

is to a large extent washed away by eddies of water which would not be sufficiently strong to move the heavier particles of the precious metal (the specific gravity of quartz is 2.65, while that of gold is about 19). Such accumulations are called "pockets." The "banket" deposits possibly originated in much the same manner, only the conditions being favourable, much of the detritus, which has become pulverised, and concentrated as regards gold, as in the case of the sand, has subsequently acted as a cement to the larger fragments, and so given rise to the present deposits.

There is still another form of deposit in which gold is found, and which is also derived from the destruction of older rocks. In this case the amount of water has been limited, and consequently the more refractory products of decomposition, instead of washing away to form banket or sand remain on the spot or near it; moreover, they remain in great blocks permeated with vesicules and holes, which represent the positions previously occupied by the less refractory constituents, these having succumbed to the action of the various constituents of the atmosphere; that is to say, the moisture, the carbonic acid, and oxygen. The minerals left behind are principally quartz, some iron oxide, and gold, if present in the original rock; some of the gold will, however, dissolve. These spongy-looking deposits of ferruginous quartz are known as "gossan," and are generally found whenever the out-crop or the upper part of the lode is exposed to atmospheric action. If we take into consideration the enormous number of years during which these changes have been going on in nature, it is easy to realise that very extensive deposits of this description may have been brought into existence. They would, of course, be more localised than the banket deposits, which in their turn ought to be more localised than the alluvial or river deposits. The famous Mount Morgan mine in Queensland, Australia, is an instance of a deposit produced by atmospheric influences.

In alluvial deposits and in the various matrices the gold appears in many states of aggregation, which have received various names:—In nuggets, or pieces of irregular shape and of moderate size, in grains more or less crystalline, down to powder, which consists of individual particles invisible to the naked eye; or it occurs as thin sheet gold, leaf gold, foliated gold, down to mere films of gold; and sometimes in long, thin aggregates of gold, such as that known as wire-gold, of moderate thickness, down to mere threads of gold.

Gold is found in all parts of the world. In Europe it is found in largest quantities in Transylvania, and in Hungary, where mines were worked by the Romans. It is also found in Spain, in North Italy on the northern slope of the Alps, from Monte Rosa and Simplon to Aosta, in Sweden, in Wales near Dolgelly, in Scotland near Leadhills, in Ireland in county Wicklow; whilst auriferous sands exist in the following amongst other rivers: Rhine, Rhone, Reuss, Aar, Danube, and many Cornish streams.

In Asia gold is found in the Ural Mountains, where it was probably mined by the Scythians; also in Siberia and many other parts of Asia, notably India.

In Africa it occurs on the west coast, near Ashantee, known as the Gold Coast, and in the Transvaal, which is now so famous; it has been said that Matabele Land is one of the richest gold districts in the world. On the coast of Mozambique there are gold mines which are supposed to be the same which existed in Solomon's time under the name of mines of Ophir, which name has lately been applied to certain properties in that district, recently put on the London market. Gold also exists elsewhere in Africa.

In America, North, South, and Central, gold is very widely distributed. It is found in Mexico. In the United States, the gold mines of North Carolina, Virginia, Georgia, and South Carolina were once the great source of gold, but the discovery of gold in California in immense deposits soon eclipsed these and all other known gold deposits in the world; the subsequent discoveries in Australia, however, equalled them. Other States are gold producers—Colorado, Arizona, Idaho, Utah, some of the Eastern States, the newly-created States Dakota and Montana, and the territories of Washington and Oregon. British Columbia and Vancouver's Island have gold—the former promises well for the future; so has Alaska; whilst gold is also found on the eastern side of Canada and in Nova Scotia. In Central America gold occurs in many places, including Honduras, Costa Rica, etc.

In South America, Brazil has long been famous for its gold mines; but gold is also found in the Argentine Republic, Venezuela, Colombia, and Guiana.

Australia is famous for its gold, and all who visited the Indian and Colonial Exhibition will remember the great arches built to represent the output from Victoria and New South Wales. It is also found in Queensland, South Australia, New Zealand, etc.—*Knowledge*.

#### UNIVERSAL SYSTEM OF TELEGRAPHY.

Whenever we hear of a gigantic project, or an exceedingly striking invention, we have hitherto been accustomed to turn our attention to America, in the expectation of there meeting with the originator, and we have rarely been disappointed. The Americans have, however, now been outstripped by the French in the person of M. Eiffel, who has shown what Frenchmen can do by the construction of the tower which bears his name. Another remarkable, and at the same time, absurd project, was recently brought under the notice of the French Ministers of Commerce and of Posts and Telegraphs by M. Léon Roquet, who proposes the institution of a universal telegraphic language, which he claims would be of great service to the public. The project, as described by the author, is as follows:

"In private, commercial, and administrative telegraphic correspondence there is a large number of phrases which are very frequently employed, and it would be quite easy to replace these phrases by conventional combinations of figures and letters, such combinations to be published by the Administration. In order to collect and make such combinations, the telegraphic correspondence for the past few years would have to be investigated, so that the most frequently employed phrases could be noted and classed in a methodical manner in order to avoid repetitions. In front of each phrase would be placed either a figure or letter of the French or Greek alphabet. Suppose we have 50 elementary signs, figures, or letters. Fifty phrases, each distinguished by a distinct sign, would form a page. At the top of the page there would be placed one of the 50 signs, and each group of 50 pages would form a part. A volume would consist of 50 parts, each of which would be distinguished in the same manner. Fifty volumes would comprise a repertoire, and 50 repertoires a series. For instance, one page would contain 50 phrases, a part would comprise 2,500 phrases, a volume 125,000, a repertoire of 50 volumes 6,250,000, and a series 312,500,000 phrases."

"The author suggests that probably one volume of 125,000 phrases would be sufficient. With this system any one desiring to telegraph by conventional signs would consult the volume in the same manner as he would refer to the directory