

HERPETOLOGY IN GHANA (WEST AFRICA)

BARRY HUGHES

c/o J.R. Simpson, 26 Greenheys Drive, London E18 2HB

Take flights from London, follow the Greenwich meridian south for 3,000 miles, and six hours later you can be in Accra, capital of Ghana. Formerly known as the Gold Coast and bounded on the north, west and east, respectively, by francophone Burkina Faso, Cote d'Ivoire and Togo, Ghana became an independent member of the Commonwealth in 1957. At 92 100 square miles (228 538 km²) it is a country about the size of Great Britain (ie UK less Ireland) but with a fifth the number of fellow humans and a tropical herpetofauna of 220 species: 70 amphibians, 14 turtles, 41 lizards, 92 snakes and 3 crocodilians.

As the Gold Coast Colony, Ghana was once notorious as "the White Man's grave" – life expectancy for the newly-arrived "oburoni" (Twi for white man) being counted in months rather than years. More recently the first African country to gain independence after the Second World War, Ghana's flamboyant first president, Kwame Nkrumah, has ensured himself and Ghana being well known by his precipitant political actions, such as deporting unwelcome critics. But with smallpox extinct, yellow fever unheard of and cholera about as common as in the UK, life expectancy for the visitor has improved: I survived 26 years and suffered nothing worse than malaria and an odd boil or two, and the occupational hazard of snake bite! Harder economic times have brought political pragmatism, but the good cheer, friendliness and politeness, not to say respectability of Ghanaians has survived all. Referring to the last – respectability, visitors are expected to be of good behaviour and to conform to that British stereotype of the stiff upper-lipped, unflappable, and above all fair and courteous gentleman. Such eccentricities as the handling of live snakes are as acceptable as the topee and spine pad once were!

Historically Ghana has contributed more herpetologically than its small size would lead one to expect. Its natural harbours – sandy beaches (often palm-fringed) nestled between rocky headlands – reminiscent of Devon and Cornwall, provided ports of call for ships bound for India rounding the Cape of Good Hope and led to specimens from the "Guinea" and "Slave" coasts reaching dealers and eventually collections, where they are still to be found, often wrongly attributed to modern Guinea. For example, the type of *Typhlops punctatus* was collected by the Bowdich Expedition to "Ashantee" in 1812, described by Leach in 1818, and is now in the British Museum (Natural History). Much of the early West African material came from Ghana, especially when the Dutch instructed their officials resident in the coastal forts ("castles") – some like Elmina originally built by Portuguese slave traders in the 15th century, to collect for the Leiden Museum. Pel (Holthuis 1968) collected around the forts of Sekondi, Elmina, Accra and Butre and at Dabocrom and his material survives in Leiden and other museums with which Leiden exchanged. Later, in the 19th century, missionary activity led to collections reaching Hamburg (Fischer 1856, 1886) and Frankfurt (Boettger 1887) and Boettger's "List of reptiles from Accra on the Goldcoast" (my transl. of German) was the first (and last!) list ever published for Accra. British "suzerainty" over most of what is now Ghana (the Volta region, once part of German Togoland, is well represented in the Berlin collections) was established by the last of the Ashanti wars (1903) and led to a colonial network of administrators, educators, foresters, miners and the like. The outstanding collector amongst this expatriate population was George Cansdale, later of fame as the Superintendent of London Zoo and the first to present live animals on British TV. But previously, for 14 years, George was a Gold Coast forester and collected live mammals, birds and reptiles for the London Zoo and left behind a collection of beetles. George's experience of Gold Coast herps is available in three popular books (1946, 1955, 1961) of which only the last – on West African snakes, remains in print. His original papers in the *Nigerian Field* (1948, 1949a, 1949b, 1949c, 1951) provide many photographs of snakes and lizards. Another expatriate was Leeson whose uninspiring book (1950), "Snakes of the Goldcoast" should be mentioned although the only authoritative treatment is by Villiers (1974), "Les Serpents de l'ouest Africain", of wider scope and also in French. The last author has also treated of the turtles and crocodilians (1958),

but one has to turn to Dunger's (1967a, 1967b, 1967c, 1968a, 1968b, 1972, 1973) series of Nigerian lizards for coverage of that group. The amphibians have fared worst of all in print: Schiötz's extensive collecting has resulted in a list (1964) which is incomplete and replete with inaccurate names but an indispensable monograph on the "treefrogs" (1967) covering *Leptopelis*, *Kassina*, *Afrixalus* and *Hyperolius* among others. The results of Hoogmoed's (1979a, 1979b, 1980a, 1980b, 1980c, 1980d, 1980e, 1980f) collecting in Ghana have been published in Dutch, partly duplicated in German, and an English version is currently in preparation.

Since colonial days of Cansdale and Leeson, collector expatriates have included Gerrard and Leston (1970a, 1970b, 1968 with Hughes) at Tafo, Swiecicki (1965) in Tarkwa and Tamale, Barry (1969 with Hughes) in Kumasi, Harper (1963) in Tema, Sapwell (1970, 1972) in Cape Coast, and Spawls (1980, 1982, 1983) in Wa. The last talked about the Savannah Snakes in Northern Ghana at a BHS meeting on February 23rd 1982. Ghanaians have been involved – one of Cansdale's "boys" (Osunmanu Moshie) taught me how to catch snakes and Philip Mensah and Daniel Boakye contributed much live material to Achimota Zoo (now defunct). But Ghanaian publications have been academic rather than natural history or taxonomic e.g. Eyeson (1970, 1971a, 1971b) and Yeboah (1982) on *Agama* which had attracted expatriates earlier – Chapman & Chapman (1964) on reproductive biology and Harris' (1964) classic on the behaviour of *Agama agama* in Nigeria.

What one sees on a visit depends on the time of year and where one is, the deciding element being the time of arrival and duration of the main rains. The coldest months in the UK are the hottest and driest (December-February) in Ghana, the northerly Harmattan wind bringing a haze of dust as far south as Accra and drying and flaking one's skin, turning the soil to dust and stunting the vegetation crisp and brown. This time is also one of "bush fires", usually started to drive out "game" (in practice most often a monitor or snake) or produce fresh growth but often running amok through crops and habitations. Turtles may be netted in shrinking pools where fish and *Xenopus* will be concentrated. Puddle frogs (*Phrynobatrachus*) still call from pond margins, emaciated chameleons (*Chamaeleo gracilis* and *C. senegalensis*) may be found wavering on shimmering road surfaces, a rustle of dry leaves may indicate where a sand snake *Psammophis* was, and monitors (*Varanus exanthematicus* and *niloticus*) may be seen more readily in their search for water. But real, tropical life comes with the rains, beginning in March, intensifying in frequency and amount in April when humidity may seem insufferable to us, but the temporary pools provide joy to early breeders (*Afrixalus*, *Hyperolius*, and especially the raucous *Bufo* and *Ptychadena*). Snakes, mostly nocturnal, now become active and subterranean ones may be driven above ground by heavy rain and perhaps higher surface temperatures (Hughes, 1978). On the coast the rains peak in June, inland in July to September, and this brings down air temperatures to make life more bearable for the northern visitor but July and August are dull with overcast days and virtually no herp activity. Thence onward, apart from some "small rains" during September-October in the southern half of the country which may induce some amphibian activity, things hot up into a new dry season and the cycle repeats. As the rains travel inland it is possible, at least in theory, to travel with them and reap a rich herpetological harvest, especially with night work. In the dry season may be seen lizards (*Agama*, especially the ubiquitous and commensal rainbow lizard whose orange-headed males contrast with their harem of dull brown females, *Mabuya* – *M. affinis* being the most ubiquitous, and *Lygodactylus*) by day and other lizards (*Cophoscincopus* – an aquatic skink, *Hemidactylus* – including the commensal house gecko, *Mochlus* – fossorial skinks, and *Ptyodactylus* – a tree gecko), terrapins (*Pelomedusa* and *Pelusios*), and crocodylians by night.

The species one may expect to find will depend also on where one is (Table 1). The coastal thicket ("scrub") of the Accra Plains extends from Cape Coast, through Accra to the Volta Delta. The rain forest forms an inland belt extending patchily onto the Togo Hills in the east (former German Togoland). Inland is the wetter, more wooded "Guinea" savanna, and north of about 10°N the drier, more open "Sudan" savanna (Lawson, 1966), Hopkins 1974). A list of species presently known from these areas is given in Table 1.

Whilst no longer the "white kman's grave", malaria and bilharzia are still endemic and the visitor should be warned not to leave with an unwanted souvenir, perhaps to be reminded for the rest of his or her life of having forgotten to take a prophylactic or pair of wading boots; sun-hat and "darks" are also useful.

TABLE 1. CHECKLIST OF THE HERPETOFAUNA OF GHANA

		Vegetation Zones			
		1	2	3	4
Genus	species	Coastal thicket	Rain forest	Moister (Guinea) savanna	Drier (Sudan) savanna
Order: ANURA					
Family: ARTHROLEPTIDAE					
<i>Arthroleptis</i> (Squeakers)	1. <i>poecilonotus</i>	+	+	+	
	2. <i>variabilis</i>				
<i>Astylosternus</i>	3. <i>occidentalis</i> *		+		
<i>Cardioglossa</i>	4. <i>leucomystax</i>		+		
<i>Schoutedenella</i>	5. <i>bivittata</i>				
	6. <i>zimmeri</i>	+			
Family: BUFONIDAE					
<i>Bufo</i> (True toads)	7. <i>maculatus</i>	+	+	+	+
	8. <i>pentoni</i> *				+
	9. <i>regularis</i>	+	+	+	+
	10. <i>superciliaris</i>		+		
	11. <i>togoensis</i> *		+		
Family: HEMISIDAE					
<i>Hemisis</i> (Shovel-nosed frogs)	12. <i>guineensis</i>	+	+	+	+
	<i>marmoratus</i>				?
Family: HYPEROLIIDAE					
<i>Afrixalis</i> (Leaf-folding frogs)	13. <i>dorsalis</i>	+	+		
	14. <i>laevis</i>		+		
	15. <i>nigeriensis</i>		+		
	16. <i>vittiger</i>	+		+	+
	17. <i>weidholzi</i>				+
<i>Hyperolius</i> (Reed frogs)	18. <i>baumanni</i>		+		
	19. <i>bobirensis</i>		+		
	20. <i>concolor</i>	+	+		
	21. <i>fusciventris</i>		+		
	22. <i>guttulatus</i>	+	+		
	23. <i>laurenti</i>		+		
	24. <i>nasutus</i>	+		+	
	25. <i>picturatus</i>		+		
	26. <i>sylvaticus</i>		+		
	27. <i>torrentis</i>		+		
	28. <i>viridiflavus</i>	+		+	+
	29. <i>viridigulosus</i>		+		
<i>Kassina</i> (Running frogs)	30. <i>arboricola</i>		+		
	31. <i>cassinoides</i>				+
	32. <i>fusca</i>				+
	33. <i>senegalensis</i>	+		+	+
<i>Leptopelis</i> (Tree frogs)	34. <i>bufonides</i>				+

Genus	species	Vegetation Zones			
		1	2	3	4
<i>Leptopelis</i> (Tree frogs) (cont)	35. <i>hyloides</i>		+		
	36. <i>macrotis</i>		+		
	37. <i>occidentalis</i>		+		
	38. <i>viridis</i>	+		+	+
Family: MICROHYLIDAE					
<i>Phrynomerus</i> (Rubber frogs)	39. <i>microps</i>	+		?	+
Family: PIPIDAE					
<i>Xenopus</i> (Clawed toads)	40. <i>muelleri</i>				+
	41. <i>tropicalis</i>	+	+		
Family: RANIDAE					
<i>Aubria</i>	42. <i>subsigillata</i>		+		
<i>Conraua</i>	43. <i>alleni</i>		+		
	44. <i>derooi</i> *		+		
<i>Dicroglossus</i> (Common frog)	45. <i>occipitalis</i>	+	+	+	+
<i>Hildebrandtia</i> (Ornate frog)	46. <i>ornata</i>				+
<i>Hylarana</i>	47. <i>albolabris</i>		+		
	48. <i>galamensis</i>	+		+	+
	49. <i>occidentalis</i>		+		
<i>Phrynobatrachus</i> (Puddle frogs)	50. <i>accraensis</i>	+	+	+	+
	51. <i>alleni</i>		+		
	52. <i>batesii</i>		+		
	53. <i>calcaratus</i>	+	+		
	54. <i>francisci</i>			+	+
	55. <i>ghanensis</i>		+		
	56. <i>gutturosus</i>		+	+	
	57. <i>liberiensis</i>		+		
	58. <i>plicatus</i>	+	+		
	59. <i>villiersi</i>		+		
<i>Ptychadena</i> (Sharp-nosed frogs)	60. <i>aequiplicata</i>		+		
	61. <i>floweri</i>				+
	62. <i>longirostris</i>	+	+	+	+
	63. <i>maccarthyensis</i>	+	+	+	+
	64. <i>mascareniensis</i>	+	+	+	+
	65. <i>oxyrhynchus</i>	+		+	+
	66. <i>schubotzi</i>	+		+	+
	67. <i>superciliaris</i>		+		
	68. <i>trinodis</i>				+
Family: RHACOPHORIDAE					
<i>Chiromantis</i> (Foam-nest tree frog)	69. <i>rufescens</i>		+		
Order: GYMNOPIHIONA					
Family: CAECILIDAE					
<i>Geotrypetes</i>	70. <i>seraphini</i>		+		
Order: TESTUDINATA					
Family: CHELONIDAE (Sea turtles)					
<i>Caretta</i> (Loggerhead turtle)	<i>caretta</i>	-	m	a	r
<i>Chelonia</i> (Green turtle)	71. <i>mydas</i>	-	m	a	r
<i>Eretmochelys</i> (Hawksbill turtle)	72. <i>imbricata</i>	-	m	a	r
<i>Lepidochelys</i> (Ridley turtle)	73. <i>olivacea</i>	-	m	a	r
Family: DERMOCHELYIDAE					
<i>Dermochelys</i> (Leathery turtle)	74. <i>coriacea</i>	-	m	a	r

Genus	species	Vegetation Zones			
		1	2	3	4
Family: PELOMEDUSIDAE (Side-necked terrapins)					
<i>Pelomedusa</i> (Marsh terrapin)	75. <i>subrufa</i>	+		+	+
<i>Pelusios</i>	76. <i>castaneus</i>	+		+	+
<i>Felusios</i> (Gaboon terrapin)	77. <i>gabonensis</i>		+		
	78. <i>niger</i>		+		
Family: TESTUDINIDAE					
<i>Kinixys</i> (Hinge-back tortoises)	79. <i>belliana</i>	+		+	+
	80. <i>erosa</i>		+		
	81. <i>homeana</i>		+		
Family: TRIONYCHIDAE (Soft-shelled turtles)					
<i>Cyclanorbis</i>	82. <i>elegans</i>			+	+
	83. <i>senegalensis</i>			+	+
<i>Trionyx</i>	84. <i>triunguis</i>	+	+	+	
Order: SQUAMATA					
Suborder: LACERTILIA					
Family: AGAMIDAE					
<i>Agama</i>	85. <i>agama</i>	+	+	+	+
	86. <i>gracilimembris</i>				+
	87. <i>paragama</i>		+		
	88. <i>sankaranica</i>	+		+	+
Family: AMPHISBAENIDAE					
<i>Cynisca</i>	89. <i>kraussi</i>			+	
	90. <i>leucura</i>	+		+	+
	91. <i>muelleri</i>		+		
	92. <i>williamsi</i>			+	
Family: CHAMAELEONIDAE					
<i>Chamaeleo</i>	93. <i>gracilis</i>	+	+	+	+
	94. <i>senegalensis</i>				+
Family: GEKKONIDAE					
<i>Ancylodactylus</i>	95. <i>spinicollis</i>	+	+		
<i>Hemidactylus</i>	96. <i>brookii</i>	+	+	+	+
	97. <i>fasciatus</i>		+		
	98. <i>mabouia</i>	+			
	99. <i>muriceus</i>		?		
<i>Hemitheconyx</i> (African fat-tailed gecko)	100. <i>caudicinctus</i>			+	+
<i>Lygodactylus</i>	101. <i>conraui</i>	+	+		
	102. <i>picturatus</i>		+		
<i>Ptyodactylus</i>	103. <i>hasselquistii</i>				+
<i>Tarentola</i>	104. <i>delalandii</i>	+			
	105. <i>ephippiata</i>			+	+
Family: GERRHOSAURIDAE (Plated lizards)					
<i>Gerrhosaurus</i>	106. <i>major</i>	+		+	+
Family: LACERTIDAE					
<i>Acanthodactylus</i> (Spiny-footed lizards)	107. <i>boueti</i>			+	
	108. <i>guineensis</i>				+
<i>Holaspis</i>	109. <i>guentheri</i>		+		
Family: SCINCIDAE					
<i>Chalcides</i>	110. <i>thierryi</i>				+
<i>Cophoscincopus</i>	111. <i>durus</i>		+		
<i>Lygosoma</i>	112. <i>fernandi</i>		+		

Genus	species	Vegetation Zones			
		1	2	3	4
<i>Mabuya</i>	113. <i>affinis</i>	+	+	+	+
	114. <i>albilabris</i>		+		
	115. <i>buettneri</i>			+	
	116. <i>maculilabris</i>			+	
	117. <i>perrotetii</i>	+		+	+
	118. <i>polytropis</i>		+		
	119. <i>quinquetaeniata</i>	+		+	+
	120. <i>rodenburgi</i>		+	+	
	121. <i>guineensis</i>		+		
	122. <i>sundevalli</i>	+		+	+
<i>Panaspis</i>	<i>nimbaensis</i>				
	123. <i>togoensis</i>	+	+		
Family: VARANIDAE (Monitors)					
<i>Varanus</i>	124. <i>exanthematicus</i>	+		+	+
	125. <i>niloticus</i>	+	+	+	+
Suborder: OPHIDIA					
Family: BOIDAE					
<i>Calabaria</i> (Calabar Ground python)					
	126. <i>reinhardti</i>		+		
<i>Eryx</i> (Sand Boa)					
	127. <i>muelleri</i>				+
<i>Python</i> (Royal python)					
	128. <i>regius</i>	+		+	+
(African python)					
	129. <i>sebae</i>	+	+	+	+
Family: COLUBRIDAE					
<i>Afonatrix</i> (Water snake)					
	130. <i>anoscopus</i>	+	+	+	+
<i>Amblyodipsas</i>					
	131. <i>unicolor</i>	+		+	+
<i>Aparallactus</i> (Centipede-eaters)					
	132. <i>lineatus</i>	+			
	133. <i>lunulatus</i>				+
	134. <i>modestus</i>		+		
<i>Atractaspis</i> (Burrowing vipers)					
	136. <i>corpulenta</i>		+		
	137. <i>dahomeyensis</i>	+		+	+
	138. <i>irregularis</i>		+		
	139. <i>reticulata</i>		+		
<i>Boiga</i> (Blanding's tree snake)					
	140. <i>blandingi</i>	+	+	+	+
(Powdery tree snake)					
	141. <i>pulverulenta</i>		+		
<i>Bothrophthalmus</i> (Red-lined snake)					
	142. <i>lineatus</i>		+		
<i>Chamaelycus</i>					
	143. <i>fasciatus</i>	+	+		
<i>Coluber</i>					
	144. <i>dorri</i>				+
<i>Crotaphopeltis</i>					
	145. <i>hippocrepis</i>	+		+	+
	146. <i>hotamboeica</i>	+		+	+
<i>Dasypletis</i> (Egg-eating snakes)					
	147. <i>fasciata</i>	+	+	+	+
	148. <i>scabra</i>	+		+	+
<i>Dipsadoboa</i>					
	149. <i>duchesni</i>		+		
	150. <i>unicolor</i>		+		
<i>Dispholidus</i> (Boomslang)					
	151. <i>typus</i>	+		+	+
<i>Gonionotophis</i> (Lesser file snake)					
	152. <i>granti</i>	+			
	153. <i>klingi</i>		+		
<i>Grayia</i> (Smyth's water snake)					
	154. <i>smythii</i>	+	+	+	+
<i>Hapsidophrys</i> (Green-lined snake)					
	155. <i>lineata</i>		+		
	156. <i>smaragdina</i>	+	+		
<i>Hormonotus</i>					
	157. <i>modestus</i>		+		

Genus	species	Vegetation Zones			
		1	2	3	4
<i>Lamprophis</i> (House snakes)	158. <i>fuliginosum</i>	+		+	+
	159. <i>lineatum</i>	+		+	+
	160. <i>olivaceum</i>		+		
<i>Lycophidion</i> (Wolf snakes)	161. <i>virgatum</i>		+		
	162. <i>irroratum</i>	+	+		
	163. <i>laterale</i>		+		
	164. <i>nigromaculatum</i>		+		
<i>Mehelya</i> (File snakes)	165. <i>semicinctum</i>	+		+	+
	166. <i>crossi</i>	+		+	+
	167. <i>guirali</i>		+		
<i>Meizodon</i>	168. <i>poensis</i>	+	+	+	
	169. <i>stenophthalmus</i>		+		
<i>Natriciteres</i> (Marsh snakes)	170. <i>coronatus</i>	+		+	+
	171. <i>regularis</i>	+		+	+
	172. <i>fuliginoides</i>		+		
<i>Philothamnus</i> (Green tree snakes)	173. <i>olivacea</i>	+		+	
	174. <i>variegata</i>	+	+		
	175. <i>carinatus</i>		+		
	176. <i>heterodermus</i>	+	+		
<i>Polemon</i>	177. <i>heterolepidotus</i>	+			
	178. <i>irregularis</i>	+		+	+
	179. <i>nitidus</i>		+		
<i>Prosymna</i> (Shovel snouts)	180. <i>semivariegatus</i>	+		+	+
	181. <i>acanthias</i>		+		
<i>Psammophis</i> (Sand snakes)	182. <i>barthi</i>		+		
	183. <i>neuwiedi</i>	+	+	+	
<i>Thrasops</i> (Black tree snake)	184. <i>meleagris</i>	+		+	+
	185. <i>elegans</i>	+		+	+
<i>Rhamphiophis</i> (Rufous beaked snake)	186. <i>phillipsi</i>	+	+	+	+
	187. <i>rukwaë</i>				+
	188. <i>sibilans</i>	+		+	+
<i>Scaphiophis</i> (White spotted beaked snake)	189. <i>oxyrhynchus</i>	+		+	+
<i>Thelotornis</i> (Twig snake)	190. <i>albopunctatus</i>	+			
<i>Thrasops</i> (Black tree snake)	191. <i>kirtlandii</i>	+	+	+	
	192. <i>aethiopissa</i>		+		
Family: ELAPIDAE	193. <i>occidentalis</i>		+		
	<i>Dendroaspis</i> (Mambas)	194. <i>jamesoni</i>	+	?	
<i>Elapsoidea</i> (Burrowing cobras)	195. <i>viridis</i>	?	+		
	<i>Naja</i> (True cobras)	196. <i>semiannulata</i>			+
<i>Pseudohaje</i> (False cobras)	197. <i>haje</i>				+
	198. <i>katiensis</i>				+
	199. <i>melanoleuca</i>	+	+	+	+
	200. <i>nigricollis</i>	+		+	+
Family: LEPTOTYPHLOPIDAE (Worm Snakes)	201. <i>goldi</i>		+		
	202. <i>nigra</i>		+		
<i>Leptotyphlops</i>	203. <i>bicolor</i>	+	+	+	+
	204. <i>macrorhynchus</i>	+			?
	205. <i>narirostris</i>	+	+	+	

Genus	species	Vegetation Zones			
		1	2	3	4
<i>Leptotyphlops</i> (cont)	206. <i>sundevalli</i>		+		
Family: TYPHLOPIDAE (Blind snakes)					
<i>Typhlops</i>	207. <i>caecatus</i>		+		
	208. <i>lineolatus</i>	+		+	+
	209. <i>punctatus</i>	+	+	+	+
Family: VIPERIDAE					
<i>Atheris</i> (Tree vipers)	210. <i>chlorechis</i>		+		
	211. <i>squamigera</i>		+		
<i>Bitis</i>	212. <i>arietans</i>	+		+	+
	213. <i>gabonica</i>	+	+	+	
	214. <i>nasicornis</i>		+		
<i>Causus</i> (Night adders)	215. <i>lichtensteini</i>		+		
	216. <i>maculatus</i>	+	+	+	+
<i>Echis</i> (Carpet viper)	217. <i>ocellatus</i>	+		+	+
Order: CROCODILIANS					
<i>Crocodylus</i> (Nile crocodile)	218. <i>cataphractus</i>		+		
	219. <i>niloticus</i>	+		+	+
<i>Osteolaemus</i> (Dwarf crocodile)	220. <i>tetraspis</i>		+		
TOTALS:		98	130	86	91

NOTES on NAMES used: no. 28 represents *nitidulus*, now considered a subspecies; 36 may be a subsp. of *palmatus*; 37 may be subsp. of *boulengeri*; 76 previously known as *derbianus* and "subniger"; 87 as *sylvanus*; 95 often synonymised with *Cnemaspis*; 102 subsp. *gutturalis*; 113 long known as *blandingi*; 123 *kisoni* is syn.; 131 formerly *Calamelaps*; 135 current opinion places these hinge-fanged snakes here; 155 *Gastropyxis* has been syn.; 158 *Boaedon* has been syn.; 181 includes *Miodon* and *Cynodontophis*; 187 on basis of *leucogaster* Spawls 1983 being treated as a subsp. of *rukwaë* by Boehme 1987; 212 sometimes *lachesis*; 216 long confused with *rhombeatus*; 217 often *carinatus* in error.

LITERATURE CITED

- Boehme, W. (1986) Preliminary note on the taxonomic status of *Psammophis leucogaster* Spawls, 1983 (Colubridae: Psammophini). *Litt. Serp.* 6 (5): 171-180.
- Boettger, O. (19887). Herpetologische Notizen. II. Verzeichnis von Reptilien aus Accra an der Gold Kuste. *Ber. senckenb. naturf. Ges.* (1887): 37-64.
- Cansdale, G.S. (1946). *Animals of West Africa*. Longmans, London. 124 pp.
- Cansdale, G.S. (1948). Field notes on some Gold Coast snakes. *Niger. Fld* 13 (2): 43-50.
- Cansdale, G.S. (1949a). Further notes on Gold Coast snakes. *Niger. Fld* 14 (2): 52-54.
- Cansdale, G.S. (1949b). Further notes on Gold Coast snakes. *Niger. Fld* 14 (2): 52-54.
- Cansdale, G.S. (1949c). Further notes on Gold Coast snakes. *Niger. Fld* 14 (2): 106-114.
- Cansdale, G.S. (1951). Some Gold Coast Lizards. *Niger. Fld* 16 (1): 21-34.
- Cansdale, G.S. (1954). Gold Coast snakes - a complete list. *Niger. Fld* 19 (3): 118-132.
- Cansdale, G.S. (1955). *Reptiles of West Africa*. Penguin, London. 104 pp.
- Cansdale, G.S. (1961). *West Africa Snakes*. Longmans, London 74 pp.
- Chapman, B.M. and R.F. Chapman (1964). Observations on the biology of the lizard *Agama agama* in Ghana. *Proc. zool. Soc. London.* 143: 121-132.
- Dunger, G.T. (1967a). The lizards and snakes of Nigeria. Part 1. The chameleons of Nigeria. *Niger. Fld* 32 (2): 53-74.
- Dunger, G.T. (1967b). The lizards and snakes of Nigeria. Part 2: The lacertids of Nigeria. *Niger. Fld* 32 (3): 117-131.

- Dunger, G.T. (1967c). The lizards and snakes of Nigeria. Part 3: The Monitors and a Plated Lizard. *Niger. Fld* 32 (4): 170-178.
- Dunger, G.T. (1968a). The lizards and snakes of Nigeria. Part 4: The Geckos of Nigeria. *Niger. Fld* 33 (1): 18-46.
- Dunger, G.T. (1968b). The lizards and snakes of Nigeria. Part 5: The amphisbaenids of Nigeria including a description of 3 new species. *Niger. Fld* 33 (4): 167-192.
- Dunger, G.T. (1972). The lizards and snakes of Nigeria. Part 6: The skinks of Nigeria. (*Dibamidae* and *Scincidae*). *Niger. Fld* 37 (3): 99-120.
- Dunger, G.T. (1973). The snakes and lizards of Nigeria. Part 7: The skins of Nigeria (continued and completed). *Niger. Fld* 38 (2): 54-80.
- Eyeson, K.N. (1970). The role of the thyroid in reproduction of the West African lizard, *Agama agama*. *Gen. comp. Endocr.* 15: 1-5.
- Eyeson, K.N. (1972). Pituitary control of ovarian activity in the lizard, *Agama agama*. *J. zool. London.* 165: 367-372.
- Eyeson, K.N. (1971a). The role of the pituitary gland in testicular function in the lizard *Agama agama*. *Gen. comp. Endocr.* 16: 342-355.
- Fischer, J.G. (1856). Neue Schlangen des Hamburgischer Naturhistorischen Museums. *Abh. Ges. naturw., Hamburg* 3: 79-116.
- Fisher, J.G. (1886). Herpetologische Notizen. *Abh. Ges. naturw., Hamburg* 9: 51-67.
- Harper, J.B. (1963). Captive snakes in Ghana. *Br. J. Herpet.* 3 (4): 71-74.
- Harris, Vernon A. (1964). *The life of the Rainbow Lizard*. Hutchinson, London. 174pp.
- Holthuis, L.P. (1968). Biografische notities betreffende verzamelaars voor het Rijksmuseum van Natuurlijke Historie te Leiden. I. Hendrik Severinus Pel (1818-1876). *Zool. Bijdr.* no. 10: 1-32.
- Hoogmoed, M.S. (1973). Herpetologische waarnemingen in Ghana (1). *Lacerta*.
- Hoogmoed, M.S. (1979a). Herpetologische waarnemingen in Ghana. *Lacerta* 37 (10-11): 164-168. (Introduction).
- Hoogmoed, M.S. (1979b). Herpetologische waarnemingen in Ghana II. *Lacerta* 38 (2): 9-20 (Amphibia).
- Hoogmoed, M.S. (1980a). Herpetologische waarnemingen in Ghana 3. *Lacerta* 38 (5): 42-48. (*Agama, Mabuya*)
- Hoogmoed, M.S. (1980b). Herpetologische waarnemingen in Ghana 4. *Lacerta* 38 (6): 50-53. (*Cophoscincopus*).
- Hoogmoed, M.S. (1980c). Herpetologische waarnemingen in Ghana V. *Lacerta* 38 (7): 62-65. (Remaining skins, *Varanus*)
- Hoogmoed, M.S. (1980d). Herpetologische waarnemingen in Ghana VI. *Lacerta* 38 (8): 76-80. (Chamaeleons and geckos).
- Hoogmoed, M.S. (1980e). Herpetologische waarnemingen in Ghana VII. *Lacerta* 38 (9): 88-95. (Snakes).
- Hoogmoed, M.S. (1980f). Herpetologische waarnemingen in Ghana VIII. *Lacerta* 38 (10-11): 112-116. (Turtles and crocodylians).
- Hopkins, B. (1972). *Forest and Savanna*. Heinemann, Ibadan and London. 154 pp.
- Hughes, B. (1978). A rare snake not so rare: *Polemon neuwiedi* in Ghana. *Niger. Fld.* 43: 86-88.
- Hughes, B. and D.H. Barry (1969). The snakes of Ghana: a checklist and key. *Bull. Inst. fond. Afr. noire* (a) 31 (3): 1004-1041.
- Lawson, G.W. (1966). *Plant life in West Africa*. OUP, Oxford. 138 pp.
- Leach, W.E. (1819). Appendix IV, in Bowdich, T.E. *Mission from Cape Coast Castle to Ashantee* - vii, 513 pp. London.
- Leeson, F. (1950). *Identification of snakes of the Gold Coast*. X, Crown Agents, London. 142 pp.
- Leston, D. (1970a). The activity pattern of *Causus rhombeatus* (Lichtenstein) (Viperidae) in Ghana. *Br. J. Herpet.* 4 (6): 139-140.
- Leston, D. (1970b). Some snakes from the forest zone of Ghana. *Br. J. Herpet.* 4 (6): 141-144.
- Leston, D. and B. Hughes (1968). The snakes of Tafo, a forest cocoa-farm locality in Ghana. *Bull. Inst. fr. Afr. noire* (A) 30 (2): 737-770.
- Sapwell, John (1970). An unusual defensive display by a west African snake. *Crotaphopeltis hotamboeia hotamboeia* (Laurenti). *Herpetologica* 25 (4): 314-315.

- Sapwell, John (1972). Observation on the growth of young *Python sebae* (Cmelin). *Ghana J. Sci.* **12**: 21-28.
- Schiotz, A. (1964). A preliminary list of amphibians collected in Ghana. *Vidensk. Medd. fr Kansk. naturh. Foren.* **127**: 1-17.
- Schiotz, A. (1967). The treefrogs (Rhacophoridae) of West Africa. *Spolia zool. Mus. haun.* **25**: 1-346.
- Spawls, S. (1980). Notes on the reproduction of *Psammophis elegans*. *Br. Herpet. Soc. Bull.* **2**: 37.
- Spawls, S. (1982). Structure and ecology of a savanna population of snakes in northern Ghana. *Br. herpet. Soc. Bull. No. 5*: 51.
- Spawls, S. (1983). A new *Psammophis* from Northern Ghana. *Br. J. Herpet.* **6**: 311-312.
- Swiecicki, A.W. (1965). Snakes and snake bite in the Western Region, Ghana. *J. Trop. Med. Hyg.* **68**: 300-304.
- Villiers, A. (1958). Tortues et crocodiles de l'Afrique noire francaise. *Initiations afr.* No. **15**: 1-354.
- Villiers, A. 1974. Les serpents de l'Ouest Africain. *Initiations Etud. afr.* No. **2**: 1-195.
- Yeboah, S. (1982). Observations on territory of the rainbow lizard, *Agama agama*. *Afr. J. Ecol.* **20**: 187-192.

Ed. note: The author was a Senior Lecturer until 1986 in the Department of Zoology, University of Ghana at Legon, and has been a BHS member for many years.