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R. Henry L. DISNEY

A new species of short-winged *Triphleba* RONDANI (*Phoridae: Diptera*) from North America

Abstract: *Triphleba brevipennis* n. sp. is described from the U.S.A. Both sexes have abbreviated wings. The hitherto unknown female of *T. parvifurca* BORGMEIER, 1963 is described and the male hypopygia of it and of *T. leptoneura* BORGMEIER, 1963 are illustrated.

Key words: *Phoridae*, *Triphleba*, new species, Nearctic

Author's address: University Museum of Zoology, Downing Street, Cambridge CB2 3EJ, U. K.

INTRODUCTION

More than eighty species (including those formerly placed in *Citrago*) are known in the genus *Triphleba* RONDANI (1856), which is recorded from all regions except the Afrotropical. However, the genus is primarily Holarctic. The Nearctic species are keyed by BORGMEIER (1963). The Neotropical species are covered by MALLOCH (1914) and BORGMEIER (1926). The Palaearctic species are keyed by SCHMITZ (1943) supplemented by SCHMITZ (1949, 1955), DELAGE & LAURAIRE (1970), DISNEY (1983, 1987, 1994a), GORI (1999, 2000), GOTÔ & TAKENO (1983), MICHAILOVSKAYA (1986, 1999), DISNEY & BRENNER (2002), DISNEY & CHAPMAN (2001), DISNEY & MICHAILOVSKAYA (2002) and MOSTOVSKI & DISNEY (2002). MICHAILOVSKAYA's (1999) paper includes a key to the species of the Russian far east. Chinese species are covered by LIU (2001). Oriental species are covered by BEYER (1958) and Australasian species by SCHMITZ (1939).

Among some specimens from the U.S.A. sent by Dr Will Reeves (Clemson University, U.S.A.) there is a distinctive new species which has the wings abbreviated in both sexes. It is described below, along with the description of the hitherto

unknown female of *T. parvifurca* BORGMEIER and figures of the the hypopygia of it and of *T. leptoneura* BORGMEIER.

METHODS

The specimens were preserved in ethanol and slide mounted in so-called Berlese Fluid (DISNEY 1994b, 2001).

RESULTS

Triphleba RONDANI, 1856

Triphleba RONDANI, 1856: 136.

In the key to the Nearctic species (BORGMEIER 1963) the new species runs to couplet 19 lead 1. The thickened vein 3 and shape of the wing will immediately distinguish it from *T. laticosta* BORGMEIER, 1962 in both sexes.

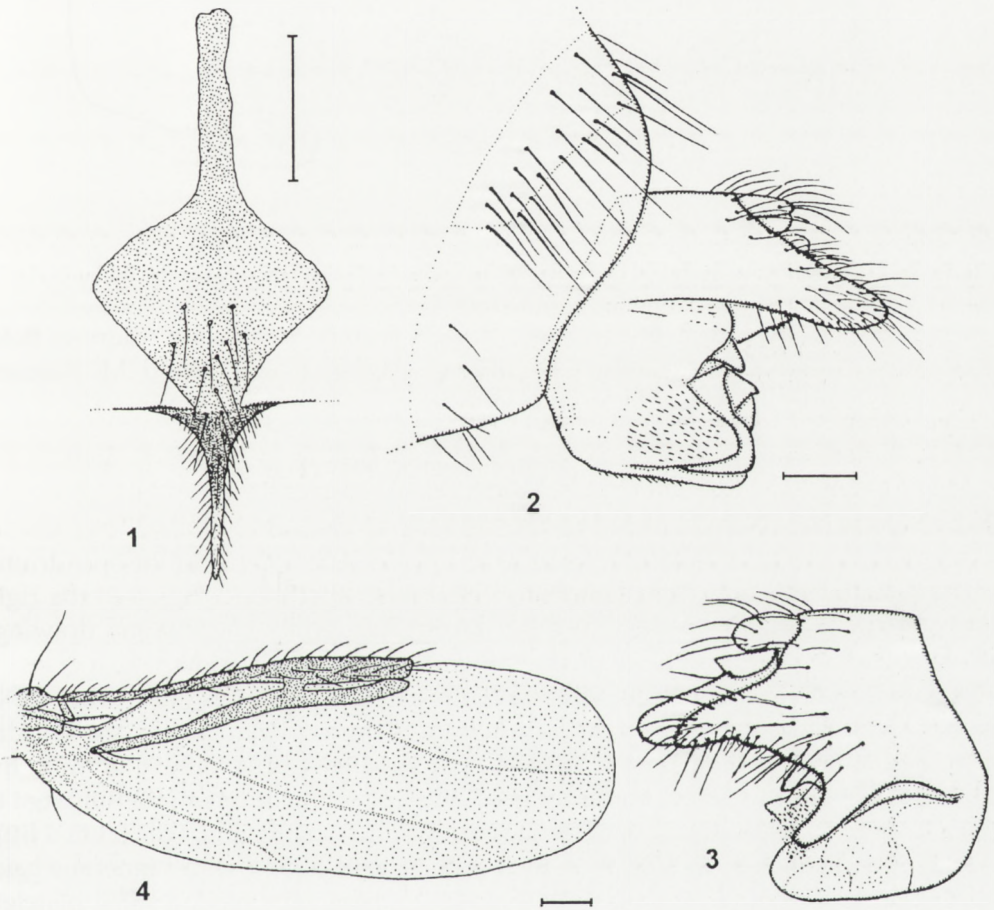
Triphleba brevipennis n. sp. (Figs 1–4)

Etymology. The name refers to the abbreviated wings.

Male. Frons brown, broader than long, with about sixteen hairs and dense, very fine, microsetae. Anterolateral bristles a little higher on frons than antials, which are almost equidistant between ALs and supra-antennal bristles. Pre-ocellars slightly lower on frons than mediolaterals and all four bristles about equidistant. Brown, subglobose postpedicels (third antennal segments) with numerous SPS vesicles, which are about as large as sockets of frontal bristles. The brown palps are about 0.25 mm long, with an apical bristle almost as long, 7–9 shorter bristles of varying lengths, and a dozen hairs. Dark brown labrum only about two thirds as wide as diameter of postpedicel. The paler brown labella with only a few short, curved hairs below. Thorax brown. Each side of scutum with a humeral, two notopleurals (the anterior one being as strong as humeral, but the posterior one much smaller), a pre-alar, an intra-alar, a postalar and a prescutellar dorsocentral bristle. Scutellum with a single pair of long bristles only. Abdominal tergites brown with well developed hairs, which are longest on T6 (Fig. 2). Venter brown with fine hairs on segments 3–6. Hypopygium brown, including anal tube, and as Figs 2 and 3. Legs brown and slender; the ratios of the lengths of the femora to their greatest breadths being about 3 : 1 for the front leg, 5 : 1 for the middle leg and 4.6 : 1 for the hind leg. The only pre-apical bristles on the tibiae are an anterodorsal in the basal third of the mid tibia and a small anterodorsal in the basal third of the hind tibia. The crowded hairs below basal half of hind femur about as long as adjacent hairs of anterior face, and thus shorter than those of anteroventral row of distal half. Wing similar to that of female (Fig. 4). Haltere brown.

Female. Head similar to male, but the labrum is larger, so that its greatest breadth is subequal to diameter of postpedicel, and the labella are narrower but have some

teeth on their inner faces adjacent to glossa. Thorax as male. Abdominal tergites brown with numerous hairs. Venter brown with hairs below on segments 3–6 and on flanks, especially on segments 5–6. Sternite 7 as Fig. 1, with posterior point anchored by lateral extensions at the rear of sternum 7 extending beneath the integument as apodeme-like processes. Cerci brown, about 3.6 times as long as greatest breadth and with subapical bristle about 1.3 times as long as cercus. Legs similar to male. Wing as Fig. 4. Haltere as male.



Figs 1–4. *Triphleba brevipennis*. 1 – female, abdominal sternite 7, 2 – male, left face of hypopygium and rear of abdominal segment 6, 3 – male, right face of hypopygium, 4 – female, right wing. Scale bars = 0.1 mm.

Material examined. Holotype male, U. S. A., North Carolina, Swain Co., Andrews Bald, pitfall trap, 14.XII.2000–1.II.2001, C. Parker, I. Stocks and M. Petersen (Cambridge University Museum of Zoology). Paratype female, Swain Co., Clingmans Dome, Malaise trap, 13–29 November 2000, otherwise as holotype.

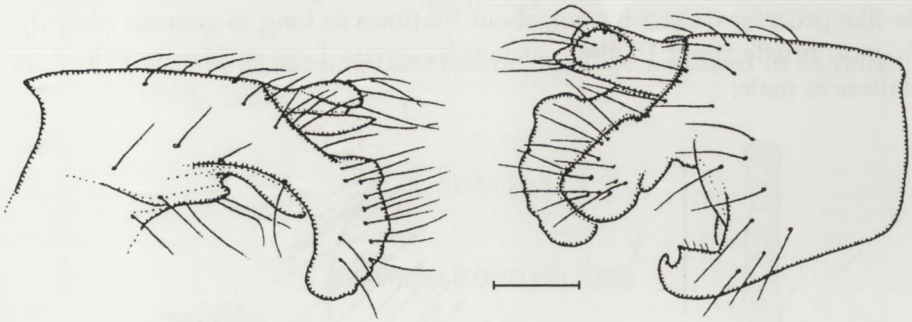
Triphleba leptoneura BORGMEIER, 1963 (Fig. 5)*Triphleba leptoneura* BORGMEIER, 1963: 54 (male holotype, USNM).

Fig. 5. *Triphleba leptoneura* male, left and right faces of epandrium and anal tube. Scale bar = 0.1 mm.

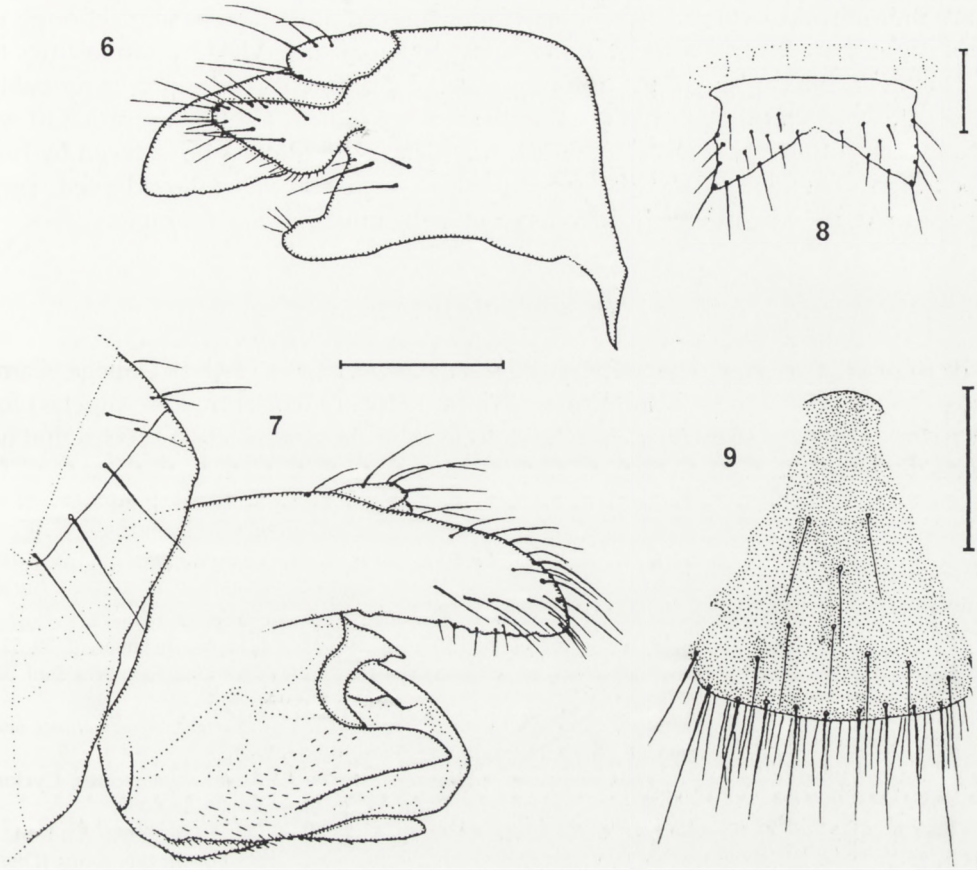
Material examined. 2 males, U. S. A., North Carolina, Swain Co., Andrews Bald, pitfall traps, 14.XII.2000–1.II.2001, 8.IX.2001, C. Parker, I. Stocks and M. Petersen (Cambridge University Museum of Zoology).

Triphleba parvifurca BORGMEIER, 1963 (Figs 6–9)*Triphleba parvifurca* BORGMEIER, 1963: 55 (male holotype, USNM).

Borgmeier stated that the male 'forceps' (the posterolateral lobes of the epandrium) are 'subequal in length, hairy'. However, in the fresh specimens (Figs 6–7) the right lobe is clearly shorter than the left. Brian Brown has kindly checked my drawings against the holotype. The hitherto unknown female is described below.

Female. Head similar to male, including numerous SPS vesicles (about the size of the sockets of frontal bristles), except the labrum is much larger (its greatest breadth being about 1.3 times diameter of postpedicel, compared with about 0.6 times in the male) and likewise the labella are larger and have teeth on their inner faces adjacent to glossa. Thorax as male. Abdominal tergites brown with small hairs, which are a little larger on the distinctive T6 (Fig. 8). Venter pale brownish grey with numerous hairs below segments 3–6 and on flanks of 4–6, most of these hairs having small platelets extending from the posterior rims of their sockets. Sternite 7 as Fig. 9. Sternite 8 is a broad, ill-defined, V-shape and bare. The light brown cerci about 2.6 times as long as broad with subterminal bristle about 1.4 times as long as cercus. The apodemes and ill-defined sclerites of T9 are separated from each other and from T10, with the epiproct clearly darker than both. Legs similar to male. Wing 1.9–2.0 mm long. Costal index 0.52–0.53. Costal ratios 2.3 : 1.1 : 1. Costal cilia 0.09 mm long. The distal half of costa and vein 3 a little thicker than in male, the fork of vein 3 being a little larger but vein 2 indistinct. Otherwise wing and haltere as male.

This female runs out to the correct couplet and lead in BORGMEIER's (1963) key.



Figs 6–9. *Triphleba parvifurca*. 6 – male, right face of epiandrium and anal tube, 7 male, left face of hypopygium and rear of abdominal segment 6, 8 – female, abdominal tergite 6, 9 – female, abdominal sternite 7. Scale bars = 0.1 mm.

Material examined. 2 males, 1 female, U. S. A., North Carolina, Swain Co., Ravensford, pitfall trap, 23–30.X.2001, E. Bernard and T. Goodrich (Cambridge University Museum of Zoology).

DISCUSSION

A number of Nearctic species of *Triphleba* have the wings a little shortened, with this being most marked in *T. laticosta* BORGMEIER (1962). The new species, however, has the wings more reduced in area than this or any other Nearctic species. Indeed, the only other known species that shows greater reduction is *T. recidopennis* MOSTOVSKI & DISNEY (2002) from Kazakhstan. In this species the reduction in the female wing is such as to render it flightless. The male has narrowed wings that are

sufficient for flight but not to generate enough lift to transport the female during a nuptial flight. In the case of *T. brevipennis* the wings of both sexes are large enough to permit flight. Indeed the presence of the paratype female in a Malaise trap testifies to this. However, the capture of the holotype male in a pitfall trap in winter is probably significant. Only scuttle flies that are flightless or are reluctant to fly are prone to being caught in pitfall traps (DISNEY, 1994b). A reluctance to fly may be induced by low temperatures. The genus *Triphleba* is noted for its inclusion of winter-adapted, very dark coloured, species, of which *T. recidopennis* is the most extreme example.

ACKNOWLEDGEMENTS

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REFERENCES

- BEYER E. 1958. Die ersten Phoriden von Burma (*Dipt. Phor.*). Comment. Biol., Helsingfors, 18: 3-72.
- BORGMEIER T. 1926. Phorideos novos ou pouco conhecidos do Brasil. Bol. Mus. Nac. Rio de Janeiro 2: 39-52.
- BORGMEIER T. 1962. Some new North American species of the Dipterous family Phoridae. Rev. Bras. biol. 32: 65-82.
- BORGMEIER T. 1963. Revision of the North American phorid flies. Part I. The *Phorinae*, *Aenigmatiinae* and *Metopininae*, except *Megaselia* (*Diptera*, *Phoridae*). Studia Ent., Petropolis, 6: 1-256.
- DELAGE A. & LAURAIRE M.-C. 1970. Trois nouvelles espèces de *Phoridae* (Diptères, Brachycères, Cyclorhaphes), trouvées à Peyresq (Alpes de Provence). Bull. Rech. Agron. Gembloux 5: 450-458.
- DISNEY R. H. L. 1983. Scuttle flies *Diptera*, *Phoridae* (except *Megaselia*). Handbk Ident. Br. Insects 10(6): 1-81.
- DISNEY R. H. L. 1987. A new species of *Triphleba* from Spain and two new synonyms in this genus (*Dipt.*, *Phoridae*). Entomologist's mon. Mag. 123: 191-194.
- DISNEY R. H. L. 1994a. A new species of *Triphleba* (*Diptera: Phoridae*) from France and the subfamily assignment of this genus. Gi. it. Ent. 6 (1992): 143-147.
- DISNEY R. H. L. 1994b. Scuttle Flies: The *Phoridae*. Chapman & Hall, London, xii + 467 pp.
- DISNEY R. H. L. 2001. The preservation of small *Diptera*. Ent. mon. Mag. 137: 155-159.
- DISNEY R. H. L. & BRENNER S. 2002. Some poorly known Alpine *Triphleba* Rondani (*Dipt.*, *Phoridae*). Entomologist's mon. Mag. (in print).
- DISNEY R. H. L. & CHAPMAN J. W. 2001. A scuttle fly (*Diptera: Phoridae*) new to Britain caught in a net suspended 200 metres above the ground. Br. J. Ent. Nat. Hist. 14: 39-43.
- DISNEY R. H. L. & MICHAILOVSKAYA M. V. 2002. New species of *Phoridae* (*Diptera*) from Russia. Entomologist's mon. Mag. 138: 225-236.
- GORI M. 1999. I Foridi della collezione Rondani (*Diptera Phoridae*). Boll. Soc. Ent. Ital. 131: 139-146.
- GORI M. 2000. Due nuove specie di Foridi italiani: *Billotia papii* n. sp. e *Triphleba ausoniae* n. sp. (*Diptera Phoridae*). Boll. Soc. Ent. Ital. 132: 175-180.
- GOTÔ T. & TAKENO K. 1983. A new *Triphleba* species with bifurcate antennae from Japan (*Diptera*, *Phoridae*). Esakia 20: 149-156.
- LIU G. 2001. A Taxonomic Study of Chinese Phorid Flies *Diptera: Phoridae* (part 1). Neupress, China, 296 pp.
- MALLOCH J. R. 1914. Costa Rican *Diptera*. Paper 1. A partial report on *Borboridae*, *Phoridae* and *Agromyzidae*. Trans. Am. Ent. Soc. 40: 8-36.
- MICHAILOVSKAYA M. V. 1986. New data on the fauna of *Phoridae* (*Diptera*) of Primorskij Territory. Entomol. Obozr. 65: 427-432.

- MICHAILOVSKAYA M. V. 1999. A review of the genera *Triphleba* Rondani, *Phora* Latreille and *Anevrina* Lioy (*Diptera*, *Phoridae*) from Russian Far East. Far Eastern Entomologist 70: 1–16.
- MOSTOVSKI M. B. & DISNEY R. H. L. 2002. A remarkable new species of *Triphleba* Rondani (*Diptera*: *Phoridae*). Studia Dipt. 8 (2001): 557–562.
- SCHMITZ H. 1939. Neuseeländische Phoriden. Naturhist. Maandblad 28: 34–37, 55–56, 67–68, 75–76, 86–89, 98–101, 111–116, 124–129.
- SCHMITZ H. 1943. *Phoridae*. In: Lindner E (ed.), Die Fliegen der palaearktischen Region 4(33), (Lieferung 147, 149): 129–92.
- SCHMITZ H. 1949. *Phoridae*. In: Lindner E (ed.), Die Fliegen der palaearktischen Region 4(33), (Lieferung 160): 193–240.
- SCHMITZ H. 1955. *Phoridae*. In: Lindner E (ed.), Die Fliegen der palaearktischen Region 4(33), (Lieferung 180): 321–68.

STRESZCZENIE

[Tytuł: Nowe, o skróconych skrzydłach, gatunki z rodzaju *Triphleba* RONDANI (*Phoridae*: *Diptera*) z Ameryki Północnej]

Ze Stanów Zjednoczonych Ameryki Północnej opisano nowy gatunek (samca i samicę): *Triphleba brevipennis*, jak również nieznaną dotychczas samicę *T. parvifurca* BORGMEIER. Sporządzono także rysunki narządów genitalnych wymienionych gatunków i rysunek aparatu kopulacyjnego samca *T. leptoneura* BORGMEIER. Wskazano również podstawowe opracowania odnoszące się do rodzaju *Triphleba* RONDANI.