

Our Bookshelf.

Northern Rocky Mountain Trees and Shrubs. By Dr. J. E. Kirkwood. Pp. xvii + 340 + 35 plates. (Stanford University, Calif.: Stanford University Press; London: Oxford University Press, 1930.) 35s. net.

DR. JOSEPH EDWARD KIRKWOOD, the author of this work, made a life study of the flora of the northern Rocky Mountains, but, unfortunately, he died suddenly in August 1928, whilst the present book was in course of preparation. The title indicates the scope of the work, and the region included embraces the country from the Yellowstone Park, north and north-west through Montana and Idaho and the Canadian Rockies, covering the various ranges and the closely adjacent plains. The limitation of area naturally excludes from this work many of the well-known trees and shrubs of western North America, but in an introduction describing the area and the peculiar distribution of various genera and species, we find that 79 genera and 248 species are found in the region under notice. The introduction is ended by a key to the 27 families concerned. *Salix* is the most prolific genus in species, for some 51 are described.

Beginning with Pinaceæ, the various families with their genera and species are then passed in review. A family description is first given with a key to the genera, then follows a description of a particular genus with keys to the species and good specific descriptions, with excellent illustrations of shoot, leaf, flower, fruit, and seeds. Some eighty-seven figures of this description are included in the 340 pages to which the book runs, whilst there are thirty-five full-plate photographs. The descriptions are in non-technical language and should not create difficulties for the person who has little or no botanical knowledge, but in some quarters difficulties may arise through the splitting up of genera. Thus, for the well-known shrub *Spiræa discolor* Pursh, the name of *Holodiscus aricefolius* Greene is used. The generic name of *Neillia* gives place to *Opulaster*; *Rubus parviflorus* Nutt. is described as *Bossekia parviflora* Greene, and *Spiræa millefolium* Torr. as *Chamæbatiaria millefolium* Maxim. Where this division of genera occurs it would have been an advantage had the well-known names been bracketed with the ones used.

A Study of the Induction Motor. By Dr. F. T. Chapman. Pp. xvi + 289. (London: Chapman and Hall, Ltd., 1930.) 21s. net.

THE induction motor is one of the most useful mechanical slaves that man has ever invented. It is deserving, therefore, of the most careful study, and engineers will welcome a good exposition of the theory. They will find it in this book. Dr. Chapman was the designer of alternating current machinery to Messrs. Greenwood and Battey of Leeds. He was afterwards senior lecturer and superintendent of the testing department at Faraday House, London. He is now an inspector of technical colleges for the Board of Education. His

experience therefore qualifies him in every way for writing a treatise on electric motors, and in particular of the induction motor, of which he has always made a special study.

The book contains a great deal of original matter now published for the first time. The student will welcome the author's method of finding the fundamental equations and developing the circle diagram on the assumption that the motor may be replaced by a stator and rotor made from magnetic material of infinite permeability, the air gap being bounded with smooth unbroken surfaces. Afterwards the length of the air gap used in the formulæ is corrected in order to take into account the presence of slot openings and the saturation of the iron.

The author shows that the theory can be readily developed by simply using algebra and geometry. Those who think that there is something specially powerful in vector algebra, which the reviewer does not, can easily convert Dr. Chapman's proofs into that form. Several firms make electric motors only, four or five of which are required for every cine-sonoro (talkie). This book will be of great use for designers.

Photographic Printing Processes. By Capt. Owen Wheeler. Pp. xvi + 260 + 6 plates. (London: Chapman and Hall, Ltd., 1930.) 8s. 6d. net.

THE average amateur is generally content to confine himself to the practice of one or two photographic printing processes. He is not aware of the many other processes, varied in nature and giving beautiful results, which will repay his attention; to some extent the same is true of the professional photographer. To both these classes this book should make an appeal. Capt. Wheeler embodies largely his own extended experience in the description of processes ranging from print-out, through bromide, carbon and carbonyl, gum-bichromate and its variants, dye-printing, etc., to colour printing. The details given are such that it should be easy for novices in a particular process to go straight ahead and acquire proficiency. The scientific principles involved are not discussed, and only the simplest chemical terminology is used.

Rasa-Jala-Nidhi: or Ocean of Indian Chemistry, Medicine and Alchemy. Vol. 3. Compiled in Sanskrit by Bhudeb Mookerjee. With English translation by the Author. Pp. xxxvi + 390. (Calcutta: The Author, 41A Grey Street; London: Luzac and Co., or Arthur Probsthain, 1930.) 6 rupees.

MR. MOOKERJI is a medical practitioner who is publishing a series of volumes on the pharmacopœia of drugs prepared from minerals, based on ancient sources. His work is of interest to students of Indian chemistry and medicine, although it is sometimes without apparent logical arrangement and contains a great number of names of plants and materials transcribed without the elucidation necessary for European readers. The present volume deals with the metals, gems, alkalis, salts, poisons, oils, and fermented liquors. The Sanskrit text is given, followed after each section by an English translation.