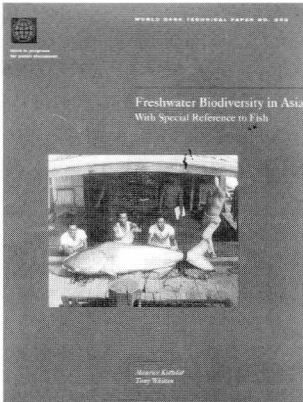


## BOOK REVIEWS



**Freshwater Biodiversity in Asia with special reference to fish.** World Bank Technical Paper No. 343. M. Kottelat and T. Whitten. 1996. World Bank, Washington D.C., 59 pp.

This document is a very timely synopsis of the very diverse freshwater fauna of Asia (some 3500 species of fish alone), and will definitely go a long way in helping conserve this relatively poorly appreciated resource. After reading countless documents which keep harping on how diverse the fishes and invertebrates are in the Americas, Europe and Australia, and the large number of endangered ones present, I am delighted to see a document which recommends

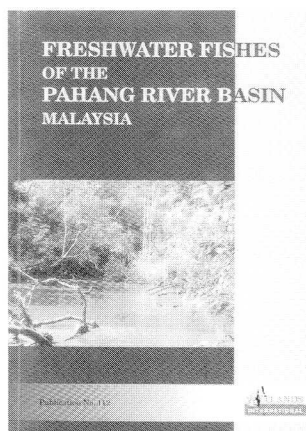
concrete steps to deal with those from Asia, especially tropical Southeast Asia! The same goes for wetlands in Asia - the Amazon might be big - but it is not everything!

The authors have done an admirable job I think in reviewing the state of knowledge, problems and challenges posed in trying to conserve the freshwater resources of selected freshwater animals (especially fish) in Asia. With the economy of many of its member countries growing at phenomenal rates, such a synopsis is timely indeed. And with the large number of dams and riverine developments planned in many species-diverse countries like China, Indonesia and Malaysia, the concerns are very real indeed.

The layout (typical of most World Bank documents) is clinical. A good part of it intends to take off from the declarations of the Declarations of the Biodiversity Convention of 1995. The "meat" of this document, however, is surely the synthesis of the available data for several key groups of aquatic organisms, particularly fish. Looking at the tables and maps, one gets a very good broad perspective as well as an excellent appreciation of the diversity and problems involved. The table documenting the deleterious effects of introduced organisms on native fauna (p. 25) makes particularly sombre reading! The country reviews are very useful, and should provide national institutions involved in conservation with an idea of what else needs to be done. In most cases, however, it makes for depressing reading.

The present document was designed as a "discussion paper" and considered as "work in progress". For all practical purposes, however, it will be a key reference on the conservation of Asian freshwater animals for years to come!

**Peter K. L. Ng**  
School of Biological Sciences



**Freshwater Fishes of the Pahang River Basin, Malaysia.**

M. S. Khan, P. K. Y. Lee, J. Cramphorn & M. Zakaria-Ismail, 1996. 82 pp. ISBN 983-9663-19-4. Wetlands International-Asia Pacific.

The freshwater ichthyofauna of Peninsular Malaysia has been relatively well-studied. However, little has been published on the freshwater fishes of any one particular drainage within Peninsular Malaysia. This book seeks to fill this gap by reporting the freshwater fish fauna of the largest drainage in Peninsular Malaysia. The research similar to this book include studies of the Gombak River by Bishop (1973), the North Selangor peat swamp forest and part of the Bernam River drainage by Ng et al. (1992), and a series

of papers on the Endau River drainage (see Zakaria-Ismail, 1986; Zakaria-Ismail, 1987; Lim et al., 1989, 1990). The book thus fills an important gap in our knowledge of the freshwater ichthyofauna of Peninsular Malaysia.

The layout of the book is good, being divided into readable chapters. A total of 167 species belonging to 38 families are reported, this represents about 80% of the 200 or so species of freshwater fish reported to be found in Peninsular Malaysia (). Besides a record of the fishes found in the Pahang River basin, other relevant information such as the fisheries and problems faced in conservation of habitats is presented to the reader. Most notable is the new record for Peninsular Malaysia of *Ompok eugeneiatus*. It would have been better, however, if the upper reaches of the Pahang River, especially in the Taman Negara area, had been sampled instead of relying on old published records.

The book suffers from a number of drawbacks, the most noticeable being the fact that some of the information within has not been updated and a thorough examination of previous records has not been made. This has resulted in the following notable omissions:

1. The cyprinids *Balantiocheilos melanopterus* reported by Tweedie (1936), *Puntius halei* described from the Pahang drainage by Duncker (1904), *Rasbora sumatrana* reported by Mizuno & Furtado (1982), and *Neobarynotus microlepis* reported by Tweedie (1952).
2. The cobitid *Botia morleti* reported by Hora (1941)[as *B. horae*].
3. The silurid catfish *Ceratoglanis scleronema* reported by Tweedie (1952).
4. The akysid catfishes *Acrochordonichthys ichnosoma* and *A. rugosus*, reported by Hora & Gupta (1941).
5. The clariid catfishes *Clarias meladerma* reported by Hora & Gupta (1941) and *C. neuhofii* reported by Mizuno & Furtado (1982).
6. The belontiids *Betta bellica* and *B. tussyae* (see Ng & Kottelat, 1994).
7. The family Chaudhuriidae and the two species found in the Pahang drainage (*Chendol keelini* and *Bihunichthys monopteroides*; see Kottelat & Lim, 1994).
8. The flatfish *Synaptura panoides* reported by Tweedie (1952).
9. The pufferfish *Chonerhinos modestus* reported by Tweedie (1952).

Although *Himantura signifer*, *Acanthopsoides molobrion*, *Pangio cuneovirgata*, *Vaillantella euepiptera*, and *Helicophagus waandersii* are stated as being new records for Peninsular Malaysia, the five species had in fact been reported from Peninsular Malaysia in earlier publications: Compagno & Roberts (1982) for *Himantura*, Siebert (1991) for

*Acanthopsoides*, Kottelat & Lim (1993) for *Pangio*, Lim (1993) for *Vaillantella*, and Lim & Zakaria-Ismail (1995) for *Helicophagus*.

The names of several species have also not been updated to reflect the recent changes in taxonomy. *Pangio* cf. *muraeniformis* and *P. cf. oblonga* have since been described by Kottelat & Lim (1993) as *P. piperata* and *P. filinaris*, respectively. The name *P. muraeniformis* used in the book is also no longer valid, being considered a junior synonym of *P. shelfordii* by Kottelat & Lim (1993). *Mystus nigriceps* was described from material usually identified as *M. micracanthus* and what used to be known as *M. nigriceps* is now in fact *M. singaringan* (see Roberts, 1994). *Mystus* aff. *planiceps* as used in the book has since been described as *Hemibagrus gracilis* by Ng & Ng (1994), using the generic classification of Mo (1991) in which the following species were assigned to *Hemibagrus*: *H. baramensis*, *H. elongatus*, *H. guttatus*, *H. johorensis*, *H. macropterus*, *H. menoda*, *H. nemurus*, *H. olyroides*, *H. pahangensis*, *H. peguensis*, *H. planiceps*, *H. pluriradiatus*, *H. sabanus*, *H. wyckii*, *H. wyckoides*. According to Roberts (1993), *Labiobarbus lineatus* (as used in this book) is a junior synonym of *L. leptocheilos*, and what was identified as *L. cf. lineatus* in the book is probably *L. fasciatus*. The *Betta* cf. *pugnax* used in the book has been re-identified as *B. waseri* by Ng & Kottelat (1994).

Minor problems aside, this is still an important work for the ichthyologist working on freshwater fishes of Southeast Asia or for the layman interested in freshwater fishes.

## LITERATURE CITED

- Bishop, J. E., 1973. *Limnology of a Small Malayan River, Sungai Gombak*. Dr. W. Junk Publishers, The Hague. 485 pp.
- Compagno, L. J. V. & T. R. Roberts, 1982. Freshwater dasyatid stingrays of Southeast Asia and New Guinea, with description of a new species. *Env. Biol. Fishes*, **7**: 312-339.
- Duncker, G., 1904. Die fische der Malayischen Halbinsel. *Mitt. Naturh. Mus. Hamburg*, **21**: 133-207.
- Hora, S. L., 1941. Notes on Malayan fishes in the collection of the Raffles Museum, Singapore. Parts 2 and 3. *Bull. Raffles Mus.*, **17**: 44-64.
- Hora, S. L. & J. C. Gupta, 1941. Notes on Malayan fishes in the collection of the Raffles Museum, Singapore. I. Catfishes of the families Siluridae, Bagridae, Amblycepidae, Akysidae, Sisoridae, Chacidae, Schilbeidae and Clariidae. *Bull. Raffles Mus.*, **17**: 12-43.
- Kottelat, M. & K. K. P. Lim, 1993. A review of the eel-loaches of the genus *Pangio* (Teleostei: Cobitidae) from the Malay Peninsula, with descriptions of six new species. *Raffles Bull. Zool.*, **41**: 203-249.
- Kottelat, M. & K. K. P. Lim, 1994. Diagnoses of two new genera and three new species of earthworm eels from the Malay Peninsula and Borneo (Teleostei: Chaudhuriidae). *Ichthyol. Explor. Freshwaters*, **5**: 181-190.
- Lim, K. K. P., 1993. A new record of *Vaillantella euepiptera* (Pisces: Osteichthyes: Balitoridae) from the Malay Peninsula. *Raffles Bull. Zool.*, **41**: 113-118.
- Lim, K. K. P. & M. Zakaria-Ismail, 1995. The occurrence of the catfish *Helicophagus waandersii* (Pisces: Pangasiidae) in Peninsular Malaysia. *Malay. Nat. J.*, **49**: 37-40.
- Lim, K. K. P., M. Kottelat & P. K. L. Ng, 1989. Freshwater fish of Ulu Kinchin, Pahang, Malaysia. *Malay. Nat. J.*, **43**: 314-320.

## Book Reviews

Lim, K. K. P., P. K. L. Ng & M. Kottelat, 1990. On a collection of freshwater fishes from Endau-Rompin, Pahang-Johore, Peninsular Malaysia. *Raffles Bull. Zool.*, **38**: 31-54.

Mizuno, N. & J. I. Furtado, 1982. Ecological notes on fishes. In: J. I. Furtado & S. Mori eds., *Tasek Bera. The Ecology of a Freshwater Swamp*. Dr. W. Junk Publishers, The Hague. 413 pp.

Mo, T., 1991. Anatomy, relationships and systematics of the Bagridae (Teleostei: Siluroidei) with a hypothesis of siluroid phylogeny. *Thesis Zoologicae*, **17**: 1-216.

Ng, P. K. L. & M. Kottelat, 1994. Revision of the *Betta waseri* species group (Teleostei: Belontiidae). *Raffles Bull. Zool.*, **42**: 593-611.

Ng, P. K. L. & H. H. Ng, 1994. *Hemibagrus gracilis*, a new species of large riverine catfish (Teleostei: Bagridae) from Peninsular Malaysia. *Raffles Bull. Zool.*, **43**: 133-142.

Ng, P. K. L., J. B. Tay, K. K. P. Lim & C. M. Yang, 1992. *The Conservation of the Fish and Other Aquatic Fauna of the North Selangor Peat Swamp Forest and Adjacent Areas*. AWB Publication No. 81. Kuala Lumpur. 90 pp.

Roberts, T. R., 1993. Systematic revision of the Southeast Asian cyprinid fish genus *Labiobarbus* (Teleostei: Cyprinidae). *Raffles Bull. Zool.*, **41**: 315-329.

Roberts, T. R., 1994. Systematic revision of the Asian bagrid catfishes of the genus *Mystus* sensu stricto, with a new species from Thailand and Cambodia. *Ichthyol. Explor. Freshwaters*, **5**: 241-256.

Siebert, D. J., 1991. Revision of *Acanthopsoides* Fowler, 1934 (Cypriniformes: Cobitidae), with the description of new species. *Jap. J. Ichthyol.*, **38**: 97-114.

Tweedie, M. W. F., 1936. A list of the fishes in the collection of the Raffles Museum. *Bull. Raffles Mus.*, **12**: 16-28.

Tweedie, M. W. F., 1952. Notes on Malayan freshwater fishes. 3. Anabantid fishes. 4. Some new and interesting records. 5. Malay names. *Bull. Raffles Mus.*, **24**: 63-95.

Zakaria-Ismail, M., 1984. Checklist of fishes of Taman Negara. *Malay. Nat.*, **37**: 21-26.

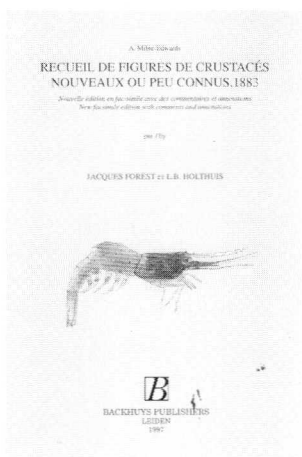
Zakaria-Ismail, M., 1986. A survey of the fish in the Sungei Endau and Sungei Jasin. *Malay. Nat.*, **39**: 25-26.

Zakaria-Ismail, M., 1987. The fish fauna of the Ulu Endau river system, Johore, Malaysia. *Malay. Nat. J.*, **41**: 403-411.

**Ng Heok Hee**

School of Biological Sciences

National University of Singapore



**A. Milne-Edwards: Recueil de Figures de Crustacés nouveaux ou peu connus, 1883: nouvelle édition en fac-similé avec des commentaires et annotations = new facsimile edition with comments and annotations.** Jacques Forest and L. B. Holthuis, 1996. Published by Backhuys Publishers, P.O. Box 321, 2300 AH Leiden, The Netherlands, 128 pp., pls. 44, appendix colour pl. A, appendix pls. B-E. ISBN 90-73348-50-1.

Even today, when studies of the Atlantic and Mediterranean decapod Crustacea are published, the paper by the great French carcinologist Alphonse Milne-Edwards in 1883, is still one of the most often cited. Despite its importance, however, very few original and complete copies of this paper exist. Only 50 copies of the original edition were printed and were distributed personally by A. Milne-Edwards to his colleagues. Of these, only six complete ones are

believed to still exist, and although many zoologists cite it, few have actually consulted an original copy.

The "Recueil" was essentially a report on the deep water specimens obtained by a number of French and American expeditions between 1877 and 1882, and its 44 plates are of particular importance. The French naval dispatch boat "TRAVAILLEUR" made a series of important collections in the Mediterranean, Atlantic side of the Iberian Peninsula, Bay of Biscay, Canary Islands and Madeira; while the American coast survey steamer "BLAKE" dredged off the Straits of Florida, Gulf of Mexico, Caribbean Sea and east coast of North America. A total of 59 species and two subspecies (as varieties) of Decapoda and one species of Mysidacea were treated, of which only four species (all shrimps) were not from the collections of the "TRAVAILLEUR" and "BLAKE". Of these, three species (*Plesionika tenuipes*, *Pandalus propinquus* and *Dischelopandalus leptocerus*) were from Newport in Rhode Island (U.S.A.) whilst *Peripandalus serratus* was from Upolu (Samoa) in the Pacific.

The present facsimile is thus a very welcomed addition to the library of any carcinologist. It is not just a simple facsimile. The authors, both carcinologists of world renown, have not only ensured the original copy of the "Recueil" has been accurately reproduced but have also provided a detailed account of the explorations of the two vessels, added bibliographic and historical details on the "Recueil", and clarified the origins as well as nomenclatural and taxonomic status of the species treated within. In addition, five additional plates (plates A-E) and unpublished information in the Paris Museum pertaining to the "Recueil" have been included in an appendix. Of these, three plates (pls. B, C, D) are original pencil drawings of the eventually engraved plates. One plate (pl. A) is a colour plate of the live colours of four shrimp species (*Systellaspis debilis*, *Acanthephyra purpurea*, *Acanthephyra serratus* and *Plesionika martius*) whilst the fifth depicts a species (the deep water lobster *Polychelus typhlops*) he eventually never included in the "Recueil". A fifth species A. Milne-Edwards had coloured (but not reproduced here) is the galatheid *Galathodes rosaceus* (= *Munidopsis serricornis*)

All in all, the present facsimile and review of A. Milne-Edwards' "Recueil" is certainly an important contribution to Crustacean taxonomy and students of the history of zoology. Certainly, it has a deserved place on the shelf of any self-respecting carcinologist!

**Peter K. L. NG**

School of Biological Sciences,  
National University of Singapore

**The Venomous Sea Snakes: A Comprehensive Bibliography.** Culotta, W. A. & Pickwell, G. V. Krieger Publishing Company, Malabar, Florida, xx + 504 pp. Available from: Krieger Publishing Company, P. O. Box 9542, Melbourne, Florida 32902-9542, U.S.A. Price US\$79.00.

From the time of buccaneers and philosophers, not to mention travellers, natural historians, scientists, and naval personnel, mankind has always been interested in snakes of the family Hydrophiidae. Accounts of these animals by drunk or delirious sailors have been published in the works of Aristotle (ca. 350 B.C.) and Pliny the Elder (ca. 77 B.C.). This exceptionally stout tome under review by Culotta (a member of the library Faculty at the California State University, Long Beach) and Pickwell (Head of the Biotechnology Laboratory, Naval Ocean Systems Center, San Diego) has scoured the world's literature on the subject from Pre-Linlean to modern times, adding significantly to the last bibliography of the group compiled by Vigle and Heatwole (1978).

Printed in hardcover (minus a dust jacket), the front cover shows the global distribution of sea snakes, while the multicoloured endpaper feature various species of living sea snakes. The text (which starts with extracts from Coleridge's 'The rime of the ancient mariner') includes a foreword by Harold Heatwole, a preface by Sherman A. Minton, introductions from both a science librarian's (Culotta) and a marine biologist's perspectives (Pickwell), acknowledgements and a listing of journals cited.

The main body of the volume comprises the bibliography, organised into 245 sections (from 'Pre-Linlean and other Pre-Nineteenth Century References' to 'Additional Bibliographic Sources'), containing about 2,5000 citations, and end with an index to authors. Each citation (which mostly follows the CBE Style Manual, 5th Edition), include a number (by which references can be located by author's name at the back), author name, date, name of paper/book/book chapter, name of journal and further particulars of the fascicle and pagination, in case of a journal article. Unfortunately for a work of this nature is the absence of details of pagination and plates of books for most references. At the end of each chapter is a genus-species index, a useful device for quickly locating necessary reference for individual taxa. Coverage of literature appears comprehensive, including both fossil and recent forms, with references in English, Dutch, German, Russian, Japanese, French, Portuguese and Latin, sometimes from journals and books not likely to be consulted otherwise by natural historians. There is little to crib about a book such as this, although I wish more attention was paid to accents, such as diacritical marks, which are mostly ignored. The format of the text also permits too much wastage of space, with just 7-10 references to a page. A more judicious use of page space would have decreased the size (and certainly the price as well) of this rather squat volume substantially.

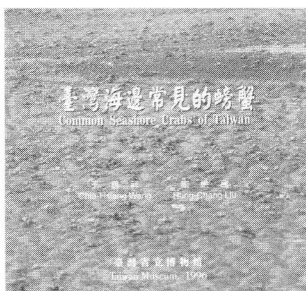
These are, of course, minor criticisms, and workers on sea snakes will doubtless be grateful to have yet another work on herpetology from Krieger, and one hopes to see resurgence of sea snake studies in the near future.

#### LITERATURE CITED

Vigle, G. O. & H. Heatwole. 1978. A bibliography of the Hydrophiidae. *Smithsonian Herpetol. Inserv.* (41): 1-20.

**Indraneil Das**

Centre for Herpetology,  
Madras Crocodile Bank Trust



**Common Seashore Crabs of Taiwan.** Chia-Hsiang Wang & Hung-Chang Liu, 1996. Taiwan Museum, 136 pp. ISBN 957-9497-54-0.

Taiwan, with its extensive coastline, is situated at the belt where the mixing of tropical and neo-tropical seas occurs. Its extensive and luxuriant reef flats is a fertile spawning ground for the proliferation of marine organisms. This is especially true for marine crabs on which a few books have already been published. Visitors to the seashores of Taiwan frequently encounter crabs and the great insatiable appetite of curiosity naturally lead them to ask the question: "What is that crab?"

A previous book was published by the same two authors but it was directed at the estuarine areas of Taiwan (Wang & Liu, 1996). The present book is an expansion of the previous, and addresses 14 families and 76 species in total. The book's layout is clinical and unassuming, even utilitarian. As such, it avoids being labelled up as a coffee table book and being rather portable so as to be able to be used in the field.

The first chapter basically describes the formation of the seashore, geology of the seashore, different habitats of the seashore and a brief description of the Taiwanese shoreline. The second chapter describes the morphology of a generalized crab. I think this chapter would be particularly helpful for non-scientific visitors of the seashore. Some common crabs of the seashore are very similar and often, the characters used to differentiate the species requires some basic knowledge of crab morphology. The third chapter is a pictorial guide to the common seashore crabs of Taiwan. Each species is introduced by its vernacular Taiwanese name followed by the scientific name. A brief diagnosis is offered followed by the preferred habitat of each species and usually by some informative remarks as well. One disparity is with the identity of the common moon crab. *Matuta lunaris* on page 22 should be *Matuta victor* instead, following recent revision by Galil & Clark (1994). The diagnosis of each crab is functional for the book's purpose. Although the authors had tried their best to simplify the diagnoses, the text for certain families, for example the Ocypodidae, gets fairly technical. Remarks are offered for some species which include whether the crab is a food crab or is poisonous. Excellent photographs accompany all the species listed and the wonderful pictures of ocypodids displaying, feeding or just posing for the photographer justifies the purchase of the book.

All-in-all, this is an excellent book that should grace the bookshelves of any carcinologist who can understand Chinese. No doubt, an English version will be greatly anticipated by the general carcinological community.

#### LITERATURE CITED

- Galil, B. S. & P. F. Clark, 1994. A revision of the genus *Matuta* Weber, 1795 (Crustacea: Brachyura: Calappidae). *Zool. Verhan.*, **294**: 1-55.
- Wang, C.-H. & H.-C. Liu, 1996. *Estuarine Crabs of Taiwan*. Kaoshiong Wild Bird Association, 113 pp.

**S. H. Tan**

School of Biological Sciences  
National University of Singapore