

REFERENCES

Lowcock, L.A., Sharbel, T.F., Bonin ,M., Ouellet, M., Rodrigue, J. and DesGranges, J.-L. (1997). Flow cytometric assay for in vivo genotoxic effects of pesticides in green frogs (*Rana clamitans*). *Aquatic Toxicology* **38**, 241-255.

JOHN BAKER

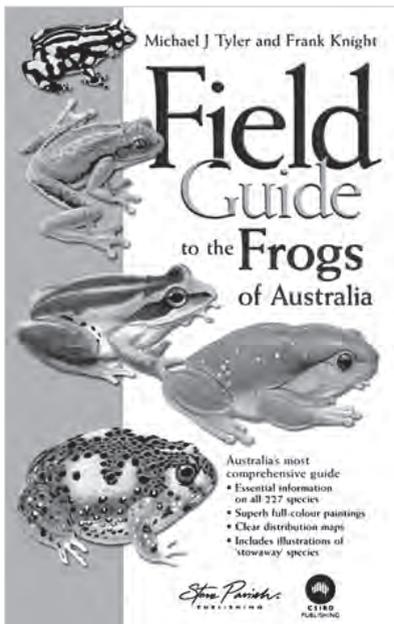
c/o Amphibian and Reptile Conservation, 655a Christchurch Rd, Boscombe, Bournemouth, Dorset, BH1 4AP.



**Field Guide to the Frogs of Australia**

Mike Tyler and Frank Knight.

2009. CSIRO Publishing, Australia, 200 pp.



When first receiving the ‘Field Guide to the Frogs of Australia’ I was impressed by the aesthetics of the front cover, with its brightly coloured illustrations. This, coupled with a brief peruse through the book reinforced the sheer skill and attention to detail of the workmanship. The practicality of the

book is recognisable by the plasticized cover that could protect the pages during periods of rain or accidental tea spillage.

Pages one to three of the field guide present a varied and busy introduction, including the use of Latin names, common or colloquial names and stowaways. The author highlights the swiftness of using an illustrated and mapped guide for species identification that only becomes inadequate when the species is differentiated by its call. The author provides 227 species accounts, with the exception of new species of *Litoria*, *Uperoleia* and *Crinia* yet to be described, and with the possibility of more to be discovered.

Latin nomenclature is a stable process, however, the change in stability for anurans is mentioned. In 2006 Daryl Frost and team reassessed anuran families, such as the change of *Bufo marinus* to *Rhinella marinus* but the former is retained by the author pending further information. The misuse of common names for a number of species such as ‘Bullfrog’ and ‘Green Tree Frog’ is mentioned due to the many species that look alike have sympatric distributions. The author states that Latin is preferred and only refers to the most popular common names in the guide.

The stowaway section is significant due to the Cane Toad (*Bufo marinus*) problem. Species accidentally entering Australia in cargo is a fascinating yet deeply concerning problem and thankfully the book holds a special illustrated section for the readers’ interest and for future reference in this. The author highlights the main stowaways established including *Litoria fallax* into Guam. A very nice but simplified sketch of an anuran is shown on page two, illustrating the main morphological measurements taken in the field.

I found that one of the most important areas of the book is within pages four to nine; that encapsulate a comprehensive review of the six families, Hylidae, Limnodynastidae, Microhylidae, Myobatrachidae, Ranidae and Bufonidae, and their genera. The sheer detail given in such a small section will provide the reader with a vital preface to lead them smoothly through the book. One pleasing snippet is the addition of unique behavioural aspects, for instance the genera *Assa* (Myobatrachidae), in

which males carry tadpoles in paired hip pouches and *Notaden* spp. (Limnodynastidae) that exude a dermal secretion that oxidises to form a solid mass (currently being investigated for medical use).

Two simplified sketches are presented very nicely of the two variants in constricted pupil shape (horizontal and vertical) that can help characterise species. By far the most vital part of this introduction is the accounts of taxon change; for example, Myobatrachidae and Limnodynastidae were united at one time under Leptodactylidae, however, Myobatrachidae was retained, and the possibility that *Litoria* may be split into numerous genera in the future. Cane Toads (Bufonidae) are presented as *Bufo marinus* and the intentional introduction and problems with eradication are briefly discussed.

Micheal J Tyler and Frank Knight excellently portray the basic biology of anurans on pages ten to fourteen with simple but accurate sketches backed with precise information. The biological introduction has some attention grabbing information; for example, *Rheobatrachus* spp. swallow fertilised eggs, retain them in their stomach, and give birth via their mouth. Illustrations show how to identify the sexes, the vocal sac found only in males, the nuptial pads produced by different species to clasp the female during amplexus (breeding season only) and that males are smaller on average. One of the finest parts in the section is the detailed illustration of skin glands and foot/hand diversity. The sketches are simple but give good insight into species specific characters.

Page fourteen presents a brief but vital summary on the current problem in Australia with chytridiomycosis. On pages fifteen and eighteen, habitats of Australia are portrayed with a brief introduction. Again the photos by Mike Tyler, M. Davies, and R. Kerton give clarity to the diverse habitats within the country.

As one would expect within a field guide, the majority of the book is taken up by illustrations and information on the species, totalling a grand 146 pages. In each description the reader is greeted by aesthetic pages with hand drawn sketches of each species. The pertinent information is presented with a small scale but detailed map. The map

shows in green, where the species are distributed throughout Australia. The detailed illustrations on the right hand page are of a very high standard, and praise should be given to Frank Knight for the effort and skill at producing over 200 hand painted illustrations with such clarity.

Hylidae represents by far the biggest section. Readers will discover some delightful species such as *Litoria chloris*, *L. xanthomera* and *L. gracilentia* (p. 30-31) that show the varying groin and thigh colours between them. My favourite sketch was that of *Litoria splendida*. Frank Knight seems to capture the frog in a pose whereby it appears to leap out of the page! The information on *Litoria infrafrenata* (68-68), gives the reader some great information on the species' tadpole identification, which would enhance any search or survey for it.

The transition onto Limnodynastidae (Myobatrachidae) on page seventy-two and on the rest of the families is quite confusing at first due to the lack of a bold heading, however, this is a minor annoyance. Within the Limnodynastidae section, the illustrations and 'key-like' guide on *Limnodynastes dumerilli* (84-85) allows readers to interpret the specifics needed to identify species and subspecies. Illustrations of *Limnodynastes dorsalis*, *L. interioris* and *L. terraereginae* (88-89) show species differences with varying groin coloration. For *Neobatrachus pictus* (92-93), the distribution is detailed specifically so identification by geographical range can help.

Microhylidae species are covered in a small part of the book (100-109), however the reader is presented with detailed accounts of all species. Myobatrachidae reveals how diverse a family can be with examples such as *Crinia* spp. that are extremely difficult to differentiate from one another. Again though Tyler and Knight provide the varying colour patterns and skin textures for simpler identification. The Myobatrachidae holds one of the more bizarre species, *Myobatrachus gouldii* (122-123), a strange looking frog that on first inspection may not be recognised as an anuran. It is a head-first burrower. Myobatrachidae also includes Ranidae (126-127); this is a very small but detailed section, as is the Bufonidae (158-159), however, it gives

valuable information on how these species are causing problems within Australia.

An insightful section is the Stowaways. I found this interesting with its details on how species get into Australia and with detailed illustrations provided alongside.

The book is finished off with checklists of genera and species, common names and a helpful glossary of words to guide readers in difficult areas. The citable work is accurately utilised throughout the guide and will allow the reader to undertake further reading.

A worrying point that I realised from reading the guide was the dire need for research on the anurans of Australia. Thirty-nine species in the guide are probably extinct, or have not been seen for many years or are unknown as their status and behaviour is vaguely documented. Two prime examples are *Litoria cavernicola* and *Uperoleia orientalis*.

Although well-written, 'Field Guide to the Frogs of Australia' is not without a few minor omissions. On page 13 *Cyclorana australis* foot adaptation is shown within the four diagrams. However, the use of this adaptation is not explained. On page 58, *Litoria phyllochroa*, explains that *L. pearsoniana* is a similar species but not the same in geographical distribution. However, within both species distribution information and mapping, they appear sympatric in distribution. Moreover, on page 100, *Austrochaperina robusta* claims to have only *A. pluvialis* within its geographic range, but *A. fryi* (page 102) explains that both *A. robusta* and *A. pluvialis* are similar species and exist in the same geographic distribution.

The field guide has a UK price averaging £35 to £40. Therefore, for anyone about to buy this book they would have to have a penchant for Australian anurans. That said, any field guide that attempts to decipher taxonomic and field characteristics in a purposeful and clear manner should be celebrated. On this account alone I would recommend the book to those interested in Australia's batrachology.

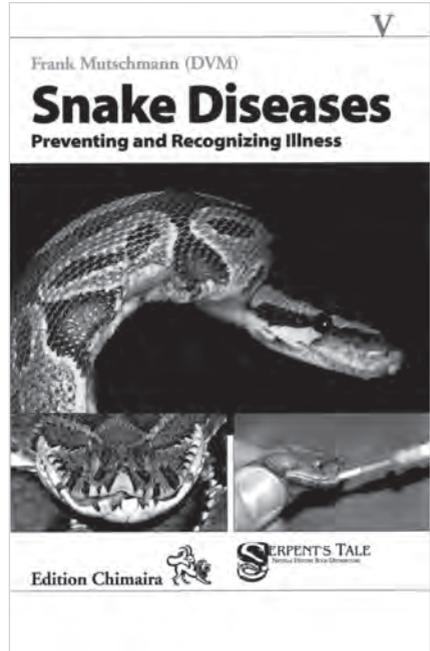
STEVEN PIGGOTT

92 Northfleet road, Peelgreen, Manchester, M30 7PQ, UK. stevepiggott@hotmail.co.uk.

## *Snake Diseases: Preventing and Recognizing Illness*

Frank Mutschmann

2008, Edition Chimaira,  
Frankfurt am Main, 306 pp.



When this book arrived, I eagerly looked forward to reading and reviewing it. Snake diseases is a topic that has always interested me as my background is a reptile keeper in a zoological society.

'Snake Diseases' is a hardback book covering a wide range of snake ailments. It specialises in recognising symptoms of disease and hopefully preventing them from ever occurring. I would like to make it clear to anybody who may want to purchase this book that it does not include any information pertaining to the treatment of diseases so as not to encourage readers to experiment with technical veterinary procedures.

As one would expect from Edition Chimaira the book is very reader friendly. At 306 pages, it is crammed full of information. There are lots of colour plates and photos to peruse through at your leisure. These are much needed in such a book in order to help recognise symptoms of illness.