

CHIRONOMIDAE (INSECTA, DIPTERA) FROM HUNGARY 3.
THE PUPA OF *PARATENDIPES NUBILUS* (MEIGEN)

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The pupa of *Paratendipes nubilus* (MEIGEN) is described and figured for the first time based on material from Hungary and The Netherlands.

MEIGEN (1830) described the imago of *Paratendipes nubilus* (type locality not given). ALBU (1980) described and figured the male imago too (Fig. 1), but she did not know the larva or pupa. We found a male pupa from the River Tisza (Tiszaroff, Hungary) and a male pupa from the River Rhine (Waal, The Netherlands) in which we could see the hypopygium (Fig. 2). This hypopygium closely resembles that figured by ALBU (loc.cit.) and CRANSTON *et al.* (1989) (Fig. 3). The pupa differs from the generic diagnoses of PINDER and REISS (1986) and LANGTON (1991): intersegmentally III/IV and IV/V there is no band of shagreen and segment VIII has 5 lateral taeniae, not 4. *Paratendipes basidens* TOWNES (EPLER & FERRINGTON, 1994) is very similar but *P. nubilus* has cephalic tubercles, lacking in *P. basidens*.

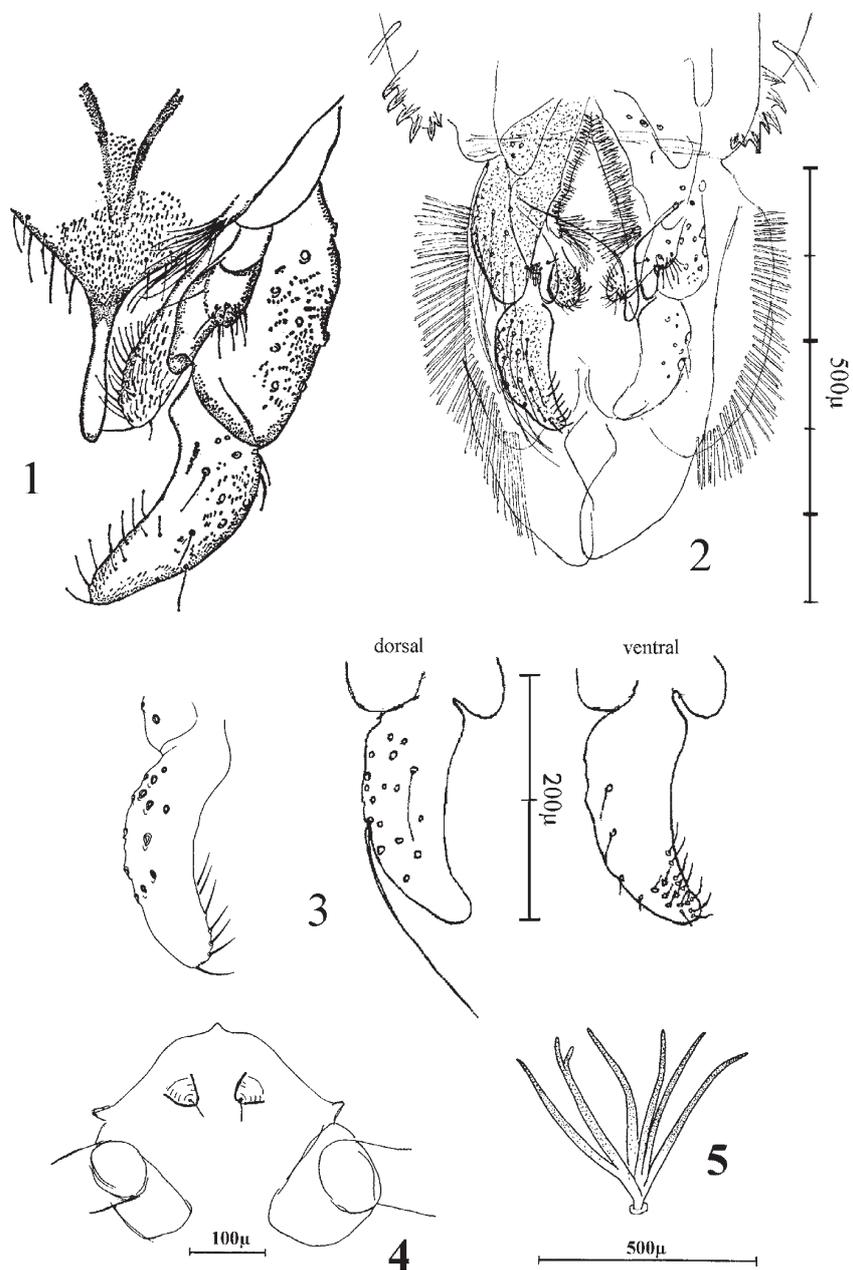
Pupal description (n = 2)

Colour: exuviae brownish.

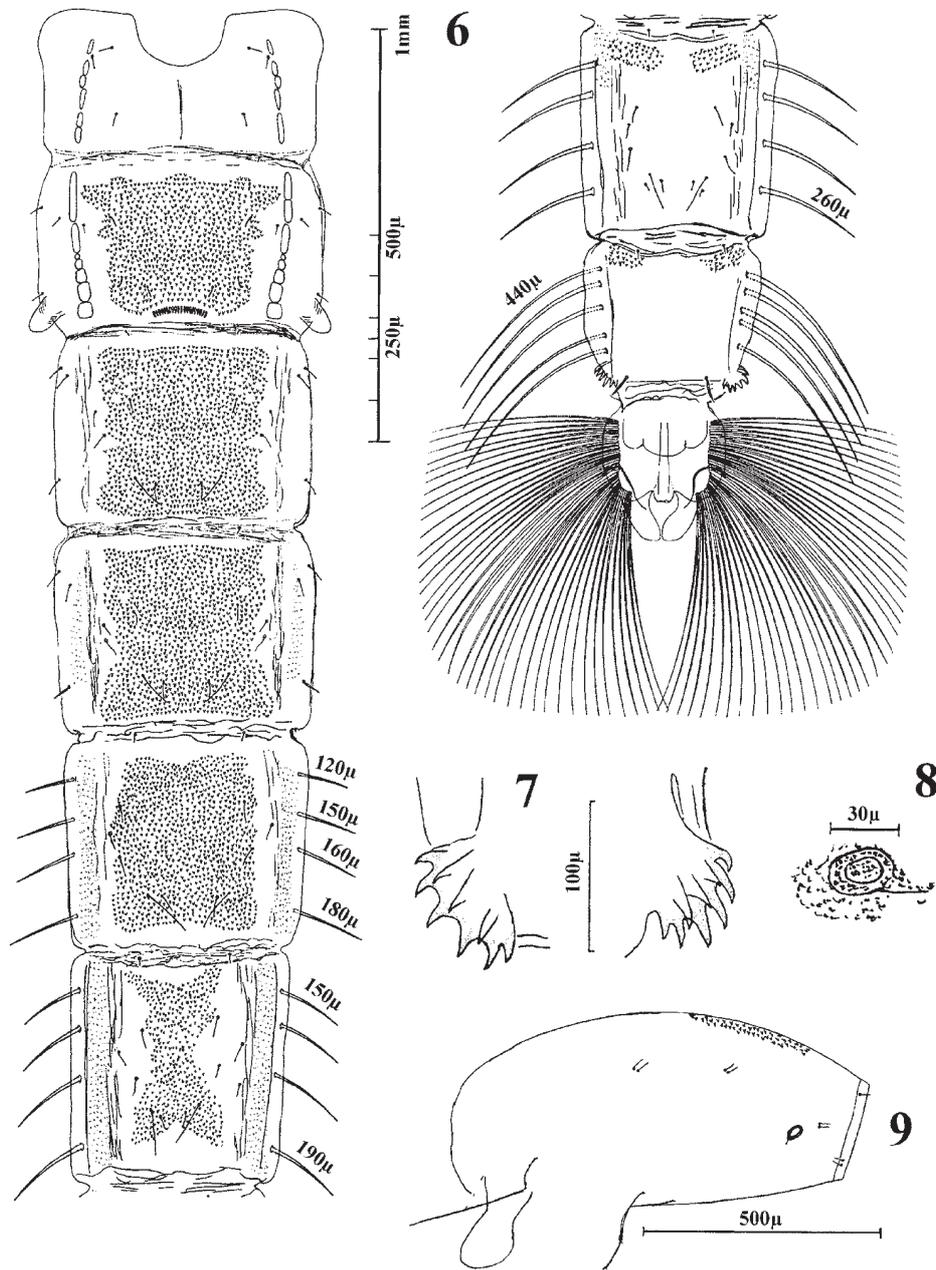
Length: Total 4.9–5.3 mm. Cephalothorax 1.1–1.2 mm. Abdomen 3.8–4.1 mm.

Cephalothorax: Cephalic tubercles present, bearing 30 µm long frontal setae; frontal warts absent (Fig. 4). Thorax with a dorsomedial group of small tubercles; 2 precorneal and 3 anteprenotal setae; dorsocentral seta 1 adjacent to 2, and 3 adjacent to 4 (Fig. 9). Thoracic horn apparently with 6 smooth, slender branches, one of them bifid at apex (Fig. 5); its base is oval with a circular/oval tracheal bundle (Fig. 8).

Abdomen: Tergite I bare; tergites II–V with a more or less rectangular area of coarse points; tergite VI with the point patch roughly X-shaped; tergites VII and VIII with a small oval/elliptical patch of fine points on each side anteriorly; tergite IX bare. Hook row of segment II of 20 weak hooklets. Paratergites IV–VI with a band, nearly the length of the paratergite, of very small points; on VII the band is only 1/4 the length of the paratergite (Fig. 6). Sternite I with a few scattered small points; II–VIII apparently bare. Parasternite with moderately developed vortex. Comb of segment VIII a cluster of 6 large pointed teeth with 3 smaller basally (Fig. 7). Well-developed pedes spurii B present on segment II. Conjunctions III/IV and IV/V bare. Tergites with 1 pair of small O-setae. Lat-



Figs 1–5. *Paratendipes nubilus* (MEIGEN) pupa. 1 = hypopygium after ALBU, 2 = segment IX and hypopygium from The Netherlands, 3 = hypopygium after CRANSTON, 4 = frontal apotome, 5 = thoracic horn



Figs 6–9. *Paratendipes nubilus* (MEIGEN) pupa. 6 = tergites, 7 = comb of segment VIII, 8 = basal ring of thoracic horn, 9 = thorax

eral setae of segment I 0, II–IV 3; lateral taeniae of V 3 (120–180 µm long), VI 4 (150–190 µm long), VII 4 (260 µm long) and VIII 5 (440 µm long). Anal lobes with a uniserial fringe of 36/38 taeniae plus a pair of narrow dorsal taeniae. Genital sacs of male extend beyond the anal lobe by half its length.

Biology and distribution. Pupae and pupal exuviae were obtained from large lowland rivers with moderate to slow flow, in The Netherlands and Hungary during June 1993.

DISCUSSION

The pupa of *P. nubilus* differs from those of *albimanus* (MEIGEN) and *P. nudisquama* (EDWARDS) described in PINDER and REISS (1986) and LANGTON (1991) as follows (*P. albimanus* and *P. nudisquama* in parentheses): thoracic horn with 6 branches (10); frontal setae short, 30–32 µm (60–125 µm); basal ring of thoracic horn more circular (more oval); armament of tergites II–V more or less rectangular (more or less like a broad X); conjunctives III/IV and IV/V bare (armed); hook row of segment II with 20–21 hooklets (25–75); hook row 130 µm long (300–430 µm); dorsal setae 4 of tergites III–VII twice as long as the other dorsal setae (all dorsal setae more or less equal in length); tergite VIII has 5 lateral taeniae (4); comb of segment VIII different.

Associated imago not examined.

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