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## BOOK REVIEW

DUDGEON D.: PATTERNS AND PROCESSES IN STREAM ECOLOGY. A synoptic review of Hong Kong running waters. Die Binnengewässer, Band XXIX, E. Schweizerbartsche Verlagsbuchhandlung, Stuttgart, 1993, viii + 147 pp. ISBN 3-150-40040-2. Price USD 60.60.

With the exception of Bishop's (1973) monograph on a small Malayan river (Bishop J.E. 1973: Limnology of a small Malayan River Sungai Gombak. W. Junk Publishers, The Hague, 485 pp.), rather little is known about the ecology of tropical freshwaters in general and those of South Asian seasonal freshwaters in particular.

Dudgeon's synoptic review is an exception. Although dealing with a small part of South East Asia, the monograph is comprehensive and general, representing a basic source of literature for freshwater limnology for the entire Indo-Malayan region. Moreover, it is not a mere compilation, but, in many respects, an original scientific publication. The author's invention is documented, among others, by more than 40 autocitations of his studies directed to particular problems.

The author analyses streams of Hong Kong at three levels of integration – individuals, populations and communities demonstrating how the attributes of individuals (e.g., morphology, foraging behaviour, growth etc.) combine to generate temporal variation in community composition. Two Hong Kong streams were selected as models: the river Lam Tsuen and the Tai Po Kau Forest stream. Within both models, the abiotic environment, characterization of the stream fauna, community composition, spatial and temporal variation, and functional organization are characterized in detail. The stream ecosystem is not treated separately, since the relationships between riparian vegetation and stream communities and the trophic basis of production are disscused.

The chapter Populations (II) is really worthy of mention for two main reasons. Firstly, the author examines the entire spectrum of aquatic animal diversity, from molluscs, through crustaceans and numerous benthic insect groups, to fishes and herpetofauna.

He worked with precisely determined material (at least to generic level), which is a very rare phenomenon in the tropics. Secondly, the author elaborates all of the most important stream animal population characteristics: life cycles and population dynamics, drift of the stream fauna, interspecific competition and niche dimensions. To study the latter topic, he selected two very informative models: the Odonata and fishes.

The chapter Individuals (III) is devoted entirely to the feeding and morphological adaptations of stream animals. To study diet and feeding apparatus, the author chose mayfly larvae (Ephemeroptera) and net – spinning caddisflies (Trichoptera). Unfortunately, sometimes the treatment of these groups remains superficial as seen for example in figures 25–31 (mouthparts illustrations of mayfly larvae where palp segments are often not distinguished).

The wide and complex approach to the problems of Hong Kong stream ecology is underlined by the last chapters named "The human factor" and "Synthesis". Although very short, all major problems, like pollution, river regulation, impact of reservoirs, exotic invaders and their ecological effect and future prospects are discussed.

There is little need to emphasize how useful such a comprehensive treatment is for hydrobiologists, aquatic entomologists and ichthyologists. Also tropical ecologists will welcome this excellent monograph as a basic source of references.

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