

Rheotanytarsus rhenanus n. sp. A common midge of the lithorheophilic fauna in large lowland rivers (Diptera: Chironomidae)

by

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ABSTRACT. — *Rheotanytarsus rhenanus* n. sp. (Diptera: Chironomidae). A description is given of the male imago, pupa and exuviae. A note is added on the distribution and the ecology.

By sieving approximately 10,000 cubic meters of water from the river Rhine (municipality of Wageningen, the Netherlands) with a drifting-net. I caught several thousands exuviae and some conspecific larvae, pupae and imagines of a new *Rheotanytarsus* which is described in the present paper. Also from the rivers Waal and Maas (the Netherlands) and the river Lahn (Germany) pupae were collected.

Types. — Holotype: River Rhine, Wageningen, 16.IV.1982, A. Klink, male imago legs still attached to pupal skin (collection of the author). Paratypes: same data as holotype, a male pupa and a male imago, still attached to the pupal skin (Instituut voor Taxonomische Zoölogie (Zoölogisch Museum), Amsterdam). The types are preserved in alcohol (70%).

Rheotanytarsus rhenanus n. sp.

Description. — Terminology according to Saether (1980).

Male imago. Length 3.5-4.0 mm.

Head and thorax. — Antennal ratio (length ultimate segment: total length preceding segments) = 0.7. The groundcolor of head and thorax is light green. The median and lateral vittae, pre-episternum, median an-episternum II, epimeron and the distal two-thirds of the scutellum are light brown. The proximal one-third of the scutellum is yellowish. Distal part of the lateral vittae with a darker triangular patch.

Legs. — Tibial combs are present on p2 and p3. On p2, both combs bearing a spine. On p3, only on the outer comb a spine is present.

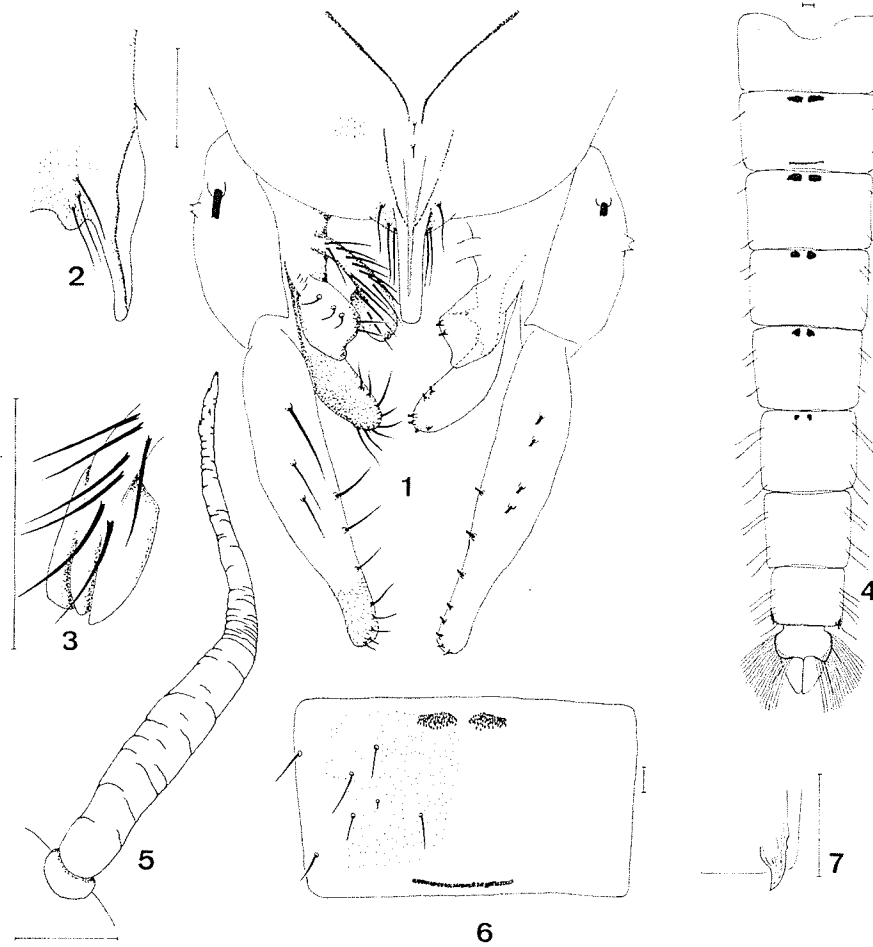
Wings. — Length 2.1 mm.

Abdomen. — Light green and turning pale in alcohol (70%). Hypopygium (fig. 1): Anal tergal bands forming a dark V-shaped figure. Anal point long and almost parallel-sided with a square tip. In lateral view (fig. 2), the anal point crests are weakly developed. The gonostyli taper abruptly in their distal third. The ultimate part parallel-sided with a rounded tip. Superior volsella with a distinct tip in the latero-anal part. On the dorso-lateral side, two distinct setae are present, while on the dorsal surface an additional group of 3-5 setae is implanted. In the latero-oral angle a field of 4-20 microtrichia is discernable. The digitus is very small with a large lateral seta. Both are covered completely by the superior volsella. The median volsella bears four lobes in its distal part. The two median lobes are situated dorsally and ventrally. The lateral lobes enclose this median pair (fig. 3). The inferior volsella has ventrally a longitudinal ridge. Dorsally, the volsella has a rounded surface.

Pupa and exuviae. Length 4.0-4.4 mm.

Head and thorax. — Cephalic tubercles are developed very weakly. The rounded tip bears a small seta. Thoracic horn 0.3 mm long and bare except for a few very small spines in the distal part (fig. 5). A small rounded tubercle is present in front of the wing-sheaths. Distally, the wing-sheaths bear a distinct nose.

Abdomen. — The lateral muscle-stripes on the tergites and sternites are pale and hardly discernable. Patches of dark brown spinules are present on tergites 2-6 (fig. 4). The patches are



Figs. 1-7. *Rheotanytarsus rhenanus* n. sp., 1-3 male imago, 4-7 pupa and exuviae: 1: male hypopygium in dorsal view; 2: anal point in lateral view; 3: median volsella; 4: abdomen in dorsal view; 5: thoracic horn; 6: segment 2 in dorsal view; 7: anal comb in dorsal view. Scale lines = 0.05 mm.

more or less rectangular on tergites 2-3 and subcircular on tergites 4-6. Beside these patches, the tergites 2-6 are completely covered with fine shagreen (fig. 6). On segments 2-3 this shagreen extends laterally, as far as the median part of the pleurites. On tergite 7 the shagreenation is confined to the oral half, while on tergite 8 only the latero-oral parts are covered with shagreen. The 9th tergite is devoid of shagreenation. The anal comb in the latero-anal angles of segment 8 consists of only one dark brown tooth (fig. 7). Setation: L-seta = lateral seta of normal shape. LS-seta = lateral filamentous seta (according to Säwedäl, 1976). Segments 2-3, 2 LS-setae; segments 4-5, 3 L-setae; segments 6-7, 4 LS-setae; segment 8, 5 LS-setae. The entire lateral part of the anal segment is fringed with a single row of 20-26 LS-setae. On the anal tergite, no additional LS-seta is present.

Discriminating characteristics between *Rheotanytarsus rhenanus* n. sp. and the other representatives of the genus *Rheotanytarsus* Bause (see Lehmann, 1970). — The male imago of *R. rhenanus* is distinguished from *distinctissimus* Brundin, *photophilus* Goetghebuer and *pentapoda* Kieffer by the median volsella not reaching beyond the tip of the superior volsella, from *ringei* Lehmann and *curtistylus* Goetghebuer by the light green ground colour of the thorax and from *nigricauda* Fittkau, by the hyaline, not darkened, anal point and its crests. The differences between the imagos of *rhenanus* and *musvicola* are slight. The latter however lacks the latero-anal tip of the superior volsella and has a median volsella which bears only a single flat plate instead of the four lobes present in *rhenanus*. Also the tip of the gonostylus is far more slender in *musvicola* than in *rhenanus*.

The pupa and exuviae of *R. rhenanus* are distinguished from *R? distinctissimus*, *curtistylus*, *musvicola* and *photophilus*, by the arrangement of the spinule patches on the tergites 2-6, from *reissi* by the anal point which consists of only one tooth, and from *nigricauda* by the thoracic horn which bears some spines and by the absence of an additional LS-seta on the anal tergite.

Distribution and ecology. — The pupae and exuviae of *R. rhenanus* n. sp. have been collected from the rivers Rhine, Waal and Maas (the Netherlands) and the river Lahn (Germany). Considering the great abundance in the lower parts of the river Rhine and the resemblance of the adult to *R. musvicola*, it is not impossible that *R. musvicola* stated to be caught in great abundance by Caspers (1980) in the river Rhine near Bonn (Germany) also belongs to *R. rhenanus*.

The larvae and pupae inhabit sludge tubes, as described by Walsche (1950). These tubes have been found on stones which are exposed to the current. The larvae generally occur together with *R. photophilus*; a difference in habitat preference has not yet been found. Interesting however is the large number of *R. rhenanus* caught in April, while the exuviae of only one *R. photophilus* were present in the same sample. Therefore it is thought, that *R. rhenanus* flies earlier than *R. photophilus*. This can be sustained by the observation of millions of *R. photophilus* adults, swarming along the banks of the rivers, not earlier than May. Both species have a second generation in late summer. In smaller running waters *Rheotanytarsus*-species other than *R. rhenanus* have been collected, therefore I consider *R. rhenanus* a typical element of the fauna in large rivers.

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