

originated *in situ* from the Dolerite. This view, however, is not shared by all observers. Some eminent geologists consider the high-level Laterite of the Western Ghâts as a derived, viz. transported, rock. If such were really the case we should only be brought face to face with another difficulty almost as great as the former. We should have to explain why and how in particular regions such vast quantities of ferric oxide and alumina were extracted from the igneous rocks, and both bases redeposited together without any admixture of other substances except mere traces of silica and titanium dioxide.

NOTICES OF MEMOIRS, ETC.

BRIEF NOTICES.

1. RECENT DISCOVERIES IN MADAGASCAR.—The first trimestrial number of this year of the *Bulletin Economique* of Madagascar and Dependencies contains a preliminary notice by Mr. Standing on the discovery of sub-fossil bones at Ampasambazimba (west of Lake Itasy).

A great number of bones, which were found embedded partly in a travertine and partly in a black "basaltic or peaty" soil, have already been received by the *Académie Malgache* of Tananarive. Besides fragmentary remains of *Hippopotamus*, Crocodiles, Chelonians, and *Aepyornis*, there are several beautifully preserved skulls and fragments of jaws and limb-bones of extinct Lemuroids, a description of which will be given in the Bulletin of the *Académie*. All the known groups of sub-fossil Lemurs are represented in the collection.

The *Megaladapis* 'group' is represented by the anterior part of a skull of *M. madagascariensis* and by several fragmentary jaws.

The remains of *Palaopropithec*i are numerous, comprising two fine skulls of a new species, together with other less complete skulls, lower jaws, and a femur.

The *Archaeolemur* or *Nesopithecus* group is likewise well represented.

Of the Lemurs *sensu stricto*, two skulls deserve particular mention, the one resembling the recent *Lemur varius*, the other the extinct *L. insignis*.

Last, but not least, a fragmentary lower jaw is said to be of particular interest, as throwing light on the origin of the Aye-Aye (*Chiromys*).

2.—L. DOLLO. LES ANCÊTRES DES MOSASAURIENS. (Extr. from Bull. Scientif. de la France et de la Belgique, 1903, vol. xxxviii, pp. 1-3.)

In his memoir "Über die Varanus-artigen Lacerten Istriens" (Beitr. zur Pal. und Geol. Oesterreich-Ungarns und des Orients, 1903, vol. xv, p. 41)¹ Baron Franz Nopcsa, jun., arrives at the following conclusions:—

a. The Pythonomorpha are derived from the Aigialosauridæ.

¹ See GEOL. MAG., 1903, pp. 119-121.

b. The Aigialosauridæ show already adaptations to aquatic life in the structure of the foot.

c. Aigialosauridæ and Varanidæ have for common (Jurassic) ancestors terrestrial Reptilia, which therefore must have had an organization very similar to that of the Varanidæ.

M. Dollo claims priority for these results by referring to pp. 259 and 251–259 of his memoir of 1892, “Nouvelle Note sur l’Ostéologie des Mosasauriens” (Bull. Soc. Belg. Géol., Paléont., et Hydr., Bruxelles, 1892, vol. vi, pp. 219–259, pls. iii, iv).

3.—L. DOLLO. LES MOSASAURIENS DE LA BELGIQUE. (Bull. Soc. Belg. Géol., Paléont., et Hydr., Bruxelles, 1904, vol. xviii, pp. 207–216, pl. vi.)

Contains some new observations on the Mosasaurians. The following remarks on the difference between *Mosasaurus* and *Plioplatecarpus* are of especial interest:—

Mosasaurus—by its strong dentition, its lateral orbits, its thin tympanic membrane, by the absence of a median basi-occipital canal, by its elongate thorax, the powerful caudal fin, and the small anterior fins—is shown to have been a *swimming Mosasaurian*, living near the surface, and enabled to capture, while swimming, the formidable creatures which formed its prey.

Plioplatecarpus—by its reduced dentition, its upward turned orbits, its calcified tympanic membrane, its median basi-occipital canal, its short thorax, its feebly developed caudal fin, and its strong anterior fins—is shown to have been a *diving Mosasaurian*, descending to more or less considerable depths, and feeding on small creatures.

4.—L. DOLLO. L’ORIGINE DES MOSASAURIENS. (Bull. Soc. Belg. Géol., Paléont., et Hydr., Bruxelles, 1904, vol. xviii, pp. 217–222.)

The author’s conclusions are as follows:—

a. Boulenger was the first to point out the relationship between the Dolichosaurians and the Mosasaurians.

b. Gorgjanovic-Kramberger has given an important contribution by his description of *Aigialosaurus*, and by recognising that the Aigialosauridæ are ancestral to the Mosasaurians. He has, however, imperfectly appreciated the phylogenetic position of the Dolichosaurians.

c. The author’s memoir of 1894, “Nouvelle Note sur l’Ostéologie des Mosasauriens,” based on original, inedited materials, gives for the first time the real relations between the Lacertilians, the Dolichosaurians, and the Mosasaurians. For the first time also the Dolichosaurians are shown to be *genealogically* intermediate between the Lacertilians and the Mosasaurians.

d. Williston is mistaken in assuming (Journal of Geology, 1904, vol. xii, p. 45) that Boulenger and Dollo have simply adopted the views of Gorgjanovic-Kramberger.

5. THE RHÆTIC BONE-BEDS.—Mr. W. H. Wickes has published in the *Bristol Naturalist’s Society’s Proceedings* (x, pt. 3, 1904) an interesting and important communication on the Rhætic Bone-beds.

His summary reads as follows:—The 'Bone-bed' is not a regular or persistent bed, but a series of thin sheets (or lenticules) of varying extent, coming in at various horizons and deposited at various times. These sheets are separate and have no connection with each other, except that they are of common origin, the general structure and fossils being identical. They are chiefly caused by the Saurians and carnivorous fishes, being the remains of their victims, with the addition of coprolites, etc. The extent of each sheet was determined by the size of the shoal, and the thickness by the time it remained at that station. At intervals the shoal shifted to another station, where the process was repeated and another Bone-bed formed. Owing to deposition of sediment, each successive bed was on a higher horizon than its predecessors. These are original organic deposits *in situ*, and not drifted material. They may be summed up as submarine guano beds laid down by the floating population of the period. We must refer the reader to Mr. Wickes' paper for the details of this highly suggestive piece of work, but may mention that the pebbles in these beds are attributed to fishes, for which idea a good deal of interesting evidence is brought forward.

6. THE KIMERIDGIAN IN EAST PRUSSIA.—The thick covering of drift materials so extensively spread over the flat country of the north-east of Germany very effectually conceals the solid rocks beneath, and to ascertain their nature it is necessary to resort to boring. Near Heilsberg, in the centre of the province of East Prussia, a boring has been carried down to a depth of over 600 metres below the surface, and it resulted in the discovery of rocks of Kimeridgian age at a depth of 562 metres. Dr. P. G. Krause has undertaken the examination of the cores, and in a preliminary communication in the *Zeitschrift d. deutschen geol. Gesellsch.*, Bd. lvi (1904), p. 56, he states that the rock is a light-gray, fine-grained sandstone with a small admixture of lime and clay. It contains *Cardioceras Volgæ*, Pavlow, very numerous, *C. cf. subtilicostatum*, Pavlow, *C. n.sp.*, *Hoplites subundoræ*, Pav., *H. n.sp.*, *Aspidoceras acanthicum*, Opp., *A. cf. Karpinskii*, Pav., *Exogyra virgula*, Goldf., and species of *Astarte*, *Pecten*, *Protocardium*, *Thracia*, and *Trigonia*. The Ammonite fauna shows a very close resemblance to that described by Pavlow in the *Acanthicus*-zone of the Volga district of Eastern Russia. Below 600 metres the *Cardioceras*-forms disappear, and thus the Kimeridge beds in this locality would appear to be not more than 38 m. in thickness.

7. FORAMINIFERA AND OSTRACODA FROM THE CRETACEOUS OF EAST PONDOLAND, SOUTH AFRICA.—In the *Annals of the South African Museum*, vol. iv, pt. 5, F. Chapman describes and figures 18 species and varieties of Foraminifera and 7 species and varieties of Ostracoda from a greenish argillaceous and sandy rock of Cretaceous age from East Pondoland, Cape Colony. The foraminifera belong to the following genera: *Haplophragmium*, *Bulimina*, *Pleurostomella*, *Nodosaria*, *Vaginulina*, *Cristellaria*, *Polymorphina*, *Globigerina*,

Truncatulina, *Pulvinulina*, and *Rotalia*. Fifteen of the 18 species are already known from the Cretaceous and Tertiary strata of this country and Germany; they are all such as would be found in quite shallow water. Of the Ostracoda, one doubtful form is of Oolitic age, 4 occur also in the Cretaceous rocks of this country, whilst 2 are described as new. The author states that the general facies of these Microzoa indicates a position intermediate between the Lower and Upper Cretaceous series.

8.—GEOLOGY OF THE TRANSVAAL, by Dr. G. A. F. MOLENGRAAFF. Translated from the French by J. H. RONALDSON, M.E. With Additions and Alterations by the Author. Royal Svo; pp. viii, 90, 19 figures; pl. i, Geological Sketch Map; pl. ii, Geological Sections. (Edinburgh and Johannesburg, 1904.)

This memoir appeared originally in the Bull. Soc. Géol. de France, 1901, and a notice of it was given in the October Number of the GEOL. MAG. (p. 475) of the same year. The translator states that the English edition has been undertaken in the hope of bringing it within the easy reach of many busy men. The author has added a new chapter and corrected and augmented the others, and a list of the principal works of reference, brought down to the present year, is appended. This general sketch by a geologist so capable and experienced as Dr. Molengraaff may safely be commended to all who are interested in the geological structure of the Transvaal.

REVIEWS.

I.—MEMOIRS OF THE GEOLOGICAL SURVEY OF ENGLAND AND WALES. SHEETS 355 AND 356: GEOLOGY OF THE COUNTRY ROUND KINGSBRIDGE AND SALCOMBE. By W. A. E. USSHER, F.G.S.

THIS memoir is a very interesting and valuable contribution to the geology of Devonshire, although the area thus mapped and described is limited in extent. The bulk of the rocks consist of Devonian slates, etc., bordered on the south by the Metamorphic schists of the Salcombe estuary (Start and Bolt rocks). Within the area, likewise, are one or two remnants of New Red rocks, whilst the phenomena of Pleistocene and Recent deposits, including modern beaches, afford much material for study and investigation. Yet the chief interest of the memoir centres in the description of the Devonian and Metamorphic rocks, and in their relation to each other along a boundary which extends from sea to sea.

In these days of thorough research, when there would seem to be so little left for posterity to accomplish, it is some consolation to find that even within the limits of a single English county there are yet problems in its geological history which cannot be said to have been altogether solved. Amongst these questions still *sub judice*, there are few more interesting and perhaps none more obscure than the true