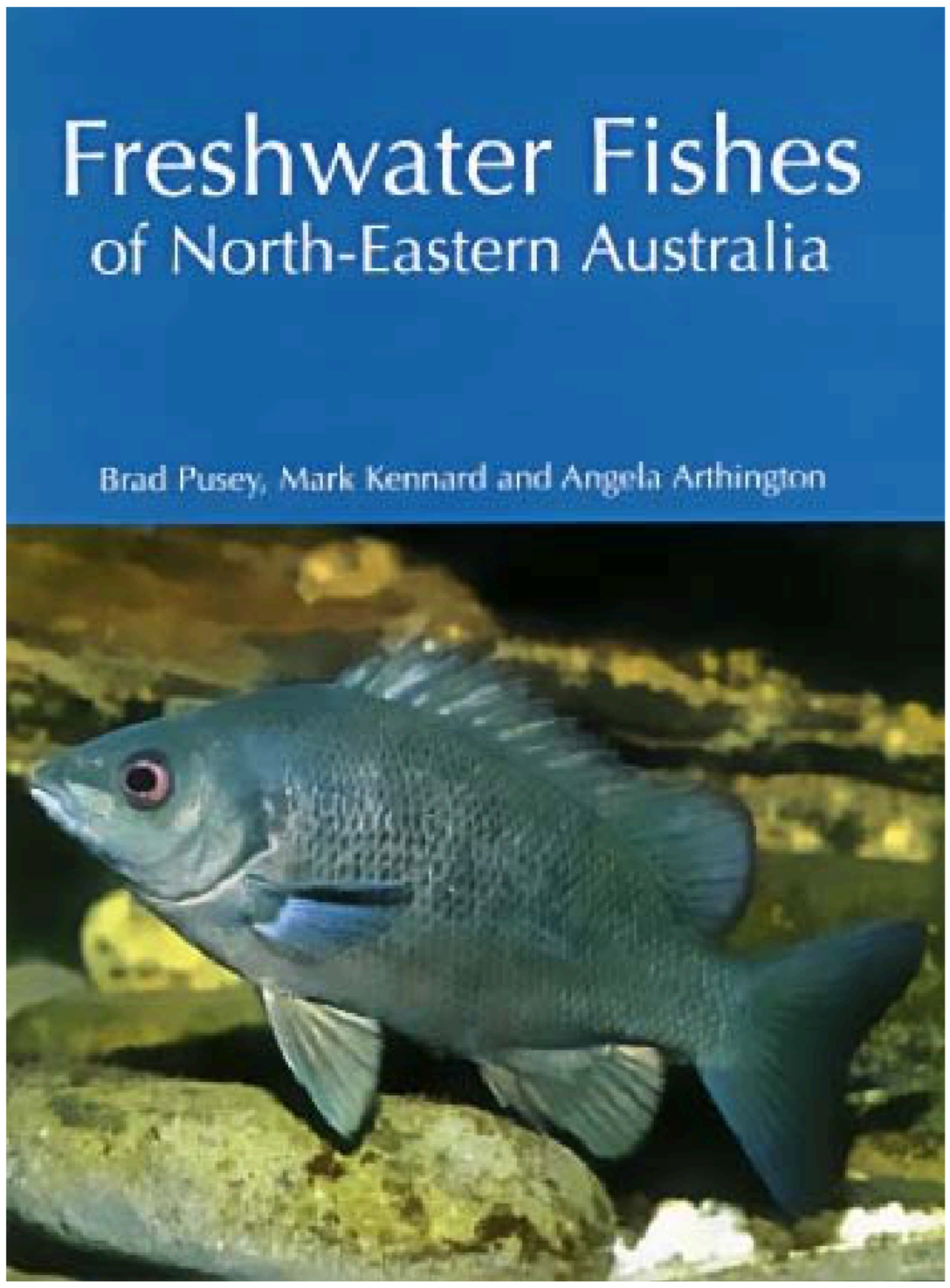
Book Review

– BRUCE HANSEN



TITLE: Freshwater Fishes of North-Eastern Australia

AUTHOR: Brad Pusey, Mark Kennard and Angela Arthington.

EDITION: 2004

ISBN: 0 643 06966 6

PUBLISHER: CSIRO Publishing.

PAGES: 684

SIZE: 21x27 cm approx

PRICE: RRP $89.00

COVER: Hardcover, well-bound but no slip-cover, featuring a colour photograph of the Khaki grunter *(Hephaestus tulliensis)* by Gerald Allen.

ARTWORK:
The artwork feature items are the detailed B&W line drawings of the individual species by Brad Pusey, many of which could stand alone and attract many admirers. There are also numerous B&W graphs, tables and "pie" charts accompanying the text.

COMMENTS:
From the moment you heft this attractive dark blue tome onto the table you form the impression that we have a serious contribution here. It looks good, is professionally published and should last the distance as far as durability of binding and paper quality is concerned. Usually I scan a new book by flicking through the pages to get an overall impression of balance of text to illustrations and stop at individual shots that catch my eye on the way through. That was my first shock. There are NO colour photos of fish or habitats, not even B&W alternatives. The old adage that a picture is worth a thousand words is not in vogue in this volume but this is not necessarily a criticism – the thousands of words are definitely there with each page packed with informative text, tables and graphs.

The initial pages include a Table of Contents, Acknowledgements, Introduction, and a section on Origins, structure and classification of fishes. Next follows a 12-page key to the native and alien fishes of the study area which is illustrated with helpful small B&W line drawings to define factors in the text. Copies of this in a smaller format would be a useful tool in the field. This key is followed by a section on the study area, data collection, analysis and presentation which could well have been placed before the key to orient the reader to the pertinent area of the study which is the North-east Coastal Division of the Australian Drainage Divisions. This is the generally narrow strip of Queensland between the coast and the Dividing Range which is in turn sub-divided into 4 sections – Eastern Cape York Peninsula, Wet Tropics, Central Queensland and South-eastern Queensland.

Over three quarters of the volume (525 pages) is taken up with the species discussions which cover around 80 of the 130 species so far recorded in the study area. I suspect much of the arguments about this book amongst interested parties will revolve around why the various species not covered could be left out while others were included. All I can say is it certainly leaves plenty of scope for the authors to produce another volume. Each species is covered under standardized sections which include Nomenclature, Description, Systematics, Distribution and abundance, Macro/meso/microhabitat use, Environmental tolerances, Reproductive biology, Movement, Trophic ecology and finally Conservation status, threats and management. In some instances more than one species (such as the three eel species) will be covered as a group.

These accounts of the individual species are where much of the "real meat" is to be found and the sections need to be read over and over to take in the wealth of detail included and of course this can be rather heavy going at times. The final 100 or so pages are taken up with a brief Conclusions section, a very useful Glossary of terms used, an extremely

extensive Bibliography which includes many entries mentioning ANGFA publications and authors, various appendices and finally an index.

From an ANGFA perspective most of the species accounts concern species that could hardly be termed aquarium fish but without doubt there is much of interest contained therein. It is when we zero in on the smaller species such as the rainbowfishes, hardyheads, blue-eyes, gobies and gudgeons that we begin to appreciate how much information is provided on not only common and widespread species but also those of more limited distribution that we rarely hear about. Although I would have loved to see *Melanotaenia trifasciata* covered for example, it was great to see some useful information on a rarity such as the Bloomfield River Cod *(Guyu wujalwujalensis)*. Overall the list includes 7 species of rainbowfishes, 3 species of blue-eyes, 2 hardyheads, 5 glassfish, 8 gobies and 17 gudgeons with a few others that are regularly kept as aquarium specimens for good measure.

The authors have taken this opportunity to publish a wealth of material they have collected and analysed over the last 20 years or so and review the existing literature to present us with this very worthwhile offering for anyone interested in our native freshwater fishes. I have no hesitation in recommending it to anyone who wants good information. If you are only after a field guide with pretty pictures of fishes and habitats this book is not for you. At the price ANGFA has been able to negotiate for you it is a bargain – the print run is limited, the quality is undoubted and it will be worth twice as much in a few years as an investment if nothing else.

Red Spot Disease

Epizootic Ulcerative Syndrome or 'red spot' disease has been identified in fish from a number of river systems in the Northern Territory, including the West, South and East Alligator river systems (and the Magela Creek). This condition has been recorded in Archer Fish (Toxotes chatareus), Primitive Archer Fish (Toxotes lorentzi), Barramundi (Lates calcarifer), Bony Bream (Nematolosa erebi), Fork-tailed Catfish (Arius sp.), Long Tom (Strongylura kreffti), Mouth Almighty (Glossamia aprion), Red Scat (Scatophagus argus), Saratoga (Scleropages jardini), Rainbow Fish (Melanotaenia splendida), Sleepy Cod (Oxyeleotris lineolata), Spangled Perch (Leiopotherapon unicolor), and Striped Grunter (Amniataba percoides) (Pearce, 1990). This condition is frequently fatal to juvenile fish. The potential for increased occurrences of this disease resulting from additional stresses such as increased sediment load or exposure to one or more toxins is a distinct possibility. Little work on this subject has been undertaken.

Australia is the driest continent in the world

Australia is the driest of all the world's inhabited continents. It has the lowest percentage of rainfall as run-off, the lowest amount of run-off, the least amount of water in rivers and the smallest area of permanent wetlands. The Western Plateau drainage division, which covers 32 per cent of the continent, produces almost no run-off, and a further 17 per cent does not drain to the ocean. Sixty-five per cent of the continent's mean annual run-off occurs in the northern drainage divisions, and 10 per cent of the divertible fraction of this tropical water has been developed for human use. Across all the other drainage divisions, 16 per cent of divertible water has been developed, with a regional high of 81 per cent developed in the Murray–Darling Basin. About 15 per cent of all water used in Australia is groundwater. Australia has the most variable rainfall and stream flow in the world, and our inland streams have high natural turbidity and salinity.

The Murray–Darling river system is Australia's largest, draining about one-seventh of the continent. It ranks with the world's big rivers in terms of length and catchment area, but has much lower annual discharge. The chemistry of our surface inland waters differs from most waters elsewhere, often being dominated by sodium chloride rather than calcium and magnesium bicarbonates. Groundwater is often very old; for example, in the Great Artesian Basin water travels across Queensland, to emerge in central Australia in bores one to two million years after it entered the ground. The generally arid climate and ancient well weathered landscape mean that mainland Australia has relatively few permanent and freshwater lakes. Lakes on the mainland are often shallow, dry and salty. Only on the Central Plateau of Tasmania do a number of larger permanent fresh-water lakes occur.

Inland waters include all water inland of estuaries, both in surface features like streams, lakes, wetlands and reservoirs, and in the subsurface as groundwater. The biology of Australian inland waters has many special features. Although our invertebrate animal groups resemble those of other continents with a similar environment, many species, and some genera and families, are unique to this country. Our aquatic invertebrates lack several groups that are widespread on other continents. Several families here have adapted to a wider range of environments than is the case elsewhere.

The fish of Australian inland waters are represented by few species, many of which have evolved from marine forms and are endemic. Fewer bottom-dwelling creatures live in the lakes, and the fauna of our salt lakes are endemic. Half of the large aquatic plants are also unique, as are some terrestrial forms of the distinctive riverbank vegetation.