

The Pauropoda and Symphyla of the Geneva Museum VI.

Symphyla from Rhodesia and South Africa (Myriapoda)

by

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With 3 figures

ABSTRACT

Two Symphyla species are reported from Rhodesia for the first time: *Hanseniella dolosa* Ribaut and *H. incisa* n. sp. *Scolopendrellopsis spinosa* n. sp. is reported from South Africa. The two new species are described.

INTRODUCTION

A Symphyla material from the southern part of Africa has been studied. It consists of 8 specimens collected in South Africa by Pierre Strinati, Geneva, and 3 specimens from Rhodesia found by the late Robert Mussard, Geneva. These collections are of great interest since only a few records of Symphyla are known from this part of the continent.

The following species have earlier been recorded from South Africa: *Symphylella natala* Hilton (by HILTON 1938), *Hanseniella capensis* (Hansen) (by HANSEN 1903, ATTEMS 1928, ROCHAIX 1955, SCHELLER 1955) and *H. natalensis* Juberthie-Jupeau (by JUBERTHIE-JUPEAU 1972). From Rhodesia there is a single species known, *Hanseniella* sp. Rochaix (reported by ROCHAIX 1955). To these species are here added *Hanseniella dolosa* Ribaut and *H. incisa* n. sp. from Rhodesia and *Scolopendrellopsis spinosa* n. sp. from South Africa. The new species are described below.

SYSTEMATICS

Family SCOLOPENDRELLIDAE

Genus *Scolopendrellopsis* Bagnall, 1913Subgenus *Symphylellopsis* Ribaut, 1931***Scolopendrellopsis (Symphylellopsis) spinosa* n. sp. (Figs. 1-2)**

Holotype. Ad. ♂ from South Africa, Cape Prov., Muizenberg, alt. about 400 m, soil sample, 1975-08-02 (Leg. P. Strinati).

Paratypes. Cape Prov., Muizenberg, 1 juv. 10, same date as holotype; Table Mt., Wynberg Cave 8, soil sample, 1975-08-10, 1 ad. (♂) (Leg. P. Strinati).

Type specimens in the Museum of Natural History, Geneva.

Length. 0.77 (-1.07) mm.

Head. Head (1.3-) 1.4 times as long as broad with broadest part a little behind the mandible on a level with points of articulation of mandibles. The latter concealed under rounded lateral margins of head. Central rod broad but indistinct, particularly its anterior half; frontal branches vestigial, median ones lacking. Dorsal surface of head covered sparsely with short, almost straight, thin setae. Diameter of postantennal organ 0.5 of greatest diameter of 3rd antennal segment; length of tube between organ and head surface 0.7 of diameter of organ. Palp of first maxilla bud-like with 3 distal points, one of them distinctly longer than the others. Cuticle anteriorly with a sparse but rather distinct granulation; on central part of head there is also a dense, very delicate ground granulation; cuticle very coarse between postantennal organ and margin of head.

Antennae. Antennae with 16 segments; they are 0.3 (-0.4) of length of body. First segment thinner than following ones, as long as wide; it is as long as 2nd segment and its width 0.8 of the width of that segment; 6 thin setae in a single whorl, 2 of them on inner side. Inner setae longest, 1.2 times as long as outer seta and 0.5 of greatest diameter of segment. Second segment with 8 evenly distributed setae of the same length as inner setae of preceding segment. Longest setae of proximal segments 1.7 (-1.8) times as long as those of apical segment. Proximal part of antenna with one whorl of setae on each segment. Secondary whorl begins on ventral side of 10th (-11th) segment; it consists of a single seta except on segments 12-15 (12-14) which have 2. Bladder-shaped organs on 6 (-7) segments next to the apical one; one or 2 on segments (9-) 10-12, many on segments 13-15. Small spined organs, one on each segment, inserted on dorsal side of segments 2-5 and on some distal segments; central pillar of proximal organs thin, straight but that of distal organs thick, curved. Apical segment subglobular with rather few, short, thin setae. In depressions in the most apical surface there are 3 short spined organs with thin, curved spines and a thick, blunt, curved central pillar. Pubescence fine, shortest on first segment; on segments 2-15 it is strongest developed just behind the primary whorl of setae.

Tergites. First tergite rudimentary, very short, with 6 setae in a straight row. Second tergite complete; processes 1.6 times as long as broad; distance between processes 1.4 times as long as their length. Third tergite not divided, about as broad as preceding one with the ratios mentioned 1.4 and 1.2 respectively. In 4th tergite these ratios are

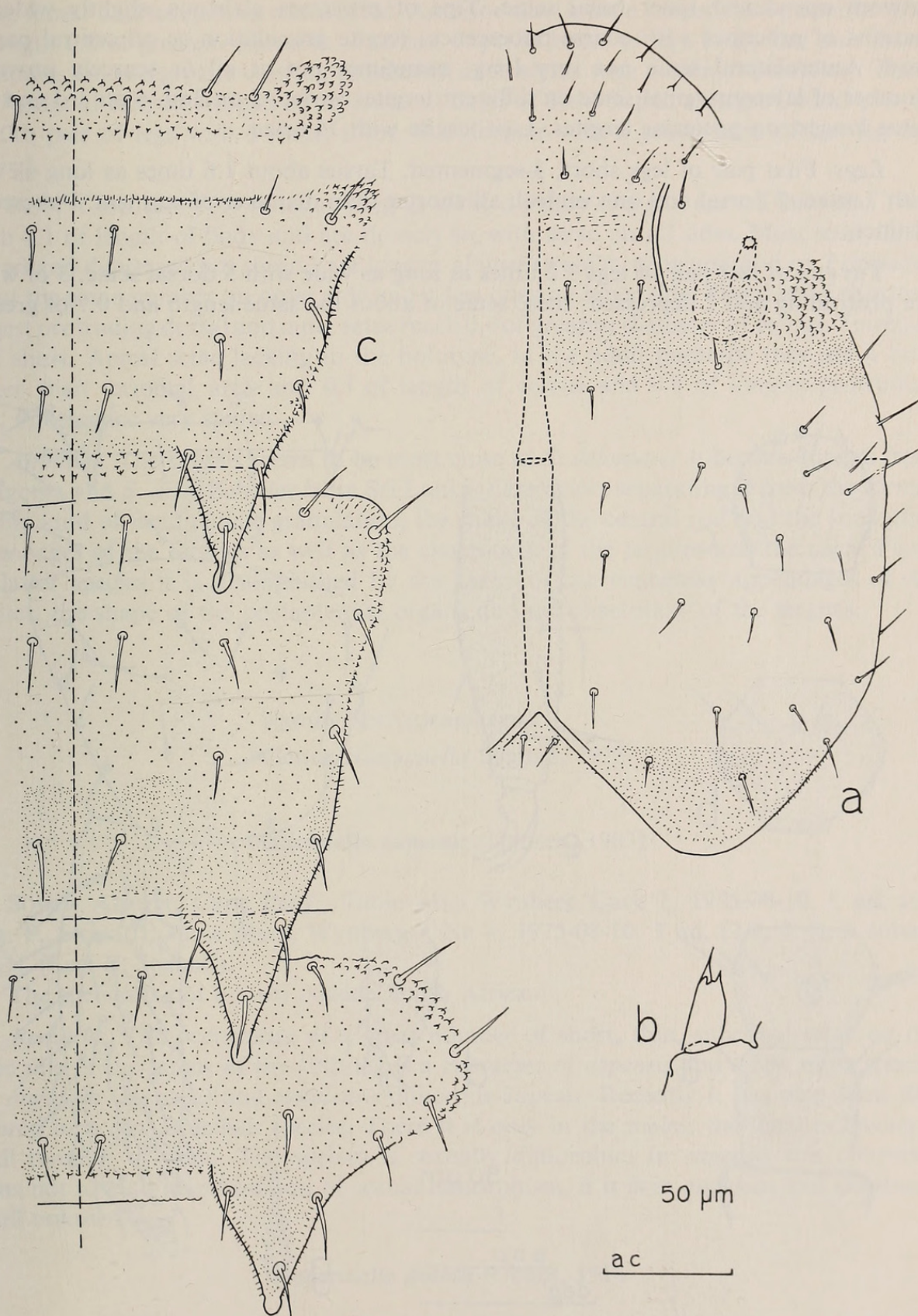


FIG. 1.

Scolopendrellopsis (Symphylellopsis) spinosa n. sp., holotype.
 a : head, right side, dorsal view (pubescence only partially drawn).
 b : palp of maxilla 1, ventral view. c : tergites 1-4, dorsal view.

about 1.1 and 1.6 respectively. Thirteen tergites with triangular processes; no seta between apical and inner basal setae. Tips of processes glabrous, slightly widened; margins of processes with coarse pubescence; tergite granulation as on central part of head. Anterolateral setae not very long, sometimes not at all or scarcely provable. Number of lateromarginal setae on different tergites varies: 5 on 2nd, 6 on 3rd and 4th. Setae longest on posterior tergites. Last tergite with 16 setae.

Legs. First pair of legs short, 3-segmented. Tarsus about 1.6 times as long as wide with 3 setae, 2 dorsal and one ventral, all shorter than diameter of segment. Pubescence distinct.

Tarsus of last pair of legs 3.2 times as long as wide with 5 dorsal setae, 3 of which are protruding and 2 depressed; these setae of about the same length and 0.7 of greatest

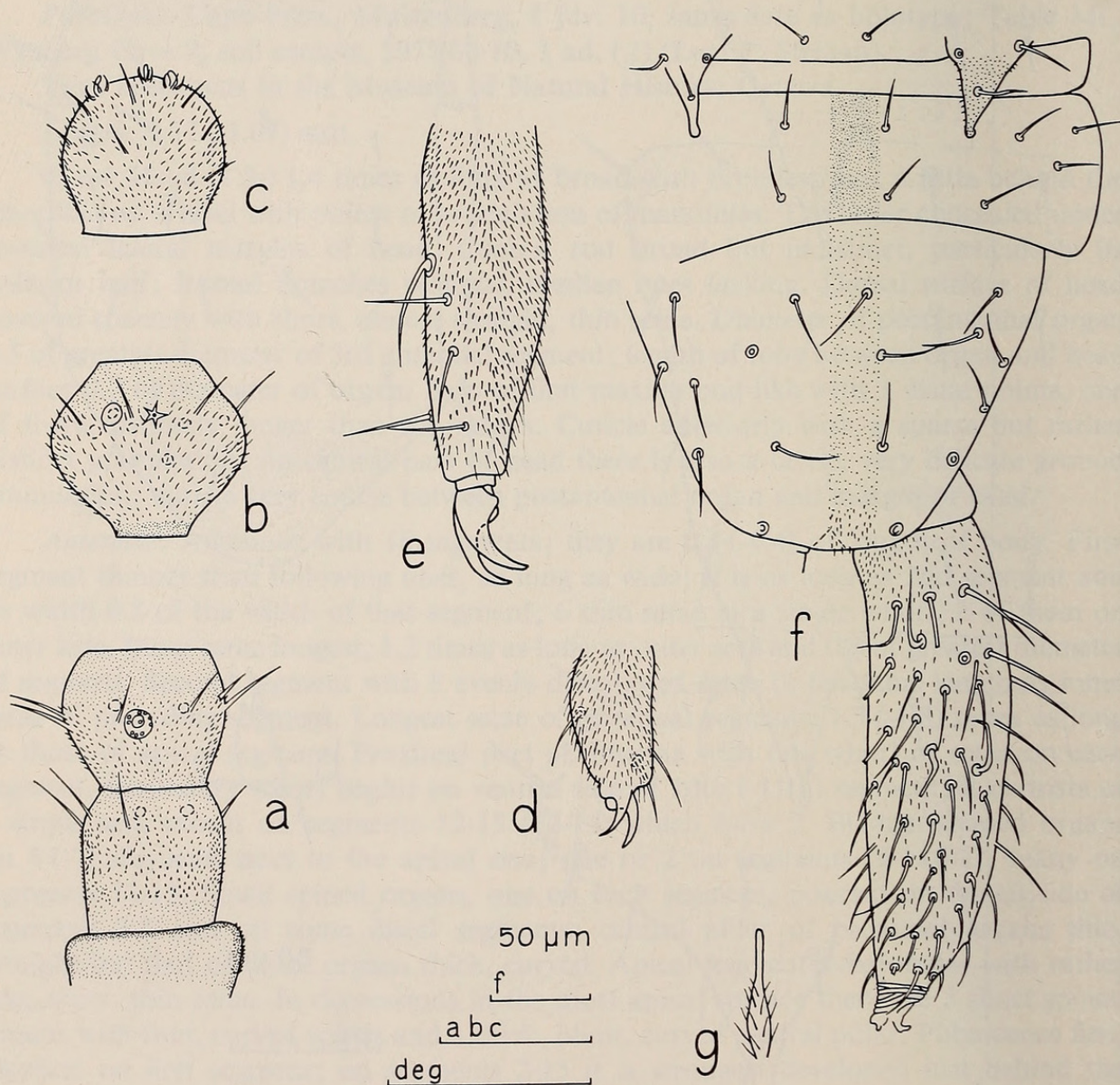


FIG. 2.

Scolopendrellopsis (Symphylellopsis) spinosa n. sp., holotype.

a-c: antenna, right side, dorsal view; *a*: proximal segments; *b*: segment 10; *c*: apical segment. *d*: leg 1, tarsus. *e*: leg 12, tarsus. *f*: posterior part of trunk (pubescence only partially drawn) and right cercus, dorsal view. *g*: stylus 12.

diameter of tarsus; one short seta is on distal half of ventral side; pubescence distinct. Tibia, femur and trochanter not studied. Anterior claw a little longer than posterior one; its length 0.8 of greatest diameter of tarsus. Styli at bases of legs 3-12; first pair short, brushlike, following pairs conical, pubescent, each stylus with a blunt, apical hair. There are 7 pairs of fully developed coxal sacs at bases of 3rd-9th pair of legs. Coxal plates of 10th pair of legs with 3 setae, those of 11th pair with 2 setae; base of last leg not studied.

Cerci. Cerci (3.6-) 3.7 times as long as wide, dorsally straight, curved inwards. They reach 0.1 of length of body and are densely set with setae on all sides. Most setae short, curved and depressed but several are longer, almost straight, protruding: 6 or 7 dorsally, about the same number on outer side and a few ones on inner side. Distal setae shortest; longest protruding dorsal and outer setae reach 0.6 of greatest diameter of cercus. Terminal area short. Apical setae lacking in the holotype, in the adult paratype they are a little longer than terminal area and 0.1 of length of cercus and 0.8 of longest protruding seta. Pubescence very sparse.

Affinities. The species seems to be most close to *S. delamarei* Juberthie-Jupeau from Patagonia and *S. hirta* Scheller from Sri Lanka. Characters separating it from the former are the kind of head cuticle granulation, the shape of the central rod and the triangular appendages of the tergites as well as the chaetotaxy of the tergites and the cerci. From the latter species it is distinguished by the shape of the triangular appendages of the tergites, the shape of the postantennal organs and the chaetotaxy of the tergites.

Family SCUTIGERELLIDAE

Genus *Hanseniella* Bagnall, 1913

Hanseniella capensis (Hansen, 1903)

SOUTH AFRICA. Cape Prov., Table Mt., Wynberg Cave 1, 1975-08-10, 1 ad. (♀), (Leg. P. Strinati); same place, Wynberg Cave 8, 1975-08-10, 3 ad. (2 ♀, 1 ♂), 1 subad. 11 (♂), (Leg. P. Strinati).

The species is not known outside South Africa.

Remarks. The occurrence of a great number of short, thin, subequal setae on the inner side of the tarsus of the 12th leg is a character of *capensis* and a few more species e.g. *angulosa* (Hansen) and *natalensis* Juberthie-Jupeau. Recently it has also been discovered in a new Brazilian species. There it is only in the males, the females having a small number of setae. The species is sexually dimorphic. In *capensis* this character seems not to be a manifestation of sexual dimorphism, if it is in *angulosa* and *natalensis* is still unknown.

Hanseniella dolosa Ribaut, 1914

RHODESIA. Umtali, Inyanga, 1969-02-27, 1 juv. 7, (Leg. R. Mussard). Mesetter, alt. 1 500 m, 1969-02-17, 1 subad. 11 (♀), (Leg. R. Mussard).

H. dolosa has earlier been collected in East Africa (RIBAUT 1914, AUBRY & MASSON 1953), in Madagascar (AUBRY & MASSON 1953, ROCHAIX 1956) and in Sri Lanka (SCHELLER 1971).

Hanseniella incisa n. sp. (Fig. 3)

Holotype. Ad. (♀) from Rhodesia, Inyanga, alt. 1 500 m, February 1969, (Leg. R. Mussard). In the Museum of Natural History, Geneva.

Length. 3.25 mm.

Head. Head very short, its length probably only 0.8 of its breadth. Lateral angle at point of articulation of mandible very prominent. Only posterior part of central rod visible; it is thin and short, about 0.2 of length of head; anterior and median branches lacking. Dorsal surface of head densely set with setae; most of them are short; longer setae are on anterior part, at antennal bases and at anterolateral corners. The longest seta in front of lateral angle 0.6 of length of diameter of first antennal segment. There are 3 long postantennal setae, the most anterior one longest. Palp of first maxilla bud-like, pointed; it might be 3-pointed with one secondary short point on each side of the central one. Cuticle of dorsal side of head glabrous and scaly on anterior, lateral and posterolateral parts; for the rest it is shortly pubescent.

Antennae. Both antennae broken outside segment 20. First segment 1.3 times as wide as long; it has a single primary whorl consisting of 6 setae of subequal length, 0.5 of width of segment; 3 inner setae are thin, one dorsal and 2 ventral ones are thicker. There is also a thin, straight inner seta behind the primary whorl; its length 0.5 of length of inner primary setae. Second segment 1.7 times as wide as long with 9 setae in a single primary whorl; these setae are on dorsal, inner and ventral sides; 3 inner setae are thin, the median one longest, 0.5 of width of segment. Small spined organs begin on outer lateral part of dorsal side of 3rd segment; they have a central pillar surrounded by 4 thin spines. Secondary whorl of setae begins with 2 setae on inner side of 5th segment and appears on dorsal side of antenna on 7th segment. A 3rd whorl of setae begins on ventral side of 12th segment. Segment 10 with a little longer setae than proximal segments; outer and inner setae of about the same length. Cuticle of first segment almost glabrous, small-scaly, with a single row of pubescence hairs most anteriorly; on 2nd segment the scales are larger and the pubescence hairs more numerous.

Tergites. First tergite rudimentary with 10 setae of subequal length. Second tergite complete, about 2.1 times as broad as long; its posterior margin with two rounded lobes separated by a broad, V-shaped, median indentation; lateral angles with anterolateral macrochaetae which are directed outwards and anteriorly. These setae are as long as diameter of first antennal segment. Posteromarginal setae number 23, longest ones 0.5 of length of anterolateral macrochaetae, shortest ones 0.2 of this length. Surface of tergite with many curved setae of subequal length. Third tergite longer than preceding one, 2.3 times as broad as long; its posterior margin with two rounded lobes separated by a broad V-shaped indentation; anterolateral macrochaetae located behind lateral angle; they are a little shorter than preceding pair. Posteromarginal setae number about 30, longest ones 0.8 of length of anterolateral macrochaetae. Surface of tergite with setae as on preceding tergite. Fourth tergite only a little longer than 2nd one, 1.2 times as broad as head, 2.8 times as broad as long; its posterior margin indented as on preceding tergite; one pair of posterolateral macrochaetae the length of which is about 0.7 of that of 2nd tergite; posteromarginal setae about 30, longest ones 0.8 of length of posterolateral macrochaetae. Surface of tergite with setae as on preceding tergite. The specimen is partly defective but there are posteromedian indentations at least on tergites 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 and 14; in the latter the indentation is con-

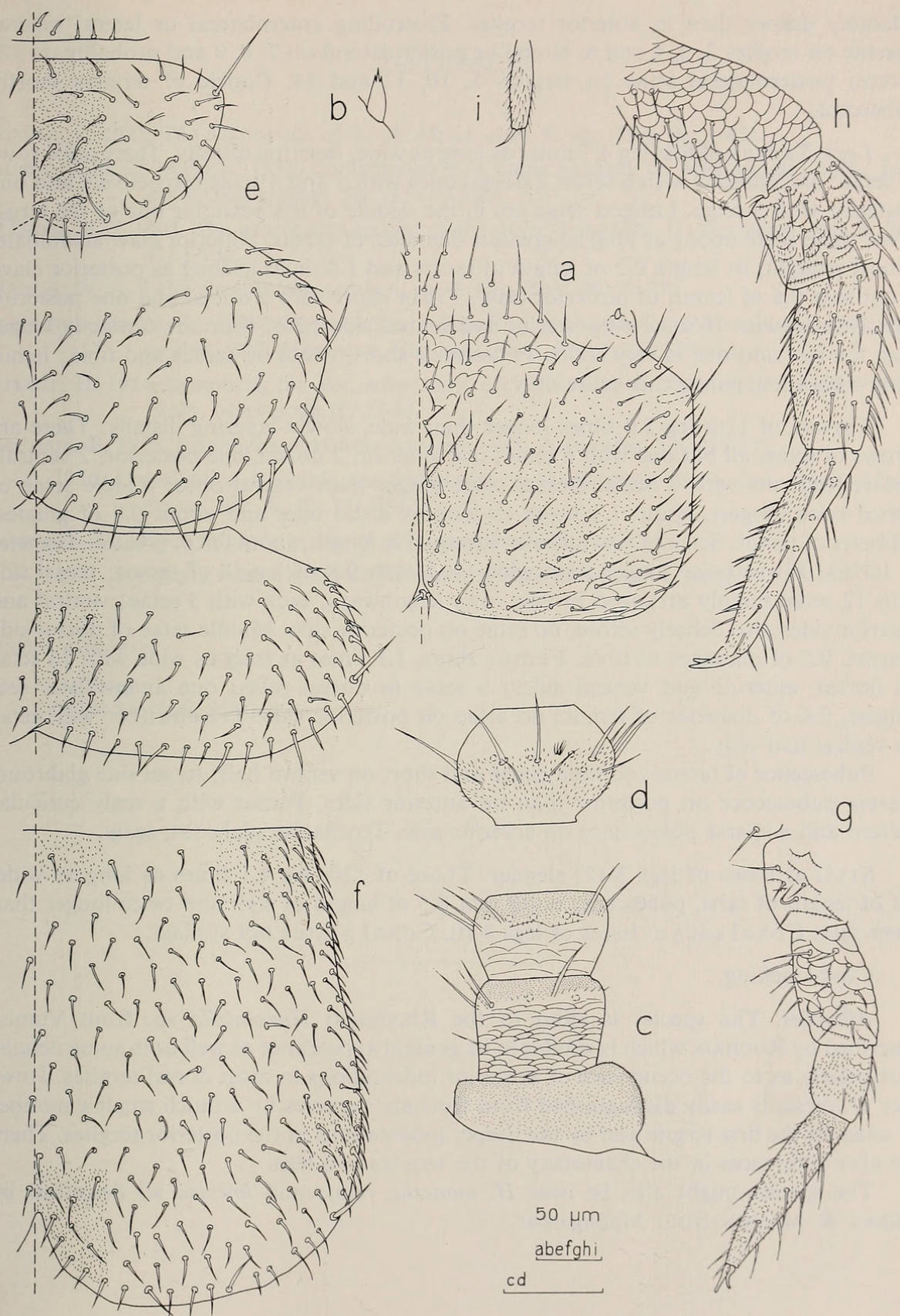


FIG. 3.

Hanseniella incisa n. sp., holotype.

a: head, right side, dorsal view. c-d: antenna, right side, dorsal view; c: proximal segments; d: segment 10. e: tergites 1-4, dorsal view (pubescence only partially drawn). f: penultimate tergite (pubescence only partially drawn). g: leg 1, right side, posterior view. h: leg 12, left side, anterior view. i: stylus 12.

siderably deeper than in anterior tergites. Protruding anterolateral or lateral macrochaetae on tergites 2, 3, 4 and 6, lateral or posterolateral on 7, 8, 9 and probably on 12; shorter posterolateral setae on tergites 5, 10, 13 and 14. Cuticle of tergites shortly pubescent.

Legs. Tarsus of first leg 4.7 times as long as wide, tapering distally. There are 4 rows of setae: one anterior with 6 setae, 2 dorsal ones with 5 and 4 setae respectively and one posterior with 5 setae. Longest setae are in the middle of the posterior one of the tergal rows, these setae about as long as greatest diameter of tarsus. Anterior claw acuminate, almost straight, its length 0.2 of length of tarsus and 1.4 times as long as posterior claw. Front seta 0.6 of length of posterior claw. Tibia short with 5 dorsal and one posterior seta. Femur with 16 setae on posterior and ventral sides; 3 of them are distinctly longer than the rest and one is very short. Pubescence short, dense on tarsus and tibia; femur scaly with a few pubescence hairs only.

Tarsus of 12th leg 5.0 times longer than wide, slowly tapering distally. There are 6 rows of setae, all but one with 6 setae: one anterior, 2 dorsal, one posterior, 2 ventral; one ventral row with 7 setae. Dorsal setae longer than ventral ones; middle setae of dorsal rows longest, about 1.1 times as long as distal ones and about 0.8 of greatest diameter of tarsus. Setae of ventral rows subequal in length, about 0.5 of greatest diameter of tarsus. Tibia twice longer than wide, its length 0.8 of length of tarsus; tergal side with 12 setae mainly arranged in two rows lengthways, each with 5 setae; ventral and anterior sides also densely setose, no setae on posterior side. Middle setae of dorsal side longest, 0.5 of diameter of tibia. Femur short, 1.1 times as long as wide with 16 setae on dorsal, anterior and ventral sides; 3 setae in dorsal rows; one anterodistal seta longest, 0.4 of diameter of femur; no setae on posterior side. Trochanter with setae on ventral half only.

Pubescence of tarsus and tibia dense and short on ventral half; tergal side glabrous; sparser pubescence on posterior than on anterior sides. Femur with a scaly cuticular pattern and a sparse pubescence on anterior side. Trochanter glabrous, scaly.

Styli at bases of legs 3-12; slender. Those of 12th leg 4.1 times as long as wide, 0.4 of length of tarsi, pubescent; outer seta 0.5 of length of styli and twice longer than inner seta. Coxal sacs at bases of legs 3-10. Coxal plates not studied.

Cerci lacking.

Affinities. The species is close to the Rhodesian *Hanseniella* sp. from Vumba described by ROCHAIX which is similar in its general appearance as well as in some details, particularly as to the occurrence of posterior indentations in most dorsal tergites. However *H. incisa* is easily distinguished from Rochaix's species by a much smaller number of setae on the first tergite and by the deeper indentations in the posterior tergites. There are also differences in the chaetotaxy of the tergites and legs.

The species might also be near *H. modesta*, *remyi* and *imerina* all described by AUBRY & MASSON from Madagascar.

REFERENCES

- ATTEMS, C. 1928. The Myriopoda of South Africa. *Ann. S. Afr. Mus.* 26: 1-431.
- AUBRY, J. et C. MASSON. 1953. Contribution à la faune endogée de Madagascar. *Mém. Inst. scient. Madagascar*, Sér. A, 8: 43-66.
- HANSEN, H. J. 1903. The genera and species of the order Symphyla. *Q. Jl microsc. Sci.*, n. Ser. 47: 1-101.
- HILTON, W. A. 1938. *Symphylella natala* n. sp. *J. Ent. Zool.* 30: 86-87.
- JUBERTHIE-JUPEAU, L. 1972. Contribution à l'étude des Symphyles (Myriapodes) d'Afrique du Sud. *Bull. Mus. natn. Hist. nat., Paris*, Sér. 3, 34: 329-334.
- RIBAUT, H. 1914. Symphyla, in: *Rés. scient. voy. Ch. Alluaud et R. Jeannel Afr. orient. (1911-1912)*, Myriapoda II: 37-48.
- ROCHAIX, B. 1955. Symphyles d'Afrique Australe. *Ann. Natal Mus.* 13: 255-257.
- 1956. Contribution à l'étude des Symphyles de Madagascar. *Mém. Inst. scient. Madagascar*, Sér. A, 10: 231-244.
- SCHELLER, U. 1955. Symphyla In: *South African Animal Life* 2: 1-3.
- 1971. Symphyla from Ceylon and Peninsular India. *Ent. scand.*, Suppl. 1: 98-187.

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