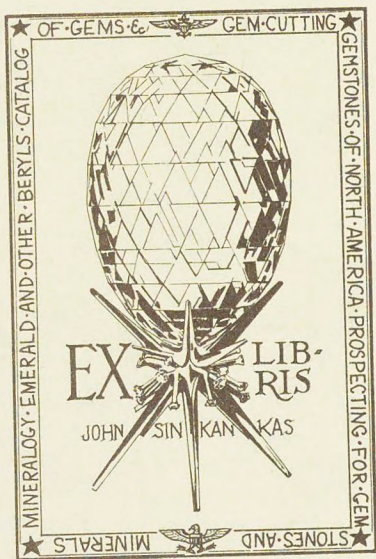


A  
Short Treatise  
concerning  
Precious Gems.

This will interest you.

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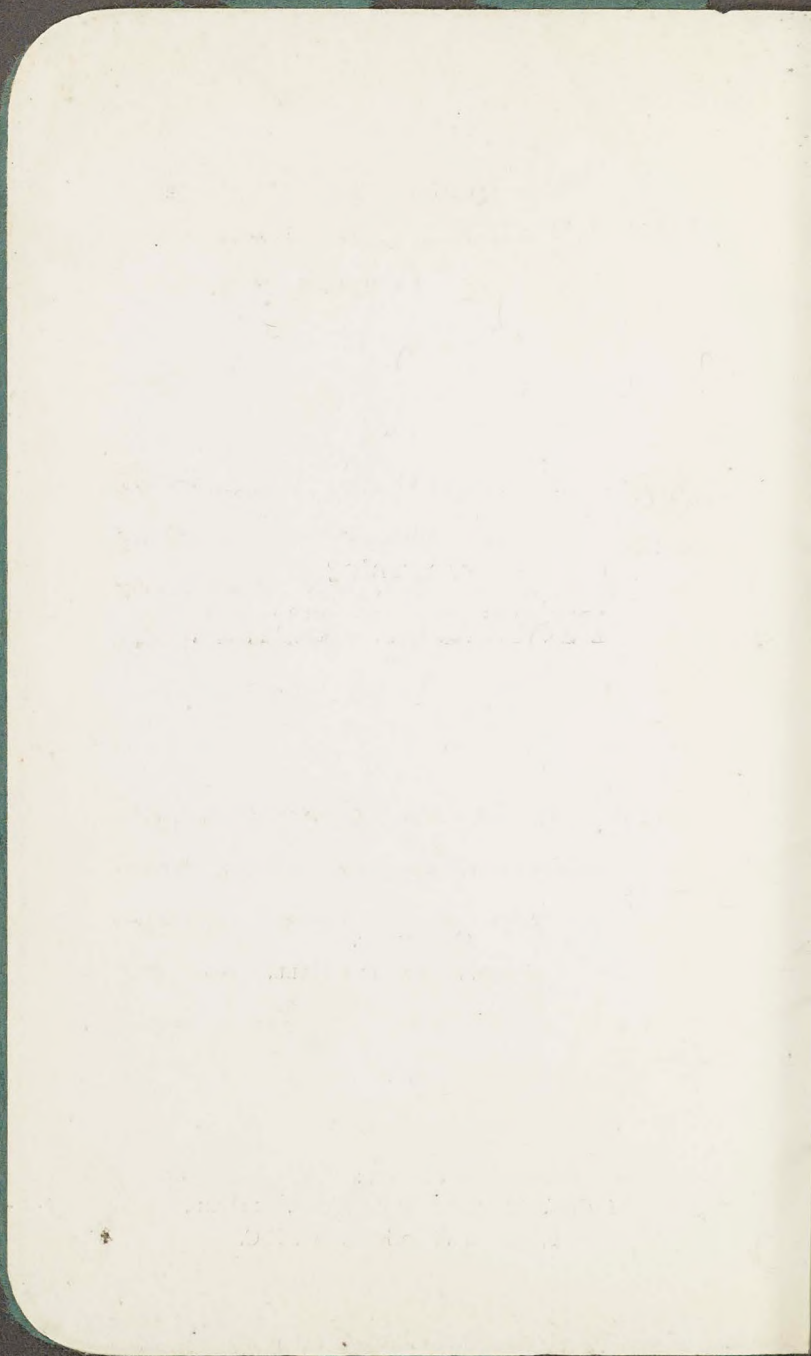
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ESSRS. MAPPIN and WEBB  
have the pleasure of submitting  
the following short treatise concerning  
Precious Gems and semi-precious stones,  
in the hope of interesting their numerous  
customers.

It is not, however, proposed to give  
the technical nor scientific details, which  
may be found in the books published  
on these subjects, as they are not inte-  
resting to many, being a complete study.  
They have endeavoured to put informa-  
tion of importance into a simple and  
concise form, which may be referred to  
with ease.

**AMETHYST.**

The usual variety (not the Oriental) is violet or purple quartz in its crystal form, the colour being due to the presence of Manganese or of Iron and Soda. The Siberian Amethysts are the finest; good specimens are found in Brazil and Ceylon, but it also is found in most countries. These belong to the group of semi-precious stones.

The Oriental Amethyst is much harder, being the purple variety of Sapphire (Oxide of Alumina), and, belonging to the Corundum group, ranks amongst the precious Gems.

**ALMANDINE GARNET.**

The precious Garnet is a deep red, transparent crystal, found in Ceylon, India, and Brazil, etc. This is much more valuable than the common Garnet,

and ranks amongst the semi-precious gems.

#### **ALEXANDRITE.**

Is a variety of Chrysoberyl. A crystal having a peculiar leaf-green or olive green colour by daylight, but by artificial light, changing to raspberry red. Found in Brazil, Ceylon and Ural Mountains. Fine specimens are quite rare and valuable. Composition is Alumina and Glucina, with a slight proportion of Ferrous Oxide.

#### **AQUA MARINE.**

Like the Emerald, is a variety of Beryl, but of Sea Green to Blue colour, as its name denotes. Transparent and bright when polished. Found in crystals in the form of Hexagonal prisms in Ural Mountains, Madagascar, Siberia, India, Brazil, Bavaria, Saxony, United States, New



South Wales, etc. Composition is largely Silicia with Alumina and Glucina. It is included in the group of semi-precious gems.

#### **CAT'S EYE OR CYMOPHANE.**

The Oriental is alone worthy of our attention. This is a translucent Gem of greenish yellow colour, having a well-defined, bright, almost white line, which appears to move as the gem is turned in the light. A single light is necessary, as light from different directions produces two streaks which destroy each other. It is very hard and similar in composition to the Alexandrite, Alumina and Glucina (or Beryllia). Found in Ceylon, Siberia, Brazil and Connecticut. It is a Precious Gem.

#### **CHRYSOBERYL.**

To this family belongs Alexandrite and

Cat's Eye. The Chrysoberyl ranges from columbine red, through brownish yellow to leaf green, almost transparent crystal, very bright when polished. Found in the same regions as Cat's Eye.

#### **DIAMOND.**

Principally now found in South Africa, but some considerable quantity in Brazil and some in India.

It is a perfectly transparent crystal octahedron in form, but very often so much worn when found in the beds of old rivers as to have lost all trace of the octahedron.

The hardest substance known, it yet yields to the blow given on a hard knife, and splits in perfect cleavage in all directions parallel to its natural octahedral faces. An original crystal may be cut up into several faceted gems, these how-

ever, are rarely equal to a gem which is formed from an entire crystal.

It is composed of pure Carbon and under intense heat will burn to an ash. Extremely hard it is also highly refractive of light and may be distinguished easily from all other white or coloured gems by its intense brightness and the play of colours as of a prism. It is found in most tints from white to black. The really true tints of blue, green, pink and yellow are highly prized and are very rare. This does not include straw and brown tints, which are common and of low value.

The most usual colour of the Diamond is, however, white, and should tend more to a blue white than to a yellowish white, hence the term "Blue-white Diamond."

Some very white stones are unfortu-



nately rather cloudy and lack brilliancy even when well cut. Others are dark in artificial light. The cutting is of great importance. A perfectly cut and polished Diamond yields the greatest brilliancy all over the gem. A thick stone is heavy for its apparent size and is worth less per carat than a properly proportioned gem, also it is less brilliant. A perfectly cut gem reflects the refracted light from all its facets, whilst the thick one is bright mainly around its bezel. A perfectly cut stone of, say, 1 carat, will be equal in size to one of from  $1\frac{1}{8}$  to  $1\frac{1}{4}$  carats of saved material in a thick stone, it will also be more brilliant, therefore worth more per carat. Those which are too flat are very deficient in lustre.

It is now considered advisable to cut Diamonds quite circular with a centre

table of octogan shape true on all sides, from this the facets begin. The top part or crown (above the girdle or circumference) having 8, 16 or 32 facets when fully cut not reckoning the Table; the lower part 8, 16 or 24 facets when fully cut in addition to the small centre called the Cujet. Pear Shaped Stones are cut in a similar manner

Rose Diamonds are small stones or parts of stones taken by cleavage from a large one. These are flat at the base, and rise to a pointed centre. Table Diamonds are too flat to have either much crown or pyramid and are, therefore, faceted only above and below the bezil, having a table covering almost the whole surface of the stone.

Flaws, spots, or any blemishes, whether visible from the front or only from the

back, interfere with the true play of light and are seriously detrimental to the beauty and value of the Diamond.

Doublets should be avoided. They are formed by a top and bottom portion joined at the girdle, the top being real diamond and the bottom crystal or glass. A magnifying glass will assist in detecting this fraud.

#### **EMERALD.**

In its perfection is a transparent Gem of vitrous lustre and deep green colour. It is brittle and should not come in contact with harder gems as Diamonds, Sapphires, and Rubies, neither should it be subjected to rough treatment, as it might be scratched or chipped. Perhaps it may be regarded as the most beautiful of gems, its restful colour being highly appreciated.



It is usually cut in its original long prism shape, not faceted like a Diamond, but with step-shaped facets along its greater and lesser sides. From its composition Silicate of Alumina, Glucina, and several other minerals in small proportion, it is very rarely, if ever, quite free from impurities, the quantity varying very much. Fine specimens of good colour and very bright, without any appreciable flaws or spots, are very valuable. The pale Emeralds are of much less value.

A Shallow Gem having a very large table results in the colour being seen only around the edge. A good specimen should have colour and brightness over the whole surface.

The best are procured from Muzo, in New Granada.

Avoid fraud in the form of Doublets (see note below Diamonds).

**GARNET.**

In addition to the (a) Almandine Garnet (Iron Aluminium Garnet) there are the

(b) Cinnamon Stone (Lime Aluminium Garnet), a deep golden hue, with a tinge of flame red, which has an appearance of sand grains. The best are found in Ceylon.

(c) The Bohemian Garnet is of little importance, being very common. It is the same as the stone called Cape Ruby.

(d) The Uwarowite (Lime Chromium Garnet) found only in small sizes, is a beautiful Emerald Green.

(e) The Bobrowska Garnet is the Green Garnet of Siberia, an extremely pretty gem, of yellowish and brownish green tints. It is, however, very soft for use in Jewellery, and not much seen for this reason. These are semi-precious gems.

**JARGOON OR ZIRCON, HYACINTH OR  
JACYNTH.**

Is colourless, grey, green, blue, pale yellow and reddish-brown. It is a remarkably heavy and brilliant mineral.

The Hyacinth is transparent red.

The Jargoon is colourless and smoky.

The Zircon is grey and brown.

The finest specimens are found in Ceylon, Mudgee (in New South Wales), and Espaly, in Auvergne, France. It is Silicate of Zirconia, and the white variety in Nature is very rare, coloured specimens can be rendered white by fire and are sometimes fraudently passed off as Diamonds.

**OLIVINE, CHRYSOLITE, PERIDOT.**

Is a beautiful transparent apple green or yellowish green gem, sometimes



nearly equal to fine Emeralds in colour, but rather less hard. The yellowish green variety is called Chrysolite, the leek green is the Peridot and the apple or olive green the Olivine. Found in the Levant and Egypt.

Composition Silicate of Magnesia and protoxide of Iron. The Olivine is the most valuable of the three varieties, but fine specimens of all command good prices. They are cut with facets like the Diamond and the Emerald.

#### **OPAL.**

Is a Gem of most remarkable variety in colours, having in some specimens all the prismatic tints. It is found in considerable abundance in Queensland, Australia, and cut en cabochon. The Opal is not hard and is rather brittle, so care should be used in wear and handling,

Under considerable artificial heat it is liable to lose colour, hence the superstition which used to be prevalent against this beautiful gem. The new darker variety is, however, much more rare and is much harder. It possesses magnificent colours, which, combined with its greater hardness must quite disperse the prejudice which was at one time the cause of neglect on the part of some towards this stone. Some specimens which Mappin and Webb have obtained give all the effects of glorious sunsets, etc., scarcely two pieces being alike.

The variety of colours in a single fine specimen cannot be described. Some, however, are principally Green, Blue, or Orange Red having yellows, greens, and blues in all imaginable shades and gradations.

This variety is obtained only from Queensland, and is amongst Precious Gems.

Composition is Hydrated Silica, and takes a good polish. Values range from £5 to £200, according to size and brilliancy of colours.

The light opals are also very beautiful, but do not possess the great range of colours.

There are also the Fire Opals of Mexico and the Hungarian Opals.

#### **PEARLS.**

Are of animal formation, yet purely mineral in substance, being almost entirely carbonate of lime. They can be dyed in colour, but are not so valuable when so coloured as the natural Pearls which they are intended to represent. It



is possible, also, to polish pearls, but, although this process improves such gems as have certain imperfections, it is still noticeable to one accustomed to these operations. Occasionally fine gems are produced by removing the outer skins.

Pearls must not be subjected to too much dry heat, but have a good deal of sunlight and air. Contact with the human skin preserves their condition, but they should be cleaned occasionally, or, becoming too greasy, they discolour.

They are found in the shells of Pearl oysters and are the effects of the Mollusc to avoid the irritation which a tiny hard substance as a grain of sand cause. This irritating substance is continually being covered by coating after coating of nacreous matter.

Pearls of greatest value are Spherical

in shape, without any blemishes in the skin, not scaly, bright in lustre and of a Satin-like sheen. The colour should be white, but not a dead white, a slight tendency to Pink is sometimes preferred, but grey, green, or yellow are to be avoided. Yet, if of good shape, skin, and lustre, a slight tendency to yellow or pink may be allowed except by such as require specimen gems. Fine plumbago black Pearls are highly prized.

Drop or pear shapes are much in demand for pendant pearls or scarf pins.

The button shape, either high or flat, is less esteemed.

Irregularity in any shape greatly depreciates the value.

Pearls are very cleverly sawn into

halves, these are set in gold settings and the under or flat side capped.

The value of Pearls depends upon all or some of the four points of perfection being present, viz. : shape, colour, brightness and absence of blemishes. Baroque or mis-shaped Pearls are of comparatively small value. Diamonds frequently add brightness to Pearls, but in fine specimens such assistance is not needed.

The finest are obtained from the Pearl fisheries on the Coast of Ceylon, but good Pearls are found in other waters. Imitations are easily detected by minute spots on the surface and by a glassy brightness.

**PERIDOT.**—See Olivine.

#### **RUBY.**

Is the most valuable of all gems in sizes of 1 carat upwards. It is not



possible to describe the exact shade of Red which is the colour, but the exact tint with the brightness requisite is neither dark nor light, neither tending to brownish red nor pinkish red. "Pigeon Blood" is a term much used but it is indefinite.

There should be brightness and colour all over the gem. Good cutting and depth to the stone is necessary as a flat Ruby has colour only around the edge.

Slight flaws are not altogether to be avoided, but a silky sheen is not permissible.

It is cut like a Diamond but not always circular, indeed the finest gems of any size have usually greater length than breadth. Artificial Rubies are easily distinguishable under a magnifying glass by minute lines throughout the stone.

Found in Burmah, Siam and Ceylon.

Avoid doublets by inspecting the edge with a glass.

Composition, Oxide of Alumina, Crystals of Corundum crystallise in hexagonal prisms, etc. It has double refraction and is dichroic. Emery is corundum not crystallised.

The star Ruby is not transparent. It has a six rayed opalescent star and is always cut en cabochon.

#### **RUBY (BALAS).**

Is a gem which contains Magnesia as well as Alumina and crystallises in the cubical system, has single refraction and is monochroic, whilst the true Ruby is hexagonal, has double refraction and is dichroic.

It is Rose red. The Spinel Ruby is

Brownish-red, sometimes green or blue, and is amongst the Precious Gems.

They are found in India, Ceylon, etc.

### **SAPPHIRE.**

Is exactly the same as Ruby in chemical composition except the colouring matter which produces the various shades of blue instead of red and, like the Ruby, crystallises in hexagonal prisms. The Oriental Amethyst is the same as the Ruby and the Sapphire, but different colouring matter results in the purple of the Amethyst.

Fine Sapphires should have no light lines within them. They should not be so dark as to be nearly black, nor too pale in colour. Slaty blue is an evidence of inferiority.

The Burmah Sapphires have a rich velvety blue. The Cashmere Sapphires



have a lighter tint such as is seen in the Corn Flower and is highly prized.

The Ceylon Sapphires are also paler in colour than the Burmah.

The Montana Sapphires, except specimen stones are pale but of the Burmah character, these appear rather purple by artificial light.

The Australian Sapphires have a green appearance.

The Star Sapphire is similar to the Star Ruby but blue instead of red.

#### **SPHENE (TITANITE).**

Is transparent in its finest specimens. It is soft, but has a charming play of colour almost like a greenish-yellow Diamond, waxy in polish.

Silicate of Titanium and Lime.

Found in Devonshire, North Wales, Argyleshire in Scotland, Griffel in Ireland, Dauphiny in France, St. Gothard in Italy, Norway and in the United States of America.

#### **TOPAZ.**

The oriental Topaz is the yellow Corundum and akin to the Ruby and Sapphire.

The Brazilian Topaz is a Wine yellow transparent stone, sometimes white, blue and pink in nature, but the pink Topaz is often produced by heating the yellow stone.

It is Silicate of Alumina and Fluoride of Silicium. Good specimens are also found in Peru, Pegu, Ceylon, Siberia, Bohemia, Saxony and in Cornwall, Scotland and Ireland.

**TOURMALINE.**

Is a transparent crystal usually step cut? Pink and Green are the principal colours but they are found in many tints, and are regarded as Semi-precious Stones.

The Blue is the Brazilian Sapphire.

The Green is the Brazilian Emerald.

The Honey Yellow the Peridot of Ceylon.

It is Dichroic and is used for polariscopes in thin plates. Composition very variable but all contain Silicate of Alumina.

**TURQUOISE.**

Is opaque and polished en cabochon. Frequently parts of the rock are seen at the back.



The colour should be a pale blue but not too light a shade.

The Persian Turquoises are regarded as the best. Egyptian are also fine, but do not equal the Persian. They are darker in colour.

Being Hydrous Phosphate of Alumina its colour may become altered by contact with certain alkalis which affect the small quantity of oxide of copper present and turn the Turquoise green.

Special Notes on page 30.

**SPECIAL NOTICE.**

A few of the stones previously mentioned rarely are made into Jewellery, as worn now, but of those which are in general wear the Company have a collection of Mounted and unmounted Gems, which, on account of their beauty and commercial value, are safe investments.

Mappin and Webb's customers may, therefore, with safety order from all parts of the world. Any instructions as to selection and style of mounting will be carefully followed. If, however, no instructions are given, the Directors will use their best efforts and experience to supply such as will give satisfaction to the most critical purchasers.

All orders are dispatched at the Company's risk, as they have insurance policies which are effective under all conditions and to all parts of the Globe.

