Mem. Soc. ent. ital., Genova, 73 (1994): 29-58, 30.6.1995

LUIS A. PEREIRA & ALESSANDRO MINELLI

THE AFRICAN SPECIES OF THE GENUS *SCHENDYLURUS* SILVESTRI, 1907[1]

(Chilopoda Geophilomorpha Schendylidae)

The genus *Schendylurus* has a wide distribution in the Neotropical Region, with about 40 species known to date. The genus is also present, but less widespread, in Africa, with 6 species, all insufficiently described by previous authors.

The different species inhabit a variety of biotopes, including tropical and subtropical forest, steppe and savannah and temperate woodlands, at altitudes ranging from the sea level up to 4500 m in the Andes of South America.

We do not know enough about the genus and its nearest relatives to be able to confidently suggest an explanation for the amphiatlantic pattern of distribution. At any rate, for geophilomorph centipedes dispersal by rafting over large distances must be sometimes considered (CRABILL, 1960).

We have recently got the opportunity to study materials belonging to all African taxa of this genus, including type specimens of most of them. Accordingly, we offer here redescriptions and a key to the Old World species of the genus.

Two African schendylids previously referred to *Schendylurus* have been recently removed (PEREIRA & DEMANGE, 1991) to the genus *Ctenophilus* Cook, 1896. These species are *S. nitidus* Brölemann, 1926 [now *Ctenophilus nitidus* (Brölemann, 1926)] and *S. haemodiontus* Attems, 1953 [junior synonym of *Ctenophilus angolae* (Chamberlin, 1951)].

Note to text and figures - We use the following abbreviations: a.a., antennal article; d., dorsal; l., left; r., right; v., ventral.

Family Schendylidae Cook, 1895

Genus *Schendylurus* Silvestri, 1907

Diagnosis - Pleurites of second maxillae not fused with coxosternum; apical claw of second maxillae pectinate on both d. and v. edges. Sterna with pore fields. Last pair of legs with seven podomeres; pretarsus in form of a small pilose tubercle or replaced by a small spine or altogether absent; coxopleura of the last leg-bearing segment each with two internal coxal organs of simple structure ("homogeneous coxal glands" in the conventional terminology; cfr. BRÖLEMANN & RIBAUT, 1912).

Type of the genus - *Schendylurus australis* Silvestri, 1907, by monotypy.

[1] This paper has been partly supported by grants of the Italian C.N.R. and the Ministero dell'Università e della Ricerca Scientifica to one of the authors (A.M.).

Schendylurus attemsi (Verhoeff, 1900) (Figs. 1-37).

Schendyla attemsii (sic) VERHOEFF, 1900 - Zool. Anz. 23: 485-6.

Schendyla attemsi, ATTEMS, 1903 - Zool. Jahrb. Syst. 18: 188.

Schendylurus attemsi, RIBAUT, 1911 - Ann. Soc. ent. France 80: 419.

Schendylurus (Schendylurus) attemsi, BRÖLEMANN & RIBAUT, 1912 - N. Arch. Mus. natn. Hist. nat. Paris, 5(4): 122.

Schendylurus attemsi, BRÖLEMANN & RIBAUT, 1912 - N. Arch. Mus. natn. Hist. nat. Paris, 5(4): 123; BRÖLEMANN, 1921 - Bull. Soc. Sc. nat. Maroc, 1: 102; 1926 - Arch. Zool. exp. gén. 65: 150; ATTEMS, 1928 - Ann. S. Afr. Mus. 26: 133, 138.

Schendylurus attemsii (sic), ATTEMS, 1929 - Das Tierreich 52: 79.

Schendylurus attemsi, BRÖLEMANN, 1932 - Bull. Soc. Hist. nat. Afr. Nord 23: 46; ATTEMS, 1934 - Zool. Anz. 107: 313; 1953 - Ann. Mus. R. Congo Belge, Sér. 8, 18: 120; DEMANGE, 1963 - Mém. Inst. Franç. Afr. Noire, n. 66: 42.

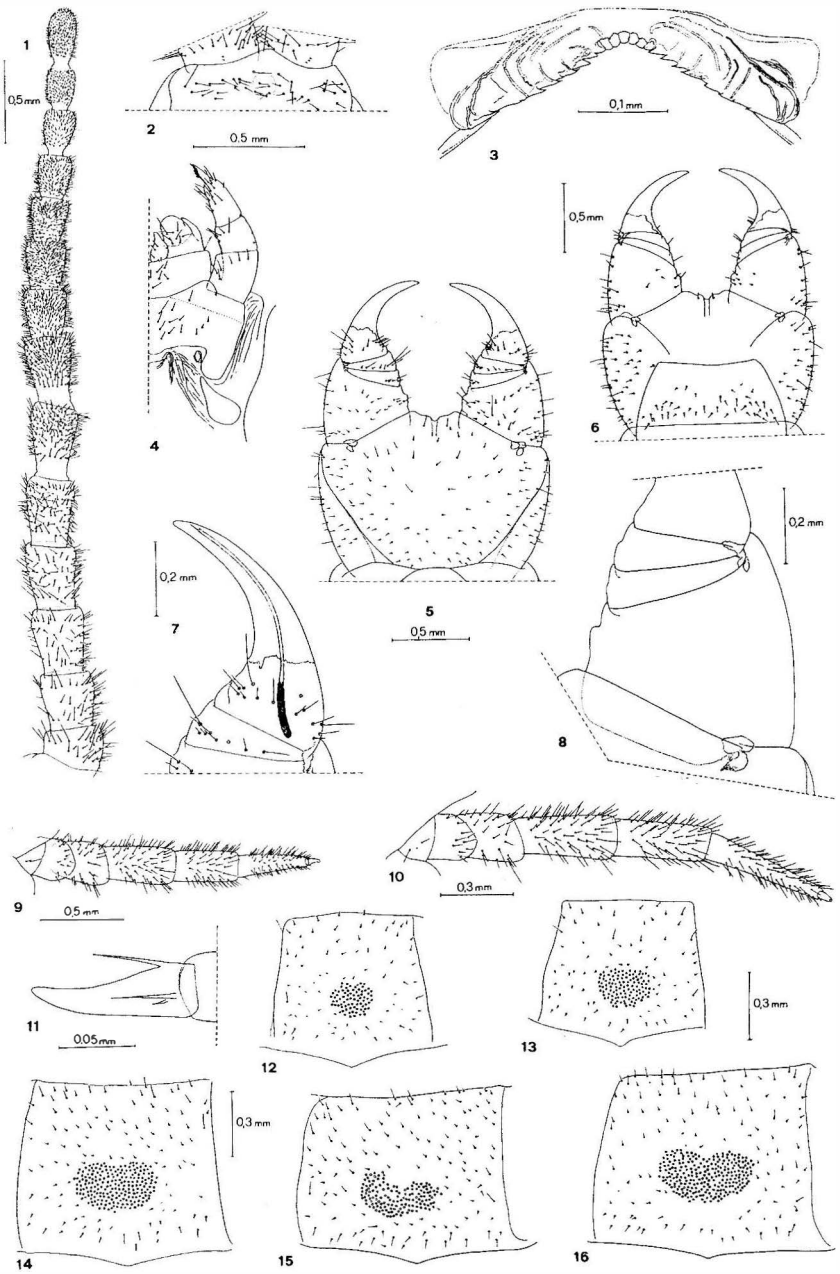
Type locality - Algeria: Oran: Saida.

Known range - Algeria: Oran: Saida; Morocco: Béni-Snassen: Ras Foura'al. 32 km from Kasba Tadla (new record).

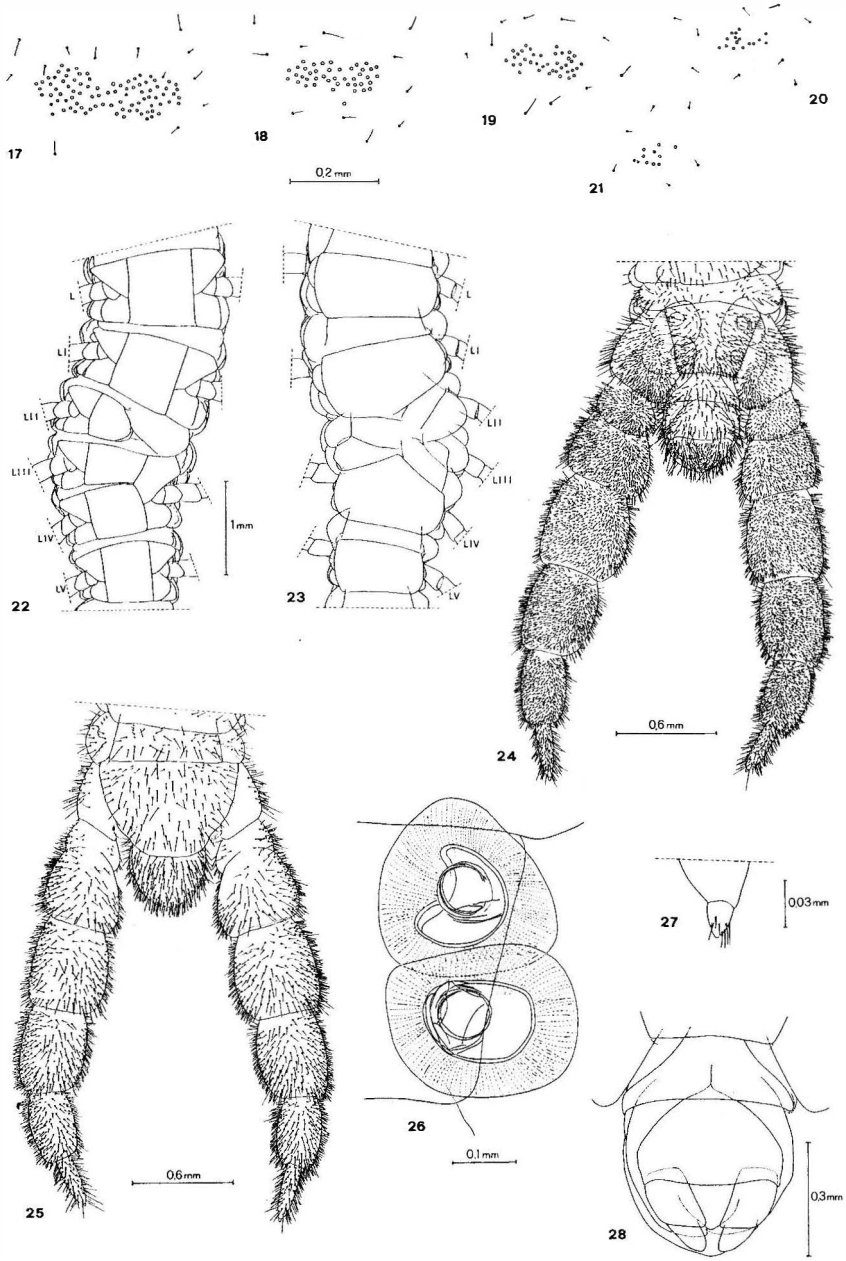
Material examined - Specimen A: Béni-Snassen: 1 ♂ with 57 pairs of legs (BRÖLEMANN & RIBAUT cited wrongly this specimen as a ♀!), body length 57 mm ("Collection Ribaut n.o 628", currently housed at the Muséum National d'Histoire Naturelle, Paris, "Collection Myriapodes M. 284"). Only the trunk is present (in one tube); head and mouthparts are missing and there is no label telling whether a slide has been made thereof. - Specimen B: "Saida Oran 14 V von Prof. Vosseler aufgefunden": Holotype ♂ of *Schendyla attemsii* represented by two slides, in the collections of ZMB. One slide with the following: a section of the trunk from the forcipular segment to the fifth leg-bearing segment included; another fragment with the 7 last leg-bearing segments and terminal segments; head capsule with antennae; first and second maxillae and mandibles. This slide bears three labels, respectively "11"; "Oran ♂ Schendyla Attemsii Verh. Syntypus" and "ZMB 13497". On the other slide there are: two fragments of the trunk, one with 13 leg-bearing segments of the anterior part of the body, the other with 15 leg-bearing segments from the middle part of the body. This slide also has three labels, one with "10" instead of "11", the others respectively identical to those on the other slide. According to Verhoeff (1900) this ♂ has 57 pairs of legs, by a body length of 58 mm, so 17 leg-bearing segments are missing in the aforementioned slides. - Specimen C - Morocco: 32 Km from Kasba Tadla 7.3.81 St. 125. (coll. Minelli): 1 ♂ with 57 pairs of legs, body length 44 mm.

We give here a redescription of this species, based as far as possible on holotype, but also incorporating features of the better preserved specimen A; a few details are also described for specimen C.

Antennae of holotype 3.5 times longer than head, slightly attenuate distally; articles longer than wide, a. a. I excepted; setae on a. a. I-IV less numerous than in the following articles, where they are progressively shorter and more numerous (Fig. 1). Last article with ca. 50 modified, claviform setae on the external border, totally absent on the internal border; distal end of the same a.a. and d. and v. surfaces of a. a. II, V, IX and XIII with very small specialized setae with morphology, number and distribution similar to those in the specimen C. In this latter, we see: distal extremity of a. a. XIV with ca. 7-10 very small setae, which do not seem to be apically divided. Dorsal and v. surfaces of a. a. II, V, IX and XIII with very small specialized setae restricted on the v. side to an internal lateroapical area and very similar to those on the apex of the ultimate article but with two very small apical branches; a. a. II with 2 setae, article V with 3 setae (Fig. 30); a. a. IX with 2-3 setae, a. a. XIII with 3-4 setae. Specialized setae on d. side located in an external lateroapical area and represented by two different types *a* and *b* (Fig. 31). Type *a* setae are very similar to those on the v. side, but those of type *b* are obviously much larger and darker in colour (ochraceous). Number of setae on the



Schendylurus attemsi (Verhoeff) - Figs. 1-4: ♂ holotype (Algeria: Oran: Saida). 1. r. antenna, v.; 2. clypeus; 3. labrum; 4. l. first and second maxillae, v. Figs. 5-16: ♂ from Morocco: Béni-Snassen (cf. BRÖLEMANN & RIBAUT, 1912). 5. forcipular segment with poison claws, v.; 6. the same, d.; 7. detail of calyx of poison gland in l. poison claw, v.; 8. trochanteroprefemur, femur, tibia and proximal part of tarsungulum of l. forcipular telopodite, v.; 9. l. leg VIII, v.; 10. l. leg LIV, v.; 11. detail of claw of r. leg XLIII, v.; 12-16. sterna II, III. X, XV, XVI.



Figs. 17-28 - *Schendylurus attemsi* (Verhoeff), ♂ from Morocco: Béni-Snassen (cf. BRÖLEMANN & RIBAUT, 1912). 17-21. sterna XXVIII, XXXII, XXXV, XXXVIII, XXXIX; 22. leg-bearing segments L-LV showing abnormal segmentation, v.; 23. the same, d.; 24. last leg-bearing segment and terminal segments, v.; 25. the same, d.; 26. detail of the l. anterior and posterior coxal organs, v.; 27. detail of pretarsus of r. last leg, v.; 28. genital region, v.

different articles are as follows: on a. a. II, 1-2 type *a* and 1 type *b* setae; on V, 4 *a* and 5-7 *b*; on IX, 4 *a* and 9-11 *b*; on XIII, 4-5 *a* and 8-9 *b*.

Cephalic plate of holotype slightly longer than wide: length to width ratio as 1.2:1.

Clypeus of holotype anteromedially with a well-developed reticulated clypeal area, 16+17 big setae in the middle (Fig. 2); 1+1 very small prelabral setae are probably present, but hard to see in the slide.

Labrum of holotype with 23 teeth, those of central arc robust and dark, the lateral ones less sclerotized, each with a relatively long and very sharp medial extension (Fig. 3). VERHOEFF (1900), however, described the labrum as having 6 blunt teeth on the central arc and 6-7 sharper teeth on each side of them.

Mandibles of holotype have been badly damaged by caustic treatment; on the dentate lamella of one of them, however, 3,2,4 teeth are apparently recognizable; pectinate lamella with ca. 27 hyaline teeth.

First maxillae of holotype with well-developed lappets both on coxosternum and telopodites. Coxosternum with 5+6 setae, medial lobes subtriangular, with 3+5 setae. Article II of telopodite with 7+8 v. setae (Fig. 4). Dorsal pores not visible because of the excess of caustic treatment. In specimen C, second article of telopodites with 10+10 pores on the d. side.

Second maxillae of holotype. Coxosternum with 15+13 setae (Fig. 4), apical claw of telopodite bipectinate, with ca. 22 v. and ca. 27 d. teeth.

Forcipulae of specimen A. Chaetotaxy as in Figs. 5-6; calyx of poison gland cylindrical (Fig. 7); form and relative size of trochanteroprefemural teeth as in Fig. 8. On this point, it is difficult to speak of "une fort dent arrondie", as did BRÖLEMANN & RIBAUT (1912: 125).

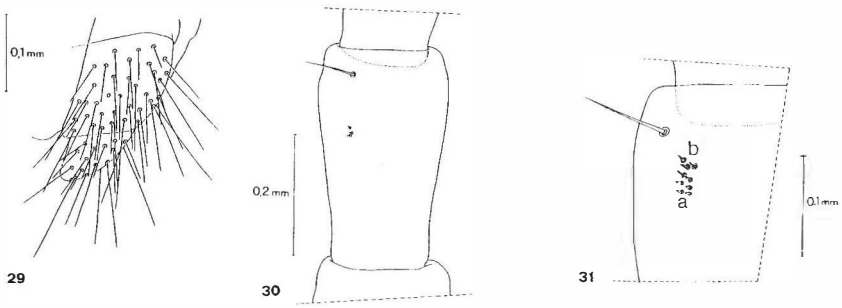
Legs of specimen A, last pair excepted, with chaetotaxy as in Figures 9-11.

Sterna of specimen A. Pore fields present on sterna II to XXXIX (rather than II to XXX, as described by BRÖLEMANN & RIBAUT (1912)), completely lacking on the remaining ones. Fields always undivided, their form and size changing along the trunk. Number of pores on selected sterna: on sternum II, 77; on III, 113; on X, 211; on XV, 144; on XVI, 252; on XXVIII, 87; on XXXII, 43; on XXXV, 38; on XXXVIII, 16; on XXXIX, 11 (Figs. 12-21). In specimen C, pore fields extend from sternum II to LII. Verhoeff (1900) described the pores as present on sterna II to XXV.

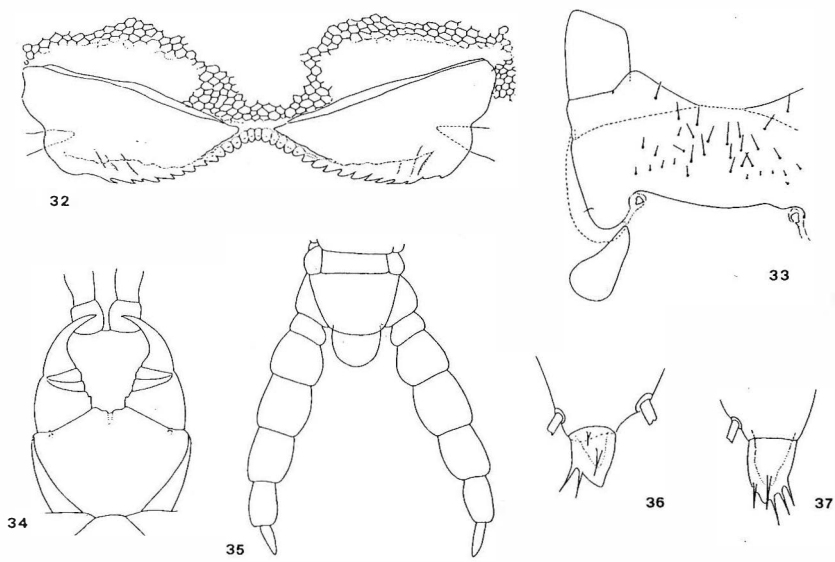
Last leg-bearing segment of specimen A - Presternum not divided in the sagittal plane. Form and chaetotaxy of sternum and tergum as in Figures 24 and 25. Coxopleura with setae on almost whole surface, setae more numerous but smaller on the v. distal half. Coxopleura ventrally not prominent at distal end. Two single ("homogeneous") coxal organs at each side, opening on the membrane between coxopleuron and sternum, with opening covered by sternum (Figs. 24 and 26). Last legs as in Figures 24 and 25. Pretarsus as in Fig. 27.

Terminal segments of specimen A. Intermediate sternum with posterior margin slightly concave, first genital sternum with posterior margin slightly convex medially and slightly concave laterally (Fig. 28). Gonopods biarticulate, basal article with ca. 36 setae, distal article with ca. 14 setae (Fig. 29), penis dorsally with 3+4 apical setae.

Remarks - In specimen A, the segmentation of the trunk is defective, because of the underdevelopment of the left half of leg-bearing segments LII and LIII, both dor-



Schendylurus attemsi (Verhoeff) - Fig. 29: ♂ from Morocco: Béni-Snassen (cf. BRÖLEMANN & RIBAUT, 1912). l. gonopod, v. Figs. 30-31: ♂ from Morocco: 32 km from Kasba Tadla. 30. l. a.a. V, v.; 31. l. a.a. V, d. (*a, b*: type *a, b* setae).



Figs. 32-37 - *Schendylurus attemsi* (Verhoeff) (from BRÖLEMANN & RIBAUT, 1912; redrawn). 32. labrum; 33. coxosternum of second maxillae; 34. forcipular segment with poison claws, v.; 35. last leg-bearing segment and terminal segments of the ♂, d.; 36-37. apical end of both last legs with pretarsus, ♂.

sally and ventrally (Figs. 22-23). That the defect affects a bisegmental unit, theoretically corresponding to body segments 59+60, is quite in agreement with the segmentation model of MINELLI & BORTOLETTO (1988). For a review of centipede teratology, we refer to MINELLI & PASQUAL (1986).

Specimen C agrees in general with the type of *Schendyla attemsii* and with the specimen studied by BRÖLEMANN & RIBAUT except for the posterior limit of the pore field series (sternum LII rather than XXXIX).

However, we know a nearly identical variation of the same character in another Schendylid *Thindyla litoralis* (Kraus, 1954). In the males of this species the pore fields are present from sternum II to sternum XXXIX to LII, by a nearly constant number of body segments (61-63 pairs of legs).

Accordingly, we regard the three specimens discussed in this section as all beloging to *S. attemsi.*

Schendylurus australis Silvestri, 1907 (Figs. 38-75)

Schendylurus australis Silvestri, 1907 - Jahresb. wiss. Anst. Hamburg 24 (1906), Beiheft 2:246.

Schendylurus australis, BRÖLEMANN & RIBAUT, 1912 - N. Arch. Mus. Hist. nat. Paris, 5(4): 122.

Schendylurus (Schendylurus) australis, BRÖLEMANN & RIBAUT, 1912 - N. Arch. Mus. natn. Hist. nat. Paris, 5(4): 122.

Schendylurus australis, BRÖLEMANN, 1926 - Arch. Zool. exp. gén. 65: 150; ATTEMS, 1928 - Ann. S. Afr. Mus. 26: 133-134; 1929 - Das Tierreich 52: 74; VERHOEFF, 1937 - Ann. S. Afr. Mus. 32: 95; LAWRENCE, 1955 - S. Afr. Anim. Life, Uppsala 2: 28; CHAMBERLIN, 1955-56 - Acta Univ. Lund. Avd. 2 N.S. 51(5): 8; DEMANGE, 1963 - Mém. Inst. Fr. Afr. Noire 66: 42.

Diagnosis - A *Schendylurus* species with v. pore fields extending along all the trunk. Among the African species of the genus, it shares this trait only with *S. pumicosus* Demange. From the latter, *S. australis* can be differentiated by means of the following character states (the corresponding states in *S. pumicosus* are given in parentheses): body length 35 mm (47 mm); sternum I with pore field (without); ♂ and ♀ with 53 pairs of legs (♂♂ with 63,65,67,69, ♀♀ with 65, 67,69, 71); forcipular tarsungulum without tooth (with a well developed basal tooth); last leg-bearing segment with pleurite at the sides of the pretergum (without).

Material examined - South Africa: Cape Province: Port Elisabeth, 15.XII.1898. Dr. H. Brauns leg.: two specimens. One is a ♀ preserved in alcohol, designed as lectotype by R.E. Crabill on 6.V.60, with 53 pairs of legs, body length 35 mm. The trunk is in three fragments: one with the 7 last leg-bearing segments and the terminal segments (but the last legs are missing), another with the forcipulae followed by the 10 first leg-bearing segments, the last one with the 36 remaining leg-bearing segments. The head capsule is present, but the maxillae and mandibles are missing: a label, in Crabill's hand, records that "the lectotype lacks maxillae, which Silvestri removed but did not indude in jar". The other specimen is a ♂ with 53 pairs of legs, body length 30 mm, designed as paralectotype by R.E. Crabill on 7.V.60. It is represented by two fragments in alcohol (one with forcipulae followed by the first 44 leg-bearing segments, the other with the 9 last leg-bearing segments followed by the terminal ones) and a slide with the head capsule and mouthparts not dissected. Both specimens in the Zoological Museum of the University, Hamburg.

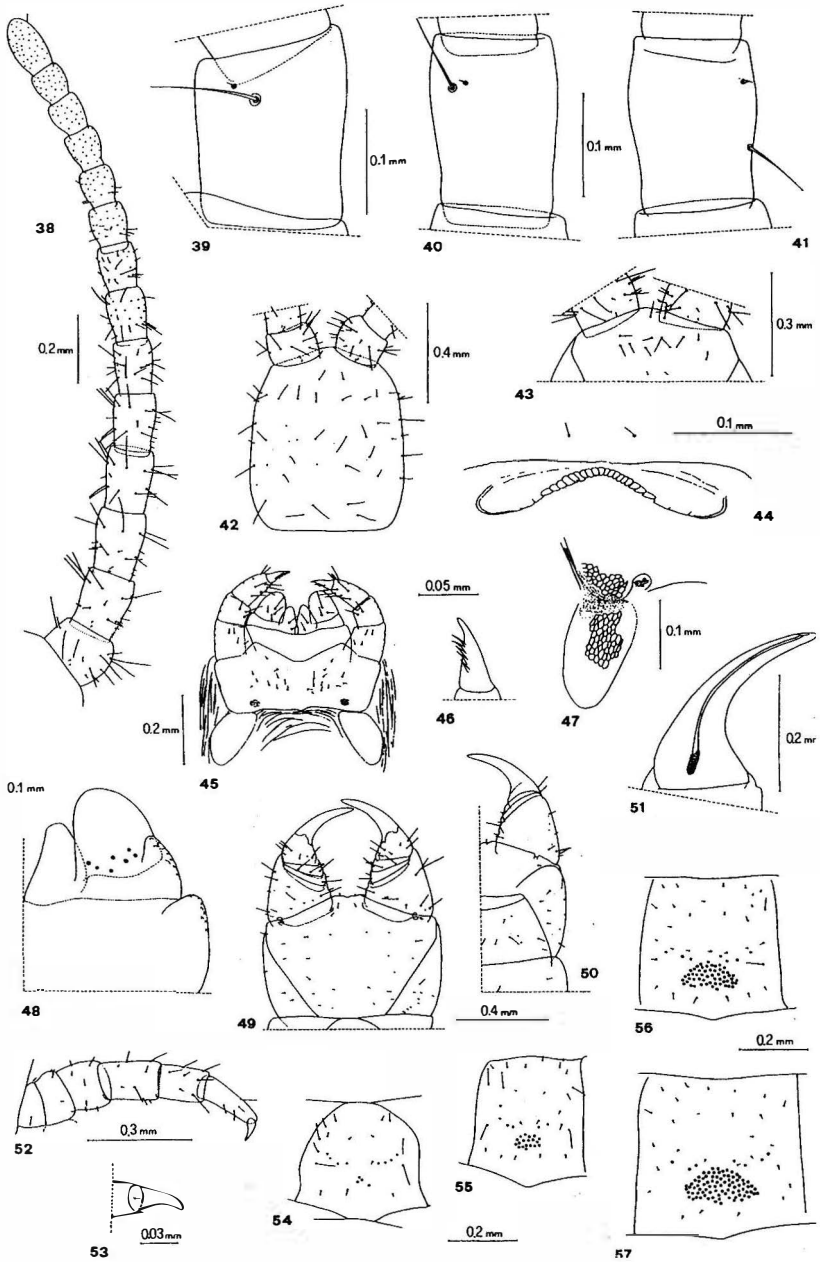
Type locality - South Africa: Cape Province: Port Elizabeth. This is also the only locality known to date.

Redescription, after the paralectotype:

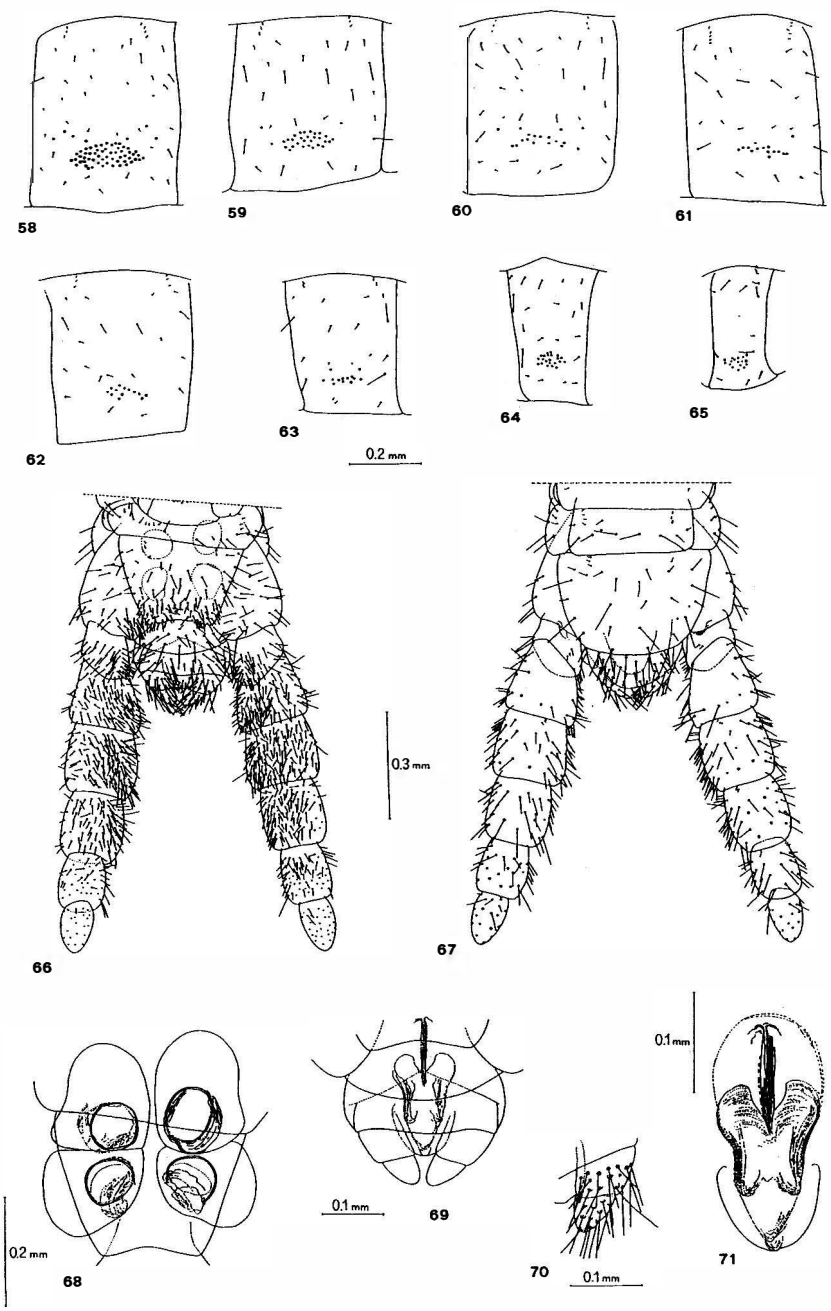
♂. 53 pairs of legs, body length 30 mm, maximum body width 0.8 mm.

Colour (in alcohol) yellowish, forcipular segment pale ochraceous.

Antennae ca. 2.8 times longer than the cephalic plate, distally slightly attenuate; all articles excepted I longer than wide. Setae on a. a. I to V-VI of different lengths, those of remaining antennomeres progressively shorter and more numerous towards the tip of the appendage (Fig. 38). Dorsal and v. surface of a.a. II, V, IX and XIII with very small specialized setae, each of them ending with two inconspicuous apical branches. On the v. side, these setae are restricted to an internal lateroapical area, on the d. side to an external lateroapical area. A. a. II, V, IX and XIII each with a single seta on v. and d. surfaces (Figs. 39-41).



Figs. 38-57 - *Schendylurus australis* Silvestri, ♂ paralectotype (South Africa: Cape Province: Port Elizabeth). 38. r. antenna, v.; 39. l. a.a. II, v.; 40. l. a.a. V, v.; 41. r. a.a. V, d.; 42. cephalic shield; 43. clypeus and basis of antennae; 44. labrum; 45. first and second maxillae, v.; 46. claw of telopodite of l. second maxillae, v.; 47. detail of posterior external region of r. second maxilla, v.; 48. r. first maxilla, d.; 49. forcipular segment with poison claws, v.; 50. the same, r. half, d.; 51. detail of poison gland in r. poison claw, v.; 52. l. leg IX, v.; 53. detail of claw of l. leg XXIX, anteroventral; 54-57. sterna I, II, VI, XI.



Figs. 58-71 - *Schendylurus australis* Silvestri, ♂ paralectotype (South Africa: Cape Province: Port Elizabeth). 58-65. sterna XX, XXV, XXX, XXXVIII, XLIII, L, LI, LII; 66. last leg-bearing segment and terminal segments, v.; 67. the same, d.; 68. detail of coxal organs, v.; 69. genital region, v.; 70. left gonopod, v.; 71. penis, d.

Cephalic plate distinctly longer than wide (ratio 1.2 to 1); shape and chaetotaxy as in Figure 42.

Clypeus with 1+1 postantennal setae, 5+5 median setae and 1+1 prelabral setae (Fig. 43).

Labrum with 22 teeth, those in the middle round-tipped, lateral ones provided each with a relatively long and very sharp medially-directed extension (Fig. 44).

First maxillae with very small palps on coxosternum and telopodites, the last slightly bigger. The presence of palps had been wrongly denied by SILVESTRI (1907: 246) and by ATTEMS (1929: 74). Coxosternum without setae; median projection of coxosternum subtriangular, well developed and provided with 2+2 setae. Article II of telopodite with 4+3 v. setae and 7+5 d. sensilla (Figs. 45, 48).

Second maxillae with 10+13 setae on coxosternum, distributed as in Fig. 45. Apical claw of telopodite well-developed and bipectinate, the d. and v. edges with 5-6 teeth (Fig. 46).

Forcipulae. Basal plate with an irregular transverse median row of 10 setae (Fig. 50). Telopodites with few setae, all articles without teeth, trochanteroprefemur, femur and tibia apparently with a small, not sclerotized tubercle on the internal apical border (Figs. 49-50). Calyx of poison gland short and cylindrical (Fig. 51); chaetotaxy of coxosternum and telopodites as in Figs. 49-50.

Legs (last pair excepted) with chaetotaxy similar throughout the body length (Fig. 52); claws basally provided, on the v. side, with two spines, one anterior one posterior; a third spine, of similar size, occurs internally, very close to the posterior one (Fig. 53).

Sterna. Pore fields present from the first to the penultimate sternum. All pore fields undivided, their form changing along the trunk as in Figs. 54-65. Number of pores on selected sterna: on sternum I, 4+4+4; on II, 4+19+2; on VI, 3+56+4; on XI, 3+84+4; on XX, 4+57+3; on XXV, 1+29+1; on XXX, 2+14+2; on XXXVIII, 0+14+1; on XLIII, 13; on L, 1+11+1; on LI, 22; on LII, 17. On this point, the descriptions given by the authors (SILVESTRI, 1907: 247; BRÖLEMANN & RIBAUT, 1912: 122; ATTEMS, 1929: 74; DEMANGE, 1963: 42) were either too vague or outright wrong.

Last leg-bearing segment with pleurites at the sides of pretergum; presternum not divided along the sagittal plane; form and chaetotaxy of sternum and tergum as in Figs. 66-67. Coxopleura not protruding at their distal v. ends, setae small and numerous on the distal v. half, the remaining of the surface with bigger setae. Two single ("homogeneous") coxal organs on each coxopleuron (Fig. 68).

Podomeres of the last legs notably incrassate, chaetotaxy ventrally in form of numerous setae, a few of them apparently resting on a tubercle-like base; setae less numerous dorsally (Figs. 66-67).

Terminal segments: intermediate tergum with posterior border convex, intermediate sternum with posterior border convex, first genital sternum with posterior margin medially convex, laterally concave (Figs. 66, 67, 69).

Gonopods biarticulate, basal article with ca. 15 setae, distal article with ca. 11 setae, some of them apparently on a tubercle-like base (Fig. 70). Penis dorsally without apical setae (Fig. 71).

♀ (lectotype). 53 pairs of legs; body length 35 mm; maximum body width 1.3 mm.

Clypeus with 2+1 prelabral setae (Fig. 72), all remaining features similar to those in the male, except for the last leg-bearing segment and the terminal segments.

Last leg-bearing segment. Form and chaetotaxy of sternum and tergum as in Figs. 74-75. Coxopleura ventrally with numerous small setae on external distal end, remaining surface with very few bigger setae. The legs, currently missing in the preserved material, were figured by SILVESTRI (1907, Fig. 49) as similar to those in the male, as for thickness and pilosity. Terminal segments: intermediate tergum with posterior border convex, intermediate sternum with posterior border slightly convex; first genital sternum with posterior margin medially convex, laterally concave (Figs. 74-75).

Remarks - We cannot describe the mandibles of the male paralectotype because in the slide made by CRABILL the mouth-parts were not dissected out from the head capsule. According to SILVESTRI's figures 43 and 44, referring to the now missing mouth-parts of the lectotype, the dentate lamellae of the mandible have 3,3,3 teeth.

Again, owing to preservational defects we cannot describe the claviform sensory setae of the antennae and the special sensilla at the apex of the last antennomere.

The last legs probably lack a pretarsus, but this trait is also difficult to check on the available material. At any rate, SILVESTRI described them as "inermes" and it is puzzling, indeed, to find in BRÖLEMANN (1926: 150) the completely wrong statement, that this species would have "une griffe apicale robuste aux pattes anales".

Schendylurus maroccanus (Attems, 1903) (Figs. 76-80)

Schendyla maroccana Attems, 1903 - Zool. Jahrb. Syst. 18: 189.

Schendylurus (Schendylurus) maroccanus, BRÖLEMANN & RIBAUT, 1912 - N. Arch. Mus. nat. Hist. nat. Paris 5(4): 122.

Schendylurus maroccanus, BRÖLEMANN & RIBAUT, 1912 - N. Arch. Mus. nat. Hist. nat. Paris 5(4): 125; BRÖLEMANN, 1921 - Boll. Soc. Sc. nat. Maroc 1(3-6): 102; 1925 - Bull. Soc. Hist. nat. Afr. Nord 16: 250; 1926 - Arch. Zool. exp. gén. 65: 149; ATTEMS, 1928 - Ann. S. Afr. Mus. 26: 128, 133; 1929 - Das Tierreich 52: 78-79; BRÖLEMANN, 1931 - Bull. Soc. Hist. nat. Afr. Nord 22: 131; 1932 - Bull. Soc. Hist. nat. Afr. Nord 23: 46; ATTEMS, 1934 - Zool. Anz. 107: 313; BRÖLEMANN, 1945-46-47 - Bull. Soc. Sc. nat. Maroc 25-27: 173; ATTEMS, 1952 - Ann. Mus. Royal Congo Belge, Ser. 8, 18: 120; DEMANGE, 1963 - Mém. Inst. Fr. Afr. Noire 66: 42.

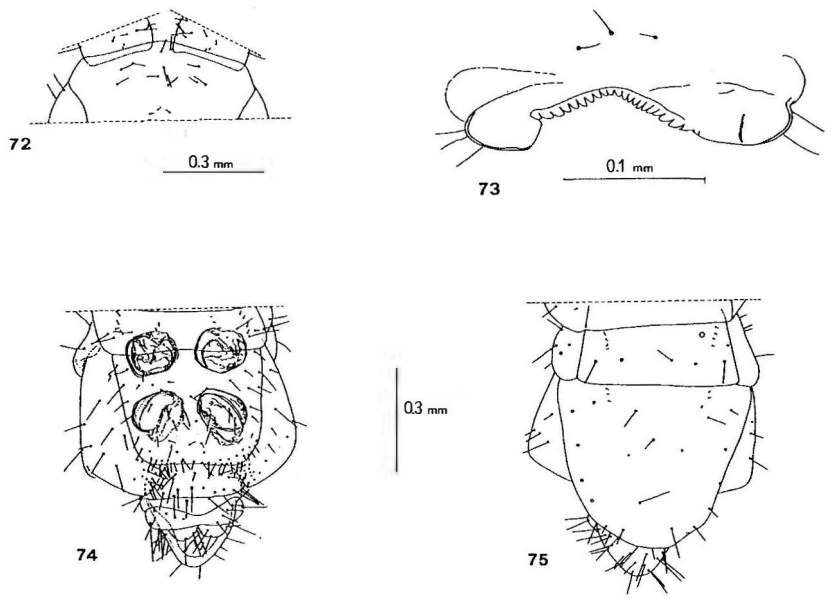
Type-locality - Morocco: Tetuan.

Known range - Algeria: Alger and surroundings; Djebel Bou Zezga; Rusguniae; Oued Tipasa; Forêt de Bainem. Morocco: Tetuan; Andjora; Volubilis; Boubhaut.

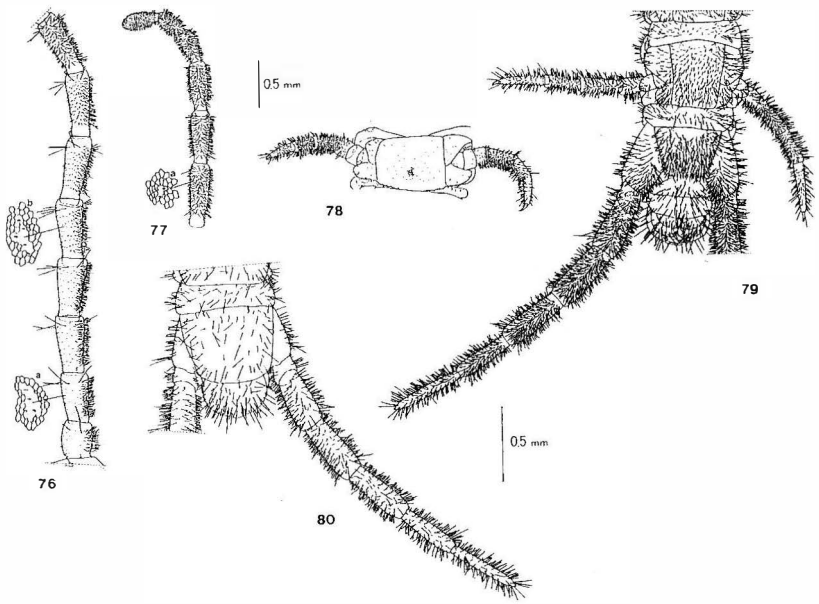
Material examined - Algeria: Forêt de Bainem 3.X.1981 Staz. 110, Omodeo leg.: ♀ with 69 pairs of legs, body length 53 mm (coll. Minelli).

This specimen agrees perfectly with the description of BRÖLEMANN & RIBAUT (1912). Accordingly, it seems to be a suitable material to provide additional data on the external morphology of the species.

Antennae with similar chaetotaxy on the v. and the d. side of the antennomeres; latero-external edges of a. a. I-VI with numerous setae; shape and distribution of the setae as in Figs. 76-77. Last a. a. with ca. 20-25 claviform sensory setae on the external border, 2 on the internal. Distal extremity of this a. a. with ca. 8-10 very small specialized setae, ending in two inconspicuous branches. Dorsal and v. surface of articles II, V, IX and XIII with very small specialized setae; on the v. side, these are restricted to an internal lateral area, whereas these setae, similar to those at the end of the last article, are more apical on a. a. IX and XIII. A. a. II has 5 setae, a.a. V, 5; a.a. IX, 3; (right) a.a. XIII, 3 (Fig. 76, a, b; Fig. 77, a). Specialized setae on the d. side are repre-



Figs. 72-75 - *Schendylurus australis* Silvestri, ♀ lectotype (same locality as paralectotype). 72. clypeus and basis of antennae; 73. labrum; 74. last leg-bearing segment and terminal segments, v.; 75. the same, d.



Figs. 76-80 - *Schendylurus maroccanus* (Attems), ♀ (Algeria: Forêt de Bainem). 76. eight proximal articles of l. antenna, v. (a, b, detail of specialized setae); 77. remaining distal articles of l. antenna, v. (a, detail of specialized seta); 78. leg-bearing segment II, v.; 79. two last leg-bearing segments and terminal segments, v.; 80. last leg-bearing segment and terminal segments, d.

sented by two different types. Type *a* are similar to those on the v. side, type *b* are bigger and much darker in colour (ochraceous). These setae are restricted to an external lateral area more apical on a.a. V, IX and XIII. Number of specialized setae on the different articles: a.a. II, 4 *a* setae; a.a. V, 4-5 *a*; a.a. IX, 3 *a* and 2 *b*; (right) XIII, 3 *a* and 1 *b*. The l. a.a. XIII, evidently abnormal, lacks specialized setae on both sides.

First maxillae. Coxosternum with 8+6 setae; median projection of the coxosternum subtriangular, well-developed and provided with 4+4 setae. Article II of telopodite with 7+6 v. setae and 8+10 d. sensilla.

Second maxillae. Apical claw of telopodite with ca. 15-17 teeth on v. and d. sides.

Forcipulae. Basal plate with numerous very small setae, dispersed over the whole surface, and an irregular transverse median row of 5 big setae; calyx of poison gland long and cylindrical.

Legs (last pair excepted). Chaetotaxy similar throughout the length of the body, represented by numerous setae on the v. side (Figs. 78-79), much less numerous on the d. side.

Last leg-bearing segment. Presternum not divided along the sagittal plane; form and chaetotaxy of sternum and tergum as in Figs. 79-80. Coxopleura slightly protruding at their distal v. ends, setae small and numerous on the distal end, remaining of the surface with less numerous, bigger setae. Two single ("homogeneous"), unilobed coxal organs on each coxopleuron, opening on the membrane between coxopleuron and sternum and covered by the latter (Fig. 79). Form and chaetotaxy of the last legs as in Figs. 79-80.

Terminal segments. Intermediate tergum with posterior margin convex; intermediate sternum with posterior margin straight to very slightly concave; first genital sternum with posterior margin medially convex, laterally slightly concave. Gonopods uniarticulate (Figs. 79-80).

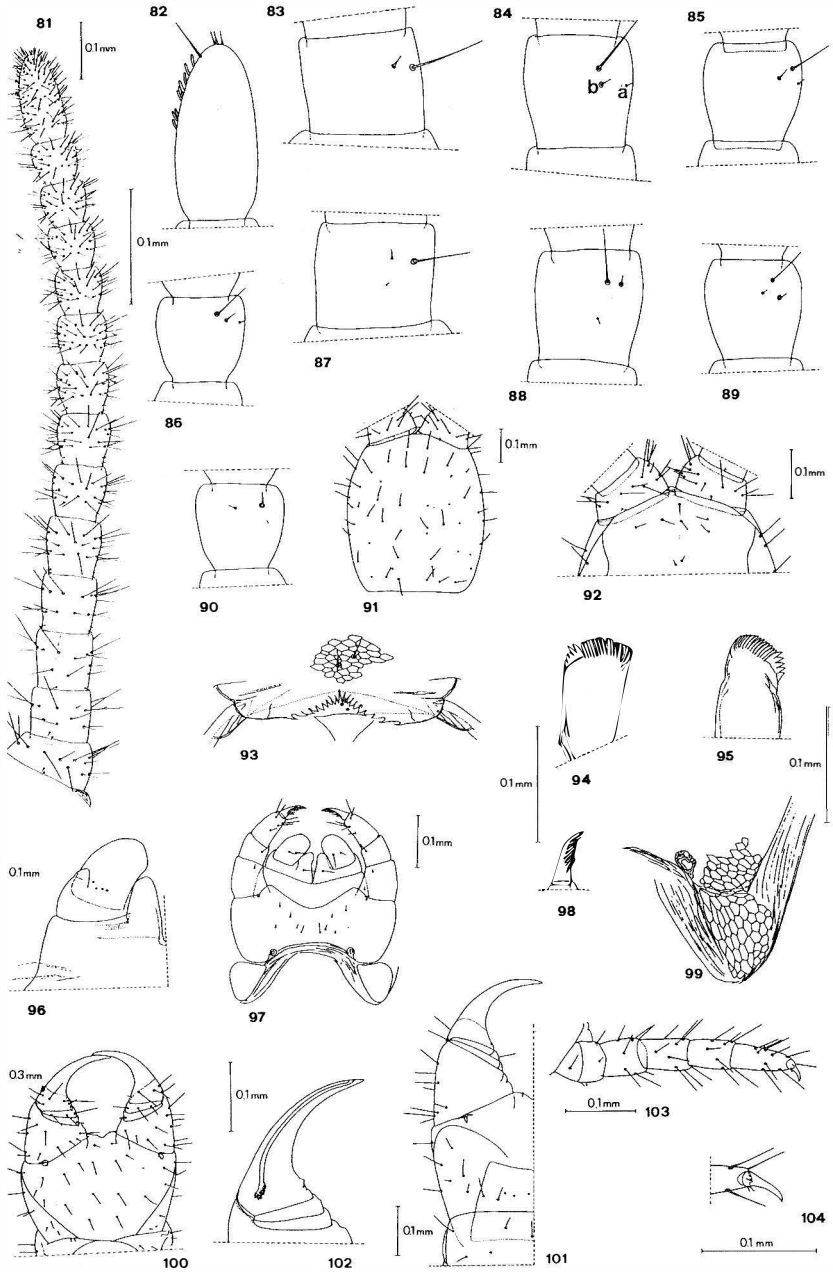
Remarks - The wrong original statement of Attems (1903: 189), that the v. pore fields begin on sternum I, rather than on sternum II, was doubted by BRÖLEMANN & RIBAUT (1912: 127) and later corrected in ATTEMS (1929: 79).

BRÖLEMANN (1925: 250) cited additional specimens of *S. maroccanus* from Algeria: "Rusguniae (littoral), 28-XII-24. Un ♂ à 76 paires de pattes. Oued Tipasa: 15-IV-25. Deux ♂ à 69 et 71 paires de pattes." This material was not considered by ATTEMS in his 1929 monograph. More puzzling, indeed, is the fact that also BRÖLEMANN, in his subsequent "Tableaux de détermination des Chilopodes signalés en Afrique du Nord" (1932: 46) only gave for the species the range 65-69 pairs of legs. In any case, as for the specimen with 76 pairs of legs, this even number was surely a typographic error!

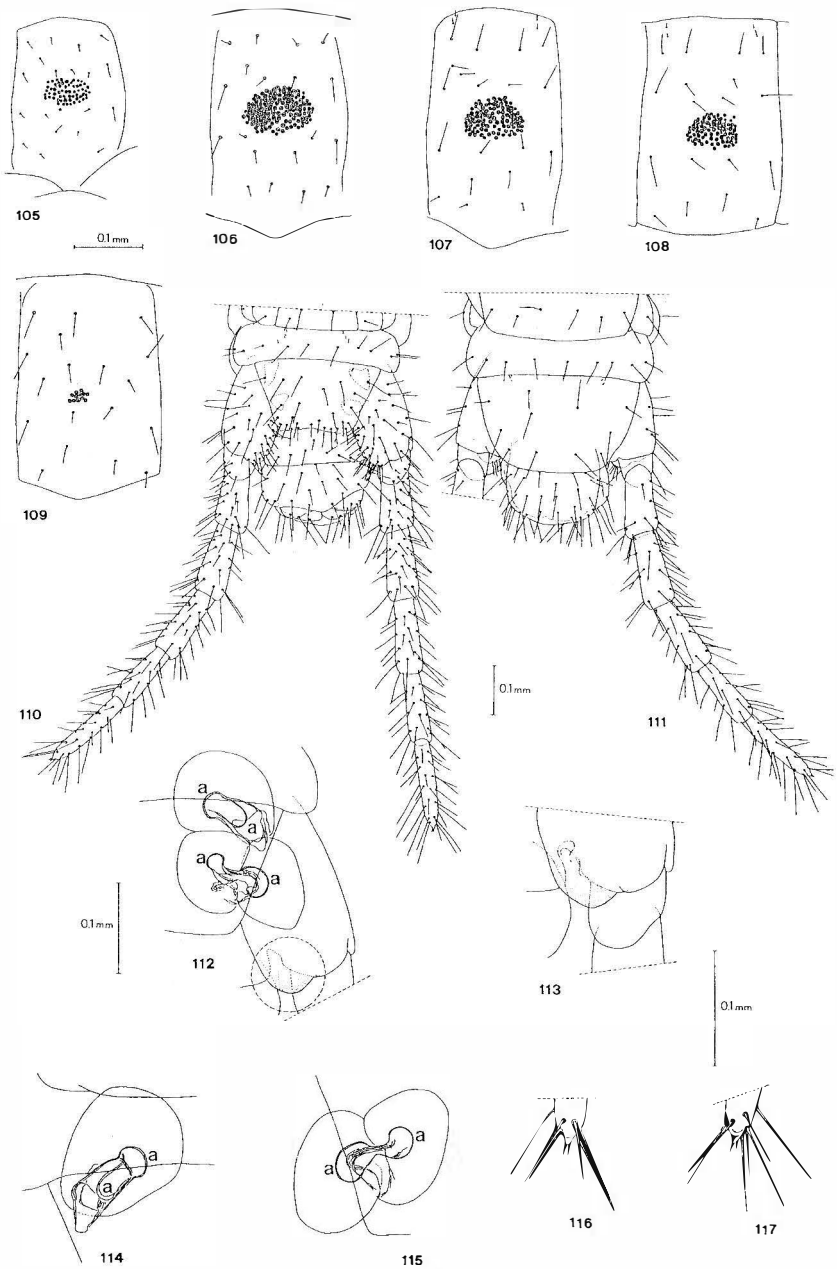
Schendylurus paucidens Attems, 1939 (Figs. 81-122)

Schendylurus paucidens Attems, 1939 - Mém. Mus. nat. Hist. nat., Paris 5(55): 303; 1947 - Ann. naturhist. Mus. Wien 55: 87; 1959 - Ann. naturhist. Mus. Wien 63: 307; DEMANGE, 1963 - Mém. Inst. Fr. Afr. Noire 66: 42.

Diagnosis - A *Schendylurus* species with dentate lamellae of the mandible not subdivided into blocks; most pore fields with 1+1 setae; coxopleura protruding at the distal v. end; posterior coxal organs of the female bilobated.



Figs. 81-104 - *Schendylurus paucidens* Attems, ♀ lectotype (Uganda: M. Elgon). 81. r. antenna, v.; 82. r. a.a. XIV, v.; 83. r. a.a. II, v.; 84. r. a.a. V, v.; 85. r. a.a. IX, v.; 86. r. a.a. XIII, v.; 87. r. a.a. II, d.; 88. r. a.a. V, d.; 89. r. a.a. IX, d.; 90. r. a.a. XIII, d.; 91. cephalic shield; 92. clypeus and basis of antennae; 93. labrum; 94-95. dentate and pectinate lamellae of mandibles; 96. l. first maxilla, d.; 97. first and second maxillae, v.; 98. claw of telopodite of r. second maxilla, v.; 99. detail of posterior external region of l. second maxilla, v.; 100. forcipular segment with poison claws, v.; 101. the same, d.; 102. detail of calyx of poison gland in r. poison claw, v.; 103. l. leg II, v.; 104. claw of l. leg XVI, anteroventral.



Figs. 105-117 - *Schendylurus paucidens* Attems, ♀ lectotype (Uganda: M. Elgon). 105-109. sterna II, X, XV, XVI, XVII; 110. last leg-bearing segments and terminal segments, v.; 111. the same, d.; 112. detail of l. coxal organs, v. (*a*, independent areas of the specialized epithelium; the circle on the coxopleuron indicates the protruding area); 113. detail of the protruding area of l. coxopleuron, v.; 114. detail of anterior r. coxal organ, v. (*a*, independent areas of the specialized epithelium); 115. detail of posterior r. coxal organ, v. (*a*, independent areas of the specialized epithelium); 116. detail of distal end of last podomere of l. last leg, v.; 117. the same, r. last leg.

Type material examined - Uganda: Mont Elgon: Camp I de l'Elgon m 2210 (Omo Exp.): Two syntypes, both in alcohol, already examined by R.E. Crabill in 1962 (Naturhistorisches Museum Wien). We designe here the syntype ♀ with 51 pair of legs, body length 19 mm, as the lectotype and the syntype ♂ with 47 pairs of legs, body length 15 mm, as paralectotype.

Type locality - Uganda: Mount Elgon: Camp I de l'Elgon. This is the only locality known for the species.

Redescription based on the ♀ lectotype.

51 pairs of legs; body length 19 mm, maximum body width 0.5 mm.

Colour (preserved specimen) yellowish with head and forcipular segment darker.

Antennae ca. 2.5 times longer than the cephalic plate. Chaetotaxy similar on d. and v. aspect; shape and distribution of setae as in Fig. 81. Last a.a. with ca. 9-17 claviform sensory setae on external, none on the internal border (Fig. 82). Distal extremity of the same a.a. with 3 very small specialized setae, not divided apically (Fig. 82). Dorsal and v. aspect of a.a. II, V, IX and XIII with very small specialized setae; those of v. side restricted to an internal latero-apical area. These setae are of two kinds: type *a* setae are very thin and apically undivided, type *b* thicker and very similar to those at the distal end of a.a. XIV (Fig. 84, a, b). A.a. II with 1 *b* seta only (Fig. 83); a.a. V, IX and XIII each with 1 *a* and 1 *b* setae (Figs. 84-86). Specialized setae on the d. side are restricted to an external lateroapical area. There is a similar arrangement on the v. side, always with 1 *a* and 1 *b* setae on each of a.a. II, V, IX and XIII (Figs. 87-90).

Cephalic plate slightly longer than wide (ratio 1.16 to 1) (Fig. 91).

Clypeus with 1 post-antennal seta, 2+3 setae in the middle and 1+1 prelabral setae (Fig. 92).

Labrum with a total of 19 teeth, shape as in Figure 93.

Mandible. Dentate lamellae with 5 teeth, not subdivided into blocks; pectinate lamellae with ca. 15-16 teeth (Figs. 94-95).

First maxillae. Coxosternum without setae, palps absent (Fig. 96); median projection of coxosternum subtriangular, well-developed and provided with 1+1 setae. Telopodite biarticulate, the basal article with a very small palp, the distal one with 2+2 setae on the v. side and 4+4 sensilla on the d. one (Figs. 96-97).

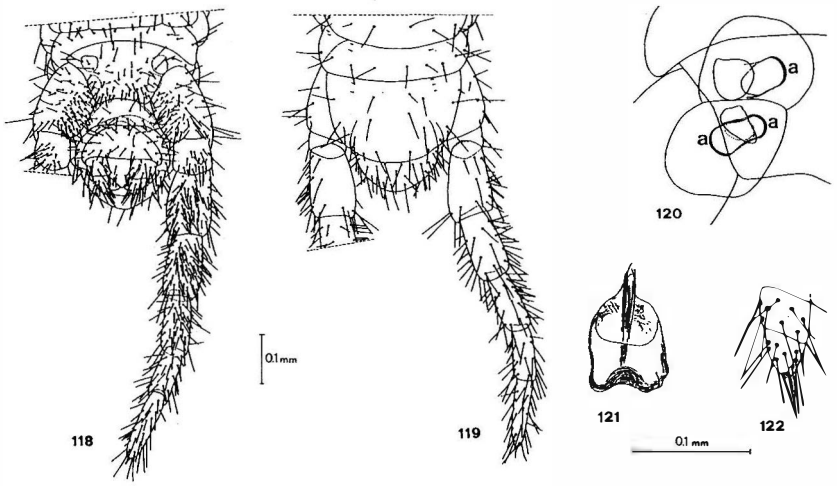
Second maxillae. Coxosternum with 5+6 setae, distributed as in Fig. 97. Apical claw of telopodite well-developed and bipectinate, the d. side with ca. 7 teeth, the v. with ca. 9 teeth (Fig. 98). Shape and chaetotaxy of telopodites as in Fig. 97.

Forcipulae. When closed, the telopodites do not extend beyond the anterior margin of the head; trochanteroprefemur, femur and tibia lacking teeth, tarsungulum with a very small and sharp tooth on the basal part of the internal border; basal plate with an irregular transverse median row of 10 setae; calyx of poison gland short and cylindrical (Fig. 102); shape and chaetotaxy of coxosternum and telopodites as in Figs. 100-101.

Legs (last pair excepted) with chaetotaxy similar throughout the length of the body (Fig. 103). Each claw is provided, ventrobasally, with two principal spines, one anterior one posterior; internally, very close to the posterior one, there is a third spine, of similar size (Fig. 104).

Terga shallowly but distinctly bisulcate, sparsely setose.

Sterna. Pore fields only on sterna II to XVII. Fields always undivided, their form changing along the trunk from transversally subovoidal to irregular. Number of pores



Figs. 118-122 - *Schendylurus paucidens* Attems, ♂ paralectotype (Uganda: M. Elgon). 118. last leg-bearing segment and terminal segments, v.; 119. the same, d.; 120. detail of r. coxal organs, v. (*a*, independent areas of specialized epithelium; b, single area of the specialized epithelium); 121. penis, d.; 122. r. gonopod, v.

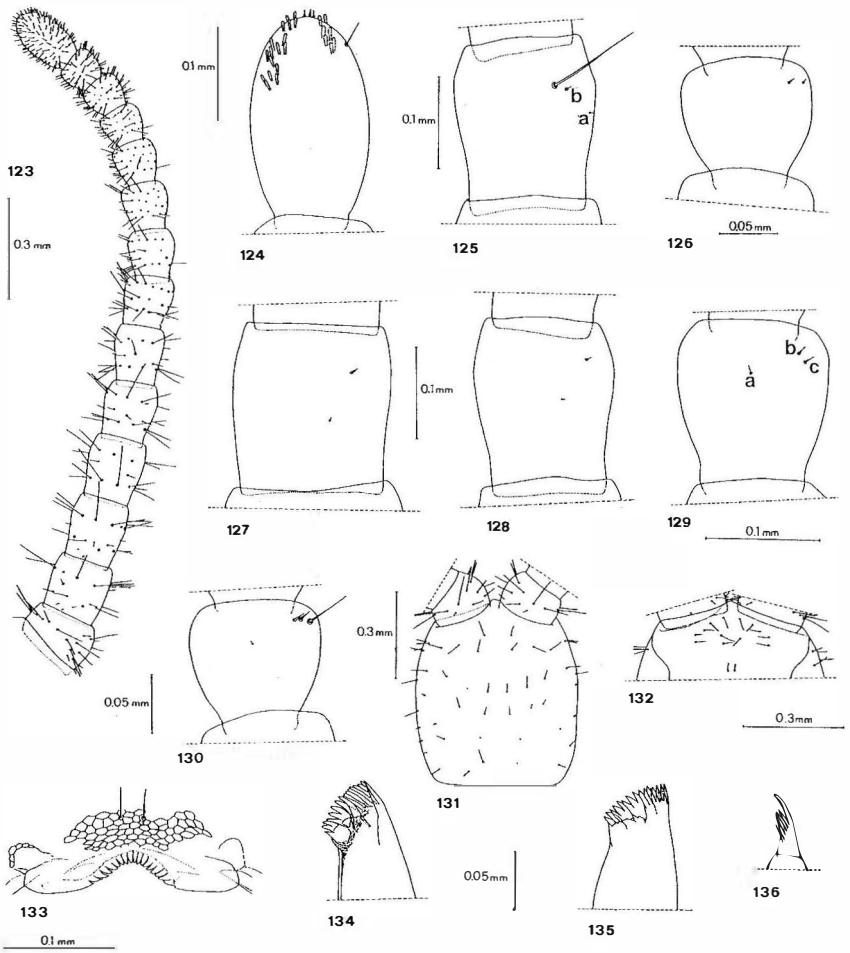
on selected sterna: on sternum II, 59; on X, 126; on XV, 95; on XVI, 75; on XVII, 12. Pore fields II to XV with 2 small setae on their surface, XVI with 1 seta, XVII without setae (Figs. 105-109).

Last leg-bearing segment lacking pleurites at the level of pretergum. Presternum not divided on the sagittal plane. Tergum trapezoidal, anterior base much wider than tergite length, the posterior border distinctly convex (Fig. 111). Sternum trapezoidal, anterior base much wider than sternum length, distal edge slightly concave (Fig. 110). Distal end of coxopleura ventrally protruding, overlapping the internal basal part of trochanter (Figs. 112-113). Setae covering v. and lateral surfaces of coxopleura, very few on the d. side, more numerous on the internal edge of the v. side (Figs. 110-111). Two single ("homogeneous") coxal organs on each coxopleuron, both of them internally with two well-defined, independent areas of specialized epithelium (*a* in Figs. 112, 114, 115); externally, the anterior organs are unilobed, the posterior bilobed (Figs. 112, 115). Coxal organs open on the membrane between coxopleuron and sternum, covered by the latter (Fig. 110). Last legs with 7 podomeres, form and chaetotaxy as in Figs. 110-111. Pretarsus very small, with two small apical spines (Figs. 116-117).

Terminal segments. Intermediate tergum with posterior margin convex (Fig. 111), intermediate sternum with posterior margin straight to slightly concave; first genital sternum with posterior margin medially convex, slightly concave laterally. Gonopods uniarticulate (Fig. 110).

Variability. ATTEMS (1939) mentions female specimens with 49 pairs of legs.

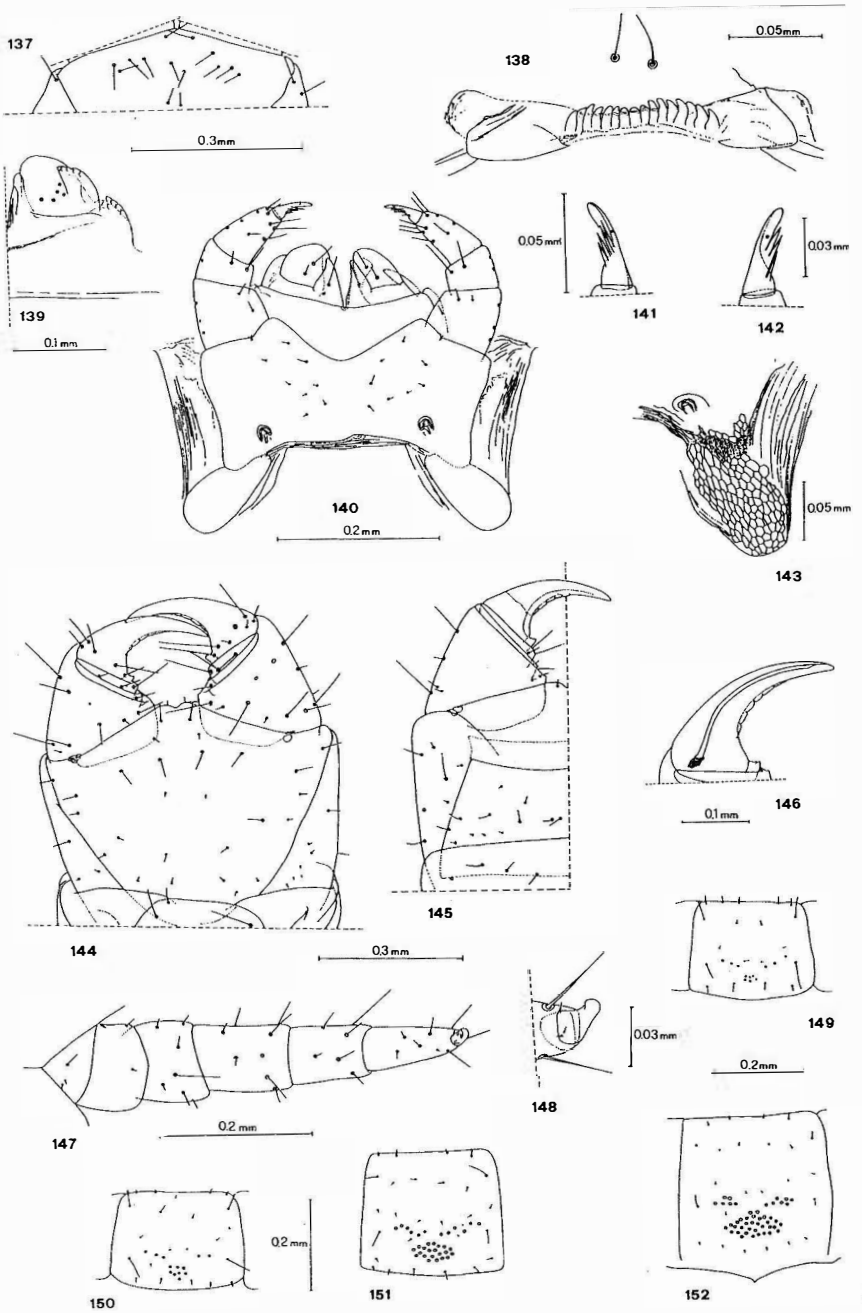
♂ (paralectotype). Pairs of legs 47, body length 15 mm, maximum body width 0.4 mm.



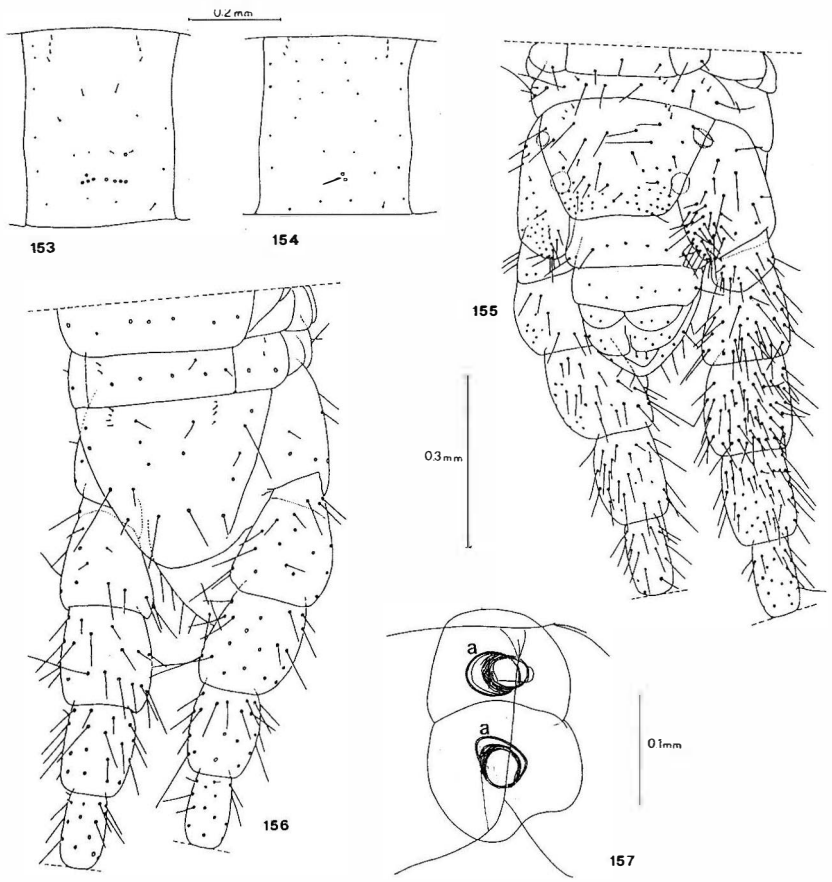
Figs. 123-136 - *Schendylurus polypus* Attems, ♀, specimen 7442 (South Africa: Pass at Avontuur). 123. r. antenna, v.; 124. l. a.a. XIV, dorso-latero-external; 125. r. a.a. V, v.; 126. r. a.a. XIII, v.; 127. r. a.a. II, d.; 128. r. a.a. V, d.; 129. r. a.a. IX, d.; 130. r. a.a. XIII, d.; 131. cephalic shield; 132. clypeus and basis of antennae; 133. labrum; 134-135. dentate and pectinate lamellae of mandibles; 136. claw of telopodite of r. second maxilla, d.

First maxillae with 1+1 setae on coxosternum, other features similar to the female except for the last leg-bearing segment and terminal segments.

Last leg-bearing segment. Form and chaetotaxy of sternum and tergum as in Figs. 118 and 119. Coxopleura protruding at the v. distal end, with setae covering v. and lateral surfaces, very few on the d. side, more numerous and smaller on internal edge of v. side (Figs. 118-119). Anterior coxal organs internally with a single area of specialized epithelium, posterior coxal organs with two separate areas (a, Fig. 120). Anterior and posterior coxal organs externally unilobed.



Figs. 137-152 - *Schendylurus polypus* Attems, ♀, specimen 7335 (South Africa: Pass at Avontuur). 137. clypeus; 138. labrum (teeth somewhat displaced during dissection); 139. r. first maxilla, d.; 140. first and second maxillae, v.; 141. claw of telopodite of r. second maxilla, d.; 142. the same, v.; 143. detail of posterior external region of l. second maxilla, v.; 144. forcipular segment with poison claws, v.; 145. the same, d., l. half; 146. detail of calyx of poison gland in r. poison claw, v.; 147. l. leg XII, v.; 148. claw of l. leg XV, v.; 149-152. sterna II, III, VI, XIII.

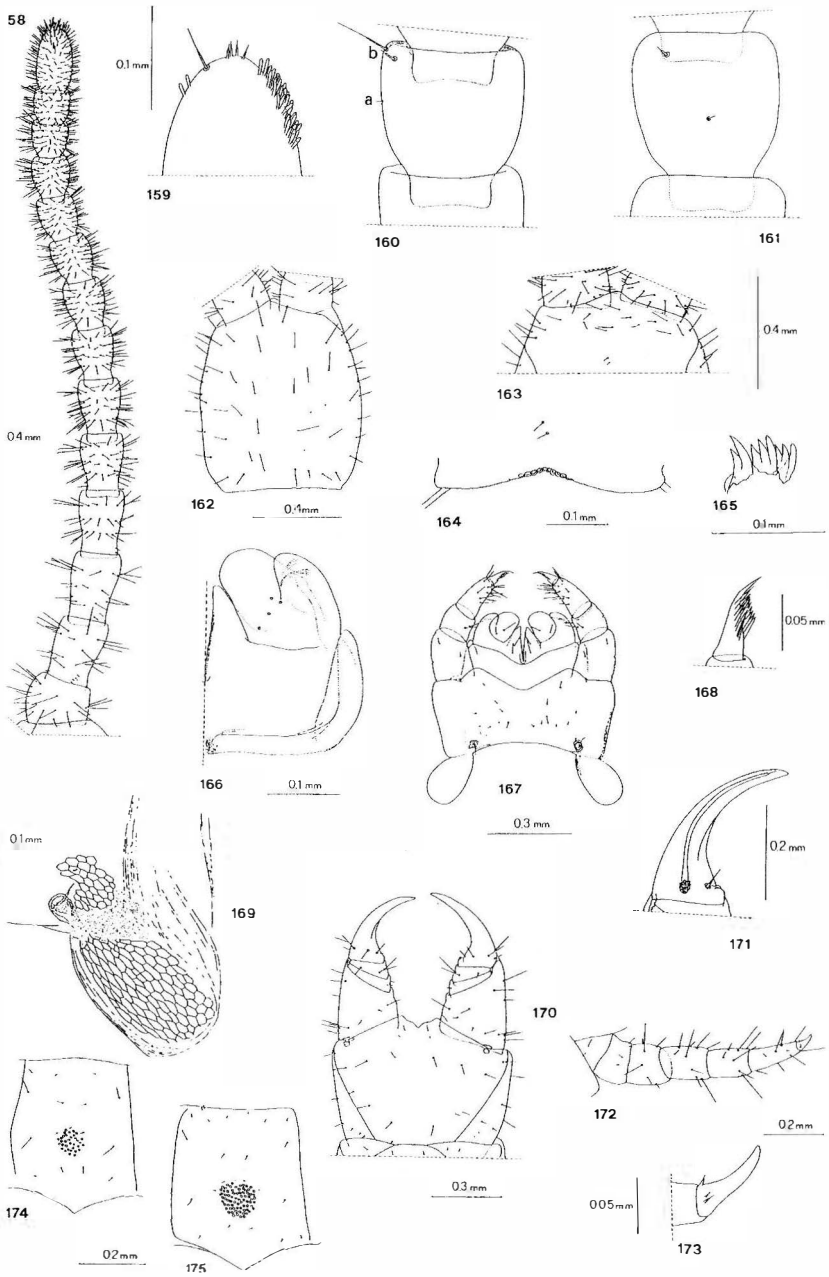


Figs. 153-157 - *Schendylurus polypus* Attems, ♀, specimen 7335 (South Africa: Pass at Avontuur). 153-154. sterna XXII, XXIII (arrow shows the two single pores); 155. last leg-bearing segment and terminal segments, v.; 156. the same, d.; 157. detail of l. coxal organs, v. (*a*, single area of the specialized epithelium).

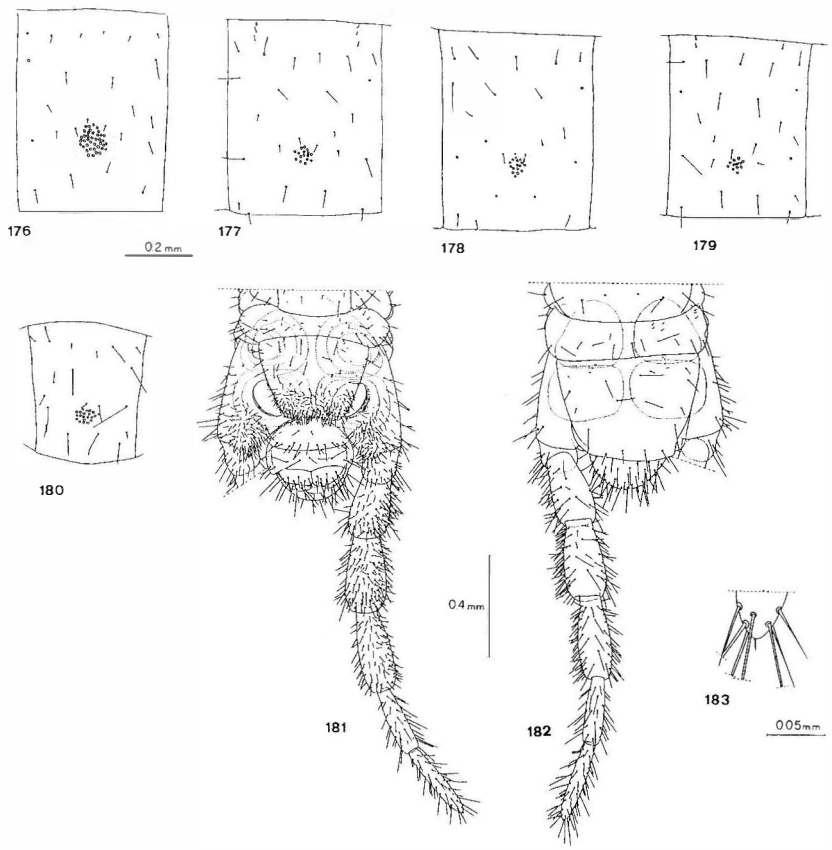
Podomeres of terminal legs moderately incrassate, ventrally with numerous setae covering the whole surface, dorsally with less numerous but larger setae (Figs. 118-119).

Terminal segments. Intermediate tergum strongly convex (Fig. 119); intermediate and first genital sterna with posterior margins slightly convex medially and slightly concave laterally (Fig. 118). Gonopods biarticulate, basal article with ca. 8 setae, distal article with ca. 10 setae (Figs. 118, 122). Penis apparently without apical setae (Fig. 121).

Remarks - The two specimens are certainly conspecific and both mature. In the male, the vesicula seminalis is full of mature spermatozoa, in the female there are full spermatecae and reasonably mature ova. Accordingly, the difference found in the structure of the posterior coxal organs, provided that it is not due to an accidental defect in one of the specimens, should be regarded as an instance of sexual dimorphism.



Figs. 158-175 - *Schendylurus pumicosus* Demange, ♀ (Ivory Coast: M. Nimba). 158. l. antenna, v.; 159. apical region of last l. a.a., v.; 160. l. a.a. XIII, v.; 161. l. a.a. XIII, d.; 162. cephalic shield; 163. clypeus and basis of antennae; 164. labrum; 165. dentate lamella of r. mandible; 166. r. first maxilla, d.; 167. first and second maxillae, v.; 168. claw of telopodite of r. second maxilla, v.; 169. detail of posterior external region of l. second maxilla, v.; 170. forcipular segment with poison claws, v.; 171. detail of calyx of poison gland in r. poison claw, v.; 172. l. leg IV, v.; 173. claw of l. leg V, postero-v.; 174-175. sterna II, VI.



Figs. 176-183 - *Schendylurus pumicosus* Demange, ♀ (Ivory Coast: M. Nimba). 176-180. sterna XXVIII, XLIV, L, LX, LXVI; 181. last leg-bearing segment and terminal segments, v.; 182. the same, d.; 183. detail of distal end of last podomere of l. last leg, v.

Schendylurus polypus Attems, 1928 (Figs. 123-157)

Schendylurus polypus Attems, 1928 - Ann. S. Afr. Mus. 26: 134; 1929 - Das Tierreich 52: 75; VERHOEFF, 1937 - Ann. S. Afr. Mus. 32: 95; LAWRENCE, 1955 - S. Afr. Anim. Life, Uppsala 2: 28; DEMANGE, 1963 - Mém. Inst. Fr. Afr. Noir 66: 42.

Diagnosis - A *Schendylurus* species with v. pore fields on the anterior sterna only. Among the African species of the genus, only the present species, *S. attemsi, S. maroccanus* and *S. paucidens* share this trait. *S. polypus* can be differentiated from these species by the characters given in the key on pag. 56.

Material examined - South Africa - Pass at Avontuur: ♀ with 69 pairs of legs, body length 26 mm (in alcohol) (identification 7335); Triangle, Worcester: ♀ holotype with 77 pairs of legs, body length 30 mm represented by (a) one original slide of Attems containing the head capsule with antennae, mandibles, first

and second maxillae and (b) the trunk preserved in alcohol, fragmented into three parts, lacking the two apical podomeres of both last legs (identification SAM-MYR 7442).

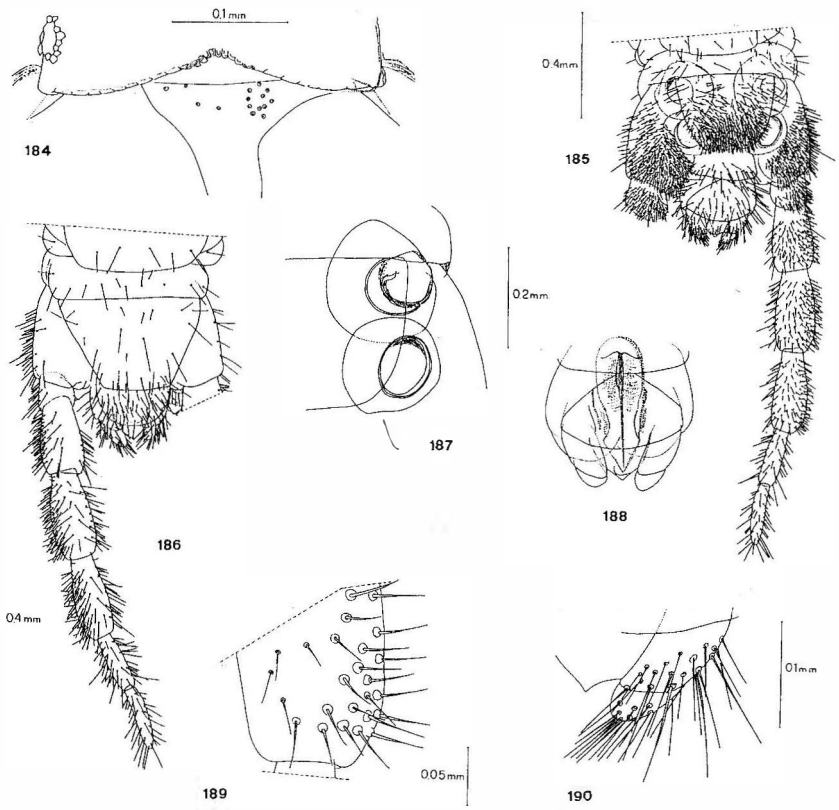
Type locality - South Africa: Cape Province: Triangle: Worcester: Pass at Avontuur, Swellendam.

Additional description, based on holotype and paratype.

69 and 77 pairs of legs; body length 26-30 mm, maximum body width 0.9 mm.

Colour of preserved specimens yellowish with head and forcipular segment darker.

Antennae ca. 3.0 times longer than the cephalic plate, chaetotaxy similar on v. and d. aspects of the antennomeres. Shape and distribution of the setae as in Figure 123. Terminal a.a. with ca. 13-17 claviform sensory setae on the external border and ca. 5-7 on the internal border (Fig. 124). Distal extremity of the same a.a. with ca. 3-4 very small specialized setae, apically undivied (Fig. 124). Dorsal and v. aspect of a.a. II, V, IX and XIII with very small specialized setae; on the v. side these are restricted to an internal



Figs. 184-190 - *Schendylurus pumicosus* Demange, ♂ (same locality). 184. labrum; 185. last leg-bearing segment and terminal segments, v.; 186. the same, d.; 187. l. coxal organs, v.; 188. genital region, v.; 189. posterior half of the fifth podomere of last l. leg, v.; 190. l. gonopod, v.

lateroapical area. There are two kinds of them: type *a* are very thin and apically undivided, type *b* are thicker and very similar to those on the distal end of a.a. XIV (Fig. 125, *a, b*). A.a. II has a single type *b* seta; a.a. V, IX and XIII each have 1 *a* and 1 *b* setae (Figs. 125-126). On the d. side, in addition to type *a* and type *b* setae, there is a third type *c*, similar in shape to type *b* but much darker in colour (ochraceous) (Fig. 129, *a, b, c*). On a.a. II and V, *a* setae occupy nearly the center of their surface, in a.a. IX and XIII the middle apical part. Type *b* and type *c* setae occur on the external distolateral region of the same antennomeres. Each of a.a. II and V has 1 type *a* and 1 type *b* seta (Figs. 127-128); each of a.a. IX and XIII has 1 *a*, 1 *b* and 1 *c* setae (Figs. 129-130). Cephalic plate slightly longer than wide (ratio 1.13 to 1) (Fig. 131).

Clypeus with 1+1 postantennal setae, 6+5 or 5+5 setae in the middle and 1+1 prelabral setae (Figs. 132, 137).

Labrum with a total of 18-19 teeth, shape as in Figures 133 and 138.

Mandibles. Dentate lamellae subdivided into 4 distinct blocks, with 2,3,3,1 and 3,3,2,1 teeth respectively, pectinate lamellae with ca. 12 hyaline teeth (Figs. 134, 135).

First maxillae with lappets both on coxosternum and telopodites. Coxosternum without setae; median projection of coxosternum subtriangular, well developed and provided with 2+2 or 2+1 setae. Article II of the telopodite with 2+2 v. setae and 6+5 or 4+5 d. sensilla (Figs. 139-140).

Second maxillae. Coxosternum with ca. 8-10+8-10 setae distributed as in Figure 140. Apical claw of telopodite well-developed, bipectinate, with 4-5 teeth on the d. side and 3-5 on the v. (Figs. 136, 141, 142).

Forcipulae. When closed, the telopodites do not extend beyond the anterior margin of the head; trochanteroprefemur, femur and tibia of telopodite with a very small tubercle on the apical part of the internal border; tarsungulum (in specimen 7335) with a clearly visible tooth on the basal part of the internal border (the tooth is smaller in the holotype); basal plate with an irregular transverse median row of about 10 setae; calyx of poison gland short and cylindrical (Fig. 146); shape and chaetotaxy of coxosternum and telopodite as in Figures 144-145.

Legs (last pair excepted). Chaetotaxy similar throughout the length of the body (Fig. 147). Each claw is provided on its ventrobasal part with two principal spines, one anterior one posterior; a third smaller spine occurs internally, very close to the posterior spine (Fig. 148).

Terga shallowly but distinctly bisulcate, sparsely setose.

Sterna. In both specimens there are pore fields on sterna II to XXIII. Number and arrangement of pores are similar in the two specimens. As for the female no. 7335, details are as follows. On sterna II to XXI most pores are arranged in a principal area with shape changing along the trunk from subcircular to subovoidal to subtriangular; some additional pores are also present in anterolateral position. Number of pores on selected sterna: on sternum II, 3+6+3 pores; on III, 3+8+2; on VI, 6+21+6; on XIII, 6+33+7 (Figs. 149-152). On sternum XXII there are 8 pores arranged in an irregular area and only 1 pore on its anterior left side (Fig. 153). On sternum XXIII, just 2 pores of the main area are left (Fig. 154).

Last leg-bearing segment with pleurites at the level of the pretergum (Fig. 156); presternum not divided along the sagittal plane; tergum trapezoidal, its base slightly wider than its length and the posterior border distinctly convex (Fig. 107). Sternum

trapezoidal, base much wider than sternum length, lateral edges converging posteriad, distal edge slightly concave (Fig. 155). Coxopleura ventrally slightly prominent at internal distal end, with setae on almost whole surface, setae more numerous on distal v. half (Figs. 155-156). Two single ("homogeneous") coxal organs on each coxopleuron, both unilobed, internally showing a single area of specialized epithelium (*a*, Fig. 157). Coxal organs open on the membrane between coxopleuron and sternum, covered by the latter (Fig. 155). Last legs with 7 podomeres; trochanter, prefemur and femur notably incrassate (Figs. 155-156). ATTEMS (1928: 137-138) described the last podomere as follows: *"The seventh joint of the female as long as the sixth joint, but much more slender, cylindrical, beset with dispersed long bristles; at the tip some short points; but the cone at the tip is not separated by a line from the rest of the joint as described by Ribaut in* Schendylurus attemsi".

Terminal segments. Intermediate tergum with posterior margin convex; intermediate sternum with posterior margin straight to slightly concave; first genital sternum with posterior margin straight to slightly concave; first genital sternum with posterior margin medially convex, slightly concave laterally. Gonopods uniarticulate (Figs. 155-156).

♂. We could not examine specimens of this sex. The only available information (ATTEMS, 1928) is, that the ♂ has 69 pairs of legs.

Schendylurus pumicosus Demange, 1963 (Figs. 158-190)

Schendylurus pumicosus Demange, 1963 - Mém. Inst. Fr. Afr. Noire 66: 42.
Schendylurus pumicosus var. *pluridentatus* Demange, 1963 - Mém. Inst. Fr. Afr. Noire 66: 46.

Diagnosis - A *Schendylurus* species with v. pore fields extending over the whole length of the body. Among the African species of the genus, this trait is only shared by *S. australis*. For the differential traits, see the diagnosis of this latter species.

Material examined - Ivory Coast: Nimba: Camp I (14 Pg Prairie, m 1600) 4-10.VIII.1951: 2 ♂♂ with 67 pairs of legs, body length 38 (specimen A) and 35 mm respectively, 3 immature ♂♂ (2 with 67 pairs of legs, body lenght resp. 25 and 26 mm; 1 with 65 pairs of legs, body length 21 mm), 2 ♀♀ with 67 pairs of legs, body length 47 (specimen B) and 25 mm respectively; 1 ♀ with 69 pairs of legs, body length 34 mm; 2 ♀♀ with 69 pairs of legs, both with body length 32 mm; 1 ♀ with 71 pairs of legs, body length 36 mm; 1 incomplete specimen. All in alcohol, preserved at the Muséum National d'Histoire Naturelle, Paris: Coll. Myriapodes M. 250).

Type locality - Ivory Coast: Nimba: Camp I.

Known range - Ivory Coast: Nimba: Camp I; Zouguépo; Pierré-Richaut; Bié.

The following additional description is based on specimens A (male) and B (female) listed above.

♀. 67 pairs of legs, body length 47 mm, maximum body width 1.0 mm.

Colour (preserved specimen) yellowish, forcipular segment pale ochraceous-orange.

Antennae 3.0 times longer than the cephalic plate, distally slightly attenuate; all articles, the first excepted, longer than wide. Setae on a.a. I-IV of different length, those of the remaining antennomeres progressively shorter and more numerous towards the end of the appendage (Fig. 158). Terminal a.a. with ca. 29 claviform sensory setae on the external border and ca. 2 on the internal border. Distal end of this a.a. with ca. 4-5 very small specialized setae ending in two very small apical branches (Fig. 159). Dorsal and v. aspect of a.a. II, V, IX and XIII with very small specialized

setae, which on the v. side are restricted to an internal lateroapical area and are represented by two types. Type *a* setae are very thin and apically undivided, type *b* are very similar to the setae at the apex of the last a.a.. Each of a.a. II, V, IX and XIII bears 1 type *a* and 1 type *b* seta (Fig. 160). Similar specialized setae are also present on the d. side, type *a* on the basal median part of the article, type *b* on the external lateroapical region. Each of a.a. II, V, IX and XIII with 1 type *a* and 1 type *b* seta (Fig. 161).

Cephalic plate distinctly longer than wide (ratio 1.1 to 1); shape and chaetotaxy as in Fig. 162.

Clypeus with 1+1 postantennal setae, 9+8 median setae and 1+1 prelabral setae (Fig. 162).

Labrum with 10 well-developed teeth on the central arc, side-pieces with 6+6 very small pale teeth (Fig. 164).

Mandible. Dentate lamella subdivided into 3 distinct blocks, with 3,3,2 teeth respectively (Fig. 165); pectinate lamella with 20 hyaline teeth.

First maxillae with palps on both coxosternum and telopodite. Coxosternum without setae; median projections of coxosternum subtriangular, well-developed and provided with 2+2 setae. Article II of telopodite with 2+2 v. setae and 4+4 d. sensilla (Figs. 166-167).

Second maxillae with 8+8 setae on coxosternum, arranged as in Fig. 167. Apical claw of telopodite well-developed, bipectinate, the d. edge with 7-9 teeth, the v. with 6-7 (Fig. 168).

Forcipulae. Basal plate with an irregular transverse median row of 11 setae. Telopodites with few setae, trochanteroprefemur, femur and tibia unarmed, tarsungula with a well-developed tooth on the internal basal part. Calyx of poison gland spherical (Fig. 171); chaetotaxy of coxosternum and telopodites as in Fig. 170.

Legs (last pair excepted) with chaetotaxy (Fig. 172) uniform throughout the body length. Claws ventrobasally with two spines, one anterior one posterior; a third spine, much smaller in size, occurs internally, very close to the posterior one (Fig. 173).

Sterna. Pore fields present from the second to the penultimate sternum. All pore fields are undivided, their form changing along the trunk as in Figs. 174-180. Number of pores on selected sterna: on sternum II, 34; on VI, 75; on XXVIII, 40; on XLIV, 16; on L, 17; on LX, 12; on LXVI, 21.

Last leg-bearing segment without pleurites at the sides of pretergum; presternum not divided along the sagittal plane; form and chaetotaxy of sternum and tergum as in Figs. 181-182. Coxopleura protruding at their distal v. ends, setae small and numerous on the distal v. half, the remaining surface with few bigger setae. Two single ("homogeneous") coxal organs on each coxopleuron, both opening on the membrane between coxopleuron and sternum, covered by the latter (Fig. 181). Podomeres of terminal legs moderately inflated; v. chaetotaxy: numerous setae on trochanter, prefemur and tibia, the external and apical setae on a tubercle-like base (similar to those in the male, Fig. 189); d. setae less numerous (Figs. 181-182); pretarsus apparently absent, replaced by a small apical spine (Fig. 183).

Terminal segments. Intermediate tergum with posterior border convex, intermediate sternum with posterior border slightly convex; first genital sternum with posterior margin medially convex, laterally concave. Gonopods uniarticulate, well-developed (Fig. 181).

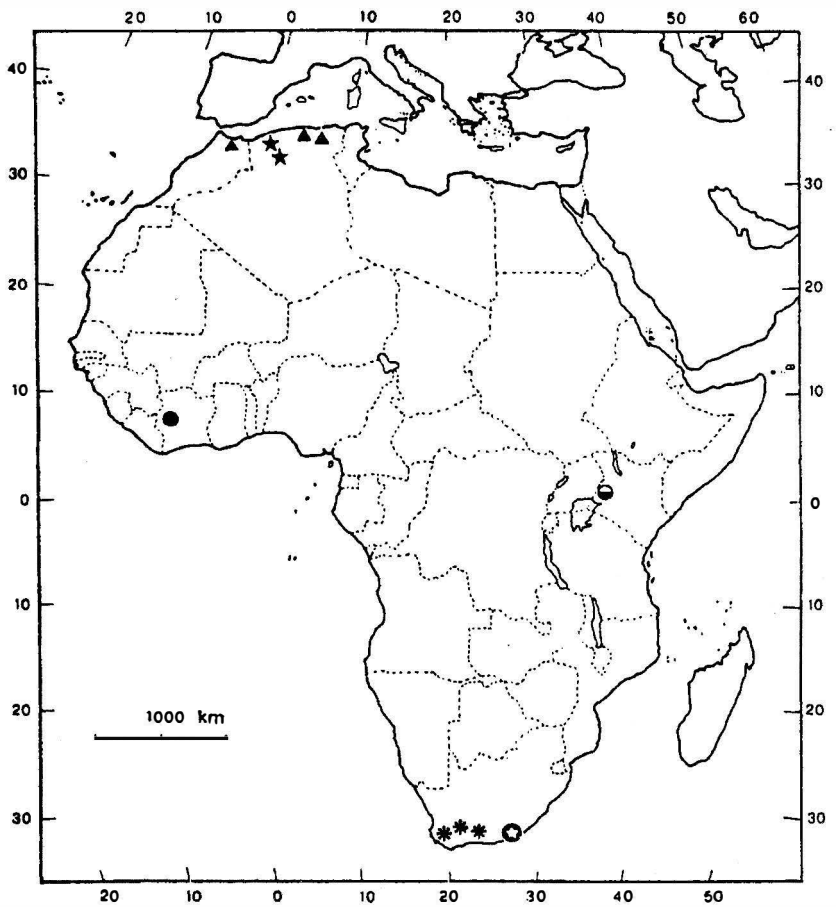


Fig. 191 - Geographical distribution of the African species of *Schendylurus*. *S. attemsi* (Verhoeff) (★), *S. australis* Silvestri (✪), *S. maroccanus* (Attems) (▲), *S. paucidens* Attems (◒), *S. polypus* Attems (✻), *S. pumicosus* Demange (●).

Variability. Other female specimens with 65, 69 and 71 pairs of legs.

♂. 67 pairs of legs, body length 38 mm.

All features similar to the female, but for the last leg-bearing segment and the terminal segments.

Last leg-bearing segment. Form and chaetotaxy of sternum and tergum as in Figs. 185-186. Coxopleura protruding at v. distal end, ventrally with numerous small setae on external and distal half, remaining surfaces with very few setae (Figs. 185-186). Podomeres (Figs. 185-186) as wide as in the female, trochanter ventrally more setose than in the female.

Terminal segments. Intermediate tergum with posterior border convex, intermediate sternum with posterior border slightly convex; first genital sternum with posterior border convex (Figs. 185, 188). Gonopods biarticulate, ca. 21 setae on basal, ca. 14 setae on distal article (Fig. 190). Penis dorsally without apical setae.

Variability. Other male specimens with 63, 65 and 69 pairs of legs.

Remarks - All specimens we have seen lack the 1+1 setae described by DEMANGE as present on the coxosternum of the first maxillae. In addition, the teeth of the central arc of the labrum seem to be of uniform size, at variance with DEMANGE'S (1963) statement, that "les 3 dents médianes sont beaucoup plus robustes et longues que les latérales". Finally, we regard as a typographical error the ratio 1.5: 1 given by DEMANGE as the length to width ratio for the cephalic shield; in the specimens seen by us, as well as in DEMANGE's (1963) figure 1, the ratio is in the range 1.1:1 to 1.2:1.

Key to the African species of Schendylurus

1 - Pore field series ending on penultimate sternum 2
- At least the 5 last sterna without pore fields 3

2 - Sternum I with pore field. Body length 35 mm. Male and female with 53 pairs of legs. Forcipular tarsungulum without tooth. Last leg-bearing segment with pleurites at the sides of pretergum. Shape of labrum as in Figures 44 and 73. Form of pore fields as in Figures 54-65 ..... *S. australis* Silvestri
- Sternum I without pore field. Body length 47 mm. Male with 63-69, female with 65-71 pairs of legs. Forcipular tarsungulum with a well-developed basal tooth. Last leg-bearing segment without pleurites at the sides of pretergum. Shape of labrum as in Figures 164 and 184. Form of pore fields as in Figs. 174-180 ..... *S. pumicosus* Demange

3 - Dentate lamella of the mandible not subdivided into blocks. Posterior coxal organs internally with two independent areas of specialized epithelium, externally unilobed in the male but bilobed in the female (Figs. 112, 115, 120). Pore fields on sterna II to XVII. Female with 49 or 51, male with 47 pairs of legs. Body length 20 mm ..... *S. paucidens* Attems
- Dentate lamella of the mandible subdivided into 2-5 distinct blocks. Posterior coxal organs internally with a single area of specialized epithelium, externally unilobed in both sexes (Fig. 157). Pore fields on sterna II to XVIII-XXX. Female with 57-61 or 65-77, males with 57 or 61-69 pairs of legs. Body length 30-63 mm 4

4 - Body length 30 mm. Labrum with a total of 18-19 teeth. Second maxillae with ca. 20 setae on coxosternum. Last legs with a very small pretarsus. Middle part of the clypeus with ca. 11 setae. Forcipulae: trochanteroprefemur with a very small tubercle in the apical part of internal border; tarsungulum with a well-developed basal tooth. Female with 69-77, male with 69 pairs of legs ..... *S. polypus* Attems
- Body length 60-63 mm. Labrum with a total of 30-60 teeth. Second maxillae with ca. 33-60 setae on coxosternum. Last legs with pretarsus represented by a well-developed tubercle. Middle part of clypeus with ca. 25-35 setae. Forcipulae: internal border of trochanteroprefemur with an apical tooth, tarsungulum without basal tooth 5

5 - Labrum with a total of ca. 23-30 teeth (shape as in Figs. 3 and 32). Coxosternum of second maxillae with ca. 28-33 setae (Figs. 4 and 33). Forcipulae: trochanteroprefemur without tooth or with a quite small tooth (Figs. 8 and 34). Pore fields on sterna II to XXX. Last leg-bearing segment with pleurites at the sides of pretergum. Last legs of the male incrassate; last joint much thinner than the penultimate (Figs. 24-25, 35), pretarsus with 4-6 spines (Figs. 36-37). Female with 57-61, male with 57 pairs of legs ..... *S. attemsi* (Verhoeff)
- Labrum with a total of ca. 60 teeth (shape as in Fig. 76). Coxosternum of second maxillae with ca. 60 setae (Fig. 77). Forcipulae: trochanteroprefemur with a strong tooth (Fig. 78). Pore fields on sterna II to XVIII-XXI. Last leg-bearing segment without pleurites at the level of pretergum. Last legs of the male not incrassate, last joint nearly as thick as the penultimate (Fig. 79), pretarsus with 2 spines. Female with 65-69, male with 61-69 pairs of legs ..... *S. maroccanus* (Attems)

Acknowledgements - We are indebted to the following colleagues for the loan of types and other useful specimens: G. Rack of the Zoologisches Institut und Zoologisches Museum der Universität, Hamburg, J. Gruber of the Naturhistorisches Museum, Wien, M. Moritz of the Zoologisches Museum der Humbaldt-Universität, Berlin and J.-P. Mauriés of the Muséum National d'Histoire Naturelle, Paris.

REFERENCES

ATTEMS C., 1903 - Synopsis der Geophiliden - *Zool. Jahrb. Syst.*, 18: 155-302.

ATTEMS C., 1928 - The Myriapoda of South Africa - *Ann. S. Afr. Mus.*, 26: 1- 431.

ATTEMS C., 1929 - Myriapoda I. Geophilomorpha - *Das Tierreich 52*, Berlin & Leipzig. XXIII+388 pp.

ATTEMS C., 1934 - Einige neue Geophiliden und Lithobiiden des Hamburger Museums - *Zool. Anz.,* 107: 310-317.

ATTEMS C., 1939 - Myriapoda. Mission scientifique de l'Omo - *Mém. Mus. nat. Hist. nat.* Paris, 5(55): 303-318.

ATTEMS C., 1947 - Neue Geophilomorpha des Wiener Museums - *Ann. naturhist. Mus. Wien*, 55: 50-149.

ATTEMS C., (1952)1953 - Neue Myriopoden des Belgischen Congo - *Ann. Mus. R. Congo Belge*, Sér. 8, 18: 1-139.

ATTEMS C., 1959 - Die Myriopoden der Höhlen der Balkanhalbinsel nach dem Material der "Biospeologica balcanica" - *Ann. naturhist. Mus. Wien,* 63: 281-406.

BRÖLEMANN H.W., 1921 - Liste de Myriapodes signalés dans le Nord de l'Afrique - *Bull. Soc. Sci. nat. Maroc,* 1: 99-110.

BRÖLEMANN H.W., 1925 - Races nouvelles de *Schizophyllum* algériens (Myriapodes-Diplopodes) - *Bull. Soc. Hist. nat. Afr. Nord,* 16: 245-253.

BRÖLEMANN H.W., 1926 - Myriapodes recueillis en Afrique occidentale française par M. l'Administrateur en chef L. Duboscq - *Arch. Zool. exp. gén.*, 65: 1-159.

BRÖLEMANN H.W., 1931 - Myriapodes recueillis par M. le Dr. H. Gauthier en Algérie - *Bull. Soc. Hist. nat. Afr. Nord*, 22: 121-134.

BRÖLEMANN H.W., 1932 - Tableaux de détermination des Chilopodes signalés en Afrique du Nord - *Bull. Soc. Hist. nat. Afr. Nord,* 23: 31-64.

BRÖLEMANN H.W., 1945-46-47 - Catalogue des Myriapodes Chilopodes de la Collection de l'Institut Scientifique Chérifien identifiés par H.W.Brölemann - *Bull. Soc. Sc. nat. Maroc*, 25-26-27: 172-182.

BRÖLEMANN H.W. & RIBAUT H., 1912 - Essai d'une monographie des Schendylina (Myriapodes, Géophilomorphes) - Nouv - *Arch. Mus. Paris,* Sér. 5, 4: 53-183.

CHAMBERLIN R.V., 1955-56 - Reports of the Lund University Chile Expedition 1948-1949. 18. The Chilopoda of the Lund University and California Academy of Science Expeditions - *Acta Univ. Lund,* Ser. 2, 51(5): 1-61.

CRABILL R.E., 1960 - Centipedes of the Smithsonian Bredin expeditions to the West Indies - *Proc. U.S. nat. Museum,* 111: 167-195.

DEMANGE J.-M., 1963 - La réserve naturelle intégrale du Mont Nimba. III. Chilopoda - *Mém. I.F.A.N.,* 66: 1-70.

LAWRENCE R.F., 1955 - Chilopoda. Results of the Lund University Expedition in 1950-1951 - *S. Afr. Anim. Life*, Uppsala, 2: 4-56.

MINELLI A. & BORTOLETTO S., 1988 - Myriapod metamerism and arthropod segmentation - *Biol. J. Linn. Soc.*, 33: 323-343.

MINELLI A. & PASQUAL C., 1986 - On some abnormal specimens of centipedes (Chilopoda) - *Lavori Soc. ven. Sc. nat.,* 11: 135-141.

PEREIRA L.A. & DEMANGE J.-M., 1991 - Sur les espèces du genre *Ctenophilus* Cook, 1896 (Chilopoda, Geophilomorpha, Schendylidae) - *Bull. Mus. natl. Hist. nat.,* Paris, 4.e sér., 13, section A: 81-96.

RIBAUT H., 1911 - Récoltes entomologiques dans les Béni-Snassen (Maroc Oriental). III. Myriapodes - *Ann. Soc. ent. France*, 80: 419-424.

SILVESTRI F., 1907 - Neue und wenig bekannte Myriopoden des naturhistorischen Museums in Hamburg - *Jahresb. wiss. Anst. Hamburg,* 24(1906), Beiheft 2: 229-257.

VERHOEFF C.W., 1900 - Über *Schendyla* und *Pectiniunguis* - *Zool. Anz.*, 23: 483-486.

VERHOEFF C.W., 1937 - South African Geophilomorpha (Myriapoda) - *Ann. S. Afr. Mus.*, 32: 95-116.

ABSTRACT

The six African species of *Schendylurus* are redescribed, mostly after type material and a key is provided for their identification.

RIASSUNTO

Le specie africane del genere Schendylurus Silvestri, *1907* (Chilopoda Geophilomorpha Schendylidae).

Le sei specie africane del genere *Schendylurus* vengono ridescritte, per lo più sulla base di materiale tipico, e viene fornita una chiave per il loro riconoscimento.

Authors' addresses: L. A. Pereira - Facultad de Ciencias Naturales y Museo, Universidad Nacional de La Plata, Paseo del Bosque s/n, 1900 La Plata (Argentina).
A. Minelli - Dipartimento di Biologia, Università di Padova, Via Trieste 75, I 35121 Padova (Italy).