esteemed friend, Professor Henry Devaux, of Bordeaux (France), who was the first to demonstrate clearly the existence of monomolecular layers at the surface of water. Dr. Langmuir, in his fundamental paper,[1] gave him full credit for this pioneer work, and described his experiments as "beautiful in their simplicity."

Professor Devaux, who is very old now, was still working on monolayers, under particularly difficult conditions, when I left France in August, 1942.

I should also like to mention the fact that, to my knowledge, I published the first paper on the influence, on the rate of evaporation of water, of a monolayer of oriented molecules. This paper undoubtedly escaped the attention of Dr. Langmuir, as it was printed in the *Journal of Experimental Medicine*[2] under the misleading title, "Further evidence indicating the existence of a superficial polarized layer of molecules at certain dilutions" (solutions of serum).

I reported a definite slowing up of the rate of evaporation, but my method was crude in comparison with that employed by Drs. Langmuir and Schaefer.

P. LECOMTE DU NOUY

SCIENTIFIC BOOKS

BOTANICAL BOOKS

The Succulent Euphorbieae (Southern Africa). By ALAIN WHITE, R. ALLEN DYER and BOYD L. SLOANE. 2 vols. xv + 990 + 11 + 11 pp. 1,102 figs. + 25 plates. Pasadena, Calif.: Abbey Garden Press. 1941. $12.00.

EVERY scholar has a dream of books that he would like to write if the fates but smiled. The authors of "The Succulent Euphorbieae" may be congratulated, not merely on the broad vision of their undertaking, but also on the splendid way in which their dream has been realized.

In the introduction we are told that the family Euphorbiaceae includes more than 250 genera and 6,000 species; this family is divided into a number of tribes, of which the largest is the Euphorbieae, "and it is with a part of this tribe alone that the present book deals." The largest genus of the tribe by far is *Euphorbia,* and this, *Monadenium* and *Synadenium* are the three genera considered in the present work, which is restricted to "what may somewhat indefinitely be called the succulent Euphorbias of southern Africa."

The introduction is devoted partly to a discussion of the peculiar inflorescence of this group—the cyathium—and to a consideration of the pistillate and staminate flowers of which it is constituted. The vegetative characters, with their great multiplicity of form, are next taken up, and their striking similarity in many cases to the Cacti, to which they are entirely unrelated, either phylogenetically or geographically, is pointed out; in spite of the vegetative variability, the relatively uniform structure of the cyathium has been maintained. The last part of the introduction is devoted to a historical discussion of the group.

There are keys to the above-mentioned three genera, and then to 193 species of the genus *Euphorbia.* Each of these species is subsequently taken up in very considerable detail, with complete descriptions of the plant, the spines, the leaves, the inflorescence and the capsules. Next follow type locality and distribution. After these formal accounts, in each case there is a discussion of history, relationships, growth habits, geographical occurrence, etc. These informal presentations are prepared in delightful style and give the volumes life and charm. Two species of *Monadenium* and two of *Synadenium* are similarly considered.

The first Appendix, A, lists the new species, varieties and combinations proposed in the book and gives Latin descriptions when necessary. In all, thirteen new species, fifteen new varieties, seven new combinations and one change of name are offered. A glossary, bibliography, discussion of five undetermined species and "Notes on Euphorbia Culture" conclude these volumes.

One of the most striking features of this work is the illustrations. In all, one hundred and ninety-seven species are described, and there are more than eleven hundred figures, including seventy in the introduction. Most of the species, therefore, are illustrated by a number of figures. In addition, there are twenty-five plates in full color.

Even if you are among the uninitiated, you can turn through these pages and gain a conception of what this group is like from the illustrations. And if you do, you will read some of the accounts, and you will be impressed by the polish, and in some instances by the quaintness, with which they are presented.

"The Succulent Euphorbieae" is a monument, of which the authors may well be proud.

The Carnivorous Plants. By FRANCIS ERNEST LLOYD. xvi + 352 pp. 11 figs. + 38 plates. Waltham, Mass.: Chronica Botanica Company. 1942. $6.00.

ALTHOUGH other accounts of carnivorous and in-

[1] *Jour. Am. Chem. Soc.,* 39: 1848, 1917.

[2] Vol. 39, p. 717, 1924.

sectivorous plants have been written, the lack of a recent and comprehensive treatment of these plants would in itself make the present volume worth while. When to this is added the intensive research of the author for more than a decade, "The Carnivorous Plants" becomes an especially valuable book. Professor Lloyd states in the preface that his interest in these plants began with work on *Utricularia gibba,* but that the treatise under consideration is based on material collected and received from many sources.

There is one relatively short chapter on carnivorous fungi, in which we read of "loop snares," "eel-bob snares" and "adhesive organs." Each of the other thirteen chapters deals with one or more of the fifteen angiospermous genera that stoop to conquer flesh—often, though by no means always, that of insects. These fifteen genera, which occur in six different families, include some 450 species, of which, however, *Utricularia* has 275, *Drosera* 90 and *Nepenthes* 65. Five of the genera are monotypic.

The kinds of traps, in addition to the snares of the fungi, are classified as "pitfalls" (pitcher plants) as in *Sarracenia, Darlingtonia, Nepenthes,* etc., "lobster pot" as in *Genlisea,* "bird lime or fly-paper traps"—passive as in *Byblis* and *Drosophyllum,* active as in *Pinguicula* and *Drosera,* "steel-trap" as in *Dionaea* and *Aldrovanda,* and "mousetrap" as in *Utricularia,* etc. Lures are also present, which may take the form of odors in *Sarracenia* and *Drosophyllum,* nectar secretion in *Nepenthes,* attractive colors in *Sarracenia* and *Darlingtonia* and of brilliant points of reflected light in *Pinguicula* and *Drosera.*

Each of the chapters is really an intensive study of the structure, development, mechanisms and interpretations of the various genera. The treatment accorded to *Drosera* and *Utricularia* is especially inclusive, a separate chapter of thirty-eight pages being devoted to the *Utricularia* trap. The literature cited at the end of each chapter is extensive; this indicates the interest that these plants have aroused for a very long time and testifies to the assiduity of the author. In addition to eleven text figures, there are thirty-eight plates, each with numerous illustrations.

Every one who reads about these plants wants to know whether their carnivorous habits really benefit them. This topic is discussed in detail in the chapter on *Drosera,* and abundant evidence for the affirmative conclusion is assembled. In the introduction also this subject is considered. "From the purely physiological point of view the carnivorous plants are concerned in a somewhat special way in the acquisition of nutrient substances containing protein, possibly vitamins and perhaps the salts of potassium and phosphorus, and even others. In this way they receive some profit, though what they receive is no *sine qua non,* as it is with many other plants."

Professor Lloyd has written a scholarly, complete, authoritative volume—one that will take its place fittingly on the library shelf beside Charles Darwin's "Insectivorous Plants," published in 1873. The author writes with clarity, with conviction and on occasion with a touch of humor. And if, at times, his presentation seems intricate and involved, as in the *Utricularia* trap, so is the subject.

EDWIN B. MATZKE
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REPORTS

MEDAL DAY AT THE FRANKLIN INSTITUTE

AN American and a Russian scientist share the highest honors of The Franklin Institute this year. The selection of Dr. William David Coolidge, vice-president and director of research for the General Electric Company; and Dr. Peter Kapitza, director of the Institute for Physical Problems, Academy of Sciences, Union of Soviet Socialist Republics, to receive the Franklin Medal was based upon work in physical science or technology, without regard to country, which in the opinion of the institute, acting through its Committee on science and arts, has done most to advance a knowledge of physical science or its applications.

Dr. Coolidge received the Franklin Medal "in recognition of his scientific discoveries, which have profoundly affected the welfare of humanity, especially in the field of the manufacture of ductile tungsten and in the field of improved apparatus for the production and control of x-rays"; and Dr. Kapitza "in recognition of his remarkable contributions to experimental physics and also to theoretical physics, especially in the fields of magnetism and low temperatures."

Since the founding of the Franklin Gold Medal in 1914, the face of which carries a medallion of Benjamin Franklin done from the Thomas Sully portrait of Franklin owned by The Franklin Institute, it has been awarded by the institute to such figures as Thomas A. Edison, Guglielmo Marconi, Charles Fabry, Pieter Zeeman, James H. Jeans, Orville Wright, Albert Einstein and Charles F. Kettering.

Dr. Coolidge has won many scientific awards, among them the Howard N. Potts and the Louis Edward Levy Medals of The Franklin Institute, and an honorary M.D. degree from the University of Zurich. Interested in mechanical problems and principles since his