Christian archaeology of this time was the Frenchman Edmond Le Blant (1818–1897), whose research on the early Christian sarcophagi and other monuments in France is still fundamental; he also is notable for having looked at a considerable amount of manuscript material, including the papers of Peiresc and Chaduc.[51] One of Le Blant's early works is devoted to some Christian gems, several of which were in his own collection and are now in the Cabinet des Médailles in Paris.[52]

The English too made a significant and lasting contribution to the study of Christian gems. Since early in the nineteenth century, English churchmen had often been active antiquaries, and a number of them sought out Christian gems. The Reverend George Frederick Nott (1767–1841), canon of Winchester and a fellow of All Souls College in Oxford, collected a number of important pieces during his stay in Italy between 1817 and 1825, including one of the gems with an early depiction of the Crucifixion (fig. 12);[53] unfortunately these were sold at auction in 1842, and most have disappeared. Little is known about the churchman named James Hamilton who lived in Rome around 1850, but he seems to have accumulated nearly all the best gems in Rome (including some from old collections) (fig. 5), as well as a fine collection of maiolica. Fortunately his collection was acquired by the British Museum in 1856 and published by Ormonde Maddock Dalton in 1901.[54] In Oxford the collector, connoisseur, and patron of the Ashmolean Museum, Charles Drury Edward Fortnum, was also dedicated to collecting Christian gems; he acquired some in Rome and others from Egypt and Turkey and published several well-informed articles between 1869 and 1886.[55] In Cambridge the Reverends Samuel Savage Lewis, Charles W. King, and Churchill Babington (who was Disney Professor of Archaeology at Cambridge) all purchased and published Christian gems.[56] Although these studies never went much beyond a few descriptive articles, the collections in London, Oxford, and Cambridge remain, and together they represent by far the largest surviving group of Christian gems.

12. *Crucifixion*, nineteenth-century cast of a lost gem
Formerly in the collection of the Reverend George Frederick Nott

Even in this century no full study was forthcoming. Adolph Furtwängler (1853–1907), whose contribution to the classification of Greek and Roman gems is immense, showed little interest in gems of the later Roman period.[57] The pioneering work on Christian iconography by Franz Joseph Dölger, *ΙΧΘΥΣ: Das Fischsymbol in frühchristlicher Zeit*, did make good use of gems and he began to compile a catalogue, but it was by no means complete.[58] The best compilation to date is the article by Henri Leclercq,[59] which, although only a list with illustrations, may serve as the basis for a modern study; it includes over three hundred examples with a good bibliography. More recent surveys are less satisfactory. The influential art historian Theodor Klauser suggested that gems may have played a significant role in the formation of early Christian art, but he made little attempt to compile or study the surviving material.[60] Most recent books on early Christian art omit any mention of gems, although there are signs of a renewed interest.[61]

This brief survey brings the subject up to date, and, with a little bit of luck, a fairly complete study of early Christian gems may appear shortly. Although this forthcoming work may at last bring the material to light, it might be viewed as anticlimactic after so many years and the considerable efforts of those early scholars. The least that can be done is to express gratitude to them.

NOTES

1. For IXΘYC on gems, see Franz Joseph Dölger, *IXΘYΣ: Das Fischsymbol in frühchristlicher Zeit*, vol. 1, 2d ed. (Münster, 1928), 262–337. For a gem with the chi-rho monogram, see Erika Zwierlein-Diehl, *Die antiken Gemmen des Kunsthistorischen Museums in Wien*, vol. 3 (Munich, 1991), no. 2172; at least fifteen other examples are known, but nearly all are unpublished.

2. Ormonde Maddock Dalton, *Catalogue of Early Christian Antiquities and Objects from the Christian East in the British Museum* (London, 1901), 4, no. 25; the gem is from the collection of James Hamilton, for whom see note 54 below.

3. For example, Oleg Neverov, *Antique Intaglios in the Hermitage Collection* (Leningrad, 1976), no. 145.

4. Dalton 1901, 7, no. 43, a carnelian gem said to have been found at Constanza, Romania; for a similar example once in the Nott collection, see note 53 below and fig. 12. In this highly unconventional depiction, Jesus is on the cross with the twelve apostles standing at the foot of the cross. See also Dölger 1928, 322–326.

5. Charles Roach Smith, "Medieval Seals Set with Ancient Gems," *Collectanea Antiqua* 4 (1857), 65–79, especially 72, 76, pl. 19.2 (a head interpreted as Jesus), 78, pl. 20.6 (a scene of actors interpreted as the Annunciation); Martin Henig, *A Corpus of Roman Engraved Gemstones from British Sites* (Oxford, 1978), 162, 285–286; Germain Demay, *Des pierres gravées employées dans les sceaux du moyen âge* (Paris, 1877), 6–8; Afuri Soeda, "Gods as Magical Charms: The Use of Ancient Gems in the Medieval Christian West," in *Survival of the Gods* [exh. cat., Brown University] (Providence, 1987), 185–192.

6. Clement of Alexandria, *Paedagogus* 3.57.1–3.59.2; the passage is indeed of great importance and its meaning is still debated: see Paul Corby Finney, "Images on Finger Rings and Early Christian Art," *Dumbarton Oaks Papers* 41 (1987), 181–186.

7. For Andrea Fulvio and Onofrio Panvinio, see Giuseppe Ferretto, *Note storico-bibliografiche di archeologia cristiana* (Vatican City, 1942), 88–99; Angelo Silvagni, *Inscriptiones Christianae Urbis Romae* (hereafter *ICUR*), new series 1 (Rome, 1922), xliii; and Davide Aurelio Perini, *Onofrio Panvinio e le sue opere* (Rome, 1899).

8. Pietro Mazzucchelli, *La Bolla di Maria, moglie d'Onorio imperatore che si conserva nel Museo Trivulzio, brevamente spiegata* (Milan, 1819), remains the most complete account of the discovery and includes all the contemporary reports; see also Fernand Cabrol and Henri Leclercq, *Dictionnaire d'archéologie chrétienne et de liturgie*, vol. 10.2 (Paris, 1932), cols. 2136–2142, fig. 7742, under "Marie, Fille de Stilicon;" Kurt Weitzmann, ed., *Age of Spirituality: Late Antique and Early Christian Art, Third to Seventh Century* (New York, 1979), no. 279; Jeffrey Spier, "Late Antique Cameos, c. A.D. 250–600," in Martin Henig and Michael Vickers, eds., *Cameos in Context* (Oxford, England and Houlton, Maine, 1993), 45–47. The *bulla* passed through the collection of Filippo Archinti, the vicar-general of Paul III, and eventually reached the Marchese Trivulzio in Milan before finally arriving in Paris.

9. Giovanni Battista de Rossi, "Disegni d'alquanti vasi del mondo muliebre sepolto con Maria moglie di Onorio imperatore," *Bullettino di archeologia cristiana* 1.5 (May 1863), 53–56; Hans-Peter Bühler, *Antike Gefässe aus Edelsteinen* (Mainz, 1973), 13, 77–78, no. 111, pl. 38.

10. Eugene Müntz, "La tiare pontificale du VIIIe au XVIe siècle," *Mémoires de l'Institut National de France, Académie des Inscriptions et Belles-Lettres* 36 (1898), 310 and 321.

11. See David Jaffé, "The Barberini Circle: Some Exchanges between Peiresc, Rubens, and Their Contemporaries," *Journal of the History of Collections* 1 (1989), 119–147.

12. Antonio Bosio, *Roma sotterranea* (Rome, 1632), actually published in 1634. For Bosio, see Giovanni Battista de Rossi, *La Roma sotterranea cristiana*, vol. 1 (Rome, 1864), 39–41; Ferretto 1942, 132–162; Lorenzo Spigno, "Della Roma sotterranea del Bosio e della sua biografia," *Rivista di archeologia cristiana* 52 (1976), 277–301; and Ingo Herklotz, "Cassiano and the Christian Tradition," *Casiano dal Pozzo's Paper Museum*, vol. 1, *Quaderni Puteani* 2 (1992), 31–38, which discusses the involvement of the Barberini circle with Bosio's book.

13. Ferretto 1942, 120–124; *ICUR*, new series 1, xlvi.

14. For Chacón, see Alejandro Recio, "La 'Historia Descriptio Urbis Romae,' obra manuscrita de Fr. Alonso Chacón, O.P. (1530–1599)," *Anthologica Annua* 16 (1968), 43–102, especially 74–75; and Recio, "Alfonso Chacón, primer estudioso del mosaico cristiano de Roma y algunos diseños Chaconianos poco conocidos," *Rivista di archeologia cristiana* 50 (1974), 295–329; Elías Tormo, "El Padre Alfonso Chacón: El indiscutible iniciador de la arqueología de la arte cristiana," *Boletín de la Real Academia de la Historia* (Madrid) 111 (1942), 151–199; Ferretto 1942, 115–119; de Rossi 1864, 20–26; S. Grassi Fiorentino, in *Dizionario biografico degli Italiani*, vol. 24 (Rome, 1980), 352–356.

15. De Rossi 1864, 26; Godefridus Joannes Hoogewerff, "Philips van Winghe," *Mededeelingen van het Nederlandsch Historisch Instituut te Rome* 7 (1927), 59–82; Godelieve Denhaene, "Un témoignage de l'intérêt des humanistes flamands pour les gravures italiennes: Une lettre de Philippe van Winghe à Abraham Ortellius," *Bulletin de l'Institut Historique Belge de Rome* 62 (1992), 69–137, especially 74–75 and 95–97.

16. Ioannes Macarius and Ioannes Chiflet, *Abraxas seu Apistopistus* (Antwerp, 1657), which also provides a bibliography of the published and unpublished works of Macarius; and Ioannes l'Heureux (Macarius), *Hagioglypta sive picturae et sculpturae sacrae antiquiores praesertim quae Romae reperiuntur*, ed. Raffaele Garrucci (Paris, 1856).

17. Cesare Baronio, *Annales Ecclesiastici*, vol. 2 (Rome, 1597), 65, who associates the gem with the Basilidian heresy in A.D. 120. For Baronio's use of the catacomb discoveries to support the Counter Reformation's view of early Christian art, see Ingo Herklotz, "Historia sacra und mittelalterliche Kunst während der zweiten Hälfte des 16. Jahrhunderts in Rom," in Romeo de Maio, ed., *Baronio e l'arte, Atti del convegno internazionale di studi, Sora, 10–13 ottobre 1984* (Sora, 1985), 21–74; and Francis Haskell, *History and Its Images* (New Haven and London, 1993), 101–111. Scaliger and Rascas de Bagarris (for whom see below) took a similar interest in "heretical" gems; see Joseph Justus Scaliger, *Opuscula varia antehac non edita* (Paris, 1610), 574–582, in a letter to Rascas de Bagarris, dated 12 January 1603; Peiresc too collected "Basilidian" gems (see below).

18. Macarius, *Hagioglypta* 1856, 24 and 199; Oleg Neverov, "Gemme dalle collezioni Medici e Orsini," *Prospettiva* 29 (1982), 4, fig. 36; Pierre de Nolhac, "Les collections d'antiquités de Fulvio Orsini," *Mélanges d'archéologie et d'histoire, École Française de Rome* 4 (1884), 161, no. 160, "Niccolo con un Intaglio Christiano, da Cesare Camei—2 [fiorini];" Carlo Gasparri, *Le Gemme Farnese* (Naples, 1994), 142, no. 109, fig. 75.

19. Biblioteca Vaticana, Vaticanus latinus 10545, fol. 185v; Macarius, *Hagioglypta* 1856, 74 and 199; also Antonio Ferrua, "Paralipomeni di Giona," *Rivista di archeologia cristiana* 38 (1962), 42, fig. 26. For another similar gem, see Marianne Maaskant-Kleibrink, *Catalogue of the Engraved Gems in the Royal Coin Cabinet, The Hague* (The Hague, 1978), no. 1143.

20. The other similar manuscripts are Paris, Bibliothèque Nationale, nouvelles acquisitions latines, 2343; and Rome, Biblioteca Angelica, 1564. Although usually ascribed to Chacón, David Jaffé, "Daniele da Volterra's Satirical Defence of His Art," *Journal of the Warburg and Courtauld Institutes* 54 (1991), 251, note 20, has suggested that van Winghe is the compiler of the manuscript, a theory supported not least by the terminal date of the material in 1592, the year of van Winghe's death.

21. For example, a letter to Peiresc from Jerome van Winghe, in Tournay, 26 April 1621, mentions the work: Paris, Bibliothèque Nationale, fonds français, 9541, fol. 37; also Giusto Fontanini, *Discus argenteus votivus veterum christianorum* (Rome, 1727), xiv.

22. Bosio 1632, 43.

23. Bosio 1632, 656; the ring was often published subsequently, for example, by Abraham Gorlaeus, *Dactyliothecae*, ed. Jacob Gronovius (Leiden, 1695), no. 211; Charles Drury Edward Fortnum, "On Finger-Rings of the Early Christian Period," *Archaeological Journal* 28 (1871), 271–272, notes that he tried unsuccessfully to find the ring in the Barberini collection in Rome.

24. Paolo Aringhi, *Roma Subterranea Novissima*, vol. 2 (Rome, 1651), 554 and 698; for Felice Rondinini, see Luigi Salerno, *Palazzo Rondinini* (Rome, 1964), 31–35, and fig. 3, for her portrait.

25. Aringhi 1651, 2:475.

26. Girolamo Aleandro, *Navis Ecclesiam referentis symbolum in veteri gemma annulari insculptum* (Rome, 1626), with an engraving by Claude Mellan; see David Jaffé, "Mellan and Peiresc," *Print Quarterly* 7 (1990), 169–171, figs. 102–103, including information on Ludovico Compagni, 171, note 9; and Jaffé 1989, 134, fig. 19. For the questions of authenticity, see Wilhelm Paeseler, "Giottos Navicella und ihr spätantikes Vorbild," *Römisches Jahrbuch für Kunstgeschichte* 5 (1941), 146; and Franz Joseph Dölger, *ΙΧΘΥΣ: Das Fischsymbol in frühchristlicher Zeit*, vol. 5 (Münster, 1943), 285–291.

27. On Bagarris, see Antoine Schnapper, *Le géant, la licorne et la tulipe: Collections et collectionneurs dans la France du XVIIe siècle* (Paris, 1988), 184–186, 240; and Ernest Babelon, *Catalogue des camées antiques et modernes de la Bibliothèque Nationale* (Paris, 1897), cxix–cxxii.

28. See David Jaffé, "Aspects of Gem Collecting in the Early Seventeenth Century: Nicolas-Claude Peiresc and Lelio Pasqualini," *Burlington Magazine* 136 (1994), 104–106.

29. See Jaffé 1989; Schnapper 1988; and notes 31–32 below.

30. A wax impression of the Good Shepherd gem is preserved, Paris, Bibliothèque Nationale, fonds français, 9530, fols. 223 and 227; there is also a drawing, nouvelles acquisitions latines, 2343, fol. 74; see Edmond Le Blant, "750 Inscriptions de pierres gravées inédites ou peu connues," *Mémoires de l'Académie des Inscriptions et Belles-Lettres* 36 (1896), no. 319. Peiresc misread the name, reading *Aristodoulou* (a good classical name), for *Christodoulou* ("servant of Christ," a purely Christian name); the misunderstanding probably reflects the common prejudice for the classical at the expense of the Christian.

31. On Peiresc's interest in Christian antiquities, see Jaffé 1989, 122–123; for letters to Peiresc from Jerome van Winghe, all dating from 1621, see Paris, Bibliothèque Nationale, fonds français, 9541, fols. 1 and 36–39; see also the letter that refers to Bosio's *Roma sotterranea* in Giacopo Maria Paitoni, ed., *Lettere d'uomini illustri, che fiorirono nel principio del secolo decimosettimo, non più stampate* (Venice, 1744), 245, Peiresc to Paolo Gualdo, 2 January 1615.

32. Max Rooses and Charles Ruelens, *Correspondance de Rubens*, vol. 3 (Anvers, 1900), 242–244 (1623); and 269 (11–12 February 1624); for his "Basilidian" gems, see Roy D. Kotansky and Jeffrey Spier, "The 'Horned Hunter' on a Lost Gnostic Gem," *Harvard Theological Review* 88 (1995), 315–317; Peiresc, in a letter to Claude Saumaise, 14 November 1633, states that he had two hundred gems of this type; see Agnès Bresson, ed., *Nicolas-Claude Fabri de Peiresc: Lettres à Claude Saumaise et à son entourage (1620–1637)* (Florence, 1992), 33. Peiresc also recorded such gems in other collections; for example, see Paris, Bi-

bliothèque Nationale, fonds français, 9530, fols. 234–235; Carpentras, Bibliothèque Inguimbertine, 1809, fol. 400.

33. Paris, Bibliothèque Sainte-Geneviève, Réserve, 1168, *Lampas Indiae novantiquae Gemmariae hoc est Gemmarum Antiquarum Aposphragismatat Litterata Restituta & Illustrata Duo millia Ex Ludovici Chaducii arverni in foro Ricomagensi consiarii regii Dactyliotheca*, 1628; another copy of the manuscript is in Clermont-Ferrand (ms. 389); see also Françoise Zehnacker and Nicolas Petit, *Le Cabinet de Curiosités de la Bibliothèque Sainte-Geneviève des origines à nos jours* (Paris, 1989), 66–67, 77, 143; and Schnapper 1988, 167–168, 203–204. The gems are mostly dispersed, with only a few remaining in the Cabinet des Médailles in Paris; the cameo now in Saint Petersburg and the lost gem engraved with fish and IXΘYC inscription are Paris, Bibliothèque Sainte-Geneviève, Réserve, 1168, fol. 90v, nos. 4 and 5; for the cameo see Alice V. Bank, *Byzantine Art in the Collections of Soviet Museums* (Leningrad, 1985), 300, nos. 162–163. For more on the Chaduc manuscripts, see the essay by David Jaffé in this volume.

34. Johannes Smith, *Oppidum Batavorum, seu Noviomagnum* (Amsterdam, 1644), 116; the gem was then published inaccurately by Fortunio Liceti, *Hieroglyphica* (Padua, 1653), 390–397, which in turn was copied by Gorlaeus 1695, no. 535. With his son, Johannes Smetius the Younger (1636–1704), he published a fundamental archaeological study of the area, *Antiquitates Neomagenses* (Amsterdam, 1678), and formed a substantial collection of Roman gems; see Marianne Maaskant-Kleibrink, *Description of the Collections in the Rijksmuseum G. M. Kam at Nijmegen, X: The Engraved Gems* (Nijmegen, 1986), ix–x; Dimphéna Groffen, in Ellinoor Bergvelt and Renée Kistemaker, eds., *De wereld binnen handbereik: Nederlandse kunst- en rariteitenverzamelingen, 1585–1735* [exh. cat., Amsterdam Historisch Museum] (Amsterdam, 1992), 113–115. The two gems are now in Munich; see Ingrid S. Weber, *Kostbare Steine: Die Gemmensammlung des Kurfürsten Johann Wilhelm von der Pfalz* (Munich, 1992), 220–221, nos. 322–323.

35. For Giovanni Ciampini, see Ferretto 1942, 189–195.

36. Marc'Antonio Boldetti, *Osservazioni sopra i cimiteri de' Santi Martiri ed antichi cristiani di Roma* (Rome, 1720); see Ferretto 1942, 206–211; many of the objects were in the collection of Cardinal Gaspare Carpegna, who later presented them to the Vatican. For Boldetti, see Nicola Parise, in *Dizionario biografico degli Italiani*, vol. 11 (Rome, 1969), 247–249.

37. Filippo Buonarroti, *Osservazioni sopra alcuni frammenti di vasi antichi di vetro ornati di figure trovati nei cimiteri di Roma* (Florence, 1716); Daniela Gallo, ed., *Filippo Buonarroti e la cultura antiquaria sotto gli ultimi Medici* (Florence, 1986); see also Haskell 1993, 123–127.

38. Anselmo Costadoni, "Dissertazione sopra il pesce come simbolo di Gesù Cristo presso gli antichi cristiani," in Angelo Calogerà, ed., *Raccolta d'opuscoli scientifici e filiologici*, vol. 41 (Venice, 1749), 249–335; this work is the source of the information and illustrations used by Thomaso Mamachi, *Originum et antiquitatum christianarum*, vol. 3 (Rome, 1751), 22–27. For Costadoni, see Paolo Preto, in *Dizionario biografico degli Italiani*, vol. 30 (Rome, 1984), 266–268.

39. Giovanni Battista Passeri, in Antonio Francesco Gori, *Thesaurus gemmarum antiquarum astriferarum*, vol. 3 (Florence, 1750), 221–232 (a chapter dedicated to Bottari); there are also essays on gems depicting the Good Shepherd, 3:82–96; and doves, 3:235–250; another essay is dedicated to Francesco Vettori, 3:253–278; Passeri also collected Christian lamps: see Maria Teresa Paleani and Anna Rita Liverani, *Lucerne paleocristiane conservate nel Museo Oliveriano di Pesaro* (Rome, 1984).

40. Filippo Venuti, "Sopra alcune antiche gemme letterate particolarmente greche," in *Saggi di dissertazioni accademiche pubblicamente lette nella Nobile Accademia Etrusca dell'antichissima città di Cortona*, vol. 7 (Rome, 1758), 35–47.

41. Paolo Maria Paciaudi, "A una antica iscrizione," in Angelo Calogerà, ed., *Raccolta d'opuscoli scientifici e filiologici*, vol. 42 (Venice, 1750), 371; and Paciaudi, *De sacris christianorum balneis* (Rome, 1758), xi–xii, and frontispiece.

42. Giovanni Bottari, *Sculture e pitture sagre estratte dai cimiteri di Roma*, vol. 3 (Rome, 1754), pl. at 19 and 82; see also 31, note 2.

43. Francesco de' Ficoroni, *Gemmae antiquae litteratae* (Rome, 1757), pl. XI; for Ficoroni, see also Eliana Fileri, "Disegni settecenteschi dall'antico del Gabinetto Nazionale delle Stampe e la collezione di antichità di Francesco de' Ficoroni," *Xenia* 21 (1991), 93–120; and Diana Scarisbrick, "Gem Connoisseurship: The 4th Earl of Carlisle's Correspondence with Francesco de' Ficoroni and Antonio Maria Zanetti," *Burlington Magazine* 129 (1987), 90–104.

44. Francesco Vettori, *Nummus aereus veterum christianorum* (Rome, 1737), contains the most information on early Christian gems, but see also *Sanctorum septem dormientium historia* (Rome, 1741); *De vetustate et forma monogrammatis sanctissimi nominis Jesu* (Rome, 1747); and *Dissertatio philologica qua nonnulla monimenta sacrae vetustatis* (Rome, 1751). Giovanni Morello, "Il Museo 'Cristiano' di Benedetto XIV," *Bolletino dei Monumenti Musei e Gallerie Pontificie* 2 (1981), 53–89.

45. Romolo Righetti, "Le opere di glittica dei musei annessi alla Biblioteca Vaticana," *Atti della Pontificia Accademia romana di Archeologia, Rendiconti* 28 (1954–1956), 279–348; I think the gems were not taken to France (as happened to so many works of art from Italian collections) but were dispersed in Rome; the few pieces still known appear to have survived on the Roman art market.

46. For the impressions, see Giancarlo Alteri, "La collezioni di calchi del Medagliere della Biblioteca Apostolica Vaticana," in *Miscellanea Bibliothecae*

Apostolicae Vaticanae, vol. 1, Studi e Testi 329 (Vatican City, 1987), 25. The two inventories are *Archivio di Biblioteca* 67, fols. 231–240 (1768); and 73, fols. 47–55 (1762).

47. Even in Pierre Jean Mariette, *Traité des pierres gravées* (Paris, 1750), which includes a comprehensive bibliography on ancient gems, there is only a summary awareness of the early Christian material, citing only Aleandro, Smetius, and Vettori.

48. Most of Marini's material on gems was drawn from published sources, but there are a few otherwise unknown examples, including a now lost gem from the Albani collection; see Dölger 1928, 266, fig. 33.

49. Giovanni Battista de Rossi, in Jean Baptiste Pitra, *Spicilegium Solesmense*, vol. 3 (Paris, 1855), 555–556, 576–577; this catalogue included the first publication of the lost Albani gem from the Marini manuscript (fig. 11).

50. Raffaele Garrucci, *Storia dell'arte cristiana nei primi otto secoli della chiesa*, 6 vols. (Prato, 1872–1880), 6:115–116, pls. 477.20 and 478.38; also 117, no. 47; see also Dölger 1928, 319–320, no. 47.

51. Edmond Le Blant, *Étude sur les sarcophages chrétiens antiques de la ville d'Arles* (Paris, 1878), 61–71; *Les sarcophages chrétiens de la Gaule* (Paris, 1886); "Une collection de pierres gravées à la Bibliothèque de Ravenne," *Revue archéologique* (1883), part 1: 299–308.

52. Edmond Le Blant, "Monuments chrétiens inédits," *Bulletin archéologique de l'Athenaeum Française* 2, no. 2 (February 1856), 9–11, pl. 1.

53. For George Frederick Nott, see *Dictionary of National Biography*, vol. 14 (London, 1922), 677–678; his gem collection was sold at auction at Sotheby's, 9 June 1842; for the Crucifixion gem, see Fernand Cabrol and Henri Leclercq, *Dictionnaire d'archéologie chrétienne et de liturgie*, vol. 6.1 (Paris, 1924), cols. 816–817, no. 53, fig. 4944; Garrucci 1880, 124, no. 16, pl. 479, no. 15; and see note 4 above.

54. Dalton 1901, xv, notes the acquisition of the cabinet of "the Abbé Hamilton;" oddly, a later publication, Ormonde Maddock Dalton, *Catalogue of the Engraved Gems of the Post-Classical Periods in the British Museum* (London, 1915), xiv, confuses James Hamilton with William Hamilton. The Hamilton gems were first published by Louis Perret before their purchase by the British Museum.

55. Articles appeared in the *Archaeological Journal* 26 (1869), 28 (1871), 37 (1880), and 43 (1886).

56. See Jeffrey Spier and Eleni Vassilika, "S. S. Lewis: Notes on a Victorian Antiquary and Contemporary Collecting," *Journal of the History of Collections* 7 (1995), 91–92; Charles W. King, *Antique Gems and Rings*, vol. 2 (London, 1872), 24–37; Churchill Babington wrote the entry on gems in William Smith and Samuel Cheetham, eds., *A Dictionary of Christian Antiquities*, vol. 1 (London, 1875), 712–723.

57. Adolph Furtwängler described the early Christian gems in Berlin only summarily in *Beschreibung der geschnittenen Steine im Antiquarium, Königliche Museen zu Berlin* (Berlin, 1896), nos. 8822–8830; and late antique gems received little attention in his otherwise masterful *Die antiken Gemmen*, vol. 3 (Leipzig and Berlin, 1900), 359–371. For Furtwängler's contribution to the study of gems, see Peter and Hilde Zazoff, *Gemmensammler und Gemmenforscher* (Munich, 1983), 203–230, and 227–228 for his lack of interest in late antique gems. The Christian gems in Berlin were published again by Oskar Wulff, *Königliche Museen zu Berlin. Beschreibung der Bildwerke der christlichen Epochen. Dritter Band. Altchristliche und mittelalterliche byzantinische und italienische Bildwerke* (Berlin, 1909), 232–235. The Berlin collection of magic gems appeared only recently: Hanna Philipp, *Mira et Magica* (Mainz am Rhein, 1986).

58. Dölger 1928, especially 262–337; and the extensive passage in vol. 5 (1943), 234–326.

59. Cabrol and Leclercq 1924, cols. 794–864, under "Gemmes."

60. Theodor Klauser, "Studien zur Enstehungsgeschichte der christlichen Kunst, 4," *Jahrbuch für Antike und Christentum* 4 (1961), 139.

61. Josef Engemann, *Reallexikon für Antike und Christentum*, vol. 11 (1979), 270–313, under "Glyptik," is unaware of most existing gems and their earlier history, and he even doubts the authenticity of many gems, despite the consistency of the finds over the last four hundred years. The chapter on Christian gems in Peter Zazoff, *Die antiken Gemmen* (Munich, 1983), 374–386, although including a long bibliography, is very incomplete. Paul Corby Finney, *The Invisible God: The Earliest Christians on Art* (New York and Oxford, 1994), 111–115 and 237, is one of the few to introduce gems into the broader context of early Christian art.

SASSANIAN GEMS AND EARLY ARMENIAN COINS

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SIGNET OF VARAHRÁN KERMÁN SHÁH.

Enlarged from the Original Gem.

[Actual Size, 1·25 × 1·05 inches.]

XIV.

SASSANIAN GEMS AND EARLY ARMENIAN COINS.

I TRUST that English numismatists will welcome into the pages of their journal a notice illustrating a collateral, but closely-allied branch of archæology—albeit pertaining to Oriental history—which has been suggested by the interpretation of the legends on that prominent example of gem engraving, the Duke of Devonshire's well-known amethyst.

The ordinary range of numismatic associations is indeed far surpassed in the surroundings of the signet of VARAHRÁN, *Kermán Sháh*, whose kingly individuality is preserved under the double aspect of exceptional elaboration of portraiture, and the illustrative record of the names and contrasted titular dignities of the imperial father, and locally regnant son, while the relic itself claims an enhanced interest as a recognised emblem of royalty, which has been worn on the person, and directly employed in the more important affairs of state by the potentate whose sign-manual it represented.

The Hebrew Scriptures[1] and the earlier Greek writers[2] alike attest the extended use of seals, in days of high antiquity, among the more civilised nations of the East, and

[1] Genesis xxxviii. 18, 25; xli. 42. Exodus xxviii. 9, *et seq.* 1 Kings xxi. 8. Nehemiah ix. 38. Esther iii. 10, 12; viii. 2. Job. xxxviii. 14. Jeremiah xxxii. 10, 44. Daniel vi. 17.

[2] Herodotus i. 195; iii. 128; vii. 69. Ctesias, apud Phot. lvii. 2—5. Xenophon Cyrop. viii. c. 2, § 16, 17.

contemporary monuments from time to time brought to light by modern discoveries, fully illustrate and confirm incidental tradition. With the advance of national culture the signets of all classes would naturally adapt themselves to more systematic classification, and equally seek a higher measure of imaginative device and artistic execution; hence the Sassanian period not alone presents us with abundance of the coarser stamps of the people at large, and many of the better specimens of the Glyptic art pertaining to the higher classes, but has preserved for our examination even the state seals of the empire, which are described by the home historians as having reached such an amount of elaboration in their designs and application, that the celebrated Naushirwán employed *four* distinct public seals, each with varied legends and devices, while Khusru Parviz amplified the division into *nine*, which severally represented a special department of government.[3]

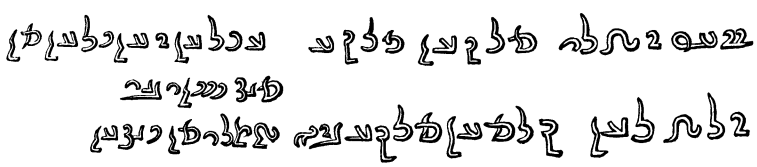
The signet I have now to describe was engraved during the reign of the great Sapor (2nd *Zu'laktaf*), the persevering and eventually successful adversary of Constantius, Julian, and Jovian; it bears his name, with the imperial title of "King of Kings," in conjunction with the less exalted designation of "King of Kermán," which had been bestowed upon VARAHRÁN, as executive ruler of the province from which the title was derived,

[3] "Eberwiz avait neuf sceaux qu'il employait dans les affaires du royaume. Le premier était un anneau de diamant dont le chaton était formé d'un rubis rouge sur lequel on avait gravé le portrait du roi; la légende portait les titres du roi; on l'apposait sur les lettres et les diplômes. Le second était un anneau d'or surmonté d'une cornaline sur laquelle étaient gravés les mots—*Khorásán Khudah* (King of Khorásán). Il servait aux archives de l'État."—*Masaudi*, Paris edit., vol. ii. p. 228.

and over which he presided in the lifetime of the father, and during the two subsequent reigns, till his own elevation to the Empire of Persia and its dependencies.

The profile of the youthful ruler on the original gem is, in its execution, an unusually perfect work of art, and though a certain amount of conventional Oriental treatment might be supposed to detract from its intrinsic merit, the portrait reproduces, in full distinctness, a man in the prime of life, endowed with singular beauty of feature, while even the sensuality of the eye is compensated by the marked vigour and determination of the face, that should so well become a king of Eastern races. The general details of the head-dress will be seen to follow the ancient models, an imitation the Sassanians especially affected as the boasted successors of the family of Darius.

The legend surrounding the portrait of the king (*omitted in the engraving*), pl. viii., is as follows:—



This legend may be transcribed and translated as follows:

ורהראן כרמאן מלכא ברי מזדיסני בני שהפוהרי מלכאן מלכא

ورهران كرمان ملكا بري مزديسني بغي شهپوهري ملكان ملكا

איראן ו אניראן מנוצחרי מן יזדאן

ايران و انيران منوچتري من يزدان

"Varahrán, king of Kermán, son of the Worshipper of Ormazd, the divine Sháhpúr, King of Kings of Irán and non-Irán, of celestial origin from God."

I will spare my readers any grammatical analysis of the legend, but it will be necessary to refer very briefly to the alphabet, which, singular to say, appears in the full completeness of its eighteen letters in the inscription on the gem. The Sassanian Lapidary alphabet given in vol. xii. of the Num. Chron. (p. 91), may now be amplified by the ordinary ס, which occurs in Mazdisen, a letter which affected an earlier outline in the Haji Abád inscription (Num. Chron. xii., p. 73), though its ordinary form was fully recognised on the Sassanian coins, a shape which it is now found to follow in the Paï Kuli inscription.

The discriminative shapes of the *short* ׳ *medial,* and ׳ *final,* are well marked in the writing on the seal, and the once doubtful value of the final letter in ברי[4] has

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[4] M. Francois Lenormant, in an article "on the Pehlvi Alphabet," printed in the *Journal Asiatique* of September, 1865, has paid me the compliment of quoting largely from my early papers in the Journal R. A. S. xii. p. 253, and in the Num. Chron. xii. p. 68. The author would have escaped some errors, and perhaps have done me more justice, had he been cognisant of the existence of my later studies bearing upon the same subject, which have appeared in the Journal R. A. S. vol. xiii. 373, and in my edition of Prinsep's Essays. He certainly, under such advanced knowledge, might have spared himself the futile effort of reverting to De Sacy's reading of ברמן (si inutilement contesté par M. Thomas), when it had been proved to demonstration that the supposed Pehlvi compound מן, he desired to rehabilitate, was nothing but the old Phœnician 𐤌 incorporated into the Sassasian alphabet for the purpose of expressing the sound of a second or *long* I.

As regards the general epoch assigned by me to this section of the sub-Parthian kings, which M. Lenormant desires to antedate considerably (J. A. p. 205), this may be a fair subject for inquiry under the new light obtained from the Armenian coins, especially as I now altogether abandon my original reading of the name of PAPAK, and transliterate the legend on the more common coins (Nos. 5, 6, 7, Plate, p. 68, vol. xii. Num. Chron.) as דאריל מלכא ברי יתורדת מלכא.

for some time past been freely recognised in the long ʾ The Parsi î = ي the *Yái-Ma'rúf* of modern Persian.

Those who are curious in such matters will not fail to remark the Aryan characteristic disregard of the true powers of ל L and ר R; the former letter is used in its right phonetic value in Ma*l*ka, while it is made to do duty for an R in Va*r*ah*r*án, &c., notwithstanding that the proper letter for R (a sign answering also for V) is employed in Ba*r*í.

I am anxious to avail myself of this opportunity to advert to the sub-Parthian series of coins, specimens of which were given in the Num. Chron., vol. xii. p. 68,

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The imperfection and uncertainty of the forms of the legends, which are at times absolutely reversed, scarcely admits of any very positive determination of the leading name of *Dárıl*, which may be rendered *Dakil*, or at times transcribed as *Daráil* and *Darali*, but the patronymic *Ithúrdat* [which M. Lenormant makes into "*Ithoucapheth*"] occurs on earlier coins, and is preserved amid the more popular names in the later Pehlvi (see *Athúrdád*, Gem, Nos. 65—68, &c., J. R. A. S. xiii.)

I may add in connection with the nomenclature on the later Parthiancoins, that in addition to the names of מתרדת, *Mithridates* (coin in B. M.) ולגש, *Vologeses*, חרתבי, *Artabanes*, and a doubtful *Artavasdas* to be found on the Imperial series, I have met with the name of Tiridates, תרדת, on an Armenian coin, and a like designation among the kings named in the *Pái Kúli* Bilingual Inscriptions copied by Sir H. Rawlinson (*Athenæum*, 17 March, 1866. Jour. Geog. Soc. ix. 30. The Sassanian text, in which alone it appears, gives the name as תילדת מלכא).

In conclusion of this somewhat discursive note, I may perhaps be permitted to cite a curious confirmation of my late speculations in the Num. Chron. (N. S., iv. p. 210) regarding the derivation of the name *Kodes*, in its Greek form, from the Persian *Kobád*. General Cunningham has lately brought home two coins of the Kodes type, one of which bears in full, in Chaldæo-Pehlvi letters, the name נואת, *Guát*. The second has the Greek transcript on one surface and the commencement of [נואת] on the other.

as, by the light of a more complete decipherment of the legends on an earlier class of money, I am now in a position to arrange a very comprehensive sequence of mintages pertaining to the kingdom of Armenia. Mr. Vaux some years ago published in our journal (xviii. 143), three coins of a very unusual type, with legends, in what were supposed to be Phœnician characters; too close an adherence to the requirements of Phœnician palæography alone defeated a satisfactory interpretation of these legends, which, by a more free concession to the dominance of an archaic type of Chaldæo-Pehlvi, may now be deciphered and explained, and the coins themselves appropriated to Artaxias,[5] the Satrap of Armenia, who in 189—188 B.C. threw off his allegiance to Antiochus the Great, and founded the flourishing kingdom which eventually descended to the Armenian branch of the Arsacidæ.

I need not reproduce the previous transliterations, but content myself with giving the transcripts I now obtain, from a re-examination of the coins themselves—

Plate. Vol xviii. p. 139—			
No. 6	—	ורתד	בחדת
No. 7	ארסנך	ורתדרשיג	בגדי
No. 8	ארס	ורתדרשי	רתוד
New Coin in the B.M. .	—	ורתדרשיג	רתודאת
			בד

I understand the opening word on Nos. 6 and 7, notwithstanding the minor variations in the two examples of *Bahdat* and *Bagdi*, to mean simply the "divine"—The *Baga* of the cuneiform inscriptions,[6] and the *Bagi*

[5] Justin, xlii. c. ii. Strabo, xi. c. xiv. §5—15. Polybius, xxvi. 6. St. Martin, L'Arménie, i. 286—490.

[6] Rawlinson, J. R. A. S., x. 93.

of the gem legend—a term so frequently associated with royalty in the East. The name of *Ortadarsheg*, or *Artadarsheg*, certainly does not coincide literally with the ordinary Greek transcription, but both the Greek and Latin reproductions of the designation are uncertain, and we may fairly assume that the coin orthography gives the true version of the Armenian name of "*Ardaschas.*"[7] The concluding term *Arsagak*, I imagine to be the title, which seems, as a compound *titular* name, to have a root in common with the generic designation of the Arsacidæ.[8] The *Ratu dát bad*, on the new piece (if such be the correct transcription), appears to connect itself with the Zend רתו, Persian رد, an epithet frequently applied to Zoroaster,[9] while the *dat*, "gift," and *Bad* or *Pat*, "lord," are simple and obvious in their meaning. On subsequent coins this combination is replaced by $\frac{\text{ור}}{\text{בד}}$ . . . . . *Ur-bad*, "lord of fire," the modern هربد *Hirbad*.

Of identical types, but slightly altered legend, succeeds a coin bearing the name of ורתהדיסשתר, *Ortahdisashtar*, which may be attributed to Artavasdes, the son and successor of Artaxias.

The varied fortunes of the kingdom of Armenia are broadly marked in the progressive typical details of her coinage, passing from the original obverse designs of her own princes, tinged, as they were, with home treatment, to purer Greek art, which again had to cede to the

[7] St. Martin, i. 409.

[8] Artaxerxes Mnemon bore the name of *Arsaces* before he came to the throne. The names of *Arses*, *Arsames*, *Arsamenes*, and *Dadarses*, point to a similar derivation, which is probably the Scythic root *irs*, "great" (Norris, J. R. A. S., xv. 205), hence *irs-saka*.

[9] Hyde, p. 317; Speigel, 443.

more material presentations of Roman craftsmen, to fall at last to Parthian barbarism.

The reverse devices are more constant, for, after the first effort of partial imitation of the current models of the Seleucidæ, Artaxias definitively adopted the Fire Temple, which, with but slight modifications of its accessories, remained to the end Armenia's numismatic emblem.

The first change from the normal type is marked by a narrowed surface, and a deeper impression on the coin, associated with a Grecised adaptation of the Scythic head-dress into the form of a helmet, surmounted by the Roman eagle. The helmet and the head it covers then degenerate into a coarser Roman design, sunk on a less perfectly modelled die; and on the reverse a bird is introduced opposite to the single Magus. These coins seem to be intentionally wanting in legends.

Next in order succeed a series of coins of very similar fabric, but a crescent takes the place of the eagle on the helmet. These pieces bear legends in the local character, but the letters are crudely formed, and irregularly distributed; among other imperfectly legible designations, they retain in two instances the name of יתורדת, *Itúrdat*, "*gift of fire*," probably the original compound, which has been perverted into the modern versions of "*Artovart, Ardoates*," &c. The name is for the first time followed by the title of מלכא, "king."

And, finally, coins are found with an identical reverse, combined with a Parthian head imitating the profile of Tiridates I. (Arsaces II.), and bearing the same name of תרדת, Tirdat, with the now conventional title of *Malka*.

EDWARD THOMAS.

THE JEWELS IN THE MOSAICS OF ANTIOCH. SOME VISUAL EXAMPLES OF LATE ANTIQUE AND BYZANTINE LUXURY*

SILVIA PEDONE**

Several well-known mosaics from Antioch give us the opportunity to address some problems in representation of women in Late Antiquity and Byzantine arts. Starting from the analysis of this female figures we will assess the documentary relevance of Antioch mosaics with respect to some objects of conspicuous consumption, as we know them specially thanks to the coeval goldsmith's production.

THE mosaics panels from Antioch excavated in the Thirties and representing personifications such as *Khresis*, *Megalopsychia*, *Bios*, *Tryphe*, *Dynamis*, *Soteria* and *Apolausis* are, incidentally, an emblematic case of imagery of luxury in Late Antique and Byzantine age.[1] To date the extraordinary repertory of floor and wall mosaics has been studied preferably from an archaeological point of view: we can remember here the excavation reports of Antioch-on-the-Orontes published between 1934 and 1972,[2] the standard monograph of Doro Levi of 1947,[3] the interesting essay of Irving Lavin[4] (1963), and the more recent contributions of Sheila Campbell[5] (1988), Claudia Barsanti[6] (1994),

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[1] There is a number of studies devoted to mosaic representations of personifications of abstract concepts as evidence of taste, fashion and other features of the Antiochian society during Roman, Early Byzantine and Justinianic age. Some of these studies are of historical and sociological concern, others mostly deal with archaeological records. Among the latest studies see: WILLIAM N. MILLIKEN, *Byzantine jewelry and associated pieces*, «Bulletin of the Cleveland Museum of Art», 34, 1947, pp. 166-175; JACK OGDEN, *Ancient Jewellery: Interpreting the Past*, Berkeley-Los Angeles, University of California Press, 1992, in part. pp. 56-61; BARBARA DEPPER-LIPPITZ (ed.), *Die Schraube zwischen Macht und Pracht. Das Gewinde in der Antike*, Jan Thorbecke, Sigmaringen 1995; ISABELLA BALDINI LIPPOLIS, *L'oreficeria nell'impero di Costantinopoli tra IV e VII secolo*, Edipuglia, Bari 1999; and AIMILLA YEROULANOU, *Diatrita. Gold Pierced-Work Jewellery from the 3rd to the 7th century*, Benaki Museum, Athens 1999 (see older bibliography); *Die Kunst der frühen Christen in Syrien*, Verlag Philipp von Zabern, Mainz an Rhein 2008; CHRIS ENTWISTLE, NOËL ADAMS (eds), *"Intelligible Beauty": Recent Research on Byzantine Jewellery*, London, The British Museum Press, 2010; *Transition to Christianity. Art of Late Antiquity AD*, Athens, 2011.

[2] *Antioch On The Orontes II: The Excavations of 1933-1936*, edited by R. Stillwell, Princeton 1938; *Antioch On The Orontes III: The Excavations of 1937-1939*, edited by R. Stillwell, Princeton 1941.

[3] DORO LEVI, *Antioch Mosaic Pavements*, Princeton 1947; ID., *Early Christian and Byzantine Art: an Exhibition held at the Baltimore Museum of Art*, April 25-June 22 1947, edited by D.E. Miner, Baltimore 1947.

[4] IRVING LAVIN, *The Antioch Hunting Mosaics and Their Sources: A Study of Compositional Principles in the Development of Early Medieval Style*, «Dumbarton Oaks Papers», XVIII, 1963, pp. 187-189, 252-254.

[5] SHEILA CAMPBELL, *The Mosaics of Antioch*, in *Subsidia Mediaevalia 15, Corpus of Mosaic Pavements in Turkey*, Toronto 1988.

[6] CLAUDIA BARSANTI, *I mosaici di Antiochia: riflessioni sulla documentazione archeologica superstite*, in Atti del I Colloquium dell'Associazione Italiana per lo Studio e la Conservazione del Mosaico (AISCOM),

Fatih Cimok[7] (2000) and Christine Kondoleon[8] (2000; 2003). But the thoroughness of these studies notwithstanding, we are still wanting in more detailed surveys of the Antioch mosaics as a source of information about material conditions of daily life, taste, habits and so on.

In the present paper I want to make an attempt in this documental direction, even if a very brief one, in a line recently opened up by researches like those of Claudine Dauphin,[9] Katherine Dunbabin[10] and Janet Huskinson.[11] So I will concentrate my attention on the representation of luxury as witnessed through the features of depicted clothing and jewels.[12] Furthermore, such an approach could prove useful also about questions concerning the chronology and dating of jewels themselves, usually isolated and decontextualized works. As already noted by Barsanti, the Antioch mosaics, ascribable to one single school and spanning over four centuries (from 2nd to 6th century a.C.), in a continuous connection with Hellenistic world, preserve precious information about life and culture of the ancient city.[13]

In the first place, and from a cultural point of view, it's interesting to observe that the richness and the detailed depiction of opulent jewels show a fondness for luxury products that seems not completely in keeping with the image of a society «weary of representing in art a world it did not like, and seeking solace in transcendental ideas, and artistic abstractions as their embodiment», as Charles Rufus Morey famously put it in his pioneering essay of 1938[14] – an image then further elaborated with scholarly perseverance by Glanville Downey.[15] To be true, in the floor mosaics of Antioch we find the remarkable

Ravenna, 29 Aprile-3 Maggio 1993, a cura di R. Farioli Campanati, Edizioni del Girasole, Ravenna 1994, pp. 579-607. For she most recently paper on this aim, see: EAD., *The Fate of the Antioch Mosaic Pavements: Some Reflections*, «JMR», 5, 2012, pp. 25-42.

[7] FATIH CIMOK, *Corpus of Antioch Mosaic: A Corpus*, Istanbul, A. Turizm Yayinlari, 2000.

[8] CHRISTINE KONDOLEON, *Antioch the Lost Ancient City*, Princeton, Worcester Art Museum, 2000; EAD., *Reading Myths on the Floor of Antioch: Where Do They Leads Us?*, in *Ancient Roman Mosaics. Path Through the Classical Mind*, Acta of the Conference Held in March 2000 in Luxembourg, edited by C.M. Ternes, Luxembourg 2003, pp. 45-59.

[9] CLAUDINE M. DAUPHIN, *Mosaic Pavements as an Index of Prosperity and Fashion*, «Levant. The Journal of the Council for British Research in the Levant», XII, 1980, pp. 112-134.

[10] KATHERINE M. D. DUNBABIN, *Mosaics of the Greek and Roman World*, Cambridge U.K, Cambridge University Press, 1999; EAD., *The Mosaics of the Roman North Africa: Studies in Iconography and Patronage*, Cambridge U.K., Cambridge University Press, 1999.

[11] JANET HUSKINSON, *Surveying the Scene: Antioch Mosaics Pavements as a Source of Historical Evidence*, in *Culture and Society in Late Roman Antioch*, edited by Isabella Sandwell, Janet Huskinson, Oxford, Oxbow, 2003, pp. 134-152.

[12] We have no complete survey of jewel production, but thanks to museum collections and several large exhibitions held in recent years we can have a good idea of the historical relevance of these extraordinary pieces. See: ROBERT CORMACK, MARIA VASSILAKI (eds), *Byzantium 330-1453* (London, Royal Academy of Arts 25 October 2008-22 March 2009), Graphicon, London 2008, in part. see the contribution of AIMILIA YEROULANOU, *At Home. Jewellery and Adornement*, pp. 164-192; and *De Byzance à Istanbul. Un port pour deux continents* (Paris, Gran Palais 10 octobre 2009-25 jenvier 2010), Paris, Édition de la Réunion des musées nationaux, Paris 2009, in part. pp. 156-161; HENRY MAGUIRE, *Personal Adornment: Glory, Vainglory, and Insecurity*, in *Transition to Christianity*, cit., pp. 43.47.

[13] CLAUDIA BARSANTI, *I mosaici di Antiochia*, cit., p. 580.

[14] CHARLES RUFUS MOREY, *The Mosaics of Antioch, London*, New York, Toronto 1938.

[15] GLANVILLE DOWNEY, *Personifications of Abstract Ideas in the Antioch Mosaics*, Tapa, 1938, ID. *Ethical*

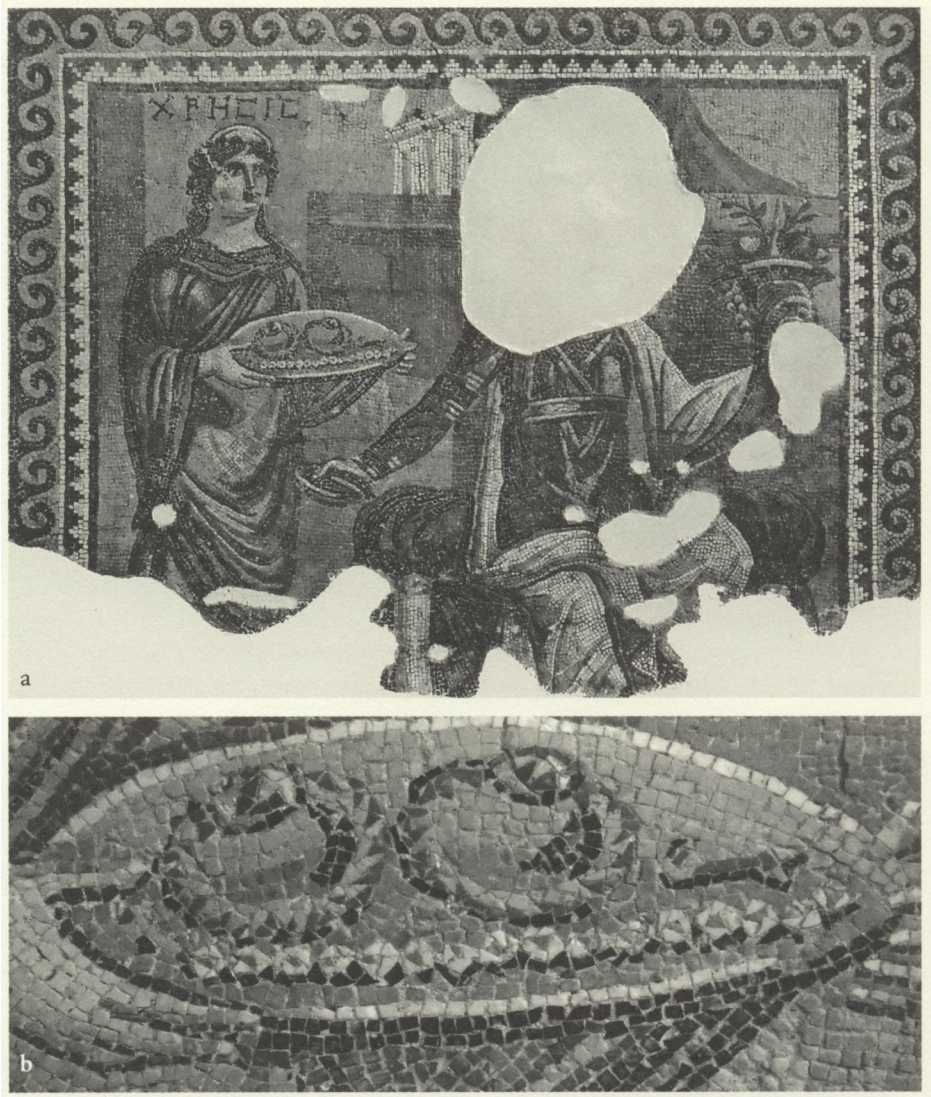

FIG. 1. a) The Mosaic pavement with *Chrisis* from Daphne (Harbiye), 4th century A.D., Inv. no. 872a, b) Detail. Hatay Archaeological Museum (Photo S. Pedone).

presence of personifications of abstract ideas, concerning philosophical or philosophical-religious concepts (such as *Megalopsychia* or *Soteria*), but as the

Themes in the Antioch Mosaics, «Church History», 10, 4, 1941, pp. 367-376; ID., *The Pagan Virtue of Megalopsychia in Byzantine Syria*, in «Transactions and Proceedings of the American Philological Association», 76, 1945, pp. 279-286. On this items see: EMMA STAFFORD, JUDITH HERRIN (eds.), *Personifications in the Greek World: From Antiquity to Byzantium* (Publications for the Centre for Hellenic Studies, King's College London, 7), Surrey, UK, Ashgate Press 2005.

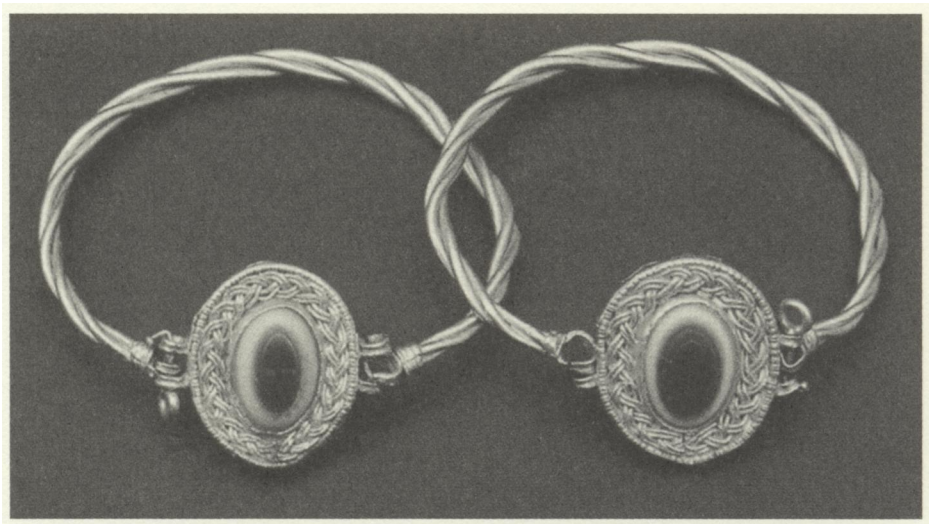

FIG. 2. Gold Bracelets with Sardonic, 5th-6th century, Munich, Prähistorische Staatssammlung.

personifications are represented here mainly as female figures, according to the traditional iconography, we are struck also by the very realistic and palpable treatment of diadems, necklaces, earrings, armlets, that have been considered, on the other hand, an «index of prosperity».[16] Indeed, we may even imagine that some of these women – although representing ethical concepts – are dressed and bejeweled like the wealthy matrons against which Chrysostom thundered from Antioch pulpits.[17] Nor it's surprising that the popular piety keeps memory of a Saint Andronicus that was silversmith in the city.[18]

The figures we are going to examine are set in the central space of richly decorated mosaic carpets, or they appears in narrative scenes, in many cases identified by label and inscriptions. The first example I want to consider (FIG. 1) is the panel from the suburb of Daphne, with the personification of *Chresis* ('Acquired Wealth'), in which a woman gives a tray with some jewels – two bracelets, a necklace and a brooch – to another seated figure, now partly destroyed and maybe identifiable with *Ktesis*, the personification of 'Foundation', provided with a cornucopia.[19] *Chresis* is richly dressed with a golden cloak trimmed with brown bands, she wears pearl earrings and a simple golden diadem. On her tray we see two bracelets adorned with a big garnet and

[16] CLAUDINE M. DAUPHIN, *op. cit.*

[17] ISABELLA BALDINI LIPPOLIS, *op. cit.*, p. 238; in particular on John Chrysostom and the city of Antioch, see: JACLYN MAXWELL, *Christianization and Communication: John Chrysostom and Lay Christians in Antioch*, Cambridge, Cambridge University Press, 2006.

[18] ISABELLA BALDINI LIPPOLIS, *op. cit.*, p. 238.

[19] FATIH CIMOK, *Corpus*, cit., pp. 94-95.

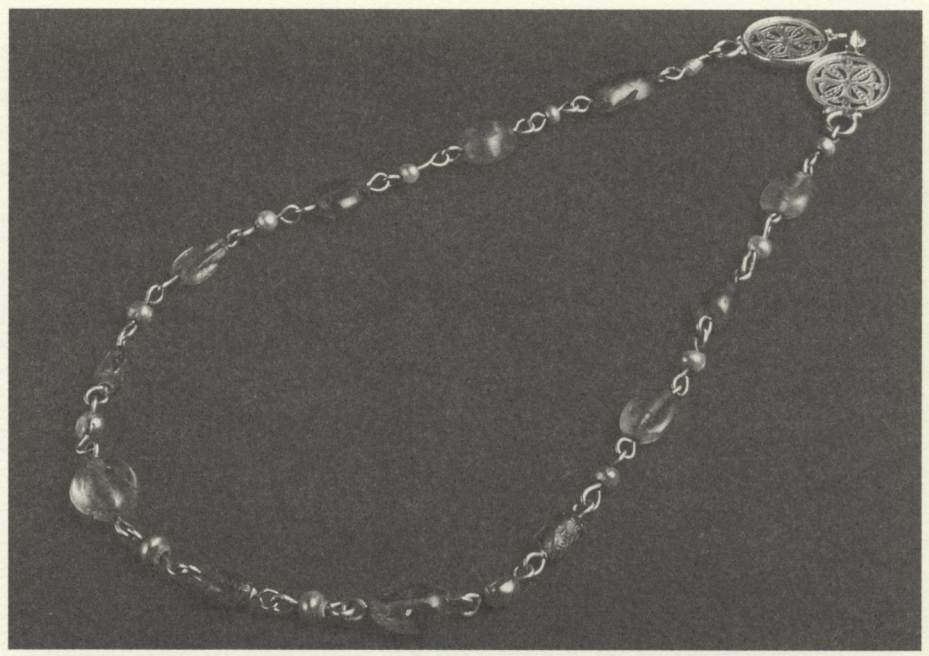

FIG. 3. Necklace from Byzantium, 6th century, Baltimore, The Walters Art Museum.

gold clasp: this is a typology widespread throughout the Mediterranean region between 3rd and 7th century, with a number of versions, in the matter of decoration and clasp devices. The bracelets now in Munich, datable to 5th-6th century, are specially close to the mosaic exemplars, both in the twisted form and in the clip with a gem, a sardonic in this case (FIG. 2). The necklace, however, with its simple string of pearls, has no precise comparison, perhaps also due to the extreme perishability of pearls. As to clasps, nevertheless, we can find some resemblance with roughly contemporary necklaces like that of Baltimore Museum of Art[20] (FIG. 3), or that one from Mytilene Treasure, now in Byzantine Museum in Athens[21] (FIG. 4).

An extraordinary example of wealthy femininity appears in the mosaic representing *Soteria*, found in the Bath of Apolausis and now in the Antakya Museum[22] (FIG. 5). The octagonal panel, formerly part of a wider star-shaped composition, presents in the middle the half-length figure of a young buxom girl, with long loose hair, slightly turned leftward. *Soteria* wears an alluring yellow-brownish dress, leaving her right shoulder bare. She has a thin golden

[20] AIMILLA YEROULANOU, *Diatrita*, *op. cit.*, p. 141, fig. 254, p. 213, cat. no. 53; *Byzantium*, *op. cit.*, pp. 170-171, 410, cat. no. 124. For this kind of necklace cfr. *ivi*, p. 48, cat. no. 63; p. 50, cat. 63.

[21] AIMILLA YEROULANOU, *Diatrita*, cit.; EUGENIA CHALKIA, *Artifacts from the Kratigos-Mytilene Treasure*, in *Transation to Christianity*, cit., pp. 104-105.

[22] FATIH CIMOK, *Corpus*, cit., pp. 234-235.

FIG. 4. a) Necklace, Treasure from Mytilene
b) Detail. Athens, Byzantine and Christian Museum.

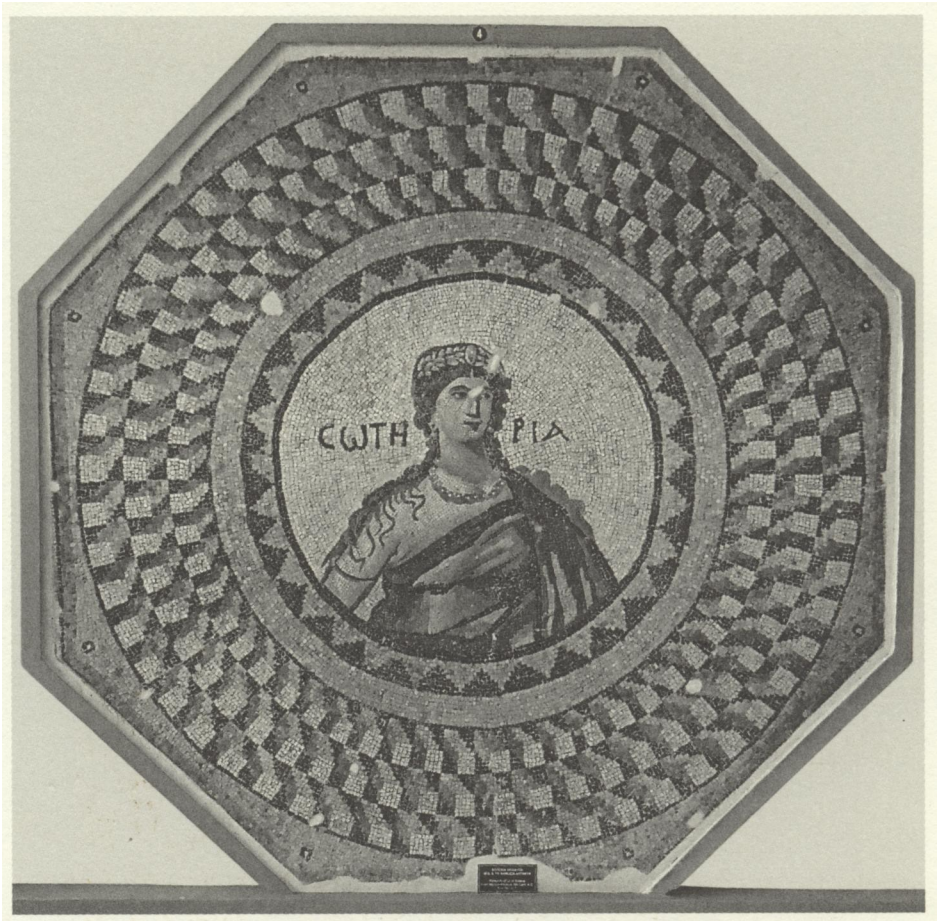

FIG. 5. Personification of *Soteria*, 5th century, Inv. no. 977, Hatay Archaeological Museum (Photo S. Pedone).

armlet, and a precious belt tightens the garment just under her breast. On her head a golden wreath-shaped diadem with a central gem stands out. Furthermore, she wears also dangling earrings and a conspicuous pearl necklace. As to diadem, the more exact matching is possible with a kind of product chiefly used in funerary contexts, as testified by a fine golden crown in the Kunsthistorische Museum of Wien (FIG. 6), very similar to that of Antioch mosaic. We can make useful comparisons also for earrings, of a typology widespread throughout Roman and Late-Roman world, as we can see here in this selection of examples, characterized by a golden ring with a drop-shaped pendant[23] (FIG. 7). The armlet recalls a very common type, like that from

[23] *Byzantium*, *op. cit.*, pp. 186, 417, cat. no. 154; cfr. AIMILLA YEROULANOU, *Diatrita*, *op. cit.*, p. 126, fig. 225, cat. no. 1779; SOFIA GEROGIRGI, *Earrings*, in *Transition to Christianity*, cit., n. 64, p. 112.

FIG. 6. Golden Diadem, Wien, Kunsthistorisches Museum.

FIG. 7. Earrings, 5th-6th century, Athens, Benaki Museum.

Mytilene Treasure[24] (FIG. 8), in which there is also a chainlet belt perhaps to be worn like the belt of *Soteria*.

Passing now to the great mosaic from Yakto, datable to the second half of vth century, we have to speak about the central clypeus with the personification of *Megalopsychia*[25] (FIG. 9). The full frontal young woman – in this case much more sober than *Soteria* – offers a fruit basket, and wears a tunic with sleeves heavily decorated on the neckline with precious gems. A big golden

[24] AIMILIA YEROULANOU, *At Home. Jewellery and Adornment*, in *op. cit.*, p. 180, no. cat. 137; *Byzantium*, *op. cit.*, pp. 180, 413, cat. no. 137. For the same type of gold bracelet cfr.: *De Byzance à Istanbul*, *op. cit.*, p. 156, fig. 2.

[25] FATIH CIMOK, *Corpus*, cit., pp. 251-274.

FIG. 8. Bracelets from Mytilene Treasure, 6th-7th century, Athens, Byzantine and Christian Museum.

FIG. 9. The Yakto mosaic with *Megalopsychia*, from Yakto (Harbiye), 5th century, Inv. no. 1016, Hatay Archaeological Museum (Photo S. Pedone).

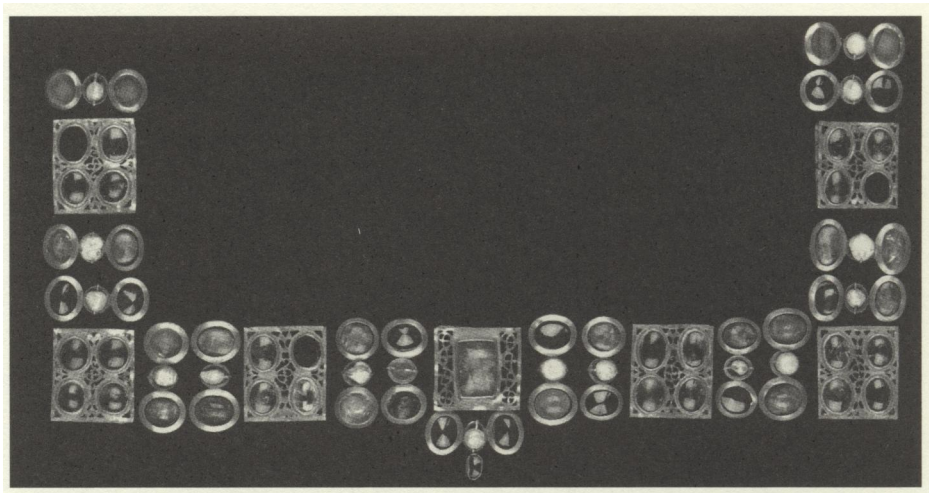

FIG. 10. Necklace with precious stones, 4th century, Athens, Museum of Cycladic Art.

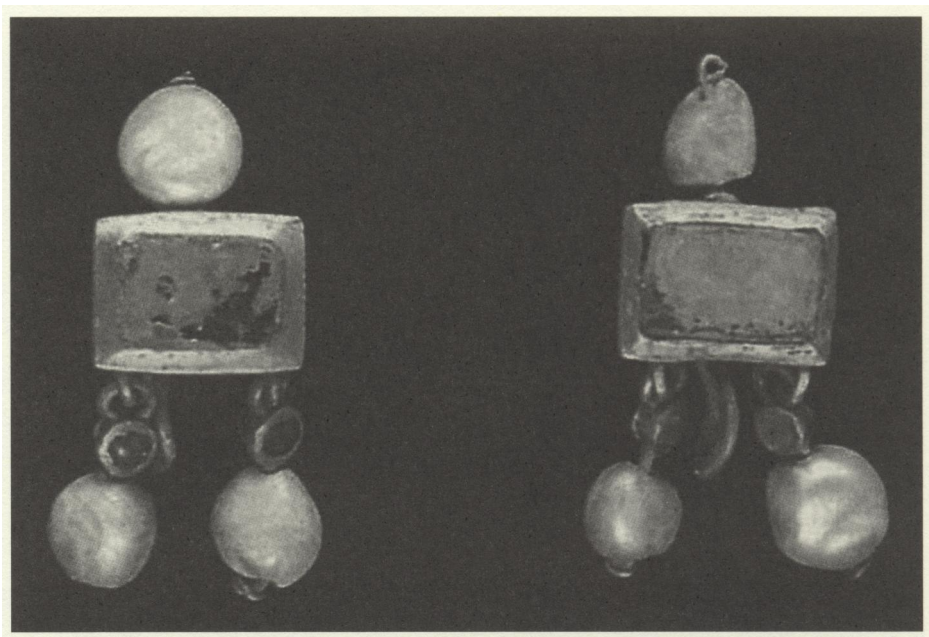

FIG. 11. Pair of earrings with pearls, Athens, Benaki Museum.

bracelet fixes the sleeve on the wrist, the shoulder are covered by an ample red cloak. The hairdressing with central parting is fasten by two trefoil combs with a little pearl diadem. In the Cycladic Museum of Athens is held a splendid jewel dating to 4th century and designed for the decoration of the neck-

line of a dress[26] (FIGS. 10-11). But this is a kind of ornamentation very common in Late-Antique and Byzantine fashion,[27] (FIG. 12) as attested – amongst other works – by the well-known panel with Theodora and her court in St Vitale in Ravenna (FIG. 13).

It's interesting to note that in the great Yakto mosaic even the female figure of the marine Thiasos emerging from the sea with a held in her hands is adorned with jewels[28] (FIG. 14). The flourishing woman, provided with strange red crab-like pincers (or coral branches?) and her 'wild' nature notwithstanding, wears a couple of big leaf-shaped dangling earrings. These jewels are comparable with works from Cesarea and Mersin, dating to 4th and 6th century, respectively[29] (FIG. 15a-b).

FIG. 12. *Piperatorium* (pepper-pot), from the Hoxne hoard, 5th century ca., London, British Museum.

Another personification in the Antioch repertory is that of *Ktisis*[30] (FIG. 16), conceived according to an iconography that we know through some marvelous mosaics in Mediterranean area, from Cyprus to Syro-Palestinian region. One of these was found in the Antioch house of Ge and the Seasons and is now in the Worcester Art Museum. The figure, inserted in an irregular octagon, is set in the middle of a geometric carpet mosaic on

[26] For similar exemplaries AIMILLA YEROULANOU, *Diatrita*, *op. cit.*, p. 90, fig. 151, cat. no. 31, p. 40, figs. 50-52, cat. no. 32-34; *Byzantium*, *op. cit.*, pp. 168, 409, cat. no. 120; MARIA DHOGA-TOLI, *Necklace*, in *Transition to Christianity*, cit., n. 70, p. 116.

[27] See for example the pepper-pot from the Hoxne Treasure (5th century AD), now in the British Museum of London, discovered in the 1992. This *piperatorium* is shaped as a Roman Empress (identified with Constantine's mother, Elena), depicted in a hieratic pose, with detailed clothing, necklace and hairstyle. This necklace shows a striking similarity with that in the Museum of Cycladic Art of Athens (see here FIG. 10). ANNE L. MCCLANAN, *Representations of Early Byzantine Empresses: Image and Empire*, New York, Palgrave Macmillan, 2002, p. 60; CATHERINE JOHNS, *The Hoxne Late Roman Treasure: Gold Jewellery and Silver Plate*, London, The British Museum Press, 2010, p. 7.

[28] FATIH CIMOK, *Corpus*, cit., pp. 248-250.

[29] For this particular shape see, also, a pair of earrings (6th-7th century) in the Historical Museum of Herakleion; the pendent on the necklace, dated 6th century, now in the Metropolitan Museum of New York and a necklace preserved in the Hermitage Museum of St. Petersburg: cfr. AIMILLA YEROULANOU, *Diatrita*, *op. cit.*, p. 37, fig. 44, cat. no. 23; p. 75, fig. 126, cat. no. 469; p. 124, figs. 221, 223, cat. nos. 26, 135.

[30] *Ivi*, p. 281.

FIG. 13. Mosaic panel with Empress Theodora and her retinue, Ravenna St Vitale (Photo S. Pedone).

white background. The woman is adorned with few but elegant jewels: a gemmed diadem and dangling earrings, practically the same dress of another personification of *Ktisis* depicted in a more fragmentary panel from Antioch[31] (FIG. 17). Much more richly dressed up is, however, the *Ktisis* of the Metropolitan Museum of New York, that seems to reveal, on stylistic ground, a Palestinian provenance. Besides the diadem and earrings, she wears two necklaces and a tunic trimmed with precious gems. A pair of gold earrings with stones is preserved in the same museum (FIG. 18).

We can close our series with the personification of *Epikosmesis*[32] (FIG. 19), from Antakya Archaeological Museum. The panel is of a lower quality and represents a rigidly frontal woman elegantly attired, holding the overhangs of her shawl on her breast. The hieratic composure of the figure recalls the

[31] *Ivi*, p. 295. [32] FATIH CIMOK, *Corpus*, cit., p. 301.

FIG. 14. The Yakto mosaic, particular of figure of the marine Thiasos, 5th century, Inv. no. 1016, Hatay Archaeological Museum (Photo S. Pedone).

imagery of aristocratic Byzantine models, like that of Juliana Anicia (FIG. 20) on the frontispiece of Dioscorides' *Materia Medica*, or the delicate sculpture in the Castello Sforzesco in Milan, now commonly considered a portrait of empress Theodora (FIG. 21). The diaphanous beauty of our female personi-

FIG. 15. a) Particular of necklace from Mersin;
b) two jewels from *Treasures of Cesarea of Palestine*, Milan, Archaeological Museum.

FIG. 16. Personification of *Ktisis* from the House of *Ge* and the *Seasons*, end of 5th century, Worcester Art Museum.

fication is enriched by a refined *parure* of jewels: a gemmed crown, stud earrings, and a conspicuous necklace with pendants, or '*maniakon*', in which we can recognize famous models, like those now in Berlin or Budapest[33] (FIGS.

[33] AIMILLA YEROULANOU, *Diatrita*, *op. cit.*, p. 43, fig. 55, cat. no. 37; *Byzantium*, *op. cit.*, pp. 168, 409, cat. no. 121.

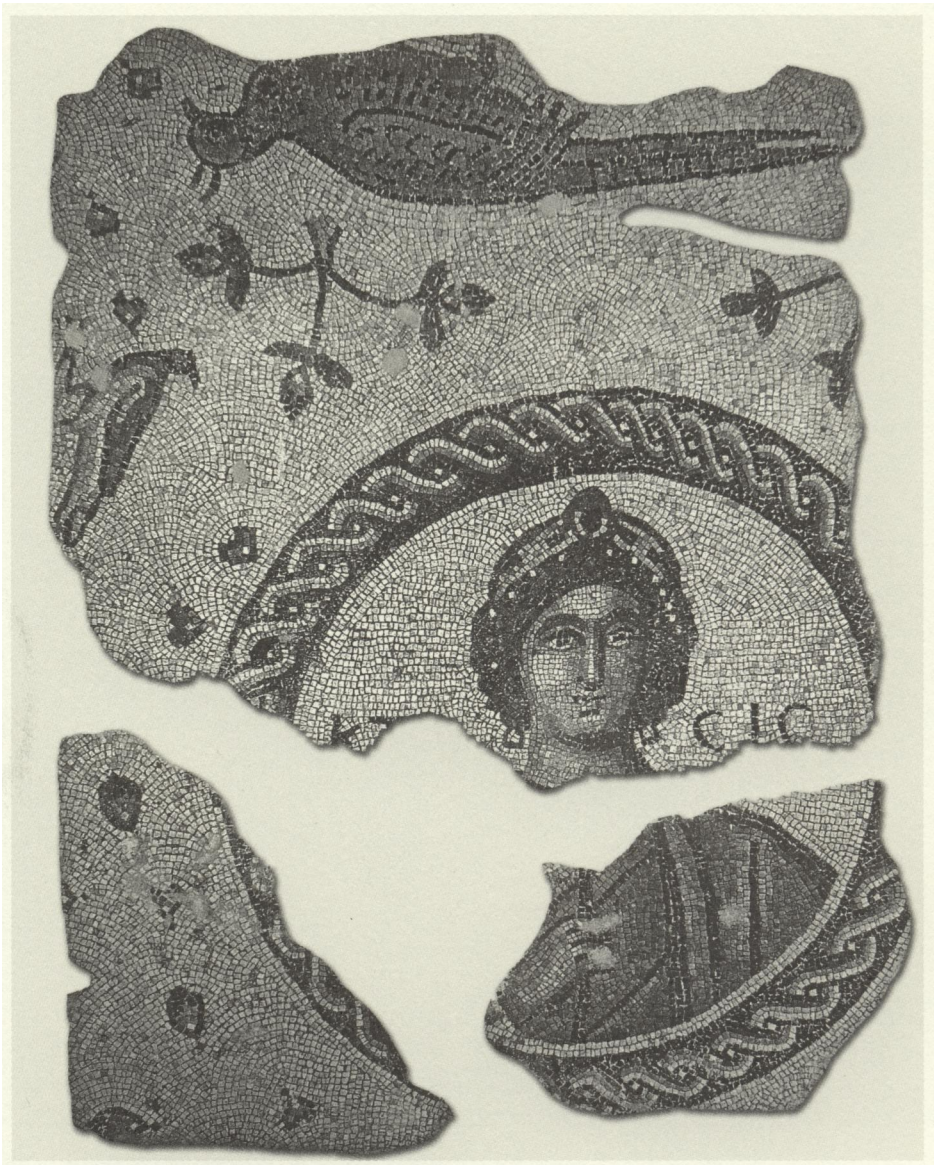

FIG. 17. Personification of *Ktisis* from Antakya, 6th century, Inv. no. 836a, Hatay Archaeological Museum (Photo S. Pedone).

22-23). A similar *maniakon* is visible also in another Antioch mosaic, representing an unknown personification[34] (FIG. 24), also from the so-called house

[34] FATIH CIMOK, *Corpus*, cit., p. 282.

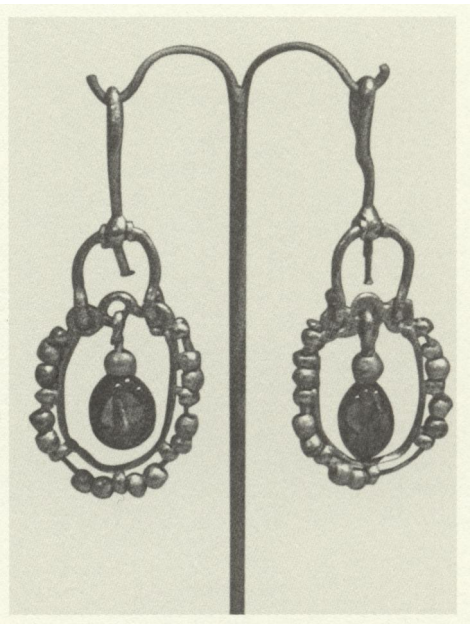

FIG. 18. Gold earrings with stone,
New York, Metropolitan Museum.

FIG. 19. Personification of *Epikosmesis* from Antakya, 5th century, Inv. no. 11092,
Hatay Archaeological Museum (Photo S. Pedone).

FIG. 20. Juliana Anicia on the frontispiece of Dioscorides' *Materia Medica*.

of *Ge* and the *Seasons*. We have here again the irregular octagon in the middle of the carpet pattern of the pavement, and the typical set of jewels.

In conclusion, we may observe how 'rich', in all the senses of the term, is the evidential nature of images like those of Antioch mosaics, probably conceived to evoke abstract concepts and to 'nurture' cultivated conversations about ethical values, Greek *paideia*, and Christian virtues, but at the same time conferring to these 'transcendental ideas' a wealthy endowment, that is not only ideal. So images, considered as eyewitnesses, reveal rather a much

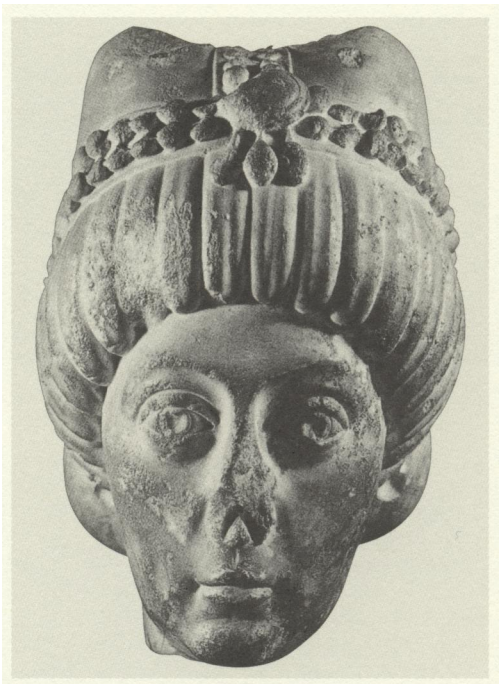

FIG. 21. Empress Theodora from Constantinople 530-540, Milan, Castello Sforzesco.

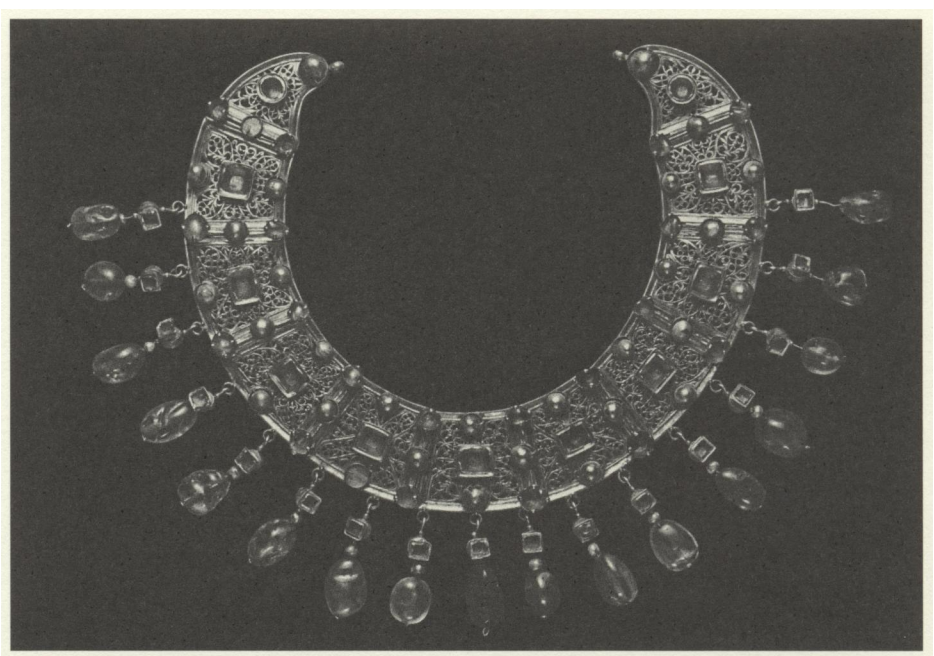

FIG. 22. The Berlin Collar, Berlin, Staatliche Museen, Antikensammlung.

FIG. 23. Gold pendent of collar, Budapest, Hungarian National Gallery.

FIG. 24. Personification unknown from Antakya, 5th Century A.D., Inv. no. 959, Hatay Archaeological Museum (Photo S. Pedone).

more complex cultural context of variable believes and even of conflicting desires, because – as a famous scholar put it – we know what we parade but we don't know what we betray.

MEDIAEVAL GEM STONES

By URBAN T. HOLMES

THERE is no lack of studies dealing with gem stones and minerals in the Middle Ages, but they are all primarily concerned with the magical lore associated with these substances, or with lapidaries in Latin and the vernaculars which are little more than repetitions of the writings of Pliny and Damigeron.[1] Perhaps it is ignorance on my part, but I know of no reference which seeks to identify systematically, with their modern names, the gems in actual use during the mediaeval period, unless it be the *New English Dictionary*. Even Studer and Evans, in their edition of Anglo-Norman lapidaries, are too chary of hypotheses. For instance, they list French *melochite* as *molochitis, a stone* — when it should be quite evident from the description that malachite, a well-known green stone, is intended. This malachite served as a pigment for early painters, and it is still used for jewel cases by such ladies as Zuleika Dobson! These same editors also make no statement of identity concerning the *aetites* or 'eagle stone,' when Miss Evans, in a work two years earlier in date, is well aware that the gold-mounted clapperstone (a piece of limonite with loose pebble inside) preserved in the British Museum answers the description. The late G. F. Kuntz, who contributed so much to the history of gems, has much information of this sort scattered through his books; but there is no systematic discussion of anything but the folk beliefs.

In preparing this present article, I have begun by examining the jewel inventories which are extant from the fourteenth and fifteenth centuries and which have been accessible to me.[2] These lists should be representative evidence of the stones that were actually treasured and collected, despite the fact that their collectors were kings or wealthy nobles. There are enough mentions of colored glass, false doublets, and 'pierrerie sans valeur' in these inventories to lead one to

[1] Chief among these studies are: Joan Evans, *Magical Jewels of the Middle Ages and the Renaissance* (Oxford, 1922), G. F. Kunz, *The Curious Lore of Precious Stones* (Lippincott, 1913), and *The Magic of Jewels and Charms* (*ibid.*, 1918), Garrett, *Precious Stones in Old English Literature* (Munich, diss., 1909), Paul Studer and Joan Evans, *Anglo-Norman Lapidaries* (Paris, 1924), and L. Pannier, *Les lapidaires français* (Paris, 1879).

[2] The most detailed of these inventories is the one made after the death of Charles v of France; it is published as the *Inventaire du mobilier de Charles V* (Paris: Imprimerie nationale, 1879) by Jules Labarte. This is a volume in the *Collection de documents inédits sur l'histoire de France*. Less voluminous is the inventory of the goods of Charles vi, edited by Douet d'Arcq in his *Pièces inédites relatives au règne de Charles VI* (Paris: Renouard, 1864), ii, 273–407. Inventories of jewels in the possession of Edward ii, Edward iii, Richard ii, Henry iv, Henry v, and Henry vi of England are accessible in Sir Francis Palgrave's *The Antient Kalendars and Inventories of the Treasury of His Majesty's Exchequer* (London, 1836), iii. The precious ornaments brought to France by Valentine Visconti were listed in a French and in a Latin account; the former is published in the *Miscellanea di Storia Italiana* (Turin: Boia, 1900), series 3, part v, 34–64. The '*Joyaux du Duc de Guyenne*' are in the *Revue archéologique* (1873), pp. 158–170, 209–225, 306–320, 384–395. Isabelle of Bavaria's trousseau was inventoried and this list is published in the *Mémoires de la Société de l'Histoire de Paris*, xxix, 125–1258. I have been unable to secure the *Testament du roi Jean le Bon et inventaire de ses joyaux à Londres* published by G. Bapst (Paris, 1884). Hereafter, where possible, we shall cite each item by its number in the inventory in question. Also of interest here is O. M. Dalton, *Catalogue of the Finger Rings, early Christian, Byzantine, Teutonic and later* (British Museum, 1912).

suspect that distinguished collectors were not too fastidious, and did not scorn gems of low value. With these lists before me I shall attempt a brief discussion of their content, repeating a few observations on gem materials in general which may not be obvious to all readers.[1] Occasionally it is necessary to refer to a description in the lapidaries.[2] It seems likely that where a stone was in common use Bishop Marbodus would not have closed his eyes completely to fact. His error, and the error of his followers, was that they repeated extraneous material from their predecessors, with garbled specifications on an equal footing with information that they knew from observation to be accurate. If these surviving jewel lists are correct, it would seem probable that Marbodus knew less than half the stones which he discussed in his famous lapidary. As to whether Pliny himself had a better average we can only express suspicion.

Today a gem substance is classified by chemical analysis, by hardness, by specific gravity, by lustre, by color, and by the refraction of light passing through it. When we realize that in earlier times only the tests of lustre and color, and a crude hardness test, were in common use, we wonder at any accurate identification at all.[3] A poor, clouded ruby can resemble nothing so much as a piece of sard; a white zircon may easily look like a diamond; an essonite garnet sometimes resembles closely a jacinth or brown zircon. There were many glass imitations in the Middle Ages; Raimund Lull gives particulars on their manufacture;[4] but almost any sort of hardness test would have enabled a goldsmith to distinguish between a sapphire and blue glass.

Standards of value have also changed during the past five hundred years. In Marbodus' lapidary it was the sky-blue sapphire 'puroque simillima coelo' that was most highly prized; modern connoisseurs prefer the deep-blue variety, despite its inky color in a night light. The green turquoise was most in favor in earlier times, whereas today this stone must be of a pronounced greenish-blue to have

[1] For the modern scientific knowledge on gems: their description, provenance, tests, methods of receiving polish, we refer first of all to E. H. Kraus and E. F. Holden, *Gems and Gem Materials* 2 ed. (New York: McGraw-Hill, 1931); then to certain pamphlets distributed by the U. S. Bureau of Mines: I.C., 6471, 6518, 6459, 6502, 6539, 6491, 6493, 6465. These pamphlets discuss, respectively, the corundums, garnets, emerald, and other beryls, topaz, tourmaline turquoise, opals, and zircons. The last is by E. P. Youngman; the others are by Miss Irene Aitkens.

[2] The prominent lapidaries of antiquity were the Περὶ λίθων of Theophrastus, the *Materia Medica* of Dioscorides (Bk. v), the *Historia Naturalis* of Pliny (Bk. xxxvii), the Orphic *Lithica*, and the Hellenistic *Damigeron*. Those of the Middle Ages were the *Etymologiae* of Isidore of Seville (Bk. xvi), the Latin lapidary of Bishop Marbodus and its many vernacular derivatives, the *Steinbuch* of Volamar, and the Latin lapidary of Albertus Magnus. The Marbodus text is in Migne, Patr. Lat., CLXXI, 1738–1770; many of the French texts derived therefrom are published by Studer and Evans in the reference given in note 1. Paul Meyer called attention to certain unpublished French lapidaries in *Romania*, XXXVIII, 44 ff., *ibid.*, pp. 481 ff., and in the *Bulletin de la Société des Anciens Textes* (1879), pp. 72 ff. The great Spanish lapidary of Alfonso X was based upon Arabic material.

[3] Pliny tells us of the use of a file or of gem dust for distinguishing between glass and the real gems. But as no exact scale of relative hardness, such as the Mohs scale used today, was in existence, their test was crude indeed; *Historia Naturalis*, XXXVII, 76.

[4] Lull tells specifically how to counterfeit the pearl, carbuncle, diamond, balas ruby, sapphire, almandine garnet, turquoise (torques), emerald, bloodstone, topaz, chalcedony, beryl, and *monascus* (*Libelli aliquot chemici* (Basel, 1600), p. 298–319). All these are common stones save the last.

value. I have seen an antique turquoise gem from Asia Minor which is so full of gangue and impurities that we wonder today why it was ever treasured. Coarser minerals were also esteemed by the mediaeval man, but usually for their therapeutic values, such as the iron ores: magnetite, limonite, haematite, and pyrites. The first of these still retains popularity among our primitive people of today as a lucky stone to 'draw one's love.' A catalogue issued by a firm in Chicago lies before me, and one of the items shows a piece of magnetite with rays of power, money, jobs, games, and love sparkling from it, and the caption 'Get my famous five-power loadstone bag.' In the Middle Ages, the magnetite was also a tester for chastity. If a husband should place a chunk of this mineral on the head of his sleeping spouse, according to the lapidaries, he could tell by her smiles whether she was faithful or not. Probably the result of the test depended more upon the size of the stone and the force with which it was applied!

Many of the gems present in Europe during the Middle Ages were survivals from the ancient world; this must have been very frequently the case with engraved gems, as the art of gem-engraving slumbered a bit from the fifth century to the Renaissance.[1] After all, a precious stone is quite imperishable (we except the opal), unless it is deliberately destroyed or ground for medicinal purposes. In the mediaeval period, opals were mined at Czerwenitza (Hungary) and turquoise was extracted in Persia near Nishapur.[2] From the East, doubtless through the market of Alexandria, a stream of rubies, sapphires, diamonds, and other stones, found its way into Europe. The agate mines of Germany were not opened until the fourteenth century, and the emerald deposits of Egypt had ceased to be worked since the late Roman Empire.[3] Jet amber, and 'perles d'Escosse' continued to be found in northern Europe. Some sapphires of an inferior quality were found near du Puy en Velay in the volcanic deposits of that region. These were always designated in the inventories as 'sapphires de Puy.'[4] It is extremely probable that the garnet mines of Bohemia were worked at this time, although there is no positive information to that effect. Lapis lazuli was mined in Armenia.[5]

The task of assigning modern names to the gems of the Middle Ages is complicated by the fact that many names of precious stones have shifted in the course of the centuries. This is particularly true for the opaque and non-crystalline varieties of quartz. The modern retail jeweler is often confused here. It might be em-

[1] The two mediaeval lapidaries of engraved gems published by Studer and Evans (*op. cit.*, pp. 277–296) list designs that are classic; examples of most of these designs are to be found in the classical collection of the Metropolitan Museum of Art in New York City; consult A. Furtwangler, *Antike Gemmen* (Leipzig and Berlin, 1900), 3 volumes, and Gisela M.A. Richter, *Catalogue of Engraved Gems of the Classical Style* (New York, 1930). Alexander Neckam mentions some gem engraving in his day; consult the reference in note 9. For mediaeval gem engraving, such as it was, the reader should see O. M. Dalton's *Guide to the Mediaeval Antiquities and Objects of Later Date* (2nd ed.; London: British Museum, 1924), pp. 102–109.

[2] I.C., 6493, p. 6; I.C., 6491, p. 13. Edrisi (*ca* 1154) mentions the torquoise mines in Persia as well as mines for rock crystal and for *prasme d'émeraude* (?); *La Géographie d'Edrisi*, tr. P. A. Jaubert (Paris: Impr. Royale, 1836–1840), II, 185.

[3] Ernst Falz, *Die Idar-Obersteiner Schmuck-Industrie* (Idar: C. Schmidt, 1926); I.C., 6459, p. 5.

[4] J. Rambosson, *Les Pierres précieuses* (Paris: Didot, 1870), p. 78; Labarte (2301).

[5] Edrisi, *op. cit.*, II, 340.

barrassing for him if a customer should enter his shop and ask to be shown one specimen each of prase, chrysoprase, onyx, sardonyx, agate, carnelian, sard, jasper, and chalcedony. These are the usual varieties of non-crystalline quartz. In correct modern terminology, the prase is a leek-green stone, and the others in respective order are: a gem of apple-green color, a stone cut so that it appears to be built up with two or more layers, a similar stone with one layer of sard, a stone cut so that bands or blotches of variegated shades or colors lie on the surface, a flaming orange or yellow stone, a brown or reddish gem, an opaque dull quartz of red, yellow, or green shade, and last, a translucent specimen of blue, grayish, or smoky shade. Plasma is another variety of impure opaque quartz which is not sold by a jeweler; it is similar to green jasper except that it is still less pure: sometimes it is darker, sometimes it has light patches scattered throughout. Black stones of this material were known as touchstones during the Middle Ages: they were known to show clear, yellow streaks of fine gold when a piece of that metal was scratched over their surface.

All the mediaeval inventories agree in the truly precious stones which adorned the royal and ducal crowns. These were the sapphire, balas ruby, emerald, pearl, corundum ruby, and the diamond. In the treasury of Edward II, in the year 1324, there were many crowns of which a typical description is: 'Une coroune d'or . . . dont les mestres perres sont rubies, emeraldz et baleies et les troches des emeraldz et de vi. perles.'[1] Another has 'saphirs d'orient' to be distinguished, of course, from 'saphirs de Puy,' and still another has 'perles d'Escoce'[2]. The descriptions of crowns in the jewels of Charles V of France are more elaborate, but the gems are the same. In the specifications of one of these crowns we read 'sur le fruitelet, a troys autres perles et ung dyamant ou mylieu.'[3] We are safe in assuming that these seven were the truly precious stones of the Middle Ages, and we note that they correspond exactly to what we call precious today except for the balas ruby. The balas is a spinel of pinkish or rosy hue. Doubtless this was distinguished most often from the corundum or genuine ruby by its color. The true ruby usually varies from a violet to a pigeon's-blood red. But Charles V had several rubies of a rosy hue and others of a pale color![4] How a mediaeval lapidary could distinguish a rose-colored ruby from the balas without accurate knowledge of hardness or refraction tests is difficult to explain. The lapidary who inventoried the jewels belonging to Charles V speaks also of 'ballaiz rouges et yndez.'[5] Does the 'yndez' refer to a red-violet spinel or does it mean the blue spinel — the sapphirine? How could a sapphirine be distinguished at that time from a sapphire? If the *hephaestitis* of Pliny and of Marbodus is the spinel (and this seems probable) then it was known to them that the spinel could be used for a burning glass — that it was isotropic (not splitting a ray of light that passes through it in any direction).[6] Of course, the corundums, both the ruby and the sapphire, are uni-

[1] Palgrave, III, 139.
[2] *Ibid.*
[3] Labarte (2).
[4] *Ibid.*, items (495), (498), (506), (515), (504), (516), (499).
[5] (840).
[6] In the second prose lapidary in French (Studer and Evans, p. 340) the name *balas* is used for the same stone that is described as *hephaestitis* in Marbodus. Marbodus says of the *hephaestitis*, 'Ad solem positus radios emittit ut ignem.'

axial (splitting the rays except when they enter in one specific direction). If these simple facts were known at the time, a mediaeval lapidary had only to hold a piece of parchment or paper before the stone in the sunlight to test this refraction. There is also mention of white balas.[1] Surely there must have been some test for the balas other than those of color and lustre at this early date.

We have mentioned above the 'perles d'Escosse.' Certain streams in Wales and Ireland, but more especially in Scotland, have always carried a pearl-bearing fresh-water mussel. Tacitus mentions the British river pearl; Pliny does also.[2] The Scottish rivers that are most profitable for this industry are the Spey, Tay, South Esk, Doon, Dee, Don, Ytham, and particularly the Forth; in Wales there is the Conway and in England there are the Cumberland rivers.[3]

Imitations of the emerald, sapphire, and ruby were worn even by the kings. Charles v had a crown of thirteen 'florons . . . en chascun florin une esmeraude contrefaicte.'[4] A 'doublait' was formed by cementing together two hemispheres or otherwise shaped pieces of glass with a thin layer of color in between. In another item belonging to Charles v there are 'pierres faulses, c'est assavoir doublaiz rouges et voirre vers.'[5] In one of his crowns, Edward II had 'dublesces et de vertz et de vermeill.'[6] Some problem is presented in the identity of 'proesme d'esmeraude.' The Godefroy lexicon of Old French defines 'presme' as 'cristal de roche coloré qui prend le nom de la pierre fine dont il se rapproche le plus par sa nuance.' This would seem to be the case from such a statement as 'y a proesme et autre faulse pierre rouge.'[7] Cotgrave in the year 1611 defined a 'presme d'esmeraude' as 'A base, or course, Emerauld; whereof there be divers kinds, some transparent as the green jasper; others of a thick or mallow color.' Those who follow Godefroy's definition must derive the form *proesme* or *presme* from *proximum*. Godefroy also records the spelling *prasme*, and this, I believe, is the key to the original meaning of this stone: it was not colored rock crystal, it was green plasma which is a variety of dark green jasper, as Cotgrave appears to know. Doubtless there was later confusion between *prasme* and *proisme* (<*proximum*). As to whether *prasme* or *presme* could ever be used for anything except plasma or green jasper: that is, for a counterfeit of any color, is not clear; but I doubt it.

We pass to other stones of almost certain identity in the inventories. In the time of Henry IV the royal treasury of England had 'un anell d'or ove i. peritot.'[8] The *Chrysolithus* or peridot, which is described so aptly by Bishop Marbodus, was not frequently listed in the mediaeval collections; but Charles v of France also had two gems which were listed as *paridos*.[9] This stone was confused with the topaz by ancient authorities; but the identity of the mediaeval peridot with the stone so called today is evident from the detailed description given by Marbodus. The present writer has a specimen for which there is no better description

[1] Labarte (753).

[2] Pliny, ix, 57; Tacitus, *Agricola*, 12.

[3] *Manchester Guardian Weekly*, July 7, 1933.

[4] Item (21).

[5] (72), (48).

[6] Palgrave, III, 140.

[7] (3068). Just what is meant by 'rubiz d'emeraudes' (2588) ? We suspect there was an error here: a confusion between 'rubiz d'Alexandre' and 'proesmes d'émeraude.'

[8] Palgrave, III, 352.

[9] (765), (1028).

than the words of Marbodus: 'Auro chrysolithus micat . . . Iste mari similis.' Charles v had one topaz signet which we assume to be genuine, that is, a real fluosilicate of aluminum, although it is quite possible that any yellow stone might pass under this name in the mediaeval period. The yellow beryl, or the citrine (a yellow crystalline quartz), or the cairn gorm (a smoky crystalline quartz), might have been mistaken for the topaz. The gem in question, belonging to Charles v, was probably a survival from the ancient period: it was engraved with a crescent and stars.[1]

Marbodus recognized six varieties of *beryllus* or beryl, but it is simpler for us to speak of this mineral with the modern classifications: aquamarine (blue or bluish green), morganite (rose), golden beryl, goshenite (white), and, of course, the emerald which is a saturated, true green. In the treasury of Henry IV of England there were two small pots and a spoon made of beryl.[2] As the aquamarine is by far the commonest variety, and as it is the only kind that is apt to be found in large crystals, in good color, we cannot hesitate to pronounce these utensils aquamarines. The treasury of France, under Charles v had a 'pomme de bericle' and several 'bericles' framed as spectacles.[3] The first mention in history of horn-rimmed spectacles is probably this item: 'ung bericle ront, plat, environné de corne noire.'[4] It is, of course, common knowledge that modern French *bésicles* is derived from *bericles*. For this purpose it is likely that a pale blue-green was most satisfactory; the emerald green was beyond the reach of all but a Nero![5]

The amethyst was a very popular stone in the inventories. Coral was common — frequently in its native unpolished condition, and jet (*gagates*) and amber (*electrum*) were also frequent. Nowhere do we find the word *ligure*<*lyncurium* except in the lapidaries, and this was most certainly another term for amber.[6] Garnets or *grenati* are not rare in the inventories, but the inference is that they were little prized. Whether these garnets were pyrope, of a dark-red color, or almandine, of a red-violet hue, cannot be determined. Probably both varieties were common. We assume that brown essonite garnets might have been confused with something else by the inventorists; and yet the *jacintes grenaz* which are mentioned in the lapidaries were most certainly essonite garnets, which would indicate that these stones *could* be correctly identified. In all events the inventories make no specific reference to the essonite garnet.

In none of the inventories is there mention of the term carbuncle or *carbunculus*. Presumably this was a learned name and one not used by sober lapidaries and goldsmiths of the fourteenth and fifteenth centuries. Dr Kuntz has listed some famous carbuncles, still preserved as such in ecclesiastical treasuries, which are unquestionably garnets.[7] This does not exclude the possibility that rubies may also have received this designation; but it was probably applied more often to the pyrope garnet. Students of mediaeval literature will recall how the Sara-

[1] (643).
[2] Palgrave, III, 355.
[3] (1904), (1919), (2706).
[4] (2205).
[5] Pliny says that Nero viewed gladiatorial combats through an emerald; XXXVII, 16, 5.
[6] Pliny, XXXVII, 13; VIII, 57.
[7] *Curious Lore Precious Stones*, pp. 164–165.

cen ships could be lighted by carbuncles fastened at the mast-head.[1] This is fiction, but there may be a slight basis in fact. A late Greek alchemical treatise records that a phosphorescent extract, obtained from marine animals, could be painted on such a stone, as a foil, to provide light in the dark.[2]

Turquoise is frequently met with in the inventories; but in none of them is there mention of the jacinth or jargon. This stone is the Latin *hyacinthus*, and it was confused with the topaz in Pliny's day. The more or less accurate classification of this material by Marbodus must have been based upon observation. Marbodus says there are three varieties of the *hyacinthus:* brown, yellow, and green. Today we call this mineral by the general term *zircon*, and use *jacinth* in particular for the red or brownish zircon. This absence of the jacinth in the inventories is surprising. Alexander Neckam, while listing the materials used by a goldsmith of his day, makes incidental mention of amber, diamonds, marble, *jacinths*, emeralds, carbuncles, jasper, sapphires, and pearls.[3] In a medical recipe of 1420 the jacinth occurs as an ingredient in an electuary.[4]

It is now necessary to distinguish between the different varieties of non-crystalline quartz as they occur in the inventories. It soon becomes evident that *jaspre* (Latin *jaspis*) was frequently a generic term used in the sense that we find agate to-day. Charles VI had an 'escuelle de jaspre violet, vergiee de blanc.'[5] His father, Charles V, possessed a cup of which the receptacle was of 'jaspre vergoyé de vert et de blanc.'[6] These stones would be designated as fancy agates by a modern lapidary. Another cup in the possession of the elder Charles was of 'jaspre azuré.'[7] This we should now call blue chalcedony. The expressions red, green, and yellow jasper, so frequently met with throughout the inventories, must have meant what they do today; e.g., 'perie ove la mesine de jaspe vert et vermaille' (Edward III).[8] The *cassidoine* (Latin *calcedonius*) was, of course, chalcedony; but we should be clear as to what sorts of translucent quartz were designated by that name. Among the treasures of Charles VI there was a portable altar 'ouquel a ou milieu une pierre carree amatistre et cassidoyne.'[9] The peroxide of iron which gives the violet tinge to amethyst is often distributed unevenly through the quartz crystal. It is evident from this description that the uncolored portion of a quartz crystal could be called chalcedony. In other places there are references to 'cassidoine blance.'[10] Surely we are accurate in claiming that this stone was usually our modern milk agate, and probably also our pale gray chalcedony. The term could also be confused with jasper. Of the jewels that Valentine Visconti brought with her to France there are two inventories: one in Latin and the other in French. The same entry is in one: 'un reliquiaire d'or d'un jaspe'; in the other it is 'fermalium unum cum uno lapide calcedoniae.'[11] There is still other evidence

[1] *Chanson de Roland*, v. 2632 ff.

[2] M. Berthelot in the *Comptes Rendus de l'Académie des Sciences*, CVI (1888), 443–446.

[3] *Jahrbuch für englische u. romanische Literatur*, VII, 171.

[4] *Chroniques de Charles VII* (Paris, 1886), p. 287.

[5] Douet d'Arcq (202). [6] Labarte (1956). [7] (1955).

[8] Palgrave, III, 181. [9] Douet d'Arcq (73). [10] Labarte (2249) etc.

[11] *Miscellanea Storia Italiana*, V (1900), 37. Compare also 'une pierre de cassidoine ou de jaspre en façon de coquille' in Douet d'Arcq (185).

that *cassidoine* could have a generalized meaning, similar to that of jasper. Charles v had 'ung camahieu d'un cassidoyne qui a une teste blanche a ung chappelet de fleurettes rousses et une torche derriere.'[1] This means that the cameo was engraved in a piece of red and white chalcedony — a stone which should be specifically called a sardonyx. The sardonyx is a combination of sard and light onyx. Cotgrave, in 1611, speaks of the chalcedony as a stone of small value 'though it shine like fire,' whereby it may be inferred that he had the carnelian in mind, which can be of a flaming orange hue.

The expression *camahieu* may well be related to the MHG *gâmahiu* or *gâman*, 'a gem of several colors,' although none of the etymological authorities seems to be aware of this. It is most often found in the inventories with no specific description of the stone used. Occasionally this silence is broken. Charles VI had 'une teste d'alebastre blanche . . . assise sur une piece de marbre noir . . . et semble estre un camahieu.'[2] He also had 'un camahiu sur champ noir a une verge blanche dessus.'[3] Examples of this sort, of the cameo cut in a black and white onyx, are sufficiently frequent to cause us to feel that this was the commonest variety. To be sure, Charles VI also had a 'camahieu vert'[4] and a 'camahieu saphistin.'[5] The first of these was probably the same gem described in Charles v's collection as 'une pierre vert a façon d'un camahiu.'[6]

The carnelian or *corneolus* was a common stone in mediaeval jewelry but hints as to its appearance are rare. The Marbodus lapidary says of it: 'lavaturae carnis par esse videtur.' This suggests the same color as the modern carnelian. Cotgrave defines it as a 'flesh-coloured stone.' This shift from Latin *corneolus* to early French *carneline* would also confirm the association with flesh tint. There is a variety of carnelian, as we call it today, which is of a light orange. Many engraved carnelians survive from the ancient period. As engraved carnelians are often listed in the royal collections with which we are concerned, and as they too were apt to be of ancient origin, it may be inferred that the true carnelian was known and appreciated during the mediaeval period. Prase (*praxus*) and chrysoprase (*chrysoprassus*) are not so named in the mediaeval lists at our disposal. If they were present in these royal treasuries it is likely that they were confused with green jasper, or with *prasme d'emeraude*, which they resemble except for their superior translucency. The bloodstone or *heliotropia*, also not mentioned, could easily have been confused with green jasper, which is what it is, with flecks of red coloring.

The goldsmiths who made the inventory of Charles v's treasures were careful men, and they did not hesitate to show doubt when they failed to recognize a stone. Apparently those who compiled the Charles VI list did not need to hesitate so often; but they too failed at times. The former group of goldsmiths record 'pierretes que on ne scet nommer, et vindrent de l'Empereur de sa myniere.'[7] It is not likely that these were agates from the newly worked mines in Germany, for

[1] (2988).
[2] Douet d'Arcq (144).
[3] *Ibid.*, (480).
[4] *Ibid.*, (522), (308).
[5] (308).
[6] Labarte (2916).
[7] *Ibid.*, (758).

stones of that sort were easily recognizable. Doubtless the Emperor Charles VII of the house of Luxemburg had some control over the opal mines at Czerwenitza and these little stones may have been opals, not mentioned elsewhere in these collections. What was the 'pierre verte a façon d'un camahiu' which we cite in the preceding paragraph? This stone was engraved and therefore likely to have been an ancient gem. An examination of a list of green stones used by ancient gem engravers shows the following varieties: plasma, jasper, emerald, aquamarine, peridot, turquoise, and malachite.[1] Possibly the engraved specimen which puzzled our lapidary was of a common variety, but of such poor quality that it was unrecognizable; otherwise we are tempted to identify this 'pierre verte' with malachite, the only one of these engraved materials not mentioned elsewhere in the inventories. Similarly Charles V had two unidentified red stones with Christian subjects cut into them.[2] These might be mediaeval work; if so we can make no controlled guess of the material. If they dated from the late Roman period the substance was apt to be haematite. Red stones employed by the ancients for engraving were carnelian, jasper, garnet, brownish red haematite, and glass. Haematite was common in the late Roman period. Charles V also had a 'grant pierre a facon d'un amatiste.'[3] If this were not a genuine amethyst we suggest a very light almandine garnet, sometimes called a Syriam garnet. Frequently the inventories mention a 'pierre blanche' with no further indication.[4] This might be intended for the moon-stone or *selenitis*, which was likely to be in a jewel collection of the fourteenth and fifteenth centuries, but which cannot be identified with any other stone mentioned in these royal lists.[5] An unknown 'pierre verdastre,' of which there were two examples in the collection belonging to Charles V, gives no clue.[6]

Proceding further down the scale of values, we come to stones of no ornamental value. The 'pierre saincte qui ayde aux femmes a avoir enfant,'[7] belonging to Charles V, could only be the clapper or eagle stone (*aetites*, also *peanitas*), a piece of limonite with a loose concretion inside. The 'deux pierres en os contre le venin — Lapis Albazahar'[8] were, of course, the famous bezoar, a concretion from the second stomach of some ruminant, usually from a deer, The efficacy of this stone was once tested by Ambroise Paré with great disaster to an unfortunate thief.[9] The primitive people of North Carolina use to draw out poisons with a 'mad stone' which we suspect is a sort of bezoar. A 'pierre qui guerist de la goute,'[10] also in the possession of Charles V, is not to be identified with certainty. The *Sidrac* assigns this curative power to a *sorige* stone. But what is a *sorige?* If such

[1] Richter, *Catalogue Engraved Gems*, liv-lxi.

[2] Labarte (2898): 'ou il y a une croisette entaillee ou mylieu'; *ibid.*, (3009): 'ou il a ung ymage de Nostre Dame.'

[3] (2826).

[4] Labarte (642), (748), (1713), etc.

[5] Pliny's *selinitis* was probably used for muscovite, a variety of mica, as well as for the moonstone.

[6] (766). [7] (617). [8] (598).

[9] This tale is retold from Paré's *Œuvres* by Alfred Franklin in his *La vie privée d'autrefois, Les médicaments* (Paris: Plon, Nourrit, 1891), p. 157 ff.

[10] (618).

a substance ever existed it was doubtless a greenish mass of some salt, which would answer the Sidrac description.[1] A 'crapaudine' or toad stone belonged to Charles VI. This was a palatal tooth from a freshwater gar, or from some other ganoid fish.[2]

Charles VI had a cup of red calamine or zinc ore, a mineral known today as zinc carbonate or smithsonite.[3] The nineteenth-century editors of the inventories which we have been using were all puzzled by a material called *madre* used for cups, knife handles, etc.[4] There is no reason to contradict the *New English Dictionary* which identifies this with bird's-eye maple or with some similar hard wood. The British Museum possesses numerous cups of this material.[5] For 'pourcelaine' we prefer the translation 'mother-of-pearl,' although there is no evidence to prove this beyond question. The abalone pearl so much used in modern jewelry is of a similar nature.

We should like to close with an attempt to identify all the mineral substances listed by Marbodus and Damigeron, but this would increase unduly the length of the present paper. Taking into consideration the stones that are encountered in these royal treasuries, as well as the gems listed by Alexander Neckam and Raimund Lull in references mentioned, the reader will surely admit our contention that of the fifty-nine substances in Marbodus many of them were rare or unknown in Western Europe during the mediaeval period.[6]

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MEDIAEVAL NOTES ON THE SIXTH *AENEID* IN *PARISINUS 7930*

BY J. J. H. SAVAGE

STUDENTS of Dante may find interest in the following notes which I copied some years ago from the margins of a codex in the *Bibliothèque Nationale*. This manuscript (numbered 7930) contains the *Eclogues*, *Georgics*, and *Aeneid* of Virgil, with numerous annotations both in the margins and in the text throughout. The text

[1] We have only the Italian version of the *Sidrac* before us. The description there is: 'Sorgoe è una pietra verde . . . ell'è buona incontro a tutte malizie al corpo, di gotte . . .', ed. A. Bartoli (Bologna, 1868) p. 473 ff. Franklin (*op. cit.*, p. 138) believed that *pierre d'éponge* was the stone intended.

[2] Douet d'Arcq (117); O. M. Dalton, *Guide to the Mediaeval Antiquities*, p. 151.

[3] Douet d'Arcq (235).

[4] Labarte says of this: 'Les auteurs ne sont pas d'accord sur la nature de cette matière. Scaliger croit que les vases de madre ne sont autres que les *vasa murrhina* des anciens. Du Cange dit que le madre était l'agate onyx. M. de Laborde veut que le madre soit une sorte de bois . . . M. Douet d'Arcq, qui est d'avis que le madre était une pierre precieuse . . . Nous persistons à croire que le madre etait une matière precieuse . . .' (p. 107, n. 1).

[5] Dalton, *op. cit.*, p. 173 ff.

[6] The mediaeval rings preserved in the British museum show these stones: sapphire, ruby, garnet, chrysoprase, plasma, toadstone, eye agate, crystal doublets, jacinth, pearl, emerald, turquoise, and colored glass; O. M. Dalton, *Cat. Finger Rings*, pp. 2249 ff. This is also evidence for our contention.

Some Mediaeval Gems and Relative Values

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be substantiated or refuted by a close examination. Whether or not a definite conclusion can be reached on this question, a systematic study of the registers cannot fail to be fruitful. The material is there for many interesting inquiries on the ministry of parishes by regulars, the obligations of parishioners towards their church, liturgical practices, and ordination lists — these are a few of the possibilities.

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SOME MEDIAEVAL GEMS AND RELATIVE VALUES

BY EUGENE H. BYRNE

PRECIOUS stones and jewelry, while they occupied no such place of significance in mediaeval trade as products and commodities in more general use, are so frequently mentioned in commercial documents from the thirteenth century onwards, as to raise the question of their variety and value. After even a partial survey of the documents it is explicable why so little has been written on mediaeval gems from this point of view. In Genoese records, for example, although goldsmiths and other merchants are found in the thirteenth century exporting jewels set and unset to many parts of the Mediterranean and to France, the variety of the gems and semi-precious stones actually named is not great. Emeralds, rubies, sapphires, diamonds, turquoises, in rings and brooches or as loose stones, cameos, crystal and amber beads, garnets, are all spoken of with a relative frequency roughly indicated by the order in which they are here listed, with the general terms *joas* and *lapides preciosi* appearing in testaments and inventories as well as in trade documents from time to time; bowls of chalcedony mounted with silver, knives with handles of coral, silver, and jasper, complete the list except for pearls which greatly predominate over all other gems. That pearls found a ready market in the wide area of Genoese trade is indicated by the large quantities regularly exported. Occasionally they were fairly large stones, even when not described as *perlas grossas*, probably from the Orient, sent in lots of two or three unset, and a notary wealthy enough to give a dot of £150 to one daughter speaks in his testament of ten pearls on the brocaded gown of another daughter. Small pearls, many of them no doubt of the variety known today as seed pearls, perhaps often fresh-water gems, were exported in strands or necklaces in which the stones were never counted and seldom weighed. The shipments of individual merchants run from two to seventy strands at a time, and in 1276 a group of merchants from Lucca purchased an undefined quantity of pearls from a Genoese dealer for £293.

As for the value of such gems as are mentioned, it is difficult if not impossible to arrive at definite conclusions because the weight of the stones is almost never given with the price, and if any terms of description in size or quality are used,

they are very vague. Exporters in their contracts with departing merchants often stated only the value of the whole lot; sometimes the stones are not even counted, and again the total amount of the investment includes other wares as well as jewels. Occasionally one is able to see that the stones were of high quality and worth. When about £3 Genoese would buy an ounce of gold bullion,[1] a balas ruby and three pearls exported for sale in Byzantium and valued at £80 would appear to be gems of some worth; but five and a half ounces of pearls valued at £19 stand at a low valuation, and strands or necklaces of the same gems worth from sol. 10 to £4 per *filum* cannot be regarded as of high value. When a goldsmith sells fourteen rings set with emeralds and fifteen with turquoises for £19½, or a merchant carries forty-eight gold rings set with thirty-three diamonds and fifteen emeralds valued at £14, it is evident either that such gems were of inferior size and quality, perhaps even imitations, or that jewels were generally very low in value. A lengthy compilation of such references would therefore not be very illuminating on the variety and value of mediaeval gems.[2]

Since reading the able article on 'Mediaeval Gem Stones' by Professor Urban T. Holmes in SPECULUM for April, 1934, however, I have encountered in my notes from the notarial archives of Genoa a detailed list of jewels belonging to the

[1] The price of gold in Genoese money may be reckoned either from investments in gold bullion in the ounce of 576 grains (P. Rocca, *Pesi e Misure Antique de Genova* [Genoa, 1871], p. 110), or from investments by Genoese merchants in the ounce of gold *tarenorum* of Sicily of 600 grains, 30 *tareni* of 20 grains each, cf. P. Guilhiermoz, 'Note sur les Poids du Moyen Age,' *Bibliothèque de l'École des Chartes*, LXVII (1906), p. 190. From the figures given below it will be seen that the prices of the two ounces are not far apart, with that of gold bullion slightly higher than that of the ounce of gold *tar.*, even without making the adjustment for the difference in the two ounces. The *tareni* were issued by the Sicilian mint in roughly stamped lumps which in 1292 were of 16 carat gold .667 fine. Allan Evans, 'Some Coinage Systems of the Fourteenth Century,' *Journal of Economic and Business History*, III, no. 3, p. 491. Only two citations of the price of gold bullion can be given since in most cases both weight and value are not given in the same contract. In 1205, 16 ounces 1 den. were valued at £43 sol. 16, or £2.73 per ounce. ASG, Not. G. Cass., fol. 271^{v}. In 1236, 12⅔ ounces were valued at £36 sol. 12, or £2.89 per ounce. ASG, Not. B. Cass., fol. 74^{v}. For comparison, in the first half of the thirteenth century the ounce of gold *tar.*, a favored form of Genoese investment in trade with the western Mohammedan lands and occasionally with Syria, stood at £2.28 (sol. 45 den. 8) in 1205; at £2.6 (sol. 52) in 1236; at £2.53 (sol. 50 den. 7½) in 1239; at £2.75 (sol. 55) in 1253; at £3 (sol. 60) in 1263. ASG. Not. G. Cass., fol. 266^{r}; Not. B. Cass., fol. 16r; Not. Pal. de S., reg. I, fol. 92r; Not. B. de For., reg. III, fol. 154^{v}; *ibid.*, reg. V, pt. II, fol. 98^{r}. It had risen from £2.1 (sol. 42½) in 1158, £1.8 (sol. 35 den. 10) in 1162, £2.1 (sol. 42 and sol. 42⅝) in 1191; *Historiae Patriae Monumenta*, VI (*Chartarum* II), nos. 654, 1183; and ASG, Not. G. Cass., fol. 1^{v}, 8^{r}, 27^{v}. While the price of gold was thus steadily rising, it should be noted that the silver content of the Genoese *denarius* upon which the pound of account rested had been declining. C. Desimoni, 'La Décroissance Graduelle du Denier de la Fin du XI^{e}. au Commencement du XIII^{e}. Siècle,' *Melanges du Numismatique* Publiées par F. de Saulcy et A. de Barthélemy, III (Paris, 1882), pp. 52–79.

[2] Exported to Tunis in 1236, £100 invested in balas rubies (*baraxiorum*), pearls and gold brocade, ASG, Not. B. Cass., fol. 83^{v}. A goldsmith in 1250 sells 14 gold rings set with emeralds, 15 with turquoises for £19½, and another sends to Laon 21 amber and silver beads worth £4 sol. 13½, ASG, Not. B. de For., reg. II, fol. 11^{r}. In 1251 a goldsmith exports £21 in silver, crystal buttons, and girdles, *ibid.*, fol. 106^{v}. In 1251 a merchant carries abroad two strands of pearls, and a brooch set with precious stones, valued at £42½, *ibid.*, fol. 176^{v}. A goldsmith in 1252 sends abroad £13 in small knives and crystal beads, *ibid.*, fol. 243^{r}. Another in 1253 sends to Sicily £13 invested in gold rings set with

Hohenstaufens of Sicily in 1253, three years after the death of the emperor Frederick II, and perhaps a part of his treasure. An agent of his son, King Conrad of Sicily, purports to be purchasing the jewels in Genoa, but in view of the desperate situation in which the Hohenstaufens were then placed by their efforts to maintain their power, it is more probable that the purchase was only simulated, and that in reality the agent was either pledging the jewels as a means of raising funds, or else was arranging for the redemption of the objects from the existing creditor. So great had been the needs of the family that in 1251, shortly after the emperor's death, a throne or *faldasterium* ornamented with gold, pearls, and other precious stones, supposedly that of the late monarch, had been pledged in Genoa to a group of the Spinola family for £2000 at an interest rate amounting to $33\frac{1}{3}$ per cent per annum.[1] In the record of that transaction the stones are not further de-

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sapphires and in girdles mounted with brass, ASG, Not. B. de For., reg. IV, fol. 22^{v}. In the same year a Florentine entrusts to a merchant going to Montpellier £64 sol. 19 invested in rings set with emeralds and diamonds, *et in alias joas et lapides preciosos*, and the same merchant carries for a goldsmith £9 invested in three gold rings set with small rubies and emeralds, and £11 sol. 9 in gold rings set with sapphires and turquoises, and in silver brooches, *ibid.*, fols. 28^{r}, 33^{r}. The same smith exports to Sicily £15 in gold rings set with sapphires, in silk girdles mounted with brass, and in loose sapphires; and to Montpellier he sends sol. 58 invested in six gold rings set with emeralds and turquoises, and in crystal beads, *ibid.*, fols. 33^{v}, 153^{r}. A merchant going to Tunis in 1253 carries £8 sol. 13 covered by a pledge of two *perlas grossas* and two mounted cameos, ASG, Not. B. de For., reg. IV, loose folio unnumbered. In 1263 a Piacenzan appoints an agent to secure in Bologna and then to fetch to Genoa from Lapus de Avenzati of Florence of the *Societas Falconerii* of Florence, two bowls of chalcedony mounted with silver, three cameos set in gold and surrounded with small emeralds, 120 dozen enameled buttons, and ten rings of gold set with rubies and small emeralds, value not given, ASG, Not. B. de For., reg. V, pt. II, fol. 92^{r}. A merchant exports to France in 1253 three rings set with emeralds and rubies worth £9. A Ferretto, 'Documenti Genovesi di Nove e Valle Scrivia, II (1231–1260),' *Biblioteca della Società Storica Subalpina*, LII (1910), 243. A merchant exports to Montpellier in 1257, £14 invested in 48 gold rings set with 33 diamonds and 15 emeralds. A. Ferretto, 'Documenti intorno alle Relazioni fra Alba e Genova, 1141–1290,' I (Genoa, 1906), p. 217. A merchant carries to Byzantium in 1281 a balas ruby (*balaxium*) and three pearls valued at £80. A. Ferretto, *Codice Diplomatico delle Relazioni fra la Liguria, la Toscana, e la Lunigiana ai Tempi di Dante*, II (Rome, 1903), 383. In 1248 a woman gives a receipt for two rings, one set with a garnet and the other with an emerald, value not stated, ASG, Not. Pal. de S., reg. II, fol. 28^{r}. Another woman in her will in 1251 leaves to a man £6 sol. 7 to redeem a gold ring set with a diamond which she had left with him in pawn, ASG, Not. Pal. de S., reg. I, fol. 205^{v}. Ten pearls on the surcoat of a notary's daughter mentioned in his testament in 1264. ASG, Not. Pal. de S., reg. III, fol. 159 ff.

Pearls, *perle seu margarite*, aside from those referred to in the preceding paragraph, exported mostly in strands: to Syria, *circa* 1253, 16 *fili* worth £8 sol. 16, ASG, Not. B. de For., reg. IV, loose folio unnumbered. To unnamed destinations in 1263, 19 *fili* worth £66; 15 worth £60; $5\frac{1}{2}$ ounces worth £19, ASG, Not. B. de For., reg. V, pt. II, fols. 104^{v}, 105^{r}. Unknown quantity sold to some Lucchesi in 1276 for £293. A. Ferretto, *Cod. Dipl.*, II, 92. To Majorca in 1277, 33 *fili* worth £8 sol. 5, and to Sicily 20 *fili* worth £34, *ibid.*, pp. 129, 190. To Marjorca in 1281, 30 *fili* worth £33, ASG, Not. S. Vatt., reg. II, fol. 202^{r}. In 1281 to an unknown port, 70 *fili* worth £150. Ferretto, *Cod. Dipl.*, II, 357.

[1] ASG, Not. B. de For., reg. II, fol. 175^{r}. The interest rate is not stated. The debtor acknowledges receipt of £2000 Genoese on June 21, for which he agrees to pay at the next fair of Bar-sur-Aube, which would be in March and April, £1600 *proveniensium*, which is at the exchange rate of den. 15 Genoese for den. 12 *prov.*, about the usual rate of exchange for this fair at the time, which runs 15, 16, or 17 for 12. Should he not pay, as he probably intended should be the case, he agrees to pay in Genoa three months from the following Easter den. 20 Genoese for every den. 12 *prov.* not paid at the fair, or

scribed, but in that of 1253 the jewels are carefully listed, and while only one variety is mentioned which has not been found by Holmes in the royal inventories he has used, the list confirms several of his conclusions, throws some light on mediaeval taste in gems and on their relative rarity, and offers an opportunity to compare the value of such a store with the cost of certain services and of other goods. It is sufficiently detailed, moreover, even though it may represent only a part of the Hohenstaufen possessions of this nature to be worthy of publication as an addition to the list of inventories of royal jewels of much later dates cited by Holmes.[1]

Before discussing the variety of the jewels and their relative worth, it may be well to glance briefly at the financial features of the transaction. Contained in two *bronziis* of leather sealed with the seal of the royal agent, Josept de Brauduxio, described as representing the impression of a palm tree suggestive of his eastern or southern origin, the jewels, whether in process of being purchased, pledged, or redeemed, were deposited with the creditors, Jacobus Buxole of Parma[2] and his

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$33\frac{1}{3}$ per cent. in interest on the amount technically due at the fair, in about one year's time. The creditors were authorized, as usual, to sell the throne at the final term if the debt were not then paid. It may be of interest to note that the Spinole were hereby exactly covering a payment they had previously agreed to make at Bar of £1600 *prov.* for 'tot denarios' borrowed from another merchant for which they had likewise agreed to pay den. 20 Genoese for den. 12 *prov.* in case they did not pay at the fair. The two transactions may have been part of one and the same deal, *ibid.*, fol. 173^{r}.

[1] The text of the document, ASG, Not. B. de For., reg. III, fol. 154^{v}, is as follows:

In nomine domini amen. Ego Josept de Brauduxio nuncius domini Regis Conradi confiteor me debere tibi Jacobo Buxoli de Palma nomine tuo et sociorum tuorum uncias noningentas decem et septem auri tarenorum bonorum et legalium ad pondus regni et soldos quinque Janue que uncie extimate sunt soldi quinquaginta quinque Janue pro uncia, que restant tibi ad habendum de precio rerum infrascriptarum quas emi a te. Res omni sunt iste; Anuli triginta septem robini. Anuli auri de safilio de Podio quadraginta tres. Anuli auri decem cum topaciis. Anulus unus auri camioli concirati de smeradetis. Anulus de auro cum crisopacio. Anulus auri cum peredoto. Anulus auri cum plasme due. Anulus auri cum clapaudine decem. Safilii inclusi in auro orientali tres. Safilio de Podio incluso in auro uno. Safilii orientali exclusi centum duodecim. Safilii de Podio duo. Topacium inclusum in auro unum. Topacii exclusi decem et novem. Lapide entaliate excluse trescentas octuaginta quatuor. Lapides de entalia excluse centum undecim. Lapides de entalia clause in auro viginti novem. Lapides de entalia incluse in argento quinque. Lapis de entalia inclusa in ramo una. Corne de safilio orientale inclause in auro due. Camiolus inclusus in auro cum galma hominis unus. Lapides de entalia excluse sexdecim. Camioli inclusi in auro quinquaginta. Camioli exclusi septuaginta septem. Camioli de vetro exclusi tres. Vas unum de onizilo et calzedono guarnitum de auro. Vasa de onizilo et calzedono sine guarnimento tria. Cruces de auro cum ligno domini tres. Lapis de entalia guarnita de auro reliquie intus una. Anuli de auro cum diamanti duo. Anulus de auro sine lapide unus. Anulus de auro cum lapide plena de diamanti unus. Anulus de auro cum safilio orientali unum. Anulum de auro cum cameolo unum. Crus de crestalo una. Perle orientale quinquaginta novem. Cameolum de jaspeo guarnitum de auro et perlis intus lignum domini unum. Lapis de calzedono guarnita de auro una. Et sunt in duabus bronziis de corio et sigillate sigillo mei Josept sculto arbore palme. Quas uncias noningentas decem et septem auri et soldos quinque Janue per me vel meum missum tibi vel tuo certo misso dare et solvere promitto in civitate Janue usque ad medietatem quadragesime proxime venture. Eo acto inter me et te quod si ut supra tibi non solvero et dedero tibi dictas uncias ut dictum est debent esse tue libre centum Janue videlicet illas libras quinquaginta quas tibi Burgus de Florentia fecit scribere in bancho Guillelmi Lecacorvi et illas libras quinquaginta tibi pro me promiserunt ex delegatione mea Paganellus Manatus de Pistoia et Bernardinus filius quondam Jacobi Storti de Palma. Et a termino in antea liceat tibi vendere dictas res cui volueris sine omni mea et heredum meorum omniumque pro me contraditione. Actum Janue eo loco die hora et presentibus.

(Actum Janue in fundico Bestagnorum. Testes Jacobinus Bestagnus. Jacobinus de Casali et Pariboni Romei de Versali. Die XXI Decembris circa terciam.) The year 1253 is given in preceding folios.

[2] In 1248 he was engaged in several large financial transactions in Genoa on his way to the fairs of Champagne, acting for Deustesalve of Parma and other anonymous associates. ASG, Not. B. de For., reg. I, pt. II, fols. 30^{v}, 172^{v}.

associates. The debtor obligated himself to pay at the end of three months 917 ounces of gold *tareni* of Sicily plus 5 Genoese *solidi;* or, if he made the payment in Genoese money, he must pay at the relatively high rate of sol. 55 per ounce of gold,[1] amounting to £2522 Genoese. The creditors, who were empowered to sell the jewels without restriction in case of default, were offered further security in a bond of £100, half of which was placed at the bank of the Lecacorvi in Genoa by one Burgos of Florence[2] and half was guaranteed by two citizens of Pistoia and Parma, the whole to be paid to the creditors on behalf of the debtor should he default on the specified date about three months thence.

An analysis of the document discloses nine hundred and eighty-seven objects in all, seven hundred and eighty-three loose stones, one hundred rings, ninety-four pieces of jewelry apparently in the form of brooches or pendants, and ten articles of devotional use or household adornment.

The hundred rings were probably all of gold, since all except the ruby rings are specifically so described, and all but one were set with gems. Forty-three were set with European sapphires coming from Le Puy-en-Velay, where the volcanic deposits, as Holmes points out, yielded a stone less valuable than the Oriental sapphire, and fairly common in the West. In this document, as in others cited by Holmes, it is always carefully described as a saphire *de Podio* in contradistinction to the sapphire *orientalis*, and may therefore have been of a slightly different shade or color. Thirty-seven rings were set with rubies, ten with topazes, one with an Oriental sapphire, one with a cameo surrounded by emeralds. Of two diamond rings listed one was a complete circlet of those stones. Of the remainder one was set with a chrysoprase,[3] one with a peridot or chrysolithus,[4] one with two pieces of plasma,[5] one with ten toadstones or *clapaudine*,[6] and one with a cameo not otherwise described.

The ninety-four pieces which are assumed to have been brooches or pendants are described merely as stones *inclusi* or *guarniti* by metal, i.e., mounted or set, and therefore probably in one of those forms of personal adornment — five in silver, one in copper, and the rest in gold. Fifty-one are cameos, one of which is described as bearing the image of a man (*galma hominis*), no indication of the color or variety of the stone being given in any case. Thirty-five are mounted intaglios, not otherwise described except as to the settings which were all of gold except the six in silver and copper. Three of the pieces were set with Oriental

[1] See above note 1.

[2] A Florentine well known in Genoa where in 1251 he had founded a partnership for the weaving of cloth in which he had supplied the capital of £600, ASG, Not. B. de For., reg. II, fol. 113^{r}.

[3] This is the sole mention of this stone I have found in Genoese documents nor has Holmes met it in those he has used but is of the opinion that it may have been sometimes confused with green jasper or other stones, *op. cit.*, p. 202.

[4] This is also the single reference to this stone which I have thus far met, but it may be noted that this yellow stone is not here confused with the topaz of which many are listed in the document. Cf. Holmes, *op. cit.*, p. 199.

[5] The only mention of this kind of impure opaque quartz I have found. Cf. *ibid.*, p. 198.

[6] The *crapaudine* of the inventory of Charles VI of France, cited by Holmes, and defined by him as the tooth of some ganoid fish. *Ibid.*, p. 204. It is not elsewhere named in Genoese documents, as far as I know.

sapphires apparently simply cut, and two with the same stone either highly cut or of a pointed form ('corne de saphilio orientale'), and one with a sapphire from Le Puy. Of the other two pieces in this fashion one was set with a topaz and another with a piece of chalcedony.[1]

The objects of devotional use or household adornment consist of three crucifixes of gold,[2] a crystal cross,[3] a reliquary of gold set with an intaglio, a cross adorned with a cameo of jasper[4] mounted in gold and set with pearls, and four vases of onyx and chalcedony combined, one of which was ornamented with gold.

The loose stones, seven hundred and eighty-three in all, are made up of one hundred and twelve Oriental sapphires, two sapphires from Le Puy, nineteen topazes, fifty-nine Oriental pearls, seventy-seven cameos of stone and three of glass; and finally there were three lots of unmounted engraved gems or intaglios numbering five hundred and eleven.

The variety of stones named, fourteen if we do not differentiate between the two sorts of sapphires but include the toadstone or *clapaudina* which is not properly a stone at all, is not remarkable when compared with the fifty-nine substances listed in the mediaeval lapidary of Bishop Marbodus.[5] This bears out the statement of Holmes that many of the substances named by Marbodus may have been rare or quite unknown in the West in the Middle Ages, although the mention of the chrysoprase is interesting, since Holmes does not find it in the lists at his disposal and comments on the fact. On the other hand, several of the stones found in Genoese trade, such as the turquoise, garnet, amber, and coral, are not represented in this collection, nor is the amethyst which I have not yet encountered in trade. Except for one cameo of jasper and three of glass, we do not know of what substances the hundreds of cameos and intaglios were composed; the variety of stones or substances represented may therefore have been considerably larger. The true precious stones fall into the following order roughly as to quantity: Oriental sapphires, Oriental pearls, sapphires from Le Puy, rubies, topazes, diamonds, and emeralds.

The great number of cameos and engraved gems, six hundred and eighty-one, raises the question of their manufacture — antique, Byzantine, or mediaeval. Although we know little of mediaeval gem engraving, it would seem that the cameos at least may have been of mediaeval workmanship, like those commonly exported from Genoa; they may have been cut very simply for contrasting color alone, since only one is definitely described as depicting the human form, although the cross or crucifix with a cameo of jasper set with pearls might have shown the figure of Christ on the stone, and in fact other cameos may also have

[1] The only other mention of this form of non-crystalline quartz is one of bowls mounted with silver. See p. 178, n. 2.

[2] *Cruces de auro cum ligno domini* seem to mean crucifixes. *Lignum domini* or *lignum dominicum* is usually defined as a cross, but in fact either expression may mean crucifix as we say 'cross' today implying the figure thereon.

[3] For the use of crystal for buttons and beads see p. 178, n. 2.

[4] In 1281 a merchant exported to Majorca 8 pairs of knives with handles of *roarch* (?), and 9 pairs with handles of jasper, silver, and coral. ASG, Not. S. Vatt., reg. II, fol. 234r. Jasper I have not otherwise found in Genoese trade.

[5] Cited by Holmes, *op. cit.*, p. 196.

depicted figures and yet have been merely described as 'cameos' as is the custom in modern times. As for the intaglios, of the designs on which unfortunately no hint is given, since they are usually made of very hard stones and are practically indestructible, many or all may have come down from antiquity. Their presence in such quantities in this list, chiefly unset, points to a wider appreciation of such objects of art in the thirteenth century than is generally assumed if the transaction were a bona fide sale by a dealer in gems to King Conrad's agent. On the other hand, if the transaction were in reality a loan with the gems as security, as seems more probable, then the engraved stones may have formed a collection of antique gems made by Frederick himself, another evidence of his astonishingly wide interests, of his love of antiquity and of beauty.[1]

When we come to the worth of the jewels we are confronted by a somewhat difficult problem. If the transaction were an outright sale, then obviously the market value of the collection was £2522 Genoese, but if it were a case of security for a loan the sum mentioned was no doubt considerably below the real market value of the jewels when sold piece by piece or in small lots as would be necessary on account of the difficulty in finding a purchaser of the entire store except in royal circles. One can only accept the sum named as the minimum worth of the jewels agreed upon by the parties to the transaction, regardless of what value Frederick as the possible former owner and collector or Conrad as a hard-pressed debtor might have placed upon them. As trade investments went in the mid-thirteenth century, £2522, although a very considerable sum, was not startling among the wealthiest merchants in Genoa. The question of what the amount actually meant then arises. In attempting to determine its equivalent it would indeed be futile to try to reckon it in terms of modern currency as has so often been done in dealing with mediaeval sums, but a fair notion of the meaning of the sum may be reached by considering what it would have purchased at that period in Genoa, bearing in mind that £2522 was the expressed equivalent of 917 ounces of gold of the fineness required by the Sicilian mint, or of about 870 ounces of gold bullion on the Genoese market.[2]

Salaries and wages afford one basis of comparison. In 1225 the annual salary of the podestà of Genoa was £1300, out of which he was required to pay the expenses of his entire establishment, including two *judices* and twenty servitors, with allowances for travel on official business varying from £2 to £4 per day in accordance with circumstances.[3] At the other end of the scale, in industrial circles, a skilled blacksmith received about £13 per annum in daily wages if continually occupied;[4] a shield-maker received the same amount and daily lunches in addition;[5] weavers received from £5 to £15 in a year, dependent on their age and skill.[6]

[1] Cf. E. Kantorowicz, *Frederick the Second* (New York, 1931), pp. 528 ff.

[2] See p. 178, n. 1.

[3] ASG, Not. Fed. de Sig., reg. II, fol. 85^{r}. Cf. V. Poggi, 'Series Rectorum Reipublicae Genuensis,' *Hist. Patr. Mon.*, XVIII, col. 1006, and M. G. Canale, *Nuova Istoria della Republica di Genova* (Florence, 1860), II, 217.

[4] ASG, Not. Pal. de S., reg. II, fol. 9^{v}, *anno* 1241, den. 10 per day, paid weekly.

[5] *Ibid.*, fol. 107^{v}, *anno* 1248, den. 10 per day, paid daily.

[6] *Ibid.*, fol. 89^{v}, *anno* 1248, den. 4 and den. 12 per day paid weekly.

Artisans of a higher type, paid by the year in monthly or quarterly installments, received somewhat more. A gold-worker, *batifolius*, was paid £18 per annum;[1] a decorator of shields sufficiently known to be urged by letter to come to Genoa to practice his art was promised £18 to £24 per annum;[2] two Genoese dyers agreed to go to Germany to engage in their craft in the employ of a German then in Genoa at £20 and £35 per annum in addition to board and lodging.[3] A factor trading abroad for other merchants received £18 the first year and £22 the second, with all expenses except his clothes when away from Genoa.[4] The equivalent of the sum on this basis therefore represents the salary of the head of the state for two years, or roughly the annual earnings of about a hundred and fifty skilled craftsmen.

Another basis of comparison lies in material things. The sum for which the jewels were pledged would have bought one of the largest ships of the period fully manned and equipped with provisions for four months.[5] It would have purchased about 500 cwt. of cotton,[6] 150 sacks of wool of around 500 pounds each,[7] over 18,000 bushels of wheat in that year of a plentiful harvest or about

[1] ASG, Not. B. de For., reg. I, pt. I, fol. 103^{r}, *anno* 1233. The agreement was for £6 on demand and sol. 20 per month.

[2] Two Genoese *scutarii* write a letter to Robertus Francigene *pintor*, asking him to come to Genoa to enter the employ of one or the other for two years at sol. 30 to sol. 40 per month "in tua voluntate." ASG, Not. Pal. de S., reg. II, fol. 22^{r}, *anno* 1248.

[3] ASG, Not. Pal. de S., reg. I, fol. 97^{v}, *anno* 1239.

[4] G. Gorrini, 'Documenti sulle Relazioni fra Voghera e Genova (960–1325),' *Bibl. Soc. Stor. Subalp.*, XLVIII (1908), 128–129.

[5] E. H. Byrne, *Genoese Shipping in the Twelfth and Thirteenth Centuries* (Cambridge, 1930), pp. 22–23.

[6] An average price of den. 12 per pound has been used, based on many recorded sales between 1236 and 1268 when the price ran from a low of den. 9.2 to a high of den. 12.8, having risen from about den. 4 in the middle of the preceding century. Cotton was sold in sacks of about 500 pounds, or in *saume* of about 450 pounds each, but the actual weight is always given as well as the number of packages since the price was reckoned on the *cantarium* of 100 *rotuli* (150 pounds) although usually not the price but the total value is given. For convenience in making comparisons the prices for various years which follow have been figured per pound. *Anno* 1158, den. 3.8, *Chartarum* II, no. 597. *Circa annum* 1160, den. 4.6, ASG, Not. Giov. Scriba, fol. Extra A^{r} (not edited in *Chartarum* II with the other acts of this notary but found on my last visit to Genoa bound into the register transversely along with some other notes of the period which now appear in the register as folios marked 'Extra'). *Anno* 1236, den. 9.2, ASG, Not. Osberg. e Magg., reg. I, fol. 241^{r}. *Anno* 1241, den. 11.6, Ferretto, *Bibl. Soc. Stor. Subalp.*, LII (1910), 88. *Anno* 1248, den. 12 and den. 12.4, ASG, Not. B. de For., reg. I, pt. II, fol. 123^{v}, 127^{v}. *Anno* 1263, den. 12 and den. 12.8, ASG, Not. B. de For., reg. V, pt. II, fol. 69^{v}. *Anno* 1268, den. 9.83, L. T. Belgrano, *Documenti Inediti Riguardanti le Due Crociate di S. Ludovico IX Re de Francia* (Genoa, 1859), p. 104 note.

[7] An average price of £16.9 per sack, based on sales of 266 sacks in many different lots between 1248 and 1282, has been used. Wool was sold by the *cantarium*, by the *sauma*, or by the sack of weight varying from 400 to 523 and 547 pounds; from the fact that after about 1248 many sales took place with number of sacks stated but no weight given, it might be assumed that a standard weight per sack was accepted among merchants. The price of wool by weight varied with the quality from den. 3 per pound, to den. 15 for the highest priced product imported from Narbonne, the average on scores of sales between 1233 and 1275 being about den. 5 per pound excluding wool from Narbonne. It seems unnecessary to list here scores of references. Those which follow are to the more important sales of sacks between 1248 and 1282, excluding again wool from Narbonne. ASG, Not. B. de For., reg. I, pt. II, fol. 156^{v}; reg. II, fol. 8^{v}; reg. V, pt. II, fol. 44^{v}, 69^{r}, 69^{v}; Not. B. Cass., fol. 180^{v}; Ferretto, *Cod.*

13,000 in an ordinary year.[1] It represented about 1500 pounds of raw silk,[2] 290 cwt. of pepper,[3] 100 cwt. of sugar,[4] or over 370 cwt. of wax.[5] In live stock it would have purchased between 8000 and 9000 sheep,[6] about 630 cows or oxen or 2500 calves,[7] about 7000 goats,[8] over 160 asses,[9] more than 400 ordinary horses or about

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Dipl. II, pp. 17, 246, 254, 322–323. I have no wool prices for the twelfth century for comparison as in the case of cotton. The chief references to wool imported from Narbonne follow. Ferretto, *op. cit.*, pp. 42, 154, 155, 322–323. The sources frequently but not always state the source of the wool which was imported from Africa, Spain, Provence, and Narbonne, and Syria, with no mention found of English wool as such; it was sold in Genoa to merchants from many of the northern towns and from Florence in large lots, and to local dealers and weavers in lesser quantities, on a very active market.

[1] Wheat, imported into Genoa chiefly from Sicily, but also from southern France and even from Byzantium, was sold by the *mina* which in the thirteenth century was equal to litres 91.630 (P. Rocca, *Pesi e Misure*, p. 109), or 2.52 bushels. In the very year of the loan with which we are here concerned, 1253, wheat sold in Genoa at the lowest price I have found recorded between 1225 and 1287, sol. 7 per *minam*. Ferretto, *Bibl. Soc. Stor. Subalp.*, LII (1910), 228. The average price on seventeen sales between 1225 and 1267 is sol. 9.7 per *minam*. In making the calculation in the text above I have therefore used these two prices, sol. 7 for a year of plenty and sol. 9.7 for an ordinary year, disregarding famine or near famine prices. In 1275 for example, wheat rose to a new high of sol. 21 per *minam* and in the following year to the famine price of sol. 40, falling in the decade ensuing to sol. 10–18. References for various years to prices per *minam* follow. *Anno* 1225, sol. 8, A. Ferretto, *Liber Magistri Salmonis, Sacri Palatii Notarii*, 1222–1226 (Genoa, 1906), p. 152. *Anno* 1245, sol. 12 and 11½, ASG, Not. Osberg. e Magg., reg. I, fol. 100r. *Anno* 1248, sol. 13, ASG, Not. B. de For., reg. I, pt. II, fol. 84r. *Anno* 1267, sol. 7½, 8, 9, 9½, ASG, Not. Osberg. e Magg., reg. I, fol. 102v, 107r, 108v. *Anno* 1275, sol. 21, Ferretto, *Cod. Dipl.* II, p. 51. *Anno* 1276, sol. 40, *ibid.*, p. 106. *Anno* 1277, sol. 15–18, *ibid.*, pp. 148–150, 154–5, 159, 162, 174, 194–5. *Anno* 1278, sol. 13–16, *ibid.*, pp. 204, 209. *Anno* 1279, sol. 10, *ibid.*, p. 276. *Anno* 1280, sol. 10–12, *ibid.*, pp. 305, 309–310, 312, 325. *Anno* 1281, sol. 11–15, *ibid.*, pp. 341, 380–4. *Anno* 1287, sol. 15, Gorrini, *op. cit.*, p. 294.

[2] Among hundreds of investments in silk in the thirteenth century both weight and value have been found in only five instances, presenting an average price per pound of £1.68 for the years 1236–1251. References to price per pound follow. *Anno* 1236, sol. 31, ASG, Not. B. Cass., fol. 15r. *Anno* 1239, sol. 36, *ibid.*, fol. 106v. *Anno* 1248, sol. 31, ASG, Not. Pal. de S., reg. II, fol. 108r. *Anno* 1250, sol. 40, *ibid.*, reg. I, fol. 172r. *Anno* 1251, sol. 34 den. 8, ASG, Not. B. de For., reg. II, fol. 176r.

[3] An average price for the years 1236–1255 has been used, £8.65 per *centenarium* or cwt. (den. 21 per pound), nearly double the price in the middle of the twelfth century. Prices per cwt. for various years follow. *Anno* 1155, £3 sol. 2 den. 8, *Chart.* II, no. 255. *Anno* 1157, £3 sol. 10, and £3 sol. 15 *ibid.*, nos. 398, 539, 540. *Anno* 1158, £5 sol. 15, *ibid.*, no. 680. *Anno* 1160, £4 sol. 7, and £4 sol. 10, *ibid.*, nos. 908, 924. *Circa annum* 1160, £5, ASG, Not. Giov. Scriba, fol. Extra Ar. *Anno* 1161, £4 sol. 10, *Chart.* II, no. 1011. *Anno* 1202, £5 sol. 10, ASG, Div. Not., fol. 224. *Anno* 1236, £7 sol. 13, ASG, Not. B. Cass., fol. 88r. *Anno* 1248, £10 sol. 6, ASG, Not. B. de For., reg. I, pt. II, fol. 88r. *Anno* 1251, £8 sol. 15 den. 4, ASG, Not. B. de For., reg. II, fol. 193v. *Anno* 1255, £8, ASG, Not. Pal. de S., reg. III, fol. 53v.

[4] Sugar in large lots sold in 1238 for den. 3.6 per pound, and in 1239 for den. 5.4 per pound. ASG, Not. Pal. de S., reg. I, fol. 93v, and Not. B. Cass., fol. 103v.

[5] In 1241 two large lots of wax from Tunis sold at den. 16.2 and den. 16.9 per pound. ASG, Not. B. de For., reg. I, pt. I, fol. 174v. For the huge imports from the Black Sea region no prices can be given here because only the total values of many shipments without the weights have been found.

[6] Using an average price per head of sol. 6, based on sales of 169 head between 1262 and 1281. A. Ferretto, *Documenti intorno alle Relazioni fra Alba e Genova*, 1141–1270 (Genoa, 1906), I, 246. Ferretto, *Bibl. Soc. Stor. Subalp.*, LII (1910), p. 257 note. Ferretto, *Cod. Dipl.*, II, 426.

[7] The average price on sales of twenty oxen and cows between 1225 and 1278 is £4, ranging from £2 to £8 each. ASG, Not. Pal. de S., reg. II, fol. 24v, 25v, 49r, 72r. Ferretto, *Liber Salmonis*, pp. 476, 483. Ferretto, *Bibl. Soc. Stor. Subalp.*, LII (1910), 235, 253, 257, 264. Ferretto, *Cod. Dipl.*, II, 426. In 1278 seven calves sold for £7 sol. 4. Ferretto, *Bibl. Soc. Stor. Subalp.*, LII, 257 note.

85 exceptionally fine ones,[1] or more than 350 Saracen slaves.[2] The equivalent of the sum under consideration, £2522, is more difficult to reckon in terms of real estate without more adequate description of the condition of houses and lands than is usually given in deeds of sale, but it would have purchased seven to ten houses of the nobility in the center of Genoa,[3] or five stone towers of the type then in vogue among the great nobles of the city,[4] and it would have bought somewhat more than a third of the village of Varazzo with thirty-odd peasant tenures therein,[5] or the entire castle and villa of Montoggio.[6] On the whole it therefore represented no inconsiderable amount of wealth in purchasing power at the time.

What became of these jewels in the troubled years of the dying Hohenstaufen era one cannot say. Ten years later than the incident here discussed, there were legal difficulties in Genoa over a debt still owed on royal Sicilan jewels upon which 425 ounces of gold *tareni* had been paid with an undefined amount still due after large expenses had been incurred, but whether or not on this same transaction is not clear, nor is there any description of the jewels.[7] In all probability the

[8] Six goats and two kids were sold in 1277 for sol. 44. Ferretto, *Cod. Dipl.*, II, 366.

[9] An average price of £14.7 based on sales of 38 beasts between 1200 and 1276 has been used. It seems unnecessary to cite here the thirty references mostly to the notaries' acts. The prices ranged from £4 to £30 per beast as the two extremes. ASG, Not. B. de For., reg. v, pt. II, fol. 119^{v}, *anno* 1248, and reg. II, fol. 135^{v}, *anno* 1251.

[1] For the lower quality of animal an average price of £6 has been used, based on thirteen sales between 1225 and 1282; and for beasts of the higher quality an average price of £30 based on thirteen sales between 1248 and 1271. Instead of listing all the references the extremes in both groups are given with the price. £3, Ferretto, *Liber Salmonis*, p. 451, *anno* 1225; and £11, ASG, Not. B. Cass., fol. 34^{r}, *anno* 1236. £27, ASG, Not. B. de For., reg. I, pt. II, fol. 2^{r}, *anno* 1248; and £70, Ferretto, *Bibl. Soc. Stor. Subalp.*, LII (1910), 233, *anno* 1253, on nine months credit.

[2] In making the average price of £7.2 more than sixty sales between 1200 and 1288 have been used, excluding slaves of advanced years when the age is given, and the very exceptionally highly priced slave, at £24 for example. It is not necessary here to distinguish between males and females since the average price for the former is £7.6 and for the latter, £7; but nearly twice as many females were sold. It may be of interest to note that although the sales of slaves are far more numerous in the thirteenth century than in the twelfth, the prices had greatly risen. Saracen boys could be bought in the mid-twelfth century for about £3, and an exceptional girl for £8. *Chartarum* II, nos. 294, 1005, 1051. In the thirteenth century most of the slaves in Genoa came from various parts of Spain, some from the Balearics and North Africa, and when Valencia was taken from the Moors in 1238, slave dealers from Tortosa brought Saracens in great numbers to Genoa where they were sold to weavers, taverners, drapers, tailors, etc., at fair prices. ASG, Not. B. Cass., fol. 107^{v}, 114^{v}, 115^{r}, 116^{r}, 120^{v}, *anno* 1239; Not. Pal. de S., reg. I, fol. 96^{r}, 99^{r}, 104^{r}, 106^{r}, 110–111, *anno* 1239; Not. B. de For., reg. I, pt. I, fol. 156–168, *anno* 1241. Occasionally an owner emancipates a slave in a testament for the benefit of his soul, sometimes only if the slave will consent to become a Christian. ASG, Not. B. de For., reg. I, pt. I, fol. 19^{v}; and Not. Osberg. e Magg., reg. I, fol. 110^{r}. There is occasional mention of baptized Saracens being sold and others being freed. Ferretto, *Cod. Dipl.*, II, pp. 88, 166–167. Cf. E. Rodocanachi, *Les Esclaves en Italie du XIII^{e} au XVI^{e} Siècle* (Besançon, 1906).

[3] Two such were sold in 1251 for £250 and £375. ASG, Not. Pal. de S., reg. I, fol. 205^{v}.

[4] In 1251 the Mallonus family sold their tower to one of the della Volta for £500. *Ibid.*, fol. 211^{v}.

[5] ASG, Not. G. de Sori, fol. 117^{r}, *anno* 1201.

[6] One half of this property was sold in 1252 for £1150. Ferretto, *Bibl. Soc. Stor. Subalp.*, LII (1910), 40.

[7] ASG, Not. B. de For., reg. v, pt. II, fol. 98^{r}.

entire store was disposed of as the family misfortunes culminated in complete disaster, and like the throne itself, were dispersed fragmentarily through Genoese channels of trade and through others in later times. The finest of them may still be in use or reposing in modern collections of engraved gems, not without having served, it is hoped, to illumine slightly the question of a few mediaeval values and prices.

BARNARD COLLEGE.

JOHN HEYRON OF NEWTON PLECY, SOMERSET

BY RUSSELL KRAUSS

A MATTER of real importance is obscured in Professor Manly's recent note, 'Mary Chaucer's First Husband' (SPECULUM, IX, 86 ff.) Neither Mr Whiting nor I have stated, despite the view expressed in the opening paragraph of this note, that the Christian name of Mary Chaucer's first husband was not John. That his surname was Heyron has been known for many years. Professor Manly misses the point of my discussion and of Mr Whiting's comment on my conclusions. The question with which I dealt was whether Chaucer's grandmother was married, as Manly once believed, to *the* John Heyron of Newton Plecy and North Petherton, Somerset, and it was with the conclusions I reached in this discussion that Mr. Whiting agreed.

Several years ago Professor Manly expressed his belief that Mary Chaucer did marry this John Heyron and that from this marriage certain benefits may have come to Geoffrey Chaucer. He stated in the introduction to his *Canterbury Tales:* 'The first husband was John Heyroun, a Londoner, apparently in the wine trade, who by a previous marriage with a Somersetshire woman had acquired land in Somerset and established relations there which may have had interesting consequences for the poet' (page 4). Some pages later he expanded this clue: 'It is, to say the least, possible, that Chaucer owed this particular office [the forestership of North Petherton], not to his early connection with the Countess of Ulster, but to the ownership of certain lands in the forest by some of his cousins (descendents of Mary Chaucer by her first husband, John Heyroun, which carried with them a claim to the appointment of forester' (page 32).

These statements are, because of the nature of the text, undocumented and the wording is a trifle vague, but the interpretation of them in my *Chaucerian Problems*[1] seems inevitable. I there demonstrated that a John Heyron of Middlesex and London married Emma, one of the three de Plecy sisters of Newton Plecy, Somerset, and further that the bailiwick of the forests of Somerset was a pertinence of the Newton Plecy manor, though not of that portion which Emma

[1] Pp. 59 and 80.

V.

RENAISSANCE MEDALS IN RELATION TO ANTIQUE GEMS AND COINS.

THE portrait medals of the fifteenth and sixteenth centuries being so completely the offspring of the Renaissance, it may be interesting to examine some of the ways in which they were specially affected by the study of the antique. I propose, therefore, within the narrow limits of this paper, to consider their relation to antique coins, and more particularly to the *camei* and *intagli* of ancient Greece and Rome, in the hope that others more conversant with these rare objects may be able to trace more fully their influence on the *cinque cento* medallists.

The earliest Italian cast medals, as is well known, belong to the middle of the fifteenth century, Pisano's first dated work being of the year 1444; but at this period the art of producing gems after the fashion of the antique had not taken root in Italy. We are told, however, that Pope Paul II., the Venetian (1464—1471), for whom so many medals were executed, had amassed from Greece and Asia a quantity of gems, chosen with taste and skilful appreciation of their extraordinary beauty. Even before this, in 1445, we hear of another Venetian, not an ecclesiastic, but an admiral, Bertuccio Delfin, as the possessor of a collection of coins and gems, which included the famous

amethyst, the Pallas of Eutyches. But to come nearer to the point, Vasari states that Donatello (who died in 1466, and may or may not have been a medallist) had recourse to antique gems for the subject of the eight bas-reliefs with which he decorated the *cortile* of the Palazzo Ricardi for the elder Cosmo de' Medici (d. 1464). These represent 1, The Rape of the Palladium; 2, Hercules vanquished by Cupid; 3, Hercules in the Garden of the Hesperides; 4, An Oracle; 5, The Triumph of Cupid; 6, Ariadne amidst Satyrs and Bacchants; 7, A Centaur; 8, A Slave kneeling before his Conqueror.

It should be remembered that, although during the Middle Ages the art of gem engraving had completely perished, yet a great quantity of Greek, Etruscan, and Roman *intagli* had been preserved, mounted in plate and jewellery, though more for the sake of their talismanic than their artistic virtues. There was, therefore, a supply ready for the learned collector, who was able to appreciate them in their latter capacity, and the clever artist-goldsmiths of the north of Italy quickly lent their hands to the resuscitated art with complete success. It is to be noted, however, that in respect of gems, no less than other antique objects, the Italians were far from being servile copyists, and that they rather consulted ancient art for inspiration and choice of subjects, giving full play to their own exuberant and original imagination. "By the end of the fifteenth century," says Mr. King,[1] "we find Camillo Leonardo (writing in 1502) praising four gem-engravers—Anichini of Ferrara, Gio. Maria of Mantua, Tagliacarne of Genoa, and Leonardo of Milan—as equal to any of the ancients in their profession; and further-

[1] *Antique Gems*, p. 168.

more stating that their works were diffused throughout all Italy—a sufficient proof of the previous length of time over which their labours had extended."

The climax was reached under Lorenzo de' Medici and his son Piero, who did all in their power to cultivate the art, by purchasing the most choice and costly specimens, and attracting to Florence the most skilled engravers. From these masters, a young man, afterwards named from his occupation Giovanni delle Corniole, who will be mentioned hereafter, learnt the art of engraving in *intaglio* through Lorenzo's instrumentality.

As might be expected, the medals of Pisano and his contemporaries or immediate successors do not offer much in illustration of the subject, though many of the works of Giovanni Boldu, Guidizani, and others, are full of the spirit of the antique. Dr. Friedlaender, the late eminent *savant* of Berlin, says that among the medals of Pisano, the reverses of those of King Alphonso of Naples are the best in design, and were nearer the freedom and grandeur of the antique than any works of art with which he is acquainted. Part of this merit, he thinks, may be attributed to the king himself, whose love for the history and monuments of classical antiquity may have led to the choice of Greek coins as suggestive models. Alphonso's contemporary, Antonio of Palermo, says, "Numismata illustrium imperatorum sed Cæsaris ante alios per universam Italiam summo studio conquisita, in eburnea arcula a rege pœne dixerim religiosissime asservabantur, quibus, quoniam alia eorum simulacra jam vetustate collapsa non exstarent mirum in modum sese delectari et quodammodo inflammari ad virtutem et gloriam inquiebat." The large and bold medallions of this time were cast from models in soft material, and it is not till we come to the medallists, who

were at the same time die-sinkers, that the influence of ancient gems (and of course the cognate coins) began to be felt. Such an one probably was Pollaiuolo, to whom five medals are attributed by M. Armand, though none of them are signed with his name; but he is known to have engraved the dies for the papal coinage with much success.

In his small medal of Lorenzo de' Medici, he has copied on the reverse a medal of Trajan, the subject being an armed warrior, with a palm in one hand and a spear in the other, in the midst of three comrades, half-reclining on the ground. This, at any rate, is an interesting combination—a portrait-medal of the "magnificent" patron of the Fine Arts, the enthusiastic collector of antiques, executed by the versatile artist Pollaiuolo, the reverse of which is borrowed from a Roman medal. This alone would go far to establish a fashion to be freely followed by the now numerous exponents of the medallist's art.

But if a coin or *intaglio* could furnish the reverse of a medal, much more must *camei* have been the models of the obverse, seeing that the *cinque cento* period is still more famous for its gems in relief, both in quantity and quality, and that a medal might be merely a reproduction in metal of the *cameo* itself. The numerous and beautiful *plaquettes* of this period afford evidence that both *camei* and *intagli* were, in fact, so reproduced for purposes of decoration or personal ornament. This, of course, was still more likely to happen in cases where the medallist was himself an engraver of gems. Such, for instance, were—

Valerio Vicentino,
Giov. Bernardi da Castel Bolognese,
Domenico di Polo,
Caraglio,
Alessandro Cesati (Il Greco),
Cesare da Bagno,
Giov. Paolo Poggini,
Jacopo da Trezzo,
Giov. Antonio Rossi,
Annibale Fontana.

Of these only three are mentioned by M. Armand as having been engravers of dies, viz., Valerio Vicentino, Domenico di Polo, and Alessandro Cesati. But many other medallists were die-sinkers, and some, at least, may very probably also have executed gems. Among these we find the following names :—

Antonio del Pollaiuolo,
Francesco Francia,
Ambrogio Foppa (Caradosso),
Vittore Camelio,
Benvenuto Cellini,
Andrea Spinelli,
Leone Leoni,
Pastorino,
Pietro Paolo Galeotti (Romano),
Domenico Poggini.

Valerio Vicentino, M. Armand informs us, mentions in his will that he engraved no less than 150 dies, which may be taken to represent 75 medals or coins. An early catalogue gives a description of 50 of these, which are all in the style of the antique, representing Greek and Roman personages. The subjects of the reverses of his own portrait medals, supposed to have been done by himself, are, (1) A Warrior (nude) in a Quadriga ; (2) The Head of Arethusa, copied from a Syracusan medal ; and (3) An Inscription within a classical wreath.

Giovanni delle Corniole executed the magnificent head of Savonarola in *intaglio*, which formerly belonged to the Medici collection, and now adorns the Cabinet of Florence. This work so closely resembles the medal of the great Friar, as to gain for its author a place among the "*Médailleurs Italiens*" of M. Armand, who suggests that the medal (of much larger dimensions) may have served for the model of the famous *intaglio*. He is also credited with the numerous *plaquettes* bearing the signature IO. F. F. (Giovanni Florentinus Fecit), which have much affinity with the reverses of medals.

Francia and Caradosso evidently studied ancient coins as models for their admirable works, and at this time portraits of princes were beginning to be generally impressed on coins, whence the name of "Testoons" was applied to the larger pieces. The medals of Giov. Bernardi were chiefly made for Clement VII., and the subjects of the reverses are all religious; but his engravings on crystal and stone represent such subjects as the Battle of the Amazons, the Rape of the Sabines, the Caledonian Boar Hunt, and other scenes drawn from ancient mythology.

Vasari says that Domenico di Polo executed some fine medals for Alessandro de' Medici, but unfortunately they are not now known. M. Milanesi mentions an *intaglio* in emerald, engraved by this artist in 1532, representing Hercules, which was used as a seal by the Duke, and also by his successor Cosmo. Of the latter we have several medals by Domenico, the reverses exhibiting such classical subjects as Hercules and Antæus, a Capricorn, Fides, &c.

Alessandro Cesati, a native of Cyprus (whence his name of Grechetto), was first employed by Cardinal Alessandro Farnese, for whom he executed a well-known medal. The one that he made for Paul III. and several others attributed to him from similarity of style, bear Greek legends, and are strongly imbued with the spirit of ancient art, revealing the hand of an engraver of gems. He was engaged at the mint at Rome, and afterwards at Parma.

G. M. Pomedello, of Verona, is another medallist who seems to have sought among antique gems subjects for his works. For instance, there is a strong similarity between the reverse of his medal of Charles V., and a gem figured in Mr. King's work already referred to (No. 51), in which a warrior is represented as tracing the announcement of

victory, VICI, on his enemy's shield. Again, the reverse of his medal of Giov. Emo seems to have been suggested by the fine *intaglio* of Alexander taming Bucephalus (*Antique Gems*, No. 56). On the same medal we find Minerva with palm and olive-branch, and on others Neptune on a dolphin, Fortune, the Phœnix, and on the reverse of the artist's own portrait, Hercules with club and bow.

Instances might be much further multiplied; but comparisons may so easily be made by the student and collector, that it is unnecessary here to quote further examples. It is remarkable to notice how completely destitute the German medals of the best epoch are of any such influence. Great as their merits are for extraordinary fineness of execution and realistic portraiture, their reverses are nearly always armorial, and it is impossible not to miss the charm which the Italian medals possess from their immediate contact with the most refined works of antiquity.

ADDENDUM.—M. Aloïss Heiss, in the last number of his *Médailleurs de la Renaissance*, points out that in all the signed medals by Niccoló Fiorentino, the reverses are copied, though not servilely, from antique coins and gems. He also mentions that the famous Cameo of Diomed and the Palladium was imitated, not only by him on his medal of M. A. De Le Lecia, but also by Donatello in a bas-relief of large medallion size executed for the palace of Cosmo de' Medici.

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earliest authority of all, the "Anonimo Morelliano", in describing the artistic contents of the houses of the patricians of Venice, does not note in them a single portrait by Carpaccio, nor, indeed, any work by him at all. The proper conclusion seems to be that Carpaccio's talent as a portrait-painter was chiefly, and no doubt very actively, exercised in the large cycles of legendary subjects for the houses of the Venetian brotherhoods and the pictures that he is known to have painted for the Ducal Palace. Judging from what has been preserved, Alvise Vivarini and Catena, among the earlier Venetian masters, would appear to have been the chief producers of those family portraits which, as Vasari tells us, were to be seen in such large numbers in the Venetian palaces.

MEDIÆVAL AND LATER ENGRAVED GEMS IN THE BRITISH MUSEUM—I

BY O. M. DALTON

THE collection of post-classical engraved gems in the British Museum does not equal that of the Cabinet des Médailles in the Bibliothèque Nationale in Paris, nor does it contain such notable examples as the Imperial Collection at Vienna. It has inherited less and its principal accessions have been the result of gradual purchase. The chief accessions have been derived from collections formed for the sake of antique gems, the most important being that of the Duc de Blacas, acquired in 1866, and that formed by Henry Howard, fourth Earl of Carlisle (1694-1758), acquired in 1890. The Blacas series is rich in imitations of the antique; that of Lord Carlisle, though much smaller, includes interesting examples of Renaissance work, and maintains a high standard throughout, a fact which causes little surprise when we remember the advantages which Lord Carlisle enjoyed as a collector. The well-known passage in Horace Walpole's letter to West, *à propos* of Cardinal Ottoboni, illustrates at once the good fortune of this nobleman and the enthusiasm which brought him a deserved success.[1] A limited number of stones were contained in the Payne-Knight and other collections; only a few of the Marlborough gems were acquired by the Museum in 1899. Sir Hans Sloane possessed a large series, but very few were above average merit, and most far below it.

The purpose of the present and following articles is to illustrate a limited number of the Museum gems, some on account of their individual interest, others as typical examples of their epoch. The series chosen begins with the later Middle Ages, from which time the practice of the gem-engraver's art has been continuous.[2] It is necessary to abandon Vasari's view that there was no engraving worth the name before the pontificates of Martin V and Paul II; discovery of actual gems, and research in mediæval inventories, prove that work of no mean quality was produced before the beginning of the 14th century, and that, too, in countries north of the Alps. Two gems on the PLATE [B and G] may be cited in support of this contention. The larger with the *Noli me tangere* is of a style which should carry us back to the 13th century; the smaller stone with three men in a ship closely recalls mediæval seals of maritime cities: one may compare, for England, those of New Shoreham, Fordwich and Scarborough, all either of the 13th or the 14th century. Nor are these examples alone. The Carrand collection in the Bargello at Florence, which is French in origin, includes an onyx cameo with a lady standing holding her hawk, while her pet dog fawns upon her knee, a charming work identical in sentiment with the secular art of the early 14th century in France, to which date and country it may probably be assigned. The inventories make mention of other cameos with similar subjects, *e.g.*, a lady seated holding her hawk, and two ladies playing draughts. Some of the intaglio gems on seals of about the same period are shown by costume and other features to be contemporary work, and the class will be represented in a later article. It is probable, then, that for some time before the beginning of the 14th century the engraving of hard stones was not only practised in North-Western Europe, but practised with the skill to be expected from an age in which fine craftsmanship was general. Italy

[1] The letter was written from Rome in May, 1740: "When Lord Carlisle was here last year . . . he asked to see the cardinal's collection of cameos and intaglios. Ottoboni gave leave, and ordered the person who showed them to observe which my lord admired most. My lord admired many: they were all sent back the next morning. He sent the cardinal back a fine gold repeater, who returned him an agate snuff-box, and more cameos of ten times the value. *Voilà qui est fini!* Had my lord produced more gold repeaters, it would have been begging for more cameos".

[2] Between late Roman times and the 13th century there occur periods during which the art of engraving hard stones can hardly have been practised at all in the West. Early Christian traditions feebly survived in the Merovingian epoch, and the Carolingian era witnessed a really remarkable revival, of which the finest work, the Crystal of Lothair, is in the British Museum. But from the 10th century information is almost non-existent, and probably engraving upon crystal, more or less after the Oriental style, represented the principal achievement of the lapidary. Byzantine gems form a class apart, which is not of great significance, and is here omitted.

may have been first in the field; but evidently France and England were quick to follow suit; there is no obvious reason why the two gems here shown should not be of English origin.

In the period covered by the later 14th and the early 15th centuries the art became widely established. It is represented in the Museum collection by two intaglios on sapphire, which will be described in a later article; one is cut on both faces, with a female head, and with an eagle; the other represents a seated prince, conjectured to be the Duc de Berry. The inventories of this prince, like those of his brother Charles V, have numerous entries relating to gems of contemporary workmanship. Each contains about fifteen examples, for the most part bearing on religious subjects; it is interesting to note, however, in relation to the sapphire just mentioned, that the Duke's inventory contains two stones with his portrait.[3] Other remarkable gems are one or two with the device of a bear, and one with a Saracen's head in a turban (*liée d'une touaille*). The important cameo in the Cabinet des Médailles at Paris, representing Noah drinking under a vine, has been identified as once the property of Charles V. The name of an engraver working in the time of the Duc de Berry has also come down to us: it is Scapessonal, a curious form, possibly of Italian origin.[4] As the 15th century advanced, gem-engraving flourished more and more, receiving a powerful stimulus from the growing enthusiasm for antique art which encouraged imitation in every branch. Princes and Popes collected antiques and encouraged contemporary engravers—the names of Paul II (Barbo) and Lorenzo the Magnificent head a long list of enlightened patrons; great artists like Donatello and Ghiberti showed a lively interest in this minute sculpture. Italy now assumed an undisputed supremacy which she was destined to maintain for a long period. She had opportunities for the study of ancient art superior to those enjoyed by any other nation; the best talent of the Renaissance was at her disposal. But even in Italy, mediæval traditions seem to have affected gem-engraving well into the century; the fine stone with the Virgin and Child [PLATE, F] is still mediæval in sentiment.[5] But the time of Cosmo, Piero and Lorenzo de' Medici was a period of transition in which the new influences rapidly displaced the feeling of the Middle Ages.

To this period belongs the important cameo representing Noah entering into the Ark, which came into the Museum with the cabinet of Lord Carlisle [PLATE, M]. An angel hovering in mid air communicates the divine command to the patriarch, who stands on the extreme left by the ark, about which are seen the various beasts and birds; the bull has already entered, and is visible through the open doors. On the right stand Shem, Ham and Japhet, with their wives, and the wife of Noah; upon the door is the well-known abbreviation of Lorenzo's name (LAVR. MED).[6] The evidence that the cameos formed part of the Medici collection is not, however, wholly dependent upon this, for it is described in the old Medici inventory[7] from which we gather two points: that the stone, like other valued objects in the Middle Ages—for instance, drinking cups—had attained the honour of an individual name; and that it is still in its original gold mount, for the back is pounced with floral designs as described. Its history between the 15th and 18th centuries seems to be unknown. One would suppose that it left Florence before the final restoration of the Medici, for the members of the ducal line were always too interested in gems to have suffered such a stone as this to have passed out of their possession. It may have been removed either after the expulsion of Piero II in 1494, or after the assassination of Alessandro in 1530. But it was known to Gori, who reproduces it more than once; while Mariette[8] states that it was in Paris in 1737, not long before its acquisition by Lord Carlisle. While still in Italy, it had been cast and reproduced as a plaquette, examples of which are in Paris and Berlin.[9] It can hardly be doubted that Gori and Molinier were wrong in regarding this cameo as late antique, and that Mariette was right when he assigned it to a Florentine of the 15th century, comparing the style with that of Ghiberti's Baptistery doors.[10]

[3] An intaglio on spinel ruby, formerly in the Arundel and Marlborough collections, is thought to have belonged to Charles V, and has been regarded as his portrait.

[4] J. Guiffrey, *Inventaires de Jean Duc de Berry*, II, p. 287. The best-known Italian name for the late 14th century is Benedetto Peruzzi, fl. about 1380.

[5] This is engraved on one face of a "double" cameo in the Waddesdon Bequest; the other face has the bust of a girl in very high relief which, though by some considered antique, appears to be Italian, of the earliest Quattrocento. If the two faces were not engraved at the same time, then the religious subject is probably the later of the two, but if this, as seems possible, is also Italian, not by very much.

[6] The British Museum possesses another cameo with the same letters; it is smaller in size and of less interest, representing a lion. The majority of the gems so signed are in the Uffizi at Florence and in the Naples Museum.

[7] "Un chammeo grande leghato in oro chiamato l'*Archa*, entrovi 8 figure, 4 maschi e 4 femine, 1 agnolo in aria, 1 choppia di chavalli, 2 lioni et piu altri animali, punzonato da rovescio cho fogliami" (f. 200). E. Müntz, "Les collections d'antiquités de Laurent le Magnifique" in *Revue archéologique*, 1879, p. 246.

[8] *Traité des pierres gravées*, I, p. 417.

[9] In the Dreyfus Collection and the Kaiser-Friedrich Museum. At a later date it was reproduced by Tassie (No. 13,831). As we shall have occasion to observe in connexion with intaglios, the connexion between engraved gems and medals and plaquettes was always close.

[10] *Traité des pierres gravées*, as above: "Le sujet du Camée est certainement d'invention moderne, il est dans le goût de ces Bas-reliefs qui enrichissent les portes de bronze du Baptistaire de Florence faites dans le quinzième siècle par Laurent Ghiberti". We may note two other gems with numerous figures and subjects from Genesis. Both have scenes from the life of Joseph, and one is at Windsor Castle. The other was in Sir W. Hamilton's possession, though its present whereabouts is unknown to me. But it is accessible in Tassie's reproductions, which show that part of a verse of Genesis in Hebrew is cut in relief, an indication of Renaissance date.

We know that Ghiberti studied gems, and that the *Diomed with the Palladium*, now at Naples, especially attracted his attention. But though the date of our cameo would seem to preclude any immediate relation to Ghiberti—its style suggests the second half of the 15th century—the engraver was clearly influenced to some extent by his manner. The free "classical" style of the nude son of the patriarch standing in the foreground on the right represents at an advanced stage a process of emancipation which had begun at a much earlier period of Florentine sculpture, and is exemplified among the figures inset in the foliage on the north door of the cathedral. It is probably impossible in the present state of our knowledge to assign this work to a particular artist; a certain reminiscence of the earlier Pisan schools renders Mr. C. W. King's attribution to Pollaiuolo unacceptable. When the gem passed into the possession of the Museum, Sir A. W. Franks, with more probability, suggested the name of Domenico de' Cammei, who worked for Lodovico il Moro at Milan. Unfortunately, the known work of this engraver is only represented by one or two portraits which do not help us very much in coming to a definite conclusion.

The close of the 15th century saw a very general development of the gem-engraver's art. In another article something will be said of its practice at the Court of René of Anjou, in connexion with the interesting portrait cameo of that prince, acquired with the Carlisle Collection. With the 16th century we enter the period of well-known engravers—Giovanni delle Corniole, Giovanni Bernardi di Castel Bolognese, Valerio Belli and others, whose history is too well known to need discussion here. The rest of this article may be more profitably employed in illustrating, by means of the remaining cameos on the PLATE some of the more obvious characteristics which distinguished the work of the Renaissance from the antique. Discrimination of the two classes is sometimes easy, but there are occasions when it becomes exceedingly difficult, especially where a common or typical design is copied: it is often by no means easy to say whether such work is antique or not. And in the case of "stock" portraits—for instance, those of Roman imperial personages—the difficulty is sensibly increased, for there are fewer adventitious details to betray the modern hand. Goethe long ago, discussing this question, said that in the end there would always remain cases in which the criterion could only be subjective: a man might convince himself, but would be unable to convince another. In this he confirms the opinion of Scaliger[11] whose very sane remarks may be borne in mind when the temptation to be oracular becomes too strong.

Paradoxical as it may at first sound, the Renaissance was in some respects further from the classic spirit than was the mediæval art which it displaced. The mediæval gem, like the greater sculpture contemporary with it, evinces a true feeling for symmetry and restraint; it has an instinct for simplicity, and avoids the inessential; even in examples like those here illustrated these qualities are in some degree apparent. In so far, therefore, there is community of aim and sentiment between antiquity and the Middle Ages; and this is rather diminished than increased by the advent of the Revival. The new period had not the discipline of that which it superseded; it was not impersonal enough; the need for honest self-assertion was too strong to be repressed. Where it copies a model, and is forced into restraint, we feel that it works under protest; the result is often simply dull. The gem with Ganymede giving nectar to the eagle [PLATE, I] a familiar classical subject, illustrates this heaviness. It was far more difficult for the engraver of the Renaissance to practise literal imitation of this kind than for his neo-classical successor of the 18th century, whose work, compared with his, is as the translation to the paraphrase. To antique subjects he was very loyal; he never, like Bernini and his successors, diverged into untrodden paths from the mere love of novelty; but in rendering them he allowed himself the scope which his eager nature required. The Renaissance loves opulence and intricacy of effect; it does not abstain from the superfluous or the intricate; it welcomes accessories as the Elizabethan drama welcomed them; it has no objection to a confusing number of actors. The balance and symmetry of the Græco-Roman gem are thus apt to disappear, expelled by an irregular luxuriance; the pose even of resting figures often suggests a latent restlessness. Italian sculpture in bronze and marble had admitted the pictorial treatment; the gem-engraver within his narrow limits did the same. He does not shun perspectival effects, and will even introduce distant landscape as a background, a thing abhorrent to Hellenic notions. His readiness to experiment and strike out new lines extends to technical processes, and is especially marked towards the close of the 16th century. He is not always content with the sober modelling which usually suffices the antique engraver: he will sometimes have reliefs of excessive prominence, while the undercutting of limbs until they are almost detached gives him pleasure as a proof of virtuosity. The result of these tendencies is to deprive the Renaissance gem of

[11] Scaliger's words are worth quoting even to-day, when the task of discrimination is less hopeless than in the second half of the 16th century: "Mirum quam multa et abstrusa et ignota in gemmis reperiuntur, in quibus interpretandis sæpe puto ludi operam. Non enim dubium est quin multa verisimilia dici possint, sed quæ vera præstare nemo potest, nisi qui nimis judicio suo confidunt, et alienum contemnunt".


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the perfection and repose characteristic of the best work of antiquity, but at the same time to endow it with undeniable life. The small Bacchic scene in the lowest row is all alive; it represents a not quite perfect but very buoyant art, akin to the lighter Italian poetry of a slightly earlier time. It dates from the 16th century; but it speaks the language of more than one familiar Tuscan poem. There are lines, for instance, in Lorenzo the Magnificent's "Bacco e Arianna" which the engraver of this stone might have had in his mind,[12] so nearly do the cameo and the verses reflect each other's spirit. The rendering in each case is typical of the period, and could hardly have been executed in any other. A Greek would have given other turns to the expression, and touched the subject with a lighter hand; a Pichler would no more have cut the stone in this particular way than a poet of the Regency would have composed verses of the same exuberance.

PLATE, H, illustrates another relation of the Renaissance to an antique subject, this time the somewhat meticulous attitude of the humanist. The subject is *The Fall of Phaeton*; the treatment is narrative and pictorial, and essentially undramatic. The antique rendering of this subject shows us as a rule the moment of the fall; the persons represented are few, and the unity of action is preserved. Very different is the method of the artist who produced this minute and curious work. Having a story to tell, he wants to insert as much as possible. He begins with Phaeton aloft on the clouds, still driving without disaster to himself. Below is a crowd of characters—Eridanus, Cycnus, already a swan, the Sisters fast changing into poplars, and in a remoter plane, small figures, perhaps tributaries of Eridanus, participating in the scene. It is diffuse narration and not drama; it has no *peripeteia* though with such a subject it might have seemed hardly possible to avoid one.[13] It violates the unity of time, for the transformations are premature, and nothing has happened to justify a departure from natural law. It violates the old glyptic conventions with regard to space by introducing distant subsidiary figures on another scale. If the previous gem suggests the swinging movement of the Tuscan canzone the present recalls rather the infinite precision of some humanist's Latin poem.

Of the remaining gems, several are introduced to illustrate the innovating spirit which prevailed in matters of technical procedure. In the *Apollo and Marsyas* [PLATE, K], the relief is in places very high, and a landscape is lightly indicated at the back. In *The Devotion of Curtius* [PLATE, O] there is again landscape, and a red stratum is ingeniously used to give colour to the flames issuing from the yawning gulf. In the *Roman Triumph* [PLATE, L], perhaps a triumph of Titus, the cutting is extremely deep; the whole is packed and overcrowded, producing a confused unsculptural effect. Much ingenuity is displayed in the head of Our Lord [PLATE, C]. Here, as not infrequently in the 16th century, heliotrope has been chosen, and the red markings are cleverly used to indicate the blood falling from the crown of thorns. A good example of this ingenuity, for which the engraver Masnago was celebrated, is seen in a *Flagellation* in the Louvre, cut in the same stone. In the religious subjects at the top of the plate, the characteristics above indicated are easily recognized, though here the absence of classical prototypes renders novelty less disconcerting than in the gems previously considered. *The Crucifixion* [D] is overcrowded with figures, and betrays its period by its pictorial rendering of the subject. *The Flagellation* [E] has more space and symmetry; but the architectural background is a feature repugnant to classical feeling. The mystical subject on the remaining gem [A], if less confused than *The Crucifixion*, is equally typical of the Renaissance by its dramatic character and tendency to over-expression. It is of peculiar interest because it copies, as Mr. Maclagan has pointed out, the upper part of a terra-cotta relief now in the Victoria and Albert Museum,[14] the lower part of which shows a third angel with his back to the spectator, holding up a chalice in each hand to catch the blood from Our Lord's feet, while on his right and left kneel S. John the Baptist and S. Jerome. The scene represents Our Lord standing before the Cross, his arms supported by the Virgin and S. John, while beyond them two angels of smaller stature hold chalices for the blood from the wounds in either hand. One supports himself on the column of the Flagellation. In the background are the two Maries; the lance, reed, scourges and *titulus* complete the composition. This development of the common iconographic type generally known as "The Man of Sorrows" does not seem to occur in illuminated MSS., and if it occurs among pictures or engravings of the 16th century, it is exceedingly rare.[15] The probable Florentine origin of this gem suggests a concluding remark on the geographical distribution of gem-engraving in Italy during the Renaissance. Rome naturally attracted artists from all

[12] Where the satyrs, nymphs and Silenus come romping on the scene:

"Hor da Bacco riscaldati
Ballon salton tuttavia;
Chi vuol esser lieta sia:
Di doman non ci è certezza".

The difference between these lines and those which Anacreon devoted to the same kind of theme is just that between this vivacious Renaissance gem and the less emphatic work of the Hellenic artist.

[13] However, a plaquette by Giovanni Bernardi in like manner represents Phaeton still in control of the car, though the multiplication of accessories is there avoided.

[14] We shall find, in dealing with intaglio stones, another apparent imitation upon a gem of a Florentine relief, also in the Victoria and Albert Museum.

[15] This kind of subject has been sometimes described as the Eucharistic *Ecce Homo*.

parts, and at any rate from the time of Paul II must have afforded permanent occupation to many. But the chief place must be assigned to Florence, where the patronage of the house of Medici was exerted almost continuously in favour of this art from the time of Lorenzo the Magnificent down to that of Giovanni Gastone the last representative of the ducal line. Next to Florence came Milan, where the tradition which began with the Sforzas was also long continued; then came the smaller N. Italian courts. Venice and Genoa, though not unrepresented, do not seem to have been so prominent as towns less noted for their wealth or population. At the time of the Renaissance nearly all the engravers of talent were natives of North or Central Italy; the men who practised their art at foreign Courts were chiefly North Italians; Matteo dal Nassaro, and Caraglio came from Verona, Jacopo da Trezzo, Masnago and Miserone from Milan. Naples does not seem to have assumed an important place until a later time.

"DAVID ET SES ELEVES" AT THE PETIT PALAIS—II

BY CAMILLE GRONKOWSKI*

THE PUPILS

TO Louis David is due the distinction of having formed nearly four hundred and twenty-five pupils, some of whom were remarkable artists. In spite of his strong will and domineering temper, the master was wise enough to leave every pupil free to develop his own temperament—perhaps the only point on which he ever showed himself liberal, but, after all, one not without its importance.

One of the chief attractions at the Petit Palais is that the exhibition collects round the head of the school numerous works signed by names many of which are almost unknown to the general public. Hitherto these works have remained concealed, dispersed among provincial museums or still more discreetly secluded in private houses, and I mention private houses advisedly rather than collectors' galleries, because many of the pictures which I am about to pass in review scarcely ever emerge from the private apartments of their owners and have never stood fire in an auction room. Indeed, a large proportion of these works are family portraits which have been hanging on the family walls for more than a century, so that their appearance for the first time ranged on the walls of a public gallery attracts the curious.

Side by side with the celebrated pupils, to whom I shall return later, are certain painters with whose works the public are not so familiar. Among these Granet (1775–1848) is especially remarkable. He is a subtle, delicate colourist, who has long been disregarded, but is now beginning to attract particular attention. His field of observation was not very extended; he almost always painted interiors of monasteries or quiet cloisters and the religious who inhabit them, but he always composed his work with extraordinary care. Granet was born and died at Aix-en-Provence, and bequeathed more than a hundred and eighty pictures and drawings to the town museum. The exhibition has been enabled to draw on this important reserve; notably we have *La Mort du Poussin*, *La Salle d'Asile* [PLATE II, C], and *Les Derniers Moments d'une religieuse.* But we must not forget an exquisite little canvas in a pale tone, *Le Jeune Desinateur* from the collection of M. Maurice Magnin. We shall stop long before a frame containing several landscapes full of penetrating vision, reminding us of Corot. Some sepias, too, attain real grandeur within their diminutive compass. The Salle Grandet will perhaps give the Parisian public an unexpected sensation.

Rouget (1784–1869) was not only David's pupil, but also his collaborator, notably in the famous canvas, *Le Sacre.* Rouget, mounted on a scaffold, did the preliminary painting, while the master assisted from an armchair and added the essential touches with his own hand. It has become customary to regret this collaboration, which is supposed to have caused the flat and dull tonality of several canvases signed by David. But perhaps after all we shall partially revise this judgment when we examine some of the canvases exhibited here, particularly the magnificent portrait of Rouget by himself, lent by his descendant Mme. Rouget. The tones are discreet certainly, but they are quite harmonious.

Another very interesting artist is Alexandre Evariste Fragonard (1780-1850), son of the great Honoré Fragonard. His warm colour reminds us of his father's palette. I especially admire the two pictures lent by M. Sibillat, *Boissy d'Anglas* and *Le Serment du Jeu de Paume;* the light circulates, the movement is true, and the presentment dramatic.

We shall pause with curiosity and advantage too before the works—of Blaizot, the author of a vigorous portrait of a woman, lent by the Musée de Coutance;—of Rioult (1780–1864), a charming "little master" who having lost the use of his right hand painted from 1820 onwards with his left;—of Gauffier, who relates episodes of the Napoleonic period with a care of detail sometimes exaggerated;—of Abel de Pujol, a too precise portraitist;—of Couder, a belated imitator of Gerard Dou; and lastly of Riésener, a singularly unequal

* Translated for the Author from the French.

Mediæval and Later Engraved Gems in the British Museum-II

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the early pictures in the Venetian Galleries; it really looks like a plate of old shimmering gold, somewhat tarnished by age, and covered with a sort of vitreous enamel, obtained through numerous various glazes and skilfully decocted varnishes; no less precious than gold are the bright red of the gown, the blue of the mantle, the golden-yellow of the Infant's tunic, and the green of the angels' albs.

It must have been the ex-voto of a very important and wealthy personage. As regards the *camaurum*, the little white coif tied under the man's chin, it might perhaps be supposed that the donor was a Doge of Venice; but he does not wear either the Doge's cap or the broad ermine collar with gilded buttons; and he does not wear a red mantle as the Doge used when not in state, but a brown one. Moreover in a mosaic of the 13th century above one of the doors of Saint Mark's, representing the funeral of the Saint, we find several figures wearing the little white cap; and in some ancient miniatures are magistrates wearing a cap, which if not precisely a *camaurum* is very near one; so I think that in the first half of the 14th century the close-fitting white cap had not yet become a peculiarity of the Doge as it did later, and that our donor was simply one of the most eminent men of the republic, while his wife in her bright red dress was no doubt a noble gentlewoman but not the wife of the prince. Although of very small size, the two figures bear a strongly marked personal character, and their minute features express a sincere religious rapture, a proof that the gift of portraiture was already prominent among very early Venetian painters. Since the panel bears no inscription, it is as yet impossible to identify the two donors.

The picture is said to come from an old Greek Scuola in Venice; but the letters MP ΘV, now partly obliterated, above the Virgin, are the only evidence for this assertion; and we are bound to remember that Greek letters are very common on old Venetian panels—so common, indeed, that their presence is in itself no indication of an especially Greek provenance.

MEDIÆVAL AND LATER ENGRAVED GEMS IN THE BRITISH MUSEUM—II

BY O. M. DALTON

THE cameos described in the present article form two groups, the first consisting of portraits, the second of classical and ideal heads, both of the period of the Renaissance. The greater number of portraits produced in the 15th and 16th centuries represent, as indeed is natural, royal or princely personages, and it is a matter for regret that among those which have found their way into the national collection portraits of English sovereigns are few and of such inferior merit that none of them are included among the gems illustrated in the accompanying PLATE.[1]

The small female head cut in outline [PLATE, D] is a work of singular delicacy, and one of the few stones in Sir Hans Sloane's collection which can be placed in the highest class. An English origin is less probable than a French; and as the date is not far from the year 1500, the gem should perhaps be ascribed to a native engraver working at the French Court before the importation of Italians by Francis I; the feeling is not that of Italy but of Northern Europe. The dark stratum of the onyx has been used with admirable effect in the veil, accentuating the purity of the profile beyond, which has a suggestion of nun-like tranquillity not infrequent in feminine portraits of the late 15th or early 16th century. The identity of the lady is unknown.

The next two gems to be considered [PLATE, M & Q] are very inferior in attraction, but interesting as being, perhaps, of rather earlier date. They are cut in high relief in chalcedony, and as the translucency of the stone is unfavourable to photography are here reproduced from casts. They should probably be assigned to the transition between the middle ages and the revival, but it is difficult to be sure in what locality they were executed. All that can be said is that like the last example they too were in all likelihood produced north of the Alps. The frankly ugly but lifelike male head [Q] has features which at first sight connect it with late-classical art;[2] but the deliberate effort after expressiveness inclines the balance in favour of the later period, to which the female head certainly belongs.

In the next gem, the René of Anjou [PLATE, C], we have an identified portrait, a strong and realistic work, convincing, and full of character. The king is represented as already advanced in years, wearing a hat with upturned brim, below which is visible either a lining or a closely fitting

[1] Members of the royal family represented in the collection are Queen Elizabeth, Charles I, Elizabeth of Bohemia, George III and George IV. There are two portraits of Philip II of Spain. The deficiency in the museum series is redeemed by several remarkable portraits in the royal collection at Windsor, described a good many years ago by Mr. Drury Fortnum (*Archæologia*, XLV, p. 16). Especially worthy of remark are the Henry VIII and the young Edward VI, the Philip II and the Elizabeth, which last ranks with the fine portrait at Vienna. The Victoria and Albert Museum possesses a most interesting three-quarter figure of this queen.

[2] For instance, the kind of love-lock on the forehead, which occurs, for example, in Græco-Roman heads of Cupid.


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cap. The portrait must have been executed during the last five years of René's life (1475-1480). The engraver has not been unsuccessful in rendering the amiable nature of a man at once chivalrous and facile, capable of heroism in affronting danger, but not possessing the tenacity to vanquish persistent evil fortune. If we compare this head with the medals by Laurana and Pietro da Milano,[3] we shall respect the performance of the artist, who at this comparatively early period of his art produced a likeness as powerful as this. He is even less of an idealist than Pietro da Milano, and the king's good-natured undistinguished face appears without the smallest flattery; the cameo is a skilful piece of characterization and must be regarded as an important document in the history of engraving upon hard stones. It is tempting to consider it as a self-portrait of a prince known to have essayed his skill in various arts. But former estimates of René's achievement as artist have undergone revision; and though he is still allowed a certain capacity with the brush, there seems to be no evidence that he could ever engrave an onyx well enough to produce such a head as this. Many pictures and miniatures formerly assigned to him are now either known or conjectured to be the work of artists in his employ;[4] the most conspicuous instance is the triptych known as *The Burning Bush*, in the Cathedral of Aix, since ascribed to Nicolas Froment of Avignon. As we learn from the royal accounts that at least two engravers of gems—Thomas Peigne, or Pigne, and Jehan Castel—were employed at René's court, it seems reasonable to ascribe the cameo to one or other of them, perhaps to the former, who is mentioned most frequently. M. Babelon has remarked that in *The Burning Bush* cameos adorn the armour or the dress of persons represented, while a gem is held by the Child Jesus.[5] These facts would be almost enough to prove an interest in engraved gems in the south of France during the second half of the 15th century, even were there no record of gem-engravers attached to the court.

The curious head once in the Hertz collection [PLATE, B], in an enamelled gold mount of the 17th century, has been regarded as a portrait of Lorenzo the Magnificent, but the attribution can hardly be maintained. The prognathous face rising from the bull neck is not that of Lorenzo; but its idiosyncrasies are so strongly marked that it should some day be identified. One would conjecture that it was engraved quite at the end of the 15th century.

The crowned bust with the long flowing beard [PLATE, A], another Sloane gem, has close analogies with portraits of George Castriota; commonly known as Scanderbeg.[6] It has a sufficiently close resemblance to the early print in the British Museum[7] and to the portrait forming the frontispiece of Barletius's "History"[8] to justify a conjectural ascription.[9] It may possibly be a contemporary work, but perhaps it is more likely to have been executed at the close of the 15th century, when Scanderbeg's fame was still alive in Europe. In any case it must be assigned to an able Italian artist; the face has much individuality, and suggests a character at once astute, determined, and gifted with a sense of humour.

A conjecture may also be hazarded with regard to the onyx portrait head [PLATE, F] representing a young man with his hair bound in a fillet. Though the likeness is not perfect, this gem may be intended for Sigismund Malatesta; the attribution is almost justified by comparison with Matteo de' Pasti's medals and the reliefs in the Tempio at Rimini. It must, however, be admitted that in the gem the contour of the nose is less accentuated, while the lower part of the face is not so strong as it is in these examples; we may perhaps assume that the cameo was executed at an earlier period in life. Though it is far from possessing the charm of Mr. Rosenheim's smaller portrait head of the young Giangaleazzo Sforza, exhibited at the Burlington Fine Arts Club last summer, the gem is of much merit despite the fact that in many points, especially the monotonous treatment of the hair, the work is of a somewhat perfunctory nature.

The strong head from the Marlborough collection [PLATE, O] has generally been described as a head of Phocion, and attributed to Alessandro Cesati (il Grechetto). The first statement appears to be more than doubtful, and the second certainly incorrect. The head of Phocion, which Vasari gives to Cesati, and praises in enthusiastic terms, seems to have been a gem formerly in the collection of Baron Stosch.[10] Be that as it may, it is impossible to connect the present cameo with Cesati, because it presents no analogy to his style as known to us from his medals. The subject is perhaps more likely to have been a contemporary of the artist, whoever he may have been, than a Greek

[3] *Cf.* A. Heiss, *Médailleurs de la Renaissance : Laurana*, pl. IV and V.

[4] E. Chmelarz in *Jahrbuch der Kunsthistorischen Sammlungen des allerhöchsten Kaiserhauses*, XI, 1890, p. 121.

[5] *The Burning Bush* is a triptych having in the central part a bush of flaming roses, amidst which are the Virgin and Child. On the left leaf kneels René with SS. Maurice, Anthony and Mary Magdalen, on the right Jeanne de Laval attended by SS. John the Evangelist, Agnes and Nicholas (H. Bouchot, *L'exposition des primitifs français*, pl. 48-9).

[6] He was born in 1404, son of John, Prince of Albania, and was given as a hostage to Amurath II, who brought him up in his own faith. After his father's death in 1432, he deserted to the Christians, seized Albania, and renounced Islam, ultimately succeeding in establishing his position and dying in 1467.

[7] British Museum. *Catalogue of Early Italian Engravings*, by A. M. Hind, Section A, 1.

[8] Marinus Barletius, *Historia de vitâ et gestis Scanderlegi Epirotarum Principis*, Rome, 1501 or 1510.

[9] The suggestion is due to Mr. G. F. Hill.

[10] The Stosch gem was inscribed: ΦΩΚΙΩΝΟϹ and ΠΥΡΓΟΤΕΛΗΣ ΕΠΟΙΕΙ: but the inscriptions need not be necessarily regarded as contemporary with the portrait.

or Roman, but the original of this realistic portrait has yet to be found. PLATE, E shows Alfonso II of Este, engraved in a hard but not ineffective style, the different colours of the stone being skilfully used to render the face, hair and costume.

The familiar features of Francis I of France[11] appear in [N], with those of his consort Eleonora of Portugal (?) [P], the two portraits being cut on opposite sides of the same stone. This double cameo was in the collection of Lord Carlisle, and is a work of great merit, the strongly-marked types of the king and queen being rendered with sympathy and comprehension. If not by Matteo dal Nassaro, the Milanese engraver to whom Francis extended his patronage, it should be assigned to one of his pupils. Or there may have been collaboration, the master finishing the heads and leaving the rest to the pupil ; the treatment of the queen's arm is ungraceful and is not what we should expect from an artist of Matteo's capacity.

The remaining cameos represent classical or ideal types. We may notice in the first place the female head from the Sloane Collection [PLATE, H] a North Italian work, and not far removed in date from the Sigismund Malatesta beside it. The face has a certain fascination from the half-cynical smile and the contemplative expression; but the mouth is large and the forehead is abnormally high, while the contour of the whole is too square to be altogether pleasing. The Omphale [PLATE, J] possesses real charm, and is one of the most attractive Renaissance cameos in the collection. It is unfortunate that so fine a head should have been damaged by the breaking away of the ground, the fracture disfiguring the tip of the nose. The Medusa [PLATE, G] and the Diana [PLATE, K], both in early enamelled gold mounts, compare unfavourably with the Omphale, though the workmanship is delicate and more highly finished. They are somewhat conventional, and lack the suggestion of frank and vigorous youth which lends the last-named such attraction.

The shell cameo [PLATE, L], likewise of the 16th century, derives interest less from its intrinsic merit than from the fact that its type is one which seems to have been very popular in the Renaissance, the two figures, back to back, representing a Roman Emperor and his consort. The British Museum has another example, and there is a third in the royal collection at Windsor. The work is framed in a contemporary enamelled gold mount, the back of which opens on a hinge, and may have contained a miniature. Shell cameos of this period, in the production of which France was especially distinguished, are well represented in the collection, though most of the examples were not intended for mounting as jewels. A whole series with saints and sacred persons executed in an admirable style adorn a cup and cover forming part of the Waddesdon Bequest, and bear a close resemblance to examples in the Cabinet des Médailles at Paris.

[11] This gem, with others in the collection, was reproduced in Mr. Cyril Davenport's work on Cameos,

THE RECONSTRUCTION OF A POLYPTYCH BY SIGNORELLI

BY TANCRED BORENIUS

VASARI states that Signorelli painted for the chapel of S. Christopher in the church of Sant' Agostino at Siena an altar-piece containing some figures of saints on either side of a carved figure of S. Christopher.[1] The date of this polyptych (1498) is known through Tizio,[2] and there exists an elaborate description of it, made towards the middle of the 18th century, by the Abate Galgano Bicchi and mentioning also a predella and a central compartment which are not noticed by Vasari.[3] The polyptych was subsequently dismembered at a period not to be accurately determined but prior in any case to 1759, when Pecci[4] refers to "la Cappella dei Bichi in cui *era già* una Statua di S. Cristofano, scolpita da Jacomo della Fonte", adding that a picture by Niccolò Franchini has been substituted for the statue.[5] It has long been recognized that the side-compartments of this altar-piece are identical with two pictures in the Kaiser Friedrich Museum at Berlin (Nos. 79 and 79A) representing, one, SS. Catherine of Siena, Mary Magdalen and Jerome, the other, SS. Augustine, Anthony of Padua and Catherine of Alexandria. The other parts of this polyptych have been supposed to be missing, and the suggestion has even been made—first, I believe, in the German edition of Crowe and Cavalcaselle's "History of Painting in Italy"[6]—that they were destroyed in a fire, supposed to have occurred in Sant' Agostino in 1655. This suggestion —which is still repeated in the last edition of the Berlin Catalogue—lacks, however, every foundation, for it was not the church of Sant' Agostino at Siena, but that of San Francesco which was ravaged by

[1] Vasari, *Le Vite*, ed. Sansoni, Vol. III, pp. 687, etc.

[2] Tizio, *Historiæ Senenses*, MS., as quoted in Vasari, *op. cit.*, Vol. III, p. 688, n.1.

[3] This description is to be found in a MS. belonging in 1879 to the Conte Scipione Bicchi Borghese of Siena ; it is published in R. Vischer's *Luca Signorelli und die italienische Renaissance* (Leipzig, 1879), pp. 243, etc.

[4] Pecci (G. A.), *Ristretto delle cose più notabili della Città di Siena* (Siena, 1759), p. 66.

[5] The inferences drawn by the late Prof. von Fabriczy (in *L'Arte*, Vol. X, pp. 222, etc.) concerning the date when the polyptych was dismembered are incorrect. Compare F. Bargagli-Petrucci, in *Rassegna d'arte senese*, Vol. III, pp. 85, etc.

[6] *Geschichte der Italienischen Malerei*, Vol. IV, p. 16, n. 50.