Book Review

SOUTHWOOD, T.R.E. 1966. Ecological methods. xviii + 391 pp. Methuen, London. Price - 75 shillings.

Southwood, in his preface, points out the distinction between 'methods for ecologists' and 'ecological methods', which are "those concerning ... the measurement, description and analysis of both the population and the community". This means that measurement of environmental factors is not covered by this book, but this is well documented in other compilations. "Emphasis is placed on those (methods) most relevant to work on insects and other non-microscopic invertebrates of terrestrial and aquatic environments, but it is believed that the principles and general techniques will be found of value in studies on vertebrates and marine animals".

The section on 'Materials and Methods' in a biological paper can often be the most important part of the paper, not only because conclusions so obviously depend on methods, but also it is here that the way to solve some other problem may be found. (Editors who shy away from purely methodological papers or who demand cuts from this section might take note.) This widely scattered literature has not before been brought together into one place and this is hardly surprising in view of the magnitude of the problem. Dr. Southwood has, however, succeeded in doing this with, as the book is subtitled, particular reference to insect populations. The work of 1400 authors has been examined and this presumably means even more individual papers, complete citations for which are given at the end of each chapter.

After 5 pages of introduction, there are chapters on: the sampling programme and the measurement and description of dispersion (51 pages); absolute population estimates using marking techniques (42 pages); absolute population estimates by sampling air, plants, plant products and vertebrate hosts (34 pages); absolute estimates by sampling soil and litter (25 pages); absolute estimates by sampling freshwater habitats (16 pages); relative methods of population measurement (55 pages); estimates based on products and effects of insects (11 pages); methods for the estimation of natality, mortality, and dispersal (37 pages); the construction, description and analysis of age-specific life-tables (34 pages); age-grouping of insects and time-specific life-tables (11 pages); experimental component analysis (4 pages); the measurement of association between species and the description of a fauna (28 pages); the estimation of productivity and the construction of an energy budget (19 pages). There are 101 clear figures and 24 tables showing equipment and explaining processes of analysis. In many instances, the whole process from collection of data through final mathematical analysis is given, making it unnecessary to go to the original literature.

It is very difficult to find fault with this book. It will be essential to anyone in any way involved in research on insect populations, particularly during the planning of a new project. Economic entomology must benefit. Teachers of ecology, too, will find the book extremely useful. The author expresses the hope that more precise studies and more critical analyses will be attempted as a result of this book. If this should happen then ecology will advance and the ecological armchair may become a more comfortable place to inhabit.

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