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Objekttyp: **Article**

Zeitschrift: **Mitteilungen der Schweizerischen Entomologischen Gesellschaft = Bulletin de la Société Entomologique Suisse = Journal of the Swiss Entomological Society**

Band (Jahr): **71 (1998)**

Heft 3-4

PDF erstellt am: **27.04.2024**

Persistenter Link: https://doi.org/10.5169/seals-402723

MITTEILUNGEN DER SCHWEIZERISCHEN ENTOMOLOGISCHEN GESELLSCHAFT
BULLETIN DE LA SOCIÉTÉ ENTOMOLOGIQUE SUISSE
71, 389 – 393, 1998

On the status of *Palamopogon longibarbus* (LOEW, 1857) (Diptera, Asilidae)

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Based on specimens from Switzerland, the genitalia of *Cyrtopogon longibarbus* LOEW, 1857, are described and illustrated. Characters found in males and females, respectively, suggest this species be excluded from *Cyrtopogon* and put in the former synonym *Palamopogon* (n. stat).

Keywords: Asilidae, *Palamopogon*, new status

INTRODUCTION

In 1993 we illustrated the genitalia of two species (WEINBERG & BÄCHLI, 1993b) belonging to the genus *Cyrtopogon* LOEW, 1847, in order to demonstrate that *C. flavimanus* (MEIGEN, 1820), should be considered as a valid species instead of a synonym of *C. maculipennis* (MACQUART, 1834). Continuing our study on species of *Cyrtopogon*, based on specimens from Switzerland, we found that, according to the genitalia, *longibarbus* LOEW, 1857, is wrongly placed within *Cyrtopogon*.

The historical background is as follows: Ten years after LOEW's description of *C. longibarbus*, based on material from St. Moritz, Grisons, JAENNICKE (1867) described the new genus *Eupalamus* and the species *Eupalamus alpestris* from the same area (St. Moritz, Alp Laret); this species became the type-species of this genus by monotypy. Both species were later considered as synonyms (cf. LEHR, 1988). BEZZI (1927) asserted that both MIK (1885a: 128, 1885b: 329) and BECKER (1887) considered the genera *Eupalamus* and *Cyrtopogon* as synonyms, whereas VERRAL (1909) did not. BEZZI (op. cit.) arranged the species of *Cyrtopogon* in several species groups, 2 species becoming type-species of the new subgenera *Cyclosocerus* and *Palamopogon*, respectively, the latter with *longibarbus* LOEW as type-species. BEZZI (op. cit.) explained why he did not use the name *Eupalamus* JAENNICKE: this name has been preoccupied by WESMAEL in 1845 in Hymenoptera.

According to VERRAL (op. cit.), *longibarbus* LOEW does not belong to *Cyrtopogon*. On the other hand, BEZZI (op. cit.), based on the data he had at his disposal, found it justified to establish the subgenus *Palamopogon* of *Cyrtopogon* for it. This decision was taken because *longibarbus* LOEW has a reduced area of the alula compared with the other *Cyrtopogon* species. However, ENGEL (1930), LEHR (1988), and following authors treated *Palamopogon* as a synonym of *Cyrtopogon*.

MATERIAL AND METHODS

Cyrtopogon longibarbus LOEW was described from a male collected in St. Moritz, Grisons. The holotype (No. 10005) is housed in the Zoologisches

Museum Berlin (SCHUMANN, 1973). We did not check the holotype but we studied 25 specimens housed in the Naturhistorisches Museum Basel (BÄCHLI *et al.*, 1995) and in the Entomologische Sammlung ETH (WEINBERG *et al.*, 1995).

Material from Basel (BÄCHLI *et al.*, 1995): 1 ♂, 1 ♀, Alp Buffalora, 19.VII.1944, 1070 m, F. KEISER; 1 ♂, 2 ♀♀, Pontresina, 1800-2350 m, 5.VIII.1952, F. KEISER; 2 ♀♀, Alp Grimmels, 5.VIII.1946, F. KEISER; 1 ♀, Alp Grimmels, 10.VIII.1946, F. KEISER; 2 ♀♀, Val Roseg, 1800-2000 m, 25.VII.1952, F. KEISER.

Material from Zürich (WEINBERG *et al.*, 1995): 1 ♂, Alp Durnang GR, IX., ESCHER-KÜNDIG; 6 ♂♂, Andeer GR, Alp Durnang, IX., ESCHER-KÜNDIG; 3 ♂♂, Cresta GR, VIII., ESCHER-KÜNDIG; 2 ♀♀, Cresta GR, Bannwald, VIII., ESCHER-KÜNDIG; 1 ♀, Piora TI, ESCHER-KÜNDIG; 1 ♂, 1 ♀, Piora TI, 1940-1950 m, VII., SAUTER.

Preparation of genitalia was made as detailed in WEINBERG & BÄCHLI (1993a).

RESULTS

The descriptions of *Cyrtopogon* and *Palamopogon* are completed here with features of external morphology and differences in the genitalia. We consider the characters mentioned below as discriminating enough at the generic level. Therefore, the species *longibarbus* LOEW is removed from *Cyrtopogon* LOEW and placed in the separate genus *Palamopogon* BEZZI, whose generic status is here established again.

Male genitalia

KARL (1959) showed that the epandrium is medially longitudinally divided in *Cyrtopogon*, and undivided in *Palamopogon* (Fig. 1a). As parts of the genitalia of two species of *Cyrtopogon* have already been illustrated (WEINBERG & BÄCHLI, 1993b), we limitate ourselves here in showing characters of both sexes in *Palamopogon*. We particularly emphasize differences in the hypandrium (prominent in *Cyrtopogon*) and in parts of the gonopods and the aedeagus (cf. WEINBERG & BÄCHLI, 1993b).

In *Palamopogon*, the epandrium is not divided (Fig. 1a), the apex of the hypandrium is not prominent (Figs 1b, 1c). The basistylus is wide in its basal half and narrowed toward its apex, reaching half of the width of the basal part; apical process of the basistylus strongly sclerotized, short and widened; basistylus with two strong black spines of different lengths near the middle on the external side; dististylus long, wider at base up to its curved half, further on narrowing a little and straight at the tip (Figs 1d, 1e). Aedeagus tubular, simple, apically curved; apodeme long (Figs 1f, 1g).

Female genitalia

The ovipositor in both genera has acanthophorites and shows differences in the shape of the gonapodeme and the spermathecae.

In *Palamopogon*: Ovipositor with 6 acanthophorites (Fig. 2c). Gonapodeme with a characteristic shape (Fig. 2b), bordering a membranous bag to which the 3 spermathecae medially cling. Spermathecae basally weakly sclerotized, with a strongly sclerotized ring in their basal third (Fig. 2b); terminally darker, forming a

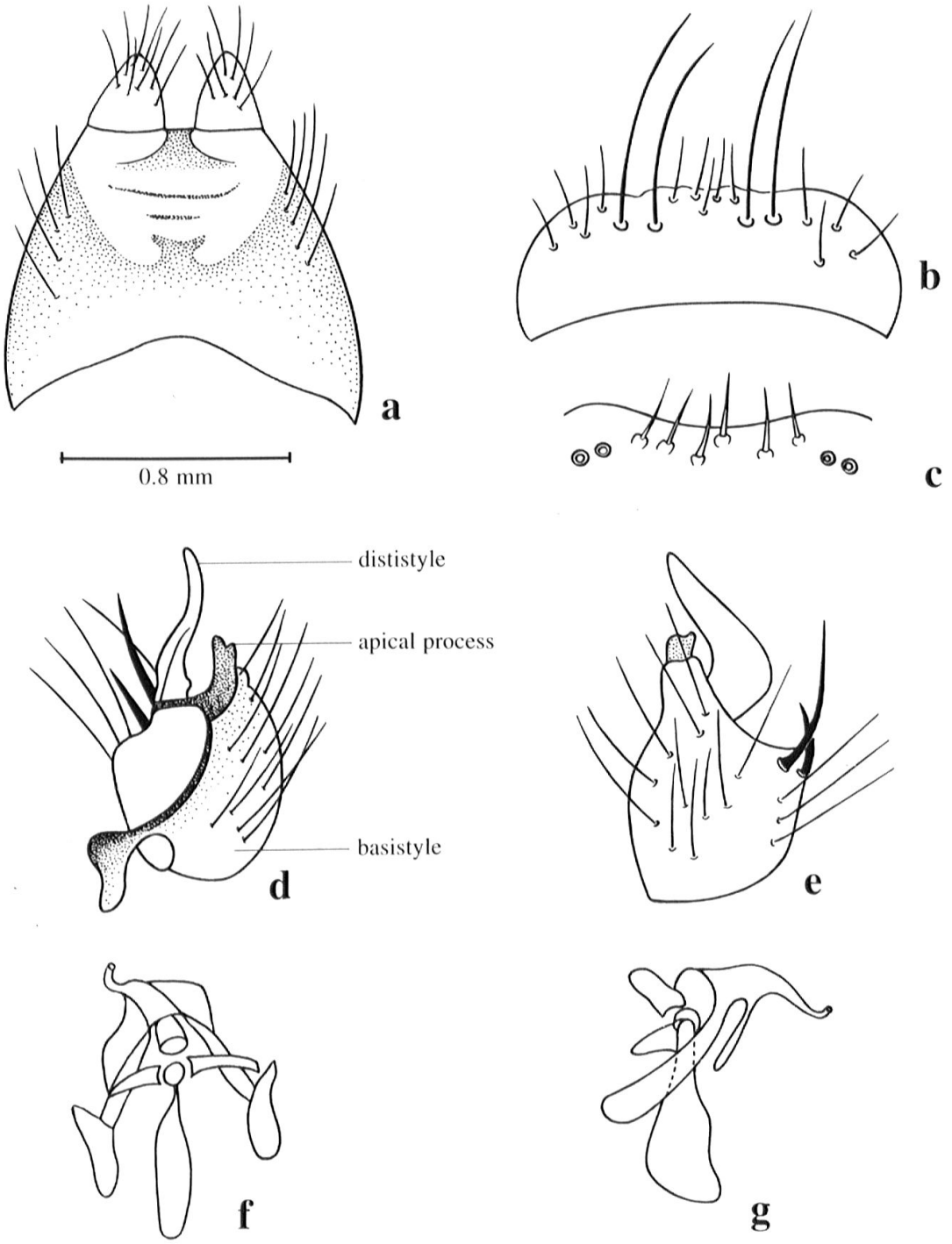

Fig. 1. Male genitalia of *Palomopogon longibarbus*: Epandrium, dorsal view (a); hypandrium, dorsal view (b); tip of hypandrium, enlarged (c); gonopod, lateral view (d); gonopod, dorsal view (e); aedeagus, dorsal view (f); aedeagus, lateral view (g).

ball at the level of the abdominal segment 5 (Fig. 2a). The spermathecae have long, thin ducts, the spermathecal glands are thin, apically forming a spiral (Fig. 2a), not broadly coiled as in *Cyrtopogon* (cf. WEINBERG & BÄCHLI, 1993b).

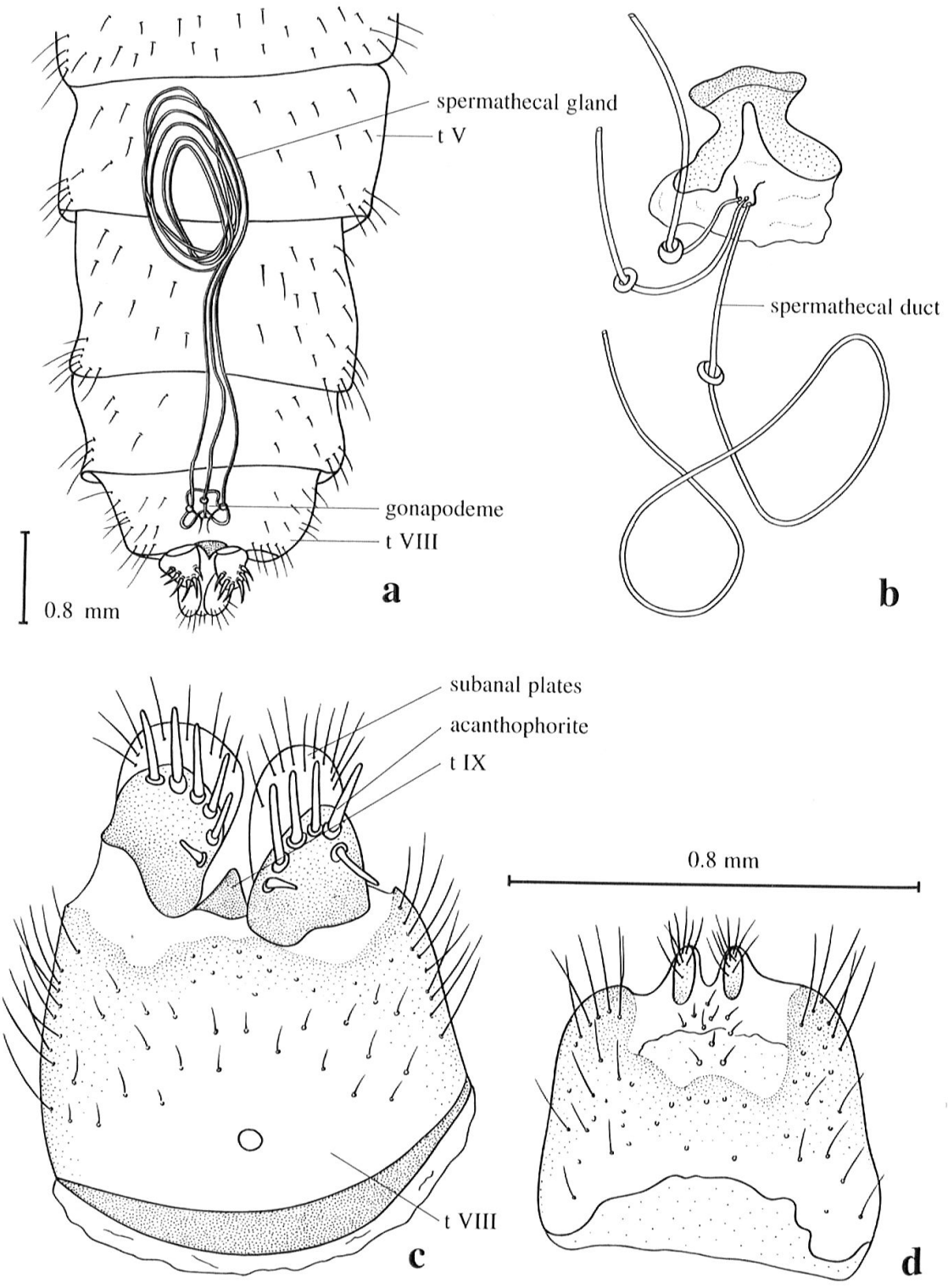

Fig. 2. Female genitalia of *Palamopogon longibarbus*: Tip of abdomen (a); gonapodeme (b); ovipositor (c); hypogyne (d). Abbreviations: t V – t IX = tergites 5–9.

REMARKS

In addition to the diagnosis given above, we already have illustrated the head (WEINBERG & BÄCHLI, 1995, Fig. 35a), showing other characters: Opposite the anterior ocellus there are two tubercula covered with a long pilosity. Their presence

makes the frons to be divergent above the antennae. This feature is present in both sexes but does not occur in the species of *Cyrtopogon*. On t_2 there is a row of long antero-dorsal hairs, stronger in males than in the females; in males they are twice as long as the first tarsal joint, in females they are a little longer than this joint. The vein r-m is placed medially on the discal cell.

ZUSAMMENFASSUNG

Die männlichen wie auch die weiblichen Genitalien von *Cyrtopogon longibarbus* LOEW werden beschrieben. Sie weichen so stark von denjenigen der übrigen *Cyrtopogon*-Arten ab, dass diese Art in die Gattung *Palamopogon* (n. stat.) gestellt wird, die bisher als Synonym zu *Cyrtopogon* behandelt wurde.

ACKNOWLEDGMENTS

We express our thanks to the curators of the collections in Basel and Zürich, Drs. M. BRANCUCCI and B. MERZ, respectively, for the loan of the specimens as well as to Marinela NAZAREANU for preparing the illustrations.

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(received April 6, 1998, accepted May 29, 1998)