

Hanseniella arborea n. sp., a migrating symphylan from an Amazonian blackwater inundation forest (Myriapoda, Symphyla, Scutigereidae)

Ulf Scheller (*)

Resumo

Mais de 800 espécimes de *Sinfilas migradoras* (Myriapoda, Symphyla, Scutigereidae) foram coletadas em uma floresta inundada do rio Tarumã-Mirim, perto de Manaus no Brasil. Eles pertencem a uma nova espécie, *Hanseniella arborea*, a qual é descrita neste trabalho. O material foi colhido da migração para o pavilhão, antes da inundação. Todas os espécimes foram coletados com fotoeletrodos arbóreos colocados numa altura de 3,60m acima do solo.

INTRODUCTION

No serious attempt to collect symphylans in Brazil has ever been made but nevertheless there are a few records from there. The first one might be that by Hansen who reported *Symphylella antennata* (Hansen) from Bella Vista at the Paraná in 1903 and the next one that by Juberthie-Jupeau in 1962. She reported there three more species: *Scolopendrellopsis brasiliensis* (Juberthie-Jupeau), *Hanseniella longisetis* (Juberthie-Jupeau) and *H. unguiculata* (Hansen). The two former had been collected at Quitihanda near Petropolis the latter one at Pico da Tijuca.

To this list is here added *Hanseniella arborea* n. sp. which was collected from near Manaus in 1976 by Dipl.-Biol. Joachim Adis, Göttingen. The species appeared in large numbers in arboreal photoelectrodes placed in 3.60m height on three big trunks (on *Aldina heterophylla*, *A. latifolia* and *Peltogyne venosa*) in an investigation area of about 150 x 100 m in a blackwater inundation forest at Rio Tarumã Mirim. The symphylans are migrating between forest floor and canopy depending on the water-level: upwards in January-March and downwards in August-October. The material studied was from the upward migration.

The new species is described below.

Hanseniella arborea n. sp.

(Figs. 1 and 2)

MATERIAL EXAMINED. 840 ad. (395 ♂, 442 ♀, 3 sex?), 4 subad. with 11 pairs of legs (1 ♂, 2 ♀, 1 sex?). In all 844 specimens.

HOLOTYPE. One of the adult females from Manaus, Rio Tarumã Mirim, blackwater region, inundation forest, caught on a trunk, (Loc. TM. 49 D), 1976-03-15, (Leg. Joachim Adis). The type specimens in the Instituto Nacional de Pesquisas da Amazônia, Manaus/Brasil.

LENGTH. (2.19-) 2.66 (-3.61) mm.

HEAD. Head short, (1.1-) 1.2 times as broad as long with a prominent lateral angle at point of articulation of mandible. Central rod short, (0.3-) 0.4 of length of head, indistinct and with its ovoid posterior endswelling feebly marked; anterior branches vestigial, posterior ones lacking. Dorsal surface of head covered with straight thin setae of different length; most of them are short but a few longer setae are irregularly scattered among them, particularly most anteriorly and on posterior part; longest setae about twice longer than shorter ones. The longest seta in front of lateral angle 0.5 (-0.7) of length of diameter of first antennal segment. There are 3 long subequal postantennal setae. Palp of first maxilla conical, pointed. Head cuticle glabrous.

ANTENNAE. Antennae with 24 and 25 (17-33) segments; length (0.3-) 0.4 (-0.5) of the length of trunk. First segment (1.3-) 1.4 (-1.6) times as wide as long with a single primary whorl of (5-) 6 setae of normal length and 1(-2) short setae. There is also a thin inner seta behind the primary whorl; its length (0.5-) 0.6 of the length of inner primary setae. The latter are thin and slightly longer than the other normal length setae of primary whorl;

(*) — Lundsberg, S-68080 Strofirs, Sweden; supported by the OEA (project INPA - Manaus/Brasil)

they reach 0.6 (-0.7) of the width of segment. Second segment 1.3 (-1.5) times as long as wide with (9-)10 setae in primary whorl; these setae are on tergal, inner and sternal sides; there are 3 thin inner setae, (3-) 6 thicker ones on tergal and sternal sides and one very short on inner tergal (or sternal) side; inner thin setae longest and a little more depressed than tergal and sternal ones. Small spined organs begin on outer lateral part of tergal side of 2nd segment. Secondary whorl of setae begins with one seta on inner sternal part of 5th (-8th) segment; this whorl never complete. Tenth segment with shorter setae than on proximal segments; outer and inner setae of about the same length, tergal ones a little longer than sternal ones. A 3rd whorl of setae is on sternal side of distal half of antenna. Apical segment (1.2-) 1.3 (-1.4) times as long as wide with setae only on apical half. These setae are mainly anteriorly directed and of different length, longest ones 0.6 (-0.7) of longest setae on proximal segments. Large spined organ at apex of this segment is 0.3(-0.4) of length of segment; there are also (1-)2(-3) very short and delicate spined organs. First segment mainly glabrous but with a scaly cuticular pattern; a few pubescence hairs on distal part of tergal and outer lateral sides on a level with the primary whorl of setae. Proximal segments from 2nd segment forth with a sparse evenly distributed pubescence; on distal segments pubescence is denser but distal part of apical segment almost glabrous.

TERGITES. *First tergite* rudimentary with 4(-5) setae most often of about the same length. *Second tergite* complete, (2.1-)2.2 (-2.4) times as broad as long; posterior margin straight. It has rounded lateral angles with anterolateral macrochaetae which are directed outwards and forwards. These setae are 1.2(-1.6) times as long as diameter of first antennal segment. There are (17-)20(-23) posteromarginal thin pointed setae, longest ones (0.5-)0.6 of the length of anterolateral macrochaetae, shortest ones 0.2 of this length. Surface of this tergite with setae of subequal length, equal to posteromarginal ones. Pubescence sparse, even reaching the posterior margin; the tergite has partly a distinct scaly cuticular pattern. *Third tergite*

(1.8-)1.9(-2.1) times as broad as long; its posterior margin very little indented (- almost straight); there are two anterolateral macrochaetae which are directed outwards and forwards; they are (as long as -) 1.2 times as long as the macrochaetae of preceding tergite; (25-)28(-35) marginal setae between anterolateral macrochaetae. Surface setae and pubescence similar to 2nd tergite but pubescence hairs partly forming a mesh pattern. *Fourth tergite* broader than preceding tergites and about 1.2 times as broad as head, (2.2-)2.6 (-2.7) times as broad as long; it is posteriorly emarginate; (27-) 28 (-36) posteromarginal setae between anterolateral macrochaetae; the latter, surface setae and pubescence as on preceding tergite. *Penultimate tergite* posteriorly emarginate. *Last tergite* with short pointed setae and pubescence arranged in a mesh pattern. One(-2) marginal posteromedian setae between the cerci; remaining setae arranged in three groups: a posteromedian one with (2-)5(-7) setae and two posterolateral ones with (10-)11(-14) setae. Distinct anterolateral or lateral macrochaetae on tergites 2,3,4,6,7,9,10, 12 and 13; sometimes also short ones on 14th tergite; the six first pairs are distinctly longer than the following ones.

LEGS. *Tarsus* of first pair of legs (4.3-) 4.4 (-4.7) times as long as wide, slowly tapering distally. Tergal setae in two rows lengthways, both with 3(-4) setae; distal setae longer than proximal ones, the longest ones (about) as long as greatest diameter of tarsus. Sternal side with 4(-6) setae in two rows lengthways. Anterior claw acuminate, almost straight, its length 0.2 of the length of tarsus and (1.3-) 1.8(-2.0) times as long as posterior claw. Front seta as long as (or a little shorter than) posterior claw. Pubescence sparse, distinct. *Tibia* short with 3(-4) tergal setae. *Femur* with 11(-15) setae on anterior and sternal sides; one (or sometimes two) of them are distinctly longer than the rest and one is very short; pubescence only on anterior side, sparse.

Tarsus of 12th pair of legs (3.8-)5.2 times as long as wide, slowly tapering distally. Setae of tergal side in two rows lengthways, both with 4(-5) setae. Middle setae of anterior row longest, 1.1(-1.4) times as long as distal one; setae of posterior row subequal in length.

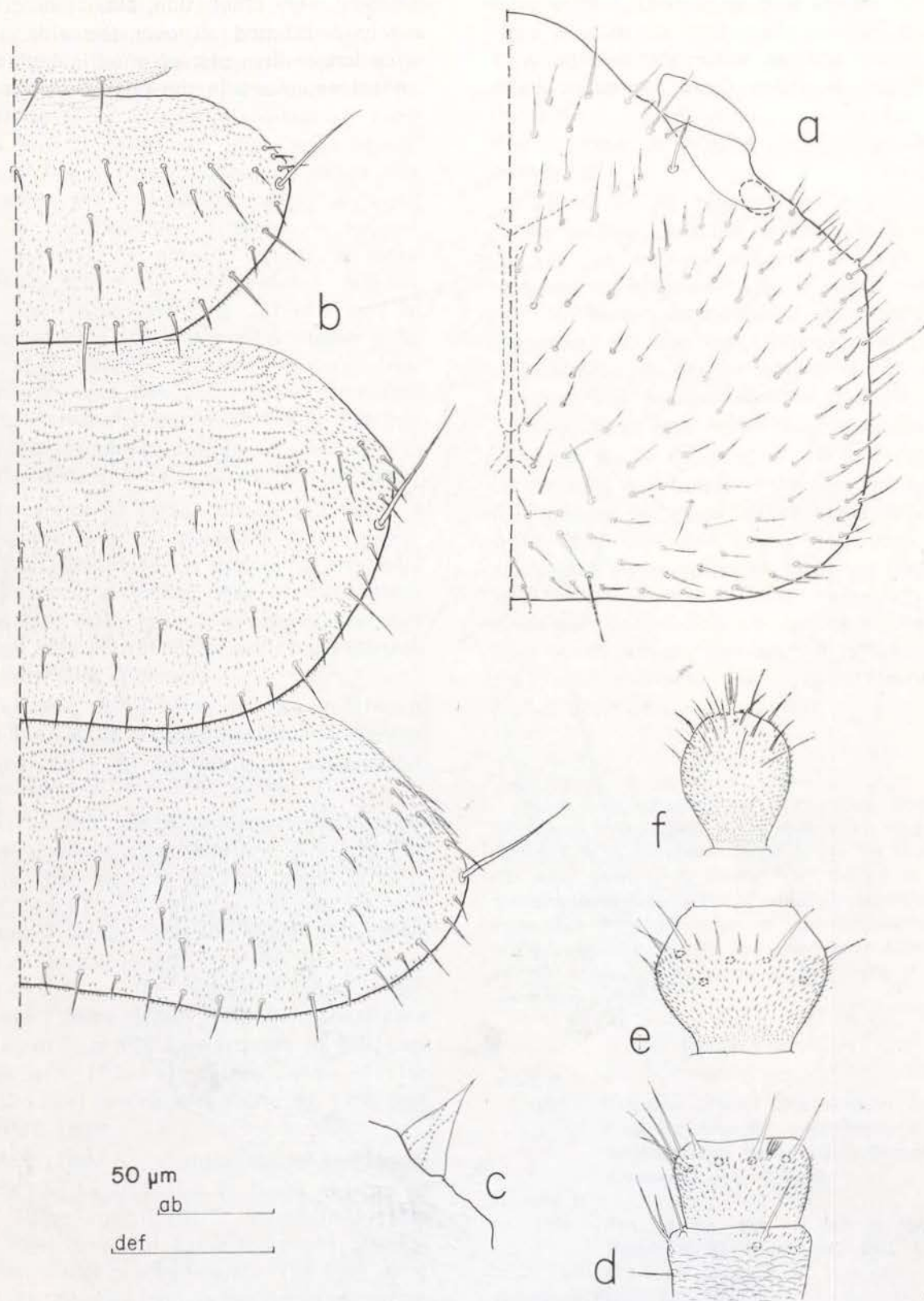


Fig. 1 — *Hanseniella arborea* n. sp., holotype. — a, head, right side, dorsal view. — b, first 4 tergites, right side, dorsal view. — c, palp of maxilla. — d-f, right antenna, dorsal view; d, basal segments; e, 10th segment; f, apical segment.

Setae of sternal side of unequal number and size: in females there is a sternal row with 3(-5) setae and an anterosternal one with 4(-5) setae, in males there are about 40-50

subequal, very short, thin, almost erect setae evenly distributed all over the side. Tergal setae longer than sternal ones in both sexes; longest setae are in the middle of the rows.

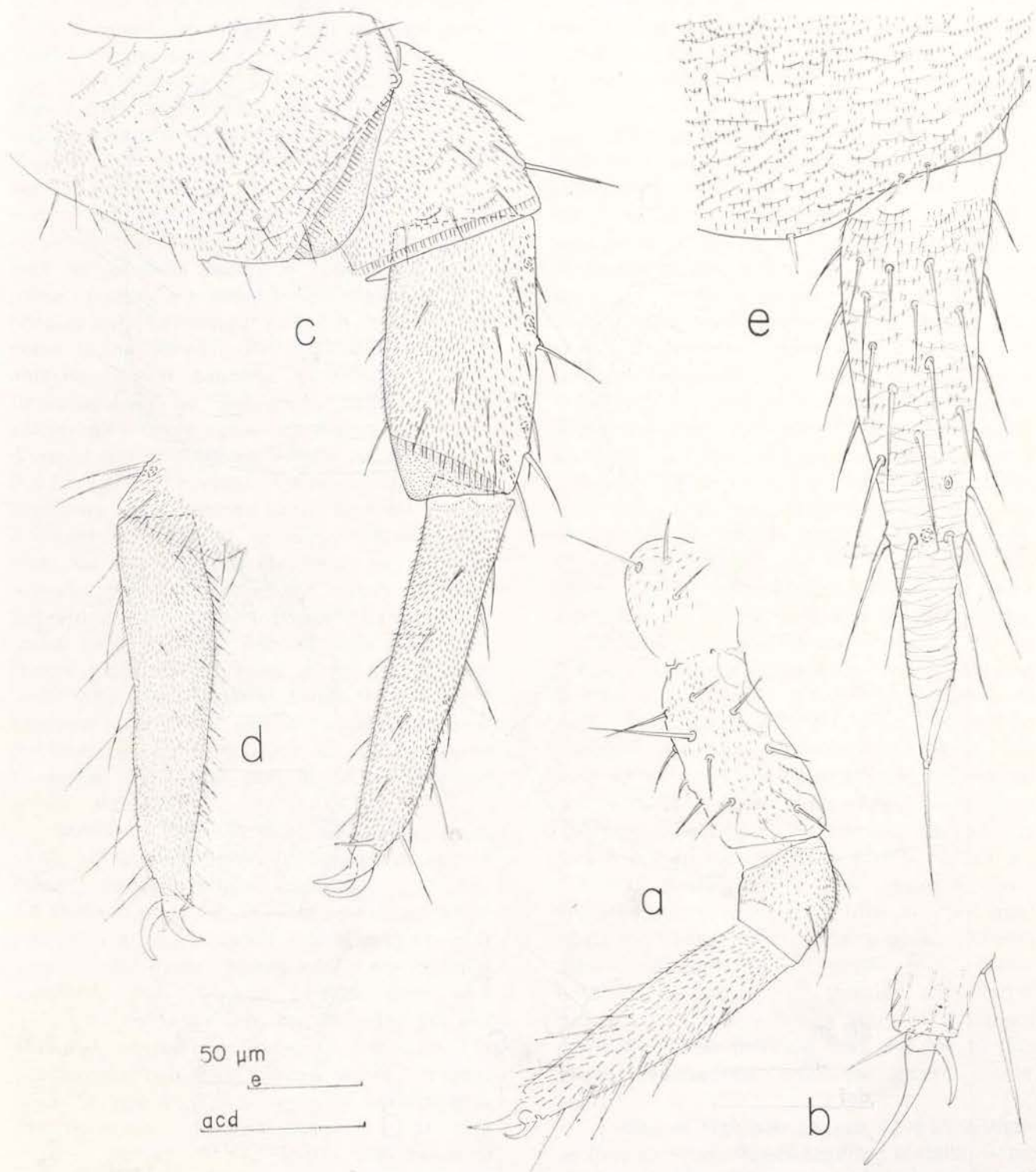


Fig. 2 — *Hanseniella arborea* n. sp., holotype. — a, first leg, right side, posterior view. — b, first leg, distal part. — c, 12th leg, left side, anterior view (holotype ♀). — d, tarsus of 12th leg paratype ♂. — e, cercus and posterior part of last tergite, right side, dorsal view.

longest one (0.9-)1.0(-1.3) of greatest diameter of tarsus. Longest sternal setae are (in the males) the distal ones which reach 0.3 of greatest diameter of tarsus; remaining short setae about 0.2 of this distance. *Tibia* (1.8-)1.9(-2.2) times as long as wide, its length (0.7-)0.9 of the length of tarsus. Its tergal side with (5-)6(-10) setae arranged mainly in two headrows lengthways; longest row with (3-)4(-5) setae. Length of setae decreasing proximally, posterodistal seta of tergal side longest reaching (0.6-)0.8(-0.9) of diameter of tibia. No setae on posterior side. *Femur* short with a few setae only; one anterodistal seta longest, it is protruding about 0.5 of the diameter of femur. Neither sternal nor posterior setae. *Trochanter* with short thin setae on anterior and sternal sides.

Pubescence of tarsus dense and short, a little sparse only on posterior side; pubescence well developed on remaining segments too except on posterior side of trochanter. Cuticle with scaly pattern of thin thickenings on tergal side of trochanter and, but vestigial, on anterior side of femur.

Protruding distal setae on tibia and femur are on legs 9-12; distinctly increased number of sternal setae on the tarsus in males occur on legs 10-12.

Styli of 12th pair of legs slender with short and dense pubescence; they are (3.5-)3.7(-9.9) times as long as wide, 0.3 of length of tarsi and (1.3-)1.6(-1.7) times as long as greatest diameter of tarsus. Longest apical seta (0.4-)0.5(-0.6) of the length of stylus, the shorter one 0.4(-0.5) of the length of longer seta. There are 7 pairs of fully developed *coxal sacs* at bases of legs 3-9. *Coxal plates* of 10th pair of legs with (2-)4(-5) setae, those of 11th with (2-)3(-4) setae and those of 12th pair with (0-)2 setae.

Cerci. They are slender, 0.1 of the length of body and (4.2-)4.3(-4.9) times as long as wide. There are (5-)6(-7) setae in longest tergal row; length of setae increases distally, the most distal one is longest, (as long as -) 1.2(-1.3) times as long as the depth of cercus. Longest sternal row has (4-)5 setae; the most distal one as long as (- a little longer than) corresponding tergal seta. Terminal part of cerci very slender, almost cylindrical. Outer

apical seta 0.2 of length of cercus and the short median one 0.2(-0.3) of the length of the long seta; the short seta is triangular in shape. Cuticle with scaly pattern of thin thickenings on all sides; pubescence very sparse, best developed proximally, lacking distally.

Affinities. As to the general appearance of the tergites and the macrochaetae on the last pair of legs *H. arborea* has significant features in common with *montana* Scheller from Sri Lanka but there are many separating characters on the cerci and the first pair of legs and as to the structure of the dorsal cuticle. In a similar way it is partly alike *proxima* Adam and Burtel from New Zealand.

From the distribution of the macrochaetae on the tibia and femur of the last pair of legs the species is close to *chilensis* (Hansen) from Chile and the occurrence of a great number of short subequal setae on the inner side of the tarsus of the same leg is a character also found in *capensis* (Hansen) from South Africa. However, it is unknown if the latter character is a manifestation of sexual dimorphism in *capensis*.

SUMMARY

More than 800 specimens of migrating symphylans (Myriapoda, Symphyla, Scutigereidae) have been collected in an inundation forest at the rio Tarumã-Mirim near Manaus in Brazil. They belong to a new species, *Hanseniella arborea*, which is described. The material is from the migration into the canopy prior to the inundation. All the specimens were collected in arboreal photoecotops placed at the height of 3.60m, above the ground.

LITERATURE

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