New Books...

Manual of Insect Morphology

MELVILLE DUPORTE. Reinhold, New York. 1959. xi + 224 pp. $5.00. Reviewed by B. ELWOOD MONTGOMERY, Purdue University, Lafayette, Ind.

PROFESSOR DUPORTE'S manual is an excellent laboratory guide for the undergraduate course or courses (if internal and external morphology are taught separately) in insect morphology. The author's objectives are stated in the preface: (1) "that the student . . . should acquire a reasonably balanced foundation in the elements of insect morphology," and (2) "to enable the student to work intelligently with a minimum of assistance from the instructor." These are valid and sufficient for such a course, and appear to have been fully realized in the selection and organization of the exercises. The basic insect structures, both external and internal, are adequately covered by the study of enough examples in each case to provide an understanding of the fundamentals of insect form. The author recognizes that no more is possible in the first course, or courses. Although a distinguished research scholar in the field, he has presented these exercises in a manner and on the level appropriate to the proposed audience.

The book is well printed and bound, and has an attractive appearance. As the price is little, if any, more than would be incurred in duplicating an instructor's own laboratory exercises, it will likely be favorably received.

One is inclined to compare the new manual with the two which have been available previously in this country—Comstock and Kellogg's "Elements of Insect Anatomy," and MacGillivray's "External Insect-Anatomy." The organization resembles that of MacGillivray in the comparative approach, but the amount of material covered and the simplicity of presentation are similar to Comstock and Kellogg's. Although 61 species belonging to 16 orders are included in the drawings or observations to be made, most of these are referred to only once or twice, usually in the exercises on the legs, wings, or mouthparts. Only 15 species of seven orders are used in four or more exercises each, and about half of the exercises (95 of 211) are based on five species—three of Orthoptera (*Acheta assimilis*, the field cricket, and the grasshoppers, *Melanoplus* sp., and *Romelea microptera*), and one each of Hymenoptera (*Apis mellifera*, the honey bee) and Lepidoptera (*Protoparce* sp., the hornworm).

The arrangement of material is different from that of most texts and laboratory exercises in insect morphology, in that the order of study is abdomen, thorax, and head, rather than the opposite. As this order proceeds from the simple to the more complex it would seem to be much the better method.

One naturally finds features which he considers undesirable, but most of these are details and do not affect the general value of the book. The laboratory instructor's verbal admonition, "Observe (or examine) . . . and note that . . ." becomes rather monotonous when repeated in paragraph after paragraph. While the modern busy instructor welcomes a book which directs the work of the student "with a minimum of assistance," he will wish occasionally that a little more were left to the imagination and initiative than "Count the number of segments in the abdomen (of *Calosoma*, larva) and note that there are only ten." A few errors, such as the quotation of "milkweed chrysomelid" for the cerambycid *Tetraopes tetraophthalmus*, occur.

The reviewer expects to use the *Manual* for his two classes—external morphology for second year students, and internal anatomy for advanced undergraduates and graduates (with an additional text for the latter).

Workbook on Gas Chromatography

A 71-page workbook, titled "Gas Chromatography Applications Manual," has been published by Scientific & Process Instruments Division of Beckman Instruments, Inc., Fullerton, Calif. A complete revision of an earlier edition, it covers the basic theory, instrumentation design, column technology, and applications of gas chromatography. It has over 50 illustrations and a 500-entry bibliography.

The company is supplying a copy of the manual to each purchaser of Beckman chromatographs. It can also be obtained from laboratory supply dealers for $5.00.

Food Packaging and the Food Additives Amendment

A series of articles by the editorial staff of *Modern Packaging* on the effects of the new food additives law on food packaging has been published in booklet form. Included are a verbatim interview with Deputy FDA Commissioner John L. Harvey, a concise explanation of the implications of the amendment, and a list of sources of data helpful in dealing with it. Copies are available for $1.00 from *Modern Packaging*, 575 Madison Ave., New York City 22.

Liquid Diets for Astronauts

Two reports of nutritional studies conducted by the Air Force are available from the Office of Technical Services.

One report (PB 151786 for 75 cents) concludes that liquid foods in squeeze bottles appear nutritionally adequate to feed astronauts in early space flights. The other (PB 151792 for $1.50) gives details on use of foil-packed meals for feeding aircrews during extended flights.

Both are available for prices listed from Office of Technical Services, U. S. Department of Commerce, Washington 25, D. C.

LITERATURE AVAILABLE

Agglomeration. Bulletin tells how to form spray dried powder into agglomerated clusters for easy reconstitution by using company's Instantizer. Ask for Bull. No. 540 from Dept. A&F, BLAW-KNOX CO., Dairy Equipment Division, Mora, Minn.

Bagging Scale. Six pages on the bagging scale designed for high-speed loading of 25-, 50-, and 100-lb. bags in feed mills. Photographs and proportional drawings show installation and construction details. Write for Bull. No. 0156A to Dept. A&F, RICHARDSON SCALE CO., Clifton, N. J.

Helicopter. Folder on advantages of spraying, dusting, and fogging by helicopter along with photographs, brief performance specifications, and information on charter operator services. Dept. A&F, Commercial Division, HILLER AIRCRAFT CORP., 1350 Willow Road, Palo Alto, Calif.

Insecticide Catalog. Forty pages on company's farm chemical and insecticide products. Research and production facilities described. Available from Dept. A&F, Farm Chemical & Insecticide Division, S. B. PENICK CO., 100 Church St., New York 8, N. Y.

Phosphorus Products. Two pages on physical data, uses, and shipping of company's phosphorus products for fertilizer, feed, and food industries. Ask for supplement to Bull. No. 100-C from Dept. A&F, HOOKER CHEMICAL CORP., Box 344, Niagara Falls, N. Y.