stitutions on page 692. Regretting the oversight, this note is offered in correction.

Philip P. Calvert

QUOTATIONS

CLERICAL HEALING

The announcement made a few weeks ago by the rector of an Episcopal church in this city, that he was going to take up the practise of medicine as a part of his clerical work, calls renewed attention to this curious movement. While it was confined to the Emmanuel Church people in Boston it was generally regarded as a sort of Neo-Eddyism, one more of the many queer fads with which the citizens of that town are wont to amuse themselves, and little more was thought of it. Now, however, two at least of the Episcopal churches in New York are going to adopt the Emmanuel plan of treating disease, and doubtless some of the rectors of other churches in that denomination will be ready to join the ranks of irregular practitioners. It is time therefore to ask what the movement means, and why physicians, even trained neurologists, are to be found lending themselves to the movement and supporting it by voice and pen.

The first question raised by a perusal of the official book of the Emmanuel movement, is, why? Why clerical healing, and why the limitation of clerical healing to functional diseases? We do not find either question answered satisfactorily in this book and we do not see how they can be answered. If the physician is to entrust the care of his patients to the clergymen why not to the lawyer? The latter is as much the confidant of his clients as the minister of his parishioners, and could speak just as authoritatively to the subliminal self of the sick. But the physician ought to be able to speak with much greater effect. When he can not, the explanation must be found in that curious state of mind which leads the ignorant to trust the confident amateur rather than the professional, to pin greater faith to quack remedies or grandmother's simples than to the prescription of the physician. The skilful physician despises no remedy which may benefit his patient, and if he believes a word from a sincere and tactful minister of the gospel will help, he is glad to send, and often does send, the sick man to the clergyman. As physicians we should regret indeed to lose the powerful therapeutic force that resides in religion, but it does not follow from this that we are ready to welcome the priest as a fellow practitioner of medicine, or even to acknowledge that he can exercise that function in the public and wholesale way of the Emmanuel rectors without the danger of doing far more harm than good.—*Medical Record.*

SCIENTIFIC BOOKS

Traité de Géologie: I. Les Phénomènes géologiques. By Mons. Emile Haug, Professeur a la Faculté des Sciences de l'Université de Paris. Pp. 536. Libraire Armand Colin, 5 rue de Mézières, Paris, France. 1907. Price, 12 fr. 50.

Though primarily intended for the use of French students, Mons. Haug's excellent volume, recently published, is worthy of study by American geologists. A text-book or treatise dealing with the whole subject of geology should be a sort of clearing-house wherein is struck the true balance of competing ideas, suggestions and hypotheses, so far as that is possible in the progressive science. Only the first part of this newest treatise, that relating to the geological processes, has been issued, but it is fair to suppose that the author's conception of the principles of geology is rather fully presented. At the very first one is struck with the compactness of thought and expression throughout the work; Mons. Haug is to be congratulated on his success in preserving a very readable style while packing into his chapters a truly remarkable amount of fundamental material. The author has not followed the beaten track and the pages are full of valuable new thoughts.

The work is unusual in its order of treatment. The complex is considered before the relatively simple; geosynclinals, metamorphism, orogeny, epeirogeny and igneous intrusion are discussed before underground water, weathering, and river, glacial and

marine erosion. It is not clear why chapter 28 on displacements of the shore-line is so far removed from chapter 16 on the vertical movements of the earth's crust.

As was to be expected, the author lays principal stress on the conception of the geosyncline. For the first time a European textbook states this idea at length sufficient to impress the student with its great importance. The statement is, however, charged with details which must lead to debate. For example, the diagram of a typical geosyncline in cross-section (p. 159) indicates a more or less perfect symmetry in the lithological composition of the sedimentary prism filling the down-warp. Yet is not the world's average geosynclinal prism lithologically unsymmetric in cross-section? The reviewer believes that the rule is to find the sediments on one side of a geosynclinal prism relatively coarse-grained because near the main region of erosion, the sediments growing finer-grained toward the opposite side of the prism. The idea of symmetry is probably suggested by Mons. Haug as a by-product of his hypothesis concerning the location of geosynclinal down-warps. He writes (p. 166): "loin de prendre naissance sur le bord des océans, les géosynclinaux sont toujours situés entre deux masses continentales et constituent des zones essentiellement mobiles, comprises entre deux masses relativement stables." Can this be correct? Is it safe to generalize from the geosynclinals[1] situated in the subequatorial zone of down-warps, Mediterranean seas and mountain-ranges? It is clear that the Alps and the Himalaya appear to follow the law as stated; but for most of the other "Mesozoic" geosynclinals the author has allowed his fancy to run very far. On page 162 a world-map is inserted, showing a wholesale "restoration" of the earth in Mesozoic times and a zone of Mesozoic geosynclines almost completely surrounding the area of the present Pacific Ocean. To make this ancestor of the mountain-built "circle of fire" obey the law, Mons. Haug hypothecates a Mesozoic Pacific continent some 75,000,000 square miles in area. He similarly "restores" a "continent nordatlantique," a "continent Sino-Sibérien," a "continent Africano-Brésilien," and a "continent Australe-Indo-Malgache." The obvious objection to this vast restoration of land-areas over the sites of the present ocean-basins is most inadequately discussed. In fact, almost the only words bearing on the fundamental matter are the following:

> On a cependant objecté aux conclusions qui viennent d'être exposées, la difficulté de loger toute l'eau des mers qui remplit actuellement de profondes dépressions auxquelles nous attribuons une origine récente. On oublie que les continents étaient beaucoup moins étendues qu'aujourd'hui et que des fosses profondes occupaient des emplacements où se dressent maintenant de hautes chaines de montagnes. L'océan Arctique semble avoir toujours existé et il a pu avoir une profondeur bieu superieure à sa profondeur actuelle. De plus, nous ne savons pas si entre Madagascar, l'Australie et le continent Antarctique ne se trouvait pas également une très profonde dépression (pp. 532–3).

But the simplest computation shows that these Arctic and South Indian oceanic basins, together with all the possible volume of the seas of transgression in the Mesozoic, are utterly incompetent to receive the 150,000,000 cubic miles of water which must be displaced to make room for the "restored" continents. It may be added that the facts of plant and animal distribution in no wise necessitate such drastic "restoration" of land-areas for the Mesozoic.

The chapters devoted to petrographic geology can hardly be regarded as satisfactory. Much emphasis is placed on the theoretical views of a few French authors, but the constructive work of men like Loewinson-Lessing, Vogt, Teall and Doelter is not discussed and, in general, not even mentioned. The view that granite is the final term of the metamorphism of geosynclinal sediments is presented, but no mention is made of the enormous physical and geological difficulties confronting this seductive hypothesis. The heat of fusion is attributed to the "rise of the

[1] The reviewer here uses this word to mean the sedimentary prism formed in the down-warp or "geosyncline."

isogeotherms" (with normal temperature gradient) into the lower beds of a sinking geosynclinal prism—a demonstrably inadequate source of the required heat. On page 174 we have:

> Le granite est formé des mêmes éléments caractéristiques que le gneiss. Plusieurs auteurs l'envisagaient, probablement avec raison, comme le terme ultime du métamorphisme, et il convient peut-être d'attribuer la même origine aux roches granitoïdes basiques, à la syenite, à la diorite, au gabbro, etc. (!)

In the table of geological periods we find the traditional but inaccurate names "ère Primaire" and "ère Secondaire" used as synonyms for "ère Paléozoïque" and "ère Mésozoïque." The "période Algonkienne" enters the table; it will be interesting to see, in the second volume, what definition a French author can give this expression. For the North American geologist "Algonkian" is hard enough to define; "Algonkian period" is harder to define.

In form of publication the book marks a distinct advance over its only rival in the French language—A. de Lapparent's "Traité de Géologie." The improvement is notable in the style of the letter-press and in the introduction of many attractive illustrations. The book is marred by the lack of an index—a lack which can not be made up by the insertion of a general index in a succeeding volume, for the present thick one should be bound alone. The "Table des Matières" is placed at the end of the volume, where the index would also be placed if it had been printed. One may hope that some day the French will change their tradition and place the table of contents in the front of the book. Who of us has not wasted precious time searching out the "Table des Matières" among the appendixes, plates and index sheets of French texts!

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A Text-Book on Sound. By Edwin H. Barton, Professor of Experimental Physics, University College, Nottingham. London, Macmillan and Co., Limited. 1908.

There was need of a treatise on sound, which would neither be taken up wholly with a mathematical discussion of dynamical principles, nor consist merely of experiments, and yet which would so combine these features and so fully cover the subject as to deserve the attention and meet the needs of the serious student of acoustics. Barton's "Text-Book of Sound" occupies such a place.

It is forty-five years since Helmholtz's classic, "Tonempfindungen," appeared, and thirty-one since the publication of Lord Rayleigh's masterly treatise, and in that time no work worthy to rank with these has been produced. The first volume of such a treatise by the late Professor Donkin was published in 1870, and this was of the same order as the two works mentioned, but it is doubtful whether it could have appealed to a large number of readers or to any but most accomplished mathematicians if it had been completed on the lines upon which the initial volume proceeded.

In the past forty years admirable treatises on heat have appeared, keeping pace with the development of the subject, still more on light; while those on electricity have been numerous enough and varied enough to satisfy almost every want; but sound as a branch of physics seems to have been side-tracked. Of course, the subject has been included in all compendiums or treatises on general physics, and to these the author acknowledges his indebtedness.

Barton's "Text-Book of Sound" is admirable on many accounts and has little to object to. Indeed all the material in it is excellent, the principal question in regard to some of it being one as to its relevancy. Unless one admits the propriety of including all wave phenomena in the theory of sound it would seem as if some things here were superfluous. Following approved precedents in defining "Acoustics, or the study of sound, as that branch of physics which deals with vibratory motion as perceived by the sense of hearing," an adherence to this definition might save the author from the necessity of discussing all the causes and peculiarities of wave motion. Pos-