

helped solidify my interest in herpetology. Reading the field note accounts in *The Amphibians of Tennessee* elicits a similar response and makes me want to get out in the field to look for amphibians.

I only have a few small criticisms of the book. The size of the book is both a pro and con. At approximately 7 inches wide and 10 inches tall, the editors were able to include a large amount of information while still maintaining a very clean and uncluttered design. They were also able to include large photographs to illustrate morphological characters. Larger photos were also ideal because they highlight the quality of the photographs used in the book as even stunning photographs can seem mundane when shrunk down. However, the book's dimensions make it less ideal for field situations. I already know this book will be a fixture in my vehicle, but I am probably less likely to want to carry it out into the field with me. Furthermore, the range maps for the species accounts were used to display both the species range and specific counties in which verified specimens have been documented. However, I found that the colors utilized made it difficult to readily distinguish between the two. I would have liked to see a range map accompanied by specific points that species have been found. Additionally, as a herpetologist who works in multiple states, I would have liked to see a small inset map of the species' entire range, similar to the ones found in *Salamanders of the Southeast* (Mitchell and Gibbons 2010). Finally, as this book is aimed at amateur through professional herpetologists, the taxonomic keys may be difficult to follow for some people. The figures accompanying the taxonomic keys were very helpful, but additional photos and figures would have made the keys even more useful. Additional photos of larval salamanders and tadpoles might also have been helpful, especially close-ups of tadpole mouths in the species accounts. However, most of these criticisms reflect personal preference and do not detract from the quality of the book.

Overall, this is a great field guide both in terms of the content and aesthetics. The information presented in this book will be useful to people of all experience levels. The editors do a good job of instilling interest in the reader and highlighting the diversity of amphibians found in the state through both their narrative and the use of superb photographs. I certainly recommend this book to anyone who plans on searching for, or simply learning more, about the amphibians of Tennessee.

LITERATURE CITED

- DODD, C. K. 2004. *The Amphibians of Great Smoky Mountains National Park*. The University of Tennessee Press, Knoxville, Tennessee. xvi + 283 pp.
- MITCHELL, J. C., AND J. W. GIBBONS. 2010. *Salamanders of the Southeast*. University of Georgia Press, Athens, Georgia. 324 pp.
- REDMOND, W. H., AND A. F. SCOTT. 1996. *Atlas of Amphibians in Tennessee*. Center for Field Biology, Austin Peay State University, Clarksville, Tennessee. v + 94 pp.

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Lézards, Crocodiles et Tortues d'Afrique Occidentale et du Sahara

by Jean-François Trape, Sébastien Trape and Laurent Chirio. 2012. IRD Éditions, Marseille, France (www.ird.fr/editions). 503 pp. Softcover. EUR 64.00 (approximately US\$ 80.50). ISBN 978-2-7099-1726-1.

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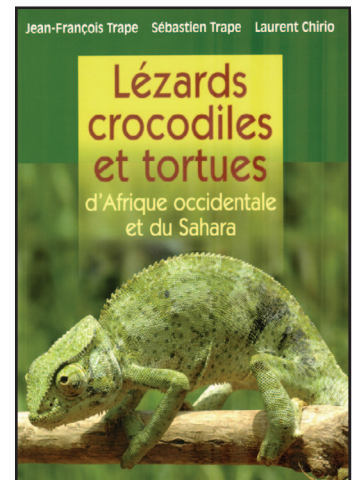
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Although a number of papers and a few books deal with the non-ophidian reptile fauna of West Africa, they all focus on a limited region or taxonomic group, and the taxonomic and ecological information on numerous genera is outdated in many of these works. This new book by Trape et al. not only is the first book providing an extensive overview of all non-ophidian West African reptiles, but it does it in an exceptional way, at a level of documentation rarely achieved in any African reptiles book. It covers all lizard, turtle and crocodile species in the 15 West African countries, as well as Chad, the Saharan areas of Morocco ("Sahara occidental"), Algeria and Tunisia south of 32°N, and Libya except its littoral area.

The genesis of the present book, only briefly mentioned in the book itself, is worth explaining here. Borreliosis was a nearly totally unknown disease in West Africa and Sahara when Sébastien, Jean-François Trape's son and second author of the opus, contracted it during a field trip in 1989. It took three months for Jean-François to diagnose Sébastien's disease, while the latter had already gone through seven high fever episodes. Jean-François eventually published a medical record of his son's borreliosis case and later of more and more other cases he diagnosed in other patients. This poorly known disease actually turned out to be the second most common cause for fevers in Senegal, after malaria (Trape et al. 1991). From 2002 J.-F. Trape conducted intensive field researches on this disease in western, central and northern Africa. J.-F. Trape was not at all a specialist of lizards until he began that research program in 2002 (J.-F. Trape, pers. comm., Sept. 2012). But he took this unique opportunity of visiting between 2002 and 2011 a large number of localities, often extremely remote, in 16 African countries, to observe, photograph and collect lizards and other reptiles, as a by-product of his medical research. About 6,500 specimens were collected during these surveys. Sébastien, whose Ph.D. dissertation was on the Mugilidae of West African coasts, specialized in fish and reptiles and in molecular biology, the latter specialty having proven very useful for the numerous taxonomic changes, resurrections, synonymies and new species descriptions included in the book.



The binding and paper of the book are of excellent quality. The front cover of the book is illustrated by a photograph of a *Chamaeleo gracilis* (without locality; it was actually taken near Kpalimé, Togo; J.-F. Trape, pers. comm., Aug. 2012). Main parts of the book include a geographical introduction (pp. 11–21), an introduction to the herpetofauna treated (pp. 23–59), identification keys to families, genera and species (pp. 61–121), lizard species accounts (pp. 123–417), crocodile species accounts (pp. 419–425), turtle species accounts (pp. 426–471), literature cited (pp. 473–493), an appendix giving for each species treated in the book the list of West African countries where it occurs (pp. 495–499), and an index to currently used scientific names (pp. 501–503).

The geographical introduction offers useful maps and 41 excellent photos of various biotopes found throughout the region covered, all with precise locality data. The biotope photo for Guinea-Bissau (page 17) shows in its foreground an intriguing roundish object, which actually is a *Chelonia mydas* (Linnaeus, 1758), and the locality is more precisely Poilao Island (J.-F. Trape, pers. comm., Aug. 2012).

The introduction to the herpetofauna treated provides excellent drawings to illustrate scale nomenclature. On the lizard head scale drawing (p. 27), the number corresponding to the subocular scale is missing. This chapter also presents recent taxonomic changes and brings important new ones, that we should briefly mention here since they might be overlooked by non-French speaking readers. These include the revival from synonymy of *Agama africana* (Hallowell, 1844), *A. boensis* Monard, 1940 and *A. insularis* Chabanaud, 1918 (the latter already revalidated by Trape 2011) (Agamidae), of *Mochlus mocquardi* (Chabanaud, 1917), *Trachylepis aureogularis* (Müller, 1885) and *T. keroanensis* (Chabanaud, 1921) (the latter actually already revalidated by Böhme et al. 2011) (Scincidae), the elevation to species rank of *Trachylepis paucisquamis* (Hoogmoed, 1978) (Scincidae) and of *Tarentola hoggarensis* Werner, 1937 and *T. senegambiae* Joger, 1984 (Gekkonidae), the synonymization of *Agama sylvanus* Macdonald, 1981 with *A. africana* (Agamidae), of *Philochortus lhottei* Angel, 1936 with *P. zolii* Scortecci, 1934 (Lacertidae), of *Mabuia guineensis* Monard, 1940 with *Trachylepis perroteti* (Duméril & Bibron, 1839), and of *Panaspis nimbensis* (Angel, 1944) with *P. tristaoi* (Monard, 1940) (Scincidae). Most importantly, nine new lizard taxa are described within this chapter (with different authors as indicated): *Uromastix dispar hodhensis* J.-F. Trape & S. Trape in J.-F. Trape, S. Trape & Chirio, 2012 (Agamidae), *Hemidactylus albituberculatus* J.-F. Trape in J.-F. Trape, S. Trape & Chirio, 2012, *H. albivertebralis* J.-F. Trape & Böhme in J.-F. Trape, S. Trape & Chirio, 2012, *H. kundaensis* Chirio & J.-F. Trape in J.-F. Trape, S. Trape & Chirio, 2012, *Tarentola pastoria* J.-F. Trape, Baldé & Ineich in J.-F. Trape, S. Trape & Chirio, 2012 (Gekkonidae), *Acanthodactylus boskianus nigeriensis* J.-F. Trape, Chirio & Geniez in J.-F. Trape, S. Trape & Chirio, 2012 and *A. b. khattensis* J.-F. Trape & S. Trape in J.-F. Trape, S. Trape & Chirio, 2012 (Lacertidae), *Cophoscincopus senegalensis* S. Trape, Mediannikov & J.-F. Trape in J.-F. Trape, S. Trape & Chirio, 2012, and *Leptosiphos dungeri* J.-F. Trape in J.-F. Trape, S. Trape & Chirio, 2012 (Scincidae). There is no mention of the sex of the holotype and the paratype of *Uromastix dispar hodhensis*, of the holotype of *Hemidactylus albituberculatus*, *H. albivertebralis* and *H. kundaensis*, of the holotype and paratypes of *Tarentola pastoria*, *Leptosiphos dungeri*, *Cophoscincopus senegalensis*, *Acanthodactylus boskianus nigeriensis* and *A. b. khattensis*. This is very unfortunate, but is a deliberate choice made by J.-F. Trape who did not want to dissect and damage the types to verify their sex (J.-F. Trape, pers. comm., Oct. 2012). The descriptions of *Uromastix*

dispar hodhensis, *Cophoscincopus senegalensis* and of both new subspecies of *Acanthodactylus* are accompanied by phylogenetic trees, but there are no details on methodology and no museum numbers indicated for the comparative specimens used. *Hemidactylus albituberculatus* is said to differ from *H. angulatus* only by a slightly larger size, more colorful and contrasted dorsal tubercles and by genetics, but no data on genetics are provided; obviously a better characterization of this species will be needed, including the actual results of the genetic analysis. The diagnosis of *Acanthodactylus boskianus nigeriensis* (relatively small size, females and juvenile without bright colors on tail) is insufficient to help identify specimens of this population.

At most five days before the present book appeared, two agamid species were co-described by two of its co-authors: *Agama parafricana* J.-F. Trape, Mediannikov & S. Trape in Mediannikov, S. Trape & J.-F. Trape, 2012 and *A. wagneri* J.-F. Trape, Mediannikov & S. Trape in Mediannikov, S. Trape & J.-F. Trape, 2012 (Mediannikov et al. 2012). The latter paper was published in a volume that appeared on June 25th, 2012 according to the website of the Russian Journal of Herpetology, while the date shown on the book is June 2012, which has to be interpreted as June 30 at the latest.

The list of species provided at the end of this chapter shows that, among the 179 species and subspecies treated in the book (156 lizards, 3 crocodiles and 20 turtles), 23, i.e., 13%, were described in the 21st Century. Among them, relatively large and colorful geckos such as *Hemidactylus beninensis* Bauer, Tchiboza, Pauwels & Lenglet, 2006, a terrapin *Pelusios cupulatta* Bour & Maran, 2003, and the gecko *Pristurus adrarensis* Geniez & Arnold, 2006 which represent a 4,700 km range extension for the genus (Geniez and Arnold 2006); all this indicates that much remains to be discovered in this part of the world.

Identification keys are abundantly illustrated. Some of them unfortunately include mistakes. In the key to Agamidae, page 69, there is no link to couplet 22; actually the second alternative from couplet 19 should be 22, not 23 (J.-F. Trape, pers. comm., Oct. 2012). In couplet 21, re. *Agama sankaranica* Chabanaud, 1918, the variation given for the number of scales on the vertebral line is different from the variation given in the species account (31–46 versus 31–39). In couplet 28, re. *Agama parafricana*, the variation given for the number of scales on the vertebral line is different from the variation given in the species account (29–34 versus 29–37), and the same is true for the midbody scale rows (54–72 versus 54–63). In the Gekkonidae key, the caption of the photo of *Hemidactylus richardsoni* on p. 81 wrongly indicates that it was taken in “Ivindo, Gabon” – for having taken the photo ourselves (OSGP), we know that it was actually taken in Gamba, southwestern Gabon (idem with both photos of the same individual p. 243). In couplet 22, it is indicated that *Hemidactylus albivertebralis* has a “paravertebral” whitish stripe – it is actually a vertebral stripe. In couplet 30, re. the *Tarentola mauritanica* complex, the variation given for the number of lamellae under the 5th toe (16–20) differs from the one given in the species account (16–21), giving the impression that there is no overlap with the key’s alternative species *T. deserti* Boulenger, 1891 (21–25). In couplet 34 (p. 89), re. *Tarentola senegambiae* Joger, 1984, the variation given for the number of granular scales between the eyes (14–18) differs from that provided in the species account (13–17). In the Lacertidae key, page 95, there is no link to couplet 20; actually the second alternative from couplet 12 should be 20, not 21 (J.-F. Trape, pers. comm., Oct. 2012). In couplet 20 (p. 98), 10 to 14 ventral scale rows leads to couplet 21, which, however, itself leads, among others, to *Acanthodactylus dumerilii* (Milne-Edwards, 1829) whose range for this

character is said to be 12 to 16 in its species account. In the same couplet 20, one reads that *A. longipes* Boulenger, 1921 shows 60–77 dorsal scale rows at midbody, whereas the corresponding species account says the species has 55–88. In the key to Scincidae, page 105, there is no link to couplet 23; the second alternative from couplet 19 should in fact be 23, not 22 (J.-F. Trape, pers. comm., Oct. 2012). In couplet 21, re. *Cophoscincus greeri* Böhme, Schmitz & Ziegler, 2000, the key indicates 48–57 paravertebral scales *contra* 45–57 in the species account. In couplet 25 p. 107, the variation in the number of keels on the paravertebral row in *Mochlus brevicaudis* (Greer, Grandison & Barbault, 1985) is indicated as 8–15 *contra* 7–15 in its species account, which means an overlap with the variation for the alternative species in the key. We found other discrepancies between variation given in some keys and variation given in associated species accounts, but contrary to the ones cited above, they do not impact the use of these keys.

Species accounts include clear and well-written sections on rapid diagnosis, size, geographic distribution and habitat, description and natural history, and are each illustrated by a distribution map (with squares of 1 × 1 degrees, in red when the species has been recorded within the square) and two photos. It is a pity that there is no distinction in geographical distribution between literature data and new data added by the authors, as the new data certainly represent a large part of the known distribution for many species.

The iconography of the book is absolutely exceptional. The photos, all in colour, are of outstanding quality. Among the ca. 650 reptile photos shown (besides the numerous scale drawings and biotope photos), 567 (thus about 87%) were taken by the authors. Only a single species, *Trapelus schmitzi* Wagner & Böhme, 2007 (Agamidae) could not be illustrated alive. All photos are accompanied by precise locality data, which adds much informative value to the book, and the vast majority of the photos were taken within the geographical area covered by the book. Taking some of the photos was a real challenge; for example taking those of *Acanthodactylus boskianus* (Daudin, 1802) in Galtat Zemmour (p. 295) or trying —unsuccessfully— to take some of *Uromastyx occidentalis* Mateo, Geniez, López-Jurado & Bons, 1998 at its type locality required crossing mine fields (J.-F. Trape, pers. comm., Oct. 2012). On page 303, in the species account for *Acanthodactylus busacki* Salvador, 1982, both photos illustrate the same individual, although two distinct localities are indicated; the actual locality for both photos is “surroundings of Tan-Tan, Morocco” (J.-F. Trape, pers. comm., Oct. 2012).

When we (OSGP) asked the first author why *Hemidactylus ansorgii* Boulenger, 1901 was indicated as occurring from Guinea to Gabon (p. 224), while the species is unknown in the latter country (Pauwels and Vande weghe 2008), he indicated to us that Gabon was actually a *lapsus calami* for Cameroon (J.-F. Trape, pers. comm., Oct. 2012). Regarding that species, let us mention that its common name “Ansorg’s Half-toed Gecko” as mentioned by Trape et al. is erroneous, the species having been dedicated to the explorer William John Ansorge (1850–1913, see Beolens et al. 2011).

The literature cited includes 502 references. There are remarkably few typographical errors in the book. We warmly recommend the purchase of this excellent opus which represents a nice addition to any natural history library because of its beautiful photos, showing many species that have rarely or never been illustrated alive before. But, above all, this book deals with a fauna that was never synoptically treated before, and represents a major milestone in the progress of African herpetology.

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LITERATURE CITED

- BEOLENS, B., M. WATKINS, AND M. GRAYSON. 2011. The Eponym Dictionary of Reptiles. The Johns Hopkins University Press, Baltimore, Maryland. 296 pp.
- BÖHME, W., M.-O. RÖDEL, C. BREDE, AND P. WAGNER. 2011. The reptiles (Testudines, Squamata, Crocodylia) of the forested southeast of the Republic of Guinea (Guinée forestière), with a country-wide checklist. Bonn Zool. Bull. 60:35–61.
- GENIEZ, P., AND E. N. ARNOLD. 2006. A new species of semaphore gecko *Pristurus* (Squamata: Gekkonidae) from Mauretania [sic], represents a 4700 km range extension for genus. Zootaxa 1317:57–68.
- MEDIANNIKOV, O., S. TRAPE, AND J.-F. TRAPE. 2012. A molecular study of the genus *Agama* (Squamata: Agamidae) in West Africa, with description of two new species and a review of the taxonomy, geographic distribution, and ecology of currently recognized species. Russ. J. Herpetol. 19:115–142.
- PAUWELS, O. S. G., AND J. P. VANDE WEGHE. 2008. Reptiles du Gabon. Smithsonian Institution, Washington, DC. 272 pp.
- TRAPE, J.-F. 2011. *Agama cristata* Mocquard, 1905 and *Agama insularis* Chabanaud, 1918 (Squamata: Agamidae): two valid West African species. J. Herpetol. 45:352–354.
- , J. M. DUPLANTIER, H. BOUGANALI, B. GODELUCK, F. LEGROS, J. P. CORNET, AND J. L. CAMICAS. 1991. Tick-borne borreliosis in West Africa. The Lancet 337:473–475.

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Amphibians of Central America

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The increasingly rapid pace of discovery and description of new taxa, along with the taxonomic revision of long-known groups, has made an accurate accounting of regional herpetofaunal diversity difficult for even the most dedicated specialists to track. Recent years have seen a remarkable proliferation of quality reference books dealing with the rich Mesoamerican herpetofauna, that is, those amphibians and reptiles occurring east of the Isthmus of Tehuantepec and southward through Panama. Given the large number of species known from this region, most works are necessarily limited to a single country or protected area, with few books attempting to deal large segments of the entire regional herpetofauna (Wilson

