to hemopoietic-cell transplantation in humans. The concluding chapter presents examples and problems of bone-marrow transplantation in man, and emphasizes that many failures occurred because insufficient animal data were available, particularly with regard to the number of injected cells, donor-host compatibility, and radiation exposure. The authors believe that the wealth of experimental data and techniques now available, together with the acquisition of additional information on subhuman primates, should provide a more rational clinical basis for successful transplantation of hemopoietic cells and for control of secondary disease.

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The Use of Geostatistics

Scientific Method in Analysis of Sediments. JOHN C. GRIFFITHS. McGraw-Hill, New York, 1967. xii + 508 pp., illus. $17.50. International Series in the Earth and Planetary Sciences.

This attractively produced volume presents a synthesis of the experience of one of the foremost pioneers in the application of statistical methods to sedimentology. The rise of mathematical procedures in geology has been painfully slow, and even though Charles Lyell made a fundamentally important contribution over a hundred years ago, geologists have been tardy in perceiving the need for a quantitative grounding for their science.

A large proportion of the geologists of the world have entered the subject as a result of following the course of least mathematical resistance, and this is clearly not a state of affairs conducive to the spread of quantitative procedures within the field. Notwithstanding the general condition, an increasing interest in geostatistics is developing, and an *ad hoc* committee for an Association of Mathematical Geologists has now been formed. One of the reasons for the catalyzation of activity on this front is clearly to be found in the growing availability of electronic computers. Griffiths's book, with its wedding of statistics and descriptive sedimentology, is therefore a timely arrival.

Although the treatment of geostatistics forms the main part of the text, considerable coverage is given analytical procedures in sedimentology, and there is a discussion of sampling techniques in sedimentary rocks; the book contains a wealth of information on various aspects of the analysis of sediments, and there is much sound advice on the planning of analyses. The complexity of the statistics used is about that reached in an introductory course in applied statistics.

The quantitative approach to the expression of the properties of sedimentary rocks is reviewed and the subject of the measurement of grain size and grain shape receives a well-worked-through treatment. The measurement of grain fabric and grain packing is treated informatively, as are also modal analysis and mineral composition. Mostly, the treatment is in terms of the methods of univariate statistical analysis; these methods are dealt with in an authoritative and instructive manner. The analysis of two or more variables is presented in some haste in only the final two chapters, and this part of the book tends to fall short of the sound development of the main part of the volume. In a few places the text would have profited from a little more editorial attention. This volume will be a very useful accessory to a course on sedimentologic techniques and may be recommended as a university text.

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Vertebrate Zoology

Structure and Habit in Vertebrate Evolution. G. S. CARTER. University of Washington Press, Seattle, 1967. xvi + 520 pp., illus. $9.50.

This is the American edition of a volume in the British "Biology Series," issued at first hand by Sidgwick and Jackson, London, and edited successively by Julian Huxley, Munro Fox, and Phillips Dales. Previous volumes by Carter are *A General Zoology of the Invertebrates* (1940) and *Animal Evolution* (1951). Books in this series have been always competent and sometimes excellent texts on biological specialties. The author intends the present volume not to be "a full text-book of vertebrate zoology" but "to be read in parallel with one of the usual text-books." Questions will arise as to the usefulness of so detailed and lengthy a tome as merely supplementary reading.

The author is concerned not with radiations within major groups of vertebrates but with the origins and basic adaptations of each major group, mostly the classes of Vertebrata. In each case paleontology, morphology, physiology, and overall ecology are excellently reviewed on the basis of the technical literature. As this book depends heavily on A. S. Romer's *Vertebrate Paleontology* and is, indeed, suggested as a supplement to that work, it is unfortunate that only the 1945 edition was available to Carter. Romer's 1966 edition is greatly modified and makes some of Carter's book obsolete from the start. Carter's work can nevertheless be recommended for students of the characteristics of major grades in vertebrate evolution.

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Books Received

Advances in Enzyme Regulation. Vol. 5. Proceedings of the 5th symposium on Regulation of Enzyme Activity and Synthesis in Normal and Neoplastic Tissues, Indianapolis, Ind., October 1966. George Weber and Catherine E. Forrest Weber, Eds. Pergamon, New York, 1967. xiv + 469 pp., illus. $20.

Advances in Heat Transfer. Vol. 4. James P. Hartnett and Thomas F. Irvine, Jr., Eds. Academic Press, New York, 1967. xii + 458 pp., illus. $19.

Analytical Chemistry of Cobalt. I. V. Pyatnitskii. Translated from the Russian edition (Moscow, 1965) by N. Kaner. D. Slutzkin, Ed. Israel Program for Scientific Translations, Jerusalem, 1966; Davey, New York, 1967. xvi + 224 pp., illus. $14. Analytical Chemistry of Elements Series.

Behavior-Genetic Analysis. Jerry Hirsch, Ed. McGraw-Hill, New York, 1967. xviii + 552 pp., illus. $12.50. McGraw-Hill Series in Psychology.

Bertrand Russell: Philosopher of the Century. Essays in His Honour. Ralph Schoenman, Ed. Atlantic Monthly Press (Little, Brown), Boston, 1967. iv + 326 pp. $7.95.

Biomedical Aspects of the Laser. The Introduction of Laser Applications into Biology and Medicine. Leon Goldman. Springer-Verlag, New York, 1967. viii + 232 pp., illus. $11.40.

The Birds. Roger Tory Peterson and the Editors of Time-Life Books. Time, New York, 1967. 128 pp., illus. $3.95. Young Readers Edition, Life Nature Library.

Catalytic Hydrogenation over Platinum Metals. Paul N. Rylander. Academic Press, New York, 1967. xiv + 550 pp., illus. $22.50.

Computer Simulation of Competitive Market Response. Arnold E. Amstutz.