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BOOK REVIEW

The Wasps by Howard E. Evans and Mary Jane West Eberhard. University of Michigan Press, Ann Arbor; 265 p., 122 fig.; 1970. Paperback, \$3.45; library edition, \$7.95.

No, we have not transferred wasps to the order Coleoptera. However, beetles play several important roles in the lives of wasps. Not only are many beetle larvae hosts for parasitic wasps of several groups, but there are beetles which are parasitic and predaceous on wasps.

Parasitic wasps of the families Scoliidae and Tiphidae are fairly well known as enemies of Coleoptera larvae found in soil and rotting wood, especially the white grubs (Scarabaeidae). Less well known is a subfamily of Tiphidae (the Methochinae) which attack larvae of Cicindelidae in their burrows, stinging them, laying their egg, and sealing off the burrow. Two of the 9 subfamilies of Sphecidae (Philanthinae & Crabroninae) also utilize Coleoptera as prey.

One of the chapters is entitled "Beetles as enemies of wasps," and it discusses representatives of 5 beetle families. Carabidae are mentioned as minor predators; Cicindelidae have been observed stealing prey; a species of Cleridae feeds on wasp larvae in cells in wood; but the most significant are the Rhipiphoridae and Stylopidae that are wasp parasites.

The book is well illustrated with line drawings and numerous photographs. This is another of the fine books from the pen of Howard Evans, an excellent entomologist as well as a prolific writer. I am sure that Fabre would be astounded with the amount of behavior studies now being conducted on the Hymenoptera. Surely beetles are equally interesting subjects and offer a nearly wide open field for investigation. It is lamentable that a good general biology, such as *The Wasps*, is not available for more orders of insects--especially the Coleoptera. (R. E. Woodruff)



Woodruff, Review By: R E. 1971. "The Wasps by Howard E. Evans, Mary Jane West Eberhard." *The Coleopterists' Bulletin* 25(1), 8-8.

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