BOOK REVIEW

Bugs in the System. May R. Berenbaum. New York: Addison Wesley, 1995, 377 pp. Illus., (cloth: $ 25.00).

In one of her latest papers in the American Entomologist, in 1995, Prof. Berenbaum mentions how young people (and entomologists alike) are martyrizing insects and arachnids, by pulling their wings or their legs, burning them with magnifying glasses, without mentioning the lepidopterists who transfix the thorax of the female butterflies to induce them to lay eggs. Such behavior was once one of the acts of the emperor Nero when he was a child. His tutor, the philosopher Seneca, when he saw him pulling the wings off a fly, predicted that he would be very cruel. It was said that the French biologist Etienne Rabaud, well known for his systematic opposition to everything, verified by the scholars of his time, used to cut in half the legs of the daddy longlegs and to declare that those legs were useless because those Arachnids walked better with shorter appendages. Rabaud was also known for removing the swimming bladder of fish to improve, as he said, their balance in water. Such is the tone of this book.

This new Berenbaum book, the third of the series, is technically very accurate, and in full accord with the facts of classical biology and entomology. In fact, it is a fascinating book for laymen and specialists alike. It is beautifully written. The chapters on behavior, physiology, plant-insect relationships, aquatic insects, virus caused fevers and protozoan disease carrying mosquitos, are particularily well documented. On page 50 I even see a discrete but distinct homage to Jean Henri Fabre as discoverer of what, one hundred years later, we now call pheromones.

When I read the first part of the book, I was fascinated, but toward the end I found it a little tedious, especially the last chapters, and particularly the one on entomophobias. I am still reticent to believe in the reality of those morbid fears that are mostly the subject of horror films as money makers. The bibliography is rather selective and several classical American works, current entomologists will note, are obviously missing.

Some specific corrections: In spite of the implications in this book, the nature of learning among insects is poorly known. For instance, the way insects adapt themselves to different plants at the larval stage (also see the still controversial Hopkins' principle) is not mentioned. Are whales really without parasites? They are covered with cirripeds and various crustacea. This is not far from phoresy and, in some cases, may be real parasitism. Microsporidia are still impossible to manipulate, and their use in biological control seems to me to be a myth. The discovery of the yellow fever vector, *Aedes aegypti*, was not made by Carlos Finlay in 1881, as stated in the book, but by Louis Daniel de Beauperthuy, from Caracas, who had already published on it in the *Comptes Rendus de l'Academie des Sciences* in 1856, 25 years before Finlay. At the same time, we must remember that it is only in the twenties that the real nature of the yellow fever virus was established, and hence, these early papers were easily overlooked. Curiously, there is no mention of the necrophagous bees (*Trigona* spp.) or beetles such as *Phanaeus* spp. in the section on "Insects and Carrion." The action of nicrophorus beetles (sexton beetles) in South America is not negligible, even if localized there only in the high mountains. Other omissions could be mentioned.

All in all, it is a very informative book. The major defect is the quality of the illustrations. For instance, (on p.5) that black and white shadow can be anything, but certainly not an insect!

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