

descriptions and names of new (or supposedly new) species given by pioneer museum men who rushed accounts into local newspapers in order to get priority.

Major Whittell's book is divided into two parts covering the periods 1618-1850 and 1850-1950. The first is of particular interest in that it deals with the accounts of the great naturalist-explorers in what can almost be called the pre-laboratory era. It relates little-known information brought back by the early Dutch navigators, including the log-record of Antonie Caen, of the *Banda*, who in 1636 found (as did De Vlaming, of the *Geelvinck*, sixty years later) that the supposedly fabulous black swan was a reality, and not even a rarity, after all. There is included, too, much of other early information brought to Europe by French naturalists, and by the English buccaneer Dampier, and, of course, that obtained by Cook on his various voyages. There are data recorded by gifted early convicts and free-settler artists and naturalists; and the labours of Robert Brown (of Brownian movement), Charles Darwin, T. H. Huxley and many others have not been forgotten.

The second and longer part is devoted to the condensed autobiography and complete bibliographies of individual naturalists.

"The Literature of Australian Birds" will be, no doubt, expanded as new documents come to light; but it is unlikely to be replaced and must, in fact, be indispensable to anybody interested in ornithology of the Australasian region. It is much to be regretted that its author, an English officer who first studied zoology in his youth under Cossar Ewart, and who decided to live in Australia after the First World War, did not live to see its publication. The only serious defect in the first edition is the lack of a species index. It is sold in paper covers in order to reduce expense.

A. J. MARSHALL

## DEVELOPMENT OF INDIAN PHARMACY

### History of Indian Pharmacy

By G. P. Srivastava. Volume 1. Second edition. Pp. xvi+277. (Calcutta: Pindars, Limited, 1954.) 12 rupees, 8 annas; 2.50 dollars.

THREE different systems of medicine have been practised in India since early times. The most ancient system, the Ayurvedic, was the original system which owed nothing to external influences. It was practised until about the end of the twelfth century A.D. From that date until the end of the eighteenth century it was augmented or supplanted by the Arabian system, the Unani Tibi. At the end of the eighteenth century the modern Western system was introduced by the British. The first volume of this work—all that is published so far—deals only with the Ayurvedic system, and this second edition has followed very rapidly on the first.

The two great works of Indian medicine are the *Charaka-Samhita* and the *Susruta-Samhita*. The eight sections of *Charaka's* work deal fairly comprehensively with the preparation and use of drugs, and the treatise by *Susruta* extends this practice and also deals with surgery. There have unfortunately been wide discrepancies in the dates assigned to these two treatises. The author adopts the dates 1000-800 B.C. for *Charaka* and 1000-600 B.C. for *Susruta*. In his

foreword, Dr. Urdang points out that the Chronology Committee of the National Institute of Sciences in India has recently accepted the dates A.D. 100 for *Charaka* and A.D. 200-500 for *Susruta*. Reference shows, however, that the report of the Committee which Dr. Urdang quotes is very brief, and it obviously indicates that the Committee based its findings largely on the fifty-year-old work of Winternitz. This matter is important in view of the possibility of the influence of Hindu medicine on the Greeks. The author contributes a few interesting points to this practically insoluble controversy.

In writing this book, Mr. G. P. Srivastava has leaned rather heavily on the standard works by Mukhopadhyaya, Dutt, Ray and others. But these works are now difficult to obtain, and the author has rendered a service by providing something more than a summary of the available material. Its value compensates for the slight quaintness of the English. It should be corrected by a European scholar before the next edition, and obvious misprints and errors—such as the 'three' humours of the Greeks, 'Gallen' for 'Galen'—should be removed. Despite these blemishes this book, which is written with enthusiasm and sincerity, will be found useful. There is an excellent index.

E. ASHWORTH UNDERWOOD

## PROJECTIVE AND METRIC GEOMETRY

### Projective Geometry and Projective Metrics

By Herbert Busemann and Paul J. Kelly. (Pure and Applied Mathematics Series.) Pp. viii+332. (New York: Academic Press, Inc.; London: Academic Books, Ltd., 1953.) 6 dollars.

MUCH of this book differs widely from other treatises on geometry. The first three chapters are on lines which are now usual. Projective geometry is treated from the algebraic point of view. The authors consider that synthetic methods have lost their appeal for the present generation, especially in the United States, where there is a tendency to consider generality as the only criterion of value. After two chapters dealing with lines and conics in the projective plane, there is a third chapter dealing with the closely related affine geometry. The surprise for the reader comes in Chapter 4. This opens with a discussion of abstract metric spaces, in which for every two points there is some definition of distance, though possibly quite different from the usual one. From the great variety of such spaces two special kinds are distinguished—Minkowskian and Hilbert's. Euclidean geometry reappears as a particular case of Minkowskian, and the non-Euclidean hyperbolic geometry of Lobachevsky is a particular case of Hilbert's. The fifth chapter considers non-Euclidean geometry, both hyperbolic and elliptic, in detail. In these two chapters there is a good deal about motion, area and perpendiculars.

The sixth and last chapter, entitled "Spatial Geometry", extends the results of the preceding five chapters from two to three dimensions; but it is written in a different style, intended as seminar work for the more mature student. Instead of the explicit exercises of the preceding chapters, the student is here asked to supply for himself the proofs of many of the theorems. The book concludes with a short bibliography and an eight-page index.

H. T. H. PIAGGIO