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GHANA: CANSDALE'S "COMPLETE" SNAKE LIST

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Abstract

Revision and update with appropriate comments on a paper published by George S. Cansdale in the Nigerian Field (1954: 19 (3): 118-132, "Gold Coast snakes – a complete list."

Introduction

Having recently sent off for publication a list of the snakes known from Ghana wherein are listed localities from where specimens have been collected as well as museums and registration numbers where voucher specimens may be found to support the claims of occurrence I find it appropriate to comment on a paper by George Soper Cansdale in the *Nigerian Field* (1954: 118) entitled "Gold Coast Snakes – A Complete List".

The "Gold Coast" was part of what became Ghana in 1957 and George Cansdale was a Colonial Forestry Officer (1934-48), later to become well known to UK audiences when, as Superintendent of London Zoo (1948-53), he was the first to regularly present live animals on Television.

I knew Cansdale from when he visited Ghana in July, 1976 to report on Zoos in the country for the Ghana Government until his death in 1993. I benefitted from the gift of his notes and books on snakes and wrote his obituary for the Nigerian Field where a short bibliography is listed (Hughes, 1994). What is unfortunate in the title of the paper he wrote in 1954 is the use of the expression "complete list" - replace "complete" with "known" or "published" would have left room for additions, an unqualified "complete" leaves no such space! Surly what was meant was a summary of what he knew at the time? On top of that is the historical reality that names change, most often in zoology it is the first part of the scientific name (i.e. the generic part) which is most likely to change as students of the subject see things differently. And thirdly is that no human is free of error so some of the species listed by Cansdale are incorrectly identified but remain in print without any later public correction.

UPDATE OF CANSDALE 'S (1954) LIST WITH HISTORICAL DETAILS.

1. *"Typhlops"* becomes *Afrotyphlops punctatus* (Leach, 1819: 493), from Fantee, Ashanti in Ghana.

2. *"Leptotyphlops brevicauda"* becomes *Tricheilostoma bicolor* (Jan, 1860, in Jan & Sordelli, livr, 1, Pl. 5, Fig. 15) from "Boutry" [= Butre], Gold Coast since the earlier name was based on variants of *bicolor.*

3. *Python sebae* (Gmelin, 1789: 1118) of unknown origin. "Some of my best medium-sized (7-10 feet) specimens - - "and other mentions by Cansdale, including hatchling young, yet none is known as voucher, all presumed to have been sent abroad alive and not preserved.

4. *Calabaria reinhardti* (Schlegel, 1851: 2) from Gold Coast. To quote Cansdale, " - - I've had about a dozen - - "(Cansdale, 1948e*: 44) but only three of which details remain (his nos. 41, 52 and 54 of 10th Oct., 1945, 16th Nov., 1945 and 17th Nov., 1945 respectively and no museum vouchers.

5. "*Natrix"* now *Afronatrix anoscopus* (Cope, 1862: 299) supposedly from "Cuba". Cansdale (1949b: 53) had four specimens of which only one (GSC No. 77A, collected 4th Jan. 1946 at Oda is recorded on his data sheets and the only museum voucher is MCZ R49607 collected 3rd October, 1947 from Kumasi.

6. "*Neusterophis variegatus"* now *Natriciteres variegata* (Peters, 1861: 358) from Gold Coast. Loveridge (1958) in his taxonomic revision of this genus lists "Pel" as a place, in reality (Rasmussen & Hughes, 1997: 14) this is the name of the Dutch administrator and collector of the time! Cansdale details two specimens (GSC Nos. 22 & 151) from Oda and Kumasi respectively and dates 15th Sept., 1945 and Apr. 1946 but no vouchers known.

7. *Bothrophthalmus lineatus* (Peters, 1863: 287) from "Guinea", at the time short hand for "Guinea Coast" which, when the collector is known, can usually be attributed from Danish or Dutcharchives to what is now Ghana.The Chicago Field Museum (FMNH 44403-4, 44406, 53641) houses GSC specimens collected 11th, Aug. 1945, 17th Aug. 1945, 1st Sept.1945 and Sept. 1946 respectively, all from the Oda vicinity.

8. *Boaedon virgatus* (Hallowell, 1854: 98) which Broadley (1969: 6) suggested referred to *Lamprophis*(Fitzinger, 1843: 25) but later reverted to *Boaedon.* Ten specimens recorded by GSC but none to be found online as museum vouchers. His field numbers, date and place of collection follow: no. 16 coltd (= collected)

5th Sept. 1945 without source, 23 coltd 23rd Sept. 1945 at Oda, 25 coltd 15th Sept. 1945 at Oda, 42 coltd 11th Oct. 1945 without source, 73 coltd 10th Dec. 1945 at Oda, 75 coltd same date but without source, 84 coltd 19th Jan. 1946 at Oda, 88 coltd 29th Jan. 1946 at Oda, 93 coltd 8th Febr. 1946 at Oda and 149 coltd Apr. 1946 from Kumasi.

9. *Boaedon lineatus* (Duméril & Bibron, 1854 (7): 363) from Gold Coast. Cansdale mentions (1954:119) specimens from Kintampo and Sekondi but these have not been located. A specimen collected by GSC at Dunkwa (MCZ R49690) was found online under the name *Lamprophis fuliginosum lineatum*, illustrative of a complication to name changes!

10. "*Lycophidium"* corrected to *Lycophidion* Fitzinger, 1843: 27 by Parker (1933: 548) *laterale* (Hallowell, 1857: 58) originally from Gabon. This specimen (MCZ R49560) is an incorrectly identified *L. semicinctum* (Schlegel, 1837 (2): 111) whose incorrect identity remains online.

11. *Lycophidion "capense ornatum"* Parker (1936: 122). Cansdale refers to two specimens: one from Oda, the other from Kumasi and details of both are available on his original record sheets no. 63 and 233 respectively and match the online data forspecimens now in the Field Museum of Natural History, Chicago (FMNH 44418) and Museum of Comparative Zoology, Harvard (MCZ R49606) where they prove to be *L. nigromaculatum* (Jan in Jan & Sordelli, op. cit.) of which the original specimen comes from Côte d'Or [= Gold Coast] and *L. irroratum* (Leach, in Bowdich 1819: 494), originally from "Fantee", Ghana.

12. *Lycophidion fasciatum* (Günther, 1858: 196) was Cansdale's Kintampo specimen (MCZ R49605) which is online under this name but I can re-identify it as *L. nigromaculatum* (op. cit.) having seen the specimen in Harvard in 1985.

13. *Hormonotus modestus* (Duméril, Bibron & Duméril, 1854: 429) originally from Cameroon but Cansdale's Oda specimen went to provide a meal for a *Mehelya sp.,* notorious for eating other snakes.

14. *Mehelya poensis* (Smith, 1847: Plate 55 footnote) of which the type is from "Fernando Po", now Boko Island. Cansdale relates that he, "took a number of fine specimens" and of these three are voucher specimens in museums in the USA – MCZ R49694 taken from on 27th Oct. 1947 at Kumas, two in FMNH 44407 & 44420 taken on 3rd Aug., 1945 and 19th Sept. 1949 respectively in the Central Province of Ghana where Oda is and GSC based. Another two specimens were alive in London Zoo – received 15th July, 1946 and 26th Jan., 1947 and post-mortemed 3rd Aug. 1947 & 20th Feb., 1947 (cases 341 & 177 in Death Books of 1946 & 1947, London Zoo).

15. *Mehelya crossi* (Boulenger, 1895: 33) from near Asaba, Nigeria. Cansdale claimed to have a specimen from Oda but no such specimen has been found in museums in London, Chicago or Harvard and is an unlikely occurrence for a species otherwise associated with open savanna country. In recent years also known under alternative generic names: *Limaformosa* or *Gonionotophis.*

16. *Philothamnus [Chlorophis* syn. by Loveridge, 1958: 49] *"heterodermus"*(Hallowell, 1857: 54), type from Sierra Leone. "I took many specimens including several black forms" wrote Cansdale here and earlier (Cansdale, 1948: 45) and whilst most likely were referable to this species the black species should have been recognised as *P. belli* (Günther, 1866: 23). A third species likely to be confused with *P. heterodermus* is *P. brunneus* (Trape, et al. 2021: 33) differing in having no more than 13 rows of body scales by contrast to the 15 of *P. heterodermus.*

17. *Philothammus* [again, not "*Chlorophis"] irregularis* (Leach, in Bowdich, 1819: 494) of which the type is from Fantee, Ghana. Mention is made of two specimens from Oda (500+180 = 680 mm & 474+204 = 678 mm) as well as one from Banda. The latter, from the savanna zone is likely, those from Oda within rain forest, unlikely and of them no vouchers are to be found. Elsewhere in Ghana the species has proved to be common.

18. "*Gastropyxis"* [syn. with *Hapsidophrys* by Broadley, 1966] *smaragdina* (Schlegel, 1837: 237, from Goldküst). Many vouchers from Ghana but not from Oda or collected by GSC.

19. *Hapsidophrys lineata* (Fischer, 1856: 111, type from Elmina, Ghana). No vouchers from Oda.

20. *Thrasops occidentalis* Parker, 1940: 273, type from Axim, Ghana. No vouchers online from Oda despite Cansdale (1949b: 52) having had, "about six specimens from Sekondi, Oda and Kumasi" and certainly not the first from Ghana contra Cansdale (1950: 42). Cozens (1950: *T. flavigularis* does not occur in Ghana.

21. *Rhamnophis aethiopissa* (Günther, 1862: 129, from "West Africa"). Cansdale's Oda specimens of which he wrote that the "largest" measured 685+370 = 1055, but his record card of his C28 has 658+370 = 1055 mm giving a tail % body length of 56.2, not the 54.0 % as it would otherwise be and even greater than he indicated. He had an earlier specimen (his no. 199) of 650+345 = 995 mm, same ventral count of 161 and 127 subcaudals c.f. the later specimen with tail incomplete and 125 scales. This is the voucher in Chicago (FMNH 53639) with a collection date of 10th Aug. 1946, matching the date on Cansdale's record sheet. There were earlier records from what became Ghana by Dutch collector/administrators.

22. *Meizodon coronatus* (Schlegel, 1837: 133, from Gold Coast). Cansdale's record from Lawra is not supported by data or museum specimens.

23. *Prosymna meleagris* (Reinhardt, 1843: 238, from "Guinea", later restricted to Accra Region). There are specimens in the Nat. Hist. Mus. London (1932.3.14.40-42) from Accra but collected by Stanley Woodward, not by Cansdale.

24. *Grayia smithii* (Leach, in Tuckey, 1818: 409, named after Smith so no need of the "*smythii*", from near Boma, DRC). A specimen collected by Cansdale on 20th, May, 1946 in Oda is now to be found in Chicago (FMNH 53646,). A sympatric species should also occur in Ghana – see Pauwels & Meirte, (1997: 159).

25. "*Dasypeltis scabra"* (Linnaeus, 1758 (1): 223) from "India" later corrected to South Africa). West African specimens of this name now assigned to *D. confusa* (Trape, S., et al. 2012) but *D."scaber"* of Cansdale from Oda is most likely a *D. fasciata,* the species associated with forest. No museum voucher from Oda has been found on the internet.

26. "*Tarbophis"* [now *Telescopus] variegatus* (Reinhardt, 1843: 249). Cansdale's Banda specimen is in Harvard (MCZ R49729) but the only Accra specimens are from Korle Bu, collected by Stanley Woodward (NHMUK 1932.6.1.20-31).

27. *"Boiga"* [now *Toxicodryas] blandingii* (Hallowell, 1844: 170, from Liberia). Cansdale, here and earlier (1948: 47) writes of two colour forms, initially distinguishing juvenile from adult but later trying to match two different adult morphs with different ecologies. With more specimens and sex taken into account it becomes apparent that only males blacken with age (Hughes, 2001).

28. *"Boiga"* now *Toxicodryas pulverulenta* (Fischer, 1856: 81, from Edina, Liberia), given short shrift by Cansdale although two which he collected in Oda are in Chicago (FMNH 44393 & 44417) with Cansdale Field Nos. 49 and 65A respectively.

29. *Dipsadoboa unicolor* (Günther, 1858: 183, from "West Africa"). This is the earliest name used for specimens from the Guinea Coast (= West Africa as here used) but Rasmussen's (1993) review left part of Cansdale's material (his p. 156) under this name but with listing of further names: *underwoodi* (Rasmussen, 1993: 169, part of Cansdale at p. (1): 23); *viridis* (Peters, 1869: 442), Rasmussen p. 180; *weileri* (Lindholm, 1905: 185), no records from Ghana. So two other species may be hidden in Cansdale's account.

30. *Crotaphopeltis "hotamboeia"* (Laurenti, 1768: 65, from "India", corrected to Africa). Cansdale's Banda specimen (GSC 329, MCZ R49726,) he described as

"uniform olive brown" which makes it likely to be not of this species but of *C. hippocrepis* (Reinhardt, 1843: 251 from "Guinea", later restricted to vicinity of Accra.

31. *Rhamphiophis oxyrhynchus* (Reinhardt, 1843: 244, from Accra area). The only Cansdale specimen located is from Lawra (with GSC No. 216, MCZ R49565) and collection date of 31st Mar., 1947.

32. *"Rhamphiophis acutus"* now *Kladirostratus togoensis* (Matschie, 1893: 212, from Togo). Cansdale's Banda specimen is now in Harvard (MCZ R49728) and was not the first to be collected from what is now Ghana: a German soldier named Lt Conrad collected from Kratschie in what was then German Togoland – now Kete Krachi under the Volta Lake in Ghana, a specimen now in the Zoologisches Museum, Berlin (ZMB 13828). See Keates, et al. (2019) for taxonomic update.

33. "*Dromophis" praeornatus* (Schlegel, 1837: 157, from Walo Ctry, Senegal). The generic re-assignment to *Psammophis* arises from Kelly, et al. (2008) with which the writer does not concur; nor has he been able to find any voucher specimen from Cansdale's collecting.

34. *"Dromophis" lineatus* (Duméril, Bibron & Duméril 1854 (7, 2): 1124). More like a *Psammophis* to which it has been refered on genetic grounds although more obviously than it's co-genor; no voucher to be found to support Cansdale's Accra record until 1968 when Leston & Room collected a specimen (NHMUK 017.1926) from near Burma Camp, Accra .

35. *Psammophis "sibilans"* (Linnaeus, 1758: 222) *afroccidentalis* (Trape et al. 2019). The *sibilans* of earlier days has been restricted to Egypt & Ethiopia and the West African impersonator is given a new name! Recognised by Cansdale (1949a: 106) to be a savanna snake with "four or five colour varieties" he did recognize a plain "variety" as *P. phillipsi* (Hallowell, 1844: 169, Liberia) which is associated with rain forest and restricted to West Africa (Trape, et al. 2019): see next.

36. *Psammophis "sibilans" var. phillipsi* (Hallowell, 1844) is detailed by Cansdale (1949: 106) as the plain "variety" of forest clearings as in Kumasi from where his data sheets record one (GSC 152 colltd April 1946) and sent to Chicago. But another record sheet (GSC 146 of ?April 1946) is for a specimen from Lawra which in the far north of Ghana and sent to Chicago.

37. *Psammophis elegans* (Shaw, 1802: 536 from "South America", corrected to West Africa!). Another savanna snake which Cansdale correctly surmised to be more arboreal than other species of the genus. Two specimens were collected at Lawra (MCZ R49563-4) by Cansdale.

38. *Thelotornis kirtlandii* (Hallowell, 1844: 62, from Liberia). Cansdale provides no sources but two of his specimens (GSSC 268 and 361 respectively) taken in Dec. 1947 in Kumasi, are in Harvard (MCZ R49687 & R49734).

39. *"Calamelaps"* now *Amblyodipsas unicolor* (Reinhardt, 1843: 236 from "Guineakystein" i.e. coast of Ghana). Cansdale's only specimen (GSC no. 298) was from near Banda Hills on 22nd Dec., 1947 now MCZ R49725.

40. *Polemon neuwiedi* (Jan, 1858: 516 from "Christiansbourg", Accra, Ghana) has been mistaken for the preceeding despite its distinctive appearance and listing by Angel (1933: 787) as from "Togo".]

"Polemon barthi Jan, 1858: 516, type collected by Barth, "Guinée". Less than a half dozen specimens are known of this species, all from rain forest so that Cansdale's specimen from Bolgatanga is of immediate suspicion!

41. *Aparallactus modestus* (Günther, 1859: 161, from West Africa). According to Cansdale (1954: 127), "taken in savannah woodland near Accra in 1946" and a specimen in Harvard (MCZ R49455) was collected by him at Accra on 1st Jan., 1944. This is a semifossorial snake usually found in rainforest.

42. *Naja melanoleuca* Hallowell, 1857: 61 from Gabon. Between 19th, Mar., 1945 & 3rd Mar., 1946 Cansdale' record cards list 17 specimens of which two were discarded and twelve sent to Chicago (FMNH 44382, 44430, 44432-4, 44436, 53648) .

43. *Afronaja nigricollis* Reinhardt, 1843: 269, "Guinea" coast i.e. Ghana. A Cansdale specimen (GSC 222) from Sekondi is to be found in Harvard (MCZ R49567) as is another from Kumasi (MCZ R49688) but a third – from Lawra, belongs to another species (see 44).

44. *Afronaja katiensis* (Angel, 1922: 40 is from Kati, Mali). Cansdale's specimen from Lawra (MCZ R49566), collected on 14th Aug., 1947, is the first of this species from Ghana although determined by Loveridge as *Naja nigricollis pallida* and so listed online as this is written (21st, April, 2024) and located on the online map in Brong-Ahafo contra source fromUpper West Region.

45. *Pseudohaje "guentheri" nigra* Günther, 1858: 222, West Africa. Cansdale's No. 61 was identified by Leeson as *P. goldi* (Boulenger, 1895: 34) from near Asaba, Nigeria) but is in fact *P. nigra* (Hughes, 1977: 457). *P. goldi* is also now known from Ghana.

46. *Dendroaspis viridis* (Hallowell, 1844: 172 from Liberia). Eight specimens are documented from Oda, of which two were not retained, five went to Chicago (FMNH 44382, 44384-5, 44392, 44437) leaving one unaccounted for but Cansdale refers to "a series of 100" so many may have been sent alive elsewhere!

Dendroaspis jamesoni (Traill, 1843: 54, "Demerara", Guana, restricted to West Africa! One of Cansdale's *D. viridis* – his no. 18, later to become FMNH 44392, was recorded as having 15 rows of body scales yet is listed online as *D. viridis:* case open and closed!

47. *Causus "rhombeatus"* (Lichtenstein, 1823: 106, Cape of Good Hope, now *maculatus* (Hallowell, 1842: 337 from Liberia). Laurent (1964: 124) in Angola recognized these two species to be associated with savanna and forest respectively but in West Africa it is *C. maculatus* that is found.

48. *Bitis gabonica* (Duméril, Bibron & Duméril,1854 (7, 2): 1428) from Gabon). Cansdale (1948: 49) claimed there to be a blue variety but the writer has seen no evidence of this. What does occur and not that unusually, is hybridization between Gaboon and Rhinoceros Vipers (*B. nasicornis)* as I showed (Hughes, 1968) and have seen others since that time. At least six Gaboon Vipers sent from Cansdale to Chicago are in the Field Museum (44375-8, 44412, GSCnos. in that order 65, 64, 50, 69 & 43.

49. *Bitis nasicornis* (Shaw & Nodder, 1792 (3) Pl. 4, "Guinea" coast). At lease four of Cansdale's specimens in Chicago (FMNH 44371-2, 44374, 44411 with GSC nos. in that order: 68, 44, 91 & 30.

50. *Bitis arietans* (Merrem, 1820: 152, Cape of Good Hope, South Africa). The name, *B. lachesis*, resurrected by Mertens (1938) has been suppressed. Of this savanna species Cansdale had little experience.

51. *Echis "carinatus"* (Schneider, 1801 (2): 285) does not occur in Africa! The species found in Ghana is *Echis ocellatus* Stemmler, 1970: 273, type from Garango, Burkina Faso.

52. *Atractaspis dahomeyensis* (Bocage, 1887: 196, Zomai, Benin). None collected by Cansdale.

53. *Atractaspis irregularis* (Reinhardt, 1843: 264, vicinity of Accra, Ghana). None recorded by Cansdale although this is a rain forest species.

54. *Atractaspis aterrima* (Günther, 1863: 363, from West Africa). Of this species Cansdale had a specimen from Kumasi (MCZ R49609 on 10th Oct., 1947) and from the Northern Territories (FMNH 53637, GSC No. 172, in April, 1946). This is perhaps the species which Cansdale claims to have cost him the tip of his left index finger but more likely it is because he applied a razor blade to the site! Bitten myself on at least three fingers and doing no such thing I suffer no more than numbness in my intact digits. A worse threat in advancing years is of arthritis!

Conclusions

The 54 species listed here do *not* include three cryptic species hidden under the names of nos. 29 and 30 and the taxonomy of No. 29 is still in flux (see Trape, Mediannikov et Baldé, 2023: 442 on *Dipsadoboa riparia* which is known from countries either side of Ghana). Cansdale thought that he had collected 200 specimens of "museum material" and 300 sent out alive and that this included "about forty species of a total snake fauna of double that number (Cansdale 1948d: 73). His "complete list" of what he himself collected is of about half the number of species now known to occur in Ghana. None the less, Cansdale's contribution to our knowledge of things Ghanaian is extensive as I indicated in attempting to compile a list of his publications when writing his obituary (Hughes, 1994: 3).

Not surprisingly there are many alterations to be made of a paper published 70 years ago, most are updates rather than of correction of errors made at the time. Errors that were made, including the wording of the title, may seem pedantic but warn of care in selecting words to use: contemporary results come always with limitations! Errors of taxonomy were often with under-collected species of which more specimens would allow future clarification. Now we are in an era of faith in the infallibility of genetic sequencing carrying with it the need to realize that whilst the invisible genetic units may provide the evidence it is the investigator who makes the decision as to what is of taxonomic significance. And to ignore gross morphological differences previously used to distinguish genera is not wise – hence my continued use of *Dromophis* – see listed numbers 33 & 34.

Another advance is the use of scanning technology to pluck data from the literature without questioning its validity; a little knowledge of history will reveal the inherent danger of this practice: go to Boulenger's catalogues of the snakes in the British Museum to see how in his time some species were thought to range throughout the length and breadth of Africa!

Lastly, a very practical matter, a matter of law. As with a case before court, all the evidence must be presented there for critical examination. So too when citing the occurrence of a species it is customary to cite an "authority" i.e. the name of someone who, in print has so claimed. What is not allowed is to doubt the judgement of that "authority" UNLESSS there is evidence to do so and sometimes that evidence is a museum voucher specimen preserved for posterity. Hence my practice here to trace and cite museum specimens from which the accuracy of identification can be checked – and my horror is that so many errors remain online for so long. I hope also that my reference to Cansdale's original records with his Field Numbers will show the importance of putting such data online together with identifying morphological data from the specimen.

Published Sources

The preceeding numbered list adds to each scientific name the name of its author and the date when published. I have included in the list of literature cited only a small selection from a long list which included contributions from 14 different countries, the most frequent being England with nine, Germany and Belgium each with 6 and France with three. These numbers reflect the former existence of European empires within whose museums rest extensive African relicts as well as their Colonial Archives.

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*Superscript letters attached to dates indicate a reference attached to my obituary notice for Cansdale (Hughes, 1994) or elsewhere; otherwise the page range is usually an easy way to distinguish citations of the same date.