not only to the bibliographer, but to the working zoologist as well, that the reader forgets to be critical.

The "Students' and Librarians' Ready Index to Short Author-Titles on Vertebrate Zoology," which forms the second division of the book, aims to furnish the means of quickly finding the most important works on any subject in vertebrate zoology. To this end the authors, each with a word or two of catch title, are arranged chronologically under geographical headings.

By far the larger part (more than two thirds) of the book is devoted to "A Partially Annotated Catalogue of the Titles on Vertebrate Zoology in the Libraries of McGill University," and this forms the third section of the contents. In this catalogue the annotations include much information, such as obscure dates of publication and other items of value.

Of rare printed books the McGill University possesses so many that space does not avail to list them here. Of particular interest are the first edition (1680–1681) of Borelli's "De Motu Animalium"; the first edition (1570) of John Caius's "De Canibus Britannicis"; Scopoli's "Deliciae Florae et Faunae Insubricae"; and especially important for ornithologists, Blasius Merrem's "Beyträge zur Besondern Geschichte der Vögel gesammelt"; and the original editions of the two earliest (1544) bird books—Longolius's "Dialogus de Avibus," and Turner's "Avium Precipuarum."

There is also in the library a noteworthy collection of original manuscripts and unpublished drawings, some of the latter apparently unknown to the zoological world until unearthed for the McGill library by the activities of the indefatigable "compiler" of this published catalogue. Among the most interesting of these is the collection of 121 colored paintings of Indian birds executed early in the nineteenth century by Lady Elizabeth Gwillim. It now appears that she was the first ornithological artist to paint full-sized portraits of the very large birds, an honor heretofore always accorded to John James Audubon.

The present treatise catalogue makes evident that the several collections of zoological works contained in McGill University together comprise one of the most important scientific libraries in the western hemisphere, and zoologists owe Dr. Wood a debt of gratitude for making available a knowledge of these treasures.

HARRY C. OBERHOLSER

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SPHERICAL ASTRONOMY

Text-book on Spherical Astronomy. By W. M. SMART, ii + 414 pp. Cambridge University Press, 1931.

THIS book is an excellent text for a second course in astronomy in a liberal arts college, but it is not suitable as a text for a graduate course in spherical astronomy or as a reference book for the working astronomer. The wide range of topics treated, the inclusion of the recent developments in the subject, the excellent diagrams, the omission of troublesome details and the large number of problems enhance its value for the casual reader and for the elementary student. However, for one who desires a thorough treatment of the traditional problems of spherical astronomy, too large a part of the book is devoted to extraneous material, while many important details are omitted. For example, in chapter five about forty pages are devoted to a discussion of planetary motions. This adds to the completeness of the book from a pedagogical point of view, but the student of astronomy already has adequate treatments of this subject in the well-known book of Moulton and in that of Crawford. In the same class are portions of descriptive material normally treated in text-books of general astronomy, such as that of Russel, Dugan and Stewart: for example, parts of the discussion in paragraphs 25 and 84. Much of this space might well have been devoted to discussions of practical methods of computation, to critical examination of the formulae derived and to more thorough discussions of such topics as astronomical photography. Chapter one gives alternative proofs for the formulae of spherical trigonometry, but does not list them for convenient reference.

The most serious faults of the book are the lack of preciseness and the absence of references. As examples of the former we have on page 21 a discussion of "trigonometrical ratios for small angles" without mention of what is meant by "small," and on page 95, the statement that the error of a Shortt clock on any day "could be almost exactly predicted several months in advance." The redefinition of astronomical latitude, page 196, to mean geographical latitude is of a similar nature.

WALLACE J. ECKERT

COLUMBIA UNIVERSITY

REPORTS

ACTIVITIES OF THE ROCKEFELLER FOUNDATION

DURING 1932, The Rockefeller Foundation appropriated $11,577,064 for projects in the fields of the medical, social and natural sciences, the humanities and public health. A printed report on these activities has just been issued.

For public health work the foundation expended