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Scutovertex pilosetosus nov. spec. from the Netherlands (Acarida, Oribatida)

by

P. J. G. POLDERMAN

ABSTRACT. — *Scutovertex pilosetosus*, occurring in dry, sandy, uppersaltmarsh communities, is described as a new species. It is distinguished characteristically from the closely related *S. sculptus* Michael by its long, spine-shaped, notogastral setae. *Scutovertex minutus* (C. L. Koch) has to be deleted from the Dutch fauna list.

INTRODUCTION

During an investigation of the Oribatid fauna in saltmarshes and other littoral border environments, representatives of the genus *Scutovertex* were frequently collected. Amongst these were *Scutovertex sculptus* Michael, 1879, and a rather similar species, deviating in some characters. In a report on this investigation (Polderman, 1974), the latter species was denoted as *Scutovertex* spec. During further investigations on Oribatids in the Netherlands, the genus *Scutovertex* received special attention in order to establish the identity of this species. For this purpose, *Scutovertex* specimens from over 30 localities in the Netherlands were studied. The material was compared with type material of *Scutovertex glaber* (Mihelčič), kindly lent by Dr. C. Perez-Inigo (Madrid), and material of *Scutovertex minutus* (C. L. Koch), collected at the locality in Regensburg by Dr. L. van der Hammen (Leiden). Attention was paid to important characters used by other authors working with the genus *Scutovertex*, such as the shape of the sensillus, the shape of the light spot, the construction of the lamellae, the median ridge on the prodorsum, the notogastral sculpturing and the shape of the notogastral setae. So far, insufficient evidence has been collected to judge the value of the chaetotaxy of the legs for classification purposes within this genus. Measurements were made on characters such as total width and length, length of the cuspides, the distance between these, the distance between the bothridia and the length of the notogastral setae. From the results it was concluded that *Scutovertex* spec. represented a new species and that the Dutch *Scutovertex* specimens identified as *S. minutus* require further investigation.

Scutovertex pilosetosus nov. spec.

DIAGNOSIS

Scutovertex pilosetosus is a robust species, characterized by its long, spine-shaped, notogastral

setae. Seta l_a exceeds twice the length of seta c_2 . The cuspides are long and the median ridge in the lamellar field of the prodorsum is only slightly developed.

DESCRIPTION

The description is based on observations made on 60 specimens from 9 localities. Measurements are given in Table 1.

Colour: brown to black. Prodorsum subdivisible into a medio-dorsal, trapezium-shaped, lamellar field, a rostral field and two lateral fields. The lamellar field is bordered laterally by the lamellae, which extend from the bothridia into the cuspides. A chitinous bar, in some specimens not completely developed, connects the bases of the cuspides and forms the top side of the trapezium. A triangular structure connects the bothridia and forms the base of the trapezium and the separation between the prodorsum and notogaster. From the top of the triangle a low median ridge extends forward, sometimes reaching the connecting bar between the cuspis bases. In a number of specimens the median ridge was not developed. The surface sculpture of the lamellar field is irregularly dotted. In transmitted light generally a dotted pattern is visible. The lamellae and cuspides are often sculptured with a broken-line pattern. The cuspides narrow towards the tips, on which a slightly rough lamellar seta is positioned.

The rostral field extends forward from the connecting bar between the cuspides and is situated lower than the lamellar field. The sculpture is punctate to wrinkled at the very tip of the rostrum. The rostral setae are generally completely smooth. The lateral fields extend downwards below the lamellae and have also a punctate sculpture. Sensillus club-shaped, in upper part rough, with minute tooth-like points.

Notogaster in outline ellipsoid to ovoid, covered with a smooth, dented cerotegument (fig. 1). The dints in the cerotegument show as light spots in transmitted light. Under the cerotegument, a pattern of dots is visible, coming to the surface at the sides of the notogaster. The notogastral setae are spine-shaped, slightly rough (fig. 3), but occasionally completely smooth. Table 1 gives the measurements of the notogastral setae. The notations of the setae are those introduced by Grandjean and also used by Moskacheva (1964).

Rostrally on the notogaster a transparent area is present, smooth in surface view, forming a light spot in transmitted light. This light spot is generally pear-shaped, but the anterior part varies in width and is sometimes as broad as the posterior part. In the ventral region, no obvious deviations from the characters of *Scutovertex sculptus* can be reported.

Type locality: Ameland, Wester Grie, collections made 19.X.1975 by the author. The holotype and nine paratypes are in the collection of the Rijksmuseum van Natuurlijke Historie (Leiden) under number 1224. Other localities in the Netherlands: S.W.-Netherlands: Zwarte Polder (Zeeuws-Vlaanderen), Kwade Hoek (Goeree); Wadden area: Balgzand (Den Helder), De Mok (Texel), NIOZ-saltmarsh 't Horntje (Texel), saltmarsh Emmapolder Uithuizen (prov. of Groningen). Former locality: De Beer, Rozenburg; material mentioned by Van der Hammen (1952) as *S. minutus*. This locality is now Europoort (industrial area and sea port).

The differences between the present, newly-described species and *S. sculptus* are basically in the notogastral setae. The notogastral setae of *S. sculptus* are spatulate (Michael, 1888), covered with tiny thorns in the widened part (fig.4). In the U.S.S.R., two species have been described recently, closely resembling *S. pilosetosus*. The first, *Scutovertex niger* Moskacheva (1964), differs by the presence of a minute, second c-seta. Its ecology is also different. The second, *Scutovertex perforatus* Sitnikova, 1975 (see Ghilarov (ed.), 1975), shows resemblance to *S. pilosetosus* as regards the spine-shaped setae. However, the specific name *perforatus* is preoccupied, as it was used for the description of *Scutovertex* (now *Passalozetes*) *perforatus* Berlese, 1910.

S. pilosetosus was also compared with *Scutovertex glaber* (Mihelčič), originally described as *Neoscutoverter glaber*. In accordance with Schuster (1958) the genus name *Neoscutoverter* is not used, as the characters for *Neoscutoverter* given by Mihelčič (1959) are too variable to serve as generic characters. According to Mihelčič, the length of *S. glaber* is 600-700 μ , which is rather similar to that of *S. pilosetosus*. However, the specimens from Spain labelled *S. glaber*, which were studied, measured 550-600 μ . The shape of the notogastral setae was intermediate between those of *S. pilosetosus* and *S. sculptus*. The cuspides are 18-21 μ , which is considerably shorter

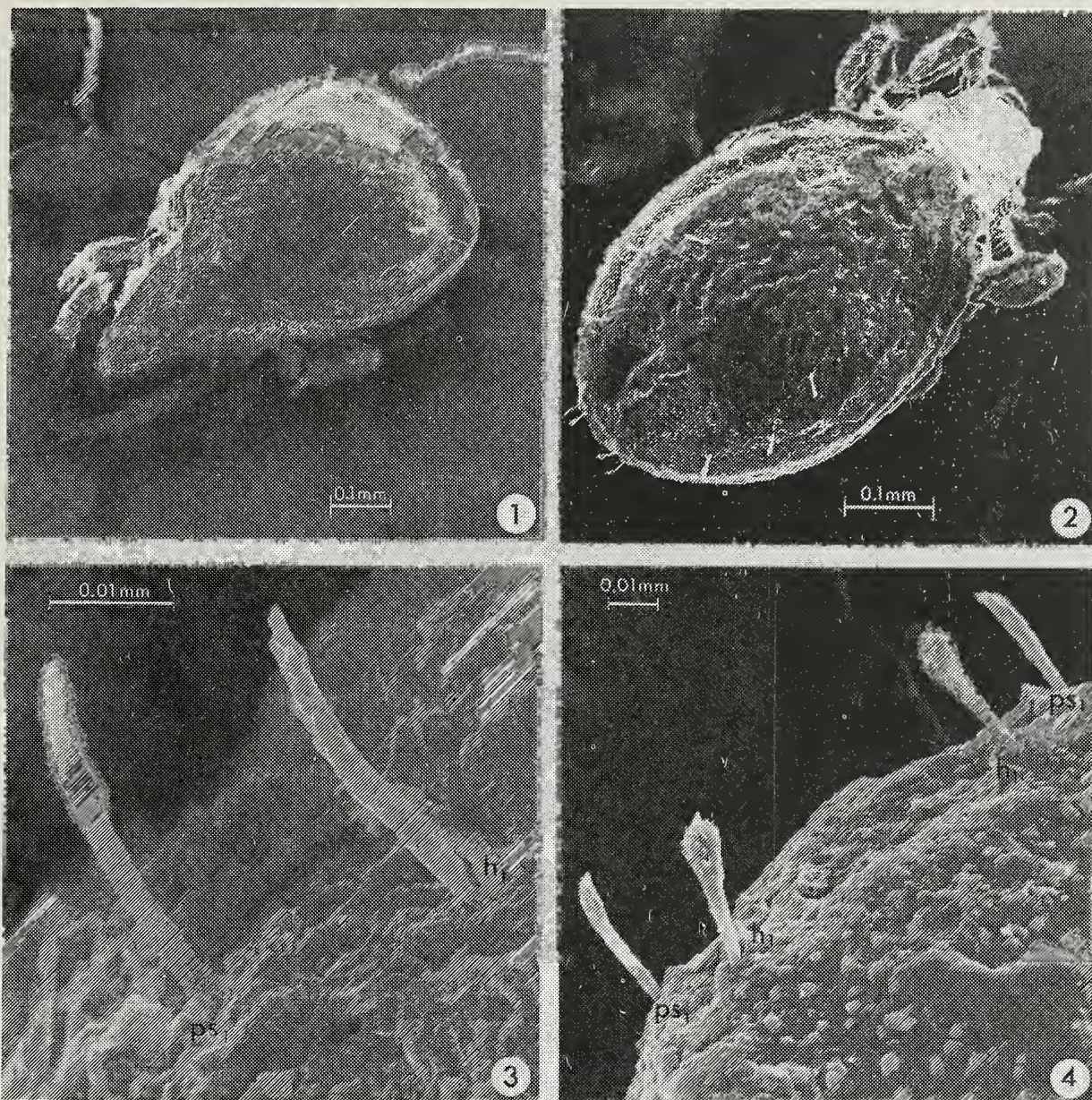


Fig. 1, 3. *Scutovertex pilosetosus* n. sp. (from Uithuizen, prov. of Groningen) in SEM preparation. 1, habitus; 3, setae h_1 and ps_1 .

Fig. 2, 4. *Scutovertex sculptus* Michael (from Vlissingen, prov. of Zeeland) in SEM preparation. 2, habitus; 4, two setae h and two setae ps_1 .

than in *S. pilosetosus* (Table 1). Seta l_a of *S. glaber* is also considerably shorter; $10\ \mu$ on average.

In his list of Oribatids in the Netherlands, Van der Hammen (1952) included *Scutovertex minutus* (C. L. Koch). After some of this material (from De Beer, Rozenburg) was found to be identical to *S. pilosetosus*, Dr. Van der Hammen advised me to recheck the Dutch collection of *S. minutus* and to compare it with the topotypical material from Regensburg in the collection of the Rijksmuseum van Natuurlijke Historie (Leiden). The differences between *S. pilosetosus* and the topotypical *S. minutus* appeared to be very clear. Although the notogastral setae l_m , l_p , h_3 and h_2 of *S. minutus* are spine-shaped, they measure between 15 and $24\ \mu$, which is far shorter than in *S. pilosetosus* (Table 1). The notogastral sculpture of the Regensburg material consists of a dotted pattern, with the dots more or less arranged into lines. This character in particular was not found in any of the Dutch *Scutovertex* specimens studied, including those earlier identified as *S. minutus* (cf. Van der Hammen, 1952). This material is heterogeneous and will be discussed in a later paper. As none of the Dutch specimens resembled the topotypical material of *S. minutus* nor other specimens verified as *S. minutus* in the collection of the Rijksmuseum van Natuurlijke Historie (Leiden), *S. minutus* has to be deleted from the Dutch fauna list.

Ecology: *Scutovertex pilosetosus* was collected in the upper regions of sandy beach-plains and saltmarshes, mainly in the *Festuca rubra*-variant of the *Juncetum gerardii*, as occurring on the

Table 1. The measurements of *Scutovertex pilosetosus*.

Character	measurements in μ	average values in μ
Length	630—760	695
Width	390—530	460
Length cuspides	18— 36	30
Width cuspis base	27— 36	30
Length connecting bar	42— 66	56
Distance bothridia	150—185	165
Length seta c_2	7— 10	9
l_a	20— 30	25
l_m	30— 42	36
l_p	27— 39	34
h_3	28— 36	33
h_2	27— 37	32
h_1	21— 33	27
ps_1	18— 29	26
ps_2	13— 21	16
ps_3	13— 21	16

The measurements have been made on specimens from all localities in the Netherlands. From large populations, which occur on the Ameland Wester Grie and in the NIOZ-saltmarsh Texel, samples were studied containing some average specimens and, in order to establish the extreme values of the characters, the smallest and the largest specimens in the population.

Ameland Wester Grie, the type locality, and in the *Elytrigia pungens* community. Some records of *S. pilosetosus* originate from the *Puccinellietum maritimae*. Up to now only records from saline areas are available, but to ascribe the species a halophilous character might be a little previous. This species is, however, salt- and drought-tolerant.

Companion species at the type locality were *Scutovertex sculptus* Michael, *Oribatella arctica litoralis* Strenzke, *Trichoribates incisellus* Kramer, *Scheloribates laevigatus* (C. L. Koch), *Platynothrus peltifer* (C. L. Koch) and *Peloptulus phaeonotus* (C. L. Koch). This is a representative group of species for habitats as described above (Polderman, 1974).

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