

with work on this order. Mr. Savory considers that the foundation of spider taxonomy was laid by French and German students in the early nineteenth century, of which the publication of Hahn and Koch's *Die Arachniden* in 1831 was the most striking example. John Blackwall for Britain made a major contribution in 1861 with his Ray Society volume on *British Spiders*, and the three countries Britain, France and Germany perhaps remained pre-eminent in this field until recent times. Mr. Savory's review does not include post-1958 works and consequently misses H. Wiehle's monograph on the Micryphantidae, one of the most important taxonomic works since the War. He is perhaps a little unfair to the younger generation of German zoologists, which, he says, "has only just begun to appreciate the Arachnida as subjects for research". In fact, since 1942 more work has been carried out in Germany on the biology and ecology of spiders than probably any other country.

This and recent work in other countries emphasize an important historical point not made by the author that the taxonomy of European spiders is now at least sufficiently well known for the main interest of the younger generation of arachnologists to concern themselves largely with population and biological problems. This would appear to be the field of investigation for the future, although outside Europe, faunal surveys and taxonomic studies will continue to be necessary for many years to come.

E. DUFFEY

BRITISH MOTHS

The Moths of the British Isles

By Richard South. New edition, edited and revised by H.M. Edulsten, D. S. Fletcher and R. J. Collins. First Series: Sphingidae, Endromidae, Saturniidae, Notodontidae, Thyatiridae, Drepanidae, Lymantriidae, and Noctuidae. Pp. 427 + 148 plates. Second Series: Lasiocampidae, Arctiidae, Geometridae, Cossidae, Limacodidae, Zygaenidae, Sesiidae, and Hepialidae. Pp. 379 + 141 plates. (The Wayside and Woodland Series.) (London and New York: Frederick Warne and Co., Ltd., 1961.) 35s. net each volume.

INTENDED primarily as a guide to the identification of the larger British moths, this new edition of a standard work fulfils its function more successfully than the editions of 1923 or 1939 mainly through the introduction of improved and completely new colour-plates. The original paintings, from which the colour-plates were prepared, are with very few exceptions excellent. In the few copies of the new edition examined by me, however, the colour-plates do not always attain the same high standard as the artist's paintings: there is a lack of register in many plates and in several of them the red element is weak, resulting in unnatural greenish tones. In spite of these drawbacks the plates are far superior to those in any except the first edition, and several plates (especially those of the genus *Eupithecia* Curtis) are as good as any illustrations previously published in Britain. Many of the plate legends (for example, Series 1, plate 97) are unfortunately most confusing and will clearly have to be rearranged by the publishers in subsequent editions. References to the corresponding pages in the text have been omitted, as in previous editions, and numerous species exhibiting little sexual dimorphism continue to have both sexes illustrated. Of some

significance is the introduction of references in the text to figures of the genitalia of some of the more difficult genera (for example, *Procus* Oken and *Hydraecia* Guenée), an indication that externally the species of these genera are extremely difficult to separate and that the colour-plates are of little use as a means of identification. The reproduction of many of the half-tone figures is very poor.

Since the publication of the first edition in 1907 the bulk of the text has remained unaltered and, although a thorough revision was clearly overdue, to remedy the haphazard and inconsistent treatment of many species, the opportunity to do this has not been taken. New text is therefore restricted mainly to passages of supplementary information; leaving most of the remainder almost exactly as it was more than half a century ago.

An important addition is the detailed treatment of several little-known moths, such as *Calamia tridens occidentalis* Cockayne. A further improvement is the adoption for the first time in this book of the correct form of scientific nomenclature in accordance with the International Code.

The unsystematic arrangement of the various families of moths is regrettable but, as the editors state in the introduction, this is the only way in which both plates and text could be arranged to avoid dividing the section on Noctuidae between the two volumes (a disadvantage of previous editions).

It is remarkable that in spite of the attention given to Lepidoptera by British entomologists, the editors have seldom been able to cite the sub-specific identity of the British representatives of a particular polytypic species—a result of the paucity of taxonomic work on our fauna at the specific and subspecific levels.

Although several references to other literature are given in the text, there is still a need for a short bibliography, which could have included some of the more useful general works on British and European Lepidoptera. No more than the usual number of minor errors seem to have arisen, but some of these lead to unfortunate confusion concerning identification; for example, on page 347 of Series 1, *ab. carthami* Herr.-Schäf. is wrongly stated to be illustrated by Fig. 11 on pl. 126.

It is disappointing to find that while this new edition is certainly an improvement on those it follows, it does not fulfil the expectations of many entomologists who had hoped for a more radical revision of the text.

A. WATSON

THE GROWING TIP OF PLANTS

Apical Meristems

By Dr. F. A. L. Clowes. (Botanical Monographs, Vol. 2.) Pp. viii + 217 + 32 plates. (Oxford: Blackwell Scientific Publications; Springfield, Ill.: Charles C. Thomas, 1961.) 37s. 6d. net.

DURING the past twenty years or so, there have been many investigations of the apical meristems of plants, an interest which is understandable since these meristems are in a sense regions of permanent embryogeny responsible in most plants for all longitudinal growth and the continued production of new organs. The early investigations of shoot and root apices were mainly anatomical, but in a considerable number of the recent investigations biochemical and experimental approaches have shed new light on the behaviour of the apical meristems. Although special