

Comparative Osteological Examinations of Geckonids, Eublepharids and Uroplatids



Review Author[s]:
Kurt Schwenk

Copeia, Vol. 1998, No. 1. (Feb. 3, 1998), pp. 259-260.

Stable URL:

<http://links.jstor.org/sici?sici=0045-8511%2819980203%293%3A1998%3A1%3C259%3ACOEUGE%3E2.0.CO%3B2-Z>

Copeia is currently published by American Society of Ichthyologists and Herpetologists.

Your use of the JSTOR archive indicates your acceptance of JSTOR's Terms and Conditions of Use, available at <http://www.jstor.org/about/terms.html>. JSTOR's Terms and Conditions of Use provides, in part, that unless you have obtained prior permission, you may not download an entire issue of a journal or multiple copies of articles, and you may use content in the JSTOR archive only for your personal, non-commercial use.

Please contact the publisher regarding any further use of this work. Publisher contact information may be obtained at <http://www.jstor.org/journals/asih.html>.

Each copy of any part of a JSTOR transmission must contain the same copyright notice that appears on the screen or printed page of such transmission.

JSTOR is an independent not-for-profit organization dedicated to creating and preserving a digital archive of scholarly journals. For more information regarding JSTOR, please contact support@jstor.org.

native fauna. All in all, this volume has a number of significant papers, and as the price is in the low range typical of SSAR publications, it is well worth acquiring.

NEIL B. FORD, *Department of Biology, University of Texas at Tyler, Tyler, Texas 75799.*

COMPARATIVE OSTEOLOGICAL EXAMINATIONS OF GECKONIDS, EUBLEPHARIDS AND UROPLATIDS. V. Wellborn (translated by A. P. Russell, A. M. Bauer, and A. Deufel, with an introduction by A. M. Bauer and A. P. Russell). 1997. Breck Bartholomew, Bibliomania! PO Box 58355, Salt Lake City, Utah 84158-0355. \$10.00 (soft cover).—This monograph is an English translation of Wellborn's (1933) published doctoral work on gecko osteology and taxonomy. Bauer and Russell are leading experts on gecko morphology and systematics and are therefore well positioned to interpret the nuances of a German work on this topic. They provide an introduction which places Wellborn's little-known work in historical context and review most gecko osteological studies published since 1933. They further note the deplorable lack of referral to such early, German-language works by English-speaking (mostly North American) herpetologists and point out that such (willful?) ignorance has dictated that much of this work be needlessly repeated. In addition to this review, Bauer and Russell provide three appendices including modern equivalents of Wellborn's species names, anglicized translations of her Latin anatomical terms, and a renumbering of her figures, which inexplicably appear in the original text out of numerical sequence.

Wellborn's (1933) study was inspired by controversy at the time regarding gecko family-level taxonomy and the affinities of *Uroplates*, the bizarre flat-tailed gecko. Boulenger (1884) had proposed a radical taxonomy that split geckos into three nominal families (Geckonidae, Eublepharidae, and Uroplatidae) on dubious character evidence, a position supported by Camp (1923) and others. Fürbringer (1900) had gone so far as to suggest that *Uroplates* was actually a chameleon relative. Wellborn did a broadly comparative assessment of the osteology of the group to determine whether variation was continuous or discontinuous. She suggested that inadequate sampling had led previous workers afoul and that all taxa could be shown to vary along a continuum. She acknowledged that *Uroplates* was at one end of this contin-

uum but found that it could be unambiguously allied with geckos, similarities to chameleons attributable to superficial convergence stemming from shared arboreal habits. She also found that all species shared the presence of cloacal bones (a synapomorphy in modern parlance) and concluded that Boulenger's three nominal families should be treated as subfamilies within a single family Geckonidae.

In their introduction, Bauer and Russell contradict themselves in suggesting that Wellborn's study has been both "seminal" (p. 11) and ignored (p. 1–2) but argue, in any case, that it "is of sufficient importance to bring to the attention of the community of individuals interested in various aspects of the biology of gekkonid lizards" (p. 2). I am not sure how large a community this is, but Wellborn's study should harbor information of interest to gecko-philes and comparative squamate morphologists. Beyond this realm, there is little to spark general biological interest.

Although Bauer and Russell make the case that Wellborn's work was unusual in the breadth of its comparative analysis, it pales in comparison to many other contemporaneous studies (e.g., Camp, 1923). As a piece of comparative morphology it is singularly uninspired. The figures are minute, poorly rendered, and inadequately labeled; and the text description is not much better. Overall, I found it to be very poorly written, a quality I attribute to Wellborn and not to the translators because it is clear that they are at pains to duplicate her meaning and style. The description is, in many places, confusing, superficial, and occasionally in error. For example, I turned with interest to the section on the hyobranchial skeleton only to find that Fürbringer's earlier (1922) work far exceeds in detail and quality Wellborn's study for information on geckos (as well as other vertebrates). Wellborn's conclusion, that gekkonids are distinguished by their retention of a second branchial horn, is inexplicable in light of the fact that Fürbringer (and others) showed it to be commonplace in lizards. Bauer and Russell enumerate other factual errors, many of which are excusable in light of then-available techniques, others of which seem less so.

I applaud Russell, Bauer, and Deufel for undertaking this challenging translation. They do an admirable job of wading through the cumbersome Latinized anatomical terminology (my favorite: the apertura nasium externa, known to anatomists as the external naris, and to civilians as the nostril!) and we clearly benefit from their conjoined gecko expertise. Although I do not doubt the historical importance of this study to gecko morphology and systematics, I am nonetheless disappointed that the obvious effort

made by the translators was not channeled into a work of greater quality and significance, of which there are many in the older German literature. However, this is somewhat unfair criticism since the motivation for the translation was the specific research area of the translators. This contribution is labeled on the title page, "Herpetological Translation No. 1." Therefore, we can hope that future contributions to the series will be of broader biological interest.

LITERATURE CITED

BOULENGER, G. A. 1884. Synopsis of the families of existing Lacertilia. *Annu. Mag. Nat. Hist. Ser. 5* 14: 117-122.

CAMP, C. 1923. Classification of the lizards. *Bull. Am. Mus. Nat. Hist.* 48:289-481.

FÜRBRINGER, M. 1900. Vergleichende Anatomie des Brustschulterapparates und der Schultermuskeln IV. *Jenaische Z. Naturw.* 34:215-718.

———. 1922. Das Zungenbein der Wirbeltiere insbesondere der Reptilien und Vögel. *Abhandlungen der Heidelberger Akademie, math.-naturw. Kl. Abt. B* 11:1-164.

WELLBORN, V. 1933. Vergleichende osteologische Untersuchungen an Geckoniden, Eublephariden und Uroplaten. *Sber. Ges. Naturf. Freunde Berlin* 1933:126-199.

KURT SCHWENK, *Department of Ecology and Evolutionary Biology, University of Connecticut, Storrs, Connecticut 06269-3043.* E-mail: schwenk@uconnvm.uconn.edu.

BOOKS RECEIVED

Copeia, 1998(1), pp. 260-262
© 1998 by the American Society of
Ichthyologists and Herpetologists

THE CRAYFISHES OF MISSOURI. William L. Pflieger. 1996. Missouri Department of Conservation, PO Box 180, Jefferson City, Missouri 65102. ISBN 1-887247-05-X. 152 p. \$7.00, plus \$2.00 shipping (paper).—This is a beautiful book. We have come to expect high-quality work from Bill Pflieger, and he delivers once again. The price of this large format (278 × 210 mm) book is a real bargain for 79 color photographs, 42 line drawings, 32 dot distribution maps, and a six-page key to 32 species. In addition to the illustrations, each species account includes description, distribution and habitat, habits, and life history. Those of us who seine in midwestern streams will want to own this book.—T.M.B.

and biogeography of 14 families: Moridae, Eulichthyidae, Carapidae, Ophidiidae, Aphyonidae, Macrorhamphosidae, Triglidae, Gempylidae, Bothidae, Triacanthodidae, Monacanthidae, Ostraciidae, Triodontidae, and Tetraodontidae.—T.M.B.

THE PONY FISH'S GLOW. George C. Williams. 1997. Basic Books, New York, New York. ISBN 0-465-07281-X. 184 p. \$20.00 (cloth).—The title of this little book involves fishes of the Indo-West Pacific family Leiognathidae. Pony fishes possess bacterial luminescence in circumesophageal light organs enhanced by an adjacent reflective gas bladder. Light is projected through the belly into the viscera. Some of the light passes through the transparent tissues and produces a faint glow along the ventral surface. How can this be explained by selection theory? The book's subtitle, "And Other Clues to Plan and Purpose in Nature," reveals the author's mission, which is to explain the adaptationist program to the general reader. Williams narrates how aquarium experiments demonstrated that the pony fish controls its light to balance downwelling light thereby obliterating its silhouette as seen by predators from below. This is adaptationist storytelling in the best sense of the term. Some of the book's other chapters are "Functional Design and Natural Selection"; "What Use is Sex?"; "Old Age and Other Curses"; and "Medical Implications." The last chap-

RÉSULTATS DES CAMPAGNES MUSORSTOM. Vol. 17. Bernard Séret (ed.) 1997. Mémoires du Muséum National D'Histoire Naturelle. (Deep water fishes of New Caledonia: contributions of the Musorstom cruises.) Available from Backhuys Publishers PO Box 321 NL-2300 AH Leiden, The Netherlands. E-mail: backhuys@euronet.nl. ISBN 2-85653-500-3. 215 p. US\$48.00 (paper).—This volume has nine contributions, seven of which are in English. It deals with 85 species (16 new) from 49 genera of the deep water fishes collected in the economic zone of New Caledonia within the past 10 years. The papers are on the taxonomy