LITERATURE REVIEWS

CATALOGUE OF THE SPIDERS OF THE TERRITORIES OF THE FORMER SOVIET UNION (ARACHNIDA, ARANEI)

by Kirill G. Mikhailov

Editor-in-chief: O. L. Rossolimo

416 pages. 14.5×21.5 cm. Hardback. Zoological Museum of the Moscow State University. 1997. US $45. ISBN 5-211-03784-7.

This is the first complete catalogue of the spiders of the former USSR, compiled from 1,921 sources from the eighteenth century up to August 1996. It is written in English and consists of Preface, Methodology, and three Chapters.

In my view, the most important information in the Preface is about the six main Russian arachnological depositories, of which the Zoological Museum of the Moscow State University appears to be the most important.

Methodology includes instructions for users and a delimitation of the 25 physiographical areas to which each species listed is assigned.

Chapter 1 provides some estimates of the number of species, and data on generic/species composition, in different physiographical areas and in the post-Soviet republics. Contribution to species diversity by the main spider families in each physiographical area is given; Linyphiidae, Gnaphosidae and Salticidae are shown to constitute 50 per cent or more of every local spider fauna. The expected richness of the total FSU spider fauna is estimated at 3,400–3,500 species.

Chapter 2 is an up-to-date checklist of spiders reported from FSU territories, including synonyms, valid subspecies, *nomina dubia* and *nomina nuda*. The checklist comprises 2,694 species, belonging to 473 genera and 49 families. The arrangement of the families follows that in Platnick's 1993 'Catalogue'. A few minor errors are worth mentioning here. *Thanatus mediocris* is listed as a valid species, but is actually a *nomen dubium* as it was described from juveniles. *Sitticus rupicola* is recorded as occurring in FSU territories, but is in fact absent. It is unclear why some definitely erroneous names, e.g. *Zelotes bonneti*, are included amongst the valid species. The author's reasons for using *Tarentula* instead of *Alopecosa* and for ignoring the genus *Piratula* are also obscure. There are a few minor misprints, e.g. *Tmarus oblecator* (instead of *oblectator*).

However, the most notable omission from this catalogue is of an index to genera and families. This prevents fast searching for taxa and the reader has to keep remembering the family arrangement given in Platnick's 'Catalogue'. Fortunately, an Index to Genera has recently been produced as a separate brochure to be distributed free-of-charge to purchasers of the catalogue.

A bibliographical index of 1,921 sources (Chapter 3) is presented in the original language of the referenced authors (mostly Russian), but all Russian, Ukrainian or Georgian paper and book titles are translated into English, making for easier use by the majority of readers.

Overall, this is a comprehensive and generally reliable source of information about the spiders from areas until recently hidden behind the 'Iron Curtain'. It is very good value for money and I strongly recommend this catalogue to both amateur and professional arachnologists.

Dmitri V. Logunov

THE EVOLUTION OF MATING SYSTEMS IN INSECTS AND ARACHNIDS

Edited by Jae C. Choe & Bernard J. Crespi

387 pages. 18.8×24.6 cm. Cambridge University Press, Cambridge. 1997. £29.95 paper covers, £80.00 hardback. ISBN 0-521-58976-2 and 0-521-58029-3, respectively.

This volume is broad in scope, covering almost all aspects of sexual selection through groups with which the various authors are familiar. Predictably, insects get the lion's share of the coverage, despite the depiction of a jumping spider engaged in sexual cannibalism on the cover. Only three chapters are directly relevant to arachnologists and I will limit my review to these. Two are on spiders (by Eberhard and Jackson & Pollard) and one on pseudoscorpions (by Zeh & Zeh). Two general chapters by the editors, introducing theoretical issues of sexual selection in arthropods, may also be of interest.

Bill Eberhard's chapter contains a useful summary of a thesis that he has developed through two books and numerous research articles (see Eberhard, 1996). The thesis is that copulation has a function above and beyond gamete transfer. This function, according to Eberhard, is to 'impress' the female through copulatory courtship and genitalic stimulation to secure paternity. Through various mechanisms, the female can exercise cryptic female choice, in response to the male's performance, over the fate of his ejaculate. This is cryptic in the sense that the choice is internal; this has hitherto been ignored by students of reproduction. The theory creates a backdrop against which physiological research can be integrated with behavioural studies in an evolutionary setting. It also explains many adaptations which make little sense when viewed from traditional standpoints. For example: (1) Females making it difficult for their eggs to be fertilised. Eberhard claims that natural selection operates when sperm is filtered from a single ejaculate, sexual selection when screening of sperm takes place between two ejaculates. This may have important repercussions for infertility in humans and other animals. (2) Baroque intromissive organs. Eberhard explains these as devices to encourage the female to allocate paternity to the bearer of the most stimulating organ she encounters. In this way, the penis, pedipalp, aedeagus, etc. are likened to the peacock's tail. The list of examples goes on, but what is even more valuable is the account of the possible mechanisms employed to bring about cryptic female choice between males. Choice can be exercised at various stages of copulation: from allowing or not allowing ejaculation, to modulation of repeat matings dependent on male performance. This is a two-way street, however, and male retaliations do take place, over evolutionary time. Examples of these include seminal products which induce ovulation, to secure paternity before the female can mate with another male. Nevertheless, Eberhard's conclusion is that the female's body is the site of the battlefield and that she is the better equipped to determine the sire of her brood. This contrasts with more traditional viewpoints regarding sperm competition and who controls its outcome (Parker, 1984). Maybe these viewpoints were influenced by the model organisms chosen: by Eberhard mostly spiders, dungflies by Parker. These groups are very different in terms of female emancipation.

In my view, the accounts of the numerous mechanisms whereby cryptic female choice can be achieved, when conflict with males over paternity occurs, support the position adopted by Eberhard. If there is a mechanism