### Book review. Snakes of Central and Western Africa

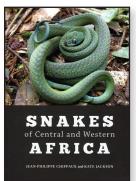
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## **BOOK REVIEWS**

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#### **Snakes of Central and Western Africa**

Jean-Philippe Chippaux and Kate Jackson. 2019. Johns Hopkins University Press, Baltimore, Maryland (https://www.press.jhu.edu). x + 429 pp. Hardcover. US \$84.95. ISBN: 978-1-4214-2719-5.



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The first edition of Jean-Philippe Chippaux's *Les serpents d'Afrique occidentale et centrale* was published two decades ago in 1999, and was followed by two later edi-

tions, each bringing many additions and improvements, in 2001 and 2006, respectively (Akani 2002; Pauwels and Branch 2003). To all herpetologists and field biologists dealing with snakes of West and Central Africa, the 'Chippaux' was no longer just a technical snake identification guide, it really became an 'institution.' Given the numerous publications on the systematics and distribution of African snakes during the last decade, it was definitely time for a new, revised edition. The main surprise element for the new 'Chippaux' is, besides the shift to English, the addition of a second author, although the general scope of the book stays the same.

The binding of the book is solid and the paper is of good quality. Although not a pocket guide, its size and weight (more than one kg) allow bringing it in the field. The cover is nicely illustrated by a photograph of a *Dipsadoboa viridis*, a welcome change from the usual cobras or vipers on the cover of so many snake guides. The first chapter of the book is dedicated to snake identification (pp. 1-27) and presents the important diagnostic characters in detail with the help of numerous photographs and drawings, as well as keys to alethinophidian genera. It is followed by a chapter on snake evolution (pp. 28–39) and chapters on the biogeography of African snakes (pp. 40-48) and snakebite in sub-Saharan Africa (pp. 49-52). Some of the introductory chapters would have benefitted from more development, such as the chapter on snakebite, because Chippaux is a leading authority in this domain. Of course, field guides impose length constraints, and the authors provide numerous references to publications for readers desiring to know more (note, however, that there are several unused pages at the beginning of the book and seven blank pages at the end of the book).

The fifth chapter introduces the scolecophidians within just a few pages (pp. 53–59). Similar to the former Chippauxs, scole-

cophidians receive a poor treatment relative to other snakes. The authors state 'We will deal with them [Scolecophidia] in less detail than we devote to the alethinophidian snakes' without justification. The authors provide a key to the families and genera, a very brief introduction to each genus, and a list of species with an imprecisely written description of their distribution. They indicate in their introduction on p. 53 that the scolecophidians are represented in the region by 49 species, but a few pages later they list 52 species, representing thus about 17% of the regional snake diversity. Only five species are illustrated by a color photograph, one of them not identified to the specific level. Knowing that this group includes many species still to be described, we regret this decision which helps to maintain a poor level of knowledge and popularity of these fascinating, ecologically specialized snakes.

The next chapters present the Boidae and Pythonidae (pp. 60-71), viperids (pp. 72-103), elapids (pp. 104-135), lamprophiids (pp. 136–287) and colubrids (pp. 288–384). Each of the 247 alethinophidian species treated in the book is presented through a specific account. Species accounts generally follow an introduction to the genus providing useful information and a key to the species. The species accounts include a clear and informative text with a general description of the geographic distribution, a morphological description with emphasis on diagnostic characters, and occasional taxonomic and other relevant comments. Maps are specific or combine the distributions of several species. The authors chose to use dotted maps, which would be very good if they included at least all reliable published localities. Unfortunately, this is not the case; in particular many recently published localities were not included. For example, the map for Atheris hirsuta shows a single dot in agreement with the species account that mentions that the species is endemic to the Taï Forest in Ivory Coast, but in fact it is more widely distributed (Penner et al. 2013). The map for Bitis arietans on p. 83 shows no dot for Ghana, but the species is illustrated by a photograph of an individual taken in Ghana; the same happens for Atractaspis aterrima on p. 143 and for Limaformosa crossi (cited under Gonionotophis crossi) on pp. 211-212 (see Table 1). The map for Natriciteres variegata on p. 301 shows no dot for Liberia, but the species is illustrated by a photograph taken in that country; the only site in Liberia where the author of the photograph, the late Bill Branch, worked is the Liberian part of Mount Nimba (Rödel, pers. comm.). The map for *Polemon bocourti* on p. 176 shows a single dot for the Republic of Congo in the northern part of the country, although the species is illustrated by a photograph taken in a coastal locality of that country (Table 1). Dietary observations made by Pauwels et al. (2004) on Psammophis cf. phillipsii in Loango National Park, Gabon, were erroneously included in the account and as a dot on the map for *P. sibilans*, while the latter species does not occur in Gabon; the Gabonese population actually belongs to *P. mossambicus* (Trape et al. 2019). Additional localities for species of the northwestern part of the region covered by the book can be found in Trape and Mané (2006). Another issue with the maps is their large size, about half a page each, and the fact that the geographic area covered by the book represents less than half of the surface of each map. Reducing the size of the maps and centering them on the region concerned by the book would have saved many pages and enabled the photographs of snakes, generally much smaller than the maps, to be enlarged.

In addition to the numerous excellent drawings illustrating the diagnostic morphological characters in the general introduction and in the introductions to various families, one finds 124 remarkably accurate snake head scalation drawings (each time a lateral, dorsal and ventral view), nearly all performed by the talented hand of Tuhin Giri who is to be congratulated. Each drawing caption specifies the museum collection number of the specimen used, which is precious information. It is therefore a pity that about 50 of these beautiful drawings were improperly typeset, thus cutting off the bottom part of the illustration (e.g., Figs. 9.74, 10.21, 11.42).

The photographs are generally of good quality, although sometimes too dark and too small. In total, 94 of the species (50 of them alethinophidians) and six of the genera treated were not represented by at least one photograph or drawing. More than 80 of the photos were taken outside the region covered by the book or show captive individuals of unknown origin. The photos of live individuals mention only the country where they were taken, without more geographical precision, a real pity for all cases where more detailed locality information was available, especially for the rarely illustrated species. In order to not lose this important information, we provide detailed localities for selected photos, obtained directly from their respective authors (Table 1).

The separation of the keys to genera and to species is very handy. We tried the identification keys with fresh material from Gabon and the Democratic Republic of the Congo. The first specimen we used, an Aparallactus modestus, did not fit anywhere in the key to the genus, as it shows, similar to the individual illustrated on p. 165, a single supralabial (the 6th) in contact with the parietal, while the key gave only two options: '5th and 6th supralabials both in contact with parietal,' or 'the 5th but not 6th supralabial in contact with parietal.' We used other snakes, for which the keys led to the right species and proved to be easy and practical. We note that in the key to the genus Atheris on p. 74, A. hirsuta is said to be distinguishable from A. hispida by its possession of only one row of scales between the eve and the nasal, while in reality it has two rows, as can be seen in the original description of A. hirsuta and on the photos provided by Penner et al. (2013) and by Chippaux and Jackson themselves. In the same key, A. broadleyi is said to be distinguishable from A. squamigera by the presence in the former of a black stripe along the side of the head. Rather than a black stripe (not visible indeed on Fig. 7.2), it is a 'darker triangle' as correctly mentioned in the species account for A. broadleyi, often poorly contrasted. In the key to *Bitis* species on p. 82, 'A group of several narrow, pointed scales between the two nostrils' leads to B. nasicornis, while 'A single scale between the nostrils' leads to B. rhinoceros or B. gabonica, although it is impossible that the nostrils are separated by a single scale. This means that a reader with a poor knowledge of these snakes won't identify a viper as any of the latter two species. There are discrepancies between the key and the species accounts for *Polemon* (p. 173). In the key, P. notatus is said to have a 'dark band across neck' while in the species account it is said to show 'a broad pale band across the nape'; in the key, P. gabonensis is said to have 'no nuchal band' but its species account says it has 'a pale band across the nape.' Among other discrepancies, it should be mentioned that in the key to Dipsadoboa, the character 'subcaudals divided' leads among others to D. duchesnii, while its species account erroneously mentions that it has single subcaudals. In the key to Telescopus on p. 362, '2 upper labials in contact with the eye' (versus 3) leads among others to T. variegatus, while this species is illustrated by a drawing showing three supralabials in contact with the eye. The last couplet of this key gives an alternative between '19 dorsal scale rows' for T. semi-annulatus, whereas the species account says '19 (occasionally 17 or 21) oblique rows.' For T. obtusus, the key says there are '21 dorsal scale rows,' whereas the species account says '23 (occasionally 21) oblique rows.'

The individual shown on p. 217 to depict Gonionotophis poensis was already used by Broadley et al. (2018) to illustrate the genus Limaformosa (Greenbaum, pers. comm., August 2019), thus excluding an identification as Mehelya poensis; it rather seems to fit with Limaformosa savorgnani, as it was initially tentatively identified by Greenbaum (pers. comm.; Table 1). In the light of the recent revision by Trape et al. (2019), the two individuals of 'Psammophis phillipsii' shown on Figs. 11.36 and 11.37 should be re-identified as P. mossambicus, and the 'P. sibilans' on Fig. 11.46 as P. afroccidentalis. The 'Philothamnus carinatus' individual illustrated by a photograph on p. 347 (see Table 1) was used in the phylogenetic study of Engelbrecht et al. (2019) where it came out as a P. heterodermus. Dipsadoboa underwoodi is illustrated by a photograph taken in the Democratic Republic of the Congo. The species account does not include this country in this species' distribution, nor does the map. Based on the characters visible on the photograph, in particular two supralabials in contact with the orbit, and the color of the underside of the tail contrasting with the lighter color of the belly, we believe this individual to be a Dipsadoboa weileri, a species well known from the Democratic Republic of the Congo. The photograph of a juvenile 'Grayia ornata' shown on pp. 8 and 382 actually represents a juvenile G. smithii, recognizable by its laterodorsal pattern made of yellowish pyramids on a dark brown background and its elongate posterior (7th) supralabial. This individual was sequenced and its identification as G. *smithii* has been confirmed (Greenbaum, pers. comm.).

The chapters presenting the snake families are followed by a bibliography (pp. 385–409) and an index (411–429), closing the opus. The literature cited includes 614 references, among them most of the original descriptions of the snakes of the region and many other important historic references, which is very valuable.

The incompleteness of some maps is explainable for the same reason for which recent revisions and species descriptions are not included—while the book was published in 2019, the manuscript was submitted for publication four years earlier, on 27 May 2015 (Chippaux, pers. comm.). After that only some publications could be integrated (only six references published after 2015 are listed in the literature cited). It is a pity that the revision of the Naja melanoleuca complex by Wüster et al. (2018) leading to the recognition at species level of *N. subfulva* and to the description of *N.* guineensis and N. savannula, all occurring in the area covered by the book, could not be taken into account, as well as the description a vear before of Naja peroescobari from São Tomé (Ceríaco et al. 2017). The revision of Gonionotophis by Broadley et al. (2018) led among other results to the description of two new genera found in the area covered by the book, the revalidation of *Mehelya*, and the confirmation of the validity of Limaformosa savorgnani as a separate species. Limaformosa chanleri, known among other countries from the Democratic Republic of the Congo, Rwanda and Burundi (Wallach et al. 2014), has been omitted in the book. Another major work that could not be included was the revision of Boaedon by Trape and Mediannikov (2016) that led to the de-

Table 1. Localities for selected photographs presented by Chippaux and Jackson (2019), provided by the respective photographers (pers. comm. to OSGP, 2019). Dept. = Department; DRC = Democratic Republic of the Congo; Prov. = Province; RC = Republic of the Congo.

Species	Fig. numbers and photographer	Locality
Leptotyphlops scutifrons	1.27 & 5.4, S. Spawls	Otse, South-East District, Botswana
Myriopholis macrorhyncha	5.5, S. Spawls	Resort on the Awash River, Sodere, Ethiopia
Tricheilostoma bicolor	5.6, S. Spawls	Wa, Upper West Region, Ghana
Eryx colubrinus	6.6, S. Spawls	Northern Tanzania
Python natalensis	6.11, S. Spawls	Otse, South-East District, Botswana
Bitis arietans	7.15, MO. Rödel	Comoé National Park, north-eastern Ivory Coast
Causus maculatus	7.30, S. Spawls	Wa, Upper West Region, Ghana
Atractaspis dahomeyensis	9.19, MO. Rödel	Ananda, eastern-central Ivory Coast
Polemon bocourti	9.61, M. Burger	2.5 km E of Lombo, about 9 km E of Hinda, Kouilou Dept., RC
Polemon collaris	9.66, M. Burger	About 24 km SE of Tsinguidi, Niari Dept., RC
Polemon notatus	9.78¹, M. Burger	1 km SE of Tchitobo, Kouilou Dept., RC
Xenocalamus michelli	9.87, E. Greenbaum	Near Manono airport (7°16'39.8"S, 27°23'23.2"E; alt. 627 m asl), Tanganyika Prov., DRC (field nr ELI355)
Boaedon radfordi	10.9, E. Greenbaum	Shatuma-Abis village (2°00'47.3"N, 30°50'26.4"E; alt. 2000 m asl), Lendu Plateau, Ituri Prov., DRC (paratype UTEP 20996)
Bothrophthalmus brunneus²	10.17, M. Burger	Near Banjoko village, about 3 km SSW of Mayoko Poste, Niari Dept., RC
Bothrophthalmus lineatus	10.18, MO. Rödel	Forêt Classée de la Haute Dodo, south-western Ivory Coast
Bothrophthalmus brunneus²	10.19, MO. Rödel	Near Dja Faunal Reserve, south-eastern Cameroon
Dendrolycus elapoides	10.26, K. Mebert	Uma (0°32'4.75"N, 25°54'3.36"E), Tshopo Prov., DRC (individual registered as RBINS 18729)
Gonionotophis brussauxi	10.30, M. Burger	$3.4\mathrm{km}$ SSW of village Bandjoko, $8.5\mathrm{km}$ SSW of Mayoko Poste, Niari Dept., RC
Limaformosa crossi³	10.35, S. Spawls	Wa, Upper West Region, Ghana
Limaformosa cf. savorgnani <sup>4</sup>	10.43, E. Greenbaum	Mayimbili (1°23'48.8" N 28°35'09.2" E; alt. 742 m asl), Ituri Prov., DRC (field n r ${\rm EBG}$ 2637)
Mehelya stenophthalmus³	10.44, M. Burger	$2\mathrm{km}$ SE of Chiboula village, about $10\mathrm{km}$ NW of Mandingo-Kayes, Kouilou Dept., RC
Hydraethiops melanogaster	12.12, E. Greenbaum	Near Epulu River (1°23'49.0" N $28°35'09.1"E; alt. 753 m asl), Ituri Prov., DRC (field nr EBG 2612)$
Dasypeltis palmarum	13.19, M. Burger	6 km W of Hinda, Kouilou Dept., RC
Philothamnus heterodermus <sup>5</sup>	13.64, M. Burger	5 km NE of Mengo, about 16 km SW of Hinda, Kouilou Dept., RC
Philothamnus dorsalis	13.66, M. Burger	1 km E of Carriere Mambanziba, 14 km E of Hinda, Kouilou Dept., RC
Thelotornis kirtlandii	13.95, MO. Rödel	Forêt Classée de la Haute Dodo, south-western Ivory Coast
Grayia ornata	13.113, M. Burger	About 5 km NE of Tchiboula village, Kouilou Dept., RC
Grayia ornata	13.114, M. Burger	Vemba River, 1 km SW of Youbi village, Kouilou Dept., RC
Grayia smithit <sup>®</sup>	13.115, E. Greenbaum	Vicinity of Epulu (1°24'05.0" N $28°34'12.0"E; alt. 747 m asl), Ituri Prov., DRC (field nr EBG 2634)$
Grayia smithii	13.117, M. Burger	2.8 km E of Hinda, Kouilou Dept., RC

<sup>&</sup>lt;sup>1</sup> The captions for figures 9.78 and 9.79 are inadvertently switched in the book. <sup>2</sup> Treated as 'B. lineatus, unicolored form' by Chippaux and Jackson. <sup>3</sup> Included in Gonionotophis by Chippaux and Jackson. <sup>4</sup> Erroneously identified as Gonionotophis poensis. <sup>5</sup> Erroneously identified as P. carinatus. <sup>6</sup> Erroneously identified as G. ornata.

scription of five species occurring in the area under consideration: B. littoralis, B. longilineatus, B. paralineatus, B. perisilvestris and B. subflavus. Snakes described in 2018 but not integrated in the book also include *Letheobia akagerae* Dehling et al. (Typhlopidae) from Rwanda, and Echis romani Trape (Viperidae) from Nigeria to the Central African Republic. Inevitably, several snakes described in 2019 could not be included: Myriopholis occipitalis Trape and Chirio from the Central African Republic and Chad, Tricheilostoma kongoensis Trape from the Democratic Republic of the Congo, Afrotyphlops chirioi Trape from the Central African Republic, A. rouxestevae Trape from Cameroon, Letheobia logonensis Trape from Chad, Atractaspis branchi Rödel et al. from Guinea and Liberia, Polemon ater Portillo et al. from the Democratic Republic of Congo, and Psammophis afroccidentalis Trape et al. from West Africa. This renders the Naja, Boaedon, Psammophis and Gonionotophis sections of the book already obsolete.

French is an official language in 17 of the 23 countries covered by the book. Some researchers will find the use of English challenging, but this new book will be a most useful tool for the numerous non-French speaking persons interested in the snakes of the region. The price of the book is much beyond what most researchers from the area covered by the book (and beyond) can afford. However, thanks to the useful identification keys, the numerous photographs and high-quality drawings, the information-rich text, and the abundant and pertinent literature cited, it remains an excellent guide, and we strongly encourage local and international scientific libraries and all naturalists and herpetologists working on African snakes to purchase this important new tool.

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# The Field Herping Guide: Finding Amphibians and Reptiles in the Wild

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For many of us, our first forays into nature involved picking up and admiring a salamander, snake, or frog, and staring in wonder at its bright yellow spots, feeling the roughness of its keeled scales, or smelling the pungent twinge of musk. Amphibians and reptiles appeal to young

