

about in spite of himself and an irresistible force makes him oscillate like a pendulum.

This see-saw motion of the water, which is the counterpart of the swell on the surface, is felt nearly as much at 30 mètres (99 feet) as at 10 mètres of depth.

It cannot be attributed to the surf, due to the vicinity of the coast, since the fishermen who use trawl or drag net upon extensive banks, situated quite out at sea, know that after a storm, these banks at 50 ms. (164 feet) *and more, below the level of the sea, are completely swept clear of their usual inhabitants.*"

If, then, the movement of the water, as described by M. Fol, is felt at such depths in the Mediterranean Sea, how much more powerful must be the storms or currents of the English Channel to disturb gravel or sand, or temporarily displace the marine fauna? The fact that Molluscs still exist in an area swept by occasional storms and open to currents generated by tidal waves seems scarcely to warrant Mr. Hunt's assumption that tidal action has no influence whatever on the sea-bottom.

MARK STIRRUP.

BOWDON, CHESHIRE.

---

## OBITUARY.

---

### WILLIAM KITCHEN PARKER, F.R.S.

BORN JUNE 23, 1823; DIED JULY 3, 1890.

THE late and deeply lamented Professor William Kitchen Parker, F.R.S., F.L.S., F.R.M.S., etc., was born June 23, 1823, and died suddenly July 3, 1890. He was a Biologist in the widest sense of the term, having systematically studied all grades of living organisms in both the Vegetable and the Animal World. His life throughout, from boyhood onward, was largely devoted to the study of the bony structure of Vertebrates, but botanical research in early days, and a wide examination of rhizopodal organisms, were rival pursuits, until his energies, well and bravely continued through ill-health, were more especially given to the elucidation of embryonic morphology, or the developmental growth of the skull and other parts of the Vertebrate skeleton. The results of this long-continued and enlightened study gave him a world-wide reputation; and his lines of research in this pursuit, grounded on the work already done by Rathke, Gegenbauer, and Huxley, have led to a great advancement in Biology, both for professors and students.

Geologists are indebted to Professor W. K. Parker's knowledge of Osteology for thoughtful notes on the Archæopteryx (*GEOL. MAG.* 1864, pp. 55–57), and on Fossil Birds from the Zebbug Cave in Malta (*Proceed. Zool. Soc.* 1865, and *Trans. Zool. Soc.* 1869); and his perfect acquaintance with Rhizopoda was shown in the treatment of several series of fossil Foraminifera, in joint papers with others. His rhizopodal studies were taking shape in 1856 (and probably before), when, examining fresh marine material from Bognor, and much larger supplies from Sponge-sands, and from among East-

Indian shells, he collected, mounted, and carefully drew a vast series of Foraminifera and other Microzoa. By the friendly advice of Professors W. Crawford Williamson and T. Rupert Jones, he then systematically treated the Foraminifera as a special study. One of the first results was his paper "On the Miliolitidæ of the East-Indian Seas" (Trans. Microsc. Soc. n.s. vol. vi. 1858, pp. 53–59). A joint paper on the Foraminifera of the Norwegian coast, published in the Ann. Mag. Nat. Hist. April, 1857, became the basis of a larger memoir, on the Arctic and North-Atlantic Foraminifera, in the Phil. Trans. 1865. A series of papers followed, on the Nomenclature of the Foraminifera, explaining the real relationship of the hitherto published genera and species, recent and fossil. These also, written in conjunction with T. Rupert Jones, from 1859 to 1863, and thence with H. B. Brady also, appeared in the same well-known periodical until 1873. In the meantime notes and papers were given by Parker and Jones on fossil Foraminifera from Auckland (New Zealand), Mount Gambier (South Australia), Malaga (Spain), Italy, Malta, Vienna, Baljik, etc., Chellaston (Rhætic?), the Chalk of Gravesend and Meudon, Mr. Eley's collection, the Cretaceous *Rotalina*, and, with Dr. H. B. Brady, the Foraminifera of the Crag, and recent and fossil *Polymorphina*, in various publications.<sup>1</sup>

Professor Parker's genius colours all these notes and papers; his wonderful power of analysing the characters of obscure organisms, and of comparing and contrasting the manifold features and peculiarities so recognized, is traceable throughout. His great natural talent of drawing aided much in the work of elucidating the relation of the several specific forms and their manifold varieties.

Together with A. d'Orbigny, A. E. von Reuss, and others, Prof. Parker has done much (and to a large extent with greater exactitude) towards making these Rhizopodal Microzoa known as to definite morphological groups, and as to their exact distribution in various geological series,—thus making them trustworthy guides in the discrimination of strata, whether as to relative age,—of different kinds of sedimentation,—or of various depths of deposition.

Much as we grieve at the loss of so acute an observer and so good a generalizer in one branch of natural science, other Naturalists feel as deeply his loss as of a painstaking and philosophical biologist, whose manifold researches and discoveries in vertebrate development, published in upwards of thirty important memoirs in the Transactions of the Royal, Linnean, Zoological, and other Societies, have had, and still will have, wide-spread useful influences. Not the less will a great circle of friends and relatives long mourn for a great and good man,—an enthusiastic lover of Nature, who sought for truth with simplicity of mind, zeal for accurate knowledge, and kindly consideration for fellow-workers;—an unselfish, upright, and true Christian.

<sup>1</sup> See the Royal Society's "Catalogue of Scientific Papers," and Mr. C. D. Sherborn's "Bibliography of the Foraminifera."