

## BOOK REVIEW

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TURILAZZI S. & WEST-EBERHARD M.J. (eds): *NATURAL HISTORY AND EVOLUTION OF PAPER-WASPS*. Oxford University Press, Oxford, New York, Tokyo, 1996, 400 pp. ISBN 0-19-854947-4. Price GBP 65.00 (hardback).

The volume is based on lectures presented at the international workshop "Natural History and Evolution of an Animal Society: The Paper-Wasp Case", held in Castiglione, Italy, 4-7 October 1993. The title of the workshop indicates better than the title of the volume that most of the emphasis is on the social aspects of the *Polistes*. The conference marked the 50th anniversary of Leo Pardi's discovery of dominance/subordination relationships in *Polistes* wasps. Studies in this group occupy an important position in the field of evolution of social behaviour. Most contributors come from USA (8), Italy (7) and France (5), three from other countries (India, Japan, UK).

A translation of the unpublished lecture of the late Leo Pardi (delivered at the 10th Congress of the Italian Ethological Society in Trieste in 1984) opens the book with a brief analysis on *Polistes* as a key group for modern sociobiology. The first section of the volume addresses biology of paper-wasps: nest architecture, social parasitism, mating

and regulation of behaviour outside the colony. The next group of contributions deal with the physiological mechanisms regulating kin selection and other social functions. An important chapter by R.L. Jeanne overviews the anatomy and function of exocrine glands, which play an essential role in social activities of the wasps. Testing the ideas about the genetic assimilation of learned traits is particularly interesting, although it might be considered controversial. This view was proposed by Rau in 1933 ("Mind as a forerunner of evolution") and, after its discussion by Evans in his 1966 book, the idea reappears here. The Jeanne's scenario for the role of learning in the evolution of chemical signals appears rather plausible (p. 158). The last five theoretical chapters explore the origin and evolution of sociality in *Polistes* wasps and their importance for the history of science. The editors have used the specific conditions of Proceedings to great advantage: they retained the interesting speculations that might not be accepted in a journal. The wealth of stimulating hypotheses will certainly provoke new directions of research not only in the study of polistine wasps, but social insects in general.

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