

**Tropical Asian Streams: Zoobenthos, Ecology and Conservation**, by David Dudgeon. Hong Kong University Press (1999), 830 pp. US\$36.90.

This is an extremely valuable book. Tropical Asia is a region rich in riverine ecosystems which are under extreme environmental pressure, not least from massive proposed hydroelectric schemes largely originating from engineering corporations in developed countries and funded by agencies from developed countries. Perhaps this is why the photograph on the cover of the book appears to be of a reservoir rather than a river. But knowledge of tropical Asia's lotic ecology is scattered, and much of it resides in the infamous grey literature, unrefereed, unindexed and difficult to access. If it does nothing else this book with almost 160 pages of references, provides a wonderful starting point to access the literature on lotic ecology of the region.

The book can be divided into four main parts. The first section of 78 pages gives an overview of lotic systems in tropical Asia. Geomorphological, hydrological, physicochemical and biological features are reviewed and summarized. The second section, 425 pages in length, consists of a systematic account of the benthic invertebrate fauna of the region prepared much in the style of WILLIAMS' (1980) account of the Australian freshwater fauna, complete with keys usually to generic level. The third section consists of a 56-page review of anthropogenic threats to tropical Asian rivers, while the last section consists of two short chapters (33 pages in total) on experimental design for environmental impact studies in rivers and process oriented studies in ecology. In an age when we are swamped by edited collections of chapters it is refreshing to find single author books with the consistency of viewpoint and the idiosyncrasies that implies. In fact, this could have been produced as three separate books: the systematic account and keys, the ecological account in section one together with the anthropogenic threats from section three on the ecology of tropical Asian streams, and the final two chapters on experimentation which are of interest well beyond Asia.

There would have been advantages and disadvantages to such a split. Having the whole work in one volume is an advantage for those of us working in Asia: all of the work is useful to us and we obtain it undoubtedly more cheaply than if we had to buy three separate books. The disadvantage, mainly for those outside Asia, is that river ecologists elsewhere in the world will have to buy a very large book, even though much of the systematic account is unlikely to be of great interest to many of them. The other disadvantage to the reader is that in order to avoid repetition between the ecological and systematic accounts there are frequent cross references which require flipping back and forth which is somewhat annoying. Had they been published separately information could have been repeated in each book, making the reading of each somewhat easier.

I found the final sections of the book, on experimentation and environmental impact analysis, the least satisfactory. They are comparatively brief and undeveloped, and don't seem to me to sit comfortably with the rest of the material. The problems with the design of impact and monitoring studies addressed are not unique to river ecosystems or tropical Asia. My own feeling is that the token nature of the environmental impact studies is a far greater problem at present than their poor design, at least in Thailand and adjacent countries. The chapter on process oriented studies in ecology comes from the heart of an academic who has the main source of such studies in the region. In Thailand also, there have

been almost no manipulative or experimental studies of stream systems (CAMPBELL & PARNRONG, in press) but I am not sure a small chapter tacked on to the end of this book will contribute much to the achievement of greater process understanding. In Thailand most publications on streams and their inhabitants have been taxonomic studies of stream dwelling taxa, or lists of species collected from a particular locality. Taxonomic work is critical for the long term progress in ecology, and tropical Asia is a region which is still comparatively poorly known taxonomically. However, we cannot wait until the taxonomy is better known before commencing ecological work. The keys provided by Dudgeon's book are more likely to stimulate ecological work than the chapter extolling the virtues of such work. Just as Williams' book stimulated ecological work on Australian freshwater systems by making it easier to identify the fauna, these keys, as incomplete as they surely are, will stimulate ecological studies on streams and other inland waters throughout this region.

The idiosyncrasies notwithstanding, this is a book that should be in the library of every university in the region. Given its reasonable price it should also be in the personal library of all those with a serious interest in the ecology of tropical Asia or the fauna of its inland waters.

#### REFERENCES

- CAMPBELL, I. C. AND S. PARNRONG (in press). Limnology in Thailand: Present status and future needs. Verein. Internat. Verein Limnol. Vol. 27.
- WILLIAMS, W. D. 1980. *Australian Freshwater Life*. (2nd Edition). Macmillan, Melbourne. 321 pp.

*Ian Campbell*

Department of Biological Sciences  
Monash University  
Wellington Road  
Clayton, Victoria 3168  
Australia