

SCIENTIFIC SERIALS

THE November number of the *Monthly Microscopical Journal* commences with a paper by Dr. R. L. Maddox on an organism found in Fresh-pond Water, which he thinks to be new. The accompanying illustration, as well as the description, shows that the monads under consideration are of the simplest structure, and amoeboid in character, of a violet tint, and highly refracting. They vary in size, and contain great numbers of little granular bodies embedded in the gelatinous matrix. The name *Pseudo-amaba violacea* is proposed for the new form.—Mr. F. Kitton describes some new species of Diatomaceæ, including *Aulacodiscus superbis* from Barbadoes, and others of the genera *Stictodiscus*, *Isthmia*, *Nitzschia*, and *Tryblionella*.—Mr. Carruthers answers Dr. Dawson's comments on his interpretation of the microscopic appearances of *Nematophycus* (Carruthers) or *Protolaixites* (Dawson). As he remarks, the question whether the plant under consideration is a sea-weed or a conifer, is entirely an histological one. Dr. Dawson, in his sections of the fossil found "wood cells, showing spiral fibres and obscure pores;" Mr. Carruthers finds "elongated cylindrical cells of two sizes, interwoven irregularly into a felted mass," and the latter observer substantiates the correctness of his observations and his drawings, which prove the accuracy of his views as to the affinities of the plant.—Mr. J. J. Woodward explains the optical principles involved in the construction of Mr. Tolles' new immersion objective that has caused the contest between him and Mr. Wenham.—Dr. Braithwaite continues his description of bog mosses, treating of figuring *Sphagnum rigidum* and *S. molle*.—This paper is followed by one on the investigation of Microscopic Forms by means of the images which they furnish of external objects, by Prof. O. N. Rood, of Troy, N.Y., which gives an extremely ingenious and simple method of testing with certainty, when the refractive indices of the body examined and the fluid in which it is immersed, are known, of determining whether markings, as of *Cocci-nodiscus triceratium*, are depressions or elevations; by regarding the object as part of the optical system, and thence finding whether its influence is that of a convex or concave lens.

SOCIETIES AND ACADEMIES

LONDON

Geological Society, Nov. 5.—Prof. Ramsay, F.R.S., vice-president, in the chair.—The following communications were read:—"On the Skull of a species of *Halitherium* from the Red Crag of Suffolk," by Prof. W. H. Flower, F.R.S. A description of this has been already given in NATURE, at p. 13 of the present volume.—"New Facts bearing on the Inquiry concerning Forms intermediate between Birds and Reptiles," by Henry Woodward, F.R.S. The author, after giving a brief sketch of the Sauropsida, and referring especially to those points in which the Pterosaurs approach and differ from birds, spoke of the fossil birds and land reptiles which he considered to link together more closely the Sauropsida as a class. The most remarkable recent discoveries of fossil birds are:—(I.) *Archæopteryx macrura* (Owen), (II.) *Ichthyornis dispar* (Marsh), (III.) *Odontopteryx toliapica* (Owen). The author then referred to the Dinosauria, some of which he considered to present points of structure tending towards the so-called wingless birds. (I.) *Compsognathus longipes* (A. Wagner), from the Oolite of Solenhofen. (II.) The huge carnivorous *Megalosaurus*, ranging from the Lias to the Wealden. The author next drew attention to the Frilled Lizard of Australia, *Chlamydosaurus Kingii* (Gray), which has its fore limbs very much smaller than the hind limbs, and has been observed not only to sit up occasionally, but to run habitually upon the ground on its hind legs, its fore paws not touching the earth, which upright carriage necessitates special modifications of the sacrum and pelvis bones. The Solenhofen Limestone, in which Pterosauria are frequent, and which has yielded the remains of *Archæopteryx* and of *Compsognathus*, has also furnished a slab bearing a bipedal track, resembling what might be produced by *Chlamydosaurus* or *Compsognathus*. It shows a median track formed by the tail in being drawn along the ground; on each side of this the hind feet with outspread toes leave their mark, while the fore feet just touch the ground, leaving dot-like impressions nearer the median line. Hence the author thought that while some of the bipedal tracks which are met with from the Trias upwards may be the "spoor" of stru-

thious birds, most of them are due to the bipedal progression of the Secondary Reptiles.—"Note on the Astragalus of *Iguanodon Martelli*," by J. W. Hulke, F.R.S. The author exhibited and described an astragalus of *Iguanodon* from the collection of E. P. Wilkins. The bone was believed to be previously unknown. The upper surface presents a form exactly adapted to that of the distal end of the tibia, so that the applied surfaces of the astragalus and tibia must have interlocked in such a manner as to have precluded all motion between them. The author remarked upon the interest attaching to this fact in connection with the question of the relationship between the Dinosauria and Birds.—"Note on a very large Saurian Limb-bone, adapted for progression upon land, from the Kimmeridge Clay of Weymouth, Dorset," by J. W. Hulke, F.R.S. The bone described by the author presents a closer resemblance to the Crocodilian type of humerus than to any other bone, and he regarded it as the left humerus of the animal to which it belonged. The author refers it provisionally to a species of *Ceteosaurus*, which he proposes to name *C. humero-cristatus*.—A despatch from Mr. Alfred Biliotti, British Vice-Consul at Rhodes (dated June 16, 1873), communicated by H.M. Secretary of State for Foreign Affairs, and relating to a volcanic outburst in the island of Nissiros, one of the Sporades, in which there existed a volcano supposed to be extinct. Shortly before June 10 new craters opened in this volcano, and from them ashes, stones, and lava were ejected; many fissures, from which hot water flowed, were produced in the mountain, and the island was daily shaken by violent earthquakes.

Royal Astronomical Society, Nov. 14.—Prof. Cayley, president, in the chair. Sir Geo. B. Airy, the Astronomer-Royal, explained the general state of the preparations for the transit of Venus. First, as to the selection of stations. He had originally selected five observing-stations, and in making his choice he had endeavoured to keep in mind what other Governments were likely to do. He had been induced to recommend another station in Northern India for the purpose of taking a series of photographic observations to be used in conjunction with the photographic records to be obtained at the southern stations. As the French would not support the station which he had selected in the Sandwich Islands, by an expedition to the Marquesas Islands, he had found it necessary to recommend to our own Government that there should be two subsidiary observing stations in the Sandwich Islands. The station which had originally been chosen was Honolulu, at about the middle of the islands; the new stations were to be Ha-wai-i to the east and an island at the western extremity of the group. The three stations would thus be distributed over a distance of some 300 miles—a fact which would greatly add to their chances of fine weather. He had also been considering the propriety of establishing stations at Christmas Island, at Hurd Island, and in Whisky Bay, but at present they knew little of the chances of anchorage or fine weather at these places. The *Challenger* was, however, about to visit and survey them. It would then proceed to Australia, whence the results of their investigations would no doubt be telegraphed to England. As to the selection of stations in the extreme south, the Admiralty would have nothing to do with any station where there was no anchorage, and where there were no human beings. Any station which laboured under both disqualifications must undoubtedly be rejected as unsuitable. He felt himself borne out in this determination by the fact that other nations had adopted the same practical view in their selection of stations. The Astronomer Royal then enumerated and pointed out upon a globe the stations which had been selected: 8 American, 5 French, 4 German, 19 Russian, and 8 English, besides the private enterprise of Lord Lindsay. He then proceeded to give a description of the now well-known "black drop," which was sometimes described as being so large as to make Venus appear "pear-shaped," at other times the illegitimate connection between Venus and the limb consisted only of a narrow black strap or band. The Astronomer-Royal had had a working model prepared at Greenwich with a black disc moved by clock-work. The black ligament, or drop, came out as a very marked feature of the contact with the artificial limb. And he hoped that Capt. Tupman would be able, from a discussion of the observations of different observers with different telescopes, to determine in what proportion the phenomenon was due to the aperture of the telescope used, and to what he might call the personal equation of the observer. He then proceeded to explain how when Venus was upon the sun's limb measures are to be made of the