

A checklist of the snake fauna of Guinea, with taxonomic changes in the genera *Philothamnus* and *Dipsadoboaa* (Colubridae) and a comparison with the snake fauna of some other West African countries

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Abstract

We present here the results of a study of 4,906 snakes from Guinea belonging to 95 species collected from 2002 to 2013 at 54 localities in all administrative regions of the country. We resurrect *Dipsadoboaa guineensis* from the synonymy of *D. brevirostris* and consider the latter species a junior synonym of *D. duchesnei*. In addition we resurrect *Philothamnus pobeguini* and *P. belli* from the synonymy of *P. heterodermus*. 19 species were not previously collected in this country, including *Letheobia coecata*, *Tricheiostoma bicolor*, *Myriopholis rouxesteviae*, *Rhinoleptus koniagui*, *Python regius*, *Grayia tholloni*, *Natriciteres fuliginoides*, *Philothamnus heterolepidotus*, *Thrasops aethiopissa*, *Amblyodipsas unicolor*, *Gonionotophis granti*, *Mehelya crossi*, *Prosymna gregeirti*, *Prosymna meleagris*, *Rhamphiophis oxyrhynchus*, *Elapsoidea trapei*, *Naja katiensis*, *Naja senegalensis* and *Echis jokeri*. Based on a critical review of literature and our own data, we compare the currently known snake fauna of Guinea (104 species) with that of Sierra Leone (65 species), Liberia (63 species), Ivory Coast (101 species), Ghana (102 species), Togo (93 species), Benin (72 species) and Nigeria (118 species).

Key words: taxonomy, biogeography, Guinea, West Africa, *Dipsadoboaa guineensis*, *Philothamnus belli*, *Philothamnus pobeguini*, *Echis jokeri*

Introduction

Little is known about the snake fauna of the Republic of Guinea. Specimens collected at the beginning of the 20th century were studied by Mocquard (1902), Klaptoz (1913), Chabanaud (1916, 1917, 1920, 1921) and Angel (1932). Further studies were conducted around Mount Nimba (Angel *et al.* 1954, Ineich 2003) and neighbouring forested areas of southeastern Guinea (Condamin 1959, Böhme 2000, Trape *et al.* 2008, Böhme *et al.* 2011). Few data are available for savanna areas of the country (Villiers 1950, Villiers 1953, Villiers 1954, Greenbaum & Carr 2005, Baldé *et al.* 2009, Chirio 2012).

From 2002 to 2013, we conducted snake collections in most regions of Guinea. A total of 4,906 specimens were collected. Although some of these specimens have already been mentioned in previous publications or included in distribution maps of the snake fauna of West Africa (Trape *et al.* 2008, Baldé *et al.* 2009, Trape & Mané 2006a,b, Trape *et al.* 2012), most records are still unpublished. Here we present a full account of these specimens and discuss selected taxonomic problems. We also establish a checklist of the snakes of Guinea and compare the snake fauna of this country to that of Sierra Leone, Liberia, Ivory Coast, Ghana, Togo, Benin and Nigeria, the other West African countries bordering the Gulf of Guinea.

Material and methods

We deposited cans or buckets half filled with formaldehyde or ethanol in 48 villages in Guinea. Local villagers

rainforest areas of the Togo Hills. This explains the differences between the snake fauna of these two countries, even if intense deforestation in Togo (and Ifangni area in Benin) may have currently eliminated most of the strictly rainforest species that have not been documented by recent surveys. Other differences between the six countries are in most cases more likely to reflect under-collection rather than actual differences in snake faunas and our data suggest that there are no endemic snake species in Guinea.

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References

- Adalsteinsson, S.A., Branch, W.R., Trape, S., Vitt, L.J. & Hedges, S.B. (2009) Molecular phylogeny, classification, and biogeography of snakes of the Family Leptotyphlopidae (Reptilia, Squamata). *Zootaxa*, 2244, 1–50.
- Akani, G.C., Luiselli, L. & Politano, E. (1999) Ecological and conservation considerations on the reptile fauna of the eastern Niger Delta (Nigeria). *Herpetozoa*, 11, 141–153.
- Angel, F. (1932) Les serpents de l'Afrique occidentale française. *Bulletin du Comité d'Études Historiques et Scientifiques de l'Afrique Occidentale Française*, 15, 613–858.
- Angel, F., Guibé, J., Lamotte, M. & Roy, R. (1954) Serpents. In: *La Réserve Naturelle Intégrale du Mont Nimba, Fascicule II. Mémoires de l'Institut Français d'Afrique Noire*, Dakar, 40, pp. 381–402.
- Aylmer, G. (1922) The snakes of Sierra Leone. *Sierra Leone Studies*, 5, 7–37.
- Baldé, C., Mané, Y. & Trape, J.F. (2009) Étude épidémiologique des serpents venimeux et prise en charge des envenimations à Kindia (Guinée). *Médecine Tropicale*, 69, 37–40.
- Balletto, E., Bardelli, G. & Spanò, S. (1973) Contributo all'erpetologia della Costa d'Avorio. *Bollettino dei Musei e degli Istituti Biologici dell'Università di Genova*, 41, 85–104.
- Barbour, T. & Loveridge, A. (1930) Reptiles and amphibians from Liberia. In: Strong, P. (Ed.), *The African Republic of Liberia and the Belgian Congo. Vol II*. Harvard University Press, Cambridge, pp. 769–786.
- Bocage, J.V. Barboza du (1882) Notice sur les espèces du genre *Philothamnus* qui se trouvent au Muséum de Lisbonne. *Jornal de Sciencias Mathematicas, Physicas e Naturaes*, 9, 1–19.
- Böhme, W. (2000) Diversity of a snake community in a Guinean rainforest (Reptilia, Serpentes). In: Rheinwald, G. (Ed.), *Isolated vertebrate communities in the tropics: proceedings of the 4th International Symposium in Bonn*, Bonner Zoologishes Monographien 46, pp. 69–78.
- Böhme, W., Rödel, M.O., Brede, C. & Wagner, P. (2011) The reptiles (Testudines, Squamata, Crocodylia) of the forested southeast of the Republic of Guinea (Guinée forestière), with a country-wide checklist. *Bonn Zoological Bulletin*, 60, 35–61.
- Boulenger, G.A. (1901) Matériaux pour la faune du Congo. Batraciens et reptiles nouveaux. *Annales du Musée du Congo*, Série I (Zoologie), 1, 7–14.
- Branch, W.R. & Rödel, M.O. (2003) Herpetological survey in Haute Dodo and Cavally forests, western Ivory Coast, Part II: trapping results and retiles. *Salamandra*, 39, 21–38.
- Briscoe, M.S. (1949) Notes on snakes collected in Liberia. *Copeia*, 1, 16–18.
<http://dx.doi.org/10.2307/1437657>
- Butler, J.A. & Reid, J.C. (1990) Records of snakes from Nigeria. *Nigerian Field*, 55, 19–40.
- Cansdale, G. (1948) Field notes on some Gold Coast snakes. *Nigerian Field*, 13, 43–50.
- Cansdale, G. (1949) Further notes on Gold Coast snakes. *Nigerian Field*, 14, 52–54, 106–113.
- Cansdale, G. (1954) Gold Coast snakes, a complete list. *Nigerian Field*, 19, 118–132.
- Cansdale, G. (1961) *West African snakes*. Longmans, London, 74 pp.
- Chabanaud, P. (1916) Énumération des reptiles non encore étudiés de l'Afrique Occidentale, appartenants aux collections du Muséum, avec la description des espèces nouvelles. *Bulletin du Muséum National d'Histoire Naturelle*, 22, 362–382.
- Chabanaud, P. (1917) Énumération des reptiles non encore étudiés de l'Afrique Occidentale, appartenants aux collections du Muséum, avec la description des espèces nouvelles. *Bulletin du Muséum National d'Histoire Naturelle*, 23, 83–105.
- Chabanaud, P. (1920) Contribution à l'étude de la faune herpétologique de l'Afrique occidentale. Note préliminaire sur les résultats d'une mission scientifique en Guinée française (1919–1920). *Bulletin du Comité d'Études Historiques et Scientifiques de l'Afrique Occidentale Française*, 1920, 489–497.
- Chabanaud, P. (1921) Contribution à l'étude de la faune herpétologique de l'Afrique occidentale. 2^{ème} note. *Bulletin du Comité d'Études Historiques et Scientifiques de l'Afrique Occidentale Française*, 1921, 445–472.
- Chippaux, J.P. (2006) *Les serpents d'Afrique occidentale et centrale*, 3^{ème} édition. IRD éditions, Paris, 311 pp.

- Chirio, L. (2009) Inventaire des reptiles de la Réserve de Biosphère Transfrontalière du W (Niger/Bénin/Burkina Faso: Afrique de l'Ouest). *Bulletin de la Société Herpétologique de France*, 132, 13–41.
- Chirio, L. (2012) Inventaire des reptiles de la région de Sangarédi (Guinée maritime). *Bulletin de la Société Herpétologique de France*, 144, 67–100.
- Chirio, L. & Ineich, I. (1991) Les genres *Rhamphiophis* Peters, 1854 et *Dipsina* Jan, 1863 (Serpentes, Colubridae): revue des taxons reconnus et description d'une espèce nouvelle. *Bulletin du Muséum National d'Histoire Naturelle*, 4^{ème} Série, 13, 217–235.
- Chirio, L. & LeBreton, M. (2007) *Atlas des Reptiles du Cameroun*. MNHN & IRD éditions, Paris, 688 pp.
- Chirio, L., Ineich, I., Schmitz, A. & Trape, J.F. (2011) Note sur la systématique de quelques espèces du genre *Prosymna* Gray, 1849 en Afrique au Nord de l'équateur (Serpentes, Prosymnidae). *Revue Suisse de Zoologie*, 118, 157–173.
- Condamin, M. (1959) Les serpents récoltés à Sérédou (Guinée) par R. Pujol. *Bulletin de l'Institut Français d'Afrique Noire*, Série A, 21, 1351–1366.
- Condamin, M. (1994) *Lycophidion semicinctum albomaculatum* (Serpentes, Colubridae) élevé au rang d'espèce. *Bulletin de la Société Herpétologique de France*, 69–70, 51–56.
- Courtois, B. (1984) Serpentes. In: Guillaumet, J.L., Couturier, G. & Dosso, H. (Eds.), *Recherche et aménagement en milieu forestier tropical humide: le Projet Taï en Côte d'Ivoire*. UNESCO, Paris, pp. 198–200.
- Courtois, B. & Chippaux, J.P. (1977) Serpents venimeux en Côte d'Ivoire. Institut Pasteur, Abidjan, 79 pp.
- Crochet, P.A., Rasmussen, J.B., Wilms, T. Geniez, P., Trape J.F. & Böhme, W. (2008) Systematic status and correct nomen of the western North African cat snake: *Telescopus tripolitanus* (Werner, 1909) (Serpentes: Colubridae), with comments on the other taxa in the *dhara-obtusus* group. *Zootaxa*, 1703, 25–46.
- Doucet, J. (1963) Les serpents de la République de Côte d'Ivoire. *Acta Tropica*, 201–259, 297–340.
- Dunger, G.T. (1972) The snakes of Nigeria. Part 3. The harmless water and marsh snakes of Nigeria. *Nigerian Field*, 37, 21–38.
- Eniang, E.A., Ebin, C.O. & Luiselli, L. (2002) On the composition of the snake fauna of Okwangwo Division of Cross River National Park, a hilly forest-savanna transition zone in south-eastern Nigeria. *Herpetozoa*, 15, 79–82.
- Greenbaum, E., Carr, J.L. (2005) The herpetofauna of the Upper Niger National Park, Guinea, West Africa. *Scientific Papers of the Natural History Museum of the University of Kansas*, 37, 1–21.
- Günther, A. (1866) Fifth account of new species o snakes in the collection of the British Museum. *Annals and Magazine of Natural History*, 103, 24–31.
- Hedges, S.B. (2011) The type species of the threadsnake genus *Tricheiostoma* Jan revisited (Squamata, Leptotyphlopidae). *Zootaxa*, 3027, 63–64.
- Hoogmoed, M.S. (1980) Herpetologische waarnemingen in Ghana, VII, De Slangen. *Lacerta*, 38, 88–95.
- Hughes, B. (1983) African snake faunas, *Bonner Zoologische Beiträge*, 34, 311–356.
- Hughes, B. (1988) Herpetology in Ghana (West Africa). *British Herpetological Society Bulletin*, 25, 29–38.
- Hughes, B. (1995) Progress on a taxonomic revision of the African green tree snakes (*Philothamnus* spp). In: Schuchmann, K.L. (Ed.), *Proceedings of the International Symposium on African Vertebrates*. Zoologische Forschungsinstitut Museum Alexander Koenig, Bonn, pp. 511–530.
- Hughes, B. (2003) *Polemon barthi* Jan 1858 and *P. bocouri* Mocquard 1897, two West African snakes which are allopatric, not sympatric. *African Journal of Herpetology*, 52, 113–117.
<http://dx.doi.org/10.1080/21564574.2003.9635487>
- Hughes, B. (2012) Snakes of Bénin, West Africa. *Bulletin de la Société Herpétologique de France*, 144, 101–159.
- Hughes, B. & Barry, D.H. (1969) The snakes of Ghana: a checklist and key. *Bulletin de l'Institut Fondamental d'Afrique Noire*, Série A, 31, 1004–1041.
- Ineich, I. (2003) Contribution à la connaissance de la biodiversité des régions afro-montagnardes: les Reptiles du Mont Nimba. In: Lamotte, M. & Roy R. (Eds.), Le peuplement animal du Mont Nimba. *Mémoires du Muséum National d'Histoire Naturelle*, 190, pp. 597–637.
- Joger U. & Lambert, M.R.K. (1996) Analysis of the herpetofauna of the Republic of Mali, I. Annotated inventory, with description of a new *Uromastyx* (Sauria, Agamidae). *Journal of African Zoology*, 110, 21–51.
- Kelly, C.M.R., Branch W.R., Broadley D.G., Barker N.P. & Villet M.H. (2011) Molecular systematics of the African snake family Lamprophiidae Fitzinger, 1843 (Serpentes: Elapoidea), with particular focus on the genera *Lamprophis* Fitzinger 1843 and *Mehelya* Csiki 1903. *Molecular Phylogenetics and Evolution*, 58, 415–426.
<http://dx.doi.org/10.1016/j.ympev.2010.11.010>
- Klaptoz, A. (1913) Reptilien, Amphibien und Fische aus Französisch-Guinea. *Zoologische Jahrbücher für Systematik*, 34, 279–290.
- Laurent, R.F. (1956) Contribution à l'herpétologie de la région des Grands Lacs de l'Afrique centrale. *Annales du Musée Royal du Congo Belge*, Sciences Zoologiques, 48, 1–390.
- Leaché, A.D. (2005) Results of a herpetological survey in Ghana and a new country record. *Herpetological Review* 36, 16–19.
- Leaché, A.D., Rödel, M.O., Linkem, C.W., Diaz, R.E., Hillers, A. & Fujita, M.K. (2006) Biodiversity in a forest island: reptiles and amphibians of the West African Togo Hills. *Amphibian and Reptile Conservation*, 4, 22–45.
- Leeson, F. (1950) *Identification of snakes of the Gold Coast*. Crown Agents, London, 130 p.
- Leston, D. (1970) Some snakes from the forest zone of Ghana. *British Journal of Herpetology*, 4, 141–144.
- Leston, D. & Hughes, B. (1968) The snakes of Tafo, a forest cocoa-farm locality in Ghana. *Bulletin de l'Institut Fondamental*

- d'Afrique Noire*, Série A, 30, 737–770.
- Loveridge, A. (1936) African reptiles and amphibians in the Field Museum of Natural History. *Field Museum of Natural History Publication, Zoological Series*, 22, 1–111.
- Loveridge, A. (1938) On a collection of reptiles and amphibians from Liberia, *Proceedings of the New England Zoological Club*, 17, 49–74.
- Loveridge, A. (1941) Report on the Smithsonian-Firestone Expedition's collection of reptiles and amphibians from Liberia. *Proceedings of the United States National Museum*, 91, 113–140.
<http://dx.doi.org/10.5479/si.00963801.91-3128.113>
- Loveridge, A. (1958) Revision of five African snake genera. *Bulletin of the Museum of Comparative Zoology*, 119, 1–198.
- Mané, Y. (1999) Une espèce nouvelle du genre *Elapsoidea* (Serpentes, Elapidae) au Sénégal. *Bulletin de la Société Herpétologique de France*, 91, 13–18.
- Menzies J. (1966) The snakes of Sierra Leone. *Copeia*, 169–179.
<http://dx.doi.org/10.2307/1441123>
- Mocquard, F. (1902) Sur les reptiles et batraciens de l'Afrique Orientale anglaise, du Gabon et de la Guinée française (région de Kouroussa). *Bulletin du Muséum National d'Histoire Naturelle*, 8, 404–417.
- Orton, G.L., Morrison, F.D. (1946) Some amphibians and reptiles from the Gold Coast, *Copeia*, 1, 15–17.
<http://dx.doi.org/10.2307/1438814>
- Philippe, J. (1943) Sur quelques serpents de Guinée. *Notes Africaines*, 18, 8.
- Pook, C.E., Joger U., Stümpel N. & Wüster W. (2009) When continents collide: Phylogeny, historical biogeography and systematics of the medically important viper genus *Echis* (Squamata: Serpentes: Viperidae). *Molecular Phylogenetics and Evolution*, 53, 792–807.
<http://dx.doi.org/10.1016/j.ympev.2009.08.002>
- Pyron, R.A., Burbrink, F.T., Colli, G.R., Nieto Montes de Oca, A., Vitt, L.J., Kuczynski, C.A. & Wiens, J.J. (2011) The phylogeny of advanced snakes (Colubroidea), with discovery of a new subfamily and comparison of support methods for likelihood trees. *Molecular Phylogeny and Evolution*, 58, 329–342.
<http://dx.doi.org/10.1016/j.ympev.2010.11.006>
- Rasmussen, J.B. (1989) A taxonomic review of the *Dipsadoboaa duchesnei* complex. *Bonner Zoologische Beiträge*, 40, 249–264.
- Rasmussen, J.B. (1993) A taxonomic review of the *Dipsadoboaa unicolor* complex, including a phylogenetic analysis of the genus (Serpentes, Dipsadidae, Boiginae). *Streenstrupia*, 19, 129–196.
- Rasmussen, J.B. (1997) Geographic Distribution: *Rhinotyphlops praeocularis*. *Herpetological Review*, 28, 160.
- Rasmussen, J.B., Chirio, L. & Ineich, I. (2003) The herald snakes (*Crotaphopeltis*) of the Central African Republic, including a systematic review of *C. hippocrepis*. *Zoosystema*, 22, 585–600.
- Rawwathy, C.J. & Attuquayefio, D.K. (2000) Herpetofaunal communities at Muni Lagoon in Ghana. *Biodiversity and Conservation*, 9, 501–510.
- Rödel, M.O. & Mahsberg, D. (2000) Vorläufige liste der Schlangen des Tai-Nationalparks/Elfenbeinküste und angrenzender gebiete. *Salamandra*, 36, 25–38.
- Rödel, M.O., Grabow, K., Böckheler, C. & Mahsberg, D. (1995) Die schlängen des Comoé-Nationalparks, Elfenbeinküste (Reptilia: Squamata: Serpentes). *Stuttgarter Beiträge zur Naturkunde*, Serie A, 528, 1–18.
- Rödel, M.O., Kouadio, K. & Mahsberg, D. (1999) Die schlängenfauna des Comoé-Nationalparks, Elfenbeinküste: Ergänzungen und Ausblick. *Salamandra*, 35, 165–180.
- Roman, B. (1984) *Serpents des pays de l'Entente*. CNRST, Ouagadougou, 45 pp.
- Roux-Estève, R. (1969) Les serpents de la région de Lamto (Côte d'Ivoire). *Annales de l'Université d'Abidjan*, Série E, 2, 81–140.
- Roux-Estève, R. (1974) Révision systématique des Typhlopidae d'Afrique, Reptilia-Serpentes. *Mémoires du Muséum National d'Histoire Naturelle*, Série A, 87, 1–313.
- Schäti, B. & Trape, J.F. (2008) *Bamanophis*, a new genus for the West African colubrid *Periops dorri* Lataste, 1888 (Reptilia: Squamata: Colubrinae). *Revue Suisse de Zoologie*, 115, 595–615.
- Segniagbeto, G.H., Trape, J.F., David, P., Ohler, A., Dubois, A. & Glitho, I.A. (2011) The sake fauna of Togo: systematics, distribution and biogeography, with remarks on selected taxonomic problems. *Zoosystema*, 33, 325–360.
<http://dx.doi.org/10.5252/z2011n3a4>
- Spawls, S. (1983) A new *Psammophis* from northern Ghana. *British Journal of Herpetology*, 6, 311–312.
- Sternfeld, R. (1908a) Die Schlangfauna von Kamerun. *Mittheilungen Zoologischen Museum in Berlin*, 3, 397–432.
- Sternfeld, R. (1908b) Die Schlangenfauna Togos. *Mittheilungen Zoologischen Museum in Berlin*, 4, 207–236.
- Taylor, E.H. & Weyer, D. (1958) Report on a collection of amphibians and reptiles from Harbel, Republic of Liberia. *University of Kansas Science Bulletin*, 38, 1191–1229.
- Trape, J.F. & Baldé, C. (2006) Geographic distribution: *Haemorrhois dorri*, *Herpetological Review*, 37, 362.
- Trape, J.F. & Mané, Y. (1995) Geographic distribution: *Grayia tholloni*. *Herpetological Review*, 26, 156.
- Trape, J.F. & Mané, Y. (2000) Les serpents des environs de Dielmo (Sine-Saloum, Sénégal). *Bulletin de la Société Herpétologique de France*, 95, 19–35.
- Trape, J.F. & Mané, Y. (2004) Les serpents des environs de Bandafassi (Sénégal oriental). *Bulletin de la Société*

- Herpétologique de France*, 109, 5–34.
- Trape, J.F. & Mané, Y. (2006a) Le genre *Dasypeltis* Wagler (Serpentes : Colubridae) en Afrique de l’Ouest : description de trois espèces et d’une sous-espèce nouvelles. *Bulletin de la Société Herpétologique de France*, 119, 27–56.
- Trape, J.F. & Mané, Y. (2006b) *Guide des serpents d’Afrique occidentale. Savane et désert*. IRD éditions, Paris, 226 pp.
- Trape, J.F. & Segniagbeto, G.H. (2008) Geographic distribution: *Letheobia crossi*. *Herpetological Review*, 39, 384.
- Trape, J.F., Chirio, L., Broadley, D.G. & Wüster, W (2009) Phylogeography and systematic revision of the Egyptian cobra (Serpentes: Elapidae: *Naja haje*) species complex, with the description of a new species from West Africa. *Zootaxa*, 2236, 1–25.
- Trape, J.F., Mané, Y. & Ineich, I. (2006) Note sur *Atractaspis microlepidota*, *A. micropholis* et *A. watsoni* en Afrique occidentale et centrale. *Bulletin de la Société Herpétologique de France*, 119, 5–16.
- Trape, S., Guilhaumon, F. & Baldé, C. (2008) Fish predation by the water snake *Afronatrix anoscopus* in a Guinean rainforest stream. *Journal of Freshwater Ecology*, 23, 495–496.
<http://dx.doi.org/10.1080/02705060.2008.9664233>
- Trape, S., Mediannikov, O. & Trape, J.F. (2012) When colour patterns reflect phylogeography - New species of *Dasypeltis* (Serpentes: Colubridae: Boigini) from West Africa. *Compte-Rendus Biologies*, 335, 488–501.
<http://dx.doi.org/10.1016/j.crvi.2012.05.001>
- Ullenbruch, K., Grell, O., & Böhme, W. (2010) Reptiles from southern Benin, West Africa, with a description of a new *Hemidactylus* (Gekkonidae), and a country-wide checklist. *Bonn Zoological Bulletin*, 57, 31–54.
- Vidal, N., Delmas, A.S., David, P., Cruaud, C., Couloux, A. & Hedges, S.B. (2007) The phylogeny and classification of caenophidian snakes inferred from seven nuclear protein-coding genes. *Comptes-Rendus Biologies*, 330, 182–187.
<http://dx.doi.org/10.1016/j.crvi.2006.10.001>
- Vidal, N., Branch, W.R., Pauwels, O.S.G., Hedges, S.B., Broadley, D.G., Wink, M., Cruaud, C., Joger, U. & Nagy, Z.T. (2008) Dissecting the major African snake radiation: a molecular phylogeny of the Lamprophiidae Fitzinger (Serpentes, Caenophidia). *Zootaxa*, 1945, 51–66.
- Villiers, A. (1950) *La collection de serpents de l’I.F.A.N.* Institut Français d’Afrique Noire, Catalogues VI, Dakar, 155 pp.
- Villiers, A. (1953) La collection de serpents de l’IFAN (Acquisitions 1952). *Bulletin de l’Institut Français d’Afrique Noire*, Série A, 15, 1103–1127.
- Villiers, A. (1954) La collection de serpents de l’IFAN (Acquisitions 1953). *Bulletin de l’Institut Français d’Afrique Noire*, Série A, 16, 1234–1247.
- Villiers, A. (1956) Reptiles. In: *Le Parc National du Niokolo-Koba*. Mémoires de l’Institut Français d’Afrique Noire, Dakar, 48, pp. 143–162.
- Wallach, V. & Boundy, J. (2005) *Leptotyphlops greenwelli*, a new wormsnake of the *L. bicolor* species group from Nigeria (Serpentes, Leptotyphlopidae). *Annals of Carnegie Museum*, 74, 39–44.

APPENDIX. List of specimens collected and collection numbers with localities. Except when other museum acronyms are provided, specimens with uneven numbers are preserved at IRD Dakar, Senegal (J.-F. Trape, curator), and those with even numbers are preserved at IPG Kindia, Guinea (C. Baldé, curator).

***Afronatrix anoscopus*:** 2311 G, 2953 G, 2958 G, 2984 G, 2986 G, 2924 G, 2926 G, Avilissou ; 2627 G, 4182 G, 4183 G, 4191 G, 4207 G, 4721 G, 4722 G, Ballassou ; 0238 G, 0246 G, 0253 G, 0255 G, 0258 G, 0270 G, 0277 G, 0282 G, 0287 G, 0295 G, 0296 G, Camaraboundji ; 1743 G, 1744 G, 1745 G, 1746 G, 1747 G, 1748 G, 1749 G, 1750 G, 1751 G, 1752 G, 1753 G, 1754 G, 1755 G, 1756 G, 1757 G, 1758 G, 1759 G, 3006 G, 3007 G, 3010 G, 3019 G, 3022 G, 3023 G, 3034 G, 3039 G, 3041 G, 3044 G, 3056 G, 3057 G, 3059 G, 3063 G, 3074 G, 3080 G, 3083 G, 3087 G, 3089 G, 3091 G, 3105 G, 3109 G, Dalakan ; 2993 G, 2994 G, 2995 G, 2996 G, 2998 G, Foromata ; 0120 G, 0141 G, 0155 G, 0156 G, 0179 G, Foulaya ; 0086 G, Friguiagbé ; 2001 G, 2053 G, 2054 G, 2055 G, 2056 G, Gbéléye ; IRD 2052 G, IRD 2003 G, IRD 2004 G, IRD 2005 G, IRD 2006 G, IRD 2007 G, IRD 2008 G, IRD 2009 G, IRD 2010 G, IRD 2011 G, IRD 2012 G, IRD 2013 G, IRD 2014 G, IRD 2015 G, IRD 2016 G, IRD 2017 G, IRD 2018 G, IRD 2019 G, IRD 2020 G, IRD 2021 G, IRD 2022 G, IRD 2023 G, IRD 2024 G, IRD 2025 G, IRD 2026 G, IRD 2027 G, IRD 2028 G, IRD 2029 G, IRD 2030 G, IRD 2031 G, IRD 2032 G, IRD 2033 G, IRD 2034 G, IRD 2035 G, IRD 2036 G, IRD 2037 G, IRD 2038 G, IRD 2039 G, IRD 2040 G, IRD 2041 G, IRD 2042 G, IRD 2043 G, IRD 2044 G, IRD 2045 G, IRD 2046 G, IRD 2047 G, IRD 2048 G, IRD 2049 G, IRD 2050 G, IRD 2051 G, Gborola; 1183 G, Hamdalaye ; 4728 G, 4729 G, 4730 G, 4732 G, 4736 G, 4749 G, Kalankalan ; 0516 G, 0540 G, 0541 G, 0554 G, 0556 G, 0568 G, 0577 G, 0585 G, 0590 G, 0599 G, 0603 G, 0613 G, 0621 G, 0629 G, 0636 G, 0656 G, 0665 G, 0696 G, 0700 G, Kalékouré ; 0312 G, 0322 G, 0349 G, 0371 G, 0372 G, 0384 G, 0385 G, 0389 G, 0390 G, 0398 G, 0399 G, 0402 G, Kilissi ; 4864 G, 4865 G, 4866 G, Kindia ; 2650 G, 2657 G, 2689 G, 2699 G, 2778 G, 3869 G, Konipara ; 3572 G, 3575 G, 3576 G, 3577 G, 3581 G, 3589 G, 3591 G, 3595 G, 3597 G, 3600 G, 3601 G, 3603 G, 3608 G, 3609 G, 3610 G, 3613 G, 3614 G, 3622 G, 3623 G, 3628 G, 3638 G, Konsankoro ; 0493 G, Kouroumaya ; 1998 G, 2058 G, 2082 G, 2973 G, 2975 G, 2987 G, 2990 G, Koya ; 1951 G, 1968 G, 1977 G, 1982 G, 1983 G, 1984 G, Madina ; 3669 G, 3671 G, 3673 G, 3674 G, 3676 G, 3678 G, 3680 G, 3686 G, 3691 G, 3692 G, 3693 G, 3695 G, 3696 G, 3702 G, 3703 G, 3704 G, 3710 G, 3711 G, 3715 G, 3719 G, 3721 G, 3722 G, 3724 G, 3725 G, 3726 G, 3727 G, 3729 G, 3732 G, 3733 G, 3734 G, 3735 G, 3737 G, 3738 G, 3740 G, 3742 G, 3744 G, 3746 G, 3747 G, 3748 G, 3750 G, 3751 G, 3752 G, 3753 G, 3756 G, 3757 G, 3760 G, 3761 G, 3763 G,