

it, but the only true testing must be left to investigators of the future, for it is to be feared that in the past seismologists have been inclined to reject, as bad, all records of time which failed to fit in with their preconceived ideas of the direction of propagation of the shock, though they might have fitted in with a less simple, though possibly truer, conception of the form and extent of the earthquake origin.

R. D. OLDHAM.

CURRENTS IN THE STRAITS OF MESSINA.

FOR our knowledge of the physical conditions at the bottom of the sea we are very largely beholden to the enterprise of submarine cable companies; indeed, it is difficult to imagine a more thoroughly satisfactory method of survey than that employed by them. Duties connected with the maintenance of cables have led to the discovery of details in the configuration of submarine gullies, of fresh-water outlets beneath the sea, and of alterations in the bed of the ocean itself, which would otherwise have eluded observation. Prof. Platania, of the Istituto Nautico of Catania, has directed attention to another rather surprising fact, namely, that in the Straits of Messina there are deep-water currents of sufficient velocity to cause the interruption of the cables joining Sicily with the mainland ("I cavi telegrafici e le correnti sottomarine nello stretto di Messina," reprinted from the *Atti della R. Accademia Peloritana*, vol. xx.). The period under observation covers the last forty years, during which time there have been twenty-six interruptions; neglecting two, nineteen occurred between November and April, and five between May and October. The strong currents cause a continual attrition by sand and pebbles. The rocks on the sea bottom are swept free of mud and sand, and their rough surfaces, thus exposed, have worn out the cables lying upon them. In one case a cable seems to have been corroded by a sulphurous spring. The surface currents attain a speed of five miles an hour. They have always been a danger to navigation, and the wrecks of two large vessels which were lying last summer upon the Sicilian shore show that Scylla and Charybdis have lost none of their power. The existence of correlated strong deep-water currents had been suspected. Biologists have long been attracted to Messina by the plentiful harvest of deep-sea animals which are occasionally brought up to the surface by a vast turmoil of waters, thus affording almost unique opportunities. M. Thoulet and others have repeated the classical experiments of our countryman, Captain Richard Bolland, made in 1675 in the Straits of Gibraltar, and have demonstrated the existence, at twenty fathoms, of an undercurrent flowing in a contrary direction to that on the surface, but these currents have not yet been as systematically studied as the importance of the subject demands. The tides, as is frequently the case in narrow straits, as, for instance, inside the Isle of Wight, are doubled.

A PERIODICAL FOR PALÆONTOLOGISTS.

THIS new venture in scientific literature,¹ which is to appear quarterly, and leads off with a double number, will be warmly welcomed by all palæontologists, for since the "Annales des Sciences Géologiques" ceased to exist, there has been no accredited journal for palæontology in France. The "Annales des Sciences Naturelles: Zoologie," it is true, has on occasion offered the hospitality of its pages, but the whole of its space is not too great for the living subject.

Material enough and to spare lies ready to hand at the Paris Museum in collections from all parts of France and its colonies, while it is further intended to carry on D'Orbigny's incompleted tasks begun in his "Paleontologie Française" and "Prodrome de Paléontologie stratigraphique universelle." The publication of illustrations of the yet unfigured types of the latter work, with reprints of the author's diagnoses, accompanied by notes and ex-

¹ "Annales de Paléontologie, publiées sous la direction de Marcellin Roule." Tome i. fasc. 1 and 2, January, 1905. Pp. xi+100; 9 plates. (Paris: Masson et Cie.)

planations, an undertaking of great merit, is begun in this first part.

As regards guiding principles, the editor, while not wishing in any way to dictate to his contributors, gently suggests in his introduction that he has preferences. On the one hand, he seeks memoirs on stratigraphical or purely systematic palæontology, in which the principal object will not be the multiplication of genera and species, holding as he does that *mieux valent des choses sans noms que des noms sans choses*. On the other, he inclines to papers having a philosophic bearing.

With his former predilection all must be in accord, while of the latter, the very first paper, one by the veteran Albert Gaudry, "Fossiles de Patagonie. Les attitudes de quelques Animaux," is an excellent example, where "attitudes" is used to express the comparative bearing, gait, and appearance, and not posture alone. The author points out that in Tertiary times in Patagonia Plantigrades and Rectigrades predominated over Digitigrades.

The editor and M. A. Thevenin give the first instalment of a series of memoirs on the palæontology of Madagascar, in which they deal with the molluscan fauna from newly discovered Upper Cretaceous beds on the eastern side of the island. Some of the species enumerated are identical with those found by the Rev. R. Baron in the northern and north-western districts, that were described by Mr. R. B. Newton in the *Quart. Journ. Geol. Soc.* for 1889 and 1895, a fact to which, however, allusion is not made. This fauna presents considerable analogy with that which lived during the same epoch in India.

The second contribution to the same series, by M. Douville, treats of some nummulitic beds in Madagascar.

M. Boule adds a memoir on "Les grands Chats des Cavernes," principally the lion, that takes the form of a popular review of current knowledge on the subject.

The part concludes with the opening portion of the descriptions and figures of D'Orbigny's types already referred to.

Altogether there are 100 pages of text, with nine phototype plates, besides abundant illustrations in the text, all the figures being most excellent, and veritable works of art.

There is, indeed, but one objection to raise, and that is against the adoption of dual pagination, each paper having its distinct pagination in addition to that of the volume, because the disadvantages of this system for purposes of citation far outweigh any possible benefits.

It is to be hoped that the glossy surfaced paper selected, so suitable for modern text illustrations, though not for type of the face employed, is not of that perishable description which we have been lately warned will deprive future generations of the fruits of our intellectual labours.

B. B. W.

UNIVERSITY AND EDUCATIONAL INTELLIGENCE.

CAMBRIDGE.—The special board for mathematics has put forward new proposals, both with regard to the mathematical tripos and the mechanical sciences tripos, which involve far-reaching changes. The first-named report points out that in the opinion of the special board the existing mathematical tripos is unsatisfactory as an examination. The special board proposes to substitute for the present part i. a new part i., which may be taken by a student either at the end of his first or second year. Part i. will not qualify for a degree without further examination. It is hoped that this part will be taken by many who propose to proceed later to study engineering or natural sciences. The board further proposes that for the existing part ii. a new part ii. be established, which must be taken at the end of the third year. The position of senior wrangler is abolished, but the class list of each part will contain three classes, the names in each class being arranged alphabetically. Schedules are published for each of the proposed new parts.

With regard to the report of the mechanical sciences tripos, the special board of mathematics suggests that part ii. of the tripos should be abolished, and it is proposed to modify part i. by the inclusion of a number of