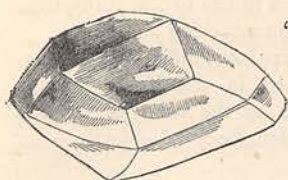


DIAMONDS.



“DIAMOND me no diamonds,” writes Mr. Tennyson, but for the nonce we feel disposed to disregard the injunction of the poet, and

to bring before our readers a few of those things which are not generally known in connection with these precious stones. Attacking our subject *au fond*, we find that the diamond is pure carbon crystallised, and that it is known in three different molecular states, viz., crystallised, crystalline, and amorphous. The crystallised diamond is the stone used in jewellery; the crystalline is known as “boart,” and is reduced to powder for cutting crystallised gems; and the amorphous suffers a similar fate, being largely used in a pulverised condition by the Swiss watchmakers for polishing the rubies with which their watches are jewelled. The commercial name of the latter is the carbonic diamond.

It will be no news to any to learn that the diamond cuts glass with great facility, but it is not generally known that not every stone can be used for that purpose, as it is requisite to find one whose angles are naturally acute. Most gems will *scratch* glass, but the diamond is the only stone capable of *cutting* it. Called adamant (the indomitable) by the Greeks, the diamond quite justifies the designation, being the hardest known substance. It is, however, very brittle, and being composed of infinitely thin laminae, deposited over each other, a slight blow struck in the direction of these laminae will cause it to split. From the authors of antiquity we find that the ancients credited the diamond with several properties which it certainly does not possess; one of these properties being its inability to acquire warmth when exposed to heat, the fallacy of which opinion was conclusively established when the first diamond was *burnt* at the Academy of Florence, in 1694, by means of powerful burning-glasses. The stone in question first split, then emitted sparks, and finally disappeared leaving no trace behind. Another idea was that it would resist, without breaking, the blow of a hammer; and this characteristic is mentioned both by Lucretius and Pliny.

The latter, speaking of the adamas—which most authorities agree must have been the true diamond—says, “These stones are tested with the hammer and anvil, and will resist the blow to such an extent as to make the iron rebound, and the very anvil split asunder.” Loth to disagree with so eminent a writer, we would only remark that diamonds will not stand that test now-a-days, and that so long ago as 1476 the Swiss soldiery who subjected the jewels of Charles the Bold to a similar process found that crushed diamonds were of no very great marketable value.

Diamonds are of various colours, including blue, green, orange, pink, yellow, brown, and black; but the

most valuable stones are those perfectly colourless, when they are said to be of the purest water. The diamond is also occasionally found opalescent. Among the various properties possessed by this gem is that of flashing out the colours of the rainbow, and it will also become phosphorescent on exposure to the light, the smaller diamonds acquiring that state by a much shorter exposure than those of larger size.

When cut, the diamond is known as the brilliant, rose diamond or rosette, and table diamond. The brilliant form is the most beautiful, as the lustre of the stone is then displayed to the greatest advantage. Strange to say, in this age of science, no one has yet proposed a theory which could account for the formation of the diamond, nor has any satisfactory conclusion been arrived at with regard to the matters which lend a tinge or colour to the gem.

We will now glance at the localities favoured by the presence of the King of Gems. Of these, India of course takes the precedence, the diamond being well known and appreciated in that region from the earliest age—indeed until the eighteenth century no diamond mines were known but those of India and Borneo.

The most famous mines of India were those of Golconda, in the territory of the Nizam, and at Raolconda, near Visiapore, in the Mahratta Empire. These mines were many years ago ceded to England, but they are now abandoned, and it is supposed that they are exhausted. There is, however, scarcely a nation of the globe in the regalia of which the treasures of these mines do not glitter. In the time of Tavernier, a French jeweller who travelled through the East in the latter part of the seventeenth century, the Golconda mines employed no less than 60,000 persons, and their yield was so enormous that, as we are informed by Ferishta, the Sultan Mahmud (A.D. 1177—1206) left in his treasury more than 400 pounds weight of these precious gems. Hindostan, Sumatra, Java, and Borneo—the “Landak” diamonds of the latter place being especially prized—have all yielded diamonds, but many localities which once abounded with these stones are now exhausted, and their very names are rapidly becoming obsolete. Brazil comes second on the list, and by far the largest quantity of fine diamonds are now exported into Europe from that country. They are met with mostly in alluvial soil derived from the materials brought down from the hills bordering the higher parts of the valleys in the district of Cerro di Fria, a lofty plateau measuring eight leagues by sixteen, at Minas Geraes, and San Paolo. The most fruitful districts of late have been Matto Grosso and Bahia; but it is said that the production of the Brazilian mines has already considerably decreased, and is every day on the decrease. It is calculated that during the first fifty years after the discovery of the Brazilian mines, diamonds to the astonishing amount of £12,000,000 in value were exported.

As might be imagined, the crown jewels of that empire are fairly supplied with diamonds, the value of these stones in the regalia being estimated at £4,000,000. When the gold-hunters of Brazil first discovered diamonds they had no idea of their value. So little were they appreciated that they were used for counters in card-playing. It remained for one Bernardo Lobo, a native, who had travelled in the East Indies and had there seen diamonds in their rough state, to recognise the true nature of the disregarded pebbles. The news of his discovery spread consternation in the diamond trade, and it was a long time before the dealers could reconcile themselves to the existence of a rival to the diamond of the East. As for the gold-hunters, gold had no longer any attraction for them, and the whole of their energies were now directed to diamond-finding. The land proved to be marvellously rich, and it is stated as a fact that a negro found a gem of 5 carats adhering to the root of a cabbage which he had plucked for his dinner. Diamonds were also found in the crops of killed fowls, but we are not informed whether the creatures were despatched with the object of ascertaining whether they had been diamond-hunting on their own account. In the event of a slave being so fortunate as to find a stone of 18 carats, he received his freedom, was crowned with flowers, and led in a triumphal procession amid the rejoicings of his friends.

A curious fact in connection with Brazilian diamonds is that they are of different specific gravity to the Indian; they are also somewhat inferior in lustre and brilliancy.

Coming to the very recent discoveries in South Africa, the first diamond is said to have been found in Hopetown division, Cape Colony, in 1867, by one of the children of a Dutch Boer named Jacobs. It weighed over 21 carats, and was, it is stated, after passing through several hands and narrowly escaping being thrown away as worthless, eventually sold for £500. Rumours reached England in the autumn of 1868 that diamonds had been found in the gold districts on Orange River, and early in the following year all doubts were dispelled by the discovery of an enormous diamond, now known as the Star of South Africa. According to one account, the first known owner of this gem was a Caffre witch doctor or sorcerer, who was with considerable difficulty persuaded to sell it to a person named Schalk van Niekerk; whilst another version is that it was found by a poor herdsman, who had the supreme happiness to dispose of it for 500 sheep, 10 head of cattle, and a horse. According to the same authority it was taken to Capetown, where an injunction was placed upon it by the emissaries of Waterboer, Chief of the Griquas, who claimed it as the possession of his own territory; but, for lack of proof, the injunction was removed, and the diamond finally reached England. It has been valued at £25,000 to £30,000.

Public attention was now quickly attracted to the South African diamond-fields, and by 1870 numbers of enterprising men and capitalists were already on the scene. The districts of the Vaal proved very

productive. At a place called Pneil seventy-two large diamonds were discovered in a week, and no less than ninety-one were found by a single digger in a fortnight. Diamonds valued at £100,000 had been picked up by Europeans. As a rule, the Cape diamonds are of an inferior quality, and have a greasy, oily appearance. They are principally of a yellowish hue, and the effect of what is technically termed their "off colour" has been to enhance the value of the translucent and colourless stones of India and Brazil. Notwithstanding their comparatively small value, it is estimated that during the year 1870 Cape diamonds were exported to the value of £1,500,000.

Diamonds have also been found in Australia, South Carolina, Georgia, Alaska, Arizona, Mexico, and the Ural Mountains, but the production has not been sufficient to indicate any new centres of commerce. India, Brazil, and South Africa are the only accepted diamond-yielding countries of commerce and of history.

We will now pass in review some of the most celebrated diamonds of the world. The place of honour must, for several reasons, be accorded to the Koh-i-noor, or Mountain of Light. This stone is mentioned by Tavernier in 1665 as the property of the Great Mogul, and was then, according to him, a very high rose diamond weighing 280 carats. The same writer informs us that when Mirgimola, who betrayed the Great Mogul, his master, made a present of this stone to Shah Sehan, with whom he took refuge, it was in the rough, and possessed the astonishing weight of 787½ carats. Its true history is wrapped in obscurity, but according to a Hindu legend it was worn by one of the heroes of the Indian epic poem, the Mahabharata, which would give it a history extending over some 4,000 years. It is stated to have belonged to Vikramaditya, Rajah of Mjayin, 56 B.C., and to have passed to his successors, the Rajahs of Malwa, and thence to the Sultans of Delhi when Malwa came into their possession. After a number of vicissitudes, we find it safely lodged in the Lahore treasury at the time of the annexation of the Punjab by the English in 1849, and once in British hands it was presented to the Queen, being forwarded to England by Lord Dalhousie in charge of two officers. The stone weighed 186½ carats when brought to this country, and was exhibited in this state at the Exhibition of 1851, when it was valued at £140,000.

The Orloff (or Orlow) diamond has a strange history. It is stated to have formed one of the eyes of the famous idol of Serringham in the temple of Brahma, and to have been stolen thence at the commencement of the eighteenth century by a French soldier, who had pretended to adopt the Hindu religion, and thus gained the confidence of the priests. He sold it for £2,000, and it was afterwards purchased by a Jewish merchant for £12,000, who, in his turn, disposed of it in 1774 to Catherine II. of Russia, for £90,000 and a pension for life of £4,000, added to which, according to some authorities, was a patent of nobility. The stone, which is flat on the under side and is rose-cut, weighs 194½ carats, and now glistens in the imperial

sceptre of Russia. It was this famous stone that suggested Wilkie Collins' novel, "The Moonstone."

But the most wonderful stone is the Braganza, or King of Portugal's diamond, which was found in Brazil in 1741. Mawe says it weighs 1,680 carats (some accounts make it 1,880 carats), and that in Brazil its value is estimated at £300,000,000! But unkind people suggest that it is not a diamond at all, but only a topaz; and the Portuguese Government, for reasons best known to themselves, resolutely refuse to allow it to be tested, or even to be seen.

Connected with the subject of doubtful diamonds, a good story is told of a monster which was found by a negro at Villa Rica, in Brazil, in 1809. The finder begged permission to present it in person to the emperor, and was accordingly fetched in a royal carriage, and honoured with a military escort. He laid his gift at the emperor's feet, and every one who saw it was astounded at its size. It weighed 2,560 carats, or nearly a pound. Its value was estimated

at countless millions. Mr. Mawe, an eminent English mineralogist, happening to be at Rio de Janeiro at the time, begged permission to prove its value by scientific inspection. Permission was granted, but before he could be admitted into the room where it was deposited, he had to produce an order signed by the whole Cabinet of ministers. One sentinel after another was passed, and the chamber at last reached where, under the guard of three officers, each with a separate key to three chests, one inside the other, he was shown the incomparable stone. Producing a cutting diamond, Mr. Mawe *scratched* the great crystal—the untold millions vanished like a beautiful dream.

The various writers on diamonds differ very materially in their accounts of some of the more famous stones, in fact scarcely any two of them entirely agree, and it has therefore been thought judicious by the writer of this paper to side with the preponderance of evidence in cases where serious discrepancies are found to exist.

EDWARD OXENFORD.

THE GATHERER.

Rubber-clad Men-of-War.

A singular experiment is about to be made on board H.M.S. *Skylark*, under the superintendence of Lieut. Custance, which if successful may entail an additional encumbrance on our war-vessels. The idea is so exceedingly simple that one wonders it has not been thought of before. That portion of a ship which is beneath water is liable to occasional penetration by shot; but as the decks even of our strongest armour-plated vessels are seldom if ever covered with the same kind of iron plates as those which defend the outside, it follows that they are peculiarly exposed to what is called a "plunging fire." The projectiles thus hurled might force their way through the decks and pass out at the bottom of the vessel. An occurrence of this kind would of course almost immediately sink the ship, for a leak would be sprung in the most impossible place for stoppage, especially during a conflict. It has been suggested that if the bottom of a war-vessel were covered with india-rubber, even if a shot penetrated a vessel in the manner above described, the leak resulting would be sufficiently closed in by the pressure of the water on the rubber. In order to test the value of the suggestion Lieut. Custance is about to employ the following experiment:—One end of an iron tube will be closed with an india-rubber diaphragm eight inches in thickness, and be made perfectly watertight. This end of the tube will then be sunk in the water until the india-rubber is in a position similar to what a vessel would be if covered by the same material. The bow-gun of the *Skylark* will then be depressed sufficiently to allow a sixty-four pound shot to be fired through the india-rubber diaphragm, when, if the tube floats, it will be evident that india-rubber can close up a shot-hole. The result may be important, for, as we have found earthworks to be the best

means of arresting projectiles on land, it would be singular if for a similar reason we exchanged an iron casing for a thick india-rubber layer on the outsides of all our men-of-war! India-rubber we can grow, but iron we cannot.

A Hidden Quotation.

In the following lines a well-known quotation from a modern poet is hidden—one word in each couplet:—

A GLIMPSE OF NATURE.

A little lake fenced round with hills,
And fed by half a hundred rills,
That laugh and prattle as they hie,
Scarce knowing yet man's watchful eye.
A little spot of Nature's best,
Hid far away like tiny nest
Low-perched 'mid grasses, bush-o'ergrown;
A little world of things unknown
To those who gaze but from afar,
And know not what earth's beauties are;
Who barely see what nearest lies
And walk the world with self-dimmed eyes.
Far otherwise with him who walks
Closely observant; Nature talks
To him with no uncertain sound,
Shows him the things that lie around
Close to his path on every side,
Tells him where unguessed beauties hide,
And bids him look about to see
The sources of her harmony.
His life can never be all sad,
Who has such friend to make him glad;
For, springing up about his feet,
Companions make the moments sweet.

W.