

II.—THE EXISTENCE OF MAN IN THE TERTIARY EPOCH.

By ALPHONSE FAVRE.

[De l'Existence de l'Homme à l'Epoque Tertiaire. Tiré des Archives des Sciences de la Bibliothèque Universelle, Février, 1870.]

THE aim of this paper is to bring down the Stone age to the Tertiary period. The author observes that so far as the climatal conditions of Tertiary times are concerned, no difficulty presents itself, as they were favourable to the existence of man. If he did exist at so remote a period, he would have been associated with a fauna and flora very different from those of the present time, and he must then be classed with those genera that have existed during two successive geological epochs. We must not therefore be surprised at the caution of scientific men in receiving these new views; the scientific man is nothing unless sceptical.

Passing on to the facts of the case, M. Favre mentions that so long ago as 1863, M. Desnoyers communicated to the Academy of Sciences some observations made at Saint-Prest, near Chartres, in which the occurrence of human works in Pliocene deposits was pointed out. M. Desnoyers found a large number of bones in stratified sand of fluviatile appearance, and mixed with flint-gravel. The bones, as determined by M. Lartet, are the following: *Elephas meridionalis*, *Rhinoceros etruscus*, *Hippopotamus major* (?), *Equus Arnensis*, *Cervus Carnutorum* and two other species of *Cervus*, *Bos*, and *Trogontherium Cuvieri*. These fossils and the sands in which they were embedded have been classed as of Upper Tertiary or Pliocene age. M. Desnoyers observed on the surface of these bones certain scratches, varying in form, length, and depth, and passing over the edge, which he thought could not be accidental, and led him to imagine that they had been made by flint-blades, and, in fact, by the hand of man. From these facts he concludes that man co-existed with the *Elephas meridionalis*, and other Pliocene species. The age of the deposits is undoubted, but not so the cause of the markings found on the bones. Sir Charles Lyell gave some bones to pigs to gnaw, and found the markings made by their teeth to be very similar to these alleged human scratches, and he therefore concluded that they were made by the great Beaver, or some other animal.

However, some more unequivocal evidence than the scratched bones was soon found; for in 1867 M. l'Abbé Bourgeois announced to the Academy that he had found in these sands of Saint-Prest worked flints, such as lance or arrow-heads, stampers, scrapers, etc. These flints were much more rudely worked than those of Amiens or Abbeville. Soon after, M. Bourgeois announced the discovery of worked flints, not only in Miocene marls, but also below the Beauce limestone, which is older. He found these flints in nearly all the beds separating this ancient deposit from the Alluvium, as can be seen in a section at Thenay, near Pont Levoy, Department of Loir-et-Cher.

Many scientific men refuse to believe that these flints are of human workmanship. On the other hand, many assert that they are genuine

implements, and this idea is supported by MM. Hamy, Cotteau Marquis de Vibraye, Dupont, de Mortillet, and De Worsae.

To sum up, the evidence of man in the Tertiary epoch seems to rest upon the evidence of the scratched bones, marked, according to M. Desnoyers, by man; according to Sir C. Lyell, gnawed by some animal; and upon the stronger evidence in the shape of rudely-fashioned flint implements, which is supported by many high authorities, but rejected by others.

F. J. B.

III.—A VISIT TO SYDNEY AND THE CUDGEGONG DIAMOND MINES.

By ANGUS MACKAY. 8vo. pp. 64. (Melbourne, 1870.)

THIS is an interesting sketchy narrative of Mr. Mackay's visit to the Cudgong Diamond Mines. Commencing with an account of his journey from Melbourne to Sydney, he gives a notice of the present state of the latter city and of the changes it has of late years undergone. Then he visits the Lithgow Valley Coal-field, and afterwards takes coach to Mudgee, a thriving town, pleasantly situated in an open level country, through which the Cudgong or Mudgee river flows. The nearest diamond workings are at a place called Two Mile Flat, twenty-two miles distant to the westward; two or three miles from this hamlet is the head-quarters of the Mudgee Gold and Diamond Washing Company. It is a portion of the ancient river-bed, considered to be of Older Pliocene age, thirty or forty feet above the present channel of the river, which has been found to be rich both in gold and diamonds,—indeed, the gold alone should give excellent returns if the ground be worked with ordinary skill. The gold is derived from the Upper Silurian rocks. The great question of interest, however, is, Whence come the Diamonds? Upon this point opinions are at variance. Judging from the facts that the diamonds found in the ancient Drift are almost without exception perfectly formed and unabraded, whereas those found in the present river alluvium show marks of the ill-usage they have met with among the pebbles and boulders, it is inferred that the diamonds were formed in the older Drift after its deposition. On the other hand, the diamonds may have been brought with the disintegrated rocks which supplied the Drift. Further observations are needed before a definite conclusion on the subject can be arrived at. Meanwhile, it is interesting to have an account of the processes carried on in these gold and diamond workings, which Mr. Mackay has set forth in a popular manner in the little pamphlet now before us.

REPORTS AND PROCEEDINGS.

GEOLOGICAL SOCIETY OF LONDON.—I. May 24th, 1871.—Prof. John Morris, Vice-President, in the Chair. The following communications were read:—1. "On the principal Features of the Stratigraphical Distribution of the British Fossil Lamellibranchiata." By J. Logan Lobley, Esq., F.G.S.

In this paper the author showed, by means of diagrammatic tables,