

2000 francs to Louis Roule, for continuing and extending his researches on the morphology and biology of the salmon in France.

2000 francs to Jean Pougnet, for the continuation of his researches on the chemical and biological action of ultra-violet light.

2000 francs to C. Dauzère for his work on cellular vortices.

2000 francs to Méd. Gard, for the publication of a work and atlas on material left by the late M. Bornet.

4000 francs to Aug. Chevalier, to meet the expense necessitated by the classification of the botanical material arising from his expeditions in Africa.

2000 francs to Paul Becquerel, for the continuation of his physiological researches relating to the influence of radio-active substances upon the nutrition, reproduction, and variation of some species of plants.

4000 francs to Le Morvan, for assistance in publishing the photographic atlas of the moon.

2000 francs to Jacques Pellegrin, to assist him to pursue his researches and publish works on African fishes.

3000 francs to E. Rengade, for a systematic research on the presence and distribution of the rare alkali metals in mineral waters.

3000 francs to Charles Alluaud, for the publication of work on the Alpine fauna and flora of the high mountainous regions of eastern Africa.

2000 francs to Charles Lormand, for the purchase of a sufficient quantity of radium bromide to carry out methodical researches on the action of radio-activity on the development of plants.

2000 francs to Alphonse Labbé, for researches on the modifications undergone by animals on changing from salt to fresh water or the reverse.

3000 francs to G. de Gironcourt, for the publication of the scientific results of his expeditions in Morocco and western Africa.

3000 francs to A. F. Legendre, for the publication of maps and documents of his expeditions in China.

2000 francs to H. Abraham, for the determination of the velocity of propagation of Hertzian waves between Paris and Toulon.

PAPERS ON VERTEBRATE PALÆONTOLOGY.

TO vol. xxii. (pp. 407-420) of the Bulletin of the American Museum of Natural History Prof. H. F. Osborn contributes two articles on the skulls of ungulates from the Wind River Lower Eocene of Wyoming. A very interesting point is that in the members of the family Uintatheriidae characteristic of this stage, such as *Bathyopsis*, the skull lacks the great bony horn-cores of the later types, their place being taken by small knobs. In the *Perissodactyle Titanotheriidae* it has been found that two phyla of the genus *Eotitanops* are recognisable, one comprising relatively small, persistently primitive light-limbed species, and the other animals of a larger and more progressive type. Several new species are named.

In the Bulletin of the Department of Geology, California University (vol. vii., pp. 169-175), Dr. J. C. Merriam describes a lower molar of a tapir obtained many years ago from the auriferous gravels of California as a new race of a species described by Leidy from the Pleistocene of South Carolina. To this race (*Tapirus haysii californicus*) is provisionally referred a set of three upper molars from the late Tertiary of Oregon. The species appears to be nearly related to the existing Central American *T. bairdi*.

The skeletons of *Saurolophus osborni*, a duck-billed dinosaur of the family Trachodontidae, and of *Hypacro-*

saurus altispinus, a new genus and species of the same family, both from the Upper Cretaceous of Edmonton, Alberta, Canada, form the subject of two papers by Mr. Barnum Brown in vol. xxxii. (pp. 387-407) of the Bulletin of the American Museum of Natural History. The type skeleton of the former, which measures about 32 ft. in length—the same as that of the contemporaneous *Trachodon mirabilis*—has been mounted on a slab for exhibition. *Saurolophus*, it appears, is much more numerous represented in the Edmonton beds than its cousin *Trachodon*. *Hypacosaurus* is characterised by the great height of the spines of the dorsal vertebrae, coupled with the presence of nine vertebrae in the sacrum, against eight in the allied genus.

Under the name of *Rutiodon manhattensis*, Prof. F. von Huene describes in the volume last cited (pp. 275-283) the remains of a new species of phytosaur (belodont) from the Upper Triassic of Fort Lee, New Jersey, at the base of the "Palisades," opposite New York. In the opinion of the describer, *Rutiodon* and the European *Mystrisuchus*, on account of the taller spines of their vertebrae and the consequently more compressed form of their bodies, were probably better swimmers than the typical *Phytosaurus*. Both were long-snouted reptiles, of larger bodily size than *Phytosaurus*, the new species being the biggest yet described.

From the Trias of Heligoland Mr. H. Schroeder (*K. Preuss. Geol. Landesanstalt*) describes a beautifully preserved skull of a large stegocephalian (labyrinthodont) as a new species (*C. helgolandiae*) of the genus typified by von Meyer's *Capitosaurus nasutus* from the Trias of Burnberg.

Mere reference will suffice for supplementary notes on fossil sharks by Messrs. D. S. Jordan and C. H. Beal, published in the Bulletin of the Department of Geology, California University (vol. vii., pp. 243-256).

In the Bulletin of the American Museum of Natural History, vol. xxxii., pp. 437-439, Dr. R. Broom records additional remains of the extinct South African horse described by himself in 1909 under the name of *Equus capensis*. These are stated to indicate a heavily built, short-legged species, standing about fourteen hands, and apparently distinct from all the existing South African members of the genus, as well as from the Arab stock.

In a second communication the same author (*op. cit.*, pp. 441-437) describes a number of remains of South African dicynodont reptiles, many of which are regarded as representing new species of the typical *Dicynodon*, while others are assigned to new genera. It is interesting to note that a skull described by Huxley as that of a lizard, under the name of *Pristerodon mackayi*, really represents a dicynodont furnished with cheek-teeth.

R. L.

AGRICULTURE AT THE BRITISH ASSOCIATION.

THE meeting this year was one of the most successful held since agriculture has been recognised at the British Association, both the quality of the papers and the attendance at the section being exceedingly good. Prof. Wood, in his presidential address, dealt with a problem which has now assumed very great importance. Hitherto the agricultural expert working in the counties and among farmers, has had to demonstrate certain facts which were already known at the experiment stations. One of the most important is the effect of phosphates in improving grassland, an effect so striking that it can be demonstrated without very refined experiments, so that the