SCIENTIFIC BOOKS

PLANT GEOGRAPHY

Foundations of Plant Geography. By STANLEY A. CAIN. xiv + 556 pp. New York: Harper and Brothers. 1944. Price, $5.00.

ONE of the great difficulties in present-day science is to get the immense amount of fact, deduction and theory concerning a specific subject into sufficiently compact form so that the interested individual can at least get some idea of the whole picture. This Dr. Cain has done for dynamic plant geography—a geography mainly concerned with how and why a plant got where it is rather than just where it is. This book is in no sense a conventional plant geography. Habitats, ecological or geographical, of plant groups of almost any size or kind, are given scant attention. In Dr. Cain's own words, the book is "an effort to survey the related fields of science for concepts and working methods which are useful in an interpretation of the phenomena of plant distribution. Many of the materials are from the fields of paleontology, taxonomy, evolution, genetics and cytology. I have sought to cut the hedgerows between these fields of science, and to discover, for myself at least, some of the significance which one field has for another."

In cutting the hedgerows, Dr. Cain has organized his material into thirty chapters, each in most cases epitomized in italics at the start, followed by discussion and factual illustration, often ending with the author's criticism for or against. These chapters are grouped into five parts: introduction, paleoecology, areography, evolution and plant geography, significance of polyploidy in plant geography. There is a very much needed glossary, since the terminology used in some cases reminds one of certain English-language novels full of French-language expressions. One might be critical here, for the author, figuratively speaking, does not always call a spade a spade, but refers to it as a geotome.

There is a "Literature Cited" list of 720 titles, mostly of recent vintage, covering many biological fields. Among the striking omissions are references to R. E. Cleland's work on *Oenothera* and to the works of Charles Elton on the importance of population size as an evolutionary factor. There is an excellent index.

In reviewing a work of this type, there is a great temptation to discuss many of the chapters, especially those involving subject-matter with which the reviewer is most familiar, but space restrains him. Among the most interesting chapters are "Certain Aspects of the History of Cenozoic Vegetation of Western America," "Species Senescence," "Causes of Species Stability," and "Rate of Evolution and Speciation." All the chapters are thought-provoking, written for those who question and not for those who just swallow. The language is technical and, outside of outline maps and diagrams, there are no illustrations.

The author in dealing with polyploidy, diploidy and haploidy is apparently unaware of the use of n and $2n$ in speaking of haploids and diploids in the generation sense. He suggests the use of g for gametophytic or haploid and S for sporophytic or diploid individuals.

The title of the book, for many people, would be misleading; it is primarily a book on evolution, to be classed alongside Julian Huxley's "Evolution; the Modern Synthesis," and it ought to be of great interest to any one properly backgrounded who is seriously concerned with the broad problems of evolution.

ORLAND E. WHITE
THE BLANDY EXPERIMENTAL FARM,
UNIVERSITY OF VIRGINIA,
BOYCE & CHARLOTTESVILLE, VIRGINIA

ELECTROTHERAPY

Technic of Electrotherapy. By STAFFORD L. OSBORNE and HAROLD J. HOLMQUEST. C. C Thomas, Springfield, Illinois, 1944. Price $7.50.

ELECTROTHERAPEUTIC measures, like many procedures employed in the practice of physical medicine, can be used successfully only when intelligently prescribed and appropriately applied. Unhappily, the practice of physical medicine has sometimes fallen short of its great potential because it has been applied empirically without basic knowledge of physics and physiology. Fortunately, physical medicine is now attracting the interests and activities of men who bring to it a background of training and experience in physical sciences and physiology. This book provides an excellent example of this development. The book represents collaborative efforts of two experienced investigators and teachers in the fields of applied physics and applied physiology. Both authors have had considerable experience in the special field of electrotherapy, having conducted courses for a number of years at Northwestern University Medical School.

According to the authors, their book is regarded as a supplementary text for students of physical medicine. This limitation to a supplementary role represents a modest appraisal for a book which is sufficiently comprehensive to be described as a reference manual on the principles as well as the techniques of