

MISCELLANEA HERPETOLOGICA GABONICA II

Olivier S. G. Pauwels^{1,2} and Patrick David³

¹Smithsonian Institution, National Zoological Park, Monitoring and
Assessment of Biodiversity Program, B.P. 48, Gamba, Gabon

²Address for correspondence: Département des Vertébrés Récents, Institut Royal des
Sciences naturelles de Belgique, Rue Vautier 29, 1000 Brussels, Belgium;
Email: osgpauwels@yahoo.fr

³UMS 602 Taxonomie-collection - Reptiles & Amphibiens, Département Systématique et Evolution,
Case Postale 30, Muséum National d'Histoire Naturelle, 57 rue Cuvier, F-75231 Paris Cedex 05, France;
E-mail: pdavid@mnhn.fr

ABSTRACT.– *Leptotyphlops perreti* and the family Leptotyphlopidae are confirmed for Gabon. The colubrid *Dispholidus typus*, the elapids *Dendroaspis polylepis* and *D. viridis* and the viperid genus *Echis* are deleted from the Gabon reptile list. New localities and/or ecological data are provided for *Agama agama* (Agamidae), *Hemidactylus mabouia*, *Lygodactylus fischeri* (Gekkonidae), *Dipsadoboa duchesnii*, *Hapsidophrys smaragdinus*, *Rhamnophis a. aethiopissa* (Colubridae), *Aparallactus modestus*, *Lamprophis olivaceus*, *Mehelya poensis*, *Psammophis cf. phillipsii* (Lamprophiidae) and *Natriciteres fuliginoides* (Natricidae). A new size record for *Hapsidophrys smaragdinus* is provided. Two species are added to the reptile fauna of Cristal Mounts National Park.

KEYWORDS.– Reptilia, Agamidae, Gekkonidae, Colubridae, Elapidae, Lamprophiidae, Leptotyphlopidae, Natricidae, Viperidae, Cristal Mounts, Gabon.

INTRODUCTION

Due to the scarcity of data on the distribution and ecology of the herpetofauna of Gabon, we decided to make relevant new observations available through a series of publications entitled *Miscellanea Herpetologica Gabonica* (see Pauwels and David, 2007), of which the present article is the second part. One of the main objectives of the series is to evaluate literature and museum records to help establish a documented list of the reptiles of the country.

MATERIAL AND METHODS

Taxa within families are presented in alphabetical order in the Results. Field observations in Gabon were made by OSGP. New locality records are marked with an asterisk*, new department (district) records by two**, new province records by three***. Body measurements were taken to the nearest millimeter; scale measurements were taken with a caliper to the nearest 0.05 mm. Paired meristic characters are given in the left/right order. Snake ventral

scales were counted according to Dowling's (1951) method. The terminal tail scute is not included in the subcaudal count. The numbers of dorsal scale rows are given respectively at one head length behind head, at midbody (above the ventral corresponding to half of the total number of ventrals), and at one head length before vent. Numbers of supralabials are followed between brackets by the indication of which among them border the eye. Numbers of infralabials are followed between brackets by the number among them bordering the first pair of sublinguals.

Abbreviations: Institutions: IRSNB: Institut Royal des Sciences naturelles de Belgique, Brussels; MNHN: Muséum National d'Histoire naturelle, Paris; USNM: National Museum of Natural History, Washington D.C. Morphology: DSR: dorsal scale row(s); IL: infralabial scale(s); Lor: loreal scale(s); PoO: postocular scale(s); PreO: preocular scale(s); PV: pre-ventral scale(s); SC: subcaudal scale(s); SL: supralabial scale(s); SVL: snout-vent length; TaL: tail length; Tem: temporal scale(s); TL: total length;

VEN: ventral scale(s). Others: DOR: dead on road; Dept.: Department; Prov.: Province.

RESULTS

Agamidae

Agama agama (Linnaeus, 1758)

Predation. On the 30th of April, 2007, at 9h50 a.m., a group of four adult *Corvus albus* (Corvidae) was seen chasing an adult male *Agama agama* in the garden of the first author in Yenzi, Gamba, Ogooué-Maritime Prov. The *Agama* took refuge in an electric box, where it could not hide completely, part of its tail, and that of another specimen, an adult female, were visible. The four pied crows were joined by five more, and all were pulling the *Agama* tails with their beaks. The female first went out, and was chased and caught in the grass. A few minutes later, the male was also extracted from its retreat. Both birds which got an *Agama* went to eat it on a palm tree.

Gekkonidae

Hemidactylus mabouia (Moreau de Jonnés, 1818)

Predation. See under *Hapsidophrys smaragdinus*.

Lygodactylus fischeri Boulenger, 1890

Province record. An adult specimen (USNM 565025) was caught on a sunny afternoon on a pipeline along a path in a mature secondary forest at Totou 9, Gamba*, Ndougou Dept.***, Ogooué-Maritime Province***, 20 May 2005. It ran surprisingly fast and made several big leaps while trying to escape. This specimen represents the first record of the species for the Gamba area, and the first record for Ogooué-Maritime Prov. (Pauwels et al., 2006a).

Leptotyphlopidae

Leptotyphlops perreti Roux-Estève, 1979

Country record. The specimen MNHN 1977.1651 (sex unknown) originates from “Mounana, près de Moanda” (“Mounana, near Moanda”), Mounana*, Lébombi-Léyou Dept.***, Haut-Ogooué Prov.*** Its SVL is 199 mm; its TaL 42 mm. The body diameter is 3.00 mm. Nos-

tril situated between nasal and 1st supralabial (= “infranasal” of Roux-Estève, 1979), rounder than as shown in the original description by Roux-Estève; eye large; rostral large, narrowing posteriorly, its apex reaching beyond the anterior limit of the eyes (just reaches it according to Roux-Estève, 1979). The ocular scale large, reaching lip. One SL between the “infranasal” and the ocular, another SL beyond the ocular, i.e., in total four scales border the upper lip. Prefrontal triangle-shaped. Frontal wider but shorter than prefrontal. Length of frontal + prefrontal longer than rostral length. Supraoculars oblique; interparietal wide; occipitals entire and wide. Other meristical and morphometrical characters include (data are followed in brackets by those provided in the original description, if they differ): DSR 14-14-14; 248 scales along body (291, 302, 297); 55 SC (54, 49, 51); TaL/TL 0.174 (0.143, 0.119, 0.126); SVL/body diameter 66.3 (54.1, 69.7, 56.6). The color in alcohol is uniformly beige. The species had already been cited from Gabon, although without any precise locality, by Trape and Roux-Estève (1995), and the present record thus confirms the presence of the species and the family Leptotyphlopidae in Gabon.

Colubridae

Dipsadoboa duchesnii (Boulenger, 1901)

Diet in captivity. A subadult specimen was caught by day in Yenzi, Gamba, Ndougou Dept., Ogooué-Maritime Province, in early April 2007, while it was resting on a metallic fence a meter above the ground. It was locally kept in a terrarium for a week, then released. During that week it ate a live adult *Hyperolius cinnamomeoventris* Barboza du Bocage, 1866, a live adult *H. nasutus* Günther, 1865 (Anura: Hyperoliidae) and a live juvenile *Hemidactylus mabouia*, all collected at the site of capture. It never made any attempt to bite when first caught or any time it was handled. Its activity was strictly nocturnal.

Dispholidus typus (Smith, 1828)

Deleted from Gabon reptile list. See below under *Rhamnophis a. aethiopissa*.

Hapsidophrys smaragdinus (Schlegel, 1837)

Diet and maximal size. Three specimens were collected in the Botanical Garden of Tch-

imbélé, Haut-Komo Dept., Woleu-Ntem Prov. in January (IRSNB 17375) and May 2002 (IRSNB 17376–17377). Their sizes are, respectively: SVL 473, 745, 251 mm; TaL 297, 450, 152 mm. They show, respectively (characters are not repeated if they do not differ): round pupil; keeled DSR, VEN and SC; 9(5–6)/9(5–6), 9(5–6)/9(5–6), 10(6–7)/9(5–6) SL; 10(5)/10(5), 10(5)/11(5), 10(5)/10(5) IL; 1/1 Lor; 1/1 PreO; 2/2 PoO; Tem 1+2/1+2, 1+2/1+2 with on each side a small scale in the anterior upper corner of the first Tem, 1+2/1+1+2. The TL of IRSNB 17376, 1195 mm, is higher than the maximal TL (1191 mm) cited by Chippaux (2006). The stomach of IRSNB 17375 contained an adult *Hemidactylus mabouia* whose SVL is 65 mm (tail mostly missing), ingested head first, the left arm along the head. The stomach of IRSNB 17377 contained a juvenile *Hemidactylus mabouia* (SVL 37 mm, TaL 45 mm) ingested head first. In both cases, the SVL ratio between the predator and the prey is close to 7 (7.3 and 6.8, respectively). Pauwels et al. (2002:63) had already reported a case of predation involving these two species, but did not mention their respective SVL; in which case, the snake (IRSNB 16317) had an SVL of 434 mm and the gecko (IRSNB 15692) an SVL of 51 mm, thus a predator-prey SVL ratio of 8.5.

Rhamnophis aethiopissa aethiopissa Günther, 1862

Distribution and nomenclatural note. Knoepffler (1966: 15) mentioned a male specimen of *Dispholidus typus* from Makokou (Ivindo Dept., Ogooué-Ivindo Prov.), and gave some of its meristic characteristics: 17 mid-dorsal scale rows, 166 VEN, 143 SC, 1/1 PreO, 2/2 PoO, 7/7 SL, and 1+2/1+2 Tem. This unique and zoogeographically unexpected Gabonese record for the genus was repeated by Chippaux (2006: 159) and Frétey and Blanc (no date: 40), although Hughes (1983: 317) had attributed the record to *Thrasops flavigularis* (Hallowell, 1852). In order to solve the question, we (PD) re-examined Knoepffler's specimen. It is deposited in the Paris collections as MNHN 1967.0443. It has 17-17-11 DSR, slightly keeled on lower flanks, smooth on higher flanks, except the vertebral row which is much enlarged and keeled. It has 1 PV + 166 VEN, 146 divided SC and a divided

anal. Its internasals are longer than its prefrontals. It has 16 + 3 enlarged maxillary teeth. As Knoepffler noted, it has 7/7 SL, 1/1 PreO, 2/2 PoO, but 1+0/1+0 Tem. These characters allow to positively identify it as a *Rhamnophis aethiopissa aethiopissa* (see a.o. key in Chippaux, 2001:103). Another record of *Dispholidus typus* exists for Gabon (at Ofoubou, also known as Moufoubou, Ndolou Dept., Ngounié Prov.), in the unpublished report by Waardenburg and Guicherit (1991:41, 108 [figs]), but the two photographs they presented undoubtedly illustrate a *Rhamnophis a. aethiopissa*. *Dispholidus typus* can thus be deleted from the Gabon reptile list. According to several dictionaries of classical Latin that we consulted, the specific nomen *aethiopissa* is not an adjective (which should be *aethiopicus*, *-a*, *-um*), but a noun that means “an Ethiopian [woman]”. It is hence a feminine noun in apposition, and should not be grammatically accorded with the masculine gender *Rhamnophis*.

Elapidae

Dendroaspis viridis (Hallowell, 1844) and *Dendroaspis polylepis* Günther, 1864

Deleted from Gabon reptile list. In a superficial study dedicated to the snake envenomations in Gabon in a medical journal, Tchoua et al. (2002) presented three species of medical importance in the country: *Bitis gabonica* (Duméril, Bibron and Duméril, 1854), *Dendroaspis viridis* and *Dendroaspis polylepis*. They gave as common name for the first “mamba vert” (green mamba) and for the second “mamba noir” (black mamba). In Gabonese French, these names refer to any elongate, (semi-) arboreal, green/greenish (*Dipsadoboa* spp., *Hapsidophrys* spp., *Philothamnus* spp., *Rhamnophis* spp., *Dendroaspis j. jamesoni* (Traill, 1843)) or black/blackish (dark *Boiga blandingii* (Hallowell, 1844), *Thrasops flavigularis*, *Naja melanoleuca* Hallowell, 1857, *Pseudohaje goldii* (Boulenger, 1895)) snakes, respectively. Their mention of these two species are thus based on misinterpretations of local common names, and throw doubt on the efficiency of medical treatments applied. From a zoogeographical point of view, the presence of these two mamba species in Gabon would be surprising and is not supported by a voucher,

and they can be provisionally deleted from the Gabon snake list. It is to be noted that the same authors also erroneously mentioned the genus *Echis* Merrem, 1820 as being present in Gabon, without supportive evidence.

Lamprophiidae

Aparallactus modestus (Günther, 1859)

Locality record. An adult individual (IRSNB 17374; SVL 442 mm; TaL 73 mm) was collected in the Botanical Garden of Tchimbélé*, Haut-Komo Dept., Woleu-Ntem Prov. in January 2002. It shows unkeeled DSR, VEN and SC; 7(3–4)/7(3–4) SL (6th contacting the parietal); 7(4)/7(4) IL; 0/0 Lor; 1/1 PreO; 2/2 PoO; 0+1+1/0+1 Tem. Other characters are shown in Table 1. In preservative, its dorsal surface is uniformly blackish. Ventral surface of head and belly yellow, except in last 3rd of belly, which is speckled with black; underside of tail blackish, contrasting with belly colour. Pupil round. This specimen represents the second known locality for the species in the Cristal Mounts (Pauwels et al., 2002).

Lamprophis olivaceus (Duméril, 1856)

Locality/national park record. Two specimens were collected in the Botanical Garden of Tchimbélé*, Haut-Komo Dept.**, Woleu-Ntem Prov. in January 2002. The largest one (IRSNB 17378), besides its characters appearing in Table 1, shows a vertical pupil; 8(3–5)/9(4–6) SL; 9(4)/9(4) IL; 1/1 PreO; 2/2 PoO; 1/1 Lor not in contact with the eye; 1+3/1+3 Tem; unkeeled DSR, VEN and SC. Its 29th and 36th VEN are forked on their right and left side, respectively.

The vertebral row is not enlarged. In preservative, its dorsal surface is blackish; belly uniformly yellowish in the first fifth, becoming more spotted with black posteriorly. The adult female (SVL 680 mm; TaL 96 mm) contained five eggs of ca. 27 x 13 mm. The second specimen (IRSNB 17379), a juvenile (SVL 213 mm; TaL 36 mm) in poor preservation condition, also shows a vertical pupil and unkeeled DSR, VEN and SC; see Table 1. These specimens represent the first record of this genus for the Cristal Mounts and Cristal Mounts National Park (Pauwels et al., 2002, 2006b).

Mehelya poensis (Smith, 1847)

Locality/national park record. An adult specimen (IRSNB 17380; SVL 770 mm; TaL 201 mm) was collected in Tchimbélé*, Haut-Komo Dept., Woleu-Ntem Prov. in May 2002. It has keeled DSR (with a double keel on an enlarged vertebral row), VEN and SC; 7(3–4)/7(3–4) SL; 8(5)/8(5) IL; 1/1 Lor, not in contact with the eye; 1/1 PreO; 2/2 PoO; 0+1+2/0+1+2 Tem (5th SL in contact with the parietal on each side). Additional characters are shown in Table 1. This record represents the second locality for the species in the Cristal Mounts and the first for the genus for Cristal Mounts National Park (Pauwels et al., 2002, 2006b).

Psammophis cf. *phillipsii* (Hallowell, 1844)

Diet in captivity. A newborn specimen collected in a school garden in Yenzi, Gamba, Ogooué-Maritime Prov., in late October 2005, which was at the beginning of the rainy season. It was kept for a month in captivity in Gamba, during which it ate two adult *Hyperolius nasu-*

Table 1. Meristic characters for some Gabon snakes. Taxa are arranged in alphabetical order.

Species	Collection number	Sex	DSR	PV+VEN	An	SC
<i>Aparallactus modestus</i>	IRSNB 17374	F	15-15-15	1 + 160	Single	45 undiv.
<i>Hapsidophrys smaragdinus</i>	IRSNB 17375	F	15-15-11	2 + 157	Divided	151 div.
<i>H. smaragdinus</i>	IRSNB 17376	F	15-15-11	2 + 157	Divided	143 div.
<i>H. smaragdinus</i>	IRSNB 17377	Juv.	15-15-11	2 + 155	Divided	150 div.
<i>Lamprophis olivaceus</i>	IRSNB 17378	F	28-29-23	1 + 211	Single	1 div. + 42 undiv.
<i>L. olivaceus</i>	IRSNB 17379	Juv.	?	1 + ca. 205	Single	41 undiv.
<i>Mehelya poensis</i>	IRSNB 17380	F	17-15-15	3 + 257	Single	99 div.
<i>Natriciteres fuliginoides</i>	IRSNB 17381	M	17-17-15	2 + 123	Single	92 div.
<i>N. fuliginoides</i>	IRSNB 17382	M	17-17-15	2 + 123	Single	>24 div.
<i>N. fuliginoides</i>	IRSNB 17383	M	17-17-15	2 + 119	Single	>33 div.

tus, collected at the same locality. The snake was later released.

Natricidae

Natriciteres fuliginoides (Günther, 1858)

Locality/national park record. Three specimens (IRSNB 17381–17383) were collected in the Botanical Garden of Tchimbélé*, Haut-Komo Dept., Woleu-Ntem Prov. in January 2002. Their sizes are SVL 163, 249, 231 mm; TaL 100, >43, >59 mm, respectively. Respectively, they show (characters are not repeated if they do not differ): rounded pupils; unkeeled DSR, VEN and SC; 8(4–5)/8(4–5) SL; 8(4)/8(4), 8(4)/8(4), 9(4)/10(5) IL; 1/1 Lor; 2/2, 2/2, 1/1 PreO; 3/3 PoO; 1+2/1+2, 1+2/1+1+2, 1+2/1+2 Tem. Additional characters are shown in Table 1. The stomach of IRSNB 17381 contains a partly digested frog (SVL ca. 29 mm, TL ca. 60 mm) ingested legs first. These specimens represent the first record of the genus for Cristal Mounts National Park (Pauwels et al., 2006b).

Viperidae

Echis Merrem, 1820

Deleted from the Gabon reptile list. See above under Elapidae.

ACKNOWLEDGEMENTS

We are grateful to Adèle Sambo, Samuel Mbadinga (CENAREST, Libreville) and Adrien Nougou (Direction de la Faune et de la Chasse, Libreville) for providing research, collecting and export permits. We thank Georges L. Lenglet, Sébastien Bruaux and Philippe J. R. Kok (Institut Royal des Sciences naturelles de Belgique, Brussels) for data on the IRSNB collections, Chuchep Chimsunchart (Phetchaburi) and Elie Tobi (Smithsonian Biodiversity Center, Gamba) for companionship in the field, and Tariq Stévant (Université Libre de Bruxelles, Brussels) and Thierry Kombila Moussavou for their kind assistance in the collection from Tchimbélé. This research was supported by the Smithsonian Institution/Monitoring and Assessment of Biodiversity Program and grants from Shell Gabon. This publication is contribution 102 of the Gabon Biodiversity Program.

LITERATURE CITED

- CHIPPAUX, J.-P. 2006.** Les serpents d'Afrique occidentale et centrale. IRD Editions, Collection Faune et Flore tropicales 35, Paris. 311 pp.
- DOWLING, H. G. 1951.** A proposed standard system of counting ventrals in snakes. *British Journal of Herpetology* 1:97–99.
- FRÉTEY, T. & C. P. BLANC. NO DATE [2004].** Liste des reptiles d'Afrique Centrale. Les dossiers de l'ADIE. Série Biodiversité N° 2 [sic], Libreville. 73 pp.
- HUGHES, B. 1983.** African snake faunas. *Bonner Zoologische Beiträge* 34(1–3):311–356.
- KNOEPPFLER, L.-P. 1966.** Faune du Gabon (amphibiens et reptiles). I. Ophidiens de l'Ogooué-Ivindo et du Woleu N'tem. *Biologica Gabonica* 2(1):1–23.
- PAUWELS, O. S. G., M. BURGER, W. R. BRANCH, E. TOBI, J.-A. YOGA & E.-N. MIKOLO. 2006a.** Reptiles du Complexe d'Aires Protégées de Gamba, sud-ouest du Gabon. pp:91–100. In: Gamba, Gabon: biodiversité d'une forêt équatoriale africaine / Gamba, Gabon: biodiversity of an equatorial African rainforest. A. Alonso, M. E. Lee, P. Campbell, O. S. G. Pauwels & F. Dallmeier (Eds). *Bulletin of the Biological Society of Washington*, Washington, D.C. 12: (i–xii +) 436 pp. + 32 pl.
- _____, **P. CHRISTY & A. HONOREZ. 2006b.** Reptiles and national parks in Gabon, western central Africa. *Hamadryad* 30(1–2):181–196.
- _____, **& P. DAVID. 2007.** *Miscellanea Herpetologica Gabonica I*. *Hamadryad* 31: in press.
- _____, **A. KAMDEM TOHAM & C. CHIMSUNCHART. 2002.** Recherches sur l'herpétofaune des Monts de Cristal, Gabon. *Bulletin de l'Institut Royal des Sciences naturelles de Belgique, Biologie* 72:59–66.
- ROUX-ESTÈVE, R. 1979.** Une nouvelle espèce de *Leptotyphlops* (Serpentes) du Cameroun: *Leptotyphlops perreti*. *Revue Suisse de Zoologie* 86(2):463–466.
- TCHOUA, R., A. O. RAOUF, A. OGANDAGA, C. MOULOUNGUI, J.-B. MBANGA LOUSSOU, M. KOMBILA & D. NGAKA NSAFU. 2002.** Analyse des envenimations par morsures de serpent au Gabon. *Bulletin de la Société de Pathologie exotique* 95(3):188–190.
- TRAPE, J. F. & R. ROUX-ESTÈVE. 1995.** Les serpents du Congo: liste commentée et clé de détermination. *Journal of African Zoology*

109(1):31–50.

WAARDENBURG, H. & R. GUICHERIT. 1991. Reptiles and Amphibians. pp:40–41 and Appendix VIII. In: Maguelou. An environmental study of the Ofoubou area for Dupont E. & P. P. Basquin, G. van Beek, P. Christy, B. Clist, R. Guicherit, S. Lahm, A. Mougazi, J. Reitsma,

H. Waardenburg, L. White & C. Wilks. N° 8 BV. Africa Forest, Libreville. i–vi + 129 + Appendices I–XIII (1–103). Unpublished report.

Received: 28 June 2007
Accepted: 6 August 2007.