is to be placed in good earth, copiously watered with rain or river water, and protected from the too powerful action of the sun, until the roots have taken good hold of the ground.

When large plants, as trees, are to be revived, their roots are to be plunged into the camphorated water for three hours; the trunk, and even the head, of the tree being frequently wetted with the same water, so as to retain them in a properly moistened state. But it is always best, if possible, to immerse the whole of the plant. Shoots, sprigs, slips, and roots, are to be treated in a similar manner.

If plants thus treated are not restored in four hours, their death may be considered as certain, for they cannot be recalled to life by any artificial means. They should, consequently, never be left more than four hours in the camphorated bath; because the exciting action of the camphor, when it is continued for a longer period, may injure the plants instead of doing good to them. It is not necessary to say that the final prosperity of the plants, thus re-animated by the camphorated water, must depend upon the particular properties of the former, the state of their roots, and the pains that are taken with them. The camphor produces no other effect than to restore life to plants nearly dead: after that, all proceeds according to the ordinary laws, and their ultimate state must be left to art and nature.

Account of the Diamond Workings and Diamonds of Sumbhulpore.

By PETER BRETON, Esq., Surgeon, Superintendent of the School of Native Doctors at Calcutta.*

THE districts of Chota, Magpore, and Sirgoojah are not marked for their mineral productions; but Sumbhulpore† has been, from time immemorial, distinguished for its production of the finest oriental diamonds in the known world. They are occasionally found in the bed of the Mahanuddee, and at the mouths of other rivers which terminate in it. The following is an extract from the observations of a gentleman, whose source of information on this interesting subject was the best that could be obtained in Sumbhulpore:—

The Mahanuddee is navigable for six months in the year, though not without obstructions and difficulties, for boats of three to four hundred maund's burthen, from the sea to Sooreenarain, which cannot be less than three hundred and eighty miles; and for smaller vessels as far as Sumbhulpore, for ten months. Diamonds of various sizes, and of the first quality, are occasionally found at the mouths of the rivers Maund, Keloo, Eeb, and others, which all have their sources in the mountainous parts of Koorba, Sirgoojah, Raegurh, Jushpoor, and Gangpoor, and fall into the Mahanuddee on its left bank. They are also picked up, after the termination of the rains,

* This curious paper is abridged from the *Transactions of the Medical and Physical Society of Calcutta*.

† The valley of Sumbhulpore is four hundred and ten feet above the sea.

amongst the mud and sand deposited on the beds of islands on the left bank, (where the stream, being resisted, makes a sharp turn,) by persons of a peculiar class, whose occupation it is to search for them. I cannot learn that diamonds have ever been found on the right bank of the Mahanuddee, or on the left bank above its confluence with the Maund at Clunderpore, or below Sonepoor. It would appear, therefore, that they were washed down from the sides of the streams which flow from north to south through the mountainous and almost inaccessible track which occupies, in Arrowsmith's Map, the 83d and 84th degrees of east longitude, and 21st and 22d degrees of north latitude. This inference is further supported by the fact of their being not unfrequently met with in the beds of Nullahs in Raegurh, Jushpore, and Gangpore, though I have no reason to think that any attempt has been ever made to discover and open their mines or beds; and this may be chiefly accounted for by the state of society and government in these wild regions. Any attempt on the part of a private individual to appropriate to himself, or conceal a diamond, would, if discovered, have been assuredly punished with death; and the rajahs have mutually preferred this scanty and uncertain acquisition of precious stones in the manner I have described, to the publicity and consequent interference of the Mahomedan or Marhatta sovereigns, by whom they were in turn ruled, which would necessarily have resulted from the establishment and working of mines. Another obstacle has doubtless been the extreme insalubrity of the climate of the tract under consideration—an insalubrity which the observation of many years has convinced me always attached to mountainous and woody districts, in which gold and diamonds are indigenous. None but natives of the wilds, whose appearance sufficiently marks the ravages of disease, can enter them with impunity, excepting in January and the three succeeding months, and this would form the chief objection to the employment of skilful European mineralogists, whose researches, if they could be adequately persevered in, would, I am sanguinely of opinion, be attended with very interesting and important results.

There were two tribes or castes of diamond searchers in Sumbhulpore, of whose origin, or of the period of their settlement in this part of the world, I can learn nothing. They have the appearance, however, of aborigines. The names of the tribes are Ihara and Tora. Sixteen villages of the poorer description have been always enjoyed by them in rent-free Jageers; of these, four are in the hands of the Toras, ten possessed by the Iharas, and two have been given to their tutelar deity Bukeser Pat, an appellation of Mahadeo. They are under the direction of three chiefs, or Sirdars, two of the Ihara tribe, called Pater and Bahera, and one of the Tora, styled Seeree Ghakur. They search for gold as well as diamonds, and are allowed to dispose of all the former article they pick up. Their habits are extremely dissipated; and when they find a diamond they spend the money it procures for them in a continued scene of debauchery. In the Pergunnahs of Raegurh, Sonepore, Jushpore, and Gangpore, are also to be found persons of this kind. In the two last-mentioned a species

of gold mine is to be found, the aperture only just large enough for a man to descend, but of considerable extent below. An account of the mine in Gangpoor, from which it is stated to me that a species of pure gold of considerable size has been obtained, remains to be submitted.

The diamond-searchers, with their women and children, amounting to between four and five hundred persons, are annually employed from the month of November till the commencement of the rainy season in searching the bed of the Mahanuddee for diamonds. They examine such parts of the river as are obstructed by rocks from Chunderpoor to Sonepoor, a distance of about one hundred and twenty miles, and all the hollows in the bed of the Mahanuddee in which alluvial matter is deposited. The process pursued by the searchers is extremely simple, and three implements only are used by them. The first is a kind of pick-axe with one pick, called Ankooa; the second, a plank of about five feet in length, and two feet in width, made a little concave towards the centre, and a rim of three inches in height on each side, called Doer; and third, a board of similar form, but only half the size of the former, called Kootla. With the pick-axe the earth is dug out of the hollows, and collected in heaps near the stream: pieces of this earth are then placed by the women on the large board, which is so inclined as to allow the earth, when mixed with water, gradually to run off; the pebbles and coarse gravel are then picked and thrown away, and the remaining mass is afterwards removed from the large to the small board, and spread over the latter, to admit of every particle being minutely examined, and gems and grains of gold, if any be present, being collected. The earth in which the diamond is usually found consists of a mixture of stiff reddish clay, pebbles, and a small proportion of sand and a little oxide of iron. This earth the searchers take particular pains to find, and they examine every particle of it with the greatest attention.

Although employed exclusively in this occupation from time immemorial, the Iharas have not the remotest idea of what constitutes the matrix of the diamond. Mr. Mawe, in his *Account of the Diamonds of Brazil*, states, that “the only places where diamonds have certainly been found in modern times are the central and southern parts of India Proper, the peninsula of Malacca, the Island of Borneo, and the mountainous district called Serro Do Frio, and other places in Brazil. Neither the rock in which it occurs, nor the other minerals with which it is accompanied in Malacca and in Borneo, are at all known. In India it is found in detached crystals, in a kind of indurated, ochrey gravel; but whether or not this is its native repository is uncertain.”

The diamonds of Brazil, like those of India, are found in a loose gravel-like substance, immediately incumbent on the solid rock, and covered by vegetable mould and recent alluvial matter. This gravel consists principally of rounded quartz, pebbles of various sizes mixed with sand and oxide of iron, and enclosing rounded topazes, blue, yellow, and white, and grains of gold. In some parts of the diamond territory of Serro do Frio, which I visited, the gravel is cement-

ed, by means of the oxide of iron, into a considerably hard conglomerate, forming rocks and low hills. On the sides of these are water-courses, produced by the torrents during the rainy season, the beds of which are very unequal and excavated. In these hollows diamonds are not unfrequently discovered. The usual and regular method of searching for diamonds is to collect the disintegrated conglomerate in which they are found at the bottoms of rivers and of ravines, and by a laborious process of washing, as long as the water comes off discoloured, to separate the mud from the distinct grains. The residue, thus cleaned, is subjected to an accurate examination for the diamonds which it may contain. These are distinguished partly by their crystalline form, but principally by their peculiar lustre, slightly verging on semi-metallic, but which cannot be adequately described by words.

If the above-mentioned conglomerate be not the real matrix of the diamond, its true geological situation is unknown, for it has never as yet been discovered in any other rock.

Now, although the Sumbhulpore diamond is more frequently found in the red earth above described, yet it is now and then met with in other kinds of compositions. The proof of this red conglomerate being its matrix is by no means established. In the late Dr. Voysey's *Description of the Diamond Mines in Southern India*, it is stated that the only rock in which the diamond is found is the sandstone breccia.

In the reign of the former rajahs and ranees in Sumbhulpore, the right to all diamonds found in the bed of the Mahanuddee was established, and on a diamond of magnitude being found by the Iharas, the finder was rewarded by a grant of a small village in Jageer, and by presents in money and clothes. When detected in secreting a diamond, they were punished with death, or by being severely beaten and deprived of their Jageers, and of the privilege of again searching for diamonds.

The facility with which a diamond, when found by the Iharas, can be secreted, (for, instead of vigilance being exercised over them, they are left to use their own discretion in searching for this gem,) and the extreme difficulty in detecting the fraud, render it more than probable that many very valuable diamonds are at this moment in the possession of the finders, which they are afraid to disclose. For, in 1818, on the power of the British government being established in Sumbhulpore, a diamond which had been secreted, by the searchers, from the former rulers of Sumbhulpore, was actually brought and delivered to the late political agent, and by him sent to government as a part of the property of Sumbhulpore, which, by right of conquest, became the property of the state. It weighed eighty-four grains, and was valued at five thousand rupees.

At Sumbhulpore the quality of the diamond is named after the four tribes of the Hindoos. A diamond of the first quality is called Brahmin; the second is named Chetree; the third Bysh; and the fourth Soudra; and, from experience, the native jewellers judge pretty accurately of their respective qualities. The weights they employ for weighing the diamond are the ruttee and masha; the former is a frac-

tion less than two grains troy weight, and seven ruttees make a masha. Rough diamonds are estimated according to their quality. The first quality is valued at, per masha, 500 sicca rupees; second at 400 sicca rupees; third at 300; and fourth at from 175 to 200 sicca rupees per masha. This mode of valuing a rough diamond is somewhat different from the rule laid down by Jeffries for ascertaining the value of this gem in its native state. According to Jeffries, the carat weight of a rough diamond is squared, and then multiplied by 2, and the product is the value of the gem in pounds sterling. For example, a diamond of 20 carat weight, $20 \times 20 = 400 \times 2 = £800$ sterling. If the product of the square of the carat weight of a cut diamond be multiplied by 4 instead of 2, its total will be the value of a cut diamond in pounds sterling. This rule applies only to diamonds of small weight, for the value of a diamond of magnitude increases, without any established rule, rapidly with its size.

The large diamond found in 1809 was of the third (Byshes) quality. It was picked up in the month of October, at a place called Herakode, in the bed of the Mahanuddee; and its delivery to Ranee Rut-tun Coher was unluckily delayed on account of her being engaged in performing the funeral ceremonies of her husband's mother; and before they were finished, the Marhatta troops arrived and expelled her from the country. A traitorous servant of her's betrayed the secret of the valuable stone to Chunderjee Bhoonsla, the commanding officer, who persuaded the diamond-finders to surrender it to him by promises of the grant of a fine village and a thousand rupees. On the following morning, when they appeared to claim performance, they were reproached for bringing a stone instead of a diamond, and driven from his presence.

French Building Regulations.

THE dreadful accident that has occurred at the Brunswick Theatre, and the insecurity of the public, from the ignorance or negligence of individuals, calls imperiously for some legislative regulations similar to those adopted by the French government. In France, details of every part of the plan and construction of the public buildings must be previously submitted to a government architect, who examines the whole carefully, and suggests the alterations and modifications which he judges necessary for the public safety: and it is only on his written approval of the plan that the construction is permitted to be executed. Nor does his charge end here; he superintends the works as they proceed, and prevents the slightest deviation from the plan as sanctioned by him. Had such a regulation existed in England, the calamity at the Brunswick Theatre would not have happened.

The paternal care of the French government, in whatever concerns the public safety and health, is admirable. In England, we