

Book review: Ichneumonid wasps (Hymenoptera, Ichneumonidae): their classification and biology

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Many of us have encountered the difficulty of identifying a specimen due to the paucity and scattered availability of specialized papers and books. This shortage of information applies to all hierarchical levels. However, things are changing for good that allied to a rather fluid taxonomy as our knowledge has evolved. The handbook entitled *Ichneumonid Wasps (Hymenoptera: Ichneumonidae): their Classification and Biology* (Broad et al. 2018; Fig. 1) made its debut four years ago. This comprehensive and highly detailed manual is part of the Royal Entomological Society (RES) handbooks series. It encompasses roughly 418 pages making it a treasure trove of information about Darwin wasps. It constitutes an up-to-date and thoughtful review of ichneumonid. The handbook is divided into four main sections. Firstly, it includes aspects of classification, biology, conservation, collecting, rearing, and preservation; secondly, functional morphology; thirdly, identification key. The largest part is the last section, which consists of individual treatment for each subfamily.

This manual offers a massive amount of information for the identification of ichneumonid wasps circumscribed to the United Kingdom of Great Britain and Ireland. Nevertheless, the identification keys and the detailed account for each of the 35 subfamilies are useful to identify ichneumonids from surrounding areas as well as world-



Figure 1. Front/back covers and authors of the present book. Left to right: Mark. R. Shaw, Michael G. Fitton and Gavin R. Broad (Photo credit: Lucy Broad).

wide, data that are seldom brought together in one place. Despite the rapidly changing concepts of higher classification of this family, the authors, Dr. Broad, Dr. Shaw, and Dr. Fitton (Fig. 1), made a substantial effort for providing a comprehensive review of current knowledge on systematic, biology, host relations, and most relevant species-level identification. They also present this complex information in a straightforward language appropriate for academics and non-specialists to unlock a huge treasure chest of species that were reputation for being 'difficult' to identify. The manual incorporates a large number of high-resolution colored images and black/white line drawings that allow an easy understanding of the morphological characteristics presented both in keys and in each subfamily taxonomic treatment. Another aspect that embraces the handbook is host associations. This kind of information is extremely convenient for field entomologists that try to emulate the rigorous techniques for rearing Hymenoptera parasitoids. Each chapter is complemented with relevant references making it an excellent source for finding specialized literature and subsequently will give readers an opportunity for exploring this economically important group.

In summary, *Ichneumonid Wasps (Hymenoptera: Ichneumonidae): their Classification and Biology* is a valuable acquisition especially if you are an amateur hymenopterologist. The handbook can be purchased through online bookstores and although the high price (£70, including shipping cost) might be a deterrent for many students, the investment pays off in the long run. It is already a benchmark publication, for that reason its addition to a personal library from any broad-minded entomologist or naturalist is more than welcome. It should also be part of the libraries of universities and museums.

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Reference

- Broad GR, Shaw MR, Fitton MG (2018) *Ichneumonid Wasps (Hymenoptera: Ichneumonidae): their Classification and Biology*. *Handbooks for the Identification of British Insects* 7(12): 1–418.