

He then deals with the condition of the buried rocks, owing to the preserving influence of the marl covering, and an interesting chapter is devoted to the breccias, stone bands, and rock fragments contained in the marls. On account of the uncertainty that existed as to the mineral composition of the Keuper Marls, Mr. Bosworth made various experiments, the result of which are given in some detail; and in the discussion of the mineral grains, an interesting comparison is made between the larger grains of the heavy minerals, now rounded and smoothed, and those of a Scottish Carboniferous Sandstone, which are in strong contrast.

The author has for some years been collecting data as to the ripple-marks, and he includes a table of observations in this direction. These ripples were formed under shallow water, and were controlled by the prevalent south-west wind.

The last chapter summarizes the facts very clearly, and some conclusions are drawn as to the mode of deposition of the sediments. Mr. Bosworth offers as his interpretation that the sediments accumulated in an inland basin that was partly dry and partly occupied by comparatively deep standing pools, the climate being arid, and evaporation in excess of precipitation. Streams of fresh water flowed into the desert from the hills south-west, on which was precipitated the moisture of the prevalent wind. At times most of the desert would be dry, and the inflowing water would be spread over the plains and be evaporated before reaching the pools. Under these conditions the grey beds would be deposited, while the red marls accumulated in the standing pools.

There are four short appendices to this volume, and these give details of the sections at Gipsy Lane, Hathen, Sileby, and Whitwick.

#### V.—BRIEF NOTICES.

1. ORE-DEPOSIT, DOLORES MINE, MEXICO.—In *Economic Geology* for August, 1912, Messrs. J. E. Spurr, G. H. Garrey, and Clarence N. Fenner give an interesting study of the metamorphic ore-deposit at the Dolores Mine, situated at the east base of a small mountain range near Matchuala, S.L.P., Mexico. The range, which is of blue Mesozoic limestone, overlain by the shales forming the valleys on both sides, is remarkable for an enormous fault of a vertical displacement of 1,500 metres. There are two areas of intrusive quartz-monzonite, showing evidence of dawning magmatic differentiation in situ, and near them are lime-silicate rocks, the product of metamorphism. The ore-deposition is in the order—copper pyrites and pyrites, mispickel, pyrrhotite and pyrites, blende, galena, the third stage being rich in silver. Mr. Spurr elaborates his theory of ore-deposition, one of the most important features of which is that the metalliferous solutions from which ores are deposited originate in and spring from the zone of igneous rock differentiation, which is in the lower part of the zone of crystallization.

2. In the *American Journal for Science* for October, 1912, Mr. E. T. Allen and Mr. J. L. Crenshaw discuss the various kinds of sulphides of zinc, cadmium, and mercury, and the conditions under which they

are severally formed, and throw considerable light on their production in nature. Alkaline solutions always give rise to blende, never to wurtzite, and the former mineral is also formed under suitable conditions from acid solutions. Only one sulphide of cadmium exists, the differences in colour that have been noticed being due to the relative amounts of light transmitted and reflected. Three forms of sulphide of mercury are known, of which one, cinnabar, is stable, and two (one being the rare mineral metacinnabar) are unstable. The authors conclude by saying, "Enough work has already been done to show that the difference in chemical character between acid and alkaline solutions, therefore, in general between deep-seated and surface solutions, is of vital importance in geochemistry." The microscopic study was made by Dr. H. E. Merwin.

3. PALÆOLITHIC MAN IN JERSEY.—In the thirty-seventh Annual Bulletin of the Société Jersiaise (1912) there is an account by Mr. J. Sinel of the prehistoric cave-dwelling (Cotte à la Chèvre) east of Grosnez Point, St. Ouen, on the north-western coast of Jersey. Here, according to the author, "we have what may be termed a pure early Mousterian station, free from admixture of other types of relics, and a floor undisturbed by floods or any other agencies." Apart from the Palæolithic implements, there was obtained the jaw of a large species of deer in a decayed condition.

Messrs. E. T. Nicolle and J. Sinel contribute a "Report of the resumed Exploration of 'La Cotte', St. Brelade". Here, again, flint implements, all of Mousterian type, have been found in a cave-dwelling; also remains of *Rhinoceros antiquitatus*, reindeer, ox, and horse, which have been identified by Dr. C. W. Andrews; and, of still greater interest, some teeth of Palæolithic man, described and figured by Dr. A. Keith and Mr. F. H. S. Knowles under the name of *Homo Breladensis*.<sup>1</sup>

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## REPORTS AND PROCEEDINGS.

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### GEOLOGICAL SOCIETY OF LONDON.

January 8, 1913.—Dr. Aubrey Strahan, F.R.S., President, in the Chair.

The following communications were read:—

1. "The Geological History of the Malay Peninsula." By John Brooke Scrivenor, M.A., F.G.S., Geologist to the Government of the Federated Malay States.

This paper is an attempt to present briefly and in a connected form all the information bearing on the geological history of the Malay Peninsula that has been gathered during the course of economic work since 1903.

The main points are as follows:—

During the Mesozoic Era earth-movements took place in a part of the crust which is now the site of the Malay Peninsula. These

<sup>1</sup> A brief notice of the discoveries was communicated to the Geological Society by Dr. A. S. Woodward, Quart. Journ. Geol. Soc., vol. lxxvii, p. iii, 1911.