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STUDIES ON AMPHISBAENIANS
(AMPHISBAENIA: REPTILIA), 5. THE SPECIES
OF *MONOPELTIS* FROM NORTH OF THE RIVER ZAIRE

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INTRODUCTION

THE GENERA *Monopeltis* and *Tomuropeltis* occupy the vast region between the southern Cape Province and Cameroon. While a number of summaries exist, these have dealt with limited collections. The present paper continues the review of Recent amphisbaenian species and deals with those forms occurring north from the forest area of the Zaire (formerly Congo). The paper redefines the species *M. jugularis*, *M. galeata*, and *M. schoutedeni* on the basis of 74 specimens, many of which have not previously been described. The placement of six names in synonymy is confirmed. *M. guentheri* is listed in the tables and new illustrations are included here, but the form has already been described elsewhere (Gans and Latifi, 1971).

The mode of analysis is essentially that given in the longer papers of this series (specifically Gans and Alexander, 1962; Gans, 1966 and 1971). Rather than reiterating the detailed analysis this paper only characterizes the species on the basis of all available specimens. We have consequently added a section "Status of the Species" under each form.

ACKNOWLEDGEMENTS

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MATERIALS AND METHODS

The specimens used in this study come from the collections of the following museums, which are identified by the abbreviations given. We thank their several curators who made the loans possible:

- ANSP, Academy of Natural Sciences of Philadelphia
 BM, British Museum (Natural History), London, England
 FMNH, Field Museum of Natural History, Chicago, Illinois
 GUM, Zoologisches Institut und Museum der Universität, Göttingen, Germany
 HM, Zoologisches Museum, Hamburg, Germany
 IRScNB, Institut Royal de Sciences Naturelles de Belgique, Brussels, Belgium
 LCFM, Musée de La-Chaux-de-Fond, Switzerland
 MHNP, Museum National d'Histoire Naturelle, Paris, France
 MSNG, Museo Civico di Storia Naturale "Giacomo Doria," Genoa, Italy
 NMB, Naturhistorisches Museum, Basel, Switzerland
 NMW, Naturhistorisches Museum zu Wien, Austria
 RGMC, Musée de l'Afrique Centrale, Tervuren, Belgium
 SMF, Senckenbergische naturforschende Gesellschaft, Frankfurt-am-Main, Germany
 SMNS, Staatliches Museum für Naturkunde, Stuttgart, Germany
 USNM, United States National Museum, Smithsonian Institution, Washington, D.C.
 ZMU, Zoologisches Museum der Universität, Berlin, Germany

The descriptive style follows Gans and Latifi (1971). The species are listed in the geographical sequence of their occurrence south from Cameroon (see Fig. 1 for localities).

SYSTEMATIC DISCUSSION

Monopeltis jugularis W. C. H. Peters

Monopeltis (Phractogonus) jugularis W. C. H. Peters, 1880, page 219. (Type locality: "Westafrika." Holotype: ZMU 9636).

Lepidosternon jugulare Strauch, 1881, col. 124. (Emendation).

Lepidosternon koppenfelsii Strauch, 1881, col. 124. (Type locality: "West-Africa (Gabon)." Holotype: SMNS 2038A).

Monopeltis semipunctata Boettger, 1893, p. 89. (Type locality: "Kamerun." Holotype: Lübeck Museum No. 191: Destroyed). Redescribed: Nieden (1910: 235-237).

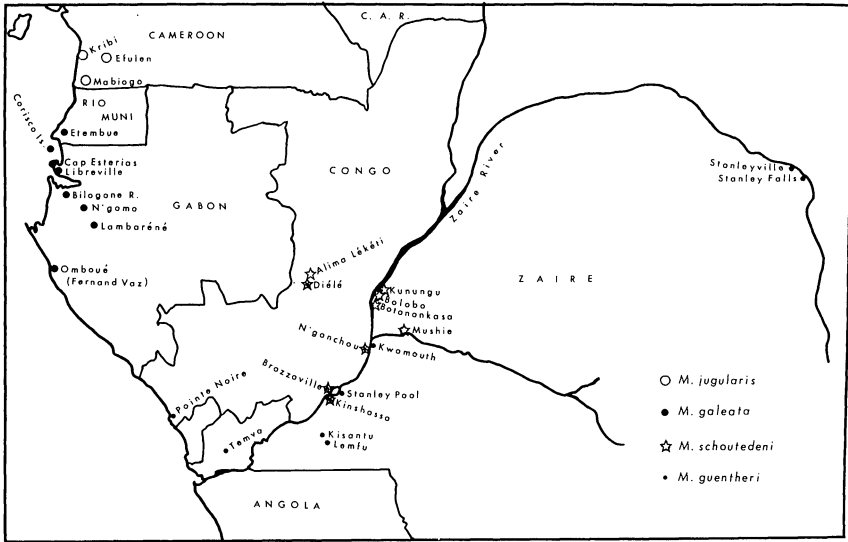


FIG. 1. Sketch map to show localities mentioned in the text.

DEFINITION.—A large species of *Monopeltis* with the heavily keratinized facial region subdivided into two large and distinct head shields (Fig. 2). The first is elongate and covers the snout. The second is more rectangular, convex dorsally, and has a broadly obtuse posterior edge. The nasals are often fused to the rostral. Thinly keratinized ocular segments and sometimes small keratinized preocular segments lie lateral to the posterior head shield (Fig. 4, 5). The ocular scale is anteriorly pointed and the eye presumably has some degree of anterior light perception. There are three supra- and three infralabials (the third being greatly enlarged), four first postgenials and 5–11 second postgenials. The pectoral shields are arranged in an anteriorly-open V-shaped pattern so that the impression is one of individual modified scales rather than a series of elongate parallel shields (Fig. 6). Specimens have 200–211 body annuli, with the dorsal count not significantly greater than the ventral. There are 14–20 dorsal, and 14–18 ventral segments to a midbody annulus (Fig. 7). Many of the dorsal annular segments have a rounded appearance. Preloacal pores are absent. The rounded tail is short, lacks an autotomy site, and has 7–10 complete annuli and a somewhat rumped posterior cap (Figs. 8, 9). A zone dorsal to the lateral line, from the nuchal region to the cloaca, tends to show a scattering of pigment cells that appear as round clusters in the central regions of the segments, or as a light speckling scattered evenly across

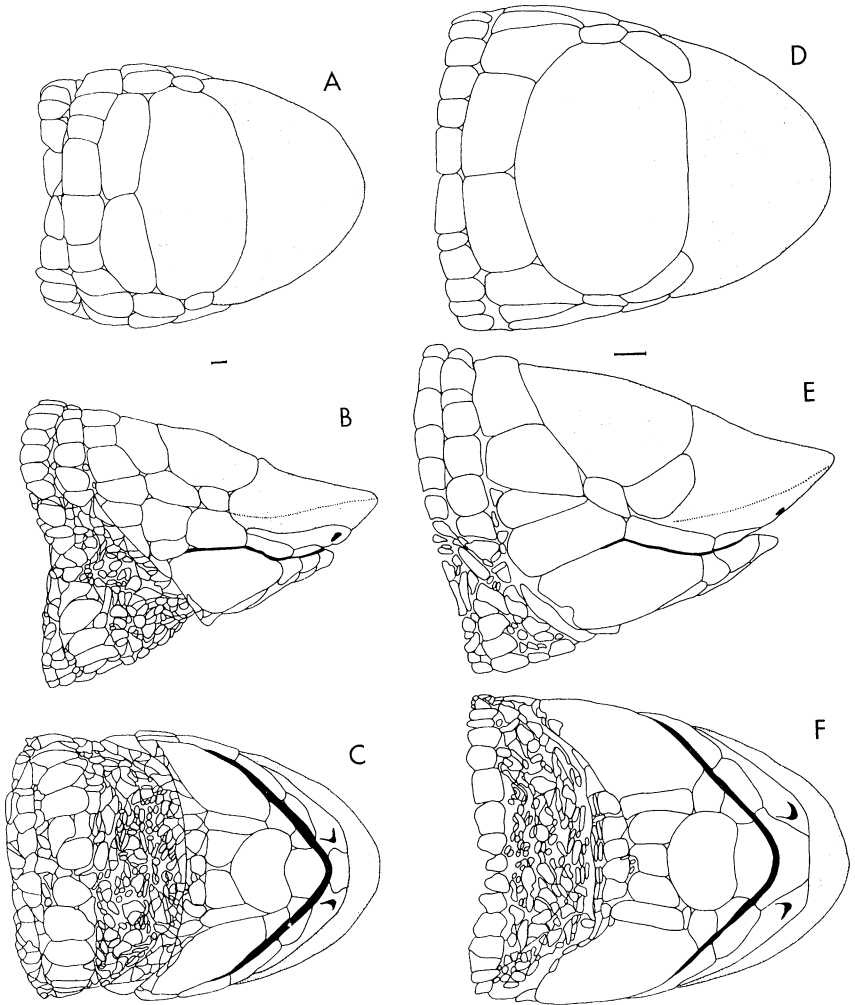


FIG. 2. *Monopeltis*. Patterns of head segmentation. The stipple shows the zone of heavy keratinization. The line equals 1 mm to scale. *M. jugularis*: Dorsal (A), lateral (B), and ventral (C) views of BM 1949.1.2.80 from Kribi, Cameroon. *M. galeata*: Dorsal (D), lateral (E), and ventral (F) views of HM 778 from Gabon.

the segment. Occasionally the dorsal surface of the tail shows pigmentation.

DISCUSSION OF THE TYPES.—The holotype of *Monopeltis jugularis* and that of *Lepidosternon koppenfelsii* were used in the formulation of the definition of the species. Unfortunately the holotype of *L. semipunctata* formerly deposited in the Lübeck Museum is no longer in

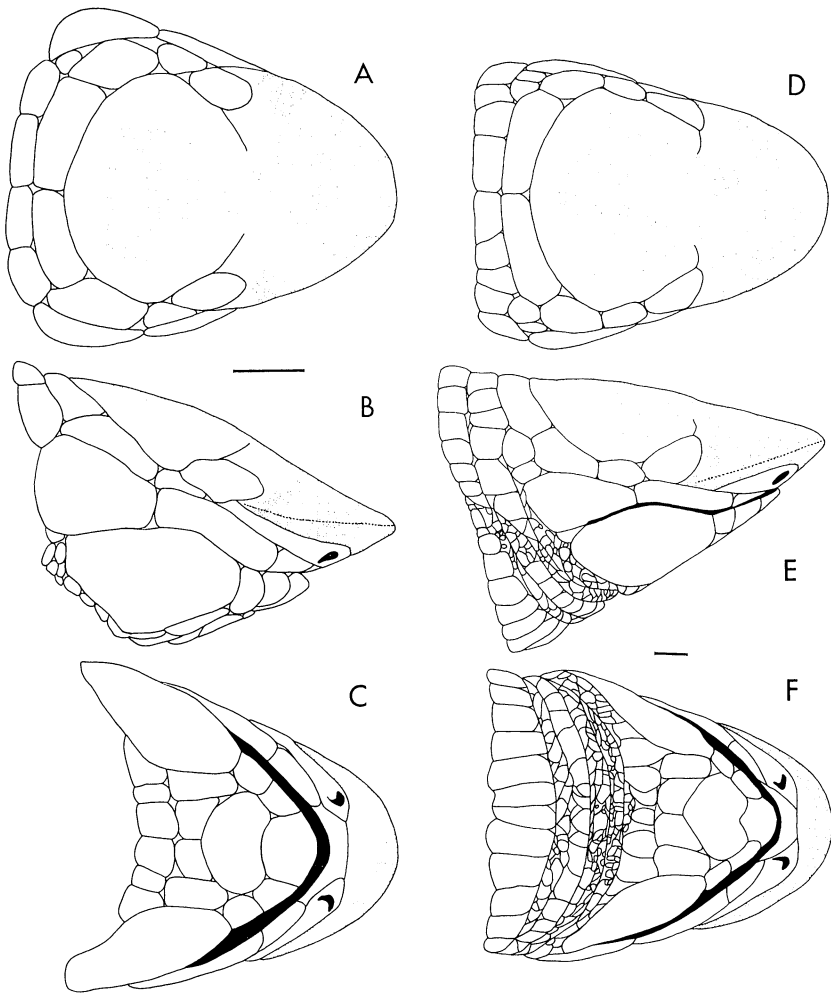


FIG. 3. *Monopeltis*. Patterns of head segmentation. Details as in fig. 2. *M. schoutedeni*: Dorsal (A), lateral (B), and ventral (C) views of RGMC 15764 from Bolobo, Zaire. *M. guentheri*: Dorsal (D), lateral (E), and ventral (F) views of CG 3495 from Brazzaville, Congo.

existence and we have hence to rely on Nieden's description (1910: 235–237). There is no question that the characteristics adduced by Nieden (1910) and Loveridge (1941) are correct and that the names *L. koppenfelsii* and *M. semipunctata* belong in the synonymy of *M. jugularis*. The discrete preoculars occur irregularly and asymmetrically in the available specimens without any clear geographical pattern.

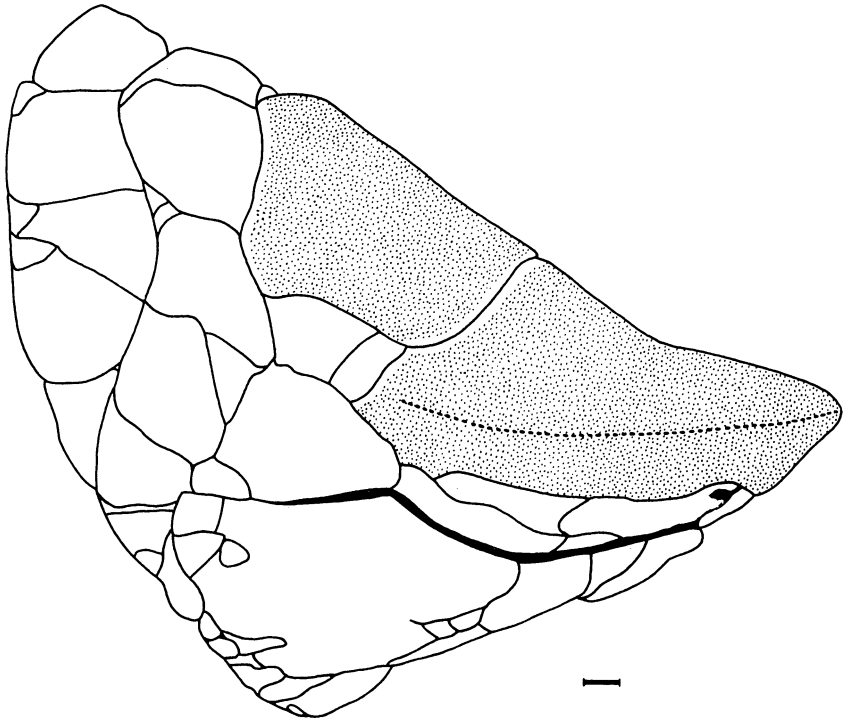


FIG. 4. *Monopeltis jugularis*. Pattern of head segmentation to show preocular shield on HM 2946A from Cameroon. The line equals 1 mm to scale.

STATUS OF THE SPECIES.—All but three specimens of *Monopeltis jugularis* come from Cameroon, a country for which no other *Monopeltis* are now known. The holotype of *M. koppenfelsii* (SMNS 2038A) bears the locality “Gabon” without further indication. This and the record of *M. galeata* from “Ssibanga” (see below) may indicate some sympatry between these species. The available samples of the two forms differ in the characteristics listed in Table 1. These seem sufficient to consider *M. jugularis* and *galeata* good species even if allopatric.

DESCRIPTION.—This is a large species of *Monopeltis* with the available specimens ranging in size from 341 to 640 mm (Table 2). The animals are generally light in color, although the head and pectoral regions of the larger individuals may be a darker shade of brown. Unfaded individuals are pigmented in a zone lying dorsal to the lateral lines and extending from the nuchal region to the cloaca. Occasionally scattered speckling occurs on the mid-dorsal surface of the tail. Dorsally, the melanin granules may be scattered evenly across

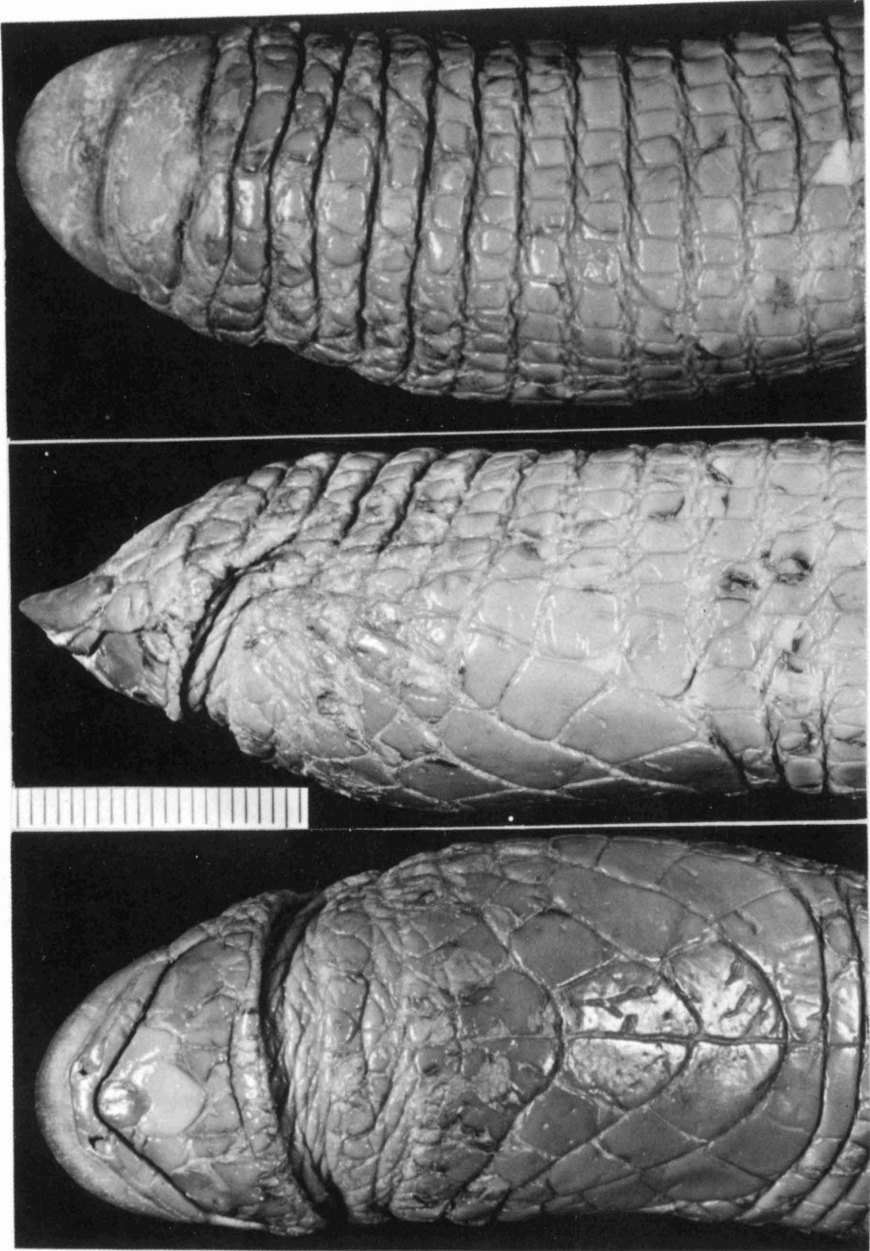


FIG. 5. *Monopeltis jugularis*. Dorsal, lateral, and ventral views of anterior end to show texture and arrangement of segments on HM 2946A from Cameroon. The scale is 1 mm.

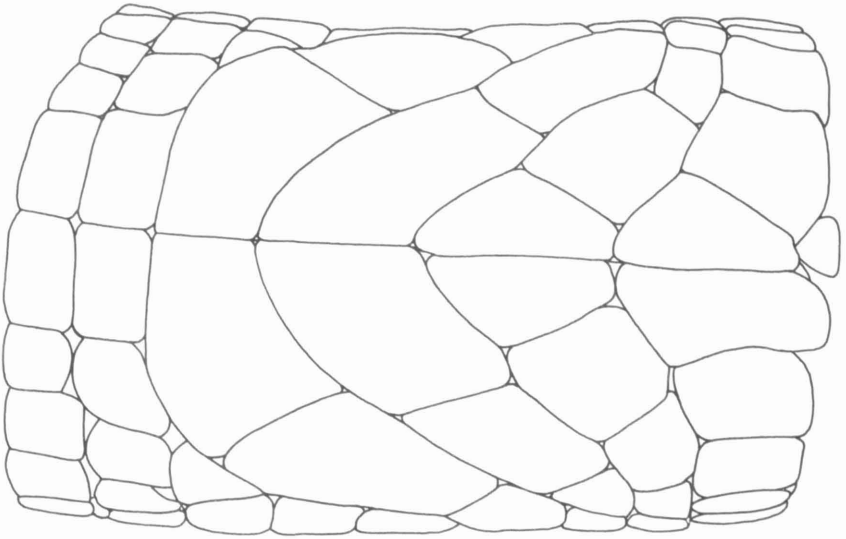


FIG. 6. *Monopeltis jugularis*. Sketch of pectoral region of BM 1949.1.2.80 from Kribi, Cameroon. (The head points to the right.) The line indicates 1 mm to scale.

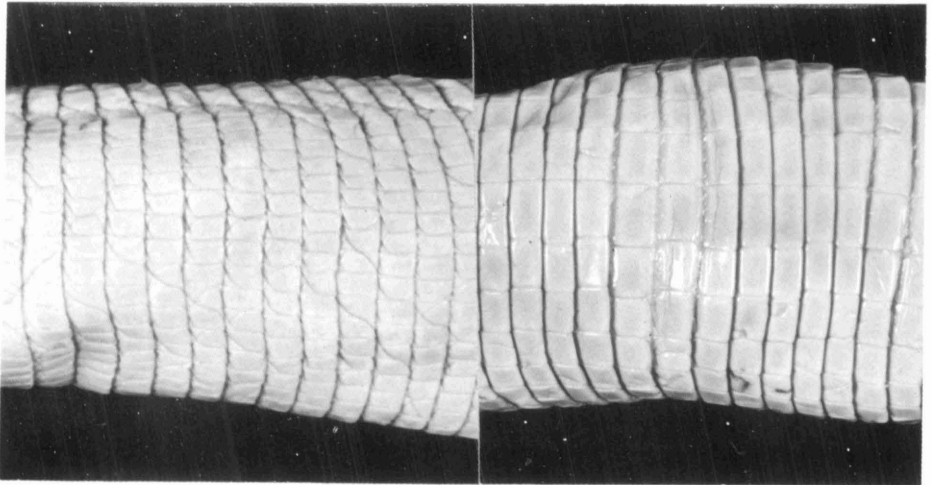


FIG. 7. *Monopeltis jugularis*. Dorsal (left) and ventral (right) views of HM 2946A from Cameroon to show segment proportions at midbody.

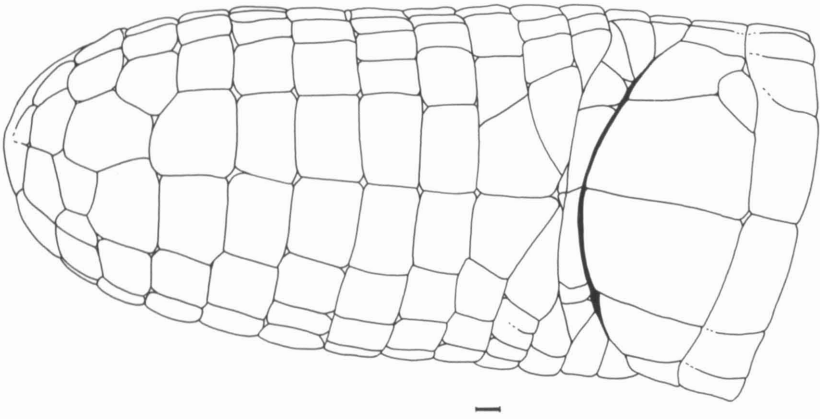


FIG. 8. *Monopeltis jugularis*. Ventral view of cloaca and tail of BM 1949.1.2.80 from Kribi, Cameroon, to show segment proportions.

each segment or may be clustered in the central area to form a dark spot. The ventral surface is unpigmented. One specimen (LCFM unnumbered) is unpigmented but has small pits or scars on the central portions of both dorsal and ventral annular segments.

The dorsal surface of the head is divided into two shields which are heavily keratinized in large specimens. Keratinization of head shields proceeds posteriorly and laterally from the anterior edge of the rostral. In SMNS 2038A (snout-vent length = 341 mm) only the anterior shield is keratinized. In HM 2946 (snout-vent length = 380 mm)

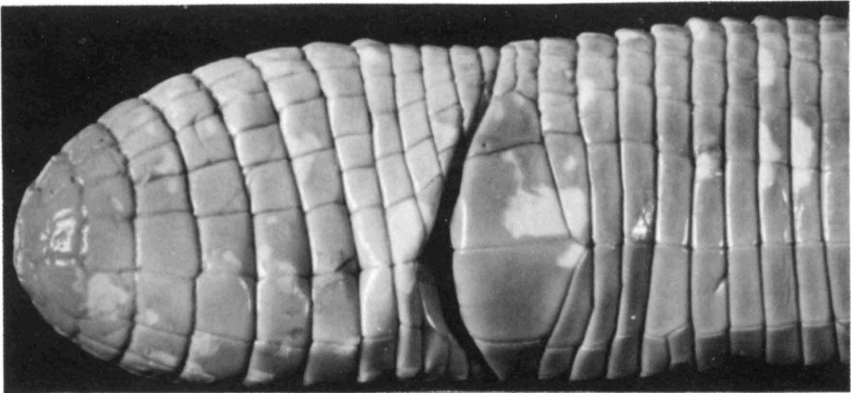


FIG. 9. *Monopeltis jugularis*. Ventral view of cloaca and tail of HM 2946A from Cameroon to show rounding of distal tip.

TABLE 1
COMPARISON OF THE CHARACTERISTICS OF *M. jugularis*, *M. galeata*, *M. schoutedeni*, AND *M. guentheri*¹

	<i>M. jugularis</i>	<i>M. galeata</i>	<i>M. schoutedeni</i>	<i>M. guentheri</i>
Head shield pattern	2 main head shields (Unfused)	2 main head shields (Unfused)	2 main head shields fused in adults	2 main head shields fused in adults
Pectoral shield pattern	short non-parallel	elongate parallel	elongate parallel	elongate parallel
Anterior laterals	9-11	8-9	7-9	8-9
Mode	11	8	8	8
Body annuli	200-211	220-233	273-289	241-262
Segments per midbody annulus				
Dorsal	14-22	9-12	16-23	16-24
Ventral	14-18	7-10	14-17	12-18
Precloacal pores	0	2-3 in males 0 in females	9-13	5-9
Caudal annuli	7-10	15-20	25-29	22-26
Autotomy site	absent	caudal 4-6	caudal 6-8	caudal 5-8
Snout-vent length (mm)	341-640	206-436	140-660	109-356
Coloration				
Dorsal	nuchal to cloaca	midbody to cloaca	midbody to cloaca	midbody to cloaca
Caudal	light	dense	dense	dense

¹ Unless otherwise indicated, numbers in the body of the Table refer to the ranges observed.

TABLE 2
DATA FOR *Monopeltis*

	1 ¹	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
<i>Monopeltis jugularis</i>																			
ZMU 9636	(11)207+6/5+(-)	8	0	0	0	0	0	0	0	0	—	16-18 + 16	562 + 26	24	0	3/3	4	7	
HM 2946A	(10)209+4/5+(-)	9	0	0	0	0	0	0	-1	—	19-20 + 18	640 + 31	27	0	3/3	4	6		
HM 2946B	(11)206+ 5 +(-)	8	0	0	0	0	0	0	0	—	14-15 + 15-16	380 + 24	18	0	3/3	4	5		
NMW 12355	(11)209+6/5+(-)	10	1	0	0	0	0	0	0	—	17-19 + 17-18	616 + 33	28	0	3/3	4	5		
LCFM (unnumbered)	(10)207+ 5 +(-)	10	0	0	0	0	0	0	0	—	16-18 + 16	590 + 34	28	0	3/3	4	6		
ZMU 23908	(10)205+ 5 +(-)	8	0	0	0	0	0	0	0	—	18 + 16	450 + 24	25	0	3/2-3	4	6		
BM 1903.2.29.1	(9)204+ 6 +(-)	7	0	0	0	0	0	0	0	—	20-22 + 18	384 + 18	17	0		4			
BM 1947.1.5.18	(10)201+ 5 +(-)	9	0	0	0	0	0	0	0	—	18 + 16	545 + 27	28	0		4			
BM 1949.1.2.78	(11)206+ 5 +(-)	8	0	0	0	0	0	0	0	—	18 + 16-18	519 + 28	22	0	-/3	4	9		
BM 1949.1.2.79	(11)200+ 5 +(-)	8	0	0	0	0	0	0	0	—	16 + 14	515 + 23	24	0	4/3	4	8		
BM 1949.1.2.80	(11)206+ 5 +(-)	8	0	0	0	0	0	0	0	—	16 + 16	459 + 25	19	0	3/3	4	7		
ZMU 23904	(11)204+ 5 +(-)	9	0	0	0	0	0	0	0	—	14-16 + 16	540 + 28	25	0	3/3	4	5		
SMF 36164	(11)211+ 5 +(-)	10	0	1	0	0	0	0	0	—	18 + 16	624 + 37	28	0	3/3	2	5		
NMB 3813	(11)207+6/5+(-)	8	0	0	0	0	0	0	0	—	18-19 + 16	604 + 34	25	0	3/3	4	10		
SMNS 2038A	(10)206+ 5 +(-)	9	0	0	0	0	0	0	0	—	16 + 16	341 + 19	14	0	3/3	4	7		
<i>Monopeltis galeata</i>																			
IRScNB 9422	(8)222+ 5 +(4)	15	0	0	0	0	-1	1	—	10 + 8	379 + 32	9	0	3/3	4	7			
HM 2364	(8)225+5/4+(4)	15	0	0	0	0	0	0	—	10-11 + 8-9	314 + 26	8	0	3/3	6				
ZMU 12093	(9/8)219+ 4 +(6)	18	0	0	0	0	0	0	—	9-10 + 8	360 + 32	10	2	3/3	5	10			
ANSP 9683	(8)219+3/4+(5)	17	0	0	0	0	0	0	—	10-11 + 8	400 + 34	11	2	3/3	5	6			
ANSP 9684	(9)224+ 3 +(5)	18	0	1	0	0	0	0	—	9-10 + 8	395 + 35	12	3	3/3	5	8			
BM 88.12.13.1	(8)222+ - +(5)	20									10 + 8	363 + 36	11	0					
BM 88.12.13.2	(9)227+ 4 +(5)	15									10-11 + 8-9	350 + 33	11	2					
BM 89.12.16.31	(8)229+ 5 +(5)	18	1	0	0	0	0	1	—	10-11 + 8-9	374 + 34	11	1	3/3	5	7			

TABLE 2—Continued

	1 ¹	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
GUM (unnumbered)	(9)224+2/3+(6)20	0	0	0	0	0	0	0	0	1	—	10-11 + 8	405 + 38	12	2	2	3/3	6	8
HM 778	(8)221+ 2 +(6)19	0	0	0	0	0	0	0	0	1	—	10-11 + 7	365 + 33	10	2	3/3	6	8	
MHNP 54-07	(8)230+ 3 +(5)19	0	0	0	0	0	0	0	0	0	—	10 + 8	436 + 37	14	2	3/3	4	6	
MHNP 5358	(8)223+ 4 +(5)17	0	0	0	0	0	0	0	0	0	—	10-11 + 8	340 + 30	10	2	3/3	5	8	
MHNP 5358A	(-2)14+ 4 +(5)17	1	0	0	0	0	0	0	0	1	—	10-11 + 8	291 + 25	9	2	—	—	—	
MHNP 5358B	(8)222+ 4 +(5)18	0	0	0	0	0	0	0	0	1	—	10-11 + 7	346 + 30	11	2	3/3	5	8	
NMB 3815	(8)226+ 6 +(5)16	0	0	1	0	0	0	0	0	0	—	10-11 + 8	355 + 34	9	0	3/3	4	6	
ZMU 7654	(8)227+ 4 +(5)17	0	0	0	0	0	0	0	0	0	—	10-12 + 8	398 + 35	14	2	3/3	5	8	
NMW 12353	(8)225+ 3 +(5)18	0	0	0	0	0	0	1	1	1	—	10 + 8	390 + 35	10	2	3/2	4	9	
NMB 5678	(8)221+2/3+(6)17	0	0	0	0	0	0	0	0	1	—	10-11 + 8	295 + 27	8	0	3/3	4	10	
NMB 5679	(8)222+ 4 +(5)16	0	0	2	0	0	0	0	0	0	—	12-13 + 8-9	335 + 32	10	0	3/3	4	9	
ANSP 9682	(-2)08+ 3 +(6)18	0	0	0	0	0	0	0	0	1	—	10 + 8	440 + 40	16	2	—	—	—	
FMNH 75074	(9)224+ 3 +(6)17	0	0	0	0	0	0	0	0	-1	—	10 + 8	333 + 28	10	2	3/3	5	9	
MHNP 99-234	(8)222+ 3 +(4)17	0	0	0	0	0	0	0	0	0	—	10-11 + 8	367 + 33	12	2	3/3	5	9	
MHNP 01-532	(8)201+ 3 +(5)18	0	1	1	0	0	0	0	0	0	—	9-10 + 7-9	263 + 27	9	2	3/3	5	6	
MHNP 02-421	(8)228+ 4 +(4) x	0	0	0	0	0	0	0	0	0	—	10 + 8	367 +	11	0	3/3	4	6	
MHNP 02-422	(8)224+ 4 +(5)17	0	0	0	0	0	0	0	0	1	—	10 + 8	206 + 18	7	0	3/3	5	8	
MSNG 28299	(8)222+ 3 +(5)17	0	0	0	0	0	0	0	0	1	—	10-12 + 8	356 + 33	11	0	3/3	4	7	
MSNG 37559	(8)222+2/3+(5)17	0	0	0	0	0	0	0	0	1	—	10-12 + 8	430 + 41	13	0	3/3	4	10	
USMN 62128	(8)220+ 3 +(5)17	0	0	0	0	0	0	0	0	1	—	9-10 + 7-8	397 + 34	12	2	3/3	4	10	
BM 1908.5.25.5.	(9)233+ 4 +(5)19	0	0	0	0	0	0	0	0	0	—	12 + 10	368 + 34	9	0	3/3	4	9	
MHNP 1969-106	(8)231+ 4 +(5)17	0	0	0	0	0	0	0	0	0	—	10-12 + 8-9	391 + 32	11	2	3/3	4	8	
MHNP 1969-107	(8)229+ 3 +(5)17	0	0	0	0	0	0	0	0	2	—	9-10 + 8	349 + 31	9	1	3/3	4	7	
MHNP 09-1	(9)231+ 5 +(4)15	0	0	0	0	0	0	0	0	1	0	10 + 8	412 + 33	11	0	3/3	4	7	
<i>Monopeltis schoutedeni</i>																			
MHNP 1886-197	(9)277+ 4 +(7)29	0	0	0	0	0	0	0	0	0	1	16-19 + 14-15	140 + 16	5.5	10	2/3	4	7	
MHNP 1886-194	(8)275+ 3 +(7) x	0	0	0	0	0	0	0	0	0	1	16-18 + 14	269 + x	7	11	2-3/3	4	6	
MHNP 1886-198	(8)286+ 4 +(7)29	0	0	0	0	0	0	0	0	0	1	19-21 + 15-16	296 + 43	7.5	11	2-3/3	4	7	
MHNP 59-32	(8)278+ 4 +(6)27	0	0	0	0	0	0	0	-1	1	1	21-23 + 14	660 + 81	20	9	3/3	4	6	
RGMC 2094	(8)281+ 3 +(8)29	1	0	0	0	0	0	0	0	0	0	18-20 + 16	313 + 42	8	11	3/3	4	8	
RGMC 14510	(7)273+ 3 +(7)26	0	0	0	0	0	0	0	0	0	2	18-19 + 14	336 + 41	9	9	3/3	4	5	

TABLE 2—Continued

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
RGMC 15762	(-)275+	3	+(7)	x	0	0	0	0	0	0	1	18-19 + 16	x + x	x	9	12	—	—	—
RGMC 15763	(7)283+	3/4	+(7)27	0	0	0	0	0	0	0	1	18-19 + 14	350 + 45	8	10	3/3	4	7	—
RGMC 15764	(8)286+	4/3	+(7)27	0	0	0	0	0	0	0	0	18-20 + 14-16	335 + 44	9	10	3/3	4	6	6
RGMC 15765	(8)285+	4	+(6)27	0	0	0	0	0	0	0	0	18-19 + 16	323 + 45	8	11	3/3	4	7	7
RGMC 20585	(7)284+	3	+(7)	x	0	0	0	0	0	0	1	19-21 + 15-16	348 + x	10.5	11	3/3	4	6	6
RGMC 20586	(7)284+	3	+(6)	x	0	0	0	0	0	0	1	19 + 16	380 + x	10	9	3/3	4	6	6
RGMC 20587	(7)286+	4	+(6)27	0	0	0	0	0	0	0	1	17-19 + 14	325 + 46	10	13	3/3	4	7	7
RGMC 20588	(7)282+	3	+(7)28	0	0	0	0	0	0	0	1	18-19 + 15-16	236 + 32	7	11	3/3	4	6	6
RGMC 20589	(7)278+	3	+(7)27	0	0	0	0	0	0	0	2	19-21 + 15-17	419 + 54	12	12	3/3	4	5	5
RGMC 20590	(8)282+	4	+(7)	x	0	0	0	0	0	0	1	16-19 + 15-16	287 + x	9	9	3/3	4	7	7
RGMC 20591	(8)282+	4	+(6)25	0	0	0	0	0	0	0	1	19-20 + 15-16	339 + 44	9	12	3/3	4	7	7
RGMC 20592	(8)286+	3	+(8)28	0	0	0	0	0	0	0	1	18-20 + 16	345 + 48	10	11	3/3	4	6	6
RGMC 27849	(7)279+	4	+(6)26	0	0	0	0	0	0	0	1	18-20 + 15-16	310 + 37	8	11	3/3	4	7	7
RGMC 27850	(7)280+	4	+(6)27	0	0	0	0	0	0	0	1	17-19 + 14-15	341 + 44	8	10	3/3	4	7	7
RGMC 27851	(7)282+	3	+(7)	x	0	0	0	0	0	0	1	17-21 + 14-15	362 + x	10	12	3/3	4	5	5
RGMC 27852	(8)286+	4	+(6)	x	0	0	0	0	0	0	0	19-21 + 15	322 + x	8	10	3/3	4	5	5
RGMC 27853	(8)284+	4	+(7)28	0	0	0	0	0	0	0	1	17-20 + 15-16	332 + 44	9	11	3/3	4	6	6
RGMC 27854	(8)284+	3/4	+(7)25	0	0	0	0	0	0	0	1	18-21 + 16	392 + 48	10	10	3/3	4	5	5
RGMC 15923	(8)287+	3	+(7)28	0	0	0	0	0	0	0	2	18-21 + 16	373 + 52	9	12	3/3	4	10	10
RGMC 16241	(8)283+	4	+(6)26	0	0	0	0	0	0	0	0	19-20 + 15-16	316 + 39	9	10	3/3	4	6	6
RGMC 16242	(7)282+	4/3	+(6)28	0	0	0	0	0	0	0	1	18-20 + 14-15	344 + 46	9	10	3/3	4	6	6
RGMC 16243	(8)283+	3	+(7)	x	0	0	0	0	0	0	2	17-19 + 14-15	345 + x	9	12	3/3	4	7	7
RGMC 16244	(8)286+	4/3	+(7)26	0	0	0	0	0	0	0	1	19-21 + 16	356 + 43	9.5	12	3/3	4	8	8
RGMC 8766	(8)289+	3	+(7)28	0	0	0	0	0	0	0	0	18-21 + 14-15	313 + 39	8	10	3/3	4	5	5
RGMC 16517	(8)287+	4	+(6)27	1	0	0	0	0	0	0	0	18-20 + 15-17	307 + 41	8.5	9	3/3	4	7	7

¹ Key to columns in table of data for *Monopeltis*: 1, Number of anterior lateral annuli; 2, Number of total body annuli; 3, Number of laterals—recorded as left/right when cases of asymmetry arise; 4, (Autotomy site); 5, Number of caudal annuli; 6-11, Number of additional dorsal annuli corresponding respectively to ventral body annuli numbers 1-50 (6), 51-100 (7), 101-150 (8), 151-200 (9), 201-250 (10), over 250 (11); 12, Number of segments to a midbody annulus—Dorsal + Ventral; 13, Snout-vent length (mm); 14, Tail length (mm); 15, Midbody diameter (mm); 16, Number of precloacal pores; 17, Number of supralabials/infralabials; 18, Number of postgenials in first row; 19, Number of postgenials in second row.

the lateral keratinization has reached the preocular region. Here keratinization also occurs in the anterior portion of the second large head shield, but does not reach either the lateral and posterior zones of the shield or its anterior sutural margin. This region in the center of the second shield, which shows initial keratinization, is more thickly keratinized even in large adults. The posterior dorsal region of the first head shield is somewhat concave, and that of the second shield is convex, so that the dorsal surface of the head describes a sigmoid curve.

The narrow preocular segments lying posterior to the first but lateral to the second head shield are thinly keratinized adjacent to their medial and anterior margins. These scales are present in approximately one-third of the specimens, and in one case (SMF 36164) occur asymmetrically. They may or may not be keratinized in large specimens. The ocular segments are non-keratinized and the eye is ordinarily visible beneath the surface.

The nostrils are U-shaped and inserted into nasal scales which are partially or completely fused with the rostral. Some specimens show the posterior tip of the elongate nasal divided off into a separate post-nasal segment; in other specimens the superior edge of the supralabial contacts the ventral edge of the large keratinized head shield. The sides of the head show remarkable scar formation and irregularities in larger animals, particularly on the ventrolateral surface. (Could this relate to damage incurred when large specimens dig underground or does this reflect variability?) The position of the third drop-shaped supralabial indicates that the annulus directly posterior to the second head shield should be designated as the first body annulus. The dorsal segments of the latter are fused to form two enlarged modified segments lying to the left and right of the dorsal midline.

The lower jaw is formed by a somewhat squarish mental, the first, second, and enormous third infralabials, and the enlarged, heart-shaped postmental (genial). Directly posterior to the latter are two pairs of postgenials, the first pair of which meet at the ventral midline beneath the genial. The second and more lateral pair are somewhat elongate and contact the postmental and second and third infralabials. Immediately caudad to the first row of postgenials is a second row of smaller postgenials, generally containing 5-6 (maximum 11) segments, the most lateral of which contact the posterior edges of the third infralabials.

The modified pectoral region extends to the ninth to eleventh dorsal annulus. It consists of four ventral half annuli much longer on

this surface than the seven dorsals occupying the same distance. The appearance is one of two or three anteriorly open V's with the interannular sutures swinging in smooth curves across the ventral surface (Fig. 6). Most of the individual segments are a little wider than long; none are narrow and elongate. Various individual differences occur within this general pattern.

There are 200–211 body annuli from the posterior edge of the third infralabial up to (but not including) the precloacal shield. Intercalated dorsal half annuli are rare or absent. A midbody annulus has 14–20 dorsal and 14–18 ventral segments, with the number of dorsal and ventral segments for a given specimen always similar. Dorsally there is considerable diagonal folding of the skin, and the reduction of the corners of many of the segments causes the centers of the segments to appear rounded.

The cloacal region is characterized by a transversely oval precloacal shield composed of four to six segments, the median ones being the largest. There are no precloacal pores.

The tail is short and subcylindrical, though the distal portion is slightly taller than wide and the extreme tip is rounded. There are seven to 10 complete annuli and a caudal cap of irregularly shaped segments of which the two medial ones are the largest. There is no autotomy annulus and autotomy seems to be lacking.

There is no dorsal sulcus, but the dorsal surface is characterized by numerous diagonal lines. The lateral sulci are visible posterior to the 50th body annulus and at midbody are $1/3$ to $1/2$ as wide as the adjacent segments. The middorsal segments are somewhat squarish in shape, but the midventral segments are distinctly rectangular and are about two times as wide as long.

BIOLOGICAL MISCELLANEA.—Peters (1880) comments that the bony skull roof shows a median gap between the occipital and parietal. Richter (1933) illustrated the hyoid and discussed its muscles.

Monard (1951) notes that the people at Capo claim that this species will kill pythons that pass too close by forcing head and tail against the sides of the snake and thus suffocating it. He wonders about the origin of this remarkable legend.

RANGE.—Cameroon, Rio Muni, possibly south into Gabon.

LOCALITY RECORDS.—**West Africa:** ZMU 9636 (holotype of *M. jugularis* Peters, 1880; Strauch, 1881; Nieden, 1910). **Cameroon:** HM 2946A, 2946B (Werner, 1910); NMW 12355. Environs de Mabiogo, près Campo: LCFM unnumbered (Coll. 5, Monard, 1951). "South Came-

room": ZMU 23908. Efulen: BM 1903.2.29.1. Kribi: BM 1947.1.5.18, 1949.1.2.78, 1949.1.2.79, 1949.1.2.80 (Monard, 1951, notes that these specimens were collected by R. P. Caret who is also responsible for the Mabiogo records). ZMU 23904 (Nieden, 1910). **Rio Muni:** Etembue: SMF 36164. **Gabon:** NMB 3813 (Müller, 1885, 1890); SMNS 2038A (holotype of *L. koppenfelsii* Strauch, 1881).

Monopeltis galeata (Hallowell)

Phractogonus galeatus Hallowell, 1852, p. 62. (Type locality: "Liberia, West Coast of Africa"; corrected by Hallowell, 1857, p. 50 to "Gaboon Country, West Africa." Lectotype: ANSP 9684; Schmidt, 1919, p. 603. Lectoparatype: ANSP 9683; possibly also ANSP 9682, labeled "Corisco, W. Africa"; cf. Schmidt, *ibid.*).

Monopeltis (Phractogonus) magnipartitus W. C. H. Peters, 1879, p. 276. (Type locality: "Angeblich von dem Gabun." Holotype: ZMU 7654).

Lepidosternum galeatum Strauch, 1881, col. 121. (Emendation).

Lepidosternum dumerilii Strauch, 1881, col. 122 (Type locality: "West Afrika (Gabon)." Syntypes: MHNP 5358, 5358A, 5358B).

Lepidosternon magnipartitum Strauch, 1881, col. 124. (Emendation).

Monopeltis magnipartita Boulenger, 1885, p. 458 (Emendation).

Monopeltis unirostralis Mocquard, 1903, p. 210. (Type locality: "Gabon." Holotype: MHNP 01-532).

Monopeltis boveei Mocquard, 1903, p. 211. (Type locality: "Fernand Vaz (Congo français)." Syntypes: MHNP 02-421, 02-422).

DEFINITION.—A medium to large species of *Monopeltis* with the heavily keratinized facial region subdivided into two distinct and very large head shields (Fig. 2D-E). The anterior shield is quite flat, while the posterior one is convex across the front of the head. In smaller individuals the posterior portion of the first shield may not be keratinized, and the keratin may not extend to the edges of the second. Lateral to the suture between the two major shields are two triangular preocular segments; these are keratinized at the anterior margins but may or may not be keratinized nearest the enlarged posterior head shield. The oculars face laterally and are small and non-keratinized. There are three supra- and three infralabials (the third of each being greatly enlarged), 4-6 first postgenials and 6-10 second postgenials. The nasals are discrete and postnasals may be present. The posterior portion of the pectoral region is characterized by two to four elongate shields. These are narrower anteriorly and flanked by

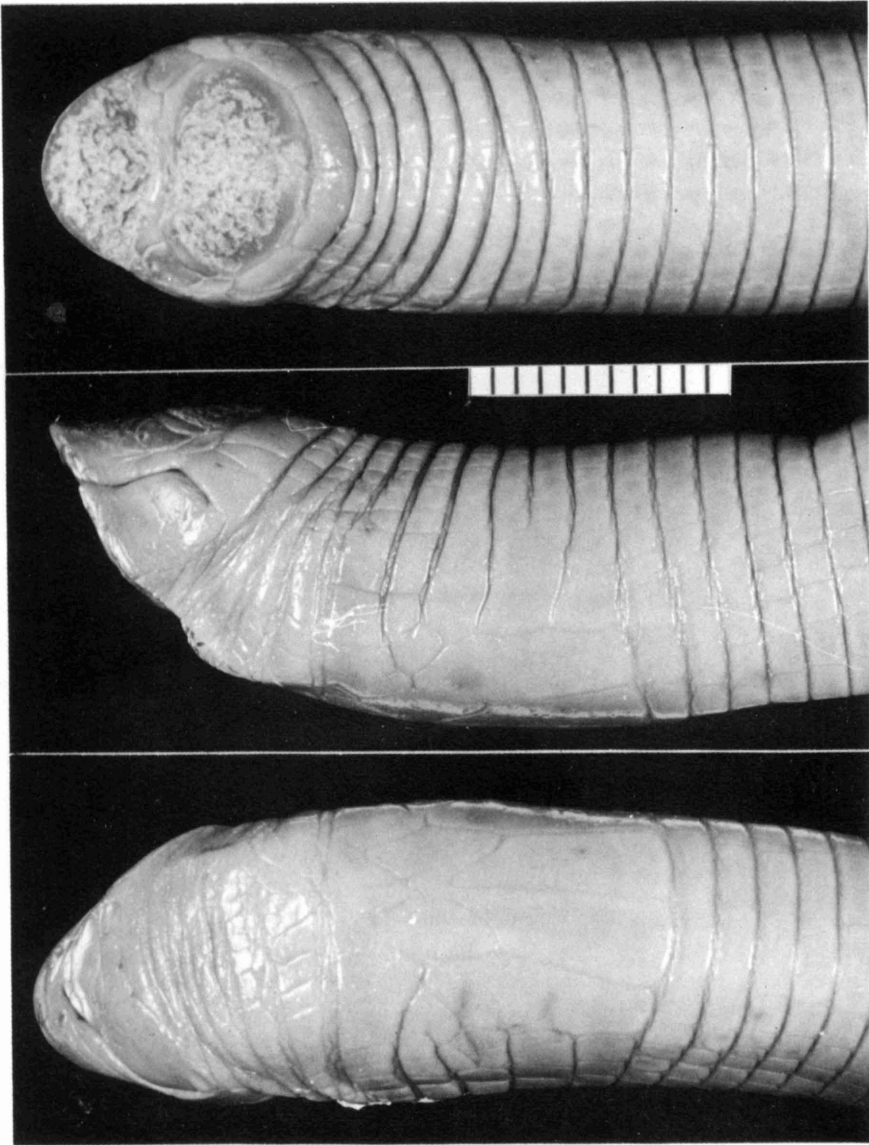


FIG. 10. *Monopeltis galeata*. Dorsal, lateral, and ventral views of anterior end to show texture and arrangement of segments on GUM (unnumbered) from Gabon. The scale is in mm.

diamond-shaped segments; the sutures thus give the impression of a junction of anteriorly and posteriorly open V's (Figs. 10, 11). Specimens have 219–233 body annuli with the dorsal count not significantly

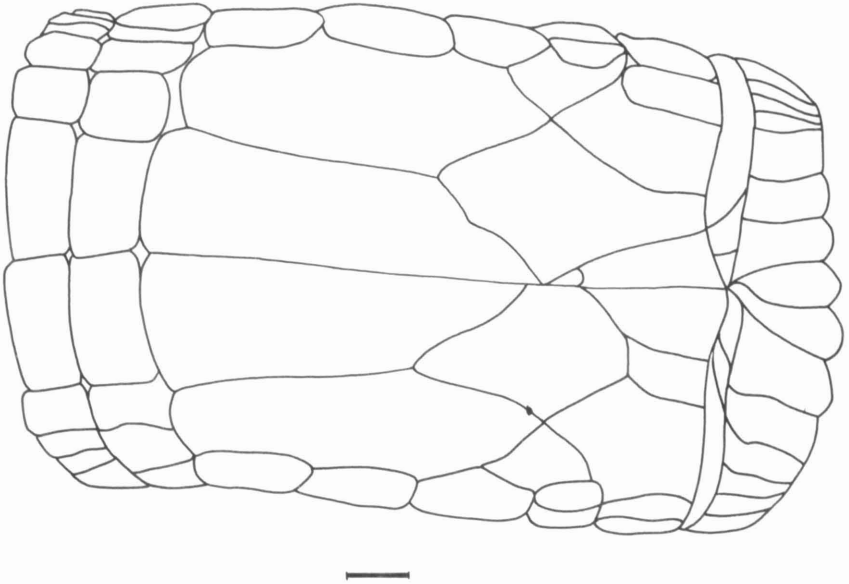


FIG. 11. *Monopeltis galeata*. Sketch of pectoral region of HM 778 from Gabon. The line equals 1 mm to scale.

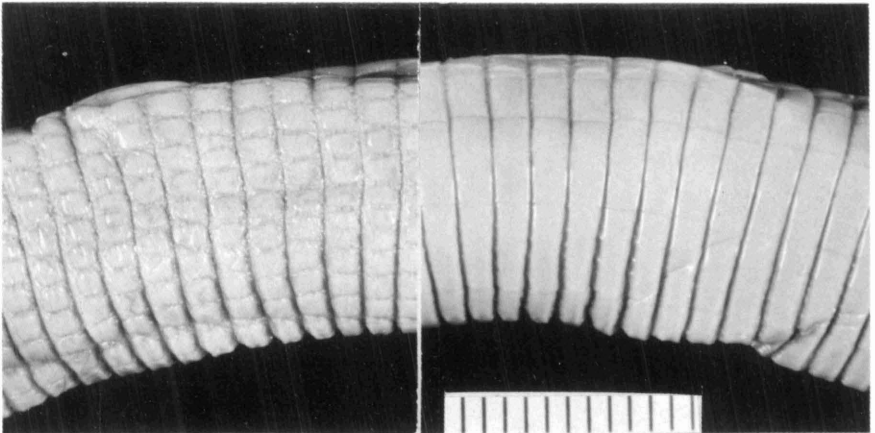


FIG. 12. *Monopeltis galeata*. Dorsal (left) and ventral (right) views of GUM (un-numbered) from Gabon to show segment proportions at midbody.

greater than the ventral. There are 9–13 dorsal and 7–10 ventral segments to a midbody annulus (Fig. 12). One or two (occasionally three) preloacal pores lie on the lateral tips of the lozenge-shaped preloacal shield of males; these pores are absent in juveniles and females. There

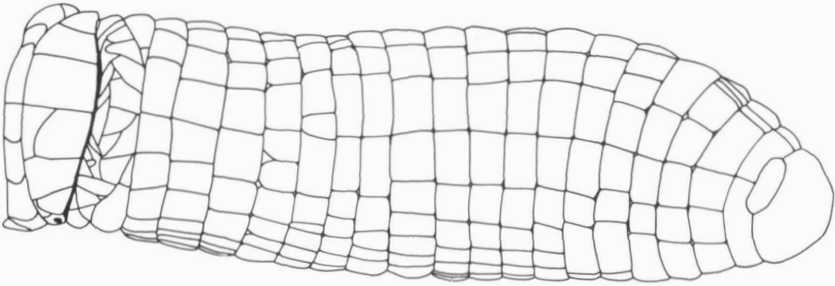


FIG. 13. *Monopeltis galeata*. Ventral view of cloaca and tail of HM 778 from Gabon to show segment proportions and autotomy site. Only one (of the specimen's two) precloacal pore(s) is shown as the pore-bearing segments lie semi-laterally. The line equals 1 mm to scale.

are 15–20 caudal annuli, with the fourth to sixth narrowed to form the autotomy site (Fig. 13). The caudal tip is pointed and narrower laterally than dorso-ventrally so that it appears oval in cross section. The last 2–5 interannular raphes are shallowly inscribed. Only the posterior half of the animal shows pigmentation, mainly as speckling on individual dorsal segments. Pigmentation is dense on the dorsal surface of the tail, extending ventrally along the sides and being concentrated at the anterior and posterior segmental edges, and particularly on the distal tip (Fig. 14).

DISCUSSION OF TYPES.—Typical material has been included in the analysis and used in the formulation of the definition of the species. The series of three specimens of *M. dumerilii* from Gabon (MHNP 5358, A,B) were collected by Lecomte and are hence syntypes; MHNP

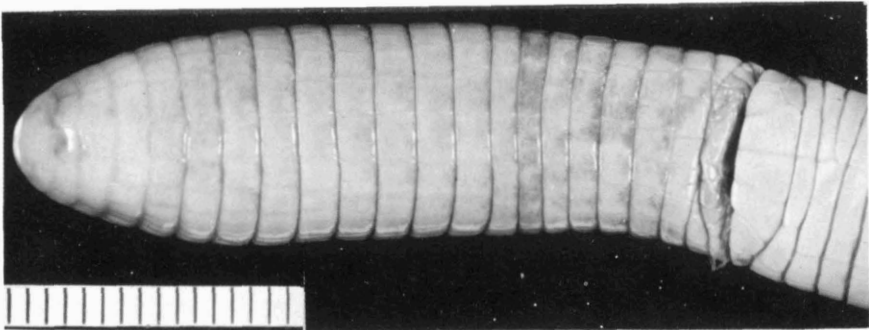


FIG. 14. *Monopeltis galeata*. Ventral view of cloaca and tail of GUM (unnumbered) from Gabon to show segment proportions and darkly pigmented autotomy site.

54-07 from the same country was collected by Patry and does not pertain to the type series (Gans, 1967:85 is in error). Schmidt's (1919:603) argument for placing this form and *M. unirostralis* into synonymy still holds. The holotype of *M. magnipartitus* (ZMU 7654) fits the concept of *M. galeata*. The present material gives no reason to question Loveridge's (1941:417) decision placing all of these forms into synonymy, though the sample is hardly adequate to rule out geographical variation. We have been unable to find the Hamburg Museum specimen from Sibanga, Cameroon, mentioned by Loveridge (1941:418). Did he intend to refer to a Berlin Museum specimen questionably from "Cameroon"?

STATUS OF THE SPECIES.—The differences between *M. galeata*, which shows no obvious geographical variation, and *M. jugularis* (Table 1) have already been cited. *M. galeata* is apparently allopatric to *M. guentheri*, a much smaller form which also shows differences in some seven characteristics. While *M. jugularis* and *M. galeata* both appear to occur in the coastal belt of low land forest, *M. guentheri* extends from the edges of this region inland across the basin of the Congo River. *M. galeata* is also allopatric to *M. schoutedeni*, a distinct form similar to *M. guentheri* in size but differing in head shield pattern and the number of body annuli, caudal annuli, and precloacal pores (see below).

DESCRIPTION.—This is a medium to large sized species of *Monopeltis* with available specimens ranging in size from 206 to 430 mm (Table 2) and the average midbody diameter of adults near one cm (Fig. 23). Nearly all specimens are pigmented, with the posterior half of the animal showing speckling on individual dorsal segments. This pigmentation fades anteriorly and disappears entirely anterior to the 50th body annulus. The pigment becomes increasingly dense on the top of the tail, which may bear some segments sufficiently pigmented to appear totally dark. More ventrally the caudal pigmentation becomes concentrated at the anterior and posterior segmental edges.

The dorsal surface of the head is divided into an elongate anterior head shield and a somewhat ovoid posterior one. Both shields are heavily keratinized at their centers, although the keratin generally does not extend to the posterior edge of the anterior nor to any edge of the posterior shield. The anterior and lateral aspects of the triangular preocular segment are keratinized, and the eye is invisible in adults.

The mental may have a partial suture on the midline, with its anterior half deeply inscribed but the ventroposterior half only faintly in-

licated. The nostrils show a U-shaped opening inserted in the anterior portion of the elongate nasal which contacts the narrow rostral and the first and sometimes the second supralabial. Some specimens have a narrow postnasal excluded from contact with the first cephalic shield. The third supralabial is drop-shaped and greatly enlarged.

The second major head shield is followed by a row of large modified head scales. The position of the third sub-triangular supralabial indicates that the annulus immediately caudad to these head scales should be designated as the first body annulus.

The posterior edge of the mental is variable so that the postmental (= genial) appears heart or shield-shaped. The genial is followed by a row of four to six postgenials, the most lateral contacting the postmental and second and enormous third infralabials. The second row of postgenials consists of 6–10 segments; its lateral elements contact the posterior margins of the third infralabials.

Almost all specimens have three supra- and three infralabials, with both first and second infralabials contacting the lateral edges of the postmental. In one specimen (MNHP 09–1), the small first infralabials contact only the mental and second infralabials, whereas another specimen (NMW 12353) shows a 3/2 labial pattern, apparently by fusion of the first and second infralabials. The rather distorted position of the lower jaw in the latter specimen, however, suggests that it is abnormal.

The pectoral region is characterized by a double-V pattern (Fig. 11), the posteriorly pointing V formed of four elongate parallel shields. Occasionally a transverse suture may divide each of the two lateral shields into two approximately equal segments, or some irregular fusion may occur in the anterolateral region. There are eight to nine anterior lateral annuli, with the most posterior of these extending ventrally and contacting the sides of the enlarged pectoral shields.

There are 219–233 body annuli from the posterior edge of the third infralabial up to (but not including) the precloacal shield. One individual has an unusually low number of annuli (201, MNHP 01–532) but is otherwise similar to the remainder of the series. There seem to be few supernumerary dorsal half annuli though irregularities, such as spiral annuli, occur. Often there is one extra dorsal half annulus in the precloacal region; up to three supernumerary dorsal half annuli occur in some individuals. A midbody annulus has 9–13 dorsal and 7–10 ventral segments; the number of dorsal segments is consistently greater than the number of ventral segments for any given specimen.

The precloacal shield is oval in shape and contains 6–8 segments of

which the medial pair are the largest. The segments become progressively smaller laterally and the extreme tips of the shield may bear precloacal pores. The medial suture is parallel to the longitudinal axis of the body, but the lateral sutures slant inward toward the postero-medial margin of the shield. Occasional irregularities in the basic pattern may result from shallow transverse or longitudinal sutures. Adult males have one or two (one specimen had three) precloacal pores. Pores are lacking in females and subadults.

The tip of the tail is distinctly pointed and narrowed laterally so that it appears oval in cross section. There are 15–20 complete caudal annuli with the last few interannular raphes being characteristically shallow. The fourth to sixth, generally the fifth, caudal annulus narrows to represent the autotomy site, at which one specimen had autotomized.

There is no dorsal sulcus; the dorsal surface exhibits a few laterally diagonal lines which do not cross it completely. The lateral sulci start about the fiftieth body annulus and at midbody are one quarter as wide as the adjacent segment. Middorsal segments are slightly longer than wide, midventral segments $2\frac{1}{2}$ times as wide as long.

BIOLOGICAL MISCELLANEA.—The skull of MHNP 5358A has been exposed showing 7 premaxillary, 3 maxillary and 7 dentary teeth, as well as small eyes deeply sunk beneath the scalloped bony edges of the facial shield. The left lung is the larger and the right rudimentary (Butler, 1895). Cope (1896) notes that this species has a bifurcate hemipenis; each branch is marked with fine, close, transverse folds, while the region proximad of these has coarser folds that are directed transversely and obliquely.

RANGE.—Gabon.

LOCALITY RECORDS.—No locality: IRScNB 9422 (Laurent, 1947). "West Afrika": HM 2364 (Werner, 1913). Cameroon?: ZMU 12093. **Gabon**: ANSP 9683, 9684 (syntypes of *M. galeatus*, Hallowell, 1852, 1857; Schmidt, 1919; Strauch, 1881); BM 88.12.13.1, 88.12.13.2 (Bou-lenger, 1890), 89.12.16.31 (Pietye River?); GUM unnumbered; HM 778; MHNP 54–07, 5358, 5358A, 5358B (syntypes of *L. dumerilii* Strauch, 1881; Duméril, 1856, 1861); NMB 3815 (Müller, 1892); NMW 12353; ZMU 7654 (holotype *M. magnipartitus* Peters, 1879). Ncowe Dist. (?): NMB 5678–5679. Corisco Island: ANSP 9682 (possible lectoparatype of *P. galeatus* Hallowell, 1852). Cap Esterias (under litter, in high forest): FMNH 75074. Libreville: MHNP 99–234. Région de Lambaréné: MHNP 01–532 (holotype *M. univostralis* Mocquard,

1903). Fernand Vaz: MHNP 02-421, 02-422 (syntypes of *M. boveii* Mocquard, 1903); MSNG 28299, 37559. Omboué, Fernand Vaz: USNM 62128. Lake Asibbe, near Fernand Vaz: BM 1908.5.25.5 (Boulenger, 1906). Rivière Bilogone: MHNP 1969-106, 1969-107. N'gomo: MHNP 09-1.

Monopeltis schoutedeni Witte

Monopeltis schoutedeni Witte, 1933a, p. 170. (Type locality: "Kunungu," Congo. Holotype: RGMC 8766).

DEFINITION.—A medium to large sized species of *Monopeltis* having a pointed, heavily keratinized facial region characterized by the presence of two large head shields which are fused in adults by a keratinized isthmus (Fig. 3). Two prominent keratinized preocular zones lie lateral to this constriction, just anterior to the smaller, non-keratinized oculars (Fig. 15). One or two rows of non-keratinized, enlarged modified head scales follow immediately posterior to the major head shield. The rostral is discrete and there are three supra- and three infralabials, the posteriormost being the largest. There are four first and 5-7 second postgenials, the most lateral of which contact the medial edges of the greatly enlarged third infralabials. The nasals are discrete and postnasals may be present. The pectoral region is occupied by six elongate parallel shields which are preceded anteriorly by two rows of slightly modified smaller segments (Figs. 16, 17). Specimens have 273-289 body annuli, with the dorsal count not significantly greater than the ventral. A midbody annulus has 16-23 dorsal and 14-17 ventral segments (Fig. 18). Specimens have 9-13 precloacal pores which lie anterior to the cloacal shield in a medially interrupted row. The tail is pointed, with 25-29 complete caudal annuli and an autotomy site that falls on the sixth to eighth post-cloacal annulus (Figs. 19, 20). Dorsal pigmentation starts about the 100th body annulus and becomes increasingly dense posteriorly to reach a maximum on the top and distal tip of the tail. Ventral pigmentation is limited to the immediate postcloacal region and the tip of the tail.

DISCUSSION OF TYPES.—The type has been included in the definition and used in the formulation of the definition of the species. It is in relatively poor condition, with incisions present on both the anterior and posterior portions of the body.

STATUS OF THE SPECIES.—*M. schoutedeni* and *M. guentheri* occupy the basin of the river Zaire. These species are apparently sympatric as both have been recorded from Diélé, N'ganchou and Brazzaville in the

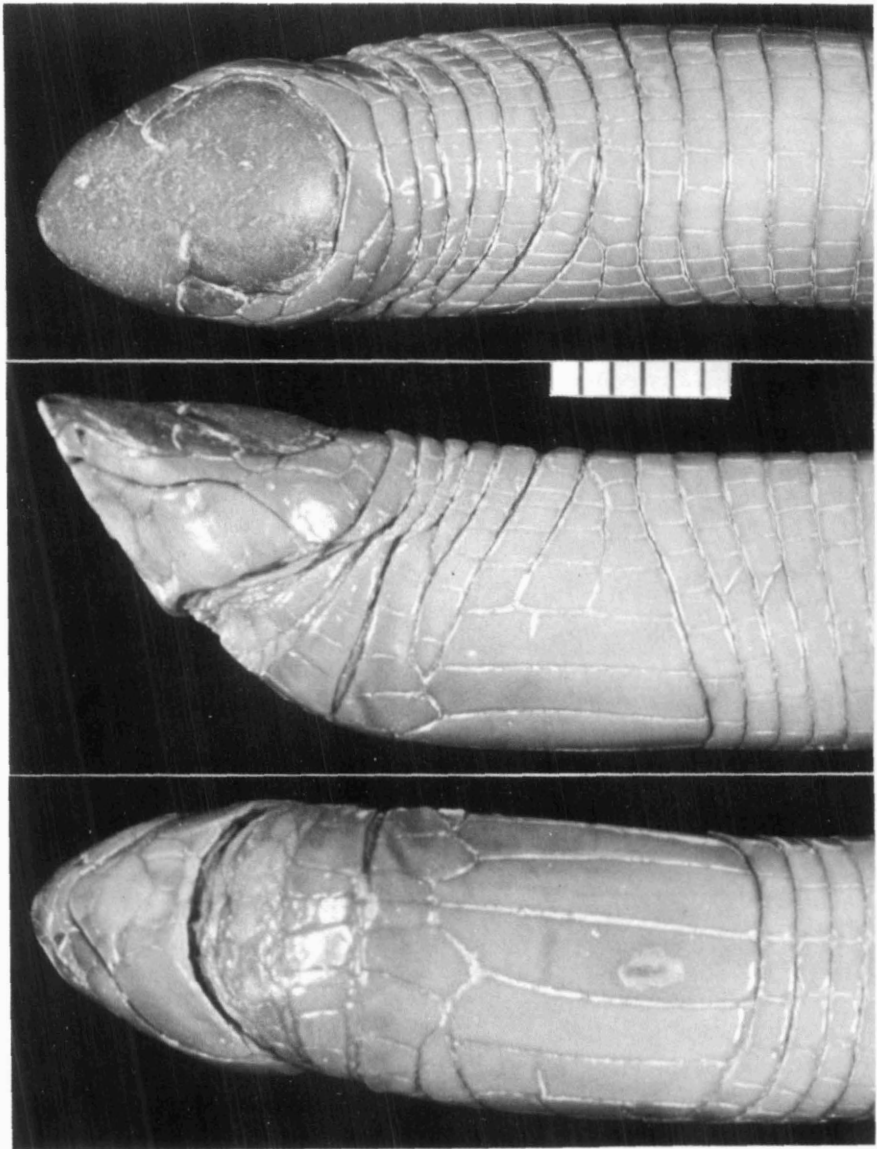


FIG. 15. *Monopeltis schoutedeni*. Dorsal, lateral and ventral views of anterior end to show texture and arrangement of segments on RGMC 14510 from Region de Mushie, Zaire. The scale is 1 mm.

Congo and Kinshassa, Zaire. The differences between these two forms have already been tabulated (Table I) and would seem sufficient to consider *M. schoutedeni* a good species.

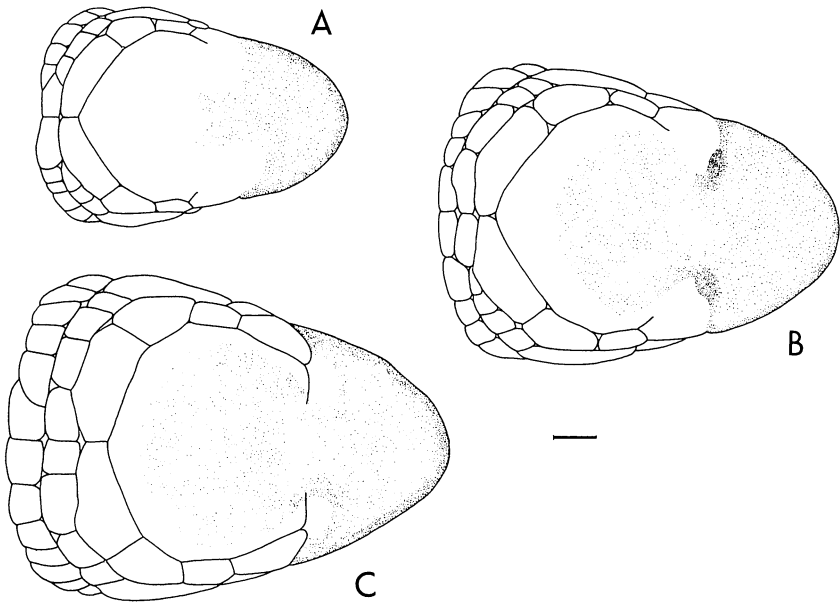


FIG. 16. *Monopeltis schoutedeni*. Dorsal view of head of three specimens to show ontogenetic progression of extensive keratinized area.

A. MHNP 1886-197 from Alima Lékéti, Mission de Brazza, Congo. (140 + 16mm).

B. MHNP 1886-194 from Diélé, Mission de Brazza, Congo. (296 + - mm).

C. MHNP 1886-198 from Nganchou, Mission de Brazza, Congo. (296 + 43 mm).

GEOGRAPHICAL VARIATION.—Most of the specimens are from Bolobo or the immediate vicinity, so that any statements pertaining to geographical variation are at best tentative. A specimen from the vicinity of Brazzaville (MHNP 59-32) has a distinctly greater number of dorsal segments per midbody annulus than do other individuals of the species. It is also very significantly larger (Fig. 23), but its meristic characters and general appearance otherwise do not appear significantly different from those of other specimens of this form.

This species again shows ontogenetic variation in cephalic keratinization (cf. Gans and Latifi, 1971). Keratinization starts with the anterior keel and proceeds posteriorly sending a narrow isthmus on to the second large segment of the head. Three small specimens from the northeastern portion of the range (MHNP 1886-194, 1886-197, 1886-198) have the medial portion of the intersegmental suture absent; indeed, in two of these what is here interpreted as fusion extends also onto the anteromedial corners of the preoculars (Fig. 16). These specimens furthermore have only two supralabials on at least one side and repre-

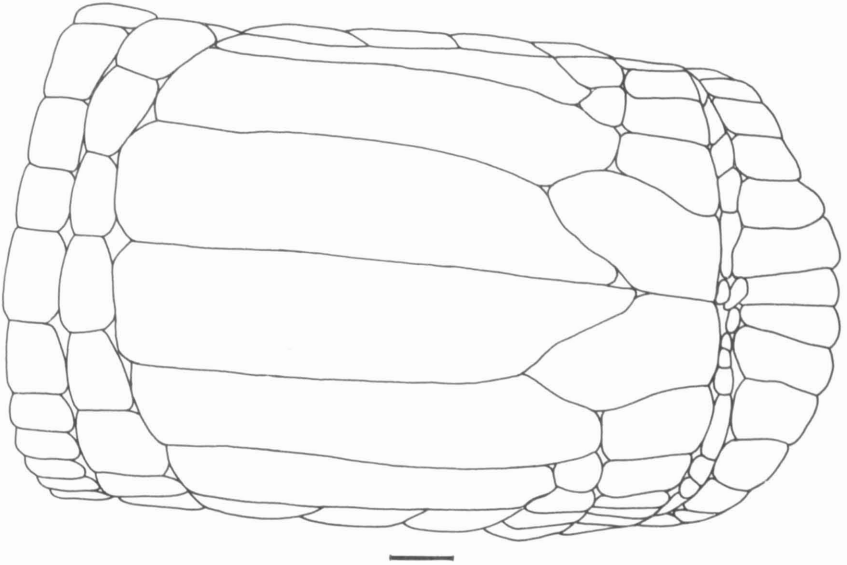


FIG. 17. *Monopeltis schoutedeni*. Sketch of pectoral region of RGMC 15764 from Bolobo, Zaire. The line indicates 1 mm to scale.

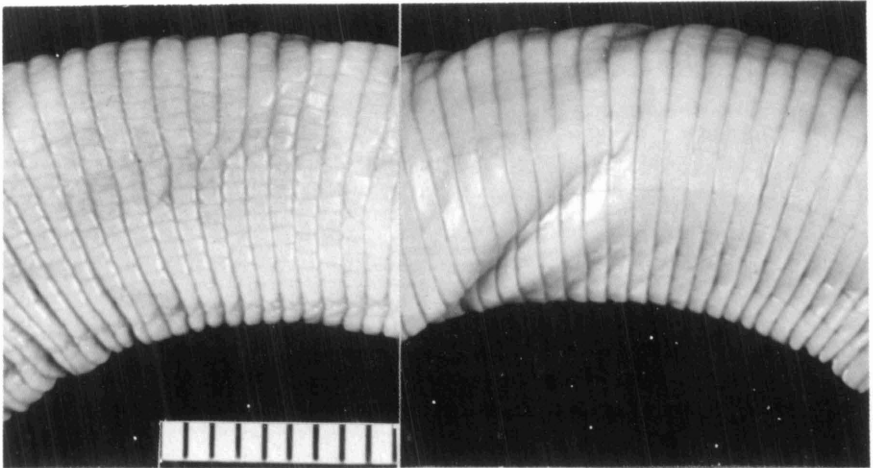


FIG. 18. *Monopeltis schoutedeni*. Dorsal (left) and ventral (right) views of RGMC 16517 from Botanankasa to show segment proportions at midbody. Note the presence of a dorsal sulcus.

sent the three smallest individuals in the sample. It is unclear whether we are dealing with geographical or individual variation.

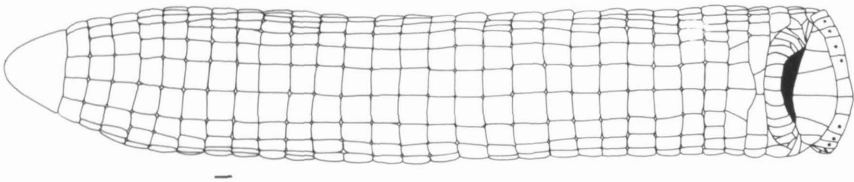


FIG. 19. *Monopeltis schoutedeni*. Ventral view of cloaca and tail of RGMC 15764 from Bolobo, Zaire, to show segment proportion and precloacal pores.

DESCRIPTION.—This is a medium to large sized species of *Monopeltis* having a range in snout-vent length of 140–660 mm (Table 2). Most of the animals studied are between 237 and 440 mm in length and have a midbody diameter of approximately one cm.

Nearly all specimens are noticeably pigmented in the posterior region of the body, with the pigment granules arranged in a reticular pattern in the central portion of the dorsal segments. Pigmentation is most highly concentrated across the top of the tail and tends to fade distally. In some animals, however, it extends to the tip of the tail, where a secondary concentration of pigment may occur. Ventral pigmentation is light and is limited to the immediate postcloacal region and the caudal tip. The dorsal pigmentation zone fades gradually so that the animal is unpigmented anterior to the 100th annulus.

The head region is distinctly pointed and somewhat flattened in a dorso-ventral direction. The two large fused head shields and interconnecting isthmus are generally completely keratinized, although in smaller specimens the keratin may not extend to the posterolateral margins. The large sub-triangular preocular areas lying lateral to the isthmus are also heavily keratinized. The smaller ocular segments, however, are non-keratinized, and in preservative the eye is invisible.

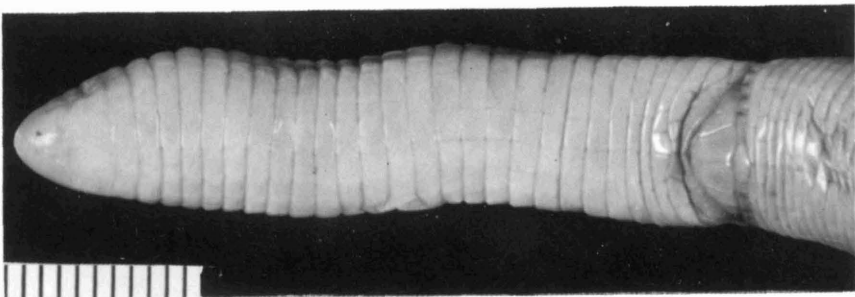


FIG. 20. *Monopeltis schoutedeni*. Ventral view of cloaca and tail of RGMC 16517 from Botanankasa to show pointed distal tip.

In young specimens of this species, varying degrees of keratinization of the head shield are observed. In MHNP 1886–197, only the anterior region and a slender medial section of the head are keratinized; whereas in MHNP 1886–194, keratinization has proceeded further posteriorly but is still not complete. In the latter individual, the demarcation between the keratinized and non-keratinized areas is sharply defined so that the entire head region has the appearance of a double shield, one within the other. The preocular segments are incomplete in both animals and are continuous with the main head shield at their medial margins (see Geographical Variation).

The nasal is elongate, bears the U-shaped nostril, and is in contact with the head shield, the rostral, and the first and second supralabials. Postnasals are rare; when present they may occur asymmetrically and are sometimes separated from the nasal by only a shallow suture. Postnasals never contact the preocular region, being excluded by a long contact between keratinized head shield and elongate second supralabial.

The mental is squarish except for its flaring tips along the labial line and is adjoined by the small first two of three infralabials, both in contact with the complexly shaped postmental. There are four postgenials in the first row, the lateralmost contacting both the second and enormous third infralabials. Five to seven postgenials comprise the second row which is followed by the deep gular groove filled with tiny segments. In a few specimens (RGMC 20589) the lateral segments in the first postgenial row may be asymmetrically subdivided anteriorly with the additional segments contacting the genial and second infralabial. There are three pairs of supralabials and three pairs of infralabials, with the third being the largest. Occasionally (MHNP 1886–194, 1886–197, 1886–198) the suture between first and second supralabials has disappeared leading to a supralabial count of two. The general geometry of the region suggests that only a fusion rather than a reorganization of the head is involved.

Two patterns occur for dorsal half-annuli contacting the third supralabials. In the first, the posterior segments form a complete half-annulus, the dorsal and medial segments of which lie immediately adjacent to the heavily keratinized cephalic shields. There are then two or three segments on each side enclosed anteriorly between this half-annulus and the posterior margins of oculars and head shield. In the second case two complete dorsal half-annuli cross the back of the head between the third supralabials of each side; these half-annuli form a double row of enlarged segments posterior to the large shields.

Neither of these dorsal half-annuli were counted in determining number of body annuli.

The pectoral shield pattern shows little variation between individuals of the species, and consists of six elongate parallel shields preceded anteriorly by two rows of smaller, somewhat rectangularly-shaped segments. There are 7–9 anterior lateral annuli which extend ventrally to contact the sides of the enlarged pectoral shields.

The form has 273–289 body annuli, with the dorsal count not significantly greater than the ventral. One or two extra dorsal half-annuli may occur, most commonly in the immediate precloacal region. The dorsal portions of the annuli cross the back at an angle so that a herringbone type of pattern is produced. There are generally 3–5 (sometimes 6) lateral annuli. A midbody annulus has 16–23 dorsal and 14–17 ventral segments. The middorsal segments are slightly longer than wide, and the midventral segments are rectangular in shape and are two to three times wider than long.

The precloacal shield is oval in shape and tapers laterally due to the presence of progressively smaller segments. The shape of the large medial segments varies most. They are often rectangular so that the anterior margin of the precloacal shield is smoothly curved. However, each of these segments may be pentagonal so that the anterior edge forms a posteriorly open V. They may also extend anteriorly, partially or completely interrupting the pore-bearing annulus. The medial suture runs parallel to the longitudinal axis of the body, but the lateral sutures slant inward to the posteromedial edge of the shield. Nine to 13 precloacal pores lie anterior to the shield in a medially interrupted row that may show some slight asymmetries.

The tail is pointed and appears vertically oval in cross section. There are 25–29 caudal annuli. A rather faintly-marked autotomy constriction is found at the level of the sixth to eighth postcloacal annulus.

There appears to be little folding of the skin and no diagonal cross lines on the dorsal surface. Some specimens have a dorsal sulcus indicated intermittently by an alignment of intersegmental sutures. This feature is first present at about the 75th body annulus (somewhat posterior to the first appearance of the lateral sulci) and extends at intervals to the cloaca.

The lateral sulci extend from about the 50th body annulus to the cloaca. At midbody they are about $\frac{3}{4}$ as wide as an adjacent segment and irregularly filled with large triangular segments, often only one or two per annulus. The intersegmental sutures on the ventral surface are aligned, but there appears to be no ventral sulcus.

BIOLOGICAL MISCELLANEA.—Laurent (1956) notes that one specimen of this species had the mandibles of three ants (*Dorylus wilverthi*) embedded in its skin. He suggests that this biting capacity represents a defensive strategy reducing the predation of the *Monopeltis* in the ant nests.

RANGE.—Vicinity of the middle Zaire river, Congo and Zaire.

LOCALITY RECORDS.—Congo: Alima Lékéti (Mission de Brazza): MHNP 1886–197. Diélé (Mission de Brazza): MHNP 1886–194. N'ganchou (Mission de Brazza): MHNP 1886–198. Brazzaville: MHNP 59–32. Zaire: Kinshassa: RGMC 2094 (Witte and Laurent, 1942; Witte, 1954). Région de Mushie (Dist. Lac Leopold II): RGMC 14510 (Laurent, 1947; Witte, 1954). Bolobo: RGMC 15762–15765, 20585–20592, 27849–27854 (Laurent, 1956). Bolobo, Village Nd'wa [Bokoro, per Laurent, 1953 is in error]: 15923, 16241–16244 (Laurent, 1953, 1956). Kunungu: RGMC 8766 (holotype of *M. schoutedeni*, Witte, 1933a, 1933b, 1954; Loveridge, 1941; Witte and Laurent, 1942). Botanankasa: RGMC 16517 (Laurent, 1956).

Monopeltis guentheri Boulenger

This species has already been redescribed and its geographical variation analyzed (Gans and Latifi, 1971). Figures 3, 21, and 22 show the same features of its morphology that have been presented here for *M. jugularis*, *M. galeata*, and *M. schoutedeni*, so that a visual comparison of its similarities with, and differences from, these species may be made. Midbody diameter and tail length as a function of snout-vent length for these four species are shown in Figure 23, and other characteristics are compared in Table 1.

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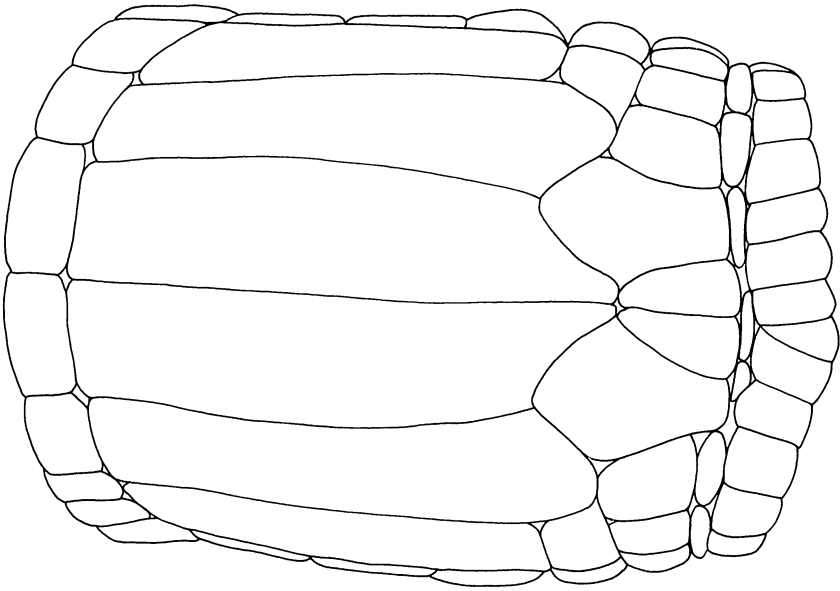


FIG. 21. *Monopeltis guentheri*. Sketch of pectoral region of CG 3495 from Brazzaville, Congo. The line equals 1 mm to scale.

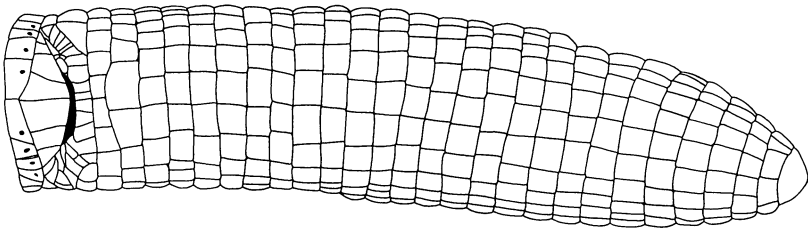


FIG. 22. *Monopeltis guentheri*. Ventral view of same specimen to show preloacal pores and pointed distal tip.

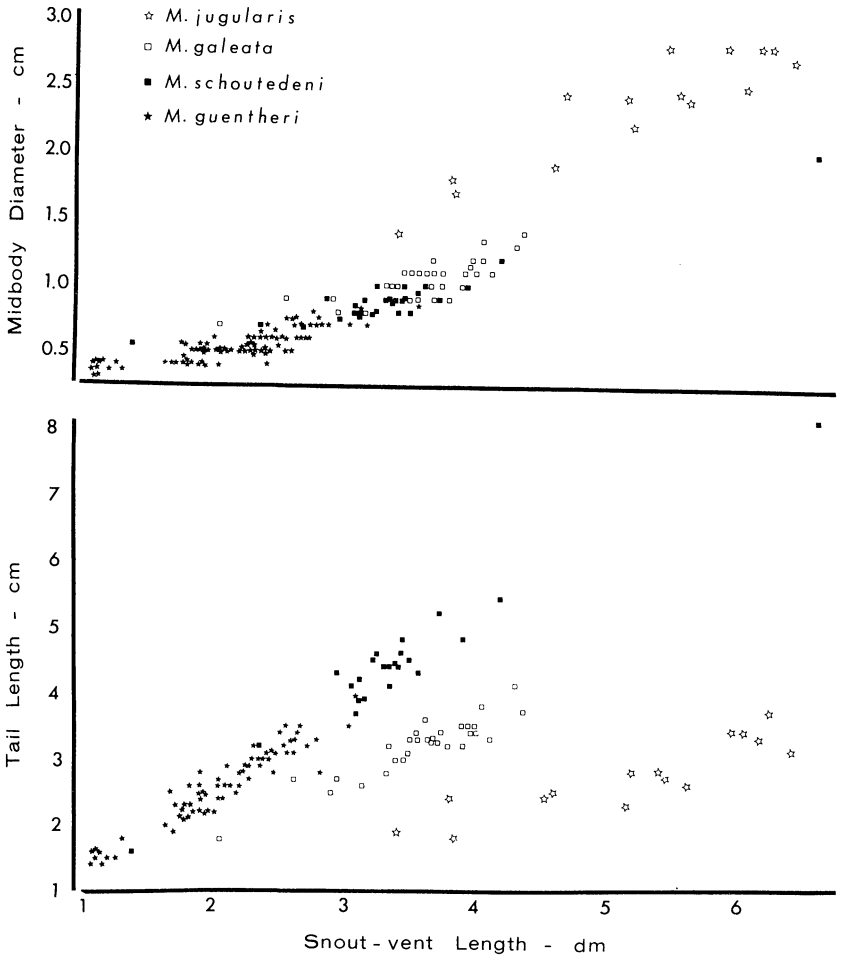


FIG. 23. *Monopeltis*. Scatter diagram to show midbody diameter and tail length as a function of snout-vent length for these four species

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