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## A redescription of *Philorus novem* KAUL, 1971, and a new synonymy in net-winged midges (Diptera, Blephariceridae)

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*Philorus novem* KAUL from the northwest Himalaya is redescribed from collections containing both sexes. *P. dubeyi* KAUL is synonymised with it. Asian species groups of *Philorus* are briefly discussed; the Japanese *P. kibunensis* KITAKAMI appears to be the closest relative of *P. novem*.

Keywords: Blephariceridae, *Philorus novem* KAUL, redescription, *P. dubeyi* KAUL, new synonymy.

### INTRODUCTION

*Philorus novem* and *P. dubeyi* were described after a single male and female specimen, respectively. They were from two sites in the Indian Himalayas, on the southern slopes of the Pir Panjal Range, in the upper Beas Basin (KAUL, 1971). Both species are large, wing lengths 8 and nearly 12 mm, respectively. Both are holoptic, their large eyes are transversely bisected; their antennae have 13 segments. In the confused key (it has no access to couplet 2, but a double entry to couplet 5) accompanying the original descriptions the two nominal species are distinguished by the length ratios between palpus segments and the relation between rostrum length and head height. Since these characters are known to be sexually dimorphic, ZWICK (1991) speculated about the synonymy of the two nominal taxa. The case remained unresolved because the male type of *P. novem* was missing and the female type of *P. dubeyi* lacks the genitalia (Zwick, 1991).

Material collected in 1953 by F. SCHMID (then Lausanne, now Ottawa) in Pakistan, in the North West Frontier Division and in Kashmir and Jammu, i.e., not far northwest of the above type localities (see SCHMID, 1958, for details of locations and maps), supports the suggested synonymy. This material was labelled as type and paratypes, respectively, of a new species of *Philorus* by the late B. MANNHEIMS (Bonn), in 1957. However, the description was never published and the name is not available. All males in SCHMID's collections belong to the same species and are identified as *P. novem* whom their genitalia resemble. The females are also of a single species and agree with the description of *P. dubeyi*. The very large females have vestigial spurs on the middle tibiae, which are absent in the smaller males. The coexisting male and female *Philorus* are nevertheless certainly conspecific; the two nominal taxa are therefore synonymised. Confirmation of this synonymy will have to await the collection of mature pupae and application of the metamorphotype-approach. Other Blephariceridae collected at the same sites by Schmid were *Blepharicera* spp. (ZWICK, 1990).

The genitalia of both sexes of *Philorus novem* are distinctive and characteristic; they are here redescribed.

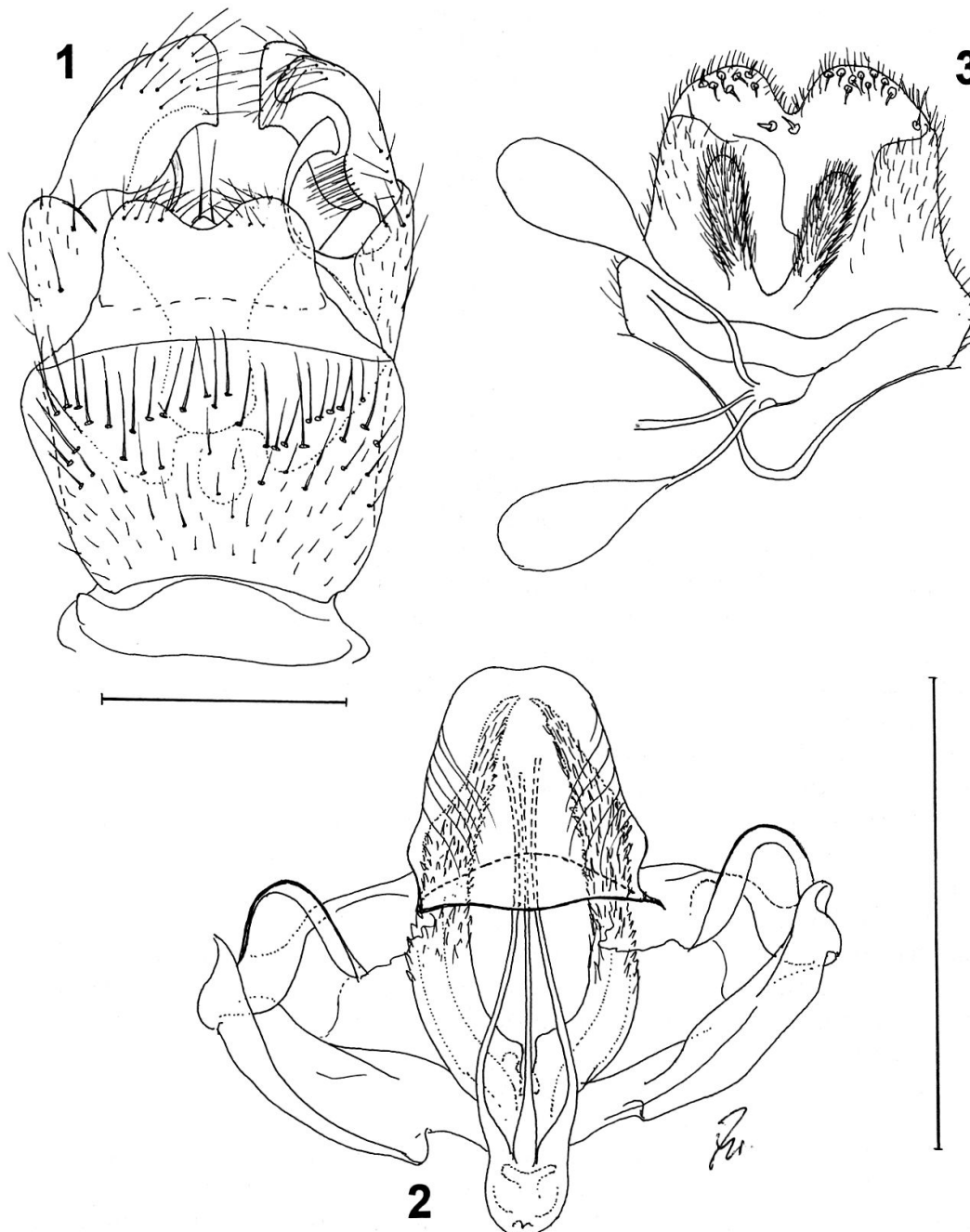
REDESCRIPTION

*Philorus novem* KAUL (Figs 1-3)

*Philorus novem* KAUL, 1971: Orient. Ins., 5: 427.

*Philorus dubeyi* KAUL, 1971, Orient. Ins., 5: 433, Figs 146-155; new synonymy.

Material studied: PAKISTAN (leg. F. SCHMID): Cachemire et Jammou: Surgun (6874 ft), 29.-30.VII.1953, 1 ♂ / 1 ♀ (Mus. Lausanne); 3 ♂♂ / 7 ♀♀, 2 torsi (Mus. Koenig, Bonn); North West Frontier Province: Naran, 5.VII.1953, 2 ♂♂ / 4 ♀♀, 2 torsi (Mus. Koenig, Bonn).



Figs. 1–3. *Philorus novem*: 1, male genitalia in dorsal view; note, however, that the gonostyle in the left half of the figure is shown in ventral view! 2, inner genital sclerites of male, dorsal view; sclerites of subanal pouch detached. 3, female, dissected oviscapt with two receptacles still attached, dorsal view. The scale lines are 500 µm long; figs 2 and 3 are the same scale.

Male: Tergite and sternite 8 narrow, bare, sclerite on sternite narrowly divided. Tergite 9 large, trapezoidal, with subterminal band of strong setae; the bare sclerotized distal portion is apically truncate. A long membrane connects tergite 9 with tergite 10 and the cerci; in dried specimens, both are retracted into the cavity of segment 9. The cerci are exceptionally short and wide (Fig. 1), barely sclerotized and with exceptionally few dorsal hairs; the cerci are much more setose ventrally, towards the anal pouch. Anal cone short, hardly visible between cerci.

Genital capsule trapezoidal, well sclerotized, pilose; the median portion is distally truncate and much shorter than the lateral lobes supporting the gonostyles. The membranous rounded apex covers the inner genital sclerites from below.

Outer gonostyles deeply divided into dorsal and ventral lobes. Dorsal lobe well shown in Fig. 132 of KAUL (1971); the lobe is slender, with medially curved gently hooked apex and a broad mediobasal swelling. There are long, dark setae along the outer edge and mainly at the apex; hairs on the mediobasal swelling are finer and pale, the remainder is bare (Fig. 1, right half). Ventral lobe of outer gonostyle flat, with almost straight outer edge leading to hook-shaped setose apex; a long broad membranous inner flange well delimited against the sclerotized part over its entire length (Fig. 1, left half). Base of inner gonostyle wide, in an almost horizontal position, distally narrowing to a slender backwardly curved rod with an ax-shaped apex. The apical enlargement is mainly in the dorso-ventral plane, but some of it is seen in dorsal view (Fig. 1, right half).

Inner structures (Fig. 2; terminology of HOGUE, 1987): Gonite with broad paramedian lobes on either side of sperm sac; sperm sac elongate, sclerotized, the three penis filaments slender, gently curved, simple. Lateral tines very dark, broad, flat, their wide channel occupies half of the width. The gonites are strongly arched (Fig. 2); their surface is frazzled beyond midlength and appears serrate in profile. The flat tips are obliquely truncate, acute, pointing medio-distally. Tegmen broad, hood-shaped, curved distad from a strong transverse basal edge. The lateral arms of the tegmen lie deeper inside the genital capsule and are particularly curved and twisted laterally, creating a lateral channel on each side, near the condyle of the genital capsule.

Female: Cerci short, plump, simple. Oviscapt (Fig. 3) plump, shallowly notched and broadly rounded, finely pilose. Strong short setiform sensilla occur only near the tip, on the dorsal side of each oviscapt lobe. Dorsobasally on each oviscapt lobe rises a procumbent densely hairy finger. The three receptacles are small, pale, drop-shaped, on pale, narrow stalks.

Notes: The interrelations of species in the circumpacific genus *Philorus* are presently poorly understood. *P. kibunensis* KITAKAMI from Japan (of which I have specimens) is certainly a relative of *P. novem*: males have a very similar tegmen and gonite and females also have digitiform hairy appendages to their oviscapt. However, other Japanese species may be even more closely related; published descriptions permit no decision.

Most species of *Philorus* have 14 or 15 antennal segments while *P. novem* has 13-segmented antennae; the same number occurs in some other Asian species. However, the latter do not seem to be close relatives of *P. novem* because they belong to a group that has finger-shaped extensions on male tergite 9. This group comprises *P. asiaticus* BRODSKY (Tian Shan, Pamir), *P. assamensis* (TONNOIR) (India, Meghalaya), *P. chosenensis* KITAKAMI (Korea), *P. horai* (TONNOIR) (India, Himachal Pradesh), *P. longirostris* KITAKAMI (Japan), *P. minor* KITAKAMI (**stat. nov.**; Japan) (after BRODSKY, 1972, and TONNOIR, 1930, and from material in my collection).

Males of the same species have extremely narrow gonites from which the bag-like, uncrested vesica extends freely forward and their pupae are distinguished by very low crest-like divergent lamellae of the medially fused or touching respiratory organs. *Euliponeura* TONNOIR, 1930 (which ZWICK, 1992, synonymised with *Philorus*) may become a subgeneric name for this species assemblage, which includes also several species with 14-segmented antennae. However, the precise delimitations and affinities of this species group must evidently still be determined: *P. vividis* KITAKAMI (Japan, Honshû, Kyûsyû) has a similar sperm sac and gonites but exhibits none of the other derived character states.

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