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New Isopod Material from Southwest Cameroon, with Descriptions of 13 New Species

By Franco Ferrara*), Florence
and Helmut Schmalzfuss**), Ludwigsburg

With 120 figures

Summary

In the course of a field investigation by the authors in Southwest Cameroon 31 species of Isopods were collected. In the present paper the collecting data are given together with the descriptions of **two new genera**, *Echinochaetus* (Platyarthridae) and *Parelumoides* (Eubelidae) and **thirteen new species**: *Arcangeloscia curvitelson*, *Arcangeloscia longistyla*, *Congophiloscia striata*, *Echinochaetus renatae*, *Trichorhina kribensis*, *Elumoides atlanticus*, *Eubelum montanum*, *Parelumoides marginatus*, *Synarmadillo caecus*, *Synarmadillo flavus*, *Synarmadillo schlegeli*, *Synarmadillo taitii*, *Togarmadillo monocellatus*.

Zusammenfassung

Während einer Feldstudie der Autoren in Südwest-Kamerun wurden 31 Isopoden-Arten gesammelt. In der vorliegenden Arbeit werden die Sammeldaten dieses Materials publiziert, außerdem werden **zwei neue Gattungen** (*Echinochaetus*: Platyarthridae und *Parelumoides*: Eubelidae) und die folgenden **13 neuen Arten** beschrieben: *Arcangeloscia curvitelson*, *Arcangeloscia longistyla*, *Congophiloscia striata*, *Echinochaetus renatae*, *Trichorhina kribensis*, *Elumoides atlanticus*, *Eubelum montanum*, *Parelumoides marginatus*, *Synarmadillo caecus*, *Synarmadillo flavus*, *Synarmadillo schlegeli*, *Synarmadillo taitii*, *Togarmadillo monocellatus*.

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A. Introduction

When we had completed a monograph on the terrestrial isopods of West Africa (FERRARA & SCHMALFUSS 1976 and in press; SCHMALFUSS & FERRARA 1978 and in press) it was evident that nowhere in the area dealt with any systematic collecting of terrestrial isopods had been done in the past. The investigated material consisted of random collections by non-specialists, and nothing was known about ecology, population densities, species numbers, diversity etc. This fact prompted us to undertake a field investigation of our own with the aim to give a first picture of the ecological role of terrestrial isopods in tropical West Africa. After four weeks in the field this can only be a very sketchy picture, but we hope that it will serve as a sound basis for further, more detailed investigations. We chose Southwest Cameroon as investigation area, since there, with Mount Cameroon reaching up to 4000 m, a great variety of different biotopes are available. The investigations were concentrated on the Mount Cameroon region and the region around Kribi, the two areas being about 180 km apart from each other. The ecological results are published in a separate paper (SCHMALFUSS & FERRARA 1982), where also climatological data, maps of the investigation areas and rough descriptions of the investigated biotopes are given. In the present issue the collecting data of the isopod material and the descriptions of the new species are published.

The field work was done from 25th January to 25th February 1980. The material was collected by the authors and our companions MARTIN SCHLEGEL and RENATE SCHLEGEL. 31 species of isopods were collected, 13 of which are *novae species*.

The material is deposited in the Staatliche Museum für Naturkunde, Stuttgart (Holotypes: SMNS + No. of isopod collection).

The drawings are not equipped with enlargement-scales, because the absolute measurements of morphological structures are nowhere used as diagnostic criteria, and because they can vary to a large degree. The reason for this is the fact that there can be size differences of adults of the same species of more than 50 % since the adult stages grow and molt continuously. On the other hand there can be allometric growth differences, so the sizes of all depicted specimens are given.

B. Species list

Two species of the non-Oniscoidean family Cirolanidae are included, since they were found in the supralittoral above the water-line.

I. Cirolanidae

1. *Excirrolana latipes* (Barnard, 1914)

Eurydice carangis: VAN NAME 1920: 47, 49 figs. 1—5; MONOD 1924: 429, fig. D; 1925: 62.

Excirrolana (Pontogeloides) latipes: MONOD 1930: 179, fig. 31 A—G (synonymy); 1931: 3; BRIAN & DARTEVELLE 1949: 121, figs. 80—90.

Material collected: 3 specimens, 5 km W Victoria, sandy beach, under stones above water line, 25. 1. 1980. — 1 specimen, Rocheur du Loup S Kribi, sand-beach, on tree trunk, 15. 2. 1980.

Distribution: West coast of Africa from Rio de Oro (West Sahara) to South Africa (MONOD 1931: 4).

2. *Cirolana* aff. *parva* Hansen, 1890

Cirolana parva: MONOD 1930: 137, figs. 5 A, C; 1931: 3.

Cirolana sp.: BRIAN & DARTEVELLE 1949: 111, figs. 49—79.

Material collected: 8 specimens, Rocheur du Loup S Kribi, sandy beach, on tree trunk, 15. 2. 1980.

Remarks: The systematic situation of the *parva*-group has yet to be clarified. According to BRUCE & BOWMAN (1982) the records of *C. parva* from Africa refer to different species.

II. Ligiidae

3. *Ligia gracilipes* Budde-Lund, 1885

Ligia gracilipes: SCHMALFUSS & FERRARA 1978: 24, figs. 9—16 (bibliography and previous records from Cameroon).

Material collected: 3 specimens, 5 km W Victoria, sandy and stony beach, 25. 1. 1980. The species was also present in two other beaches further west of Victoria. — 26 specimens, Rocheur du Loup S Kribi, sandy beach, on tree trunks, 14.—18. 2. 1980.

Distribution: Coast of West Africa from Senegal to the mouth of the Congo.

III. Styloniscidae

4. *Clavigeroniscus riquieri* Arcangeli, 1930

Clavigeroniscus riquieri: ARCANGELI 1930: 26, fig. VIII; VAN NAME 1936: 85, fig. 34; 1940: 139; WILLIAMS 1941: 72; VANDEL 1952 a: 70, figs. 58 A—E, 59 A—C, 59; 1952 b: 83.

Trichoniscus (Afroniscus) Sassandrai: PAULIAN DE FELICE 1940: 101, figs. 6—11.

Alfroniscus sassandrai: VANDEL 1945: 236.

Trichoniscus sp.: PAULIAN DE FELICE 1940: 102; SCHMALFUSS & FERRARA 1978: 28.

Trichoniscus (Fakoniscus) pteridicola: PAULIAN DE FELICE 1940: 99, figs. 1—5; SCHMALFUSS & FERRARA 1978: 28.

Clavigeroniscus sassandrei (sic): VANDEL 1973: 19.

Clavigeroniscus sassandrai: SCHMALFUSS & FERRARA 1978: 29.

Material collected: 2 ♂♂, 3 ♀♀, Mount Cameroon, above Buea, 1800—2000 m, mist forest, 5.—7. 2. 1980. — 1 ♀, Mount Cameroon, Buea, 1200 m, eucalyptus-forest, 4. 2. 1980.— 1 ♂, Rocheur du Loup S Kribi, edge of rain-forest at sea-shore, 14. 2. 1980.

Distribution: Pantropical cosmopolitan, probably secondarily by human transport.

Remarks: VANDEL (1952 a: 70), studying the material after which PAULIAN DE

FELICE (1940: 99, figs. 6—11) had “described” *Trichoniscus (Afroniscus) sassandrai*, reached the conclusion that *Clavigeroniscus riquieri* Arcangeli, 1930 from America is identical with *Trichoniscus sassandrai* PAULIAN DE FELICE, 1940 because “il m’a été impossible de relever aucune différence entre la forme africaine et l’espèce américaine”. In a later publication (VANDEL 1973: 19) he obviously had overlooked his own former conclusion, citing *C. riquieri* and *C. sassandrai* as two different species. We follow his 1952-statement, synonymizing *C. sassandrai* with *C. riquieri*. Even *C. mussaui* described by VANDEL 1973 (p. 20, figs. 7 A—C) from Melanesia could well be, after the description, the same species as *C. riquieri*. Our material from Cameroon agrees perfectly in all details with the drawings in VANDEL (1952), so it certainly belongs to *C. riquieri*. The drawings of this species in PAULIAN DE FELICE are inappropriate and certainly wrong. *Trichoniscus (Fakoniscus) pterydicola* described by PAULIAN DE FELICE (1940: 99, figs. 1—5) after females from Mount Cameroon is, with all probability, also a synonym of *Clavigeroniscus riquieri*, even if the inadequate description does not allow any safe conclusion.

IV. Halophilosciidae

5. *Littorophiloscia compar* (Budde-Lund, 1893)

Material collected: 70 specimens, Rocheur du Loup S Kribi, sand-beach, on dead tree trunks, and on border to forest under leaf litter, 14.—16. 2. 1980. — 2 specimens, Kribi, border of beach, 19. 2. 1980.

Maximal length: ♀ 4.5 mm, ♂ 3.5 mm.

Distribution: Pantropical cosmopolitan.

Remarks: This is the first record of the species from West Africa. For detailed description and discussion of systematic position see FERRARA (1974: 207, figs. 63—79).

V. Philosciidae

6. *Arcangeloscia buettneroides* Schmalfuss & Ferrara, 1978

Arcangeloscia buettneroides: SCHMALFUSS & FERRARA 1978: 34, figs. 29—36.

Material collected: 140 specimens, Mount Cameroon, Buea, 1000 m, cultivated land, 1.—11. 2. 1980. — 74 specimens, Buea, Tole, river-bank, 8.—10. 2. 1980. — 11 specimens, Buea, entrance of cave II, surrounded by plantations, 7. 2. 1980. — 2 specimens, Buea, pine forest, 9. 2. 1980. — 37 specimens, above Buea, 1200 m, eucalyptus-forest, 4.—10. 2. 1980. — 12 specimens, Mount Cameroon, above Buea, 1800—2000 m, mist forest, 5.—6. 2. 1980.

Maximal length: 8 mm.

Coloration: Violet-brown, first two articles and distal half of fifth article of antennal peduncle whitish, in most specimens also basal parts of uropods; hind corners of posterior pereon epimera reddish or yellowish.

Distribution: Known only from the Mount Cameroon region.

7. *Arcangeloscia curvitelson* nov. spec.

Material collected: 9 specimens, Rocheur du Loup S Kribi, forest, 16. 2. 1980 (holotype ♂, SMNS T 80).

Description:

Maximal dimensions: 5.1×1.7 mm (♀ ovig.).

Coloration: Yellowish with dark spots at the base of pereon epimera; antenna dark.

Tegumentary characters: Back with the usual upright setae and small scale-spines at the margins of segments; four-five gland pores at the anterior angle of pereon segments; long noduli laterales (almost half of the length of pereon segments) arranged as in all the species of *Arcangeloscia* (fig. 1).

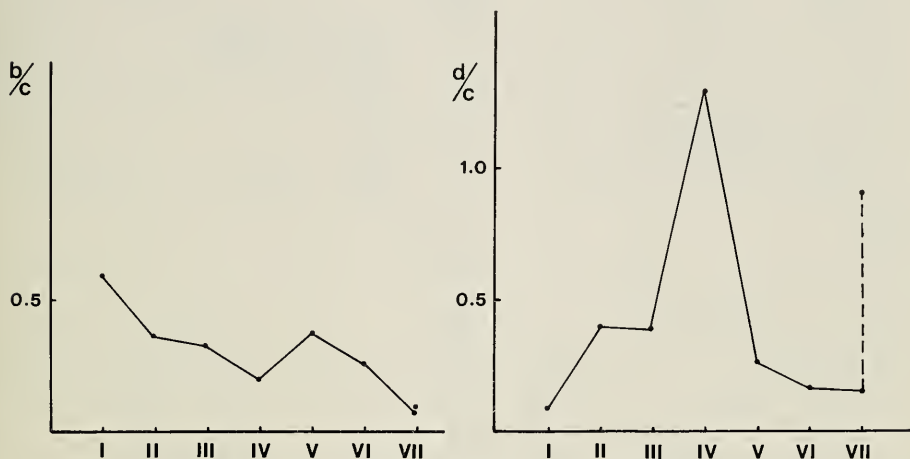


Fig. 1. *Arcangeloscia curvitelson* nov. spec. — b/c and d/c co-ordinates of noduli laterales.

Cephalon: Without frontal and supra-antennal line; eyes with 12 ommatidia.

Pereon: Segments 1–5 with posterior margins straight, rounded angles; segments 6–7 with concave margins, acute angles (fig. 2).

Telson (fig. 3): Semicircular, a little depressed at the apex.

Antenna (fig. 4): Fifth joint of peduncle a little longer than flagellum whose segments are 15:8:17.

Mouthparts: As described in the generic diagnosis (SCHMALFUSS & FERRARA 1978).

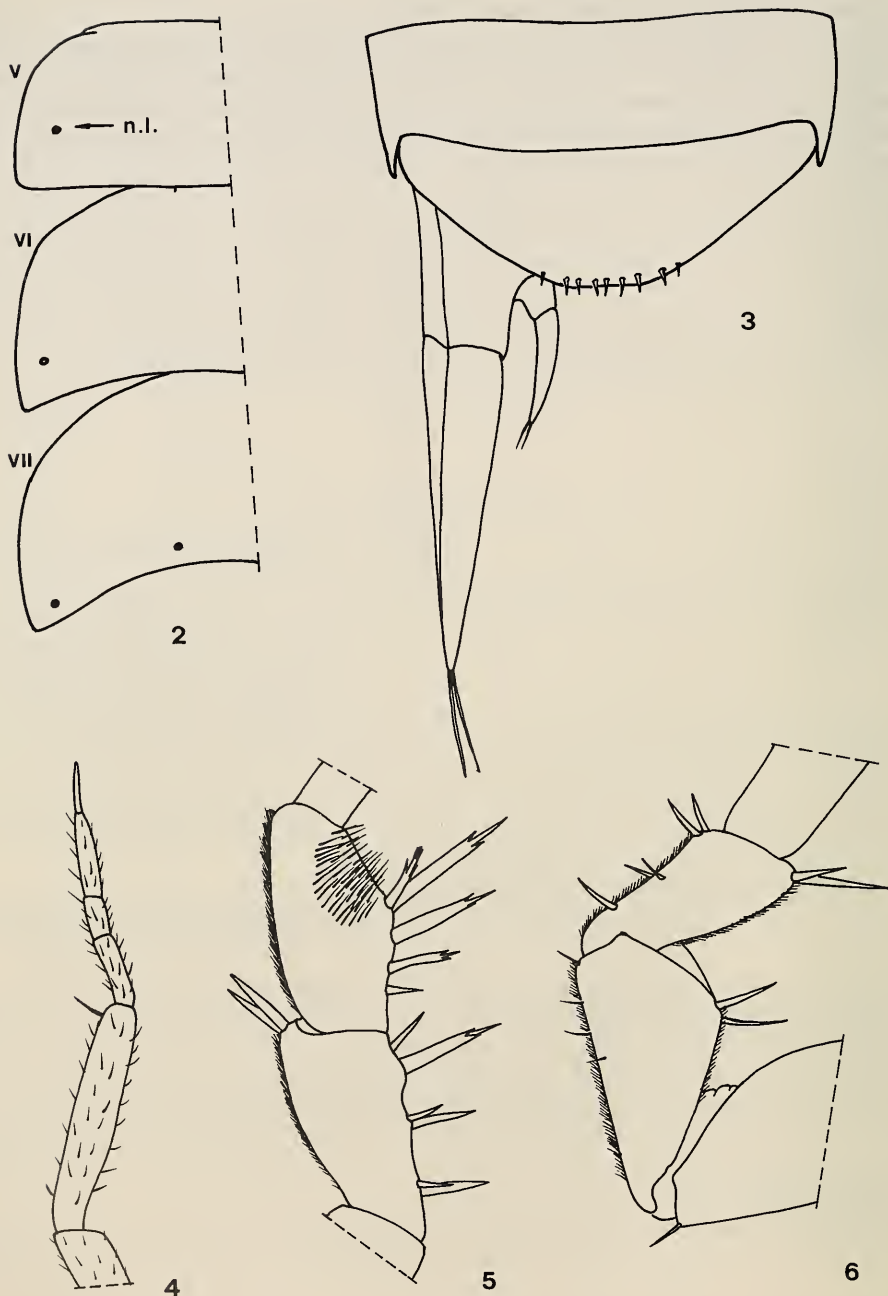
Uropods (fig. 3): Protopodite grooved on outer margin; endopodite short, arched, inserted proximal to exopodite.

Male sexual characters: Pereopod I (fig. 5) not specialized; pereopod VII (fig. 6): Ischium with sternal margin straight and covered with fine setae. Pleopod-exopodite I (fig. 7) with triangular posterior lobe, endopodite I (figs. 8, 9) with a row of spines and three transversal ridges on the medial margin and a denticulate area on the outer. Pleopod II see fig. 10.

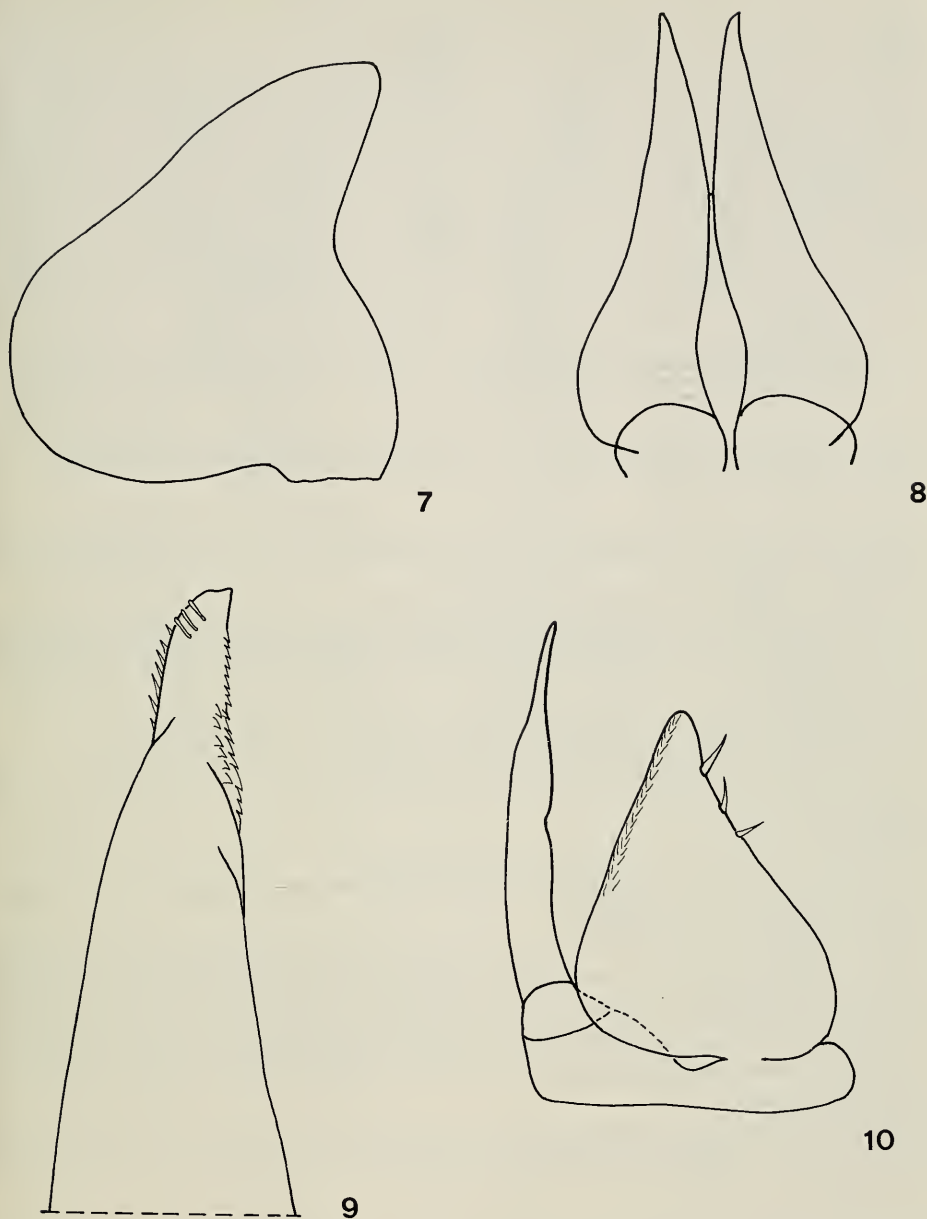
Remarks: The species is characterized by the shape of telson and of pleopod I in male.

8. *Arcangeloscia longistyla* nov. spec.

Material collected: 9 specimens, Kribi, forest at beach, 19. 2. 1980 (holotype ♂, SMNS T 82). — 6 specimens, Rocheur du Loup S Kribi, primary forest, 17. 2. 1980. — 9 specimens, Rocheur du Loup, limit beach-forest, 17. 2. 1980.



Figs. 2—6. *Arcangeloscia curvitelson* nov. spec., ♂. — 2. Left pereon-epimera V—VII with noduli laterales (n.l.), — 3. Telson and left uropod, — 4. Distal part of antenna, — 5. Merus and carpus of pereopod I, — 6. Ischium and merus of pereopod VII.



Figs. 7—10. *Arcangeloscia curvitelson* nov. spec., ♂. — 7. Pleopod-exopodite I, — 8. Pleopod-endopodite I, — 9. Apex of pleopod-endopodite I, — 10. Pleopod II.

Description:

Maximal dimensions: ♂ 5.5×1.6 mm (holotype); ♀ 7.5×2.5 mm.

Coloration: Yellowish-brown.

Tegumentary characters: Back with sparse upright setae and small scale-spines at the margins of segments; gland pores not traceable; noduli laterales shorter than in *A.*

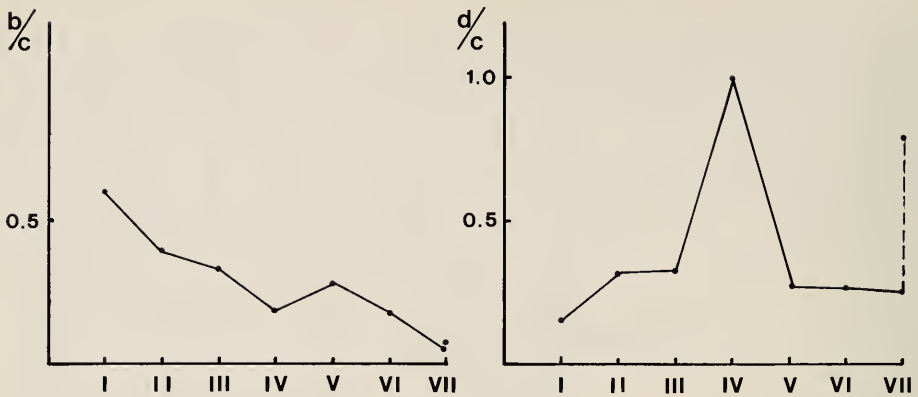


Fig. 11. *Arcangeloscia longistyla* nov. spec. — b/c and d/c co-ordinates of noduli laterales.

curvitelson (about 1/3 the length of pereon segments); b/c and d/c co-ordinates as in fig. 11.

Cephalon: Without frontal and supra-antennal line; eyes with 15 small ommatidia.

Pereon: Segment I—IV with posterior margins straight, rounded angles; segment V with very slightly concave margin and right angle; segments VI—VII with concave margins, acute angles.

Pleon: Epimera reduced with short posterior points not visible from above.

Telson (fig. 12): With concave sides, rounded apex.

Antenna (fig. 13): Flagellum slightly longer than fifth joint of peduncle; ratio of flagellum joints 7:4:5.

Mouthparts: As in all the species of *Arcangeloscia*.

Uropods (fig. 12): Protopodite grooved on outer margin; endopodite not recurved, inserted proximally to exopodite.

Male sexual characters: Pereopod VII ischium (fig. 14) with sternal margin a little convex equipped with short setae and three long spines. Pleopod-exopodite I (fig. 15) with a short triangular posterior lobe; endopodite I (figs. 16, 17) with pointed apex strongly bent outwards, equipped as in the preceding species with a denticulate area on outer margin. Pleopod II (fig. 18) with extremely long endopodite, reaching almost tip of uropod-exopodite.

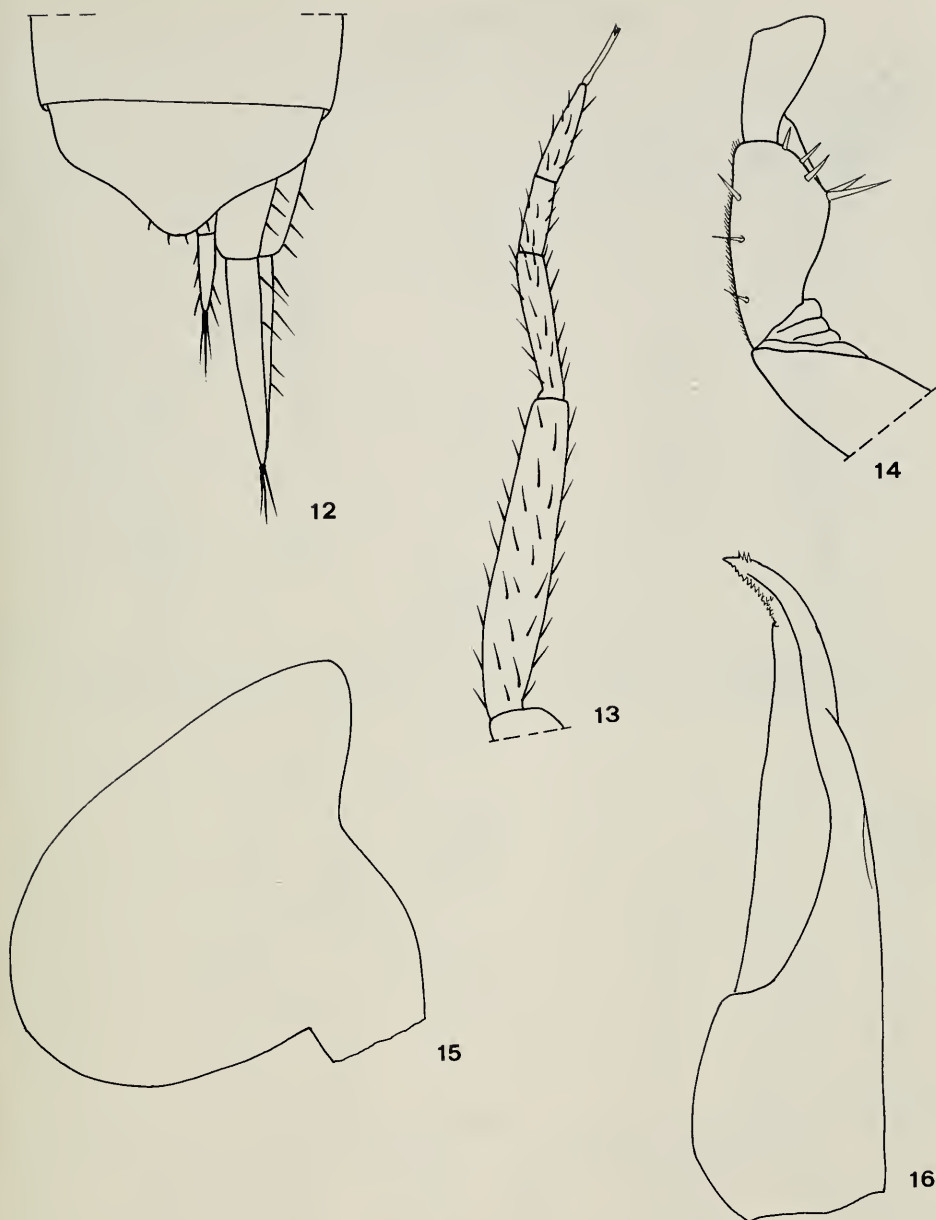
Remarks: The species is very close to *A. curvitelson* nov. spec. from which it differs in the shape of telson and of male pleopod II.

9. *Congophiloscia longiantennata* Schmalzfuss & Ferrara, 1978

Congophiloscia longiantennata: SCHMALFUSS & FERRARA 1978: 49, figs. 73—80.

Material collected: 48 specimens, Rocheur du Loup S Kribi, primary forest, 17. 2. 1980. — 45 specimens, Rocheur du Loup S Kribi, mangrove, 16. 2. 1980. — 7 specimens, Rocheur du Loup S Kribi, forest behind mangrove, 16. 2. 1980. — 3 specimens, Rocheur du Loup S Kribi, border between beach and forest, 14. 2. 1980.

Distribution: Kribi region in Southwestern Cameroon.



Figs. 12—16. *Arcangeloscia longistyla* nov. spec., ♂. — 12. Telson and right uropod, — 13. Distal part of antenna, — 14. Ischium and merus of pereopod VII, — 15. Pleopod-exopodite I, — 16. Pleopod-endopodite I.

10. *Congophiloscia striata* nov. spec.

Material collected: 24 specimens, Kribi, forest at beach, 19. 2. 1980 (holotype ♂, SMNS T 79). — 10 specimens, Kribi, upper margin of beach, 19. 2. 1980. — 7 speci-



Figs. 17—18: *Arcangeloscia longistyla* nov. spec., ♂. — Apex of pleopod-endopodite I, — 18. Pleopod II.

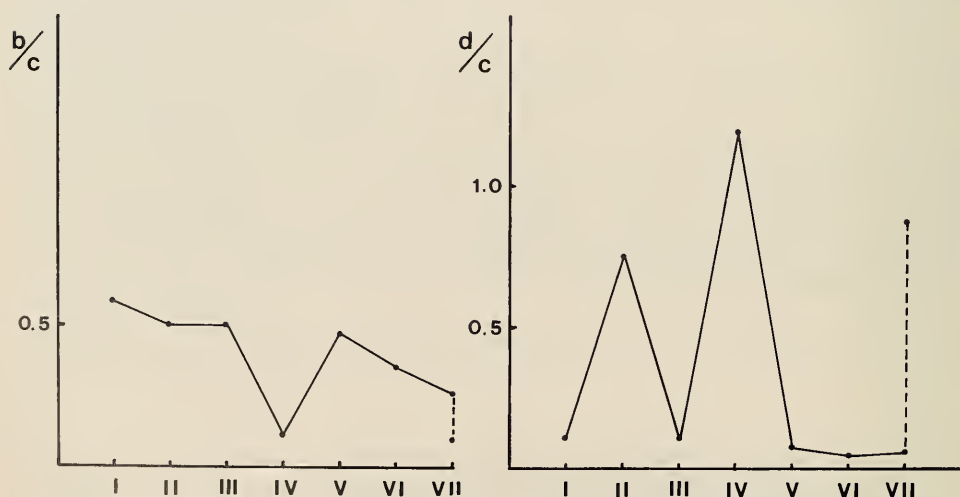
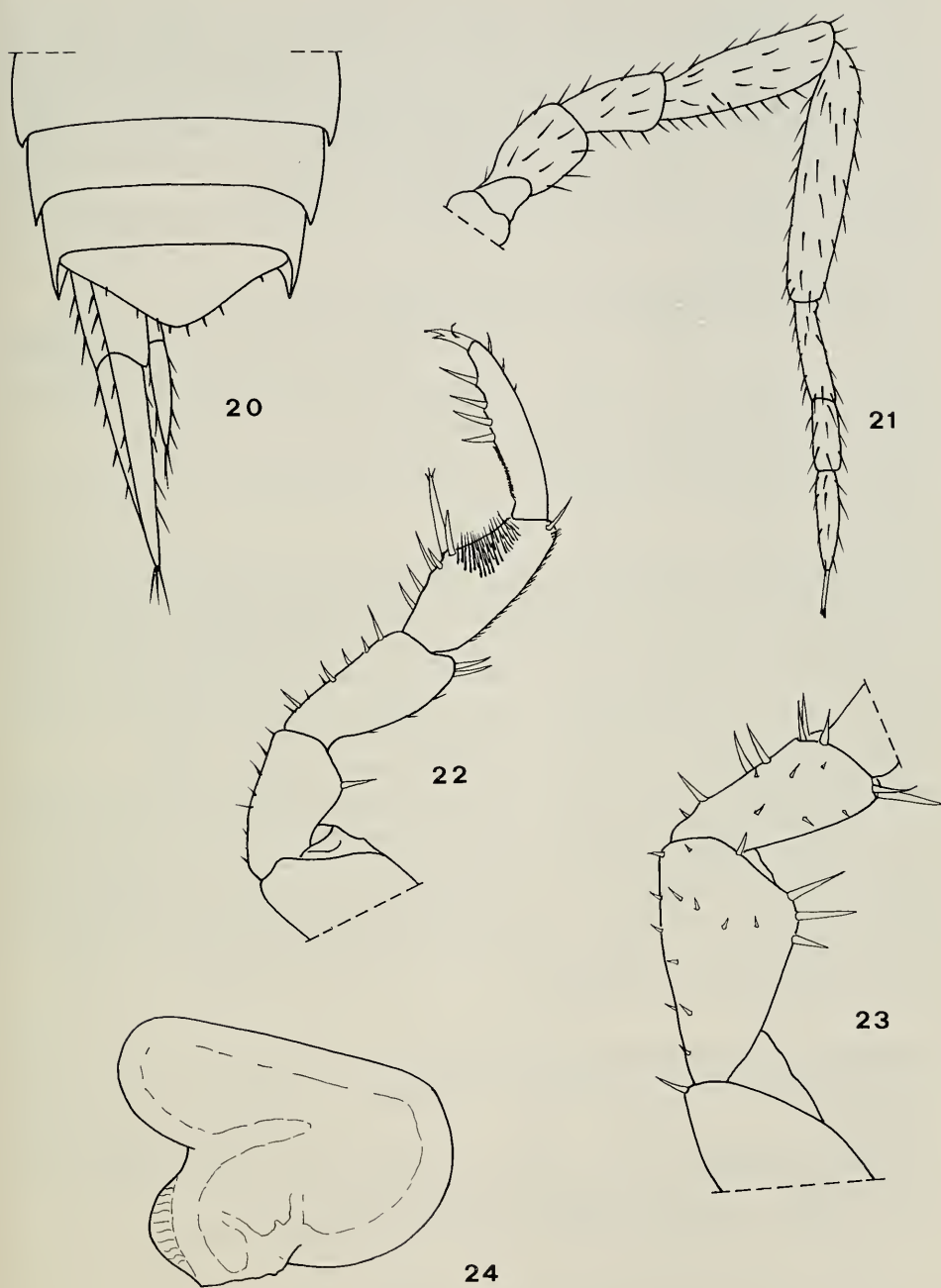


Fig. 19. *Congophiloscia striata* nov. spec. — b/c and d/c co-ordinates of noduli laterales.

mens, Douala, Protestant Mission, 12. 2. 1980. — 43 specimens, Rocheur du Loup, limit beach forest, under leaf litter, 14. 2. 1980. — 5 specimens, Rocheur du Loup, mouth of a small stream, 15. 2. 1980. — 3 specimens, Rocheur du Loup, limit beach-forest, 17. 2. 1980.



Figs. 20—24. *Congophiloscia striata* nov. spec., ♂. — 20. Telson and left uropod, — 21. Antenna, — 22. Pereopod I, — 23. Ischium and merus of pereopod VII, — 24. Pleopod-exopodite I, juv.

Description:

Maximal dimensions: 7.0×2.6 mm (♀ with embryos).

Coloration: Cephalon and pereon segment I purplish-brown, mottled with pale; pereon segments II—VII: Anterior half whitish, posterior brown; pleon and telson brown; antenna: Segments I—III and distal half of segment V pale, segment IV, proximal half of segment V and flagellum brown; uropod-protopodite pale, exo- and endopodite brown.

Tegumentary characters: Back equipped with upright setae; some gland pores are present; b/c and d/c co-ordinates of noduli laterales as in fig. 19.

Cephalon: Without frontal and supra-antennal line; profrons a little bulbous; eyes with 21—22 ommatidia.

Pleon: Epimera with short points not protruding laterally.

Telson (fig. 20): With slightly concave sides, broadly rounded apex.

Antenna (fig. 21): Slightly surpassing pereon segment III; ratio of flagellum joints 2:1, 5:2.

Mandible: With molar penicil dichotomized; outer branch of maxillula with 4+6 (5 cleft) teeth; endite of maxilliped bearing a penicil.

Pleopods: Exopodite I with a semilunar respiratory area.

Uropods: Protopodite grooved on outer margin; endopodite inserted proximally to exopodite.

Male sexual characters: Pereopod I (fig. 22) without specializations; ischium VII (fig. 23) with sternal margin slightly convex. Pleopod-exopodite I (figs. 24, 25) with posterior lobe almost transversal, quadrangular, its outer lobe denticulate; angle between basal and posterior lobe acute; endopodite (figs. 26, 27) with apical part thickset, a little bent outwards, armed medially with a row of spines and a series of transversal ridges, laterally with a row of small triangular "teeth". Pleopod II (fig. 28): Exopodite without respiratory area, endopodite thickset, longer than exopodite.

Remarks: *C. striata* is very close to *C. albofasciata* Arcangeli, 1950 and *C. longiantennata* Schmalfuss & Ferrara, 1978. It differs from the former in: 1) the colour-pattern; 2) the telson with broadly rounded apex; 3) the absence of a brush of spines on carpus I in male; 4) shape of male pleopod I; 5) the absence of a respiratory area on pleopod-exopodite II. From the latter in: 1) the colour-pattern; 2) the telson with broadly rounded apex; 3) shorter antenna (in *C. longiantennata* surpassing pereon segment VII); 4) male pleopod-exopodite I with quadrangular, instead of triangular, posterior lobe; 5) the apex of male pleopod-endopodite I.

11. *Rennelloscia kohleri* Schmalfuss & Ferrara, 1978

Rennelloscia kohleri: SCHMALFUSS & FERRARA, 1978; 55, figs. 92—97; FERRARA & SCHMALFUSS in press.

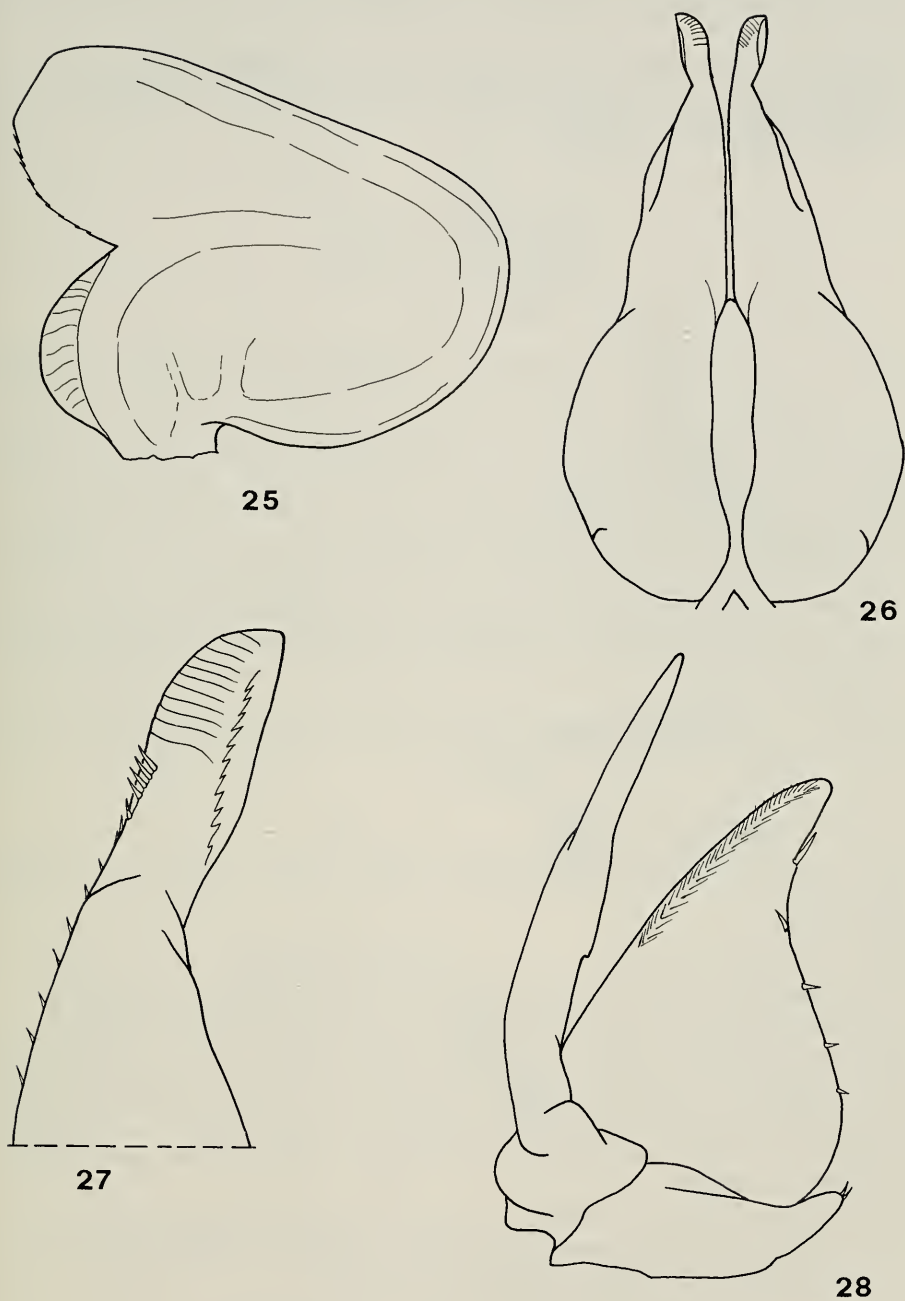
Material collected: 1 ♂, 1 ♀, S Edea, Nyong river, road to Kribi, forest, leaf-litter, 18. 2. 1980. — 4 ♀♀, Kribi, forest at beach, 19. 2. 1980.

Distribution: Southwest Cameroon and the island of São Tomé.

12. *Zebrascia buddelundi* Schmalfuss & Ferrara, 1978

Zebrascia buddelundi: SCHMALFUSS & FERRARA 1978: 61, figs. 109—116.

Material collected: ? ♀♀, Mount Cameroon, Buea, plantations, 7.—9. 2. 1980. — 4 specimens, S Edea, Nyong river, road to Kribi, forest, 18. 2. 1980. — 4 specimens,



Figs. 25—28. *Congophiloscia striata* nov. spec., ♂. — 25. Pleopod-exopodite I, adult; — 26. Pleopod-endopodite I, — 27. Apex of pleopod-endopodite I, — 28. Pleopod II.

Kribi, border forest-beach, 19. 2. 1980. — 21 specimens, Rocheur du Loup S Kribi, border forest-beach, 14.—17. 2. 1980. — 2 specimens, Rocheur du Loup S Kribi, mangrove, 16. 2. 1980.

Distribution: Southwest Cameroon (Mt. Cameroon region to Kribi region).

Remarks: Since there are no ♂♂ in the sample from Buea, the ascription of these specimens to this species is doubtful.

VI. Platyarthridae

Echinochaetus nov. gen.

Type-species: *Echinochaetus renatae* nov. spec.

Diagnosis: Back moderately convex; no interruption of the body-outline between pereon and pleon. Tergites equipped with conical tubercles arranged in transversal rows and supporting a big scale-spine. Cephalon with frontal margin slightly protruding on vertex; antennary sockets very well developed, conical, obliquely directed upwards; very small eyes (1 ocellus?) situated inside a tubercle. Pleon-epimera III—V well-developed. Telson very short, triangular. Antenna short and thickset with second joint of flagellum much longer than first. Mandible with molar process consisting of a tuft of plumose setae inserted on a conical tubercle. Maxillula: Exite with 4+6 (5?) teeth, all simple; endite with two subequal penicils. Maxilliped: Palpus with only two tufts of setae, apex of endite setose, bearing a penicil. Pereopods with flagellar dactylar seta. Pleopod-exopodites without respiratory structures. Uropod-endopodite inserted proximally to exopodite.

Remarks: The new genus is characterized among the Platyarthridae by the tergal ornamentation and the structure of cephalon.

13. *Echinochaetus renatae* nov. spec.

Material collected: 1 ♂, Buea: Tole, stream in dense vegetation, 10. 2. 1980 (holotype, SMNS T77).

Description:

Dimensions: 4.5 × 2.0 mm.

Coloration: Yellowish-brown, a little darker on pereon epimera and on pleon.

Tegumentary characters: Big scale-spines (fig. 29) supported by conical tubercles, diminishing in size from cephalon to telson, arranged as follows (fig. 30): Cephalon: 5 rows (the anterior on frontal margin, the last on the posterior margin of vertex); pereon-segment I: 5 rows; pereon segments II—VII: 3 rows, the median one being interrupted in the middle; pleon-segments I—V with a row on the posterior margin. Telson with a row on each side.

Cephalon (figs. 31, 32, 33): With frontal margin interrupted in the middle.

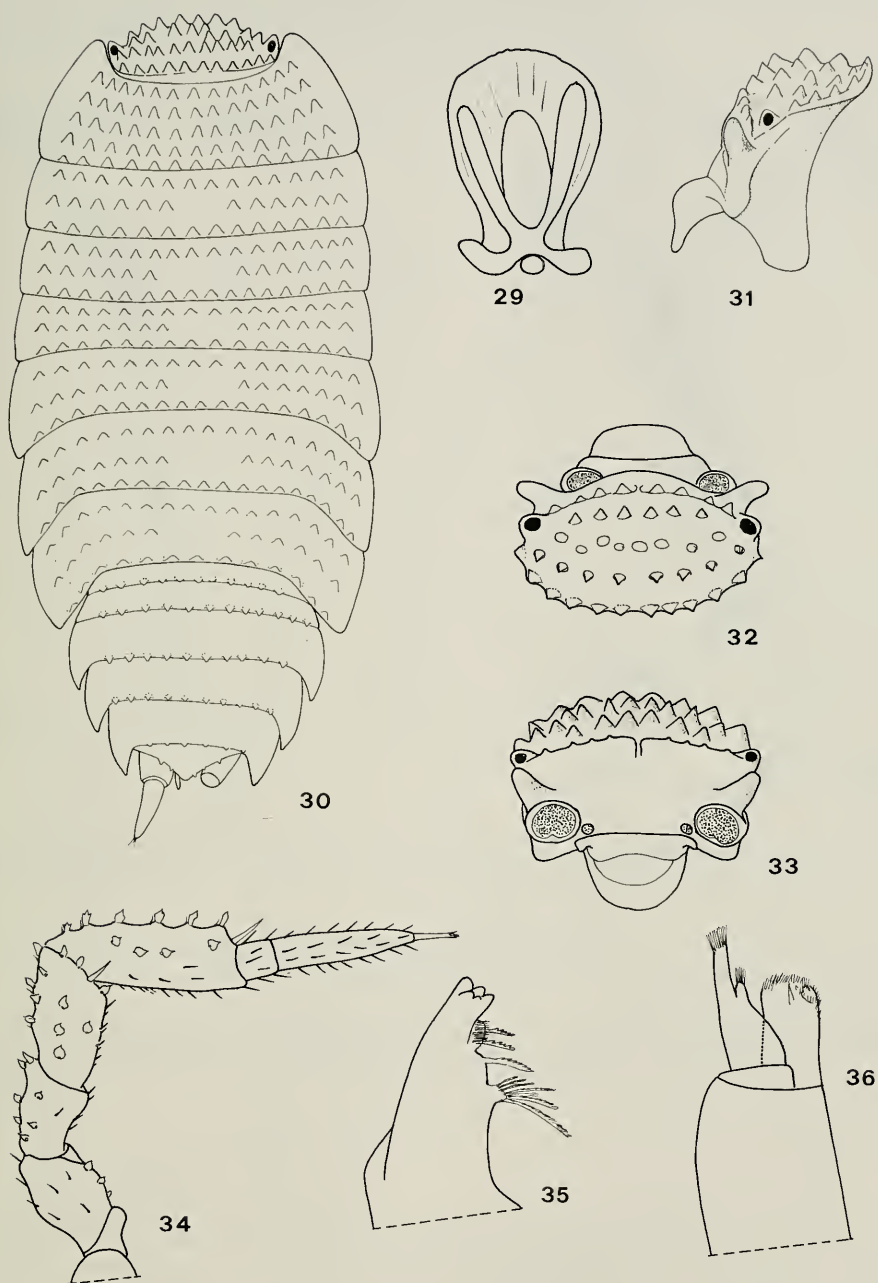
Pereon: Segments I—III with posterior margin straight, rounded angles; segments IV—VII with posterior margins excavated, acute angles.

Telson: With slightly concave sides and narrowly rounded apex.

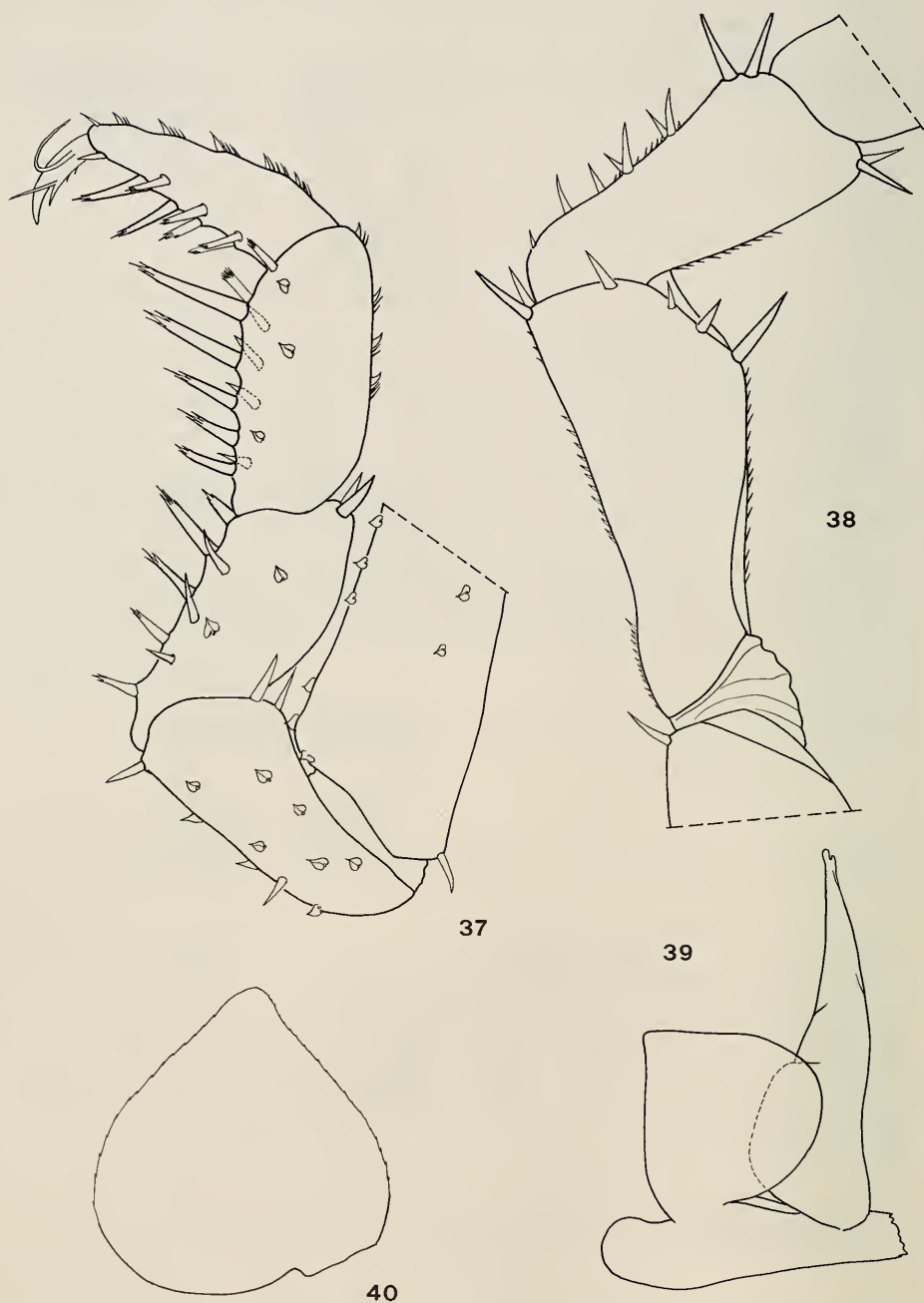
Antenna (fig. 34): Joints of peduncle equipped with triangular scale-spines; second segment of flagellum almost four times longer than first.

Mouthparts: Mandible see fig. 35, maxilliped see fig. 36.

Pereopod I (fig. 37): With sparse triangular scale-spines.



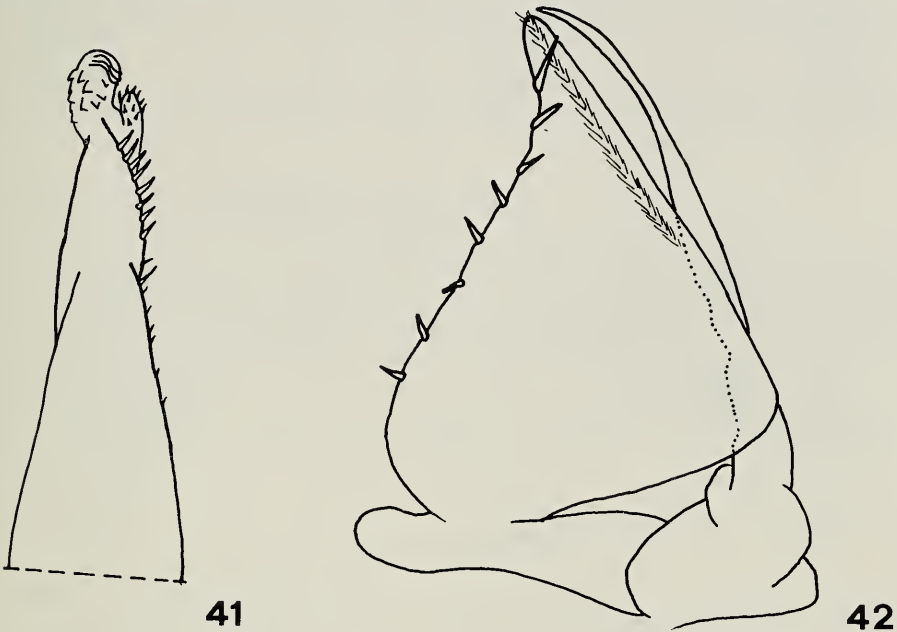
Figs. 29–36. *Echinochaetus renatae* nov. spec., ♂. — 29. Scale-spine, — 30. The whole animal, — 31. Cephalon, lateral; — 32. Cephalon, dorsal; — 33. Cephalon, frontal; — 34. Antenna, — 35. Mandible, — 36. Maxilliped.



Figs. 37—40. *Echinochaetus renatae* nov. spec., ♂. — 37. Pereopod I, — 38. Ischium and merus of pereopod VII, — 39. Pleopod I, — 40. Pleopod-exopodite I.

Pereopod VII (fig. 38): Ischium with two series of short spines on sternal margin.
 Pleopod I (figs. 39, 40, 41): Exopodite equipped with very short spines along the margins; endopodite with apex divided into two unequal lobes.
 Pleopod II (fig. 42): Exopodite with very short posterior lobe.

Derivatio nominis: The species is named for RENATE SCHLEGEL, who was a helpful companion during our excursion to Cameroon.



Figs. 41–42. *Echinochaetus renatae* nov. spec., ♂. — 41. Apex of pleopod-endopodite I, — 42. Pleopod II.

14. *Lanceochaetus camerunicus* Schmalfuss & Ferrara, 1978

Lanceochaetus camerunicus: SCHMALFUSS & FERRARA 1978: 69, figs. 131–134, 139–146.

Material collected: 2 specimens, Kribi, upper margin of the beach, 19. 2. 1980. — 27 specimens, Rocheur du Loup S Kribi, border forest-beach, under leaf-litter, 14.–17. 2. 1980.

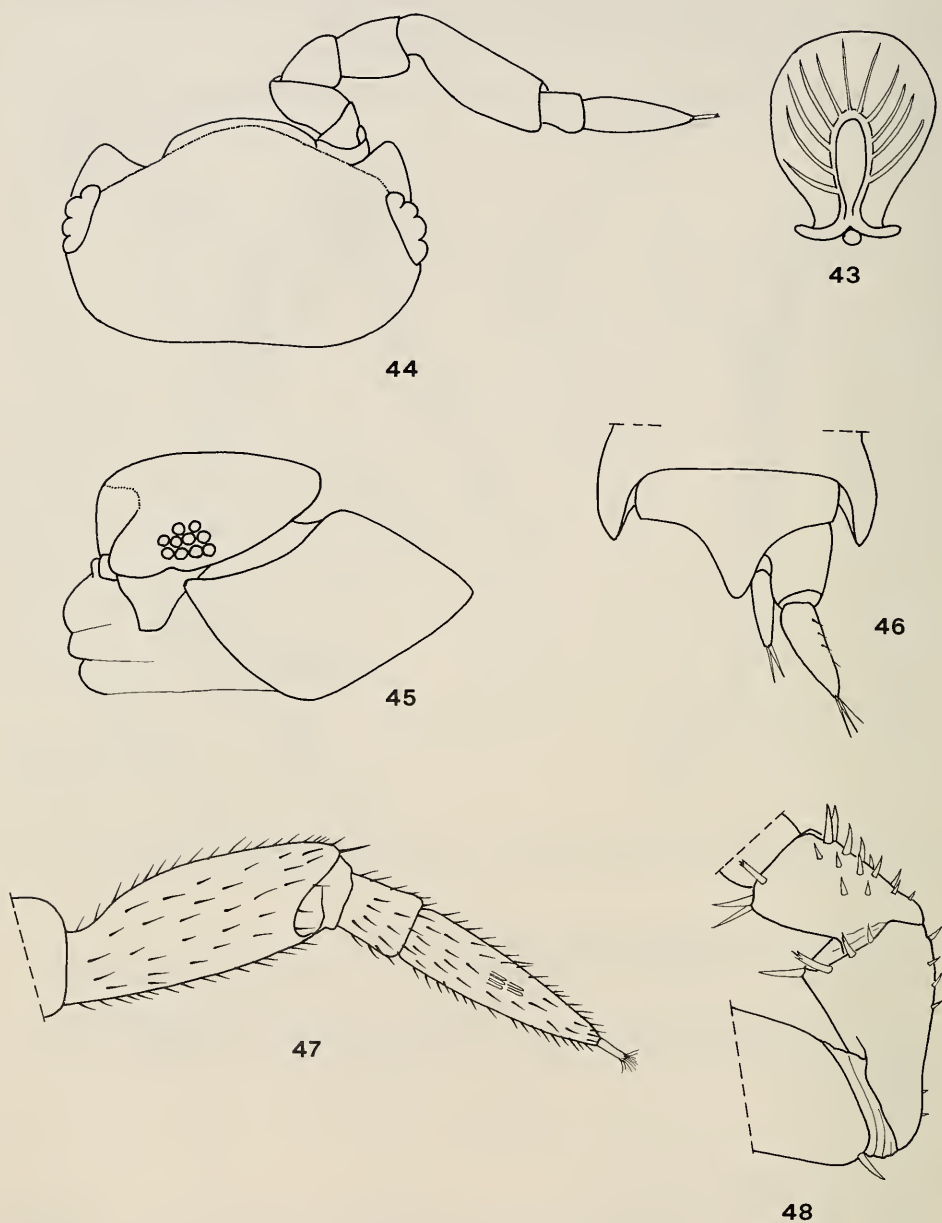
Distribution: Southwestern Cameroon.

15. *Trichorhina kribensis* nov. spec.

Material collected: 25 specimens, Rocheur du Loup, border between beach and forest under leaf-litter, 14. 2. 1980 (holotype ♂, SMNS T 83). — 4 specimens, Rocheur du Loup, border between beach and forest under leaf-litter, 17. 2. 1980. — 4 specimens, Kribi, upper margin of beach, 19. 2. 1980. — 12 specimens, Kribi, forest at beach, 19. 2. 1980.

Description:

Maximal dimensions: ♂ 2.8×1.2 mm; ♀ ovig. 3.2×1.3 mm.



Figs. 43—48. *Trichorhina kribensis* nov. spec. — 43. Scale-spine (♀), — 44. Cephalon and right antenna (♀), dorsal; — 45. Cephalon and pereon segment I (♀), lateral; — 46. Telson and right uropod (♀), — 47. Distal part of antenna (♂), — 48. Ischium and merus of pereopod VII (♂).

Coloration: Pale brown with the usual yellowish muscle spots.

Tegumentary characters: Tergites without granulations, back equipped with scale-like cuticle structures and large, oval scale-spines (fig. 43).

Cephalon (figs. 44, 45): With a triangular bulbosity on profrons; lateral lobes rounded, obliquely directed frontwards; frontal line missing; eyes well developed with 10 (in the largest specimens) ommatidia.

Pereon segments I—IV: With posterior margin straight.

Telson (fig. 46): With concave sides, narrow, triangular distal part; apex narrowly rounded.

Antenna (fig. 47): Short and thickset, densely covered with setae; second segment of flagellum almost three times longer than first and equipped with two series of aesthetascs.

Maxillula: Exite with 4+5 teeth, all simple.

Pereopods: With a long flagellar dactylar seta.

Uropod-protopodite: With a triangular depression on outer margin.

Male sexual characters: Pereopod VII (fig. 48) with ischium enlarged and merus equipped with several spines on sternal margin. Pleopod I (figs. 49, 50, 51): Exopodite ovate, medial and lateral margins denticulate; endopodite with pointed apex a little bent outwards; a row of spines on the medial margin and a tuft of apical setae are present. Pleopod II as in fig. 52.

Remarks: The new species is characterized by the large eyes, shape of telson and of male pleopod I.

VII. Trachelipidae

16. *Nagurus cristatus* (Dollfus, 1889)

Nagurus cristatus: SCHMALFUSS & FERRARA 1978: 80 (bibliography and previous records for Cameroon).

Material collected: 2 specimens, W Victoria, Isongo, upper part of sandy sea-shore, in palm-tree debris, 26. 1. 1980. — 28 specimens, Mount Cameroon, Buea, eucalyptus-forest, in leaf-sheaths of reed-like grass, 10. 2. 1980.

Distribution: Pantropical cosmopolitan, probably due to secondary transport by man.

VIII. Eubelidae

17. *Elumoides atlanticus* nov. spec.

Material collected: 1 ♀, Kribi, upper border of beach under leaf-litter, 19. 2. 1980 (SMNST 81).

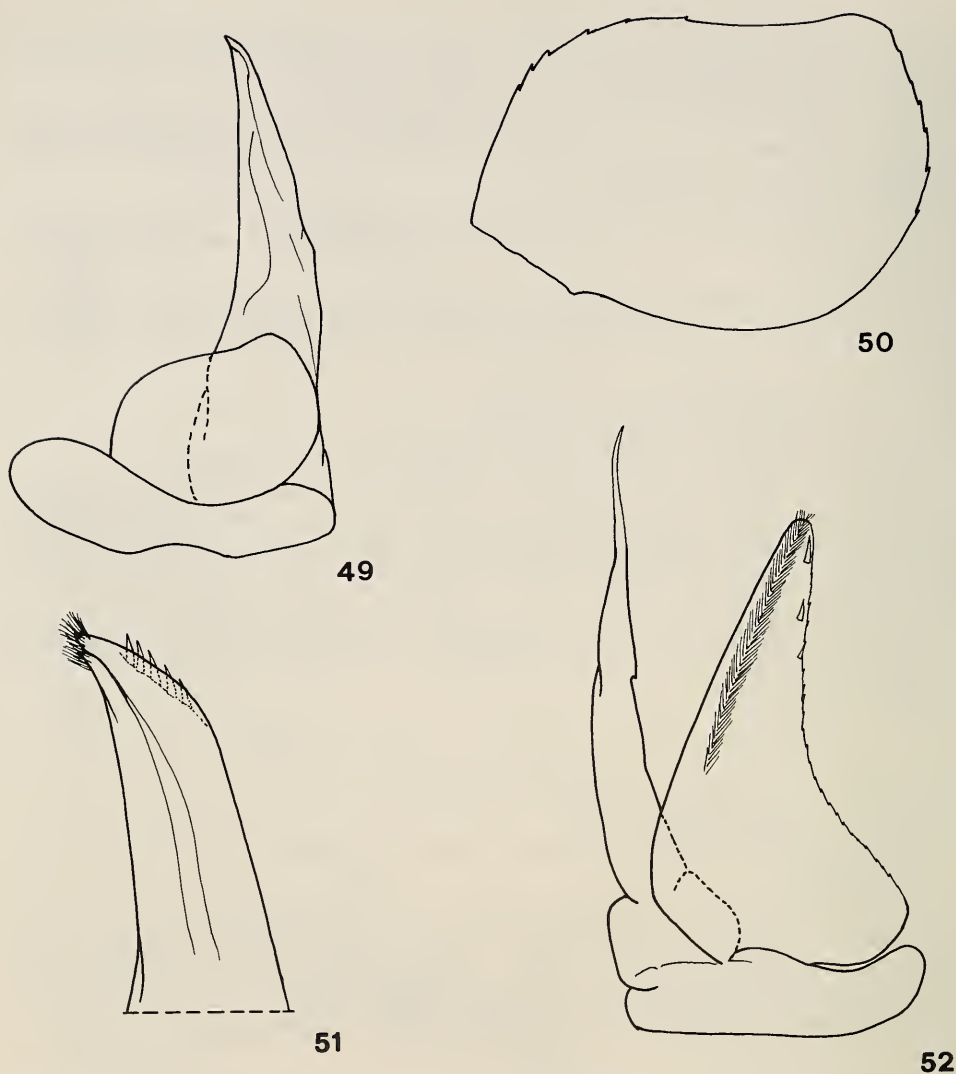
Description: Animals able to roll up into a complete ball; very steep epimera (fig. 53).

Maximal dimensions: Diameter of rolled animal 1 mm.

Coloration: Completely colorless including the eyes which are traceable only because of the lens.

Tegumentary characters: Back equipped with spatuliform scale-spines (fig. 54).

Cephalon (fig. 55): Of *Paraschizidium*-type, with a triangular scutellum in the pro-



Figs. 49—52. *Trichorhina kribensis* nov. spec., ♂. — 49. Pleopod I, — 50. Pleopod-exopodite I, — 51. Apex of pleopod-endopodite I, — 52. Pleopod II.

frons and large, rounded antennary sockets; no ridge across the head; eye consisting of a single large ocellus.

Pereon: Segment I (fig. 56) sulcus arcuatus not reaching posterior margin of segment; lateral margin thickened; the schisma with the two lobes protruding backwards to the same level. Segment II (fig. 57) ventrally with a big triangular tooth. Segment III (fig. 58) ventrally with a small tooth.

Pleon: Epimera of pleon segment V convergent.

Telson (fig. 59): With concave sides, rounded apex.



Fig. 53. *Elumoides atlanticus* nov. spec., ♀, the whole animal.

Antenna (fig. 60): Fifth joint of peduncle 1.5 times longer than flagellum; ratio of flagellum joints 1:2; the second with two—three aesthetascs.

Pleopod-exopodites: Without respiratory structures.

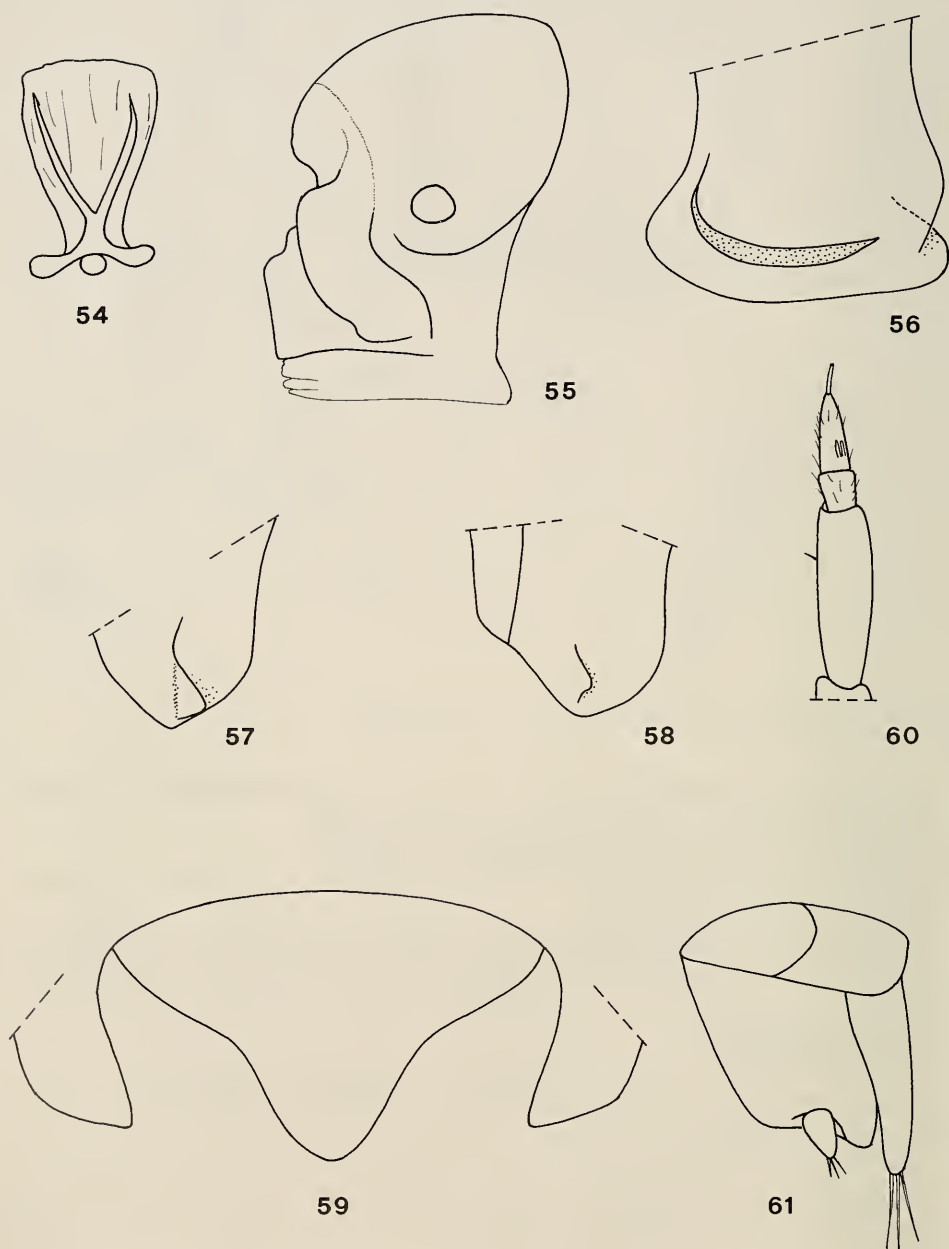
Uropods (fig. 61): Protopodite rectangular, distal margin with an indentation in which the exopodite is inserted.

Remarks: The specimen perfectly agrees with the diagnose of the genus *Elumoides* (TAITI & FERRARA 1983) which is characterized, among the Eubelids, essentially by the structure of the cephalon, closely resembling that of the Armadillidiidae (especially the genus *Paraschizidium*).

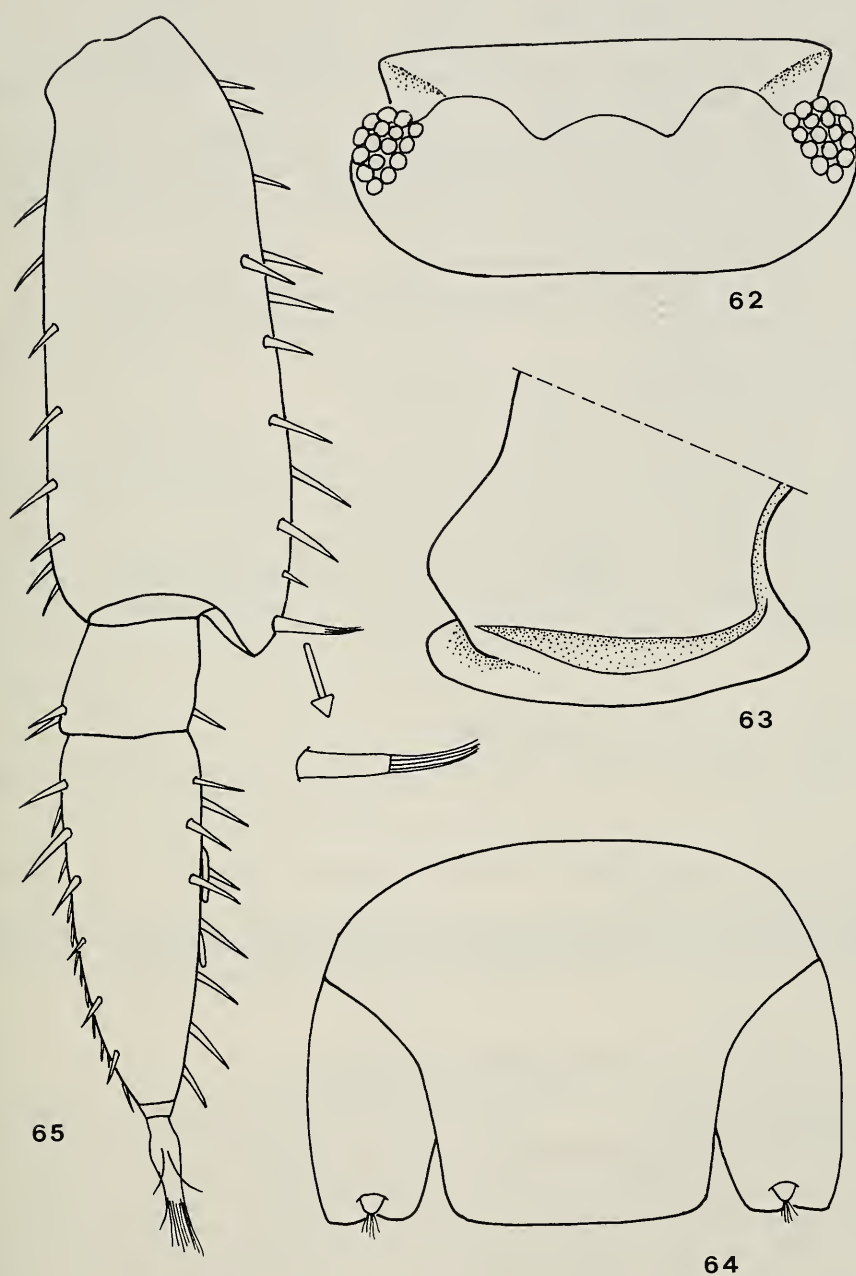
The new species is very akin to the only known species of the genus, *E. monocellatus* Taiti & Ferrara from the Mascarene Islands and Seychelles archipelago, from which it differs in: 1) the absence of pigment; 2) inner lobe of schisma protruding as far backwards as the outer lobe (it is shorter in *E. monocellatus*); 3) inner lobe of pereon segment II triangular instead of rounded and more developed; 4) telson with concave sides (they are straight in *E. monocellatus*); 5) uropod protopodite not so deeply notched on distal margin.

18. *Eubelum montanum* nov. spec.

Material collected: 1 ♂, Mount Cameroon, Buea, 1000 m, Tole, edge of forest, 10. 2. 1980 (holotype, SMNS T 67).



Figs. 54—61. *Elumoides atlanticus* nov. spec., ♀. — 54. Scale-spine, — 55. Cephalon, lateral; — 56. Epimeron of pereon-segment I, — 57. Epimeron of pereon-segment II, ventral; — 58. Epimeron of pereon-segment III, ventral; — 59. Telson, — 60. Distal part of antenna, — 61. Uropod.



Figs. 62—65. *Eubelum montanum* nov. spec., ♂. — 62. Cephalon, — 63. Epimeron of pereon-segment I, — 64. Telson and uropods, — 65. Distal part of antenna.

Description:

Dimensions: 5.0×2.2 mm.

Coloration: Dark violet-brown.

Tegumentary characters: Tergites densely covered with big scale-spines.

Cephalon (fig. 62): Profrons folded up on the vertex, bordered by a two-lobed ridge.

Eyes consisting of ca. 16 ommatidia.

Pereon: First epimera (fig. 63) with deep sulcus arcuatus widened in the middle. Inner lobe of schisma strongly protruding backwards, no groove on the thickened margin. Ridges on the ventral surface of second and third epimera. A very pronounced division between protergite and metatergite.

Pleon: Caudal margins of 5th epimera parallel.

Telson (fig. 64): Wider than long, pronounced distal part with straight sides.

Antenna (fig. 65): Flagellum with two segments, distal segment about three times longer than proximal one.

Pleopods: Pseudotracheae as in *Eubelum asperius*.

Uropods (fig. 64): As in *E. asperius*.

Male sexual characters: Ischium VII (fig. 66) with concave upper side. Carpus I—III without brush, only with a few long spines. Pleopod-exopodite I (fig. 67) with protruding posterior lobe, endopodite I see figs. 68, 69.

Remarks: The species belongs to the *asperius*-group (with two-jointed flagellum) and is very close to *E. squamatum* Arcangeli, 1950 and *E. squamosum* Ferrara & Schmalzfuss, in press. It differs from these species by the characters of the I. pereon-epimera and the shape of the male pleopod-exopodite I.

19. *Eubelum stipulatum* Budde-Lund, 1899

Eubelum stipulatum: FERRARA & SCHMALFUSS 1976: 14, figs. 11—23 (bibliography and previous records).

Material collected: 2 ♀♀, 4 juv., Mount Cameroon, Buea, Tole, river-bank with dense vegetation, 10. 2. 1980.

Distribution: Known only from Mount Cameroon and the Bambouto Mountains which are about 150 km NNE of Mount Cameroon.

20. *Mesarmadillo quadrimaculatus* Budde-Lund, 1899

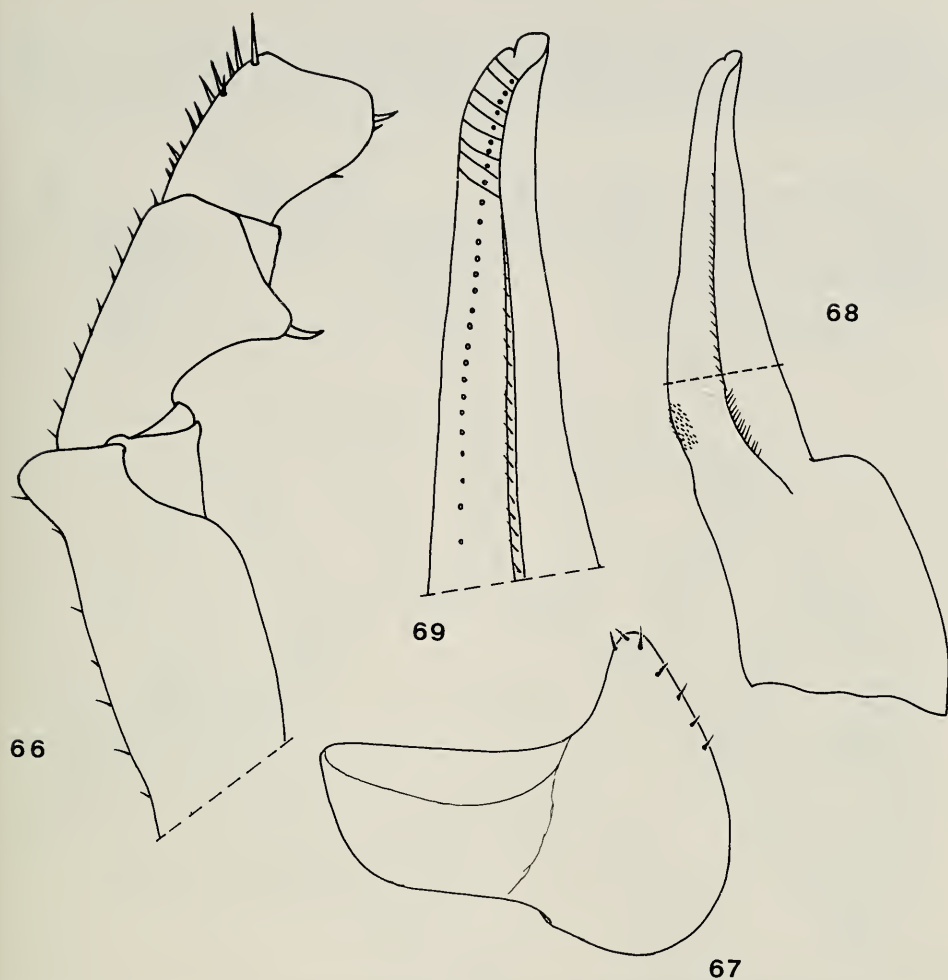
Mesarmadillo quadrimaculatus: FERRARA & SCHMALFUSS 1976: 29, figs. 62—69 (bibliography and previous records).

Parathelum insulanum: VERHOEFF 1942 a: 89, figs. 2—5, 9—10.

Material collected: 5 specimens, Mount Cameroon, Buea, Tole, plantations, 8.—10. 2. 1980.

Distribution: Known only from the Mount Cameroon region and the island of Fernando Po.

Remarks: The examination of the type material of *Parathelum insulanum* Verhoeff, 1942 (Munich) revealed that this "species" is a junior synonym of *Mesarmadillo quadrimaculatus*.



Figs. 66—69. *Eubelum montanum* nov. spec., ♂. — 66. Basis, ischium and merus of pereopod VII; — 67. Pleopod-exopodite I, — 68. Pleopod-endopodite I, — 69. Apex of pleopod-endopodite I.

Parelumoides nov. gen.

Type-species: *Parelumoides marginatus* nov. spec.

Diagnosis: Back moderately convex, animals with incomplete conglobation abilities. Tergites smooth, i. e. without tubercles or scale-spines. Cephalon with a triangular scutellum on profrons and very well developed rounded antennary sockets (very similar to those of the genus *Elumoides*); a continuous ridge across the head. Pereon-segment I with sulcus arcuatus margined only medially because of the lack of a lateral thickening; inner and outer lobe of schisma rounded. Transversal processes on the ventral surfaces of pereon-segments II and III. Telson triangular. Antenna with two-jointed flagellum. Endite of maxillula with two penicils. Pleopod-exopodites without respiratory structures. Uropod with terminal exopodite.

Remarks: The new genus differs from the closely related genus *Elumoides* by: 1) the more depressed body and the incomplete conglobation ability; 2) the presence of a ridge across the head; 3) the structure of the sulcus arcuatus and lack of lateral thickening.

21. *Parelumoides marginatus* nov. spec.

Material collected: 2 ♀♀, Kribi, upper border of beach, under leaf-litter, 19. 2. 1980 (holotype ♀, SMNS T 78).

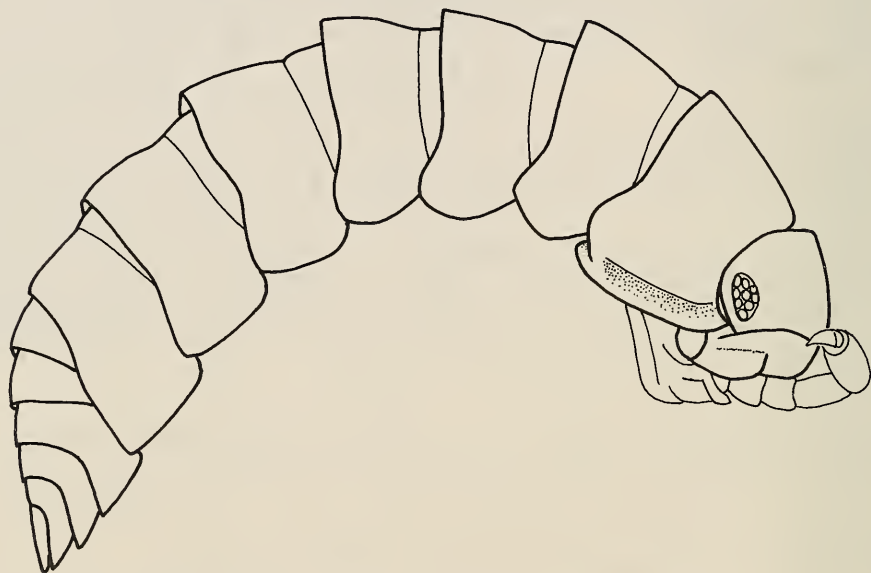


Fig. 70. *Parelumoides marginatus* nov. spec., ♀, the whole animal.

Description (fig. 70):

Dimensions: 2.6×1.0 mm (♀ with four embryos).

Coloration: Brownish with the usual yellowish muscle spots.

Tegumentary characters: Back equipped with sparse upright setae.

Cephalon (fig. 71): A continuous frontal margin is present; a triangular scutellum in the middle of profrons; antennary sockets large, vertical, directed frontally; eyes with 10 ommatidia.

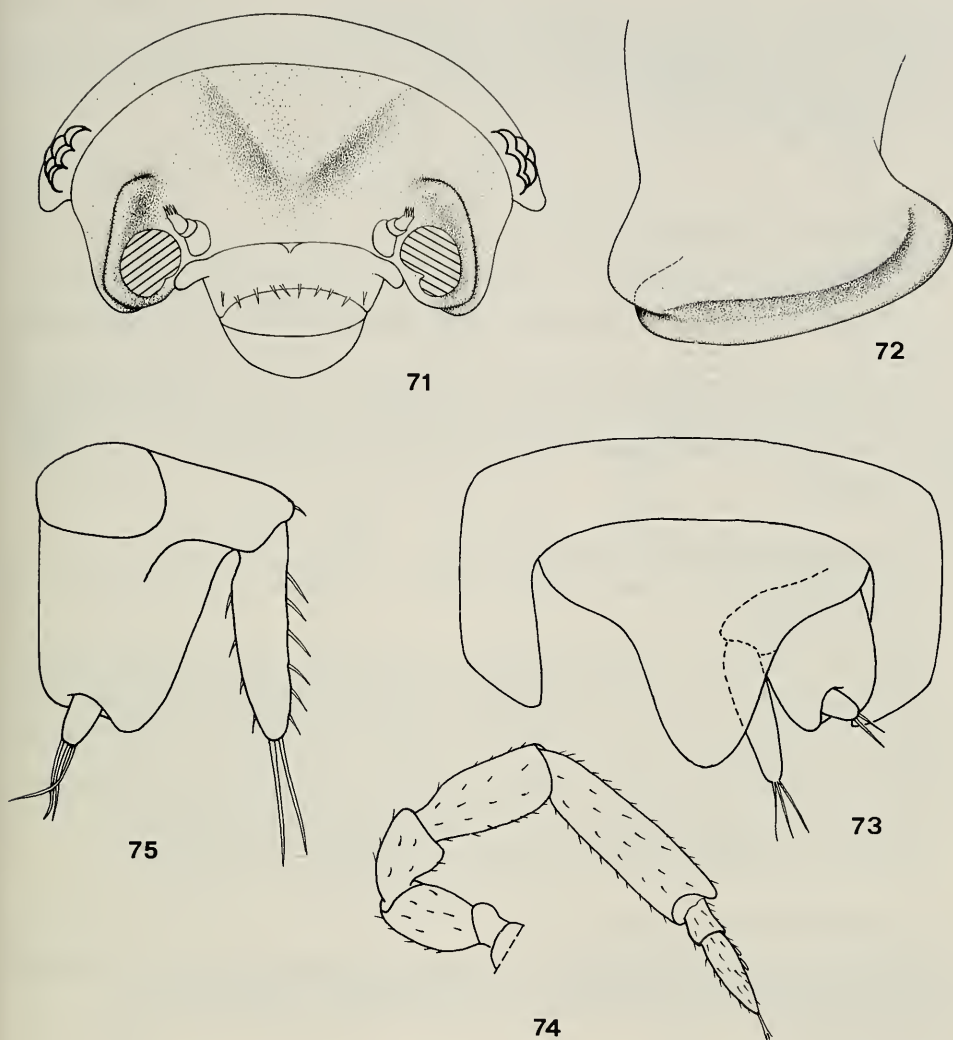
Pereon-segment I (fig. 72): Posterior margin slightly sinuose; outer lobe of schisma largely rounded; inner lobe protruding backwards as far the outer one.

Epimera of pleon segment V parallel.

Telson (fig. 73): With concave sides, rounded apex.

Antenna (fig. 74): Fifth joint of peduncle longer than flagellum; second segment of flagellum twice as long as first and bearing some aesthetascs.

Uropod (fig. 75): Protopodite with lateral margin convex, exopodite apically inserted.



Figs. 71–75. *Parelumoides marginatus* nov. spec., ♀. — 71. Cephalon, frontal; — 72. Epimeron of pereon-segment I, — 73. Telson and right uropod, — 74. Antenna, — 75. Uropod.

22. *Periscyphops bizonatus* Budde-Lund, 1899

Periscyphops bizonatus: FERRARA & SCHMALFUSS 1976: 43, figs. 114–123 (bibliography and previous records).

Material collected: 138 specimens, Mount Cameroon, Buea, ± 1000 m, cultivated land, 1.–10. 2. 1980. — 73 specimens, Mount Cameroon, above Buea, 1200 m, “artificial” eucalyptus-forest with reed-like grass as undergrowth, 28. 1.–10. 2. 1980. — 2 specimens, S Edea, 1 km S Nyong river (road to Kribi), 13. 2. 1980. — 3 specimens, S Kribi, Rocheur du Loup, secondary mangrove behind coast-line, 16. 2. 1980. — 15 spec-

imens, Rocheur du Loup, primary rain forest near the coast, 16.—17. 2. 1980. — 3 specimens, Rocheur du Loup, limit beach-forest, 17. 2. 1980.

Distribution: SW-Cameroon and Fernando Po. Obviously a species of lowland forest, not present in the primary montane forest of Mount Cameroon.

IX. Armadillidae

23. *Cubaris murina* Brandt, 1833

Cubaris murina: SCHMALFUSS & FERRARA in press (former records from West Africa).

Material collected: 22 specimens, Duala, garden of Protestant Mission, 12. 2. 1980.

Distribution: Pantropical cosmopolitan, probably due to secondary introduction by man. In West Africa the species is known from Moanda at the mouth of the Congo (Zaire) and from Principe Island (Gulf of Guinea), so our material is the first record from Cameroon.

24. *Synarmadillo albinotatus* Budde-Lund, 1908

Synarmadillo albinotatus: FERRARA & SCHMALFUSS 1976: 101, figs. 357—363 (bibliography and previous records).

Material collected: 7 specimens, S Edea, Nyong river (road to Kribi), primary rain forest, 18. 2. 1980. — 12 specimens, S Edea, 1 km S Nyong river (road to Kribi), primary rain forest, 13. 2. 1980. — 1 specimen, S Kribi, Rocheur du Loup, primary rain forest, 17. 2. 1980.

Distribution: This rain-forest species is known only from the southwestern corner of Cameroon between the Nyong river and the surroundings of Campo.

Remarks: The biggest specimen of the new material (♀) is 12 mm long.

25. *Synarmadillo caecus* nov. spec.

Material collected: 1 adult ♀ with 6 eggs in marsupium, S Kribi, Rocheur du Loup, primary rain forest near coast, 17. 2. 1980 (holotype, SMNS T 71).

Description:

Dimensions: 3.0 × 1.3 mm.

Coloration: White, completely without pigmentation.

Tegumentary characters: Tergal parts with peculiar, very compact, mushroom-like scale-spines (fig. 76) (not on protergites II—VII). On the anterior parts of the metatergites these scale-spines are arranged in longitudinal rows very similar to the situation in some species of *Platyarthrus* (SCHMALFUSS 1977); on the posterior parts of the tergites the scale-spines are arranged irregularly.

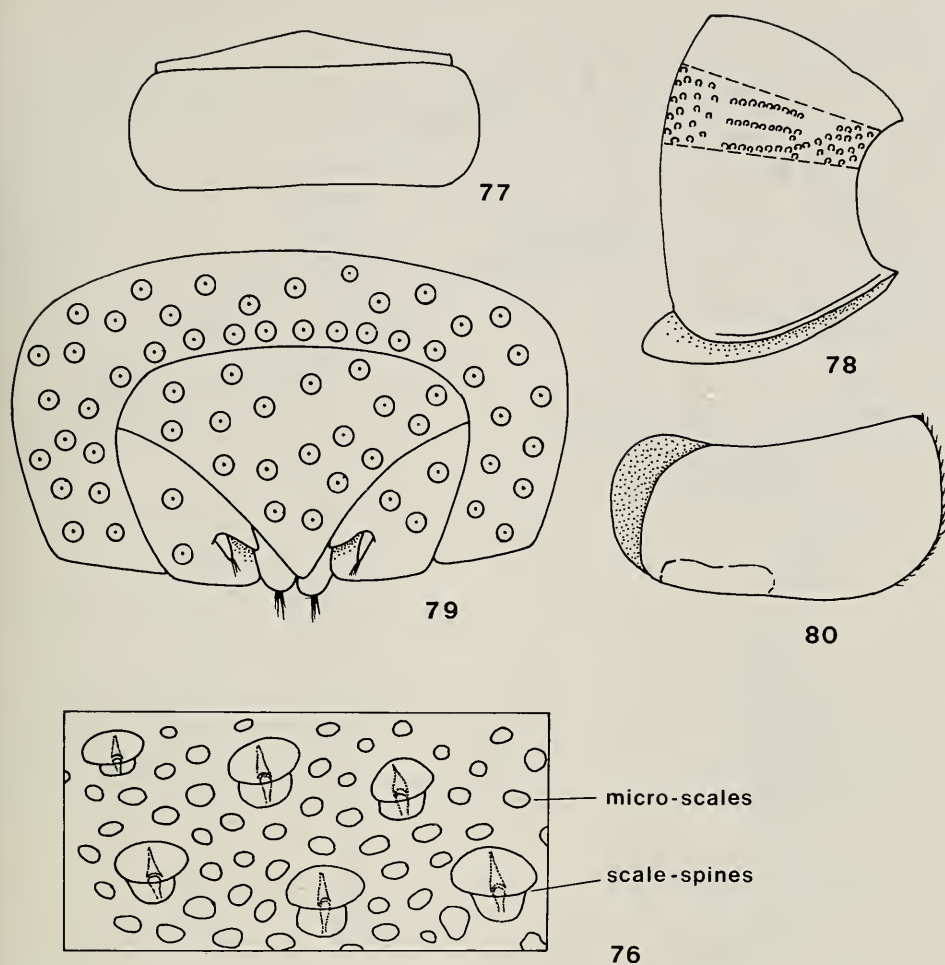
Cephalon (fig. 77): Profrons protruding in an angle. No visible eyes.

Pereon: Epimera I (fig. 78) with pronounced groove along the epimeral margin. Interior lobe of schisma triangular, protruding far backwards compared with the exterior lobe. Pronounced differentiation between protergites and metatergites.

Telson (fig. 79): Triangular, concave sides, pointed apex.

Antenna (fig. 81): Short and compact, comparable to that of *S. insulanus*.

Pereopods: Frail and slender. Pereopod V see fig. 82, pereopod VII identical.

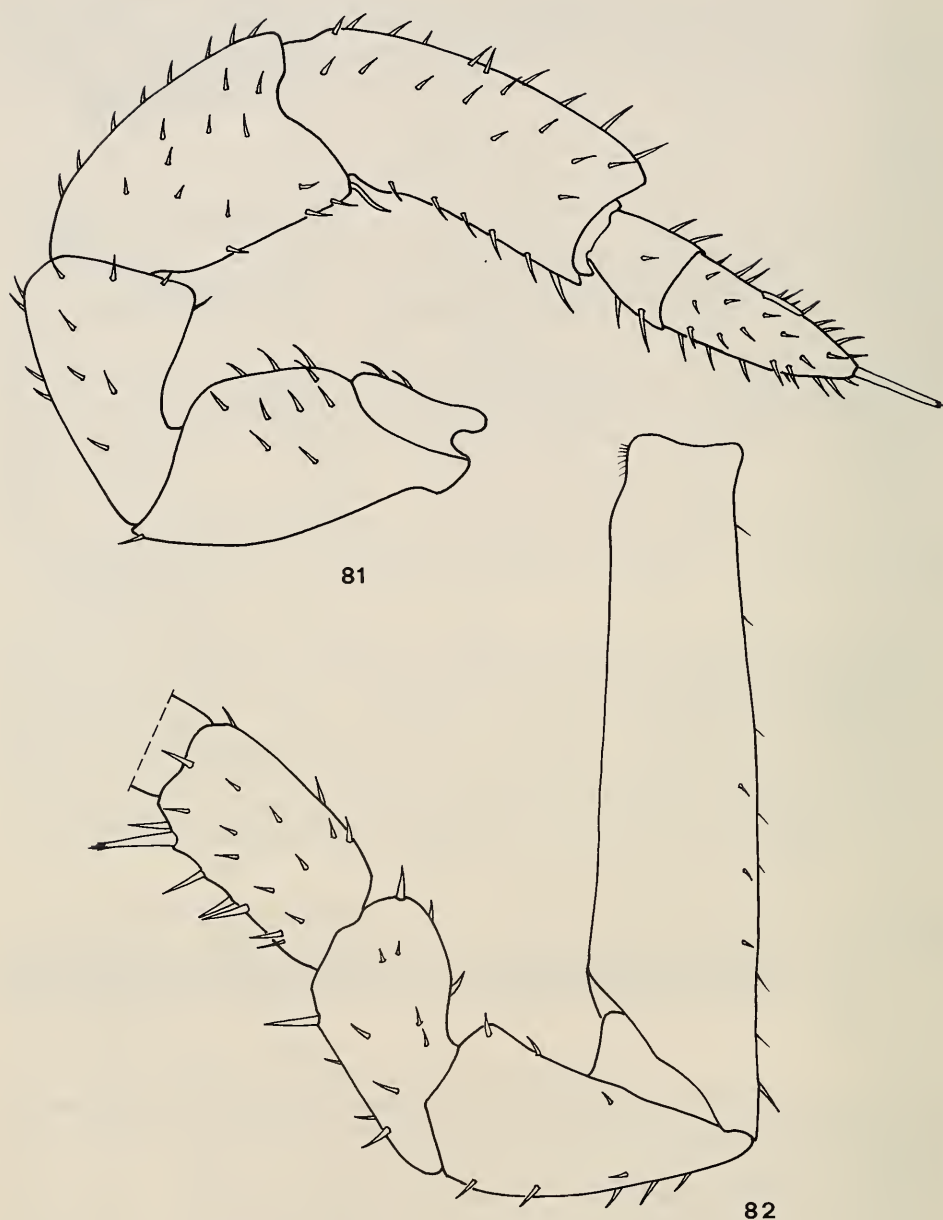


Figs. 76–80. *Synarmadillo caecus* nov. spec., ♀. — 76. Cuticular structure and scale-spines of pereon-tergite V, — 77. Cephalon, dorsal; — 78. Pereon-segment I, partly with scale-spines; — 79. Pleon-segment V, telson and uropods with scale-spines; — 80. Pleopod-exopodite II.

Pleopods: Exopodites (fig. 80) with well-developed respiratory areas (*Oniscus*-type) but no real pseudotracheae (these are reduced according to small size and endogean way of life).

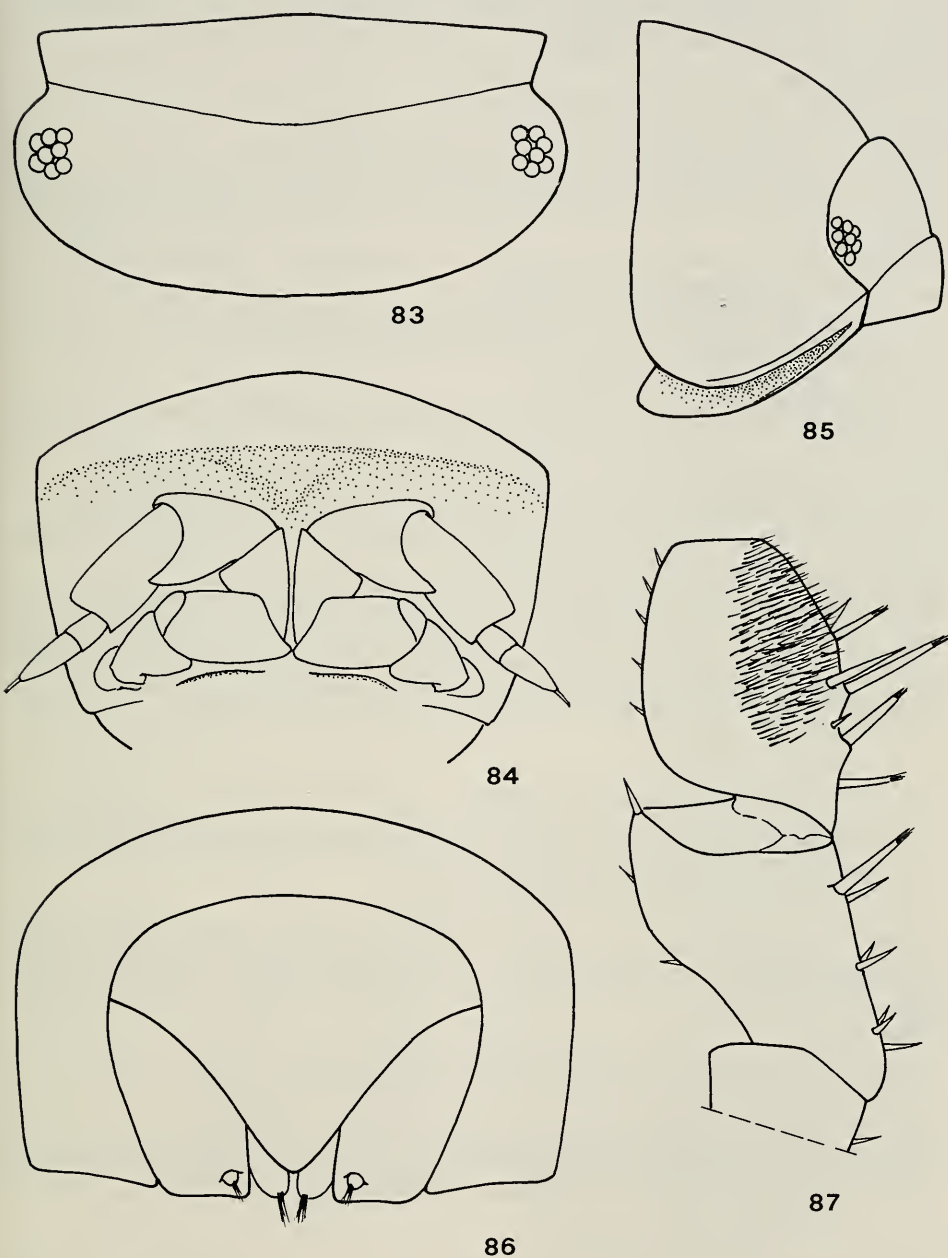
Uropods (fig. 79): Exopodites to be clapped into an oblique groove.

Remarks: This is the first record of a “ribbed” endogean isopod from tropical West Africa. All characters postulated for endogean species (SCHMALFUSS 1977: 161) are present: Size of adults below 5 mm; pereopods and antenna short and frail; no pigmentation; eyes reduced; cylindrical body-shape; small clutch size compared with epigean species. Thus the eco-morphological strategy of this species corresponds obviously to that of other ribbed species (Haplophthalminae, *Platyarthrus*, *Stenoniscus*, *Bathytropa* etc.). The longitudinal rows of scales-pines on the tergites function to minimize possible contact area with wet substrate to avoid adhesive forces (SCHMALFUSS 1977).



Figs. 81—82. *Synarmadillo caecus* nov. spec., ♀. — 81. Antenna, — 82. Pereopod V.

The new species differs from all other members of the genus by the following characters: 1) Small size (3 mm); 2) eyes reduced; 3) no pseudotracheae; 4) specific pattern of mushroom-like scales-pines on tergites.



Figs. 83–87. *Synarmadillo flavus* nov. spec., ♂. — 83. Cephalon, dorsal; — 84. Cephalon and antennae, frontal; — 85. Cephalon and pereon-segment I, lateral; — 86. Telson and uropods, — 87. Merus and carpus of pereopod I.

26. *Synarmadillo flavus* nov. spec.

Material collected: 1 ♂, SW-Cameroon, S Kribi, Rocheur du Loup, primary rain forest, 17. 2. 1980 (holotype SMNS T 68). — 3 ♀♀, same data. — 1 ♂, Rocheur du Loup, border beach-forest, 17. 2. 1980.

Description:

Maximal dimensions: 5.5×2.3 mm.

Coloration: Light reddish-yellow.

Tegumentary characters: Very small pointed scale-spines.

Cephalon (figs. 83, 84): Profrons folded up onto the vertex; eyes consisting of about 7 ommatidia.

Pereon: First epimera (fig. 85) with pronounced groove visible in lateral view. Schisma with broadly rounded outer lobe.

Telson (fig. 86): With concave sides and narrowly rounded apex, shorter than uropod-protopodites in situ.

Antenna (fig. 84): Short and thickset.

Pereopods: Pereopod I (fig. 87) as in other species of *Synarmadillo*, pereopod VII see fig. 88.

Pleopods: With pseudotracheae of the *Trachelipus*-type in all five exopodites.

Uropods (fig. 86): With the exopodite in the medio-caudal corner of protopodite.

Male sexual characters: No sexual specializations on pereopods. Pleopod-exopodite I see fig. 89, endopodite I see figs. 90, 91.

Remarks: This species seems closest to *S. insulanus* FERRARA & SCHMALFUSS, 1976; it differs from that species by 1) the small size; 2) the characters of the schisma; 3) the more acute apex of the telson; 4) the more thickset antenna; 5) the stouter male ischium VII; 6) the much shorter medio-caudal lobe of male pleopod-exopodite I. Furthermore, 7) the coloration is different.

27. *Synarmadillo globus* Budde-Lund, 1908

Synarmadillo globus: FERRARA & SCHMALFUSS 1976: 88, figs. 299–313 (bibliography and former records); SCHMALFUSS & FERRARA in press.

Kamerunillo sulcatus: VERHOEFF 1942 b: 86, fig. 68.

Material collected: 38 specimens, Mt. Cameroon, Buea, 1000 m, cultivated land in and around the town, February 1980. — 7 juv., Buea, cave I, 7. 2. 1980. — 29 specimens, Mt. Cameroon, above Buea, ca. 1200 m, "artificial" eucalyptus-forest, February 1980.

Distribution: Mount Cameroon region and Fernando Po. On Mt. Cameroon the species has been found up to 1200 m, on Fernando Po up to 1400 m.

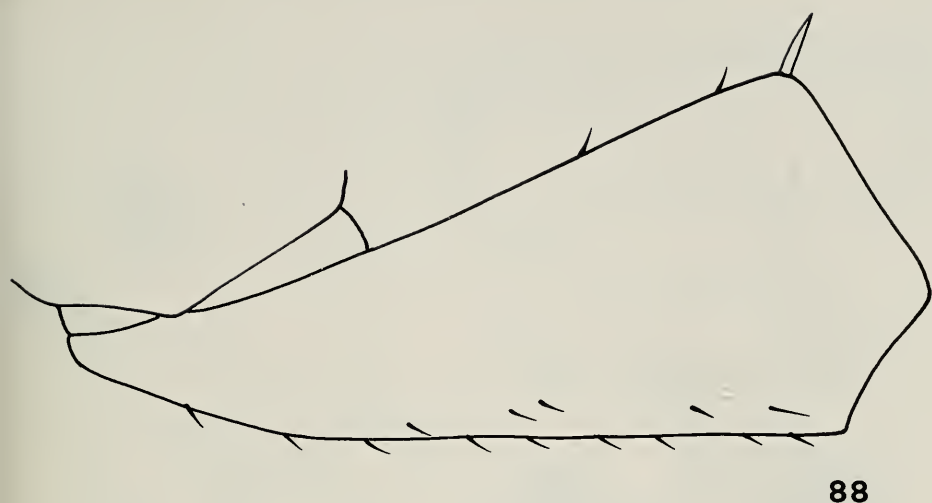
Remarks: After VERHOEFF's description (1942b) of *Kamerunillo sulcatus* from "Buca" (which is certainly a printing mistake for Buea) no differences could be discovered from *S. globus*, so we consider the two forms to be synonyms.

28. *Synarmadillo schlegeli* nov. spec.

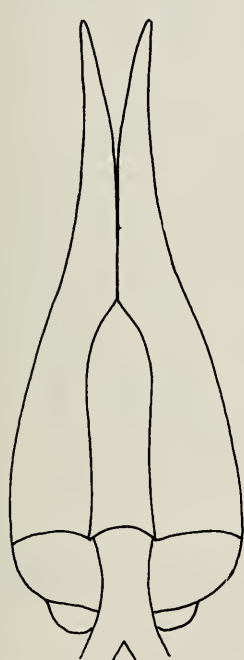
Material collected: 1 ♂, S Edea, 1 km S Nyong river (road to Kribi), primary rain forest, 13. 2. 1980 (holotype, SMNS T 72). — 1 ♀ without marsupium, same data.

Description:

Dimensions: ♂ 15.0×6.7 mm, ♀ 12.5×5.5 mm.



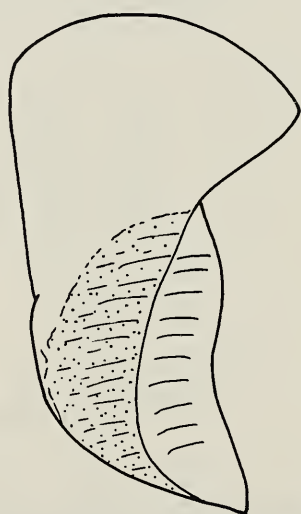
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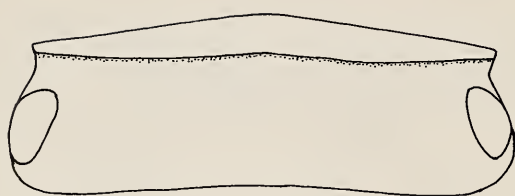
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Figs. 88–91. *Synarmadillo flavus* nov. spec., ♂. — 88. Ischium of pereopod VII, — 89. Pleopod-exopodite I, — 90. Pleopod-endopodite I, — 91. Apex of pleopod-endopodite I.

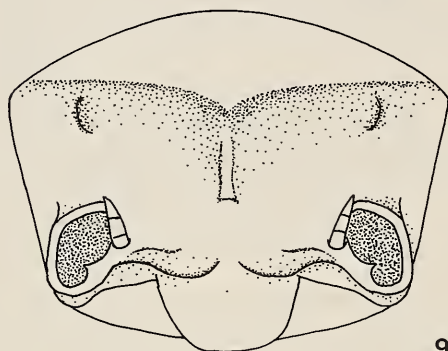
Coloration: Violet-brown with yellowish muscle-spots, ♂ darker. Distal half of antenna white.

Tegumentary characters: Smooth tergites, densely covered with tiny triangular scale-spines.

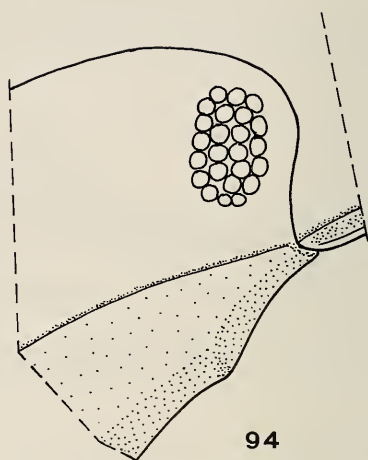
Cephalon (figs. 92, 93, 94): Profrons at an angle of about 120° towards vertex. Eyes



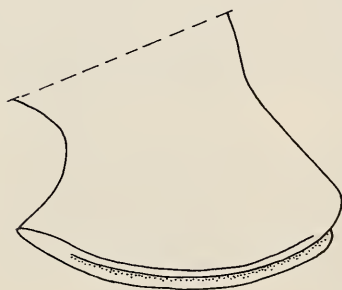
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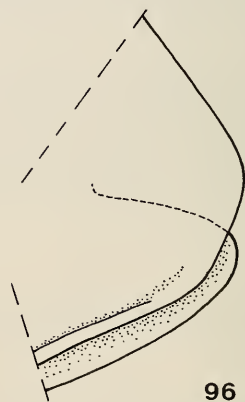
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Figs. 92—96. *Synarmadillo schlegeli* nov. spec., ♂. — 92. Cephalon, dorsal; — 93. Cephalon, frontal; — 94. Lateral part of cephalon in fronto-dorsal view, — 95. Epimeron of pereon-segment I, — 96. Posterior angle of pereon-epimeron I.

composed of about 20 ommatidia. In dorsal view a lateral notch protrudes in the frontal outline as it is the case in other species of the genus.

Pereon: I. epimera (figs. 95, 96) with narrow furrow, interior lobe of schisma shorter than exterior part.

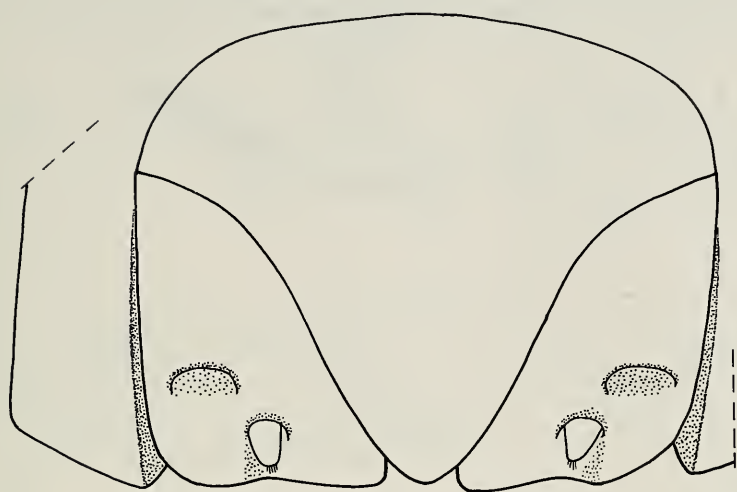
Telson (fig. 97): Concave sides, narrowly rounded apex.

Antenna (fig. 98): Proportions as in *S. cristifrons* (= *S. feai* Ferrara & Schmalfuss, 1976).

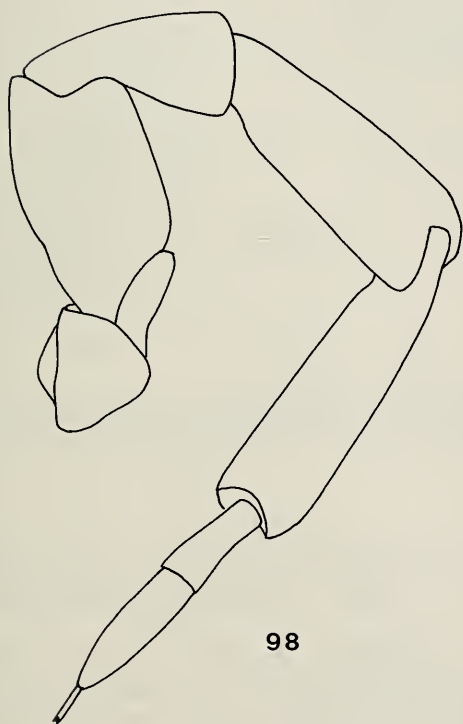
Pereopods: Carpus I as in *S. globus* (see FERRARA & SCHMALFUSS 1976: 90, fig. 309).

Pereopod VII see figs. 100, 101.

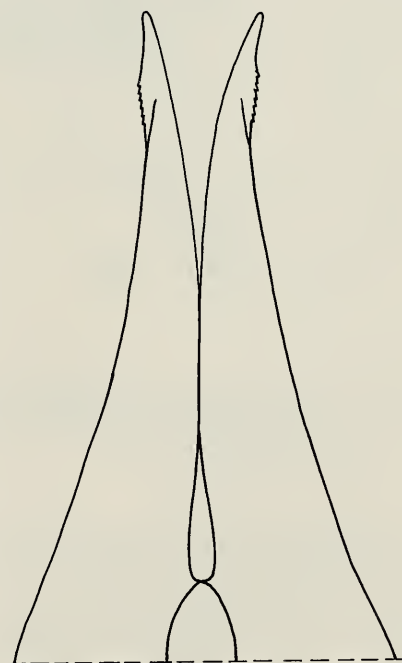
Pleopods: Pseudotracheae in all 5 exopodites as in most other species of the genus.



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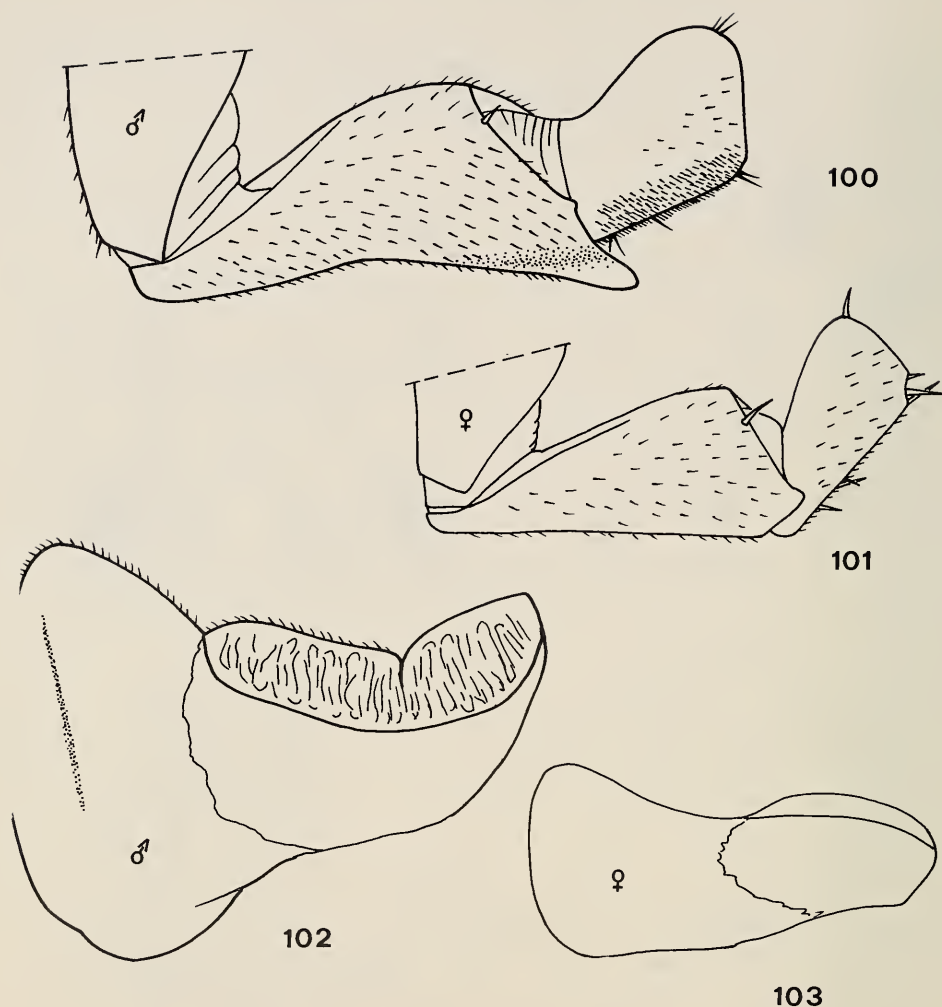


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99

Figs. 97—99. *Synarmadillo schlegeli* nov. spec., ♂. — 97. Telson and uropods, — 98. Antenna, — 99. Apices of pleopod-endopodite I.

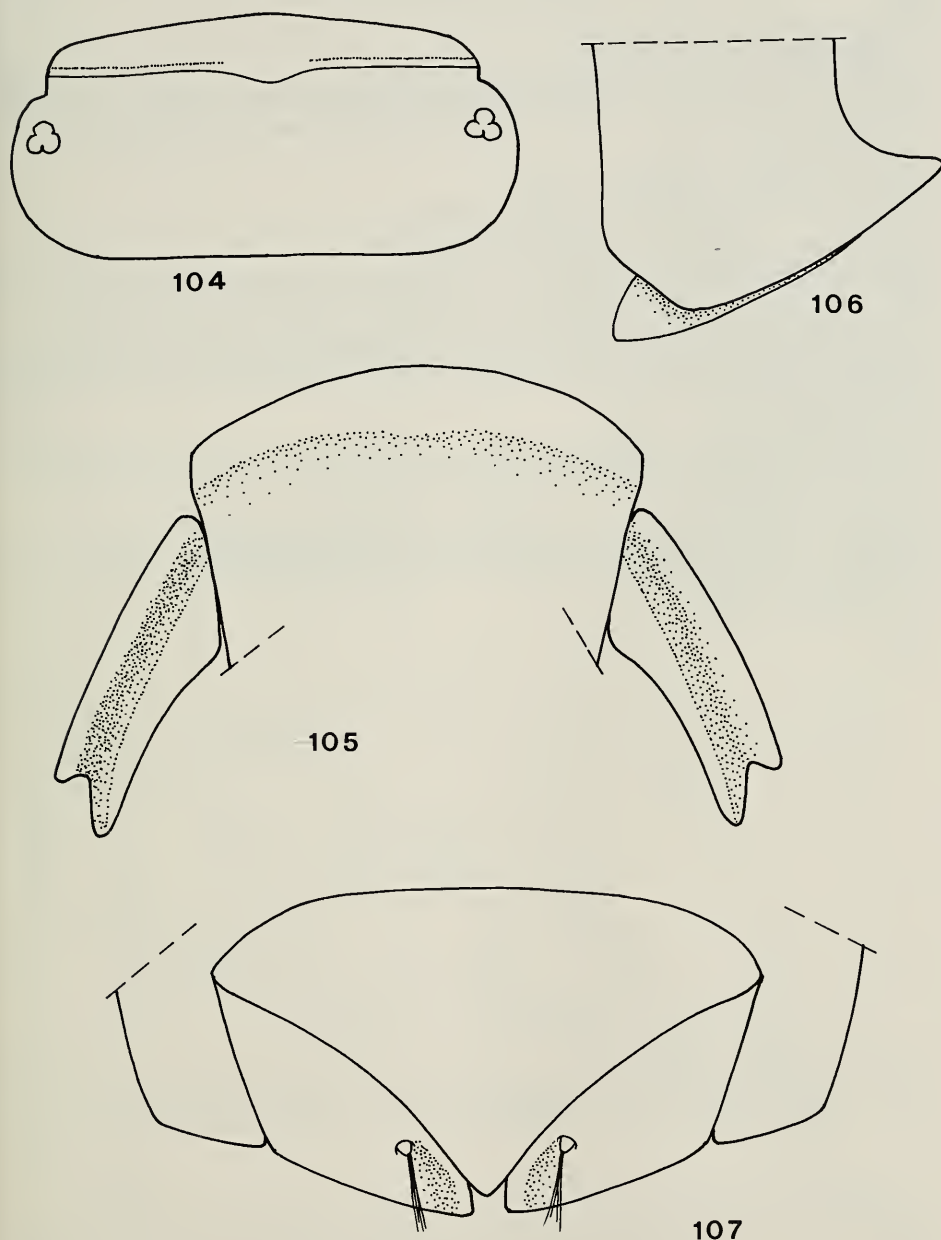


Figs. 100—103. *Synarmadillo schlegeli* nov. spec. — 100. Ischium and merus of pereopod VII (♂), — 101. Ischium and merus of pereopod VII (♀), — 102. Pleopod-exopodite I (♂), — 103. Pleopod-exopodite I (♀).

Uropods (fig. 97): Exopodite distally in the middle of protopodite; caudal margin of protopodite with pronounced sinuosity; very large and conspicuous glandular field laterally and distally of exopodite.

Male sexual characters: No sexual modifications of pereopod I. Pereopod VII (fig. 100) with big distal process on ischium, ventral side concave (straight in ♀, see fig. 101). Merus VII shorter than in ♀, ventral side equipped with a dense field of short setae (as in other species of the *globus*-group). Pleopod-exopodite I (fig. 102) with deep incision in the margin of the tracheal field, and with well-developed medio-caudal process (♀ see fig. 103). Pleopod-endopodite I (fig. 99) very slender compared with other species of the genus, apex with serrate outer margin.

Remarks: The species belongs to the *globus*-group (*S. globus*, *cristifrons* and *insulanus*) which is characterized by large size and rounded tip of telson. *S. schlegeli* differs from the other species of this group by: 1) the characters of the schisma; 2) the con-



Figs. 104—107. *Synarmadillo taitii* nov. spec., ♂. — 104. Cephalon, dorsal; — 105. Cephalon and pereon-segment I, ventral; — 106. Epimeron of pereon-segment I, — 107. Telson and uropods.

spicuous glandular field on the uropod-protopodite; 3) the shape of the male pleopod-exopodite I; 4) the conspicuous process of the male ischium VII.

Derivatio nominis: The new species is named after our friend and companion MARTIN SCHLEGEL, who assisted with enthusiasm during the field work.

29. *Synarmadillo taitii* nov. spec.

Material collected: 1 ♂, Mt. Cameroon, above Buea, Hut 1, 1850 m, mist forest, 5. 2. 1980 (holotype SMNS T 75). — 1 ♂, 2 ♀♀ without marsupium, same data.

Description:

Maximal dimensions: 2.8 × 1.2 mm.

Coloration: Dark violet-brown, males darker.

Tegumentary characters: Leaf-like scale-spines.

Cephalon (figs. 104, 105): Profrons at an angle of ca. 120° towards vertex; very well developed frontal line. Rudimentary eyes consisting of 2 or 3 small ommatidia.

Pereon: Epimera I (fig. 106) with exterior lobe truncated, interior lobe triangular; margin with pronounced groove not visible in lateral view. Epimera II and III with well developed inner lobes.

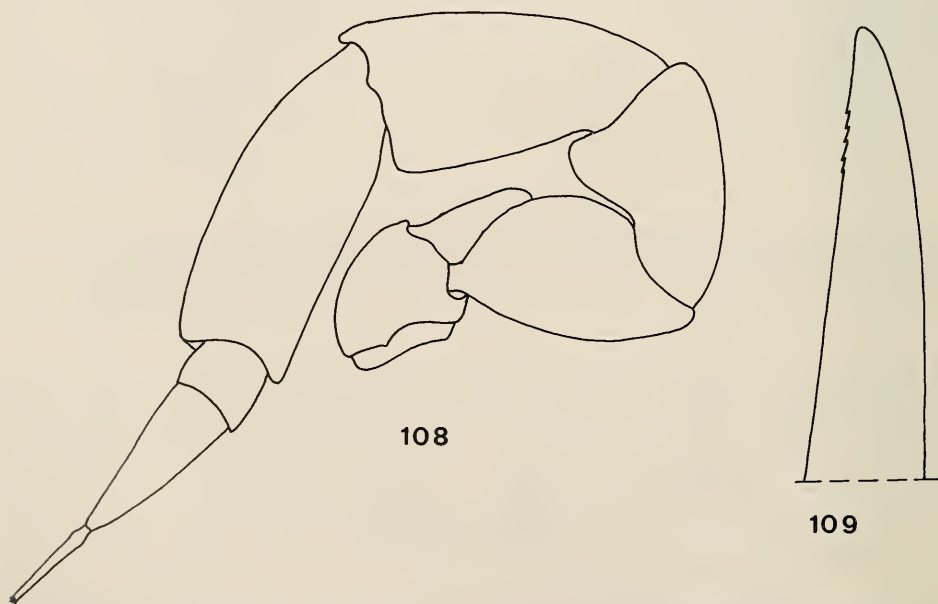
Pleon: Epimera V convergent.

Telson (fig. 107): Much wider than long, with slightly concave sides, apex pointed.

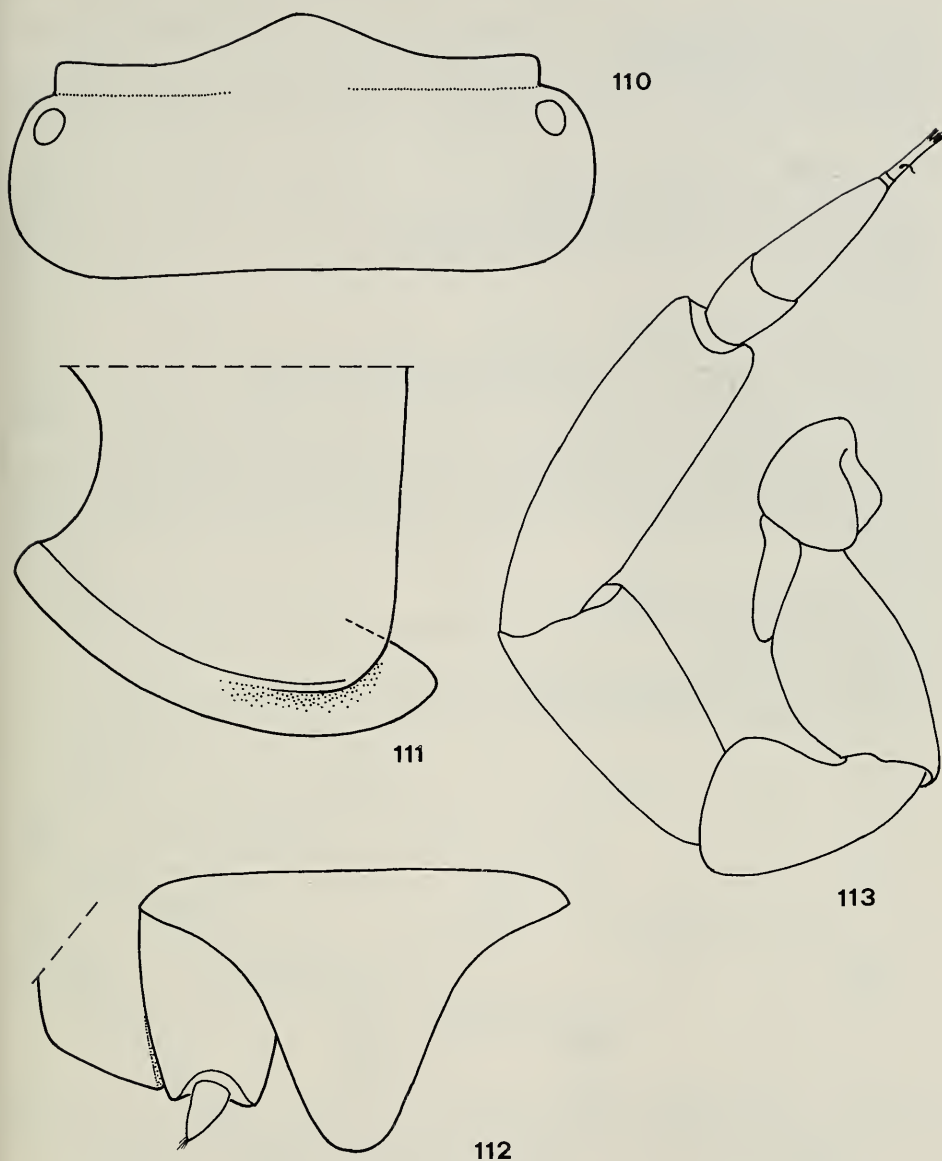
Antenna: See fig. 108.

Pereopods: Frail and slender as in other small species of the genus.

Pleopods: Exopodites without any respiratory structures according to small size of the animals and endogean life.



Figs. 108—109. *Synarmadillo taitii* nov. spec., ♂. — 108. Antenna, — 109. Apex of pleopod-endo-podite I.



Figs. 110—113. *Togarmadillo monocellatus* nov. spec., ♀. — 110. Cephalon, dorsal; — 111. Epimeron of pereon-segment I, — 112. Telson and left uropod, — 113. Antenna.

Uropods (fig. 107): Protopodite very broad, tiny exopodite with long terminal setae, which surpass the protopodite caudally and can be withdrawn into an oblique groove in the protopodite.

Male sexual characters: No sexual specializations on pereopods. Apex of pleopod-endopodite I (fig. 109) with serrate outer margin.

Remarks: This small endogean species may be the only endemic isopod of the montane part of Mount Cameroon.

Derivatio nominis: The species is named for our young colleague and friend Dr. STEFANO TARTI, Florence.

30. *Togarmadillo monocellatus* nov. spec.

Material collected: 1 ♀ with eggs in marsupium, Mt. Cameroon, Buea, 1000 m, small cave (cave I), 7. 2. 1980 (holotype SMNS T 74).

Description:

Dimensions: 4.0×1.5 mm.

Coloration: Brownish-yellow, eyes black.

Tegumentary characters: Tergites with leaf-like scale-spines.

Cephalon (fig. 110): Frons in dorsal view protruding in a pronounced angle. Eyes consisting of a single ommatidium.

Pereon: Epimera I (fig. 111) with schisma, the interior lobe of which is triangular and protruding backwards considerably compared with the exterior part. The anterior two thirds of the lateral "thickening" without groove and in vertical position as in *T. nigromaculatus*.

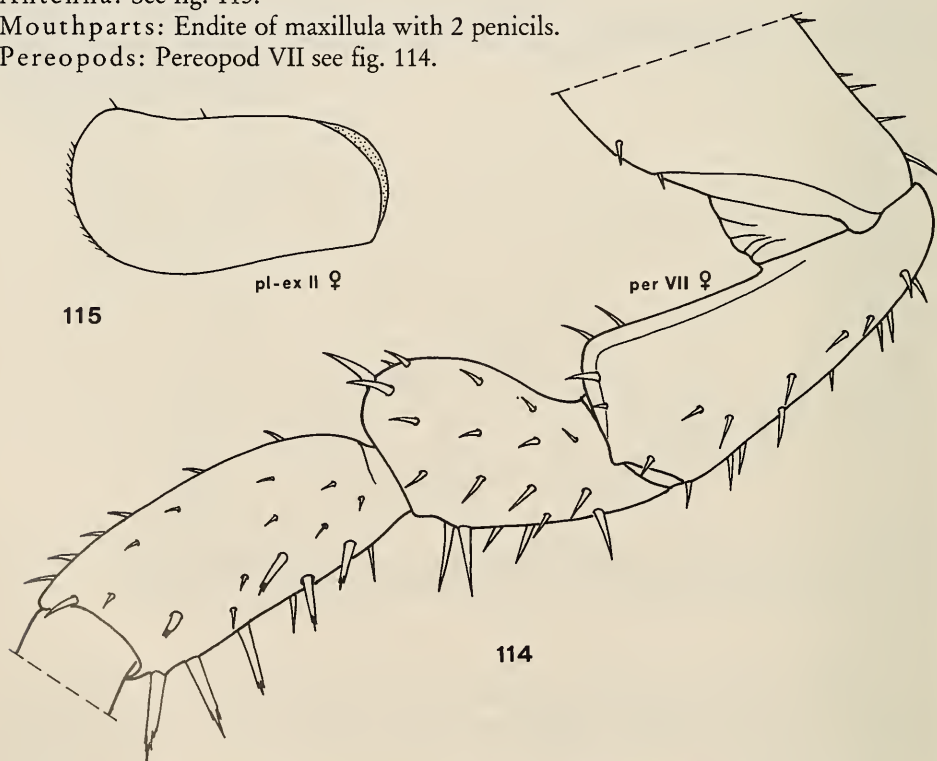
Pleon: Epimera V convergent.

Telson (fig. 112): Concave sides, rounded apex.

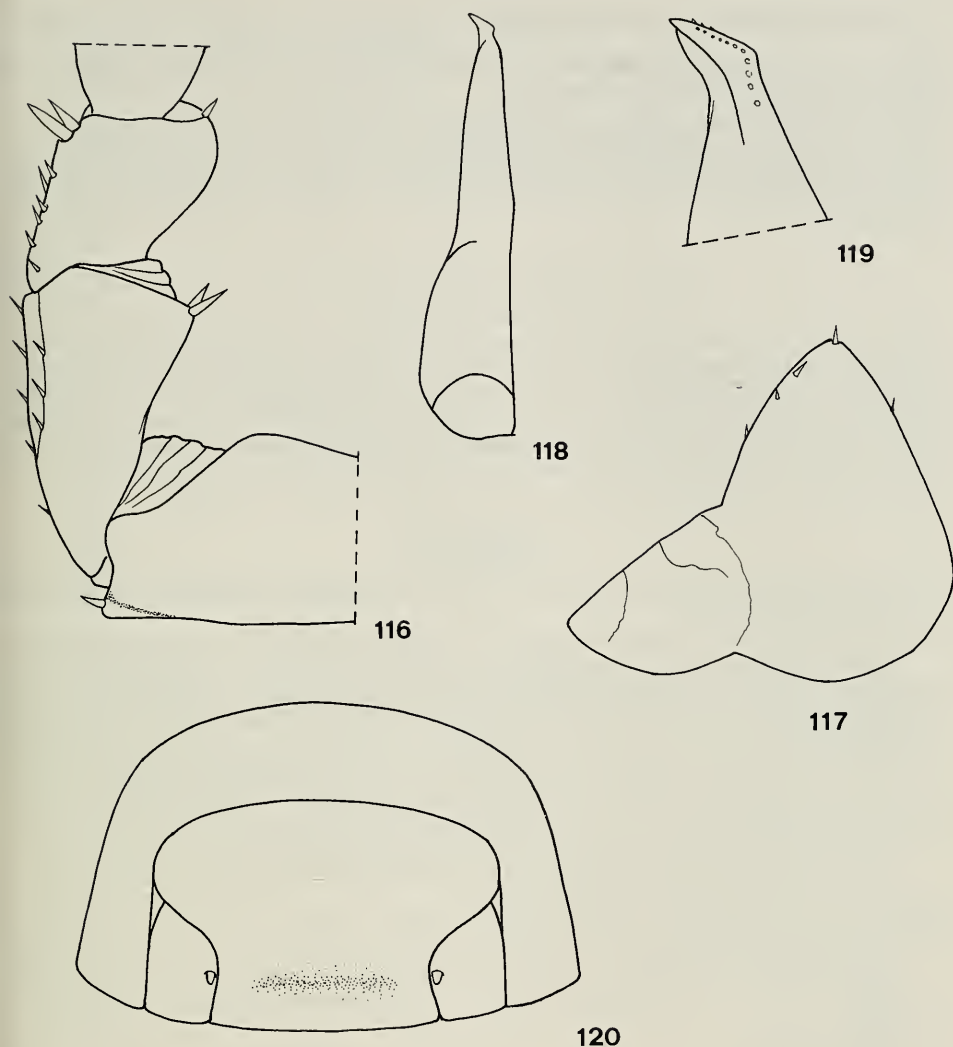
Antenna: See fig. 113.

Mouthparts: Endite of maxillula with 2 penicils.

Pereopods: Pereopod VII see fig. 114.



Figs. 114—115. *Togarmadillo monocellatus* nov. spec., ♀. — 114. Pereopod VII, — 115. Pleopod-exopodite II.



Figs. 116—120. *Tuberdillo bananae* (van Name, 1920), ♂. — 116. Pereopod VII, — 117. Pleopod-exopodite I, — 118. Pleopod-endopodite I, — 119. Apex of pleopod-endopodite I, — 120. Telson and uropods.

Pleopods: Exopodites with narrow respiratory areas, but according to small size without pseudotracheae. Exopodite II see fig. 115.

Uropods (fig. 112): With well-developed terminal exopodite.

Remarks: The ascription of this species to the genus *Togarmadillo* Schmalfuss & Ferrara (in press) is preliminary. The only other species of this genus, *T. nigromaculatus* (Hilgendorf, 1893) from Togo, is an epigeal form of 11 mm length, which possesses "normal" pseudotracheae in the pleopod-exopodites. *T. monocellatus* is probably a semi-endogean troglophilous species, but no real troglobiont, considering pigmentation and presence of eyes.

31. *Tuberdillobananae* (van Name, 1920)

Material collected: 5 specimens, Rocheur du Loup, border between beach and forest, under dead leaves, 14. 2. 1980.

Distribution: Zaïre, Angola; our material is the first record from Cameroon.

Remarks: These specimens agree well with VAN NAME's (1920) description. We only add the illustrations of the male characters (figs. 116, 117, 118, 119) and of the telson (fig. 120).

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Authors' addresses:

Dr. FRANCO FERRARA, Centro di Studio per la Faunistica ed Ecologia Tropicali del C.N.R., Via Romana 17, I-50125 Firenze (Italy); Dr. HELMUT SCHMALFUSS, Staatliches Museum für Naturkunde Stuttgart, Abteilung für Stammesgeschichtliche Forschung, Arsenalplatz 3, D-7140 Ludwigsburg (West Germany).

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