

BOOK REVIEW / RESEÑA DE LIBRO

A DIFFERENT SORT OF "FIELD GUIDE":

DAVID W. ROUBIK AND PAUL E. HANSON, ORCHID BEES OF TROPICAL AMERICA, BIOLOGY AND FIELD GUIDE, INBIO, 2004. editorial@inbio.ac.cr

The pollination of orchids by euglossine bees was observed by Crüger in Trinidad, and his observations were discussed by Darwin in the second edition of his well-known book on orchid pollination. At that time, no one had any idea that there was a system of pollination involving more than 150 species of bees and many orchids, some aroids, gesneriads and other plant families, in which the perfume was both the attractant and the reward, and the pollinators were male bees, probably using their mix of perfumes to demonstrate their genetic quality to the females.

Not only did this system permit the remarkable mechanisms of such orchids as *Catasetum*, *Coryanthes* and *Gongora*, but the euglossine bees include five genera of bees of various sizes with relatively to incredibly long mouthparts and striking metallic colors, are involved in mimicry both Müllerian and Batesian (the sting of a large female is not soon forgotten), nest parasitism, diverse nest architecture and some approach to the complex social organization of the honeybees and their close relatives.

Paul Allen later made important observations of pollination by *Euglossa*, showing that the perfume was a critical element, and then Dodson and his associates identified many of the chemical elements in the perfumes, so that one could attract male euglossines by chemical baits, greatly increasing our sample of bees, and, by collecting the bees with orchid pollinaria, learning much more about the relationships between bees and orchids.

There are still a few specimens of *Euglossa ignita* from Colón Province, Panamá, with pollinaria of what

must be an undescribed species of *Sievekingia*, but we still know the *Sievekingia* only from its pollinaria. At this point, it is still difficult to identify *Euglossa* from much of South America, and in too many cases, we cannot be sure how to associate the females with conspecific males. In Costa Rica and Panamá, we can confidently identify any euglossine bee that is likely to be found there, we know much more about the nests and the foraging behavior, and we can associate the females with the males, either because we have had both emerge from the same nest or by comparison and elimination.

Roubik and Hanson have produced an excellent book on the biology and field guide. The book is bilingual, and covers all of the euglossine species of Mexico and Central America. There are many excellent photographs of the bees in the field. I must point out, though, that the "*Catasetum*" pollinaria in Figures 7b and 7c are *Stanhopea*, the "*Gongora*" pollinarium in Figure 7e is *Coryanthes*, and I am a bit skeptical about the "*Peristeria*" in Figure 7f (I sincerely hope this plate was not included in the copy that I read for "Revisión científica").

Each species is illustrated by color photos of the most important details (face and hind tibia). With this beautifully prepared book, one should be able to identify any euglossine bee encountered in Central America. Now there is increasing interest in the use of chemical baits to compare different habitats or different systems of agriculture. With this book in hand, students will be well prepared to undertake these and many other studies, and visitors can be introduced to a fascinating aspect of tropical American forests.

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