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Host-Plant Selection by Phytophagous Insects
E. A. Bernays and R. E. Chapman
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IT IS REFRESHING to see a technical monograph written by individual authors rather than a collection of chapters hodge-podged together in an edited pastiche. E. A. Bernays and R. A. Chapman are senior scientists in the field of Behavioral Ecology and they bring a wealth of knowledge and insight to this opus of theirs, in *Host-Plant Selection by Phytophagous Insects*. They indicate that their intended audience is "new graduates to postdocs" although the book is certainly appropriate for a much wider audience than this. As they note, this is a very active research field and multiple reviews, symposia proceedings, and monographs are available to lead one into the discipline. Unlike many multi-authored works, this book provides a coherent overview that allows a newcomer to see what has been done before, why it is important, and what still needs to be done. And, as noted by Bernays and Chapman, none of the earlier works have approached the subject primarily from the point of view of behavior. The present volume therefore fills an important lacuna and does so in a witty and readily followed manner. Indeed, this is one of the easiest monographs to read that I have perused in a long time.

I suspect that the ease of reading will be frustrating to many readers, however, because the authors explicitly have chosen *not* to include citations in the text to lead the reader to the original literature. Each chapter ends with a list of *Further Readings* organized along the flow of the chapter material, and the reader can, with a little patience, track down most of the original papers that are not cited in the text. Perhaps it is just a lifetime of scientific habit, but I find (as do many other of my colleagues) that this absence of in-text references is counterproductive and I would certainly not want to see all scientific monographs so handled. I especially feel that for new graduate students and postdocs it is essential to convey the idea that science is done by humans and that the originator of a given idea should be explicitly acknowledged at the point the idea is introduced. Interestingly, Bernays and Chapman do cite authors in their figure legends.

The book contains a 3-page introduction and 8 chapters entitled: (1) Patterns of Host-Plant Use, (2) Chemicals in Plants, (3) Sensory Systems, (4) Behavior: The Process of Host-Plant Selection, (5) Behavior: The Impact of Ecology and Physiology, (6) Effects of Experience, (7) Genetic Variation in Host Selection, and (8) Evolution of Host Range. The book also contains a 6-page glossary and a taxonomic and subject matter index. Each chapter is lucid and presents an in-depth overview of the current state of basic knowledge in the area as well as suggesting the many areas in which knowledge is not adequate. The authors do a good job of balancing their story in terms of ecological and evolutionary time, and in picking examples that illustrate their major points clearly. It is also a statement on the progress in this area that they occasionally have to use examples from outside the stated domain of the book.

Despite the many fine aspects of this book (including its moderate price), there are areas that could be improved in future editions. The chemistry chapter presents several of the structures with bond angles that are convenient for fitting the structure onto the page, but which do umbrage to conventional chemical typography standards. Very few of the figures that present data have error bars; I think that students (and working scientists as well!) need to be constantly reminded that "mother nature" is highly variable and that it is appropriate to indicate this by using proper statistical methodologies when presenting one's data. Occasionally in the text and in figures the authors vacillate between American and British usage in spellings and in at least 1 chemical structure the valences are incorrect (cyanidin, Fig. 2.17). Finally, the definitions used in the glossary are often simplistic and more limiting than their actual usage in the literature.

Despite these caveats, I heartily recommend this book for its intended audience. It will cause the students to think and will give them a coherent overview of a vitally important area of entomology. I also readily recommend it to those of us who are no longer enrolled in school, but who wish to meditate on the views of 2 leading scientists in a complex and dynamic area of science. It certainly caused me to think about my own research area in some new ways, and that is, perhaps, the strongest recommendation that one can give to any monograph.

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