

Book review

J.C. MORSE, L. YANG & L. TIAN (eds) (1994): Aquatic insects of China useful for monitoring water quality. Nanjing: Hohai University Press, 570 pp., ISBN 7-5630-0240-5

The present-day knowledge of the aquatic insects of China is very scarce and scattered throughout the world literature. Thus a summarization of the present knowledge is generally needed. The book reviewed here is intended to be a derivative work of the famous volume entitled "An Introduction to the Aquatic Insects of North America", 2nd edition (1984) edited by R.W. Merritt and K.W. Cummins and "adapted" for the Chinese fauna. Much of its text and many of the illustrations and tables are taken directly (often with very little modification) from that volume.

The book is divided into 22 chapters, compiled by 33 authors of which 16 are from North America, 15 from the People's Republic of China and 2 from Europe. The chapters contain general information on the morphology, collecting and rearing methods, respiration, habitat, life history and behavioral adaptations, ecology and distribution, and phylogenetic relationships of aquatic insects, and specific information on the aquatic, semiaquatic and riparian members of the following Chinese insect orders: Collembola, Ephemeroptera, Odonata, Orthoptera, Plecoptera, Hemiptera, Megaloptera, Neuroptera, Trichoptera, Lepidoptera, Coleoptera, Hymenoptera and Diptera. One might argue that the title of the book ("Aquatic insects of China useful for monitoring water quality") is somewhat redundant because all aquatic insects are somehow useful for monitoring water quality and there are no groups or species explicitly left out. A title such as "An Introduction to the Aquatic and Riparian Insects of China" would have been more appropriate and it would have more clearly expressed the overall similarity between the two volumes.

I am not able to expertly comment on all chapters of the book, but, as a result of a personal interest I carefully studied chapter # 17 on the Coleoptera (p. 330 - 399), a chapter which unfortunately leaves much to be desired, a fact for which certainly not only the author (C. Yang) but also the editors are responsible.

Altogether 38 families of aquatic and ripicolous Coleoptera are discussed in chapter # 17. Some of these families (Ptiliidae, Salpingidae), however, have but very little or no association with aquatic environments while others with clearly aquatic affinities (e.g. Scarabaeidae) are missing. A short synopsis of the most important papers and remarks on Chinese species are provided, but these are in fact rather incomplete and often erroneous.

The fact that generally no scales are given in the Figures is irritating; this is especially obvious in the habitus illustrations of the genera of Dytiscidae (pp. 346, 347): one of the smallest genera of Dytiscidae (*Bidessus*, Fig. 17.43) appears larger than even the largest genera of the family (*Dytiscus*, Fig. 17.56 and *Cybister*, Fig. 17.57). More examples could be named for other families.

The introduction to chapter # 17 shocks the reader with 3 unacceptable postulations:

- 1) "Georissidae are almost entirely aquatic". To my knowledge, Georissidae are strictly terrestrial.
- 2) "The dryopoid *Helichus* is one of the few insects in which the adult is aquatic and the larva terrestrial" is another incorrect postulation as probably all larvae of Dryopidae and all larvae of Hydraenidae (one of the largest families of water beetles) are terrestrial.
- 3) Fig. 17.2 shows the ventral aspect of a hydrophilid (*Hydrochara* sp.) in which the so-called hypomeron is incorrectly termed as "propisternum", a structure which is strictly absent in Polyphagous Coleoptera and which is one of the most important features to distinguish Polyphaga from Adephaga.

Hydroscaphidae: An (unnamed) species of Hydroscaphidae is reported as having been described from "Guangdong by Pu (1940)" (p. 339); in fact, Pu described one species (*H. humanensis*) from China, but its provenance is Hunan and the date of its description was 1948.

Staphylinidae: 24 "aquatic" genera are listed of which at least 2 (*Drusilla*, *Staphylinus*) can hardly be called aquatic or even riparian, while several genera which are represented in China by dozens of species and which are strictly riparian and often found very close to the water edge are missing (*Dianous*, *Lesteva*, *Geodromicus*, *Acylophorus*).

Hydraenidae: The first couplet in the key to the families of Polyphaga on p. 357 singles out a group of families containing also Hydraenidae: "Maxillary palpi prominent, as long as, or longer than antennae"; however, on p. 365 the family Hydraenidae is characterized as follows: "The maxillary palpi may be either longer or shorter than the antennae." (!); and in the key to the genera of Hydraenidae (p. 365) the genus *Ochthebius* is characterized by its "maxillary palpi shorter or as long as antennae". Some of the subgenera of *Ochthebius* used in the key (p.366, *Homalochthebius*, *Bothochius*, *Hymenodes*) have been synonymized with *Asiobates* resp. *Ochthebius* s.str. several years ago; these synonymies have been confirmed since then in various publications.

Scirtidae: The first couplet in the key to the larvae of Scirtidae on p. 376 separates genera on the number of ocelli (3, resp. 1-2) present on the head. In fact, all larvae of Scirtidae have the same number of ocelli.

Ptilodactylidae (Eulichadidae): The genus *Stenocolus* is here reported for the first time from the Old World. Obviously, the author confused it with the genus *Eulichas* which is wide-spread in China and the Oriental Region. Three species of *Eulichas* were described from China so far (the type species of the genus was described from Hong Kong in 1853 !, the other species were described in 1878 and 1939), none of these species is mentioned in this book. However, the genus *Stenocolus* is here treated as a member of the family Ptilodactylidae, although Eulichadidae are recognized as a distinct family at least since 1978.

Dryopidae: On page 378 the author postulates again that the terrestrial larvae and aquatic adults are "unique among the aquatic insects". The genus *Elmoparnus* is here reported for the first time from the Old World. Obviously, the author confused *Elmoparnus* with *Elmomorphus* which is widely distributed in the Oriental region, in China and in Japan.

Elmidae: The statement that "Steyskal (1975) clarified the proper derivation [of the name Elmidae] as Elmididae" is incorrect. In fact, Steyskal (1975) postulated that the correct family name should be "Elmidae". The statement that "... all stages [of Elmidae] may be found together in the weeds (!) in running water" is also incorrect. In fact, most larvae and adults of Elmidae are found on rocks, a number of species occur on submerged wood and very few are found "in the weeds"; pupae are generally terrestrial.

References: The literature compiled for each family is very incomplete. And, in addition, many of the references mentioned in the text are not included in the "references" section at the end of the chapter. Bertrand 1939, Britton 1973, Chao 1963, van Emden 1956, Howard 1896, Kissinger 1968, Ochs 1929, 1936, Peng 1965, Peyerimhoff 1913, Pope 1975, Ren Guodong 1991, Sato 1972, Steyskal 1975, 1988, Zeng 1989 are just some examples. Several authors and important revisions with close affinities to the Chinese water beetle fauna (e.g. Biström, Brancucci, Dudgeon, Gentili, Jäch, Klausnitzer, Lafer, Nilsson, Shatrovskiy, Smetana, Wewalka, to name only some of the authors) are not mentioned at all. Even the *Coleopterorum Catalogus* (Junk, ed.) has been ignored. And, the references are not only incomplete, many of them are incorrectly cited with wrong years and pages, with lacking junior author (e.g. Madge 1980, instead Madge & Pope 1980). Generally, no letters are appended after the year for multiple references which have the same author and the same year of publication, e.g. Brown 1981 (2x), d'Orchymont 1935 (2x), Pic 1954 (2x), Pu 1951 (2x), Satô 1976 (2x), Wu 1933 (3x) and 1934 (3x). The alphabetical order is not always correct. And even the paper of which the chapter # 17 is a derivate (White et al. 1984) is incorrectly cited as neither the editors (Merritt & Cummins) nor the publisher (Kendall/Hunt Publishing Company) nor the city (Dubuque) are mentioned.

Table 17A: This table provides some ecological data and is virtually a copy of the table published by White et al. (1984). Information on those non-American genera which do occur in China but not in North America would be especially useful and very much appreciated by the reader and one would expect a special focus on these. But, to the readers disappointment, this kind of information is wanting.

As I have mentioned above, the idea of compiling a book on the aquatic insects of China is a very good one, especially if one regards the fact that China is now facing enormous environmental problems and the present knowledge of the aquatic insects of China is still rather scanty. But, if we consider the lapses and insufficiencies discussed above it is doubtful whether this book is a valid tool to improve the general knowledge of the aquatic insects of China.

As I said in the beginning, the author of the chapter # 17 is certainly not the only one to take the entire responsibility. Certainly the editors are accountable as well for the unusually high number of typographical errors, for inconsistencies in citing references in the text (inconsistent usage of commas, lack of year, ...), for the usage of both valid and invalid names (Georissidae - Georyssidae), for the fact that many (!) text references are not included in the "references" section at the end of the chapter and, last but not least, for the obvious omission of an international scientific reviewing process.

M.A. Jäch

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Digitale Literatur/Digital Literature

Zeitschrift/Journal: [Water Beetles of China](#)

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