and to the misleading influence of old theories of metamorphism, very substantial results have been gained. I believe I am correct in saying that all who have studied the question with any degree of thoroughness, that is to say, in more than one or two localities, have come to substantially the same conclusion. Whether there are one, two, or three Archæan systems—whether, if there are more than one, they are separated by broad or narrow gaps—are questions on which unanimity is not yet attained; but there is little difference of opinion as to the existence and distribution of the Archæan masses as a whole. The dynamic theory of metamorphism affects certain details of the Older Archæans, it renders correlation amongst igneo-metamorphic masses somewhat less precise, and it materially alters all the old views on the Eastern gneiss of Sutherland. On the other hand, it opens up questions of the greatest interest, and renders comparatively intelligible some of the earliest chapters in the earth's history.

VII.—Note on some Points in the Nomenclature of Fossil Reptiles and Amphibians, with Preliminary Notices of Two New Species.

By R. Lydekker, B.A., F.G.S., F.Z.S.

HAVING occasion in a work now in the press to refer to certain fossil Reptiles and Amphibians of which the commonly accepted nomenclature requires revision, I think it advisable to make the necessary amendments in a Journal specially devoted to Geology and Palæontology. I also take the opportunity of giving two new scientific names to Reptiles from the Wealden.

The name *Diplovertebron*, Fritsch, as being a hybrid word, may be amended to *Diplospondylus*. *Notochelys*, Owen, being preoccupied by Gray, may be changed to *Notochelone*.

Since there is every probability that *Ornithopsis Hulkei*, Seeley, is identical with *Hoplosaurus armatus*, Gervais, while the latter is probably not generically separable from the earlier *Pelorosaurus*, I propose to adopt the name *Pelorosaurus armatus* for the Isle of Wight species, on the assumption that it is distinct from *P. Conybeari* of Sussex. The Kimeridgian and Oxfordian species described as *Ornithopsis* may likewise be referred to *Pelorosaurus*.

The teeth from the Wealden provisionally referred by Mantell and Owen to *Hylæosaurus* are now known to be Sauropodous, and since they appear to be too small to belong to any of the described Wealden forms of that group, I propose to refer them provisionally, on account of their small size, to the genus *Pleurocœlus*, Marsh, with the name *P. valdensis*. I am confirmed in this reference by a small dorsal vertebra in the British Museum (No. R. 1626), from the same deposit, which closely resembles that of the typical American species, and probably belongs to the same form as the teeth.

Finally, I propose the name *Megalosaurus Oweni* for the metatarsus from the Wealden figured by Owen in his 'Wealden and Purbeck Reptilia,' pt. iv. pl. xi. as *Hylæosaurus*, and referred by

myself to *Megalosaurus* in the 'Cat. Foss. Rept. Brit. Mus.' p. 167, under the name of *M. Dunkeri*. I am induced to make this new species because metatarsals obtained by Mr. C. Dawson from the Wadhurst Clay of Hastings are clearly specifically distinct from the above-mentioned specimen, and I provisionally refer them, on account of their larger size, to *M. Dunkeri*. The type of *M. Oweni* appears to belong to the right side, instead of to the left, as stated by its describer.

NOTICES OF MEMOIRS.

I.—On a possible Geological Origin of Terrestrial Magnetism.[1]

By Professor Edward Hull, M.A., LL.D., F.R.S., Director of the Geological Survey of Ireland.

THE author commenced by pointing out that the origin and cause of terrestrial magnetism were still subjects of controversy amongst physicists, and this paper was intended to show that there is cause for believing the earth itself contains within its crust a source to which magnetic phenomena may be traced, as hinted at by Gilbert, Biot, and others; though, owing to the want of evidence regarding the physical structure of our globe in the time of these observers, they were unable to identify the supposed earth's internal magnet.

The author observed that in the opinion of many geologists there exists beneath the crust an outer and inner envelope or "magma" the former less dense and highly silicated, the latter basic and rich in magnetic iron-ore. This view was in accordance with the views of Durocher, Prestwich, Fisher, and many others. The composition of this inner magma, and the condition in which the magnetic iron-ore exists, were then discussed, and it was shown that it probably occurs under the form of numerous small crystals, with a polar arrangement; each little crystal being itself a magnet, and having crystallized out from the magma while this latter was in a viscous condition, the crystalline grains would necessarily assume a polar arrangement which would be one of equilibrium. Basalt might be taken as the typical rock of this magma.

The thickness and depth of the magnetic magma beneath the surface of the globe were then discussed; and while admitting that it was impossible to come to any close determination on these points owing to our ignorance of the relative effects of increasing temperature and pressure, it was assumed tentatively that the outer surface of the effective magnetic magma might be at an average depth of about 100 miles, and the thickness about 25 or 30 miles. The proportion of magnetic iron-ore in basaltic rocks was then considered, and it was shown that an average of 10 to 15 per cent. would express these proportions; and assuming similar proportions to exist in the earth's magnetic magma, we should then have an effective terrestrial magnet of from $2\frac{1}{2}$ to 3 miles in thickness. The thickness, however, might be very much greater than here suggested.

[1] Read at the Royal Society, May 16, 1889.