

Miscellanea Herpetologica Gabonica IV

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This contribution is dedicated to the French veterinarian Bettina Sallé, who tragically died of malaria in Libreville in April 2013. She was an extraordinary woman who dedicated her life to the study and conservation of primates. Bettina co-authored the MHG III and posthumously contributed to the present MHG IV.

Abstract

We report the first observation of *Lygodactylus conraui* (Gekkonidae) in Gabon. We present new Gabonese locality records for *Kinixys erosa* (Testudinidae), *Agama agama* and *A. lebretoni* (Agamidae), *Trachylepis albilabris* (Scincidae), *Chamaeleo cristatus* and *C. owenii* (Chamaeleonidae), *Dasypeltis fasciata*, *Hapsidophrys smaragdinus*, *Rhamnophis a. aethiopissa* (Colubridae), *Aparallactus modestus*, *Gonionotophis poensis*, *Lamprophis olivaceus*, *Polemon fulvicollis* (Lamprophiidae) and *Afrotrophlops congestus* (Typhlopidae). Four snake and two lizard species are newly recorded from Ogooué-Lolo and Estuaire provinces, respectively. We refer all published records of *Agama paragama*, *A. cf. paragama* and *A. sylvana* from Gabon to *A. lebretoni*.

Keywords

Biodiversity, herpetofauna, Squamata, protected areas, conservation, Gabon, Equatorial Africa.

Introduction

Since the publication of a synthesis on the herpetofauna of Gabon a few years ago (Pauwels and Vande weghe, 2008), which showed that many more species should be found in the country based on their global distribution, and that the species' ecology and geographical distribution within the country were poorly studied, very little progress has been made. We hence decided to pursue the publication of the series Miscellanea Herpetologica Gabonica, in order to keep track and increase the development of the knowledge on the reptiles of Gabon. Hopefully this series, whose third and latest volume was published by Pauwels and Sallé in 2009, will motivate persons who made interesting observations and photographs in the field or who are aware of unpublished museum material which could help to better understand the species' distributions, to share their data and hence eventually contribute to a better understanding of the ecology, diversity and conservation status of the reptiles of Gabon.

Material and Methods

New reptile material under study is housed in the Natural History Museum of Salento in Calimera, Italy. Collected specimens were injected with 90% ethanol then preserved in 70% ethanol. Snake ventral scales were counted according to the method of Dowling (1951). Snake dorsal scale rows were counted 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; subcaudal counts exclude the terminal pointed scale. The sex of preserved snakes was determined by dissection of the tail base. Specimens' main

diagnostic morphological characters are provided in Table 1 and within the species accounts. We examined all available literature on the reptiles of Gabon (see Pauwels and Vande weghe, 2008; Pauwels et al., 2011; Pauwels and Kok, 2013; Carlino and Pauwels, 2014, 2015, and references therein).

Abbreviations: **Institutions:** CENAREST, Centre National de la Recherche Scientifique et Technique, Libreville, Gabon; MSNS, Natural History Museum of Salento, Calimera, Italy; ZFMK, Zoologisches Forschungsmuseum A. Koenig, Bonn, Germany. **Morphology:** A = anal scale; AT = anterior temporals; D = divided; DSR = number of dorsal scale rows; F = female; IL = number of infralabials, followed in brackets by the number of IL in contact with the first pair of sublinguals; K = keeled; M = male; PoO = number of postoculars; PreO = number of preoculars; PV = number of preventrals; S = single; SC = number of subcaudals; SL = supralabials, followed in brackets by the SL in contact with orbit; SVL = snout-vent length; TaL = tail length; U = unkeeled; VEN = number of ventrals. Varia: Dept = Department; Prov. = Province.

Results

Testudines
Testudinidae

Kinixys erosa (Schweigger, 1812)

A subadult female was photographed by one of us (JLA) at 10 km south of Akiéni, Lékon-Lékori Dept, Haut-Ogooué Prov. (Figure 1) on 25 Feb. 2015. The turtle was crossing the road at around 9:30 A.M. in a secondary forest area. New dept record (Maran and Pauwels, 2005).

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Figure 1. Live subadult *Kinixys erosa* in Lékoni-Lékori Department, Haut-Ogooué Province, southeastern Gabon. Photograph by J.-L. Albert.

Squamata

Agamidae

Agama lebretoni Wagner, Barej & Schmitz, 2009

In their description of the species, Wagner et al. (2009a) listed specimens from Gabon in their material examined, reported on their distribution map: ZFMK 73239-245 from “Fougamou” and IRSNB 15686-687 from “Ngouassa.” Fougamou is located in Tsamba-Magotsi Dept, Ngounié Prov. Wagner et al. (2009a) ignored the work of Pauwels et al. (2002) where the specimens IRSNB 15686-687 were listed under *A. cf. paragama*. Although IRSNB 15686 indeed originates from Ngouassa, Offoué-Onoy Dept, Ogooué-Lolo Prov., IRSNB 15687 was collected by one of us (OSGP) in Gongué, another locality in the same department. Pauwels et al. (2002) mentioned that this species was different both from *A. agama* and *A. paragama*, and also listed it, based on visual observations by OSGP, from Boussimbi, Diangui, Mandji and Sogha in the same department. The *Agama* “*sylvana*” populations from Ogooué-Ivindo and Ogooué-Lolo provinces mentioned by Pauwels and Vande weghe (2008) have to be referred to *A. lebretoni*. We also refer here the *A.* “*sylvana*” individuals from Ekouyi (Plateaux Dept, Haut-Ogooué Prov.) and Wagny (Mouloundou Dept, Ogooué-Lolo Prov.) illustrated by Pauwels and Vande weghe (2008) as *A. lebretoni*. An adult male *A. lebretoni* was photographed by one of us (JLA) on 13 September 2014 at the foot of a building in France-

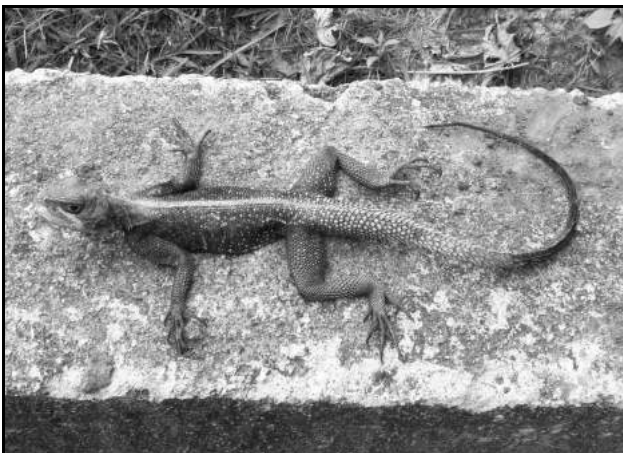


Figure 3. Live adult male *Agama lebretoni* in Angondjé, Libreville, Estuaire Province, northwestern Gabon. Photograph by L. Chirio.



Figure 2. Live adult male *Agama lebretoni* in Franceville, Haut-Ogooué Province, southeastern Gabon. Photograph by J.-L. Albert.

ville, Passa Dept, Haut-Ogooué Prov. (Figure 2). Based on its coloration, we maintain the identification of an adult male *Agama* from Franceville illustrated by Pauwels et al. (2007) as *A. agama*. One of us (LC) observed two adult males and one female in Angondjé, Libreville, Estuaire Prov., on 13 July 2013 (Figure 3), one adult female at Malibé 2 (0°35'22.34"N, 9°24'08.06"E), commune d'Akanda, Estuaire Prov., on 11 Oct. 2013 (Figure 4) and one adult male and one adult female at SIAT-Gabon in Bitam, Ntem Dpt, Woleu-Ntem Prov., on 19 July 2013. In Angondjé *A. lebretoni* is found in the mangrove and its direct surroundings, while *A. agama* is found in gardens and on house walls. These observations represent new records



Figure 4. Live adult female *Agama lebretoni* found at night asleep on a branch in Malibé 2, Estuaire Province, northwestern Gabon. Photograph by L. Chirio.



Figure 5. Live adult female *Chamaeleo owenii* in Akiéni, Haut-Ogooué Province, southeastern Gabon. Photograph by B. Sallé.

for both provinces. *Agama lebretoni* has thus been observed in Gabon at elevations varying from sea level to 650 masl. *Agama agama* and *A. lebretoni* thus co-exist in Haut-Ogooué Prov., as already stressed by Pauwels and Vande weghe (2008), and in Angondjé, although they are not found in strict syntopy.

Chamaeleonidae

Chamaeleo cristatus Stutchbury, 1837

Morin et al. (2014) showed a photo of an unidentified chameleon from an unspecified locality, taken by Q. Meunier. The chameleon shows a high dorsal “sail,” a high casque with blue spots on its lateral crests, no gular crest, no ventral crest, no horns, and can be unambiguously identified as an adult male *C. cristatus*. Its photographer informed OSGP that it was found at Hendjé (0°16'06.8"N, 13°23'23.0"E), 90 km E-SE of Makokou, Ivindo Dept, Ogooué-Ivindo Prov. New locality record.

Chamaeleo owenii Gray, 1831

An adult female from Akiéni (1°11'S, 13°53'E), Lékoni-Lékori Dept, Haut-Ogooué Prov., was photographed (Figure 5) in Apr. 2010 by Bettina Sallé. New dept record. In this province it was so far recorded only from Franceville in Passa Dept (Pauwels et al., 2007).

Gekkonidae

Lygodactylus conraui Tornier, 1902

On 26 Feb. 2012 an adult individual was observed and collected by the mammalogist Rosalie Ngoua on a rubbish pile along a trail in Mondah Forest, Komo-Mondah Dept, Estuaire Prov. The specimen (Chirio's collection number 9363) was caught and examined by one of us (LC) while it was alive; it was subsequently preserved in ethanol and sent to J.-F. Trape for DNA analysis. Alive it displayed the highly distinctive bright green color of *L. conraui*. The species is well known from southern Cameroon (Chirio and LeBreton, 2007) and its presence in northwestern Gabon was thus highly expectable. Pauwels and Vande weghe (2008) did not include it in their revised list of the reptiles of Gabon, and we thus present it here as a new country record.

Scincidae

Trachylepis albilabris (Hallowell, 1857)

A dead adult individual was photographed on 22 Sept. 2013 by



Figure 6. Freshly dead adult *Trachylepis albilabris* in Franceville, Haut-Ogooué Province, southeastern Gabon. Photograph by J.-L. Albert.

one of us (JLA) at the foot of a building in Franceville, Passa Dept, Haut-Ogooué Prov. (Figure 6). The individual showed a large transparent disk on the lower eyelid, three keels per dorsal scale, 8/8 SL, 4/4 supraoculars, a single scale between the last supraocular and the anterior supratemporal, prefrontals in contact, supranasals not in contact, and a whitish throat and belly. New province record (Pauwels and Vande weghe, 2008).

Colubridae

Dasypeltis fasciata Smith, 1849

MSNS Rept 111: near Koulamoutou airport (1°11'12"S, 12°25'44"E), Lolo-Bouenguidi Dept, Ogooué-Lolo Prov., 19 Nov. 2012. It was found at 7:30 P.M. near a fallen tree. New province record for the genus (Pauwels and Vande weghe, 2008).

Hapsidophrys smaragdinus (Schlegel, 1837)

MSNS Rept 115: near Boussimbi (1°12'02"S, 11°48'57"E), Offoué-Onoy Dept, Ogooué-Lolo Prov., 21 Nov. 2012. It was caught while crossing the road at 11:15 A.M.; it was very aggressive when handled. New locality record (Pauwels and Vande weghe, 2008).

Rhamnophis aethiopissa aethiopissa Günther, 1862

MSNS Rept 116: near Koulamoutou, Lolo-Bouenguidi Dept, Ogooué-Lolo Prov., 27 Nov. 2012. Found freshly dead on road at 5:00 P.M. New dept record (Pauwels and Vande weghe, 2008).

Lamprophiidae

Aparallactus modestus (Günther, 1859)

MSNS Rept 112: between Boussimbi and Mount Iboundji (1°11'49"S, 11°49'10"E), Offoué-Onoy Dept, Ogooué-Lolo Prov., 22 Nov. 2012. Found at midday in the leaf litter in secondary forest. New province record (Pauwels and Vande weghe, 2008).

Gonionotophis poensis (Smith, 1847)

MSNS Rept 117: near Boussimbi (1°07'45"S, 11°50'08"E; alt. 382 masl), Offoué-Onoy Dept, Ogooué-Lolo Prov., 22 Nov. 2012. Caught at 11:30 A.M. among the vegetation on a boulder surrounded by the water of a forest stream. New province record (Pauwels and Vande weghe, 2008).

Lamprophis olivaceus (Duméril, 1856)

MSNS Rept 114: near Iboundji city (1°13'34"S, 11°50'43"E), Offoué-Onoy Dept, Ogooué-Lolo Prov., 20 Nov. 2012. Found



Figure 7. Preserved *Polemon fulvicollis* from Boussimbi, Ogooué-Lolo Province, central Gabon. Photograph by P. Carlino.

alive on the roadside at 8:00 P.M. New locality record (Blanc and Frétey, 2000).

Polemon fulvicollis (Mocquard, 1887)

MSNS Rept 110: Boussimbi, Offoué-Onoy Dept, Ogooué-Lolo Prov., 24 Nov. 2012 (Figure 7). Found in the afternoon, freshly killed with a stick by a villager near the village chief hut. New province record for the genus (Pauwels and Vande weghe, 2008).

Typhlopidae

Afrotyphlops congestus (Duméril & Bibron, 1844)

MSNS Rept 109: an adult male (SVL 420 mm, TaL 12 mm, DSR 30 around midbody) found dead on road at 10:00 A.M. between Koulamoutou and Rongassa (1°00' 32"S, 12°32'34"E), Lolo-Bouengué Dept, Ogooué-Lolo Prov., on 19 Nov. 2012. The specimen, in poor condition, was probably killed by a car during the preceding night. New dept record (Pauwels and Vande weghe, 2008).

In addition to our new material presented above, recent literature on Gabon added new localities and data for various species. Shirley et al. (2014) examined and sampled long-snout crocodiles from Akaka, Dji Dji River, and a few unprecise localities, and claimed they belong to a species distinct from *Mecistops cataphractus*, the latter they said being not represented in Gabon. A number of popular articles related the discovery of an underground population of *Osteolaemus tetraspis* in Abanda caves, Étimboué Dept, Ogooué-Maritime Prov. (see, among others, Testa et al., 2011). These articles claimed that the cave-dwelling crocodiles genetically and morphologically differed from surrounding populations, as echoed by other researchers (Somaweera et al., 2014), but this was so far never evidenced; the only available molecular work involving these specimens (Shirley, 2013) did not show them to deserve a distinct taxonomic status. Delsinne et al. (2015) reported dietary observations on *Agama agama* in Pongara and Minkébé national parks. Bates et al. (2013) mentioned *Gerrhosaurus nigrolineatus* (Gerrhosauridae), based on museum-preserved vouchers, from Pointe Denis, Estuaire Prov., and from Loango National Park, Gamba area and Rabi in Ogooué-Maritime Prov. Billand (2012:66) showed the photograph of a monitor identified as a “Varan du Nil (*Varanus niloticus*),” without locality, taken by G. Dubois. Its four yellow bands between limb insertions allow us to re-identify it with certainty as a *V. ornatus*; it was photographed in Loango National Park (G. Dubois, pers. comm. to OSGP), from where the species is already well known

(Pauwels et al., 2004). We confirm that the photograph of a live python from Loango National Park presented in van Vliet et al. (2012) is of *Python sebae* (Pythonidae). In a phylogeographic study on West African *Agama* populations, Vasconcelos et al. (2014) used an *Agama agama* sample (ZFMK 73185) from “Barrage de Tchimbélé” (locality details provided in the online supplementary material). Leaché and Fujita (2010), in a genetic study on *Hemidactylus fasciatus*, showed a dot on southwestern Gabon on a map illustrating the geographic location of samples used for their study, without any additional detail on that sample. Wagner et al. (2014), in a superficial revision of *Hemidactylus fasciatus*, described *H. coalescens*, said to occur in southern Cameroon, Gabon and Congo. They listed two non-type ZFMK specimens from Gabon in their examined material: one from “Mokabane,” the other from “Kama River,” without more locality details. Carlino and Pauwels (2015) regarded *H. coalescens* as a synonym of *H. fasciatus*. Testa and Oslisly (2013) illustrated an adult male *Boiga blandingii* from Pahon 1 cave near Lastoursville, Ogooué-Lolo Prov. Jesus et al. (2009), in a phylogenetic study of *Philothamnus* and *Hapsidophrys*, used specimens of *Hapsidophrys smaragdinus* and *Philothamnus nitidus* from Rabi and *Philothamnus carinatus* from Loango National Park, Ogooué-Maritime Prov.; these specimens were actually collected by Pauwels et al. (2004, 2006) who provided their exact localities of origin. Motsch et al. (2015) reported observations of *Python sebae* and *Bitis gabonica* in enclosures of semi-free-ranging Sun-tailed monkeys *Cercopithecus solatus* (Cercopithecidae); although the localities of these observations were not reported within the publication they took place in a secondary forest in Franceville, Haut-Ogooué Prov. (P. Motsch, pers. comm. to OSGP, Nov. 2015). Mibambani et al. (2009) described an interaction between a *Causus maculatus* and Senegal Lapwings *Vanellus lugubris* in the savanna of the northern part of Lopé National Park, thus in Lopé Dept, Ogooué-Ivindo Prov. Dvořáková et al. (2014, 2015) listed a haemogregarine, *Haemogregarina* sp., from *Pelusios marani* from Gabon without more precision; the *Pelusios* actually originated from “Mourimatsengui, 5 km from Yombi II” (N. Dvořáková, pers. comm. to OSGP), thus in Ngounié Prov. The *Haemogregarina* sample originates from a series of *P. marani* collected in that locality and cited by Fritz et al. (2012).

Discussion

Pauwels and Vande weghe (2008) documented 122 reptile species for Gabon. The recent additions of *Hemidactylus echinus* (Gekkonidae) by Carlino and Pauwels (2015), *Ichnotropis bivittata* (Lacertidae) by Ineich and Le Garff (2015), *Lepidothyris f. fernandi* (Scincidae) by Wagner et al. (2009b), *Monopeltis schoutedeni* (Amphisbaenidae) by Pauwels et al. (2010) and of *Thrasops jacksonii* (Colubridae) by Carlino and Pauwels (2013) and the present confirmation of *Lygodactylus conraui* for Gabon bring to 128 the reptile species number for the country. In order to further increase the list of Gabon reptiles, future surveys should focus on northeastern and southeastern Gabon, to add forest and savanna species, respectively. There is indeed no reason to believe that a number of sylvicolous species known from southern Cameroon and savanna species known from the Republic of Congo would not also

Table 1. Diagnostic morphometric and meristic data for colubrid and lamprophiid snake vouchers. For the abbreviations, see Materials and Methods.

Species & catalog number	Sex	SVL (mm)	TaL (mm)	DSR	PV + VEN	A	SC	SL	IL	Lor	PreO	PoO	AT
Colubridae													
<i>Dasyplectis fasciata</i>													
MSNS Rept 111	M	280	65	19-19-17, K	2 + 241, U	S	87, D, U	7 (3-4) / 7 (3-4)	7 (3) / 8 (3)	0 / 0	1 / 1	2 / 2	3 / 2
<i>Hapsidophrys smaragdinus</i>													
MSNS Rept 115	F	440	285	15-15-11, K	1 + 160, K	D	146, D, K	9 (5-6) / 9 (5-6)	10 (5) / 10 (5)	1 / 1	1 / 1	2 / 2	1 / 1
<i>Rhamnophis a. aethiopissa</i>													
MSNS Rept 116	M	890	450	17-17-15, U	1 + 165, K	D	141, D, K	7 (4-5) / 8 (4-5)	8 (4) / 8 (4)	1 / 1	1 / 1	2 / 2	1 / 1
Lamprophiidae													
<i>Aparallactus modestus</i>													
MSNS Rept 112	M	150	25	15-15-15, U	2 + 151, U	S	39, S, U	7 (3-4) / 7 (3-4)	7 (4) / 7 (3)	0 / 0	1 / 1	2 / 2	0 / 0
<i>Gonionotophis poensis</i>													
MSNS Rept 117	M	660	214	17-15-15, K	2 + 244, K	S	101, D, K	7 (3-4) / 7 (3-4)	8 (5) / 8 (5)	1 / 1	1 / 1	2 / 2	1 / 1
<i>Lamprophis olivaceus</i>													
MSNS Rept 114	F	670	90	27-27-24, U	1 + 206, U	S	39, S, U	8 (3-5) / 8 (4-6)	9 (4) / 9 (4)	1 / 1	1 / 2	2 / 2	1 / 1
<i>Polemon fulvicollis</i>													
MSNS Rept 110	F	410	18	15-15-15, U	2 + 234, U	D	16, D, U	7 (3-4) / 7 (3-4)	7 (4) / 7 (4)	0 / 0	1 / 1	2 / 2	1 / 1

occur in the neighboring parts of Gabon, as demonstrated by the most recent additions to the country's herpetofauna.

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