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TWO NEW VICTORIAN SYMPHYLA OF THE GENUS
HANSENIELLA.By *O. W. Tiegs, D.Sc.**(Department of Zoology, University of Melbourne.)*

(Figs. 1-2.)

Of the two species which are here described, one is the subject of a forthcoming embryological memoir, while the second will be referred to incidentally in the same work. As there appears to be no published record of either species, a taxonomic description is required. This forms the substance of the present paper.

Although Symphylids are easily obtainable in Australia, even in large numbers, if sought for in their appropriate environment, there are only few accounts of their occurrence here, while the commonest genus, *Hanseniella*, does not seem to have been recorded at all. Attems (2) described from Western Australia, in 1911, under the name *Scutigerebella indecisa*, a form which may prove to be a species of *Hanseniella*, Bagnall's (3) definition of that genus having not then been given. More recently Tillyard (6) refers under the name *Scolopendrella* sp. to a form which, from the presence of coxal styles, clearly belongs to another family of Symphyla—the *Scutigerebellidae*, and which, from the dimensions given, is probably the common *Hanseniella agilis* here described.

In the following taxonomic description I have closely followed the method of Hansen (4), since direct comparison with his species can only be made on those characters to which he specifically refers. The terminology is also that of Hansen.

Family **SCUTIGERELLIDAE** Bagnall, 1913.Genus **HANSENIELLA** Bagnall, 1913.*Hanseniella agilis*, sp. nov.

(Fig. 1, A-F.)

Length 6.6.5 mm. when fully grown; the full number of legs first appears in animals 4.2 mm. long.

Head.—About as broad as long, measuring in large adults 0.55 mm. in diameter; clothed with numerous equally spaced setae; the longest lateral setae equal in length to, and sometimes even considerably longer than, the breadth of the proximal antennal joints; "central rod" not forked.

Antennae.—In large adults there are as many as 43 antennal segments; in incompletely grown individuals the segments are fewer, even in animals that have attained the full complement of legs; e.g., in an individual measuring 4.8 mm., only 32 antennal segments were present. Setae on inner side of primary whorls not longer than those on the outer side. The

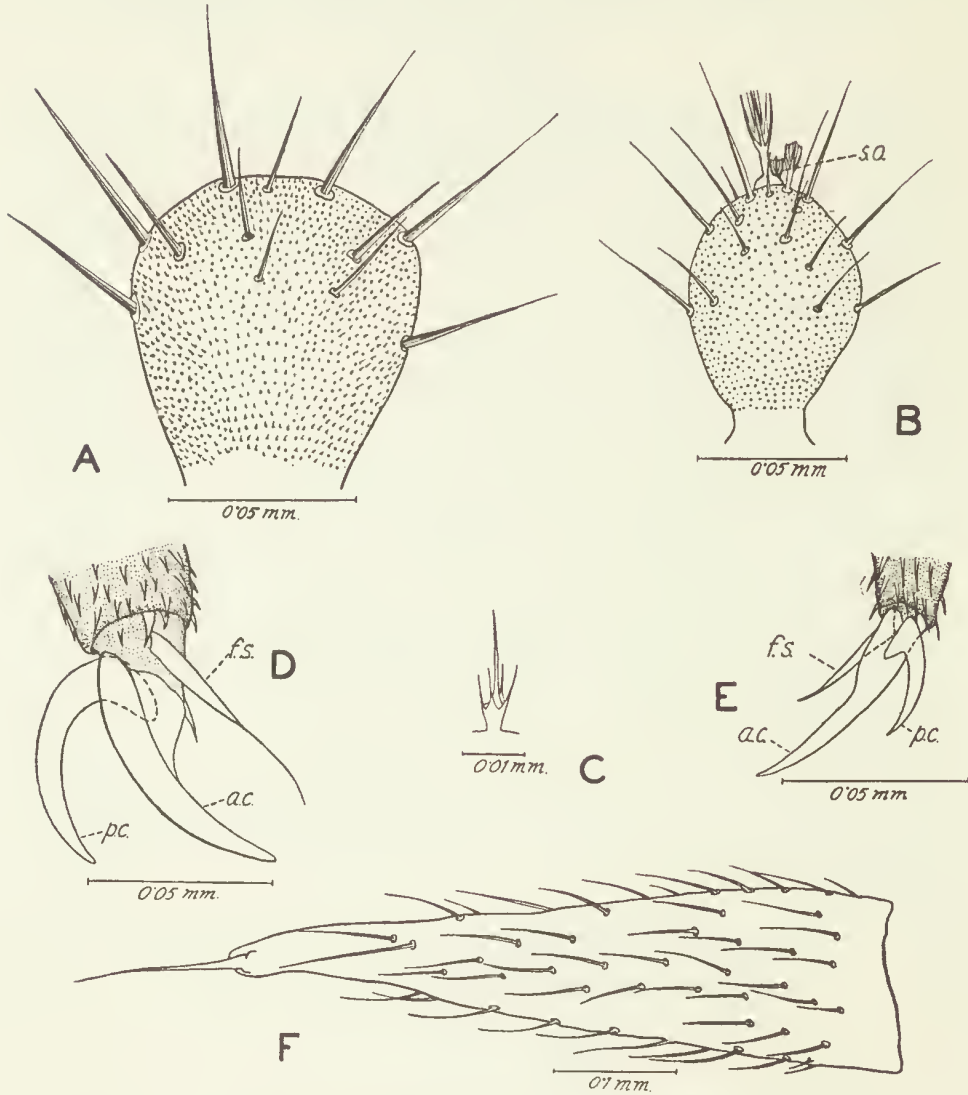


FIG. 1. *HANSENIELLA AGILIS* sp. nov.

- A.—One of the distal antennal segments.
 - B.—Terminal antennal segment, showing the sense-organs.
 - C.—Single sense-organ, from one of the proximal antennal segments.
 - D.—Claws of right hind leg, anterior view.
 - E.—Claws of the right front leg, posterior view.
 - F.—Cercus.
- a.c.*, anterior claw; *f.s.*, "front seta"; *p.c.*, posterior claw; *s.o.*, sense-organ.

secondary whorl begins on the lower side of the seventh or eighth segment, first appears dorsally on about the fifteenth, and is well developed by about the twenty-first or twenty-second. A third whorl begins, on the lower side, on about the seventeenth segment. On the more distal segments the individuality of the whorls tends to become more obscure (cf. Fig. 1A). Except for an occasional diminutive seta, the setae of the whorls are approximately equal in length, measuring about three-fifths the thickness of the basal antennal segments. Terminal segment provided with three stalked sense-organs ("striped organs"), of which two are small, the third nearly twice as large, and with a broad base (Fig. 1B). The large sense-organ seems, on close examination, to consist of a central spine surrounded by a ring of six lesser spines. In addition to these sense-organs on the terminal segment, there is a sense-organ of similar type on each segment from the third onwards. Under high magnification it is seen to consist of a long central spine surrounded by a ring of four lesser spines (Fig. 1C). Comparable organs have been described by Imms (5) from *H. (Scutigerebella) subunguiculata*.

Scutes.—The first two scutes convex on their posterior margin; from the sixth backwards they are gently indented. On each scute except the fourth, seventh, tenth and fourteenth, a single pair of very enlarged outwardly directed lateral setae. The enlarged setae of the first scute nearly three times the breadth of the basal antennal joints. Following Hansen, I have reckoned the scute of the second leg-bearing segment as the first, the diminutive scute of the first segment being customarily excluded from the series. It is devoid of a large lateral seta.

Legs.—On the last leg the tarsus is five times longer than thick. "Metatarsus" and tarsus each with eight setae in the outer dorsal row. On the "metatarsus" the most distal seta is the largest; it measures more than half the thickness of the "metatarsus." The anterior claw (Fig. 1D) of the last leg is slightly curved, and forms at its base a broad blade which tapers sharply one-third the length of the claw from its basal end. The posterior claw more curved, being two-thirds the length of the other. "Front seta" unusually long, being nearly as long as the anterior claw; its basal half broad and blade-like, its distal half tapering into a thin filament.

On the first leg the anterior claw (Fig. 1E) is rather less curved than on the last leg, and the basal blade-like portion is less pronounced. Posterior claw curved and about half the length of the anterior claw; basal portion unusually sharply demarcated. "Front seta" robust and a little longer than the posterior claw.

Cerci.—(Fig. 1F). Their length from four to five times their thickness. Clothed with numerous relatively small setae, of about equal size, except that they enlarge a little towards the apex. At the apex itself is a single enlarged seta, a little longer than the thickness of the cercus at its base.

Habitat.—Belgrave, Marysville, and Otway Range, Victoria. The animals occur under stones and in decaying vegetation; well-decayed trunks of tree-ferns (*Alsophila*, *Dicksonia*) are especially favourite haunts, and they can usually be obtained in numbers by breaking up the rotting stems. A moist but not wet environment is always selected.

Type in National Museum, Melbourne.

Of the described species of *Hanseniella* the present species seems to resemble most closely, though it is clearly not identical with, a form described by Archey (1) from New

Zealand, and regarded by him as identical with *Hanseniella* (*Scutigereilla*) *caldaria* Hansen, from South America. Certain differences between the two forms were, however, observed, notably in regard to size, number of antennal segments, and other points. In so remarkably homogeneous a group as the Symphyla the differentiation of species, when direct comparison of types is not made, must be a matter of uncertainty, and it is not improbable that the New Zealand form is a species distinct from the South American.

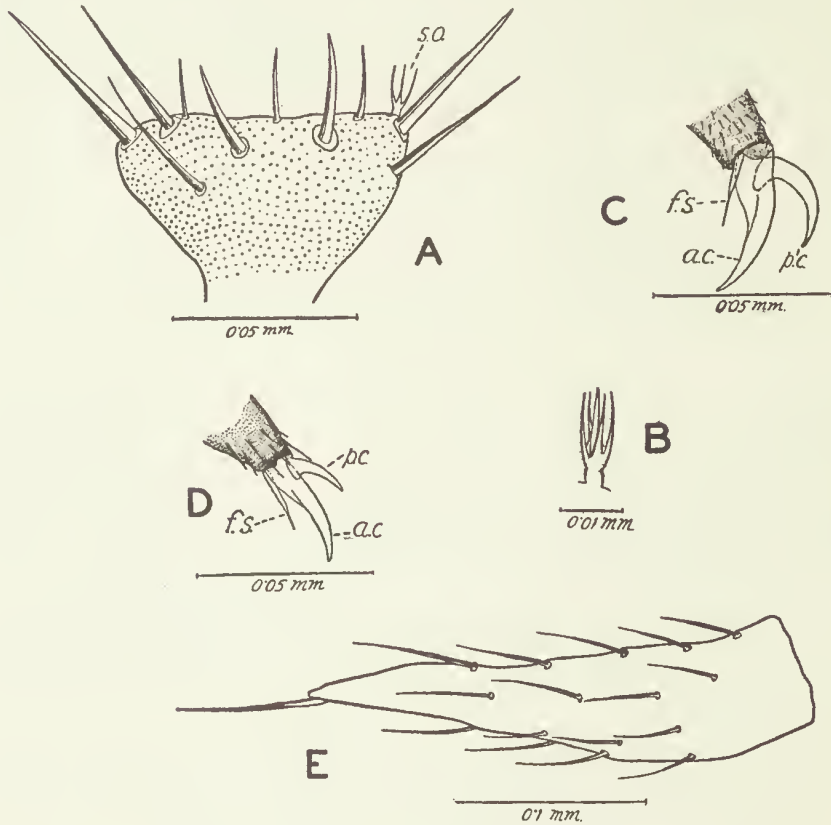


FIG. 2. *HANSENIELLA MINOR* sp. nov.

A.—One of the distal antennal segments; sense-organ visible.

B.—Sense-organ from an antennal segment.

C.—Claws of left hind leg, anterior view.

D.—Claws of right front leg, posterior view.

E.—Cercus.

Lettering as in Fig. 1.

Hanseniella minor sp. nov.

(Fig. 2, A-E.)

Length.—3.4 mm.

Head.—About as broad as long, measuring in adult about 0.36 mm. in diameter. Clothed with numerous equally spaced setae, the largest lateral setae only a very little shorter than the breadth of the proximal antennal joints. "Central rod" exceptionally short and unforked.

Antennae.—Maximum number of antennal segments counted in any adult 32; minimum 22. Setae on inner side of primary ("central") whorls not longer than those on outer side. On first six segments four setae visible above. The secondary whorl begins on the lower side of the seventh and eighth segments, first appearing dorsally on about the fourteenth joint. A true third whorl, posterior to the second, does not develop; there is, however, a whorl of diminutive setae from the eighth segment onwards, situated anterior to the primary whorl (Fig. 2A). The absence of a true third whorl, and the presence of this anterior whorl of small setae sharply distinguish the antennal segments from those of *H. agilis* (cf. Figs. 1A, 2A). The main setae of the primary whorl about equal in length, and about half the diameter of the basal antennal segments. On each segment from the second onwards, is a small sense-organ similar to that already described for *H. agilis*, except that the central spine is short, scarcely exceeding the others in length (Fig. 2B). Terminal segment of antennae with one large and two small stalked sense-organs, as in *H. agilis*.

Scutes.—The first scute slightly convex on its posterior margin; from the third onwards they are slightly indented. A single pair of enlarged outwardly directed lateral setae on the fourth, seventh, tenth, thirteenth and fourteenth scutes. The enlarged seta of the second scute nearly twice the breadth of the basal antennal joints.

Legs.—On the last leg the tarsus is nearly five times longer than thick. "Metatarsus" and tarsus each with five setae in the outer row. On the "metatarsus" the most distal is the largest, but is less than half the thickness of the "metatarsus." The anterior claw (Fig. 2c) of the last leg slightly curved, and forming at its base a broad blade, which tapers less sharply than in *H. agilis*. Posterior claw very curved. It measures two-thirds length of the other. "Front seta" not exceptionally large, being a little shorter than the posterior claw. Its basal half broad and blade-like, its distal half tapering into a thin filament.

On the first leg the anterior claw (Fig. 2b) is only slightly less curved than on the last leg, and the basal blade-like portion is less pronounced. Posterior claw gently curved and a little less than half the length of the anterior claw. Basal portion not as sharply demarcated as in *H. agilis*. "Front seta" robust and a little longer than the posterior claw.

Cerci.—(Fig. 2E). Length from three to four times their thickness; sparsely clad with relatively large setae, of which there are not more than five in a row. They increase in length towards the apex, the largest hinder setae being twice the length of the smallest anterior setae. A single enlarged seta at the apex itself, about equal in length to the thickness of the cercus at its base.

Habitat.—As for *H. agilis*.
Type in National Museum, Melbourne.

Although *H. minor* is about the same size as *ScutigereUa indecisa* Attems, there can be no confusion with this form even if it should prove to be a species of *Hanseniella*. Of the described species of *Hanseniella*, *H. minor* seems to resemble most closely *H. (ScutigereUa) subunguiculata* described by Imms from the Himalayas. The resemblance of the antennae in the two species is particularly striking. Points of difference are (i) the first stalked sense-organ in *H. minor* is on the second, not third, antennal segment; (ii) the enlarged seta of the second scute is nearly twice the breadth of the basal antennal segment; (iii) the form of the claw on both anterior and posterior legs is different; (iv) there are about 4-5 large setae in the longitudinal rows along the cerci; Imms' drawings show about 11-12 small setae.

REFERENCES.

1. Archey, G., The Occurrence in New Zealand of Myriapoda of the Genus *ScutigereUa*, Order Symphyla. Trans. N.Z. Inst., xlvii, 1915, p. 293.
2. Attems, C., Myriapoda, in *Die Fauna Südwest-Australiens* (Michaelson und Hartmeyer), iii, 1911, p. 165.
3. Bagnall, R. S., On the Classification of the Order Symphyla. Journ. Linn. Soc. London, Zoology, xxxii, 1913, p. 195.
4. Hanscn, H. J., The Genera and Species of the Order Symphyla. Quart. Journ. Micr. Sci., xlvii, 1903, p. 1.
5. Imms, A. D., On a New Species of Symphyla from the Himalayas. Journ. Linn. Soc. London, Zoology, xxx, 1909, p. 252.
6. Tillyard, R. J., The Evolution of the Class Insecta. P. and Pr. Roy. Soc. Tasmania, 1930, p. 1.