difficult problems. On page 63 we are invited to think of a moving point as going from one position to the "next." Two points thus next to each other *form* an infinitely small straight line. The two points are consecutive, without distance between them, and "may practically be considered as one point." No talk about limit: a curve is, for thought, composed of infinitely short straight lines. The term locus does not appear except incidentally as on page 84. But "if a point moves so as continually [not continuously] to change its direction from point to point, the line generated is a curved line, or curve." According to the highest mathematical standards, descriptive geometry has not attained, in America, to the rank of a science. It is a tool. Judged as a work designed to teach the use of an important tool, Professor Bartlett's book will render good service. But such books ought to get up-to-date in respect to logic, geometric spirit, conception and nomenclature.

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Les Poissons Wealdiens de Bernissart. By Ramsey H. Traquair, M.D., LL.D., F.R.S. Extrait des Mémoires du Musée Royal d'Histoire Naturelle de Belgique, T. VI. Bruxelles. 1911. 4to. Pp. iv + 65; 12 pls. and 21 text figures.

In this memoir Dr. Traquair—the dean of paleichthyologists—discusses the fishes of the Wealden, or basal Cretaceous, of Belgium. This formation, though known chiefly for fine skeletons of the dinosaur *Iguanodon,* contains also a highly interesting fish-fauna. This is remarkable for the fact that its species, though relatively few (sixteen), represent both the more archaic members of the group of ganoids as well as the quite modern teleosts. In discussing this fauna, therefore, Dr. Traquair has opportunity of reviewing at once such forms as *Coccolepis,* the last survivor of the Palæoniscidæ, as well as *Leptolepis,* the earliest of the clupeoids.

The memoir is of necessity devoted mainly to systematic details; none the less broader questions, such as those of morphology, relationship and geological distribution, are not overlooked. And all these themes are treated with the author's characteristic painstaking regard to fact. In short, the memoir is an example of what a systematic review of a fossil fauna should be.

An interesting and very useful feature is the carefully drawn restorations, of which there are thirteen. Especially noteworthy are those of *Coccolepis, Callopterus, Amiopsis, Mesodon* (with new interpretations of the cranial elements) and *Aethalion.* These figures are sure to follow the many others from the same hand, and become part of the stock in trade of all writers on ichthyology.

The fauna of Bernissart, as a whole, is regarded as fresh water. The chief evidence for this view is the entire absence of sharks from this formation, although the group is abundantly represented in other European rocks of equivalent age.

To the friends of Dr. Traquair—and they are many, both in Europe and America—the publication of this memoir has an especial interest. For it shows the doctor, who is past his seventieth anniversary, still working away, with his old-time vigor and enthusiasm, in the field which he has done so much to advance.

Ave Magister! Many be the years
That lie before thee, thronged with busy hours![1]

L. Hussakof
American Museum of Natural History

THE HARRIS TIDAL MACHINE

The Coast and Geodetic Survey has recently put in operation, after a thorough test, a new tide-predicting machine, which performs simultaneously all the operations of the British or Thomson machine and of the first American machine invented by Professor Ferrel. As in the Thomson machine, the tidal curve is drawn from which the height of the tide at any time may be scaled off, but, in addition to this, the times of high and low water are marked upon its axis, and both the time and height of the tide, as well as the height of the water's surface at any given

[1] Dr. S. Weir Mitchell, "The Comfort of the Hills and Other Poems," p. 95. New York, 1910.