

A New Species Group in the Genus *Tanytarsus* van der Wulp (Diptera: Chironomidae) Based on a Fossil Record from Baltic Amber

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Abstract: A new fossil chironomid, *Tanytarsus serafini*, found in Baltic amber is described and illustrated based on adult males. The new species and similar extant species of the genus *Tanytarsus* van der Wulp are compared. Due to several distinct characters of wing, legs and hypopygium, a new species group for *Tanytarsus serafini* is proposed, and its diagnostic features are evaluated.

Key words: Diptera, Chironomidae, *Tanytarsus*, new species, Baltic amber, Eocene

1 Introduction

Tanytarsus van der Wulp, 1874 is the most species-rich chironomid genus in the tribe Tanytarsini, represented by more than 300 extant species. However, very few species of the Tanytarsini have been reported from fossil resins so far (Evenhuis, 1994; Seredusz and Wichard, 2007), including only three specific names assigned to *Tanytarsus* mentioned in Baltic amber (Meunier, 1904). These names were based on descriptions consisting primarily of inadequate characters of a single male (*Tanytarsus insularis*) and three females (*Tanytarsus wulpii*, *T. maritimus*) (Meunier, 1904), and their systematic status, in view of the absence of type specimens, should be regarded as doubtful.

Representatives of the subfamily Chironominae, including the Tanytarsini, are expected in the Cretaceous (Ekrem, 2003; Doitteau and Nel, 2007), they account for 4.6–6.5% of chironomid inclusions in the Eocene Baltic amber (Jędryczak, 2001; Seredusz and Wichard, 2007), and dominate in the chironomid fauna of the Dominican amber (Oligocene/Miocene), where their contribution amounts to 56% of all chironomids (Grund, 2005).

Systematic groups of chironomid species are typical for different aquatic habitat types, for which reason the representatives of the diverse family Chironomidae are excellent indicators of the habitat, and their indicative potential is used in palaeoecology. The complex systematic division of the genus *Tanytarsus* into several groups of species recognized at present (Reiss and Fittkau, 1971; Ekrem, 2003; Sanseverino, 2006) is based on heteromorphism unrivalled by other chironomids. The heteromorphism is observed in head structures, wings, legs and, particularly, in male genital apparatus. However, the most important diagnostic structures of the male Tanytarsini are minute (several tens of micrometers long at most) and therefore they are seldom adequately legible in fossil specimens.

Individuals of a hitherto unknown species of *Tanytarsus* described in the present study are in excellent condition and have supplied unique data that have enabled identification of a new species group.

2 Materials and Methods

The amber stone was cut into small cubicoid pieces, ground and polished manually so that the inclusions could be approached as closely as possible and their diagnostic structures could be studied. The wing was measured from the arculus to the tip; lengths of leg segments were measured to the nearest 5 μm ; lengths of palpomeres were measured to 1 μm ; the antennal, leg, bristle and venarum ratios (AR, LR, BR, VR) were calculated to 0.01. The morphological terminology and abbreviations used for the Chironomidae and Tanytarsini follow Sæther (1980) and Giłka (2009). Illustrations were prepared using the technique described by Giłka (2008). Both types of *Tanytarsus serafini* are deposited in the Museum of Amber Inclusions (MAI) at the Department of Invertebrate Zoology of the University of Gdańsk, Gdynia, Poland.

3 Systematic Palaeontology

Family Chironomidae Newman, 1834

Subfamily Chironominae Macquart, 1838

Tribe Tanytarsini Zavřel, 1917

Genus *Tanytarsus* van der Wulp, 1874

The *Tanytarsus serafini* species group

Diagnosis: Wing slender, with anal lobe strongly reduced; veins R and M very short, nearly half as long as Cu; R_{2+3} long, reaching almost the end of C; FCu placed far distally of RM, Cu much longer than M. Fore leg with stout tibial apical bristles. Anal point with large equidistant spinulae arranged in row between long crests. Superior volsella with two anteromedian setae. Stem of the median volsella long, bearing setiform and slender subuliform lamellae.

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