

yet published, will include chapters on stratigraphy and paleontology, and a discussion of theoretical questions connected with historical geology and the evolutions of the earth. This will therefore probably be the more entertaining of the two; but the book now before us is attractively written and makes easier reading than most geological manuals. Its style is between the extreme condensation of the encyclopedic text-books, and the more literary form of Lyell's 'Principles.' Except in the chapters that are necessarily occupied with simple definition and tabulation, there is a satisfactory amount of argument and discussion, and a careful presentation of both sides of a question; so that the learner's attention is held to the facts long enough to allow him to acquire them familiarly, and to perceive that their proper understanding requires a higher mental process than mere memorizing. The work is further intentionally a statement of the evolutionary rather than of the uniformitarian view of geology, which Lyell's leadership so long in England placed too prominently before many students: there was under Lyell's teaching no room for uniformitarianism and catastrophism for the safer middle ground which Prestwich clearly states, and which is now certainly the dominant view held by working geologists. The change in the rate of denuding processes and of eruptive action from ancient to later geological times may be named in illustration of this. Under the latter subject, it is an additional satisfaction to see prominence given to the mechanical origin of eruptions, and only a subordinate importance attached to Scrope's theory of the action of steam and other gases; and to find definite statement of the metamorphism of eruptive as well as of sedimentary rocks. Indeed, it would be easy to name many more examples of treatment that must commend themselves to the American as well as to the English taste, while there are only two sections that are likely to excite any general dissent,—one on the origin of valleys, which attributes too much influence to fissures to find full acceptance, at least in this country; and another in which much importance is attached to Elie de Beaumont's extinct theory of parallel mountain-ranges, which is certainly given more space than students in this last quarter of the century should ask for it. The author's familiarity with the geology of this country has not been such as to prompt many quotations from our surveys, nor to change the triassic coloring of the copper-bearing rocks of Lake Superior on the reduced copy of Marcou's geological map of the world, which serves as a frontispiece; so that, as a book for class reference in our higher schools and colleges, this work will hardly gain the reputation

of Geikie's text-book: but, if the excellent fashion of placing different books in the hands of every member of a class could be introduced, this one would certainly be one of the most popular.

W. M. D.

PORTER'S MECHANICS AND FAITH.

THIS work is one of those attempts, so common in our day, to 'reconcile science and religion.' The main thesis of the author, which he endeavors through many chapters to prove, is this; that all truth, physical and spiritual, is made known to us by 'revelation,' and could never become known to us by any other means. Thus, he says that in mechanical science, "man, in his conscious ignorance, and with a sense of entire dependence, makes his appeal immediately to the Infinite Source of truth; that the methods of experiment and observation are the divinely appointed way in which this appeal is made and the revelation of physical truth is received" (p. 32). Having established this thesis, to his own satisfaction, he goes on to infer, that, since all other truth is given by revelation, we should naturally expect that religious truth, the most important of all, would be given in the same way. Thus he thinks to establish the doctrine of revelation in the theological sense.

Now, in all this there is great confusion of thought, resulting from the use of the word 'revelation' in two quite different senses. The 'revelation' which the author speaks of in physical science is nothing but the presentation of objects to our senses, and this is not a revelation of truth at all. Truth is not a property of objects, but of thoughts; and all our thoughts, whether true or false, are the product of our own mental activity. It is absurd, therefore, to say that scientific truth is revealed to us from an external source. On the other hand, the sacred books of religion are held to contain religious truth itself in the form of propositions, and we have nothing to do but to receive and assimilate it. At best, therefore, there is nothing more than a poetic analogy between the two cases, and nothing whatever to base an argument on.

Mr. Porter's main doctrine being thus defective, it is unnecessary to criticise his book in detail; but we would call attention to the chapter on 'The revelation of God,' as an example of the author's method. He expressly says that God cannot be known by the intellect, but only by love—with much more to the same effect. It is not by such methods as these that science and religion can be harmonized.

Mechanics and faith; a study of spiritual truth in nature. By CHARLES TALBOT PORTER. New York, Putnam, 1886. 12°.