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Homalopsid Snakes. Evolution in the Mud, by John C. Murphy. 2007. Krieger Publishing Company, Malabar, Florida (www.krieger-publishing.com). viii + 249 pp. Hardcover. US $68.50. ISBN 1-57524-259-1.

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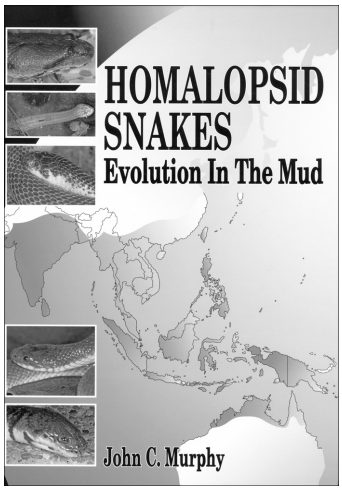

No synthetic work on Homalopsidae has been published since the group's revision by the late Myanmar herpetologist Ko Ko Gyi, which dates back to 1970. Much research has been done since then, including many ecological and taxonomic studies by Daryl Karns, John C. Murphy, Harold K. Voris and their collaborators. Several species have been described or revalidated, others synonymized, and after nearly four decades the time is right for a new major work on these snakes. Taxonomically, the main recent contributor to the knowledge of this group is John C. Murphy, who (co-)described *Enhydris chanardi*, *E. gyii*, and *E. vorisi*. He is, thus, the best placed herpetologist to provide us with an overview of the group, and his new opus is a very welcome contribution.

The book includes two main parts, i.e., the introduction and keys (pp. 1–48) preceded by the preface and acknowledgments, and the generic and specific accounts (pp. 49–212) followed by the literature cited, appendices and the index to scientific names. The author recognizes 10 genera and 37 species in the Homalopsidae, and adds a section on three homalopsid-like *incertae sedis* snakes (*Anoplohydrus aemulans*, *Brachyorrhos albus,* and *B. jobiensis*), which might eventually turn out to be homalopsids once detailed taxonomic studies have been conducted.

The introduction provides a well-written presentation of the group, its general ecology and classification. Figure 1 shows a snake phylogeny to help understand the homalopsids' position among other snakes; its caption mentions that groups containing at least one aquatic representative are marked with an "A." However, no A was associated to *Grayia ornata*, a strictly aquatic snake, nor to the Boidae, which however contain freshwater snakes such as *Eunectes murinus* (see Pauwels et al., 2008 for a review of freshwater snake diversity). The introduction also includes a chapter co-authored by Brooks et al. on the water snake harvest at Tonlé Sap Lake, giving really impressive figures on the homalopsid meat and skin business in Cambodia.

The identification keys include all homalopsid snakes, but unfortunately not the three *incertae sedis* ones. These keys are not fully reliable, since many ranges of characters provided are in contradiction with those given in the species accounts. As an example, couplet 9a mentions that female *Enhydris jagorii* have more than 50 subcaudals, while the species account (p. 134) says they have 48–54 subcaudals, and that males have about 68, while the species account gives a variation of 53–68. Another example is that couplet 2a, "Nasal scales in contact" leads a.o. to *Myron richardsonii* (couplet 4c), which actually has separated nasal scales, as rightly mentioned in its species account. I noted in total 34 such discrepancies between the keys and the main text, with more-or-less significant consequences on species identification. It is also to be noted that there is no entry to couplet 9 of the key, excluding identification of snake specimens identifiable as *Enhydris jagorii* and *E. longicauda*. Consequently, an identification using these keys must be carefully double-checked with a comparison of the specimen to the presumably associated species account.

The generic and species accounts are well constructed, with clear sections on etymology, species content, distribution, and diagnosis, and a partial chreso-synonymy. Each species account includes a partial chreso-synonymy and sections on etymology, common names, distribution, diagnosis (except *Enhydris punctata*), size, external morphology, habitat, diet and feeding behavior, reproduction, relationships, and on the museum material examined by the author. In cases in which certain aspects of natural history are particularly well known, additonal sections have been added (predators, etc.). The chreso-synonymies are most often incomplete; their literature references are mentioned using the authors, dates, and abbreviated titles. Since there is a literature section at the end of the book, citing the authors and dates only in the chreso-synonymy would have been sufficient and would have saved a lot of space. The external morphology section follows the same organization for all species and this is helpful for interspecific comparisons. A point locality map is provided for each species. Unfortunately, although there was an effort to track literature references even in local journals, as stressed by Luiselli (2008) in his review of this book, many such references were not listed by the author and numerous localities are thus missing from the maps of many species, sometimes giving a misleading impression of rarity or disparate populations.

Most species are illustrated in life and in color—the book includes 76 color photos. One species only, *Brachyorrhos jobiensis*, is not illustrated at all. There are also 38 black-and-white plates, each composed of six pictures, showing details of head or body. Additional illustrations, mainly drawings, are provided in 47 figures throughout the book, and there are often several drawings per figure. The book is thus lavishly illustrated, most illustrations being of very good quality. A number of specimen photographs present important information, such as the only known picture of a live *Enhydris dussumieri*, or a very unusually patterned *Homalopsis buccata* from Songkhla Lake, southern Thailand. Many photographs are accompanied by precise locality data, which increases their informational value. The natural history of Homalopsidae is extremely interesting, and is well detailed for each species: specialized diets and habitats, hunting strategies, etc. Typical biotope photographs are provided for a number of species.

The main text often refers to the work of Gyi (1970), re-evaluating the accuracy of his observations and updating the data and diagnostic characters for each species, indicating real progress in

the knowledge of the group. The author moreover stresses a number of gaps in the current knowledge of homalopsids and highlights interesting variation among populations (see for example p. 75 for *Cerberus rynchops*), and thus provides useful directions for future research. The inclusion of species accounts for the *incertae sedis* species is also an excellent feature and underscores the need of additional taxonomic studies on these taxa.

The literature cited section (pp. 213–229) is not exhaustive, but provides all of the most important references. The most recent reference dates from 2007 (only one for that year). A number of references cited in the main text are not in the literature section, some perhaps due to a *lapsus calami* with respect to publication date. Among those referred to in the text and which were certainly omitted from the literature section (since the authors do not even appear in the literature section) are the following: Biswas and Acharyo (1977) (p. 121), Duvernoy (1832) (p. 24), Frith and Boswell (1978) (p. 63), Hundley (1964) (p. 95), Iskandar and Nio (1996) (p. 116, etc.), Kaup (1858) (p. 56), Mattison (1995) (p. 63), Mocquard (1907) (p. 139, 166, etc.), Obst (1977) (p. 155), Phisalix (1922) (p. 139), Reitinger (1978) (p. 148, etc.), Seba (1735, etc.) (p. 233), Shaw (1802) (p. 72, etc.), Sing et al. (1970) (p. 76, etc.) and Thu (2001) (p. 94, etc.). I will not list here the presumed associated references, since this would be too speculative given the possibility of erroneous dates.

Appendix 1 gives a list of species names and their current status, information on the type material and type locality. Appendix 2 is a summary of species distribution by country. This latter information must be used with caution, since I detected not less than 19 discrepancies between this table and the maps and/or text provided in the species accounts. Appendix 3 gives the maximal known sizes for each species. One regrets that the errata on p. 244 could not have been included within the main text.

The most disturbing weakness of the book is the huge number of misspellings. Indeed, I counted more than 450 misspelled words, and this figure is certainly not exhaustive. Most such mistakes are found in the scientific names, authors' names, and in the French and English citations (chreso-synonymy and literature cited). As an example, the binomen *Homalopsis buccata* was spelled five different ways. So many easy-to-detect mistakes and the existence of an errata section seems to indicate that the book was published in a hurry. It would have greatly benefitted from a careful reading, particularly by French- and German-speaking herpetologists, since so many important literature references were written in these languages.

Discrepancies between character variations are not limited to the above mentioned contradictions between the keys and the species accounts. These discrepancies are also found within the text and between the text and tables. A striking example is found in the *Enhydris jagorii* species account (p. 133), where the type specimen is described twice, once in the left column, once in the right one. For the same specimen and on the same page, two different total lengths are given (463 vs. 471 mm), as well as two dorsal scale row numbers before vent (21 vs. 20) and two numbers of subcaudal scales (86 vs. 68). Another example is found in the *Enhydris punctata* species account, where one reads "The subcaudal scales are divided and number 27–46 (32–44 in females, 46–48 in males)." The diagnosis for *Myron richardsonii* (p. 205) mentions that the species has a white belly, while a picture on the same page shows a yellowish-pinkish belly with transverse lines on each ventral and a black mid-line; and so on. Often these discrepancies have an influence on the diagnosis and species identification. For instance, on p. 168 *Enhydris subtaeniata* is compared with *E. enhydris*. Their respective ventral scale numbers are given as 136–153 vs. 153–174, thus with nearly no overlap. However, on p. 170, the minimum ventral scale number for *E. subtaeniata* is given as 134, and on p. 118 (Table 9) the minimum number for *E. enhydris* is given as 148; their ventral numbers are thus to be corrected to 134–153 and 148–174, respectively, this time with a wide overlap. In addition to the discrepancies in morphological variation between the keys and the main text, I noted 106 problems within and between the main text and the tables, or sometimes between the text and the figures; this number does not include the discrepancies between the main text and Appendix 2. Tables 5, 6, and 11 exhibit an especially large number of discrepancies with the associated species accounts and information available on figures.

The preface explains that the main goal of the book is threefold: to "provide a means of identification for the species of homalopsid snakes, clear up some taxonomic confusion, and provide the reader with a summary of what is known about their natural history." With the caveat indicated above, i.e., always carefully compare a key-based identification with the associated species account, the book indeed does provide a means for identification. The second and third goals are achieved more successfully, and this makes of the present book an important reference to have not only for all herpetologists, but also for readers interested in general natural history and Southeast Asia. The price indicated on Krieger Publishing's website for the book is US $68.50. Given the very good binding and glossy paper quality, the well-illustrated hard cover, the high number of color pictures and the important content of the book, this is a very reasonable price. I thank Patrick David (Muséum National d'Histoire Naturelle, Paris) for useful comments on this review.

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