

the amateur pocket. The format recalls Bailey's *Hortus*, with genera and species in alphabetical order for ease of reference, but there are also a key to genera (36 pages) and chapters on cultivation and geographical distribution of Cactaceae, with eighteen maps. To reduce costs, the 468 illustrations (some in colour) have been grouped together at the start and end, but they are cited in the text and hence easy to find. Authorities for names are given and some synonyms. There are 107 new taxa and combinations, as well as descriptions of many widely grown and recently introduced cacti for which no valid names have yet been published.

The death of Curt Backeberg in January 1966 may be said to end an era in cactus taxonomy—one is tempted to christen it "The Schizocene"—in which fine subdivision of genera and species was carried to an even farther extreme than by Britton and Rose (1919–23). Already the pendulum is swinging in the opposite direction, and with the advent of more conservative concepts, many of Backeberg's names are bound to disappear. But this will take a long time, and there is the immediate need for a convenient, overall survey of the family including all the new accessions of recent years. That need is well met by *Das Kakteenlexikon*. To the ever increasing circle of amateur cactus growers clamouring for pictures and descriptions, it will be a boon; it also offers remarkable value for money.

G. D. ROWLEY

FUNGI IN ITALIAN

Il Genere "Chaetomium"

Microfunghi della Cellulosa e Della Carta Attività e Inquadramento Sistematico. Da Giorgio Mazzucchetti. Pp. xii + 364 (43 plates). (Roma: Ente Nazionale per la Cellulosa e per la Carta, 1965.) n.p.

THE first twenty pages of this book are devoted to an account of the morphological features of the genus *Chaetomium*; pages 21–28 to aspects of physiology in culture; the next 243 pages to a key and descriptions of the species recognized; and, finally, 92 pages to plates and a bibliography. The last and largest taxonomic section is based on the recent monographs of Ames (1963) and Udagawa (1960) and the descriptions appear to be accurate translations into Italian of these authors' descriptions. The forty plates are copied from other publications with all the defects and virtues of the originals. The morphological and physiological data summarize published

accounts save for some original data on media and the effects of pH, temperature and relative humidity on growth in plate culture. No information is provided concerning the mechanism, effectiveness, or biological significance of the abilities of species of this genus to degrade cellulose or about their other interesting attributes such as the thermophilic species.

The work is essentially an adequately acknowledged compilation. It will be useful to Italian speaking readers who neither read English nor possess the works of Ames or Udagawa and who are concerned to identify species of *Chaetomium*.

J. H. BURNETT

BIRD POPULATION

Population Studies of Birds

By David Lack. Pp. v + 341. (Oxford: Clarendon Press; London: Oxford University Press, 1966.) 63s. net.

THE author, who has so successfully pioneered ecological studies as Director of the Edward Grey Institute of Field Ornithology at Oxford for the last 20 years, has written this book as a sequel to *The Natural Regulation of Animal Numbers*, published in 1954. Here he analyses further data amassed in the last 12 years, as well as long-term studies on fifteen species of birds. These are presented in seventeen chapters which are packed with information and argument. Though Professor Lack has produced convincing evidence that the balance between birth rate and mortality is best explained by density-dependent factors (as postulated by A. J. Nicholson), he discusses the case of Andrewartha Birch for random control by the environment and that of Wynne Edwards by an innate population limiting mechanism.

An unavoidable limitation imposed by studies of birds which migrate is that few data may be available during their six month absence in another hemisphere. This is apparent in Lack's otherwise masterly account of the population fluctuations of the white stork, *Ciconia ciconia*, in Europe. The large mortality which has occurred in Africa as a result of the use of insecticides on locust swarms can but briefly be referred to. This emphasizes the fact that every species must be studied daily over 365 days of the year in order to establish the complete analysis. This book is a model for all who undertake field studies on living creatures. It is indispensable to such scientists and at the same time invaluable to all those who study birds.

H. B. D. KETTLEWELL

Applied Science

AGRICULTURAL HISTORY

A History of Agricultural Science in Great Britain 1620–1954

By E. John Russell. Pp. 493 + 7 plates. (London: George Allen and Unwin, Ltd., 1966.) 63s. net.

THIS is a remarkable book both because the late Sir John Russell was more than 90 when he finished writing it and on account of the extreme clarity and comprehensiveness of the picture he presents. He begins by emphasizing that no boundaries have yet been defined for agricultural science. He himself treats it as the study on broad lines of the relations between the growing plant and its environmental factors, including also methods by which the plant may be changed to make it conform better to some desired standard. He adds that farm animals and their products now form part of the subject. Agricultural

science began, and remained until the latter part of the nineteenth century, as the application of chemistry to agriculture.

Starting from Sir Francis Bacon, Boyle and the Royal Society at its foundation, the author describes, often in considerable detail, the work of the men—and in the present century the women—who have contributed to the science, and of the institutions which have been created to further it. He refers to the scientific ideas current at the time and often the prevailing economic conditions. He adds sympathetic thumbnail sketches of the leading figures. If he dwells a shade too long on Rothamsted and the early days of Wye College, that is perhaps understandable. The picture he leaves is primarily a colourful one of human endeavour and of new knowledge being gained by human intuition and intellect. He shows, too, how hard some of the medieval ideas died and how the solution of some problems was impossible