

## THE DIAMOND.

The diamond in its purest condition is colorless and transparent, yet at times it is found colored throughout of almost every possible tint, the colors ranging from bright canary yellow to a deep brown and black, and in very rare instances green, blue, pink and red. Diamonds are found occasionally in Sumatra, India, Borneo, Brazil, North America, British Guinea, Australia and the Ural Mountains, but the South African Mines practically supply the world. The following are some of the important characteristics a diamond must possess to be classed as "first water"; it should be absolutely white, that is without the slightest tinge of yellow, free from flaws, and perfectly cut. In speaking of freedom from flaws it must be explained that should a magnifying glass of sufficient power be used, flaws can be found in the most perfect diamond ever discovered. The cutting is a most important feature, frequently overlooked even by dealers, as an improperly cut stone loses much of its fire and brilliancy. In a correctly cut stone, the front, that is the part above the girdle, should be one third, and the back two thirds of the total thickness of the stone. The girdle itself should be sharp and free from the heavy uncut edges seen in many stones.

Composition : Pure Carbon.

Specific gravity : 3.52 to 3.53.

Hardness : 10.

## THE RUBY.

The ruby occupies, among precious stones in general, a position which is unquestionably supreme, and from Old Testament times until to-day it has been regarded as the very type of all that was most precious in the natural world. The true ruby is a variety of the mineral species termed *corundum* and can be scratched by the diamond but by no other mineral. It is found in many parts of the world, but the localities yielding the rubies of commerce are practically limited to Burmah, Siam and Ceylon. Even of these localities, it is only in Burmah, that the favorite tint, the true pigeon's blood color is found; those of Siam are darker, and those of Ceylon, paler. The price paid for rubies by the Ancients was very high; according to Benvenuto Cellini, in his time, a perfect ruby of a carat weight cost 800 écus d'or, whilst a diamond of like weight cost only 100, the same applies to-day more especially in the larger stones. When a perfect pigeon's blood ruby of five carats is brought into the market, a sum will be offered ten times the price given for a diamond of same weight; but should it reach ten carats or more it is almost invaluable.

Composition : Alumina with traces of Oxide of Iron.

Specific gravity : 4.

Hardness : 9.

## THE EMERALD.

The emerald varies in color from what is called emerald green to grass green, and greenish white, the value depending upon its color and freedom from flaws; but a very fine dark velvety colored stone, free from flaws, is almost never met with. The rise in the price of emeralds within the last year or two, has been most remarkable, a really fine stone being now worth as much as a pigeon's blood ruby. The rise has been caused by the great demand for all green stones, and by the very limited output of the emerald mines. Emeralds are found in the Republic of Columbia, the Ural Mountains and in the mountains of Sahara.

Composition, Silica, Alumina and Glucina.

Specific gravity : 2.7.

Hardness : 7.5.

## THE PEARLS.

These products of nature stand pre-eminent in the ranks of precious gems; so rarely are they found of perfect quality and symmetry however, that they are rapidly increasing in value. The steady demand coupled with the recent closing of some important fisheries, by the Indian government, has resulted in most astonishing advances. For really fine gems, quite twice as much will now be paid, as would have been two years ago, and even when this great increase is paid, they are much more difficult to procure. The characteristics of a fine pearl are : perfection of shape, skin and lustre or brilliancy. The chief localities for pearls are North Borneo, West Australia, Torres Strait, Gulf of Panama, Ceylon and the Persian Gulf.

## THE SAPPHIRE.

The sapphire is a variety of corundum and much, therefore, that was said under the head of ruby will apply to the sapphire. The desired color is velvety "Cornflower" blue; but while this is the typical color of the sapphire, it should be explained that the word "Sapphire" is extended by mineralogists and jewellers to corundums of other colors. Thus we have green sapphires, various shades of yellow, and grey, while others may be entirely destitute of color. The principal sapphire yielding localities are : Siam, Burmah, Cashmere and Ceylon, and of these the Siam stones are at present the finest in the market. Many sapphires are found in Montana, but the stones are mostly of green and other fancy tints, and not deep blue. The value of the sapphire, like the diamond, depends on its purity, color and size. A perfect Oriental sapphire being worth from a third to a half of a diamond of like weight. The imperfections which appear at times in the sapphire, and which lessen its value, are clouds, milky half-opaque spots, white glassy stripes, etc. Doublets are made of the sapphire as well as the ruby and other gems; these consist of thin layers of true stone cemented to a backing of colored glass. They may be distinguished from the genuine stone partly by their color, but more especially by a careful examination of the girdle where the join may usually be readily detected.

Composition : Alumina.

Specific gravity : 4.

Hardness : 9.