

Two species of the genus *Nilotanypus* (Diptera: Chironomidae) in Europe

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Meigen (1804) described the female of *Nilotanypus dubius* (Meigen, 1804). *N. dubius* has been since reported as the only species of the genus *Nilotanypus* Kieffer, 1923 from Europe (Fittkau 1962, Fittkau and Roback 1983, Vallenduuk and Moller Pillot 2007, Cranston and Epler 2013, Bitušik and Hamerlík 2014). But Fittkau and Roback (1983) note that a second larval type is known from the western Palaearctic. Kownacki and Kownacka (1968) and Fittkau and Roback (1983) show claws on the larval posterior parapod of *N. dubius* with at most fine spinules, whereas Roback (1986) states that both *N. dubius* and *N. fimbriatus* have one claw of the posterior parapod strongly pectinate. Kownacki and Kownacka (1968) and Fittkau and Murray (1986) show pupa of *N. dubius* with posterior band of teeth on tergites, whereas Langton and Visser (2003) with posterior band of granules on tergites.

During the course of a survey of macroinvertebrates in Czechia (Skála 2011, Skála et al. 2019, Skála, unpublished records), pharate adults, pupae, pupal exuviae, prepupae and larvae of two different species of *Nilotanypus* were recorded. The pupa of the first morphotype, *Nilotanypus* sp. A has a transverse band of granules on posterior margin of tergites (n = 62; Fig. 1a), rarely with flat teeth up to 3 µm long. The larva has a comb of spines on one claw of posterior parapod (Fig. 2a). The antennal ratio of adult male is 0.50-0.88 (n = 7). The pupa of the second morphotype, *Nilotanypus* sp. B has a posterior band of teeth on tergites (the longest teeth 5-7 µm long; n = 9; Fig. 1b), and the larva has no comb but only fine spinules on larger claws of the posterior parapod (n = 24; Fig. 2b), male adult antennal ratio 0.53 (n = 1). No distinguishing characters were found in pharate adults, except a possible subtle difference in phallapodeme (Fig. 3). The small branchlet of phallapodeme is parallel with the main branch of phallapodeme in *Nilotanypus* sp. A (n=7), whereas it seems to be divergent in *N. sp. B* (n = 1 only). However not all characters were visible in pharate adults, especially the ones in legs or wings.

In central Bohemia (Czechia), *Nilotanypus* sp. A was commonly found in clean brooks, less frequently in rivers, at altitudes of 200-565 m a. s. l. (examples of localities were given by Skála 2011 under *N. dubius*). *Nilotanypus* sp. B was only found in the Brdy Highlands (max. 865 m a. s. l.) in three small forest brooks with high pH of 7.5-7.9 at altitudes 450-515 m a. s. l. (Skála et al. 2019, who reported it erroneously also from Mourový brook). In the Brdy Highlands, *Nilotanypus* sp. A was also found in five brooks at the same range of altitudes, but at somewhat lower pH of 6.2-7.1. In the Brdy Highlands, both species avoid acidic waters with pH less than 6.2.

Nilotanypus sp. B inhabits higher altitudes than *Nilotanypus* sp. A in Czechia. Kownacki and Kownacka (1968) describe larva of *Nilotanypus* sp. B from the Tatra Mountains, where they found *Nilotanypus* at altitudes 500-1400 m a. s. l. Thus, although *Nilotanypus dubius* has been regarded as a cold stenotherm species (Fittkau 1962), such description probably applies to *Nilotanypus* sp. B only.

Adults less distinguishable than larvae and pupae seem to be typical for the genus *Nilotanypus* (Cranston et al. 2022). The key to adult males by Cheng and Wang (2006) is not very useful due to use of unreliable characters (Cranston et al. 2022). Further study of the genus is necessary.

A brief neighbour joining analysis of the publicly available DNA barcodes of *Nilotanypus dubius* from Europe in BOLD (www.boldsystems.org, May 20, 2024) using MEGA 11 (Tamura et al. 2021) indicate a clear separation of two COI clusters (Fig. 4). Uncorrected pairwise distance between members of the two clusters are around 15 %. Thus, also available COI data indicate more than one species of *Nilotanypus* in Europe.

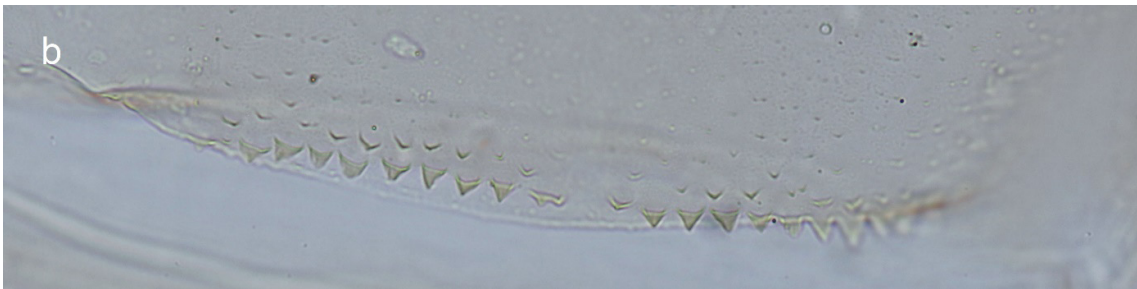
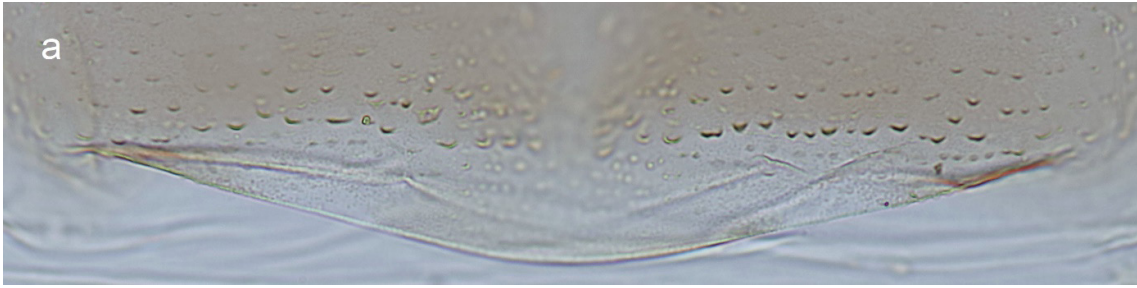


Figure 1. a-b. Pupa, tergite IV posterior margin. a. *Nilotanypus* sp. A; b. *Nilotanypus* sp. B.

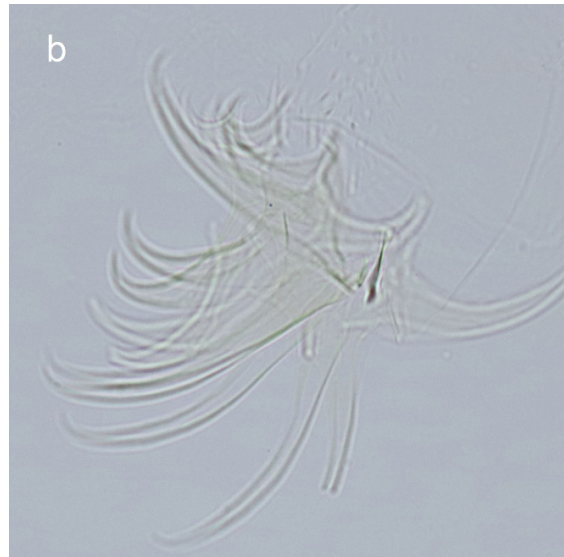
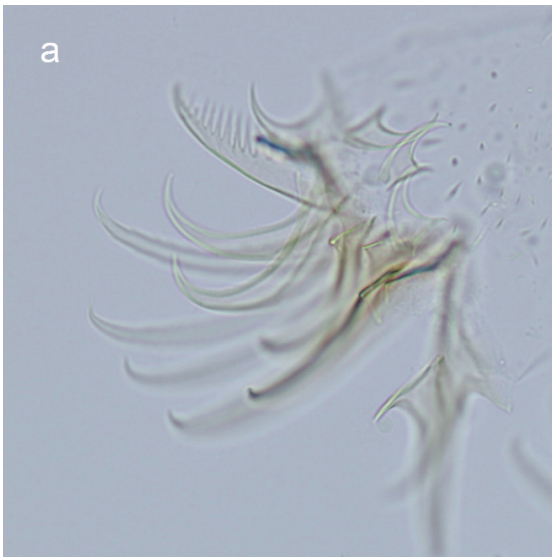


Figure 2. a-b. Larva, posterior parapod. a. *Nilotanypus* sp. A; b. *Nilotanypus* sp. B.

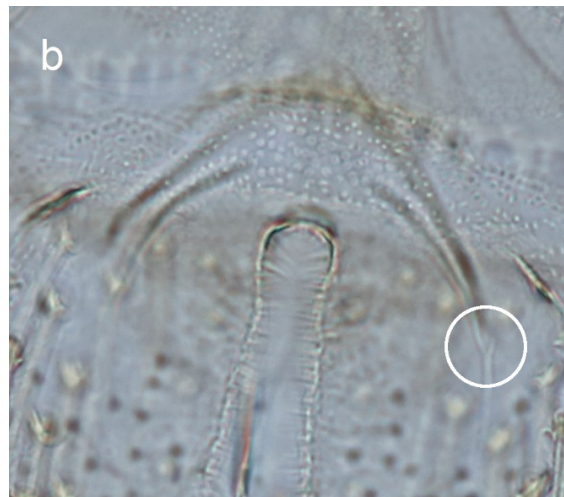
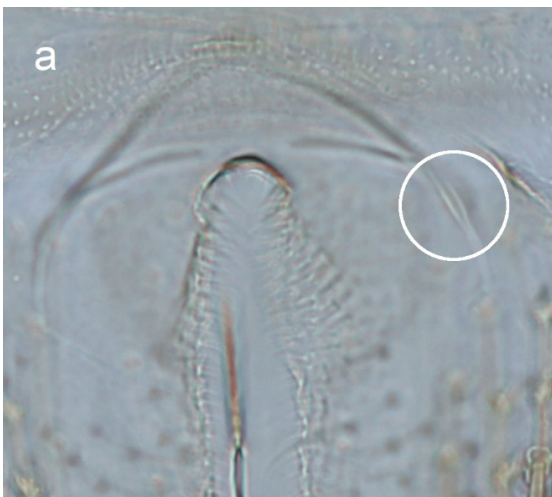


Figure 3. a-b. Male imago, apodemes of male hypopygium. a. *Nilotanypus* sp. A; b. *Nilotanypus* sp. B.

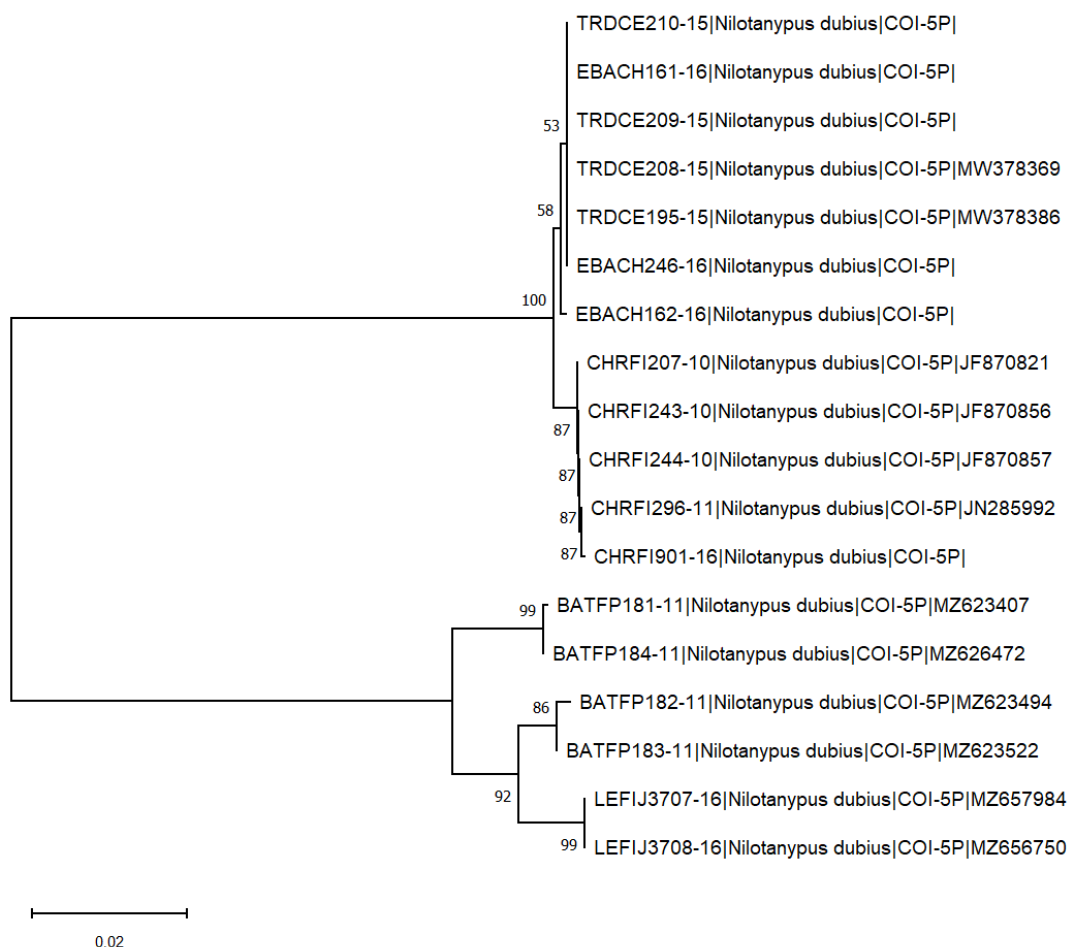


Figure 4. Neighbour joining tree with bootstrap values on branches (500 replicates) generated by MEGA 11 (Tamura et al. 2021). Distances used were uncorrected p-distances, all codon positions were included. First alphanumeric code is BOLD Process ID, last alphanumeric code is GenBank accession.

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