shortage of engineers has to be revised.

Again, even if this study is concerned with the situation and forecast of the number of engineers in the United States, the methods of predicting demand used by the U.S. Bureau of Labor Statistics and the Engineers Joint Council are not the only ones in use, and it seems unfortunate that no mention is made of the English and German methods of forecasting. Sometimes, some help can come from the other side of the Atlantic.

The explanation of the movements of the supply of, and demand for, scientific personnel in the past and forecast of these movements for the future remain to be made.

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A Treatise on Limnology. vol. I. *Geography, Physics and Chemistry.* George Evelyn Hutchinson. Wiley, New York; Chapman & Hall, London, 1957. xiv + 1015 pp. Illus. $19.50.

Sixteen years ago teachers of hydrobiology refreshed their dog-eared limnology lecture notes when Hutchinson's mimeographed "Lecture Notes on Limnology" were made available in limited supply. Hopefully we have awaited the completion of the then envisioned *Treatise.* We were unanimously confident of the excellence and scholarly depth it would represent, and, now that the first of the two volumes is published, we are not disillusioned. Moreover, the biologists among us await eagerly the appearance of volume II on biology. Volume I is a masterly presentation and truly unique; a "monumental work," as it was so appropriately designated by a prepublication critic.

One might expect a *Handbuch* of these dimensions to be padded. This is not the case; it is packed with important and thoughtfully selected data. It is replete with examples drawn from all corners of the earth and with data assembled from some obscure *"Berichte," "Undersökningar," "Trudy (URSS),"* or *"Tôhoku."*

In this book scientists of many disciplines should find much that is required reading. I find a great deal of evidence to support the author's statement in the preface: "The book is addressed to all who are professionally concerned with limnology, but also to biologists who may wish to know something of the physiochemical environment, mode of life, and evolutionary significance of such freshwater organisms as they may study from quite different points of view; to geologists who are desirous of learning something of modern lakes in order that they may better interpret the record of inland waters in past times; and to oceanographers who wish to compare the results of their own science with what has been learned of the small but very individual bodies of water which make up the nonmarine part of the hydrosphere." To the latter clause I might add that the oceanographer, after reading this book, most certainly will be convinced of the usefulness of lakes as possible sites for experimental, small-scale oceanographic research. This is an opportunity they have not exploited.

As a thoughtful synthesizer of knowledge, Hutchinson is unsurpassed. Numerous instances bear this out, in which published and even unpublished data, from widely different sources, have been reworked to describe a new principle or to make an old one more clear. Readers of "Marginalia" in the *Sigma Xi Quarterly* must certainly have admired the great breadth of Hutchinson's reading and his literary skill. Occasionally one was "snowed under" by complex concepts expressed in elliptical style. In volume I of *A Treatise in Limnology* he has made every effort to explain clearly. In his "Lecture Notes on Limnology," the term *thermocline* was defined as "the horizontal plane defined by the inflection point of a temperature curve." In the *Treatise,* the definition now reads simply "the plane in which the temperature falls most rapidly." This should not be construed to mean that volume I is free from complex concepts, for to include such concepts is inescapable and to omit them would be undesirable. Many principles of physical limnology are involved and will be understood principally by those oceanographers and hydrobiologists whose training in mathematics, physics, and chemistry is adequate. One marvels at Hutchinson's versatility and at his ability to grapple competently with so many phases of science.

The following are some helpful features of the *Treatise*: (i) In the section on geological origin of lakes there is a concise summary of 76 lake types. (ii) A list of mathematical symbols is given, and an effort has been made to avoid duplications. (iii) An index of the lakes mentioned in the text gives the precise longitude and latitude of the location of each lake. (iv) A list of the genera and species that are discussed is given, together with a helpful listing of the taxonomic position of individuals in the plant and animal kingdoms. (v) There are 1489 references. Asterisks identify the titles of works of unusual limnological interest and those with extensive lists of references. (vi) Tables on the inorganic ions in rain, lakes, and rivers present data nowhere else available in one place. (vii) A concise summary concludes each chapter.

For publisher should be praised for his interest in publishing a professional volume of this kind. There is justification here for some type of subsidy, because the many students and field-station staff-members who could best profit from this book will be unable to afford it.

The book is embellished here and there by a witty comment, a fitting quotation from the classics, or even by a light verse. For example:

"Big swirls have little swirls
That prey on their velocity,
And little swirls have lesser swirls
And so on . . . to viscosity."

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Géologie Sédimentaire. Les séries marines. Augustin Lombard. Masson, Paris; Vaillant-Carmanne, Liége, 1956. 722 pp. Illus. F. 11,000.

The field of sedimentary geology can, if the definition is broad enough, include almost all facets of geology except petrology of the igneous rocks. To include all aspects of this generalized subject in one volume is an almost impossible task. Lombard has amassed an amazing amount of information in a well-organized volume which includes 13 plates, 180 illustrations, and 34 pages of bibliography. Inevitably in such a broad subject some of the sections are little more than brief outlines, and in some cases these brief outlines are not as comprehensive as they should be. In part I the general subject of recent marine sediments, topography, and structure of the ocean basins is treated in too brief a manner, and several important references are omitted; for example, Emery, Tracey and Ladd on coral reefs and flat-topped seamounts [*U.S. Geol. Survey Profess. Paper No. 260-A* (1954)]; Phleger, Parker, and Peirson on present-day planktonic Foraminifera [*Reports of the Swedish Deep-Sea Expedition No. 7* (1953)]; Revelle on pelagic sediments [*Carnegie Inst. Wash. Publ. No. 556* (1944), pt. 1]. In part II the analysis of sediments does not include the Wentworth reference so commonly used for clastic size classification in the United States [*J. Geol.* **30**, 382 (1922)]. In part 3 the writer gets into his special field of stratigraphy and produces an excellent and well-documented discussion of such difficult subjects as facies and rhythmic deposits.

All in all, Lombard has produced a valuable addition to the knowledge of sedimentation and stratigraphy, especially of the European section. American geologists will find the bibliography especially helpful because of the numerous references to European journals.

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