

time, some quite remarkable and beautiful stereocinematic effects. All this has now vanished, and we are left with wide-screen techniques instead.

During these years the Spottiswoode brothers were the leading enthusiasts in Great Britain, and they give in this book an account of the theory of stereoscopic cinematography in a form which they have found by experience to be most helpful. Perhaps some people may be surprised to learn that anything serious in the way of a theory is required—Hollywood was probably taken by surprise too—but the presentation of a set of mutually consistent three-dimensional clues is no easy task.

In addition to elaborating the geometry of the binocular parallax, the book deals with the characteristics, mechanisms and methods of practical stereoscopic systems. Neither the algebra nor the terminology which the authors have used makes the book easy reading—terms like hyper-infinite and hypo-infinite systems seem designed to confuse rather than clarify the problem—yet if only the film industry could have spared the time to master the subject instead of impetuously rushing ahead, something really exciting might have emerged. The possibilities are still there.

W. D. WRIGHT

Practical Physical Chemistry

By Prof. Alexander Findlay. Revised and Edited by J. A. Kitchener. Eighth edition. Pp. xiii+364. (London: Longmans, Green and Co., Ltd., 1954.) 18s. net.

PROF. A. FINDLAY'S book has been a friend to teachers and students of physical chemistry for many years. It was first published in 1906 and has now reached an eighth edition. With the passage of time new interests and techniques have arisen, and books must take account of these. Dr. J. A. Kitchener has undertaken a revision which is intended to preserve the original character and at the same time bring the book up to date. Many new experiments and apparatus for performing them are described. References to literature are given at the ends of the sections.

The error of some books of this kind of giving large digressions on theory, and sketchy mentions of experiments which cannot be performed in the average student laboratory, is avoided, and the text is studiously devoted to practical work, the equations necessary for the calculation of the results being provided. In this way it has been possible to include a large amount of material—more than can be attempted in the usual practical course but giving a choice of work.

The book is an excellent guide to practical physical chemistry for the honours student, and research students should find it of great service. The revision has been very well done; and with its type reset and new figures provided, the volume is very handsome and worth double the price at which it is sold.

Birds of Eastern and North-Eastern Africa

By C. W. Mackworth-Praed and C. H. B. Grant. (African Handbook of Birds—Series 1, Vol. 2.) Pp. viii+1099+plates 54-96+photographs 7-19. (London: Longmans, Green and Co., Ltd., 1955.) 45s. net.

AFTER an interval of three years, this useful and excellent work has been completed by the issue of the second volume, on the same lines as its predecessor (see *Nature*, 172, 92; 1953). Among other things, one notes again with pleasure the

marginal drawings and distribution maps; and the standard of reproduction of the colour plates has been much improved. The lithographed text, as before, gives the essential facts about identification, range and habits for each species and race; and there are keys to the different groups. The volume covers the passerine birds, and the number of represented forms makes it even larger than the first; the weavers occupy more than a fifth of it.

In an introductory note to this volume, the authors make a point which needs to be stressed on every suitable occasion. They refer to the many missing facts about habits, habitat and breeding which field observers have the opportunity of filling in: "It is, however, essential that they should be published. We know of many cases where such biological data are known to local residents but to no one else". This work should be a great stimulus, throughout East Africa, to the making of such observations and to recording them as contributions to available knowledge.

LANDSBOROUGH THOMSON

The Genus *Nicotiana*

Origins, Relationships and Evolution of its Species in the Light of their Distribution, Morphology and Cytogenetics. By Prof. Thomas Harper Goodspeed. (*Chronica Botanica*, Vol. 16.) Pp. xxii+536+118 plates and illustrations. (Waltham, Mass.: The Chronica Botanica Company; London: Wm. Dawson and Sons, Ltd., 1954.) 12.50 dollars.

A FEATURE of agricultural botany to-day, in both warm and temperate climates, is the intensive study that is often given to all the members of any genus that happens to contain crop plants or economic plants of some kind. How valuable this kind of work can be has been well demonstrated with the potato.

The appearance now of a most comprehensive monograph of the genus *Nicotiana*, to which tobacco belongs, is therefore very much to be welcomed. These investigations on the genus *Nicotiana* have been carried out by Prof. T. H. Goodspeed at the University of California Botanic Garden during the past thirty years and were actually initiated even earlier (in 1904). Of the sixty species known to belong to the genus *Nicotiana*, no less than fifty-six were cultivated in the Botanic Garden—a fine achievement. Five different expeditions were made to South America, and these accounted for a good deal of the living material. Actually, only two species, *N. tabacum* and *N. rustica*, are of direct economic value or yield commercial smoking tobacco at the present time. In its original distribution, before being spread by man, the genus was more or less restricted to the Americas, with a few species in Australia and some islands of the Pacific.

The author divides his monograph into six parts, the first part dealing with distribution, while successive parts deal with morphology, cytology of species, cytology of F_1 interspecific hybrids, phyletic (or evolution) and taxonomy of *Nicotiana*. Full descriptions, accompanied by line-drawings, are given for each of the sixty species. In the sections on cytology, karyotypes of all but four species and complete meiotic sequences in representative species and hybrids are illustrated. The work is a good example of modern treatment in speciation and probable evolution in plants. It should be of special interest to botanists and geneticists and to many others engaged on scientific work with tobacco or the related species.