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# GEMSTONE NOMENCLATURE

In 1936 the National Association of Goldsmiths of Great Britain, which represents the retail jewellers of the country, approved for trade usage standard gem descriptions. These descriptions were themselves adapted for use in Britain from the 1936 International Congress of Jewellery Associations.

The Gemmological Association has now revised the 1936 list, and in so doing has discarded and disregarded altogether misleading names which have become outmoded and can be considered " dead and done with," and only singled out for condemnation terms still commonly mis-used in the trade to-day. Thus reference is not made in the list to misnomers now obsolete, such as " oriental amethyst," when mauve sapphire is the correct description. Names which, while not incorrect, have an indefinite meaning have also been avoided. As an example may be quoted the term " chrysolite," which has been often used to designate yellow chrysoberyl, but is used by American mineralogists as the species name for Olivine.

It is emphasized that the modifications made to the 1936 list have been made for use in Britain. It is hoped that the recommended revised British List will provide a basis for discussion and agreement between other countries which possess gemmological and jewellery organizations that are fully alive to the importance of the use of correct gem descriptions.

| Mineralogical Species and Variety | Colour | Correct Trade Name |
|---|---|---|
| DIAMOND: | | |
| | Bluish white, white yellowish white. Yellow, brown, green, pink, red, mauve, blue, black | Diamond |
| | Brilliant; Rose. *These terms are commonly applied in the trade as synonyms for diamond of appropriate cut. Unless followed by the name of the species, however, the terms are not free from ambiguity.* | |
| CORUNDUM: | | |
| Ruby | Red | Ruby. *If description is given, i.e., Burma Ruby, seller to be responsible for correct place of origin.* |
| | Red, with 6- or 12-point star effect | Star Ruby |
| Sapphire | Blue | Sapphire. *If description is given, seller to be responsible for correct place of origin.* |
| | Blue, grey. etc., with 6- or 12-point star effect | Star Sapphire |
| | Blue, with shimmering stripe | Sapphire Cat's Eye |
| | Pale bluish white | White Sapphire |
| | All colours other than the above to be called by their colour | Yellow Sapphire, Green S., Pink S., Mauve S., Orange S., etc. |
| | Incorrect Descriptions: *Coloured Sapphires should not be called "King Topaz, Oriental Topaz, Oriental Amethyst, Oriental Aquamarine."* | |
| CHRYSOBERYL: | | |
| Chrysoberyl | Yellow - yellowish - green, green, yellowish - brown, brown | Chrysoberyl (Term "Chrysolite" should not be used) |
| Cat's Eye | Translucent honey-coloured to greenish or brownish, showing chatoyancy. | Cymophane Chrysoberyl Cat's Eye |
| | Note: *Term "Cat's-eye" should not be used on its own but qualified by name of species, i.e., Chrysoberyl Cat's Eye.* | |
| Alexandrite | Green to greenish-brown by daylight, red to reddish-brown by artificial light | Alexandrite |

| Mineralogical Species and Variety | Colour | Correct Trade Name |
|---|---|---|
| SPINEL: | All colours, other than dark blue, and black to be called . . . | Spinel; or Red S., Pink S., Orange S., Purple S., Violet S., Mauve S., Blue S. or Green Spinel, respectively. |
| | Black, or very dark green | Pleonaste, or Ceylonite |
| | Zinc-rich blue spinel | Gahnospinel |
| | Note: *Terms spinel ruby, ruby spinel, rubicelle, alamandine spinel cause confusion, and should not be used.* | |
| TOPAZ: | All colours | Topaz |
| | Species to be called by colour, e.g. Yellow Topaz | White, Pink, Blue, etc., Topaz respectively. |
| | Note: *Term Topaz should only be applied to this mineral and not applied to yellow quartz.* | |
| BERYL: | | |
| Emerald | Bright green (coloured by Chromium) | Emerald |
| Aquamarine | Pale blue<br>Pale greenish-blue | Aquamarine |
| Beryl | Green (other than emerald green) | Beryl |
| | Golden, Yellow | Heliodor (Golden beryl) |
| | Pink or Rose | Morganite (Rose Beryl, Pink Beryl) |
| ZIRCON: | All colours | Zircon |
| | White (colourless) | White Zircon |
| | Blue | Blue Zircon |
| | Green | Green Zircon |
| | Note: *The terms "jacinth" and "hyacinth" should not be used.* | |
| | Incorrect Descriptions: *White Zircon should not be called "Matura Diamond." The term "Jargoon" is fast becoming obsolete and may well be dispensed with.* | |
| TOURMALINE: | Colourless and all colours<br>The colour should prefix name, i.e. Red tourmaline, Green tourmaline, etc. | Tourmaline |
| | Chatoyant | Tourmaline Cat's Eye |
| | Incorrect Descriptions: *Green Tourmaline should not be called "Brazilian Emerald", Yellow-green Tourmaline not "Brazilian Peridot": Red Tourmaline not "Siberian Ruby": Greenish-blue Tourmaline, not "Brazilian Sapphire."* | |

| Mineralogical Species and Variety | Colour | Correct Trade Name |
|---|---|---|
| GARNET: | | |
| | All colours | Garnet |
| Almandine | Violet-red | Almandine Garnet |
| | Incorrect Description: *Almandine should not be called "Ceylon Ruby," "Arizona Spinel" or "Kandy Spinel."* | |
| Pyrandine | Violet-red, density range 3.80 to 3.95 | Pyrandine Garnet |
| Rhodolite | Pale Violet (Intermediate types between Almandine and Pyrope) | Rhodolite Garnet |
| Pyrope | Brownish red to crimson | Pyrope Garnet |
| | Incorrect Descriptions: *Pyrope should not be called "Arizona Ruby," "American Ruby," "Adelaide Ruby," "Bohemian Ruby," "Colorado Ruby," "Cape Ruby."* | |
| Spessartite | Brownish-red, orange-red | Spessartite Garnet |
| Grossularite | Pale Green | Green Garnet<br>Grossularite<br>Grossular |
| Hessonite | Orange-reddish-brown | Hessonite |
| | Incorrect Descriptions: *Massive Green Garnet should not be called "Transvaal Jade": Hessonite not "Jacinth."* | |
| Andradite | Yellow | Andradite Garnet |
| | Green, Yellowish - green, Olive-green | Demantoid |
| | Black | Melanite Garnet |
| | Incorrect Descriptions: *Demantoid should not be be called "Olivine" or "Uralian Olivine."* | |
| Uvarovite | Emerald green | Uvarovite |
| IOLITE: | | |
| Iolite<br>Cordierite<br>Dichroite | Blue and pale brown, strongly dichroic | Iolite, or Cordierite or Dichroite |
| | Incorrect Descriptions: *This gemstone should not be called "Water Sapphire" or "Lux Sapphire."* | |
| PERIDOT, OLIVINE: | | |
| Peridot | Yellowish-green | Peridot |
| | Olive Green | Peridot |
| | Yellow, brown | Peridot |
| | Incorrect Description: *Peridot should not be called "Evening Emerald."* | |

| Mineralogical Species and Variety | Colour | Correct Trade Name |
|---|---|---|
| QUARTZ: | | |
| Rock Crystal | Colourless, milky, also slightly coloured | Rock Crystal |
| | Incorrect Descriptions: *Rock Crystal should not be called "Bristol Diamond", "Cornish Diamond."* | |
| Amethyst (natural colour) | Light to dark mauve<br>Violet | Amethyst |
| Amethyst (heat-treated) | Shades of brown and yellow | Citrine |
| Citrine | Yellow, yellow-brown | Citrine |
| | Incorrect Descriptions: *Amethyst heated to a topaz colour should not be called "Topaz," neither should the naturally-coloured Citrine be called "Topaz." Yellow or Brown Quartz should not be called "Topaz," "Madeira Topaz," "Scotch Topaz," "Spanish Topaz," "Occidental Topaz," "Quartz Topaz," etc.* | |
| Smoky Quartz | Smoky or brownish-yellow to black | Smoky Quartz |
| | Brown | Cairngorm |
| | Smoky brown or blackish | Morion |
| Rose Quartz | Milky rose pink | Rose Quartz |
| QUARTZ (with inclusions) | | |
| Prase | Leek green | Prase |
| Quartz Cat's Eye | Chatoyant<br>Whitish-grey<br>Greyish-green<br>Greenish-yellow<br>Brownish-red<br>Blue | Quartz Cat's Eye |
| | Incorrect Descriptions: *Quartz Cat's Eye should not be called "Cat's Eye" without the qualification "Quartz."* | |
| Aventurine Quartz | Yellowish-browny-red<br>Yellow, brown, red or green, spangled with green or reddish flakes | Aventurine Quartz |
| | Incorrect Description: *"Indian Jade," for green Aventurine Quartz "Aventurine" should not be used for a glass melt containing crystals of copper, sometimes known as "Gold Stone."* | |
| Rutilated Quartz | Colourless, with rutile inclusions | Rutilated Quartz |
| Tiger's Eye (Crocidolite) | Golden-brown chatoyant | Tiger's Eye (Crocidolite) |
| Falcon's Eye | Like Tiger's Eye, but greyish-blue | Falcon's Eye |

| Mineralogical Species and Variety | Colour | Correct Trade Name |
|---|---|---|
| QUARTZ (Cryptocrystalline): | | |
| Chalcedony (translucent) | Grey to bluish | Chalcedony |
| | Incorrect Descriptions: *Chalcedony stained blue or green should not be called "Blue Moonstone" or "Chrysoprase" respectively.* | |
| Chrysoprase | Apple-green and light green | Chrysoprase |
| Cornelian | Red in various shades | Cornelian |
| Heliotrope | Dark green with red spots | Bloodstone Heliotrope |
| Jasper | Opaque, whitish, yellow, red, green, brown, etc. | Jasper |
| | Incorrect Description: *Jasper when chemically stained blue, should not be called "German" or "Swiss Lapis."* | |
| Plasma | Leek Green | Plasma |
| Agate | White, yellow, grey, red, brown etc., usually in concentric strata<br>Also stained in various permanent colours | Agate |
| | Milky with green or brown moss-like inclusions | Moss Agate |
| | Velvety black, single coloured | Black Onyx |
| | Stained or unstained Agate with two strata of black and white or red and white | Onyx, Sardonyx |
| SPODUMENE: | | |
| Spodumene | Yellowish-green<br>Pale yellow | Spodumene |
| Hiddenite | Bright green | Hiddenite |
| Kunzite | Rose, Pink, Lilac, Violet | Kunzite |
| JADEITE: | | |
| Jadeite | White or parti-coloured, also mauve, brown, orange, translucent to opaque | Jadeite or Jade |
| Chloromelanite | Dark green or nearly black, with white flecks, opaque to translucent. | Chloromelanite or Jade |
| NEPHRITE: | | |
| Nephrite | Green, White, self-coloured or spotted, translucent to opaque | New Zealand Jade, Nephrite, Greenstone, Jade |

| Mineralogical Species and Variety | Colour | Correct Trade Name |
|---|---|---|
| OPAL: | | |
| Opal | Milky with quickly shimmering rainbow-like play of colours | Opal<br>White Opal |
| | The same on dark background | Black Opal |
| Fire Opal | Pale to dark orange | Fire Opal |
| Opal | Transparent, colourless or pale yellow with internal play of colour | Water Opal |
| Opal Matrix | Flecks of Opal in Matrix | Opal Matrix |
| FELDSPAR: | | |
| Orthoclase | Colourless<br>Yellow | Adularia<br>Yellow Orthoclase |
| Moonstone | Whitish with bluish wavy lines of light | Moonstone |
| | Whitish green | Microcline |
| | Opaque green | Amazon Stone, Amazonite |
| | Incorrect Descriptions: *Moonstone or Adularia should not be called "Ceylon Opal": Amazonite or Amazon Stone, not "Colorado Jade."* | |
| Oligoclase and Orthoclase | Brownish-white with gold flakes | Sunstone<br>Aventurine Feldspar |
| Labradorite | Ashen grey with gleams of colour | Labradorite |
| | Transparent type | Black Moonstone |
| LAPIS-LAZULI: | | |
| | Fine blue (opaque), often with brassy specks of Pyrites, sometimes with white patches | Lapis-Lazuli |
| TURQUOISE: | | |
| | Sky-blue, bluish-green, greenish, opaque | Turquoise |
| | Containing veins of brown limonite matrix | Turquoise Matrix |
| FLUORITE, FLUORSPAR: | | |
| Fluorite, Fluorspar | Green, yellow, red, blue, violet, etc. Transparent to translucent | Fluorspar, Fluorite, Blue John for blue veined massive variety |
| | Incorrect Description: *Fluorspar should not be called "African Emerald" or "Emerald Matrix."* | |

| Mineralogical Species and Variety | Colour | Correct Trade Name |
|---|---|---|
| PYRITES: | Note: *Actual mineral Marcasite is not used in jewellery, as it decomposes too readily. So-called Marcasite is really Pyrites.* | |
| Pyrites | Brassy yellow with a metallic sheen | Pyrites<br>Marcasite |
| | *Not to be confused with faceted steel or other metal.* | |
| OBSIDIAN: (a volcanic glass) | Dark green, or black, grey, red, brown, etc. | Obsidian |
| | Note: *The term "Obsidian" is sometimes wrongly applied to bottle glass.* | |
| MOLDAVITE (a meteoric glass) | Dark green to brownish green | Moldavite |
| | Note: *The term "Moldavite" is sometimes wrongly applied to bottle glass.* | |
| MALACHITE | Green, veined, banded | Malachite |
| SERPENTINE: | Greenish-yellow to green | Serpentine |
| | *Serpentine should not be described as "Jade."* | |
| PSEUDOPHITE: | Green | Pseudophite |
| | *"Styrian Jade" is a misnomer.* | |
| AMBER: | Pale yellow to brown<br>Transparent to opaque, also also cloudy | Amber |
| | Amber chips reassembled under heat and pressure | Pressed Amber |
| | Stained Amber | Stained Amber |
| JET: | Black | Jet |
| CORAL: | Varies from pure white to dark red | Coral |

| Mineralogical Species and Variety | Colour | Correct Trade Name |
|---|---|---|
| PEARL: | | |
| Pearl | Creamy - white, pink, yellow, green-blue, etc. | Pearl |
| | Black | Black Pearl |
| Pearl (Cultured) | Creamy-white to pink-white, with artificially inserted nucleus | Cultured Pearl |
| | *The Designation "pearl" without qualification must only be used for the natural product of a mollusc unaided in any way by human agency.* | |
| | *Pearls which have been produced with the intervention of human agency must bear the designation "Cultured Pearls."* | |
| Conch Pearl | Pink, white, porcellaneous | Conch Pearl<br>Pink Pearl |
| Clam Pearl | Black, non-nacreous | Clam Pearl |

## To the Editor

May I comment on Elsie Ruff's exposition concerning " semi-precious stones " in the " Journal of Gemmology," Vol. 1, 1947, p. 28, a theme which is at present debated by the gemmologists of the U.S.A. and of Britain?

If memory serves me right, the expression " semi-precious stones " (Halbedelsteine) was first used in Germany in a treatise published at Heidelberg in 1824. I cannot submit more specific details, especially not the name of the author, as I lost my papers through war-action, but I remember that the author probably chose this expression in order to have —according to his opinion—a better possibility of classifying gemstones. Although it requires some effort, one can imagine that some 125 years ago the then new conception did not have the same significance and especially not the same effect as to-day. Neither the African diamond localities nor the very rich gem occurrences of Brazil and Madagascar were known at that time ; the quantity of gems on the market must have been very small and their price correspondingly higher than at later times. Apart from gems from Ceylon, India, Russia and Britain, there were practically known only Bohemian garnet, amber, and agate and jasper from Idar-Oberstein. Considering the relative rareness of gems, the expression " semi-precious stones " could not have had the most undesirable effect which it has to-day at a time when jewellery is in great demand and gems are abundant.

In Germany the expression " semi-precious stones " has practically disappeared since about 20 years. No doubt, constant explanation and the tireless efforts of Prof. Brauns (Bonn) and of my late father, Dr. Alfred Eppler, have contributed to this end. I wish the same success to the gemmologists of the U.S.A. and of Great Britain. The designation " semi-precious stone " does not make sense.

U.S. Zone, Germany. W. F. Eppler.

# EXPERIMENTAL RESULTS with the Hawkins Density Gels

By B. W. ANDERSON, B.Sc., F.G.A.

A BRIEF reference to the Hawkins density gels has already appeared in this Journal (Vol. I, No. 3, page 1). Now, thanks to the generosity of Dr. A. C. Hawkins in sending me a complete set of his gels, it is possible to offer a more detailed report on this interesting variation on the heavy liquid theme.

The resistance offered to the fall of stones in these liquids depends not upon their density (which is less than that of water) but upon their viscosity. In appearance they resemble hair-cream (a substance actually used, Mr. G. T. Clarkson tells me, in some experiments on these lines he carried out some years ago), and they are contained in glass cylinders some 8 inches high and 1½ inches in diameter, graduated in 100 divisions. Neatly made wire spiral " spoons " serve to raise the specimens to the surface after a test has been made, and the gels, though somewhat messy, are non-poisonous, non-corrosive and water-soluble.

The fluids are graded A, B, C and D in order of increasing viscosity. Those most suitable for gemstones of average size and density are grades B and C, and with these two gels careful and extensive experiments were carried out for me by Dr. W. Stern, Mrs. G. V. Ash and Mr. H. A. Clark in the Post-Diploma classes at Chelsea Polytechnic.

Dr. Hawkins in his own description of the gels had already uttered a warning that the rate of fall increased not only with the density of the specimen but also with its weight ; also that the style of cutting had some influence. In order to obtain more precise information about the importance of these factors, our experiments were mainly directed to discover the rate of fall of

(a) Specimens of the same density but varying in size and weight.

(b) Specimens of the same shape and size but differing in density.

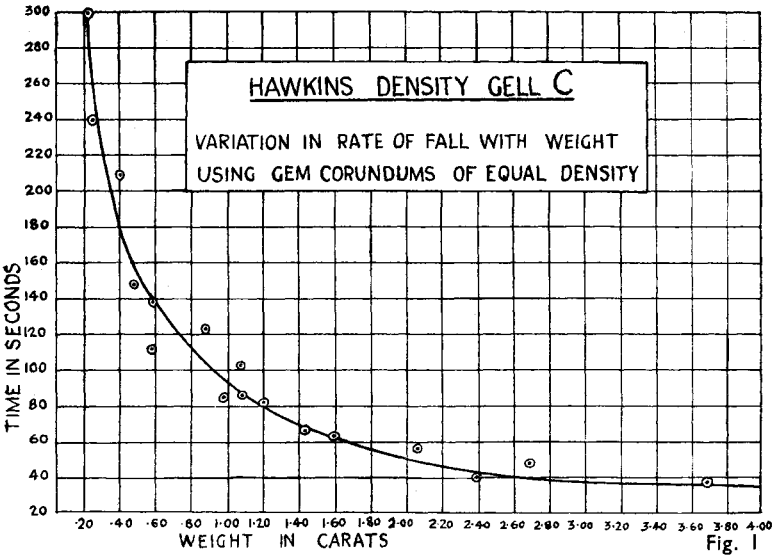

Fig. 1

For experiments (a) corundums were chosen, some natural and some synthetic, ranging from 0.21 carat to 8.56 carats. As expected, there was no evidence of the slower rate of fall in synthetics compared with natural corundums of the same size, a claim surprisingly put forward by Dr. Hawkins on the basis of the lightening effect of included bubbles. The time taken for the specimen to fall from 0 to 50 and from 50 to 100 divisions was measured by two observers using stop-watches, and each stone was timed twice. No acceleration was observed in the falling specimens when once they had started to sink, the time taken to fall from 0-50 being equal to that for the 50-100 interval. The time for the complete fall, plotted against the weight of the respective specimens, was found to form a rough curve (see Fig. 1), very steep in the smaller weight region, but flattening out for the larger stones. The actual time variation was very great: 300 seconds for a corundum weighing 0.21 carat to only 23 seconds for one weighing 8.65 carats. The tremendous influence of weight (as distinct from density) is alarming enough when one considers trying to use the method for discriminating between stones of different density, but even more disconcerting were the inconsistencies within the curve, which made one despair of the gels being in any way a practical proposition. Records were kept of the dimensions and style of cutting of each

stone, but no clear correlation could be made between the shape and rate of fall of two specimens equal in all other respects. Brilliant-cut stones were found to turn over in falling and then to remain steady in the sideways position. This having been observed, later stones were introduced into the liquid in this most favoured position, to ensure a steady fall.

In experiments (b) a set of Rayner density indicators made from optical glass was chosen, as these give a wide range in density and at the same time are of almost exactly the same shape and size (rectangular slabs, some 10 × 10 × 5 mm.). Here time of fall was plotted against density, resulting in the crude curve indicated in Fig. 2. Again there were many anomalies, and the line drawn in is only an attempt to guess the correct position.

A number of other tests were carried out with the gels, but, with the best will in the world, one was left with the conclusion that to place any reliance on a density figure assessed from the rate of fall in these fluids one would have to carry out so many comparative experiments with stones closely similar in size and density that it would be both quicker and safer to use the hydrostatic method or the normal heavy liquids.

In conclusion, my thanks are due to Dr. Hawkins for so kindly sending the gels over from America, and to the small team of workers mentioned above who carried out the experiments.

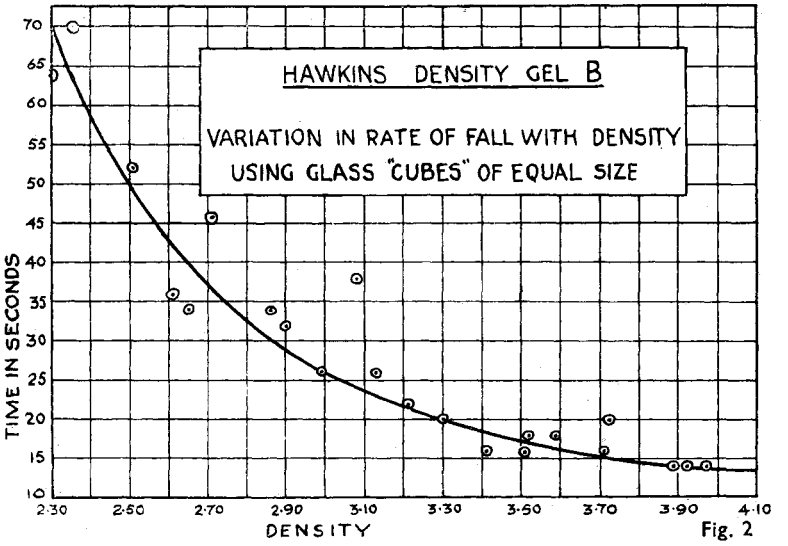


Fig. 2

# Canadian Gems and Gem Localities

**Part II**

**GEMS OF QUEBEC AND ONTARIO**

*By D. S. M. FIELD*

THE rocks of Quebec and Ontario are so varied and the deposits of gem material so numerous that the writer has chosen to give in this chapter only a brief, general outline of the geology of the country, and to classify the gems according to their respective names rather than by specific localities.

The Canadian Shield—technically known as the Laurentian Plateau—stretches like a giant horseshoe around Hudson Bay. All the Labrador peninsula is occupied by the Shield. It skirts the north shore of the St. Lawrence River almost to the city of Quebec. It occupies the whole northern part of Ontario and reaches down to the shores of Lakes Superior and Huron, and borders the eastern side of Georgian Bay. It projects across the International Boundary in a narrow belt east of Lake Ontario, and in a wide zone between Lake Huron and Lake-of-the-Woods. Its western boundary is formed by the chain of lakes which includes Lake Winnipeg, Lake Athabaska, Great Slave, and Great Bear Lakes.

The Canadian Shield (Pre-Cambrian) has the oldest surface rocks to be found anywhere in the world. These consist of a series of sedimentary and volcanic formations, and igneous intrusives of great variety.

Mountains, some of which, before the Great Ice Age, were miles in height, have been completely eroded by the combined actions of weather, icefields, glaciers and other agents, until the average elevation does not exceed 1,500 feet, and few areas—except in the north-east—exceed 2,000 feet in height.

Since most of the rocks now exposed were of plutonic origin, ideal conditions for the growth of crystals—such as slow cooling,

the presence of mineral solvents to keep the mass liquid, and cavities large enough to allow free growth—were present during the formation of many of the crystalline rocks of the country. As a result, exceptionally large and well-developed crystals of gemstones occur in several localities. Unfortunately, however, when the rocks now exposed were deeply embedded, they were subjected to great strain, re-heating and crushing, which tended to destroy the internal perfection of most crystals which might otherwise have furnished cut gems of good size and colour.

In this chapter I propose to describe in some detail those gems of Canada which may be of interest to gemmologists and collectors generally, either because of their beauty as gems, or on account of the size and perfection of the specimen crystals obtainable.

Grateful acknowledgment is made to the Librarian, Bureau of Geology and Topography and National Museum of Canada, who has given generous co-operation in the provision of geological and mineralogical references, and information.

ZIRCON.—Dr. George Frederick Kunz, in his book, " The Gems and Precious Stones of North America," called the zircons of Ontario " the most remarkable known for beauty, size, perfection, and richness of colour."

The crystals from Lake Clear, Renfrew County, Ontario, are generally cinnamon red in colour, with an adamantine to resinous lustre. They range in length from about one-half to four inches, and are frequently twinned. This locality furnishes what are generally acknowledged to be the choicest twinned crystals of this mineral in the world. Several splendid twins from Canada are in the British Museum collection, and one of these is shown, in colour, in Selwyn's " Retail Jewellers' Handbook " (Plate VII).

Some of the individual zircons from the townships of Brudenell and Sebastopol, Ontario, are nearly a foot in length and from three to four inches in diameter.

The fine-grained rock in which they occur is composed almost entirely of feldspar, and has been classified as a syenitic-aplite. On account of the toughness of the gangue, the crystals can rarely be secured except by blasting, and this hopelessly shatters much of what might otherwise be good material.

The crystals are uniformly distributed throughout the rock, and it has been estimated that the diggings will yield a crystal more than an inch and a half in length for every three tons of rock removed. Crystals weighing from two to fifteen pounds are of fairly common occurrence. No crystal of less than one-half inch in length has been observed at this locality. (Parsons, A. L.—" The Mode of Occurence of the Giant Zircons from Brudenell Township Ontario," in " Contributions to Canadian Mineralogy," 1931.)

Large zircons are also found at many places at the contacts of crystalline limestone and the granite-gneisses, in the district north of Kingston, Ontario.

At best, only small portions of these huge crystals are fit for cutting into gems, and the finished stones, although of very fine quality and colour, rarely exceed a carat or two in weight ; but many thousands of dollars worth of the crystals have been sold as specimens.

For really promising gem material one must go to Burgess, Ontario, and adjoining townships. Here, smaller but exquisite crystals—in splendent, highly modified forms—occur, and at Templeton and near Grenville, P.Q., still smaller, but transparent cherry red crystals occasionally yield hyacinth gems.

SPHENE.—The huge crystals of sphene found in Canada also have a world-wide reputation, not only for their perfection as specimens, but also for their colour and general appearance. They occur in several localities in Ontario and Quebec, but perhaps the best known deposit is on Turner's Island in Lake Clear, Renfrew County, Ontario.

The crystals from Turner's Island are, in general, deep chocolate brown in colour, with an amazingly brilliant adamantine lustre. They average about two and one quarter inches in their greatest dimension, but crystals of giant size are quite frequently met with. Dr. Kunz (op. cit.) mentions a twinned crystal from this locality which weighed upwards of eighty pounds.

Unfortunately, like the large zircons described above, few of the crystals of sphene from Turner's Island are transparent enough to furnish even a small gem ; but many thousands of dollars worth of specimen crystals have been sold to collectors and museums.

The finest crystallographic specimens are found in Brudenell and Sebastopol townships, also in Renfrew County, Ontario. Both of these localities furnish huge sphenes of both the twinned and simple types.

Honey-yellow crystals of gem quality are occasionally found in the township of North Burgess, Lanark County, Ontario ; and fine crystals have been found in the townships of Buckingham, Hull, and Wakefield, P.Q.

A very rare, almost white variety from Brome, P.Q., is among the many fine specimens in the Geological Survey Museum at Ottawa. The Royal Ontario Museum of Mineralogy houses what is probably the best collection of sphene crystals from Lake Clear.

WHITE GARNET.—Among the less spectacular, but exceedingly rare and interesting gems of Canada, are the colourless and white grossular garnets found in some abundance in Lots 6 and 14, Wakefield township, near Hull, P.Q.

These gems occur in veins and vugs in crystalline limestone, associated with hessonite, idocrase, and pyroxene ; galena, pyrites, and zinc.

This locality is the most remarkable known for this particular type of garnet. It yields crystals up to two inches in diameter, often in large groups of twenty or more individuals, measuring as much as a foot across (Kunz, op. cit.). Some of the smaller transparent crystals have keen cut into gems of from one to two carats in weight. A number of the crystals are of a pale sherry tint—grading to light olive green—and these also furnish small, but bright and attractive faceted stones.

Although sporadic attempts to mine these garnets were made some seventy-five years ago, no market could be found at that time, and the work was abandoned altogether. The extent of the deposits is not known, but their systematic exploitation would undoubtedly yield some good gem material.

UVAROVITE.—Not the least of the Canadian gemstones are the small, transparent uvarovite garnets from the township of Orford, P.Q.

These gems, although rarely measuring more than four millimetres across, rival in colour and clarity the best of the emeralds

from Muzo, and are quite matchless anywhere. If it were not for their small size, the bright velvety-green dodecahedra would furnish faceted gems of the very highest rank.

The crystals are found in association with chrome diopside and millerite, lining cavities in crystalline limestone.

Uvarovite also occurs in the township of Wakefield, P.Q. Here the crystals are larger, but as a rule are opaque or only feebly translucent. The larger specimens measure nearly a half inch across, and therefore rival in size the uvarovites from the Ural Mountains. The crystals are of a deep emerald green colour externally, grading to yellow at the centre. Some of them might furnish cabochon gems.

GEM SCAPOLITE.—Until the recent discovery in Canada of several promising deposits of this rare mineral, Brazil, Madagascar and Burma were thought to be the only producers of gem scapolite.

In Canada, the crystals and masses exhibit a wide range of colours.

Scapolite occurs in fine lemon-yellow masses in the township of Grenville, P.Q. Cabochons exhibiting a well-defined, sharp chatoyant line have been cut from this material, and these have been classified as true scapolite cat's-eyes. Some of these cabochons are on display in the Royal Ontario Museum of Mineralogy.

Clear, transparent fragments are also met with occasionally at the Grenville deposit, and authorities believe that it may some day yield transparent material suitable for cutting into faceted gems.

Mr. G. G. Waite, a Toronto gem collector, has acquired a number of transparent specimens of scapolite from other Canadian localities. His collection now contains a pale green, step-cut stone from a newly discovered occurrence at Khartum, in the township of Griffith, Renfrew County, Ontario. This was cut from a fragment of a large, single crystal. Another recently discovered deposit at Drag Lake, Dudley township, Haliburton County, Ontario, has provided him with a very clear, pale yellow, triangular mixed-cut stone.

DIOPSIDE.—Transparent diopside (a variety of pyroxene) is found near Laurel, Argenteuil County, P.Q., and many crystals

have been cut in both the cabochon and faceted forms. The diopside from this locality ranges in colour from sherry-drab to greyish-green. The former colour provides surprisingly attractive and unusual gems. A number of cut specimens of this material are on display at the Royal Ontario Museum of Mineralogy.

Emerald-green diopside crystals, approaching gem quality, have also been found in Lot I, Concession XI, in Cardiff, Haliburton County, Ontario ; and it occurs abundantly as a rock constituent in the Laurentian area.

Diopside crystals up to six inches in length occur at Calumet Falls, P.Q., but these are seldom clear enough to be cut into gems.

A rich emerald-green chrome diopside is found at Orford, P.Q., associated with the uvarovite garnets described above. This is occasionally transparent and affords beautiful cut stones.

Diopside in a light green colour occurs at Bird's Creek in the township of Herschel, Hastings County, Ontario. Some of it is transparent and of gem quality.

A lilac-colour variety of pyroxene, resembling kunzite, is found near Grenville, P.Q., but it unfortunately does not admit of a high polish, and it is consequently seldom fashioned into gems.

VESUVIANITE (IDOCRASE).—Transparent, gem-quality vesuvianites, of a cadmium yellow to golden brown colour, are found at Laurel, P.Q. The Royal Ontario Museum collection contains two flawless and exceedingly attractive cut gems, of the esteemed cadmium tint, from this locality. These stones were apparently fashioned from fragments of a large, transparent crystal which was shattered either by natural forces or by blasting. The fine quality of a piece of rough which accompanied the cut specimen would seem to indicate that further search may reveal crystals from which stones of large size may be cut.

Rich amber to seal-brown crystals occur in white calcite, in the township of Wakefield, P.Q., and at Calumet Falls large brown crystals of vesuvianite are known to occur in considerable quantity.

Mr. G. G. Waite possesses a fine, golden brown, oblong brilliant cut from part of a large crystal from Laurel, P.Q., as well as

a golden brown aventurescent cabochon, measuring 14 by 12 by 8 mm., from the same locality.

MONAZITE.—This mineral, called Monazite from the Greek μονασειν, to be solitary, in allusion to its rare occurrence, is a phosphate of cerium, lathanum, praseodymium, neodymium, etc., with thorium, ythrium and silica usually present. It has a high specific gravity (S.G. 4.9-5.3), and crystallizes in the monoclinic system, the crystals being commonly small and flattened. It is relatively soft for a gem (H. 5-5½), but might afford quite attractive cabochons.

In colour, it ranges from hyacinth red through clove brown to yellow and yellowish green, with a resinous to vitreous lustre.

Monazite is occasionally found as large crystals in the township of Villeneuve, Ottawa County, P.Q. A part of a huge crystal taken from this locality weighed nearly fourteen pounds, which makes this one of the most remarkable occurrences known.

LABRADORITE.—Since its discovery, nearly a century and a half ago, the several occurrences of this universally admired variety of what might be termed Canadian feldspar have been so fully described in mineral texts that little need be added to what has already been written.

The finest known specimens come from Ford's Harbour (near Nain), Paul's Island, and Black Island, off the coast of Labrador. It also occurs in Ontario, along the shore of Lake Huron, at Cape Mahul, and at Abercombie, P.Q., and in large cleavages showing rich colour at Morin, P.Q.

APATITE.—The apatite of Canada, like so many of the other gem minerals described in this paper, is found in finer crystals and in greater abundance than in any other country (Kunz, op.cit.).

Magnificent crystals—one of which weighed 550 pounds—are found in the Emerald* Mine at Buckingham, P.Q. Others of rich colour, measuring several feet in length, occur throughout eastern Ontario, at Lake Clear and Sebastopol and other localities in the Counties of Renfrew, Lanark, Leeds, and Frontenac, Ontario ; and in the townships of Hull, Wakefield, Templeton, and Portland in Ottawa County, P.Q.

* So called because of the green colour of the apatite crystals.

Crystals from these localities are all shades of flesh-red, purple-brown, steel blue, and green. In Ottawa County, rich deep green apatite occurs in considerable quantity. The crystals are frequently partly transparent, and could be fashioned into ornaments or cut as cabochons.

Transparent gem apatite—considered to be equal in colour to the finest known—is found near Wilberforce, in the township of Monmouth, Haliburton County, Ontario. The rich bluish-green crystals from this locality are strongly dichroic. It is quite unlike the universally familiar type of material found in abundance elsewhere in Ontario and Quebec, although a poorer grade apatite of similar colour occurs near Cheddar and Tory Hill, Ontario. The Wilberforce crystals occur in veins of calcite, and provide very attractive faceted and cabochon stones.

TOURMALINE.—Gem quality tourmaline is rather scarce in Canada, but the occasional crystal provides small faceted stones of fine colour, and in some respects superior to those once taken from the celebrated deposit in the United States, near Paris, Maine.

Green and red tourmaline of gem quality occurs in the townships of Villeneuve and Wakefield, P.Q. Mr. G. G. Waite has a green triangular-cut stone from Wakefield which matches in colour the best of the tourmaline from Brazil. He also possesses a mixed-cut stone from a newly discovered deposit at Wilberforce, Monmouth township, Haliburton County, Ontario. This gem exhibits very dark green and crimson colours, and closely resembles the andalusite-like tourmaline from Ceylon.

Rich brown and yellow tourmaline crystals of gem quality are found imbedded in pink crystalline limestone in the township of Ross, Ontario, and at Calumet Falls, Clarendon, and Huntertown, P.Q.

The greater part of the crystals from the localities mentioned above, and the green tourmaline found in Chatham township, P.Q., are either cloudy or fractured in part, so that faceted gems of only a few carats can be cut from them. It is possible, however, that crystals now deeply imbedded may yield larger cut stones of excellent colour and quality.

Fine, large and well developed crystals of blackish green and blue-black tourmaline, and schorl of no gem value, are frequently

met with in the Laurentian limestone at localities too numerous to mention in this paper.

AQUAMARINE.—Large and well-developed prismatic beryl crystals—one of which measured five inches in diameter and twenty in length—occur in a small pegmatite dyke in Lot 23, Concession XV, in the township of Lyndoch, Renfrew County, Ontario. This dyke, which averages ten feet in width, is exposed for a length of only 150 feet, but numerous outcroppings indicate that its extent is considerably greater.

The dyke consists principally of an intimate mixture of gem amazonite albite, and the white, smoky, and rose varieties of quartz. Considerable black tourmaline and large crystals of red garnet are also present.

The beryl crystals are distributed rather thickly throughout the dyke, but are generally fractured and of a greenish shade. Occasionally, however, the larger crystals furnish gems of blue colour. A very fine, large blue aquamarine, cut from Lyndoch material, is in the Royal Ontario Museum collection of Canadian gems. It is the largest faceted aquamarine yet cut from Canadian beryl.

Gem quality aquamarine of fine blue colour occurs sparingly near Quadville, Renfrew County, Ontario, and a number of quite large faceted stones have recently been cut from it.

A newly discovered deposit, near Kearney, in the township of Butt, Nipissing District, Ontario, has also yielded stones of the esteemed blue shade.

GOLDEN BERYL.—Translucent to opaque golden beryl, suitable only for cabochons, occurs in Lot 13, Concession IV, in the township of Calvin, Nipissing County, Ontario. To the writer's knowledge, none of this material has yet been fashioned into gems. However, it is possible that transparent crystals of gem quality may some day turn up at this locality.

AMAZONITE.—Amazonite is found in the township of Lyndoch, in association with the aquamarine crystals described above. Unlike the watery green amazonite from other countries, the beads and cabochons which have been cut from the Lyndoch material are of a rich, nearly emerald green colour, with contrasting stripes or bands of creamy white. A magnificent necklace cut

from the amazonite from this locality is in the Royal Ontario Museum collection.

Amazonite of good colour has also been found in the townships of Monteagle and Sebastopol, Ontario, and near Hull, in the Province of Quebec.

SODALITE.—Perhaps no gem material found in Canada is better known than the rich cornflower and deep royal blue sodalite found near Bancroft, in the township of Dungannon, Hastings County, Ontario.

Sodalite is a complex silicate mineral, closely related in composition and properties to Lazurite, the principal constituent of lapis-lazuli.

The most attractive material found in Canada is laced and mottled with included minerals of bright red and white colours, and in this respect approaches very closely the true lapis-lazuli in composition. Indeed, no sharp line of demarcation can conscientiously be drawn between the two materials, since lazurite itself belongs to the isometric group of sodalite minerals.

Both the pure and the mottled varieties of Canadian sodalite take an excellent polish and furnish most attractive beads and cabochon gemstones.

Larger pieces of the Bancroft material have been cut into slabs and utilized in the arts for inlays, panels, etc. The collection of gems in the Royal Ontario Museum of Mineralogy contains several polished specimens from Bancroft, including carved figures, cabochons, and ornamental panels.

Sodalite of good colour also occurs in the counties of Peterborough and Haliburton, Ontario, and in small quantities in the rocks of Mount Royal, in the city of Montreal, P.Q.

The Redpath Museum at McGill University, Montreal, contains several pieces of the rare purple variety from Ontario ; and Mr. G. G. Waite, of Toronto, has secured a large flawless and translucent double cabochon of rich blue colour from the Bancroft deposit.

MALACHITE.—Malachite has been observed in Canada at practically every locality where native copper or its ore occur, but gem quality material is comparatively scarce. Some fine malachite does turn up occasionally, however, especially near Sutton, P.Q.

# AN ASPECT OF GEMMOLOGY

ELSIE RUFF, F.G.A.

THROUGHOUT the English-speaking world—and in other countries also—is an increasing and enthusiastic column of gemmology students. One writes *students* with intention, because the qualified or practising gemmologist almost invariably takes the scientific view, despite the fact that he is a hybrid—part trade, part science, part devotee. One wonders less at gemmology itself and more at this growing body of adherents who have more to offer than the present jeweller appears to need. Maybe the jewellery trade is about to experience a sort of metamorphosis.

Curious of the part played by gemstones, from the dawn of man's existence, the gemmology student must perforce ask himself what all the fuss is about. Imperial Institute's " Gemstones " introduces the subject with a statement: " . . . it is said . . . some fourteen different varieties were known more than seven thousand years before the Christian era." Sydney H. Ball states that the Red Men alone used at least eighty-four different kinds of gems and stones, yet while fashion, custom, and even habits change, we continue to fuss over the emerald, not only as a species but in the main over a particular green. The same may be said of the ruby and many another stone. Some generations like their amethysts a little paler. Some their sapphires a little darker. Even those with an aversion to gemstones as ornamentation may nevertheless indulge in a personal collection, or exhibit an interest in collections.

The familiar formula, *Beauty, Durability,* and *Rarity,* at least provides a ready-made explanation that is generally satisfactory. But Durability, to take the second word first, used to mean more than it does to-day. No one particularly wants an old-fashioned Rolls Royce, even with petrol. No one really wants the furniture of a previous generation—if the furniture could somehow skip a hundred years it would be acceptable in a different way. Save for the reactionary, no one really wants an Edwardian house with a

scullery. So, if one's gemstones and pearls last a life-time it is, to be quite frank, all one wants or needs. Rarity, the third point, is something most of us innately understand. Deep down there is a desire for exclusiveness—if one cannot be exclusive about one's possessions or mode of living one tries to be exclusive about one's intellectual attainments or one's virtues. Yet the diamond is not rare. It is not possible to be exclusive in the possession of it. Furthermore, because one's neighbours on both sides possess diamonds, it does not make the diamond less desirable—rather it's an urge for the Smiths to keep up with the Joneses. Very few gemstones, in fact, are rare and at the same time attractive for ornamental purposes. Fine specimens are often rare, but these affect only the discriminating, not the great majority. At one period on the American Continent, where the public has been educated to desire fine diamonds and the average standard is higher, there was a craze for Jager diamonds. "Pay a little more and buy a Jager," one would hear. Neither the adviser or the advised could have recognized a Jager from any other diamond. The jeweller's word was enough. And from the moment of purchase the new owner would talk confidently about her Jager. Julian Huxley wrote recently: " . . . Are we to try to hold up the march of events on the ground that rarity is a good thing, and that the natural must always be better than the synthetic ; or are we to go to the opposite extreme and try to bring rarities and luxuries down to the level of commonplace and everyday abundance? It is a curious problem, which is new in human history. The answer in any case is not an affair of science, but of economics and of human nature. So I shall content myself merely with stating it, and leaving you to the question: Whether you would rather all of you be able to wear diamonds, if diamonds only cost little, or would prefer that diamonds should be luxuries for almost everyone, and by their very rarity confer some kind of glamour on the world? " Linked with Rarity is, of course, the investment factor, more acute to-day than for some time past. But that again affects only the few. The average buyer knows that his small investment, in a crisis, is neither here nor there. So, to sum up, Rarity, like Durability, does not make a big case for the gemstone.

Undoubtedly Beauty has the strongest vote, but beauty is relative. And to the gemmologist, bent on discovering the secret

—if there is one—it is not enough. Why all the fuss, he still asks, about that *emerald* green, that *pigeon's blood* red, that *royal* blue? Nature is lavish with colour. Even a pauper may satiate himself with it. One need not spend a thousand pounds to enjoy colour—superb colour!

We can hardly dismiss this discussion without reference to the part magic and superstition have played, though in our present sceptical world little of this remains. And the therapeutic aspect of gemstones is now historic or pre-historic, save for a few isolated instances. Nor do gemstone collectors, who have been constant throughout, elucidate the mystery, if mystery it is. Rather do they further confuse, for so often the particular is lost in the mass.

Scintillation is no help either, for most gemstones do not scintillate, and those that do, effectively, owe their sparkle to a comparatively modern technique. All forms of scintillation certainly fascinated primitive man, just as they do the baby. Our Christmas decorations are based on this appeal to the young. But though there are periods where scintillation plays a rather more important rôle, by and large man has grown out of it.

Added together, Beauty, Durability, and Rarity give a fairly substantial result. Maybe it is entirely satisfactory to the layman. For the gemmology student, however, it is still not enough. Beauty, Durability, and Rarity might quite conceivably, in primitive times, have been applied to teeth, often worn as necklets or ear or nose ornaments. But there is no vestige of the tooth cult left, unless it is the first baby tooth mounted in gold for an adoring parent.

It is possible that many a gemmology student, by a fluke of circumstances denied a scientific career, here finds his safety valve. It is possible, too, that the artistic, denied expression in other fields, also finds satisfaction here. The artist and the scientist have much in common for they more nearly approach that most exhilarating and precious of treasures, an open mind. For the rest, it is possible that the gemmology neophyte is first astonished at the vast field of knowledge concerned with these little scraps of nature that conform to law. It is possible that he gets caught up in this study as one may with any such work, pin-pointing life as it were. And was it not a famous scientist who said that any serious study must bring one to just this point?

*R. Dick-Larkam, B.Sc.(Eng.), A.M.I.Mech.E., F.G.A., discusses*

# The Problem of NOMENCLATURE

IT is interesting indeed to review the names of gemstones, as they form such a conglomeration of misnomers and misuses that it is remarkable that more confusion does not occur. In 1929-1930 a conference was held in London in an endeavour to clear up some of the errors and misrepresentations in the naming of stones, and this was followed by an international meeting in 1936. These, no doubt, did good and valuable work for the jewellery trade as a whole, but it is indeed difficult to make a man suddenly forget a number of names which he has been using for many years and start again on systematic and sensible lines.

This process will only mature after several generations have passed and grown accustomed to a more scientific treatment of the gemstone than has been used in the past.

A great deal of confusion is undoubtedly due to a large number of stones having been known to the ancients, who named them haphazardly after any particular property that they possessed or were claimed to possess. Many of these names come down to us from the dead languages ; others are of Arabic, Persian, Hebrew or Indian origin.

In some instances the meaning of the words can be traced and it generally is indicative of some particular colour ; without doubt, anciently, many gems of a totally different nature were included under the same name because they resembled one another in appearance. In some cases, however, a name has a different meaning, as for instance the word *garnet* comes from the Latin word meaning " grain-like " ; *euclase* from the Greek, indicating " to break easily " ; and we get the name *turquoise* from the French, indicating that the gem was obtained from the merchants of Turkey.

Many of the older names of stones give a peculiar euphony, which seems to suggest beauty, and in fact are quite poetic in their inspiration, such names as beryl, chrysoberyl, spinel, and topaz, all of which fall easily, smoothly and beautifully from the tongue. This cannot be said of the more recent names, however, which are more scientific, being terminated by the suffix " -ite," indicative of a mineral. Such names as hiddenite and kunzite, for the green and pink varieties of spodumene, are not particularly poetic, nor is morganite, the name given to pink beryl. The two former take their names from two eminent American mineralogists, while the latter was named after Mr. Pierpont Morgan, a great collector of objects of beauty.

Yet another prominent stone named after a great man is that variety of chrysoberyl called alexandrite, which changes colour from green by daylight to red by artificial light. This stone thus displays the national colours of the old Russian Empire, and as it was discovered in Russia on Czar Alexander I's birthday, it no doubt has every right to the name which it has been given.

One of the chief difficulties which beset the student of gemmology is the complicated nomenclature of the subject. The gems have received their names in past ages without any regard to their relationship one with another and with an utter disregard of method. For instance, few but those in the trade and students of the subject realize that emerald and aquamarine are in reality one and the same, namely, beryl, and that a further variety, as mentioned above, is morganite. Surprisingly enough, almost as few realize that Ruby and Sapphire are brothers in the family of Corundum. There is really no reason why they should ; the names do not indicate in in any way.

In addition to this, partly through ignorance and partly for other reasons, the names of certain gems have become in course of time attached to stones of an altogether different nature, which they somewhat resemble, and which are in many cases of less value and importance. An extremely good instance of this is Topaz, which is a mineral found in yellow, blue, brown, pink and colourless varieties, but unfortunately the name is often given, not by any means always fraudulently, but merely out of ignorance, to the yellow variety of quartz (citrine), which has less value. It is sometimes, but by no means always, wrongly hyphenated with the word *Quartz*. *Scotch* or *Spanish*, etc.

All the confusions and misnomers so far mentioned are ones which have arisen by accident or by chance, owing to either their being many centuries old or to sheer ignorance on the part of the people who handled them. There is yet another and far more dangerous cause of confusion, and one which seems to have been rife in the gem trade a decade or so ago, and still often practised in the East, namely, that of fraud. Many ordinary cheap stones were given fancy names, to which they had no right or bearing, purely in order to sell them to an unsuspecting public, who did not know the difference between one mineral and another.

By the foregoing it is not meant that, for instance, a piece of crystal was sold as a diamond, but it would be called a " Cornish diamond," or " Bristol," " Brighton," " Briançon " diamond. A garnet would be sold as a " Cape Ruby," "Australian Ruby," or "Adelaide Ruby," etc. ; a spinel as a " Balas Ruby " or massive green garnet as " Transvaal Jade," and very many more. Fortunately, the use of such names has greatly decreased.

To dealers in gems these names have become known, and when, for example, a Balas Ruby is referred to, he does not think of ruby, but of spinel. The danger and confusion really lies with the uninitiated, who only too naturally believe it to be a particular kind of ruby and value it accordingly.

Hyphenated names have come into being for numbers of stones, such as " ruby-spinel," which is an ordinary spinel with a colour similar to ruby, to which it has no other connection. In the past the term " Rubicelle " has been used for orange-red spinel, and similarly the word " Rubellite " is often used for red tourmaline. Both should be disregarded.

For the green garnet found in the Urals there is a perfectly good name which it has all unto itself, namely, demantoid, and yet, peculiarly enough, the gem dealers of the past had to call this stone olivine, a name used by mineralogists for the gem mineral of which peridot is a variety. This leads to a great deal of confusion, and it is not at all uncommon to hear someone asking for olivine garnet, using two words where merely demantoid would suffice and be much more correct ; even when correctly used, the term olivine is liable to be misunderstood in the trade and peridot is thus a better name for the gem material.

" Oriental " and " Occidental " are words sometimes used in gemmology, but it is indeed encouraging to see that these terms are being used less and less. They are very confusing and are best discontinued. Oriental is a term which has grown to mean corundum, and as there are no special names for any of the colours other than red or blue, oriental topaz, oriental emerald and oriental amethyst, etc., have incorrectly grown to mean yellow, green and mauve corundum respectively. To-day the much more sensible habit of calling them yellow sapphire, green sapphire, etc., has come into being.

Jade is yet another very loose term which is used to cover numerous varieties of minerals ; it can almost be safely said that any green stone from soft steatite to the relatively hard Jadeite is called jade. Actually, according to the 1936 International Jewellers' Conference, this should, however, only cover Jadeite and Nephrite, two extremely similar minerals.

The recently revised Gemmological Association list should be helpful in further impressing upon all interested in gemstones of the importance of nomenclature.

# ASSOCIATION NOTICES

### JANUARY MEETING

On January 28th, 1948, the Association was honoured by a talk by Dr. W. Campbell Smith, M.A., D.Sc., Keeper of Minerals, British Museum (Natural History). His subject was " Gems and Gemmology at the Natural History Museum," and Dr. Campbell Smith discussed the history of his department between the period

Following Dr. Campbell Smith's talk, Mr. B. W. Anderson commented upon some recent problems in gemmology, including synthetic star corundums, synthetic emeralds and synthetic spinel boules, which showed twinning. Specimens of the various synthetics were available for examination.

### GIFTS TO ASSOCIATION

The Association wishes to record the gift of five parcels of stones from Mr. C. T. Gilmer, Bath.

### TALKS BY FELLOWS

January 17th, 1948.—" Identification of Gemstones." H. Reese, F.G.A. Liverpool Geological Society.

February, 1948.—" Gemstones." T. Ratcliffe, F.G.A. Buxton Youth Club.

## GEMMOLOGY CLASSES IN EDINBURGH

In January officials of the Association visited the gemmology classes conducted at the Heriot-Watt College, Edinburgh, by Mr. D. Ewing, F.G.A. A special two-day course of practical instruction was undertaken by the visiting officials. The facilities at the College are excellent, and the Edinburgh and East of Scotland Goldsmiths' and Jewellers' Association are sponsoring the purchase of additional gemmological equipment for use in the classes.

## 1948 GEMMOLOGICAL EXHIBITION

The 1948 Gemmological Exhibition, organized by the Association, will be held at Goldsmiths' Hall, Foster Lane, London, E.C.2 (by kind permission), on the following days:—

Tuesday, 11th May, 2.30 to 8.30 p.m.
Wednesday, 12th May, 2.30 to 8.30 p.m.
Thursday, 13th May, 2.30 to 8.30 p.m.
Friday, 14th May, 2.30 to 7.30 p.m.

Admission will be by ticket only, and will be open to all members and their friends and members of the jewellery and allied trades. A limited number of tickets will also be available to the general public.

## MARCH MEETING

In March the Association was honoured by a visit from Dr. Edouard Gubelin, F.G.A., C.G., of Lucerne, Switzerland. On Tuesday, 9th, and Wednesday, 10th March, at 6.45 each evening, he gave a lecture (in two parts) on "Inclusions in Gemstones" to Fellows and Members of the Association, at the Medical Society of London, Chandos Street, W.1. The principal feature of the lecture, however, was the showing of about seven hundred coloured photomicrograph slides of gemstone inclusions prepared by the lecturer. It was the first occasion that members in this country had had an opportunity of seeing part of Dr. Gubelin's unique collection of coloured photomicrographs. A full report will appear in the next issue of the Journal.

Mr. B. W. Anderson, who recorded a vote of thanks, said that mere words were inadequate to describe the debt that gemmologists owed Dr. Gubelin for the vast amount of work he had done on this particular aspect of gemmology.

## ANNUAL MEETING

At the second Annual Meeting of the Incorporated Association held at Chelsea Polytechnic, London, S.W.3, on Wednesday, 24th March, 1948, the following Officers were re-elected:—Chairman, Mr. F. H. Knowles-Brown; President, Dr. G. F. Herbert Smith; Vice-Chairman, Dr. G. F. Claringbull; Treasurer, Mr. S. F. Bones. Messrs. J. H. Stanley, R. Webster and E. R. Levett were re-elected to serve on the Council. Messrs. Watson Collin & Co. were re-appointed as Auditors.

## EXAMINATIONS IN GEMMOLOGY

The 1948 Examinations in Gemmology will be held as follows:—

PRELIMINARY (Britain and Overseas): Wednesday, 23rd June.

DIPLOMA (Overseas): Theory papers, Thursday, 24th June; Practical papers, Friday, 25th June.

DIPLOMA (Britain): Theory papers, Thursday, 24th June; Practical papers: London, Friday, 25th June; Edinburgh, Monday, 14th June; Birmingham, Friday, 18th June.

## MEMBERSHIP

The following were elected to membership at a meeting of the Council held on Thursday, 26th February, 1948:—

FELLOWS:

A. E. Farn, London.
G. A. Hancock, Hazel Grove.
G. Livsey, Bradford.

ORDINARY:

E. G. Ashwin, London.
Douglas Benson, London.
C. G. Biggs, Maidenhead.
Arthur G. Batty, Liverpool.
A. W. Byron Brook, Edinburgh.
H. Cartier, London.
C. D. Dyson, Windsor.
R. H. Eames, Stourbridge.
G. B. Falconar, Singapore.
J. C. Ginder, London.
C. T. Gilmer, Bath.
J. W. Isaac, London.
A. A. Julius, London.
R. W. Kemp, Bristol.
T. W. Lightfoot, Kingston-upon-Thames.
J. G. Lucas, Leamington Spa.
James R. Ogden, Harrogate.
A. Sondheimer, London.

PROBATIONARY:

J. A. Alderson, Huddersfield.
P. Benson-Cooper, London.
H. P. Bowen-Evans, London.
A. D. Cairncross, London.
E. Christie, Aberdeen.
E. O. Hack, Birmingham.
G. D. Llewellyn, Ilford.
C. W. May, Ilford.
V. R. Pleasance, Worthing.
C. M. Robb, New Zealand.
L. Sanitt, London.
Mrs. J. Smith, Tenterden.
N. Stein, London.
M. B. Wade, London.
G. W. Whitehead, Surbiton.

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