Book Reviews

A text-book of mathematical analysis: the uniform calculus and its applications. R. L. Goodstein. Oxford, Engl.: Clarendon Press; New York: Oxford Univ. Press, 1948. Pp. xii + 475. $9.00.

In presenting this rigorous book on calculus the author has attempted to avoid difficult fundamental items like the Dedekind theory of real numbers or the proof of uniform continuity of functions continuous in an interval.

The basic theory of real numbers is given in the form of a precise theory of infinite decimal fractions, culminating in the classical theorem that nests of intervals determine a number. From here the author could have proceeded in the usual way. But he wants to simplify the theory by introducing only "uniform continuity" (instead of continuity in general) and only uniform differentiability of f(x) (instead of differentiability in general). This expression means that the derivative f'(x) is defined in such a manner that it is uniformly continuous in the considered closed interval [a, b]. His definition is equivalent to the following: For every $\varepsilon > 0$ there exists a $\delta > 0$ such that

$$\left| \frac{f(X) - f(x)}{X - x} - f'(x) \right| \leqq \varepsilon$$

if X, x are in [a, b] and $0 < |X - x| \leqq \delta$.

The author's procedure restricts the generality of the usual calculus somewhat. On the other hand, he is able to emphasize constructive proofs and avoids such theorems as the Heine-Borel covering theorem or the Bolzano-Weierstrass theorem. It seems therefore that his philosophy of mathematics has induced the author to develop his presentation of calculus. Whether many mathematicians will like his approach remains to be seen.

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Sequence in layered rocks: a study of features and structures useful for determining top and bottom or order of succession in bedded and tabular rock bodies. Robert R. Shrock. New York-London: McGraw-Hill, 1948. Pp. xiii + 507. (Illustrated.) $7.50.

Sequence in layered rocks should enjoy extensive use because it brings together in very usable form a large mass of detailed information about original structures of rocks that heretofore has been widely scattered through the literature. Field men particularly will find this book a useful one to include in a limited field library.

Dr. Shrock apparently has in mind the problem that confront field geologists dealing with highly folded rocks because his avowed purpose in writing the book is to assemble information that will assist in the discrimination of tops and bottoms in folded layered rocks. Though admirable in itself, the purpose seems to understate the actual achievement of the book.

A unique and commendable feature of the book is the very extensive use of line diagrams and photographs, many of them original, over detailed descriptions of the features portrayed; so that the reader sees as well as reads about the subject simultaneously.

Approximately 60 pages are devoted to definitions and to a review of what the author terms "gross relationships." This latter feature sets forth the author's views on such basic concepts as superposition, faunal succession, unconformity, intrusion, comparative deformation, and comparative metamorphism.

More than half of the book is devoted to setting forth detailed features of sedimentary rocks. Original structures of all kinds are illustrated and discussed. Individuals engaged in sedimentary studies will find these sections especially welcome, not only because the features are adequately illustrated and explained, but because an extensive indexed bibliography accompanies the volume, thus simplifying the problem of assembling additional information about a feature.

Additional chapters on detailed original structures in igneous and metamorphic rocks, though not as extensive as those that deal with sediments, nevertheless seem adequate for the purpose of the book.

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Bibliography of animal venoms. R. W. Harmon and C. B. Pollard. Gainesville, Fla.: Univ. Florida Press, 1948. Pp. xxx + 340. $8.00.

The value of a complete bibliography concerning a particular subject, properly indexed, is undoubted. The time saved a worker in having an immediate source of information concerning the literature on his subject is usually sufficient to make the time necessary to compile the information well spent. This, unfortunately, is not entirely the case in the present bibliography. The authors have done a tremendous amount of work in its preparation and are to be congratulated upon a fine piece of work, albeit incomplete.

The authors have listed 4,157 titles dealing with animal venoms published since 1875 (rather than 1863, as stated in the foreword). These titles are arranged chronologically by year of publication of the original references, and alphabetically by author under each year. Citations are given to abstracts of the paper as well as to the original publication. Titles in foreign languages have been translated, and all titles are given in English. Ten abstracting journals have been used extensively, and the list of abbreviated journal names is indeed impressive. There is an index of authors whose works are mentioned.

In view of the exhaustive and painstaking work involved in preparing what has been done, it comes as a surprise to find that there is no cross indexing whatsoever,