Gems & Gemology

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In This Issue:

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The Diamond Industry Today*

by

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The diamond industry in 1940 started as if it were going places. The Diamond Trading Company of London, the sales agency for 95% of the world's rough, sold almost $15,000,000 worth of goods in the first quarter of the year, a rate reminiscent of the glorious twenties. The business of Antwerp and Amsterdam cutters and brokers was good, both in small goods and in sizes. The United States was the best customer followed by India and the East and South America and the Balkans. Thanks to profits on jute, tin and rubber, the Oriental was able to satisfy his hunger for diamonds, and South America and Eastern Europe had also benefited by the war. The European and the Englishman, insofar as governmental financial regulations permitted, invested in fine stones, for he desired concentrated and easily transportable wealth.

And then in May, one Adolf Hitler staged his Low Countries' show and the picture instantly changed. All business became cautious, as did the diamond industry—with reason, for its processing branch, that of cutting, was wholly disrupted. Sales of rough in the second quarter were small, those of the third quarter appreciably better. While 1940 sales will presumably be somewhat less than the satisfactory sales of 1939 they will handsomely top those of 1938.

As to world sales of cut goods, they will be fair this year. As you know, sales in our own country are some 12% better than in 1939 and this year is likely to be the best year the American retail jeweler has enjoyed since 1929. While the major demand is for items in the lower brackets, some important items have been sold.

Canada is enjoying a boom; India and South America are prosperous. To these countries the industry must look for its patrons, for through war it has lost some of its best clients. But even in the war-torn countries, people, when able to do so, are investing in gems.

Production at the mines continues at a high rate, but will be appreciably less than the 12,500,000 carats produced last year. The mines will, however, produce at least as much rough as the world will buy.

For the first nine months of 1940, total gem diamond imports into the United States at custom-house valuations amounted to $26,314,697, a 10% increase over those of the corresponding months of 1939. Doubling the rough imports offset a fall of 13% in that of cut. The increase in rough imports is, in part, due to the greater activity of the American cutting industry, but in part represents an increase in stocks. The fall in the per carat price of rough in 1940 as compared to 1939 suggests that the American cutter intends to cut smaller stones than he has in the past. Imports of cut for the first nine months of 1940 were, in round numbers, $16,600,000 as opposed to $19,150,000 in 1939 but the per carat

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price rose from \$54.29 to \$73.84. The higher price is, in part, due to the higher price of cut throughout the world and, in part, to an increase in the average size of cut imported. Normally, stones weighing less than 1/10th of a carat make up 80% of the value of American imports; in August, 1940, only 50%. Part of the imports of cut were brought in by refugees from the Low Countries. As to sources, rough largely came from South Africa and the latter country is now pressing and soon will pass Belgium and Holland as a source of cut.

Large cut stones (over ½ carat) are up in price since September, 1939, from 10% to 20% with the supply adequate. Small cut has doubled and, in instances, tripled in price and some brokers are unwilling to sell even at such prices. While the price tendency is still upward, prices have been more or less stabilized in the past three months. Mediocre qualities such as formerly were not saleable in the U.S., are appearing on the market. The stocks of small cut in America are not large, only small amounts are being imported, we cannot profitably cut small goods in America, and while a few small diamonds are being recovered from outmoded jewelry, this cannot be a big factor. Within a year an acute shortage of small cut will either increase jewelry prices or force on the public new jewelry styles. Already single large stones are being mounted alone, intricate carving of the platinum mounting supplanting small diamonds.

To be fashionable these days, an industry must have a bottleneck, and we have an efficient one in the cutting industry, for customers will be unwilling to wear uncut diamonds even if the supply is adequate. The cutting industries of Belgium and Holland, which normally have sold us 95% of the cut we imported, are, for the time being, wiped out. Last year, there were about 26,000 diamond cutters in the world, but as there was much unemployment in the trade, 12,000 cutters continuously employed could in that year have supplied the world's needs. Since 1939, several relatively important markets have been lost due to the war, and perhaps 9,000 cutters could satisfy the present demand. We have in America between 350 and 400 skilled cutters, the Union of South Africa some 300, England has a few, and there are also in Brazil, Borneo, Palestine and India perhaps 1,000 cutters, but their product is largely locally sold and if it were not, the make, in the main, is not sufficiently perfect to satisfy the American market. American and South African cutters can supply us with large cut, of say over ½ carat weight. Wages, here and in South Africa, however, are so high, four to five times those of the Low Countries, that cutting stones of ¼th carat or less at present prices is uneconomic, as in small cut the labor may exceed the value of the rough used; indeed the profit to American cutters disappears somewhere between that of ¼ and ½-carat stones. A number of Dutch and Belgian cutters escaped into Great Britain, perhaps about 1,000, but it has taken time to get wheels and other tools for their re-establishment. The small industry at Birmingham, England, is being expanded and the old shop at Brighton is being reopened. In short, facilities exist for cutting an adequate supply of large stones; the newly cut supply of smalls will be inadequate, certainly for a number of months. While of merely academic interest, German reports state that diamond cutting has recommenced in the Low Countries. The stock of rough must be meager and cannot be replenished and, of course, the British blockade renders export to America impossible. Considering the financial condition of Germany and its subject nations, the industry, however, should be able to satisfy the home market for some time.

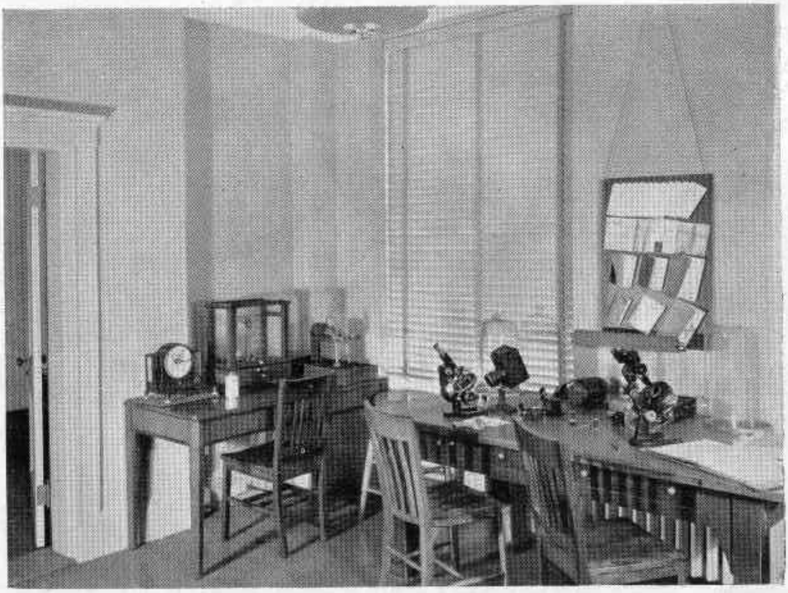
Attention has already been called to the effect of the war on some factors in our industry. Others may be mentioned. The American armament program and the European war are sure to increase the use of industrial diamonds markedly. Prior to the fall of Belgium and Holland at least most of the stocks of cut and rough were moved to London. The evacuation of these stocks has added many a saga to the history of our industry so replete with romance. One word of warning, when the war is finished, a financially wrecked Europe is likely to sell seconds here; diamonds, however, will be one of the last treasures to be given up by French, Belgian, and Dutch women and a flood of seconds, such as affected the market so adversely from 1932 to 1934 when the Soviet sent us its unholy horde, is scarcely to be expected.

In resume, unless political conditions change markedly in Europe, there will be an adequate supply of fine large cut at firm prices, but there will be eventually a shortage of small cut and the price of such goods will, presumably, remain high. War has restricted the world's sales of gem stones, although America may well buy more diamonds due to the indirect effect of our rearmament program. The lesser world sales of gem stones likely as long as war rages will be more or less offset by increased sales of industrial stones. The sale of such stones is advancing by leaps and bounds; for example, America and Canada alone are using from 2,000,000 to 2,500,000 carats of industrial stones yearly worth, say $6,000,000. In the past 25 years imports of industrials have increased eightfold and the end is not yet.

In its history, now over two thousand years old, the diamond industry has lived through many a troublesome time; it is a vigorous industry and will weather this storm as it has many others. When the wars are over, other countries besides the United States, Canada, the South American republics, and India will buy gem stones, while the use of industrial stones in another decade may tax the capacity of the world's diamond mines.

The Institute's Eastern Laboratory

The Eastern Laboratory of the Gemological Institute of America was opened on September third at 69 Newbury Street, Boston. Dr. Edward Wigglesworth, Ph.D., C.G., is the director with Mrs. Marjorie Wheeler as secretary. The laboratory consists of two rooms on the third floor which have exceptionally good light. In addition to regular office equipment there is here a complete set of instruments for the identification of gems: a petrographic microscope, two diamondscopes, specific gravity scales, Berman density balance, endoscope, refractometer, endoscopic pearl stages, polariscope, dichroscope, ultra-violet light, and other instruments.



The laboratory serves as an eastern representative of both the G.I.A. and the A.G.S. Mr. John Kennard, as chairman of the International Committee of the A.G.S., conducts his business here, and Dr. Wigglesworth, as secretary of the Examination Board and chairman of the Educational Advisory Board, conducts correspondence and grades examination papers in addition to the laboratory work. Information and circulars about the courses and other activities are kept on file so that inquiries can be answered promptly without writing to Los Angeles. A stock of instruments is kept to aid eastern members in making selections of these and, in cases of rush orders, certain instruments can be delivered directly from Boston. A stock of booklets and pamphlets is also on hand.

Eastern members are invited to send stones to the laboratory for identification so that several days' time may be saved over shipping them to Los Angeles and back. Students taking courses who live in the east may obtain practice in the use of instruments under Dr. Wigglesworth's supervision. Several candidates for the title of Certified Gemologist have availed themselves of the laboratory's facilities in preparing for their final stone examination and have then taken the examination in the laboratory. Students are also taking written examinations under proctorship.

In a general way the eastern headquarters is a branch of the head office and laboratory in Los Angeles. It sells courses, instruments, and publications of the A.G.S. and G.I.A. Its major functions are educational activities and identification work. Under the educational work is the revision of several assignments in the courses, visiting and helping study groups, loaning practice stones, helping arrange the educational programs of the Conclaves, personal help to students especially in the use of instruments and the grading of final written examinations. A plan is soon to be tried out in which unusual stones will be sent to various small groups of Certified Gemologists for identification. The score made by each group will be kept so as to stimulate friendly competition between groups. It is hoped that this will interest the Certified Gemologists, keep them in practice as well as show them stones which they would not otherwise see. Dr. Wigglesworth hopes that any Certified Gemologist having unusual stones, or any who would like to join one of the groups will write to him.

Identification will be made for the general public when submitted through a member of the American Gem Society. No charges are made for a reasonable number of such identifications.

DEFINITION OF CAMEO*

The following definition of cameo was prepared by the G.I.A. in collaboration with the National Better Business Bureau and becomes an A.G.S. ruling.

Cameos are generally, but not always, fashioned from substances composed of two or more differently colored layers.

Genuine cameos contain a design which has been produced by cutting away portions of the upper layer or layers (or of the upper surface, in singly colored substances).

If cut from genuine gem materials, it is advisable to describe such cameos as stone cameos; if from shell, as shell cameos; if from coral, as coral cameos; if from glass, or other manufactured substance, as glass cameos, bakelite cameos, etc. If cut from synthetic stones, they should be described as synthetic stone cameos.

Cameos are also molded or pressed, and when so constructed should be described as molded or pressed. Cameos which are made of two or more separate parts joined together should be described as assembled cameos.

*A.G.S. Research Service

A GEMOLOGICAL ENCYCLOPEDIA

(Continued from last issue)

by HENRY E. BRIGGS, Ph.D.

LAZULITE

Lazulite is a mineral of blue color and is often mistaken for lazurite or for turquois. It is, however, a distinctly different mineral and one which is much more valuable than lazurite. The hardness of lazulite is 5 to 6 and the specific gravity is near 3.1. The luster is vitreous and glistening when cut, which should serve to tell it from lazurite which, at best, has only a shining luster and, more often, inclining to greasy. The index of refraction (mean) of lazulite is 1.62, it is strongly dichroic when translucent enough to allow such examination to be made. It is biaxial and optically negative, double refraction is fairly strong. The composition is rather complex, being a basic iron, magnesium and aluminum phosphate $(Fe,Mg)Al_2(OH)_2(PO_4)_2$.

It occurs with a brownish matrix and also with a white matrix in America. The brown matrix gems are the more desirable of the two.

Important localities for lazulite are: Austria, North Carolina, Georgia and California.

ANATASE

Transparent anatase or octahedrite is sometimes cut for gem purposes and is a very attractive gem when properly cut. However, the hardness is so low that it is not usable for ring sets or, in fact, anywhere that it will be subjected to considerable wear.

Anatase crystallizes in the tetragonal system; the hardness varies from 5½ to 6, the specific gravity varies from 3.8 to 4.0. It is brown to black and transparent to opaque, luster adamantine, mean index of refraction 2.53, uniaxial and optically negative.

Transparent gem crystals of anatase are found in North Carolina, Cornwall, England; France, Germany, and Brazil.

ANDALUSITE

Andalusite is often mistaken for tourmaline since it is difficult to distinguish it from tourmaline with the unaided eye. Andalusite occurs in orthorhombic crystals with a hardness of 7 to 7½ and a specific gravity of 3.1 to 3.2. The luster is vitreous and it is transparent to opaque. Pleochroism is strong in the deeper colored varieties. The mean index of refraction is 1.64, it is biaxial and optically negative, which will serve to distinguish it from tourmaline. Andalusite is a silicate of aluminum, Al_2SiO_5. The colors in which it occurs are: Gray, green, yellow and yellowish green, red, pink, violet, and brown. Important localities are Spain, Brazil and Ceylon. Chiastolite is a variety of andalusite, having black inclusions which are usually in an arrangement resembling a cross. It is cut en cabochon.

BENITOITE

Benitoite was first discovered in 1907 in San Benito County, California, and this is the only known locality. To the mineralogist benitoite is of special interest since it is the only mineral known to occur in ditrigonal-bipyramidal crystals.

The hardness of benitoite is 6½, specific gravity 3.65, color pale to deep blue due to trivalent titanium, mean index of refraction is 1.78, double refraction strong .047, uniaxial optically positive, dichroism strong twin colors white and blue, composition $BaToSi_3O_9$. The supply is extremely limited, since there is only one deposit which at this time is not being worked, nor has it been worked for some years. The gem is in demand with collectors of gems, and fine faceted stones are absorbed as soon as they are on the market. When it was first introduced, however, it did not meet with much favor and possibly this is the reason for lack of interest in the mines. The gem, while it bears a strong resemblance to blue sapphire, can easily be distinguished from it, for the twin colors of benitoite and sapphire differ widely. Also, the inferior hardness of benitoite will show it to be another mineral than corundum.

BERYLLONITE

Beryllonite is orthorhombic in crystallization and from 5½ to 6 in hardness. The specific gravity is 2.85 and the color transparent colorless to light yellow. The luster is vitreous, mean index of refraction is 1.56, biaxial and optically negative, composition is sodium beryllium phosphate, $NaBePO_4$. It is little used as a gem since it is colorless in most cases or light yellow and having a low index of refraction and weak dispersion it has little brilliancy. It is found at Stoneham, Maine.

AXINITE

Axinite is rather rare in gem quality and is not of much importance as a gem, although it is sought after in good quality by collectors of gems. It occurs in wedge-shaped triclinic crystals, hardness 6½, specific gravity 3.3, color yellow to brown and violet, luster vitreous, mean index of refraction 1.68, biaxial optically negative, pleochroism weak to distinct, composition boro-silicate of iron, calcium, and aluminum $(Ca,Fe)_7Al_4B_2(SiO_4)_8$. The important locality for gem quality axinite is Le Bourg d'Oisans, Dauphiné, France.

CYANITE

Cyanite, or Kyanite, occurs in bladed triclinic crystals, hardness variable 4 to 7, specific gravity 3.5 to 3.7, luster vitreous, mean index of refraction 1.72, biaxial optically negative, pleochroism distinct in dark specimens, colors blue, gray, green, brown, white and colorless, composition silicate of aluminum, Al_2SiO_5. When entirely transparent gems of cyanite are very beautiful and quite brilliant. Important localities are Switzerland, Tyrol, Brazil, Massachusetts and North Carolina.

(To be continued)

Characteristics of Ceylon Rubies*

EDWARD GÜBELIN, Ph.D., C.G.
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In one of my previous articles (Spring, 1940) I apologized for not being able to give account on the characteristic and distinguishing inclusions of Ceylon rubies. Since then I have studied every Ceylon ruby that found its way through my laboratory so that I might give a survey of the typical enclosures in Ceylon rubies. These enclosures differ distinctly from those in rubies of other sources.

Among all the rubies those from Ceylon show their birthmark most unmistakably, since they usually are lighter in tone than rubies from other localities. They closely approach in color the so-called "pink sapphire," though they are actually pale rubies containing chromium oxide which the color is ascribed to. The percentage of the coloring pigment (chromium) within the stone is responsible for the difference in tone between the "darker" Burma and the "paler" Ceylon ruby. The following spectrograms which are taken from both Burma ruby (center) and Ceylon ruby (bottom) objectively and clearly manifest by the fainter and fewer absorption lines in the lower spectrum, that the paler tones of Ceylon rubies are caused by a smaller amount of chromium. (Fig. 1.)

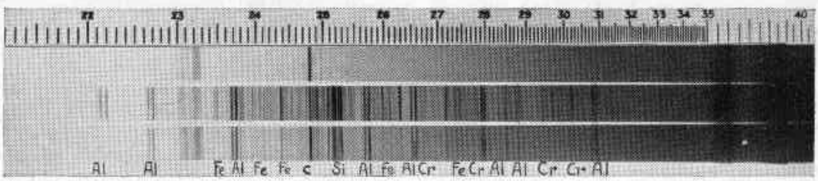


Fig. 1

Spectrograms of Burma Ruby (center) and Ceylon Ruby (bottom). Top Spectrum is That of the Arc.

The trained eye of an expert may distinguish Ceylon rubies from Burma and Siam stones by their fluorescence under ultra-violet rays. The fluorescence of Ceylon rubies would in most cases be somewhat lighter.

Yet the microscopic examination is more accurate and yields many more possibilities. Ceylon rubies contain solid, liquid, and gaseous inclusions which differentiate them markedly from other rubies. Among all inclusions the solid ones are particularly worth mentioning.

Rutile needles, well crystallized though most subtle, are very frequently present and directed according to the crystallizing rules of the host mineral. In rubies from Ceylon the rutiles are oriented parallel to the edges of (0001) : $(11\bar{2}0)$ (Lasaulx[1]) which are divisional planes. The inclusions of rutile intersect each other at an angle of 60° under correct projection, i.e., looking parallel along the crystal and optic axis. As in

*G.I.A. Research Service

[1]Annal de la Soc. Belge de Microscopie. 1885.

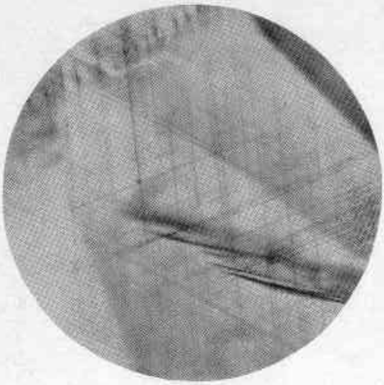


Figure 2 (at left).
Rutile Needles in Ceylon Ruby, as Observed by Transmitted Light.

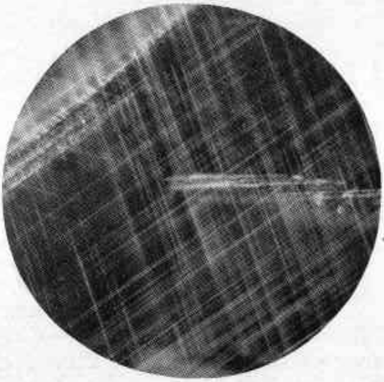


Figure 3 (at right)
The Same Rutile Needles Seen in the Dark-Field Illumination of the Diamondscope.

Burma rubies, the rutile needles appear mostly nontransparent on account of their high light refraction in spite of great thinness. They are one of the main peculiarities of both Burma and Ceylon rubies. In Ceylon rubies, however, they are *more widely spaced* and are *scarcer*. (Figs. 2 and 3.)

In Fig. 2 the ruby was photographed in a beam of light reflected from the mirror beneath the stage and traveling through the stone from underneath, whereas in Fig. 3 the light passed horizontally through the stone and was merely reflected by the rutile needles (at a right angle) into the tube of the microscope. It is interesting how the third figure shows a striking picture of rutile inclusions, while in Fig. 2 these appear rather weakly. This is a new and more effective procedure to illuminate gemstones when examining "silk," because these most thin formations are "swallowed up" by the strong and direct light coming from the mirror and cast through the gem into the observer's eye.

In rubies from Ceylon rutile needles are often found in conjunction with characteristic liquid inclusions: large "flags" and "feathers." Liquid inclusions as depicted by Fig. 4 are cavities of irregular shape, they appear hoselike, wormshaped and droplike, in the latter case the single drops are extending to long dotted lines, running more or less parallel. Very many liquid inclusions show balanceflies (Libellae), i.e., movable gas bubbles floating on top of the liquid, which in every case designates the inclusion as a liquid one. The single, sometimes extended, thin, liquid-filled channels are often combined to a "vane." Fig. 5 shows typical feather-like formations of liquid-filled cavities in a Ceylon ruby. The included liquid is said, but not yet proved, to be carbon dioxide.

Siam rubies also contain liquid inclusions. Because their appearance and shape are markedly different from those in Ceylon rubies they may be called upon to play their part in helping the gemologist in deciding the origin of a given ruby.[2]

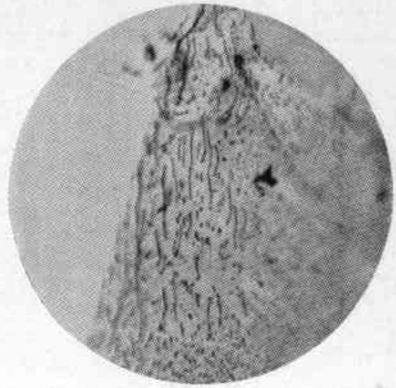


Figure 4 (above) Liquid Inclusions in Ceylon Ruby.

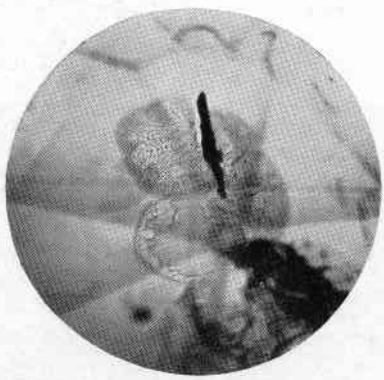
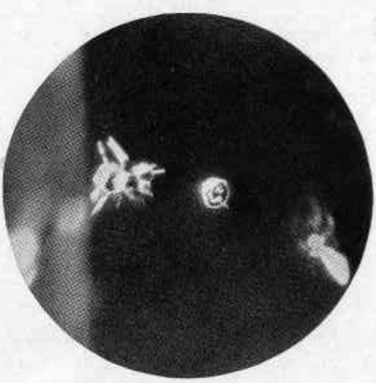


Figure 5 (left) Liquid "Feathers" in Ceylon Ruby.

Figure 6 (below). Zircons with Halos in Ceylon Ruby. (Photographed through Diamondscope.)



The most characteristic peculiarity in Ceylon rubies are the enclosed zircons surrounded by more or less regular halos. Through the microscope the scattered crystals of zircons show broad border-lines because of their high refractive index and their crystal shapes are seldom well defined (Fig. 6). Usually the halos are brown, some concentric, growing fainter towards the perisphere, some formed by a mass of rays of various

[2]*Gems & Gemology*, Vol. III, No. 5, Spring, 1940, pp. 69-72.

length and darted radially (Fig. 7), others are not completed and consist merely of a few irregular rays. Zircons contain thorium, cerium and ytterbium, which elements are interplaced within the structure and are, therefore, often radio-active. Radium rays issued by these radio-active elements within the zircon cause destruction and alteration of the structure of the host-mineral within their sphere of action, producing the so-called "pleochroic halos." In linearly polarized light a dependency of absorption upon the direction of vibration can be perceived, and it seems to be the law that the stronger absorption in the halo coincides with the one of the mineral.

Halos are a well-known phenomenon in connection with zircons, and they are also observed in Ceylon sapphires, cordierite and dark brown biotite. Particularly, in the latter, they produce beautiful, round spots. Since zircon, on account of being a primary excretion in rocks, occurs in various colored minerals, pleochroic halos are easily observed.

Other accessory solid inclusions are more or less idiomorphic crystals of muscovite and corundum. Also very thin blades of calcite may sometimes be noticed.

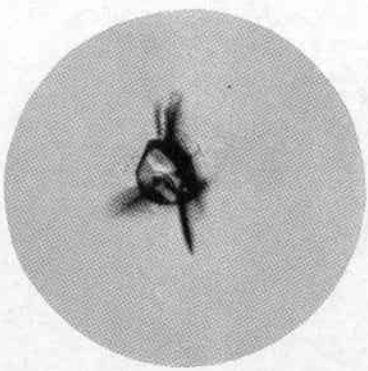


Figure 7.
Zircon with Pleochroic Halo Enclosed in Ceylon Ruby.

BOOK REVIEWS

"*Gemstones,*" by G. F. Herbert Smith. Published by Methuen & Co., Ltd., London, 1940. $4.00. (May be obtained from G.I.A. Book Department.)

In this, the ninth edition of his standard textbook on precious stones, Dr. Smith has incorporated for the first time since the original printing important changes and additions. The new edition is considerably enlarged. Much of the material on properties and their uses in identification has been expanded. Especially valuable is the material on the use of the refractometer; a subject on which Dr. Smith is eminently qualified to speak.

This text includes much of the new gemological information published in the last few years. The observations of B. W. Anderson, C. J. Payne, and Robert Webster, in connection with the London gemological laboratory, are of especial value and much of the revision has been made on the basis of their findings.

The sections on individual stones have been brought up to date and considerable material been added to them. Throughout these sections, emphasis is placed on correct nomenclature. Dr. Smith favors the use of mineralogical forms without exception—unquestionably a sound basis if ever put into universal practice in the jewelry trade. The section on the diamond especially has been expanded; much valuable information has been added, together with some of questionable nature.

The color plates which are incorporated in this new edition are fine reproductions. Especially to be mentioned are the illustrations of alexandrite on Plate IX. These illustrate the color change of alexandrite most faithfully. Many new photographs, including a series covering the development of the Kimberly Diamond Pipe, are included. Unfortunately, a serious error appears on Plate XIX; among the photographs a group of very palpable synthetic bubbles are illustrated as crystal inclusions in Burma Ruby.

The book closes with the tables for identification which are known to users of earlier editions of *Gemstones*. Several of these, however, have been expanded and in the case of specific gravity and refractive index, possible variations are listed. These limits of variation are most useful when correct identifications of unusual stones must be made.

The index is very detailed, an important advantage in view of the comprehensive nature of this revised edition. Altogether, the revised *Gemstones* will be of undoubted value to the student of gems, whether beginning or advanced.

"*A Dictionary of Metals & Their Alloys,*" edited by F. J. Camm. Published by Chemical Publishing Company, Inc., New York, 1940.

This very complete glossary contains by far the great majority of terms used for various metals and their alloys. In the case of pure metals, chemical symbols, atomic weights and atomic numbers are given, together with details of the original discovery and the more important properties. For alloys the composition is listed and the principal uses of the alloy are usually given.

Though the terms refer largely to the common alloys, steels, bronzes, brasses, etc., precious metal alloys and substitutes for precious metals are also included. These references to jewelry alloys are in sufficient quantity to render the book of value to the worker in precious metals, despite the inclusion of the volume of non-jewelry terms.

The *Dictionary* would be of considerably more value if it were accompanied by a general index; unless the common name of an alloy be known, the term cannot be located. An index referring to all the alloys in which the principal metals are used would correct this fault.

***"The Story of De Beers,"* by Hedley A. Chilvers. Published by Cassell and Company, Ltd., London, 1939.**

This biography of the great De Beers Consolidated Mines was prepared under conditions which might have made it either a fascinating story of the diamond mines and the men who developed them, or an important financial history of the growth of a great corporation. However, the book attempts to do both, and as a result it is often difficult to understand; sometimes it is very slow reading.

The first portion of the book deals with the amalgamation of the individual diamond claims in the South African diamond pipes, and the growth of the De Beers interests under the inspired management of Cecil Rhodes. The men and mines described in this portion make fascinating reading. However, so much is taken for granted by the author that unless the career of Cecil Rhodes, the principal character, be fairly well known to the reader, the thread of the story is difficult to follow.

The student of the economics of the diamond fields will find much of interest in the book; especially in the many lines of activity in which the De Beers interests have engaged. Not only have De Beers obtained control of every important diamond deposit within their power, but also they have been intimately associated with the development of railroads, the manufacture of explosives, and even with Rhodes' opening of the vast regions of Africa which now bear the name Rhodesia. The magnitude of De Beers' part in the development of South Africa is well covered. This company was especially important as a source of revenue to finance Rhodes' work. Also, De Beers gave vast sums for improvement of living conditions of the residents of Kimberley and its suburbs, for the foundation and support of schools and hospitals, and for charitable purposes.

The book is illustrated with a group of splendid photographs. Those showing the important diamond mines in their early stages are of particular interest. Furthermore, the excerpts from the De Beers' Company records include many bits of valuable information for the student of diamonds.

GEMOLOGICAL GLOSSARY

(Concluded from last issue)

(With phonetic pronunciation system.)

Terms in quotation marks are considered incorrect.

Wesselton (wes'el"ton). An important diamond pipe in South Africa, operated by De Beers Consolidated Mines. Also used to describe the color of a fine quality of diamond, ranking just below River or Jager and above Top Crystal.

Wet Diggings. Alluvial diamond mines, as contrasted with pipe mines, known as dry diggings.

White Acid. Hydrofluoric Acid.

White Carnelian. Cloudy, milk-white, or pale reddish or yellowish, chalcedony.

White Jade. White nephrite.

White Sapphire. Colorless corundum.

White-Shell. Pearl-bearing mollusk shells with nacre white to the edge.

"White Stone Diamonds." Genuine and imitation colorless stones of various kinds.

White Topaz. Colorless topaz.

Wilconite (wil'con-ite). Purplish red scapolite.

Wild Pearl. Pearl whose growth began naturally, as contrasted to cultured or culivated pearl whose growth is artificially induced.

Willemite (wil'em-ite). A yellow, green, or brown, transparent to translucent mineral occasionally used as a gem. Refractive index 1.69-1.72, specific gravity 4.0, hardness 5½.

Wing Pearls. Pearls that are elongated or irregular, resembling a wing or part of a wing.

Wolf's Eye. Moonstone (orthoclase).

Wolf's-Eye Stone. Crocidolite quartz.

Wood Agate. Petrified Wood.

Wood Opal. See Opalized Wood.

Wood Stone. Petrified Wood.

World's Eye. Hydrophane (opal).

Wulfenite (wool'fen-ite). A colorless to red-orange, green, or brown mineral, rarely fashioned as a gem. Refractive index 2.3-2.4, specific gravity 6.8, hardness 3.

Yellow Ground. An altered form of blue ground, which weathering agents near the surface have changed to a yellowish, clay-like mass.

Yellow Orthoclase. A transparent to semi-transparent yellow variety of orthoclase (feldspar).

Xalostocite. See Landerite.

Xylonite (zye'lon-ite). Celluloid.

Xylopal (zile-oe'pal). Opalized Wood.

Yellow Sapphire. Golden Sapphire.

Yellow-Shell. Pearl mollusk with yellowish nacre.

Yogo (yo'go). Montana sapphire from Yogo Gulch.

Yu (yue). Chinese word for jade, or for any very precious stone.

Zeasite (zee'a-site). (1) Wood Opal; (2) An old name for a variety of Fire Opal.

Zeolite (zee'oe-lite). A group composed of a number of hydrous silicate minerals. Contains no important gem species.

Zircolite (zurk'oe-lite). Synthetic colorless sapphire. A trade name.

Zircon (zur'kon). A gem mineral, of the tetragonal system. Zirconium silicate. Gem varieties transparent, in all colors and colorless. Refractive index 1.93-1.98, specific gravity 4.7, hardness 7½. A lower form, usually green or brownish green, has refractive index 1.81, specific gravity 4.0.

"Zircon Spinel." Synthetic blue spinel.

Zirconium (zer-koe'ni-um). A rare metallic chemical element.

Zirctone (zurk'tone). Trade-marked name for a bluish green sytnhetic sapphire.

Zoisite (zois'ite). A translucent gray to yellowish green or red mineral, sometimes fashioned as a gem. Refractive index 1.70, specific gravity 3.3, hardness 6-6½.

THE END