6. The larvae of Telmatogetoninae (Diptera: Chironomidae) of the Holarctic Region — Keys and diagnoses

P. S. CRANSTON AND P. ASHE

Subfamily Telmatogetoninae Wirth, 1949
Figs 6.1–6.3.

Diagnosis

Medium-sized to large, yellow to dark brown. Dorsal sclerites of head variable. Eye spots paired, single or absent (extralimital Telmatogeton torrenticola Terry).

Antenna. Very short, less than 1/5 of mandible length; 4 segmented; basal segment no more than 2X as high as wide; remaining segments small; third segment never annulate. Blade bifid, subequal to flagellum. Lauterborn organs small. Style weak.

Labrum. All S setae well developed, simple. Chaetae a tuft of simple or serrate setae. Labral lamellae absent, although anterior margin of labrum is variably divided into 3 weak lobes. Labral margin wide and strong. Pecten ephiphrangys consisting of 3 subequal scales, each with unequal teeth. Chaetulae laterales narrow, simple and serrate; chaetulae basales small or absent. Premandible broad and heavily sclerotised with up to 3 apical teeth and strongly developed brush.


Mentum. With 11–15 teeth; median tooth with a median nipple (lost in worn specimens). Ventromental plate very small; beard absent. Setae submenti retracted on post-mentum.


Premento-hypopharyngeal complex. Labial palp with common base. Ligula small. Paraligula a curved, sclerotised, simple scale. Prementum medially divided into numerous apically serrate, elongate lamellae, not apparently divisible into median and paramedian groups. Caudolateral chaetulae small and simple. Hypopharyngeal skeleton strongly

sclerotised; pecten hypopharyngis not recognized.

Body. Parapods well developed, anterior pair fused basally; both pairs with simple, dark claws (rarely serrate on anterior parapods). Procercus absent; 2–3 anal setae present. Anal tubules absent in all Holarctic species. Body setae variably developed, but never longer than half segment length.

Comments

The lack of ventromental plate, striae and beard separates Telmatogotoninae from Chironominae and Prodiamesinae. The absence of annihilations on the third antennal segment and the single median group of premental lamellae (Fig. 6.1A) separates the Telmatogotoninae from most otherwise similar Diamesinae. The combination of 4-segmented antenna, simple S1, absence of labral lamellae and strongly developed premandible and brush will separate the Telmatogotoninae from any known larval Orthocladiinae. The two genera recognised now in Telmatogotoninae include many synonyms; those cited here pertain to the Holarctic, all are detailed in Ashe & O’Connor (2009).

Key

Genera of Telmatogotoninae

1. With distinct clypeus and labral sclerite. S3 placed on well developed tubercle. Premandible with 3 rounded apical teeth. (Figs 6.1–6.2).......................
   Telmatogoton (p. 138)
   — Area anterior to frons homogeneous, tuberculose, without delimited sclerites. S3 not on tubercle. Premandible simple. (Fig. 6.3)... Thalassomya (p. 139)

Notes

The larvae of Paraclunio Kieffer and Telmatogoton cannot be separated and the genera are treated as synonymous (Cranston 1989). The immature stages of Psamathiomya Deby (P. S. Cranston pers. obs.) although undescribed, confirm the synonymy with Telmatogoton, as was suggested by Sublette & Wirth (1980).

Telmatogoton Schiner

Figs 6.1, 6.2.

syn.: Paraclunio Kieffer, 1911:103.

Diagnosis

Large larvae, up to 11 mm long.

Dorsal surface of head. With frons separate, distinct rectangular clypeal sclerite, small median labral sclerite, remaining area granulate without sclerites delimited. S3 arises from strong tubercle.

Antenna. Short, with 4 simple (non-annulate) segments; flagellum very short. Blade bifid, subequal to flagellum. Lauterborn or gans small. Style weak.

Labrum. All S setae simple and well developed. Labral lamellae absent, but anterior labral margin variably divided into 3 lobes. Chaetae in tuft of simple and/or serrate chaetae. Pecten epipharyngis consisting of 3 subequal scales, each with unequal teeth. Chaetae laterales narrow, simple and serrate; chaetae basales small or absent. Premandible broad, heavily sclerotised, with 3 apical teeth and well developed brush.

Mandible. Single apical tooth scarcely longer than any of 4–6 inner teeth. Seta subdentalis long, extending nearly to apical tooth. Seta interna with 6 fine, simple branches.

Mentum. With single median tooth bearing median nipple; 4–6 pairs of lateral teeth, outermost often very small. Ventromental plate weak; beard absent.

Maxilla. Variable high numbers of tetrahedral lamellae, some simple, others apically serrate, present on outer margin of palpiger. Sensillae and setae of palp small and situated apically. Galea without lamellae or pecten galearis; sensillae and setae well developed.

Body. Parapods well developed, each bearing crown of claws. Procercus absent; 2–3 anal setae present. Anal tubules absent. Body setae sometimes well developed, up to half segment length on thoracic segments.

Ecology and distribution

Marine Telmatogoton species can be found on most of the world’s shores, where larvae construct tubes within green algae such as Enteromorpha. They seem especially abundant in areas where there is some freshwater seepage,
and/or where there is shelter from extreme wave exposure. Larvae are agonistic, defending their tubes against intruders apparently seeking optimal pupation sites.

The genus is world-wide, with 29 species recognised, including nine from the Holarctic. *Telmatogeton japonicus* Tokunaga has a wide distribution along the Pacific, Nearctic and western Palaearctic coasts, with likely recent and continuing distributions assisted by intercontinental shipping (Brodin & Andersson 2009) including oil rigs. In Hawaii five or six species, some of conservation significance, are found in freshwater streams and torrents (Benbow et al. 1997). There is diversity, including possibly parthenogenetic species, among islands of the southern oceans including the Sub-Antarctic.

The larvae of 5 species of Holarctic *Telmatogeton* are described (Wirth 1947a; Wirth 1949; Tokunaga 1935).

**Thalassomya** Schiner

Fig. 6.3.

*Thalassomya* Schiner, 1856:219; Wirth 1947b.
syn.: *Scopelodromus* Chevrel, 1903:1.

**Diagnosis**

Medium-sized to large larvae, up to 10 mm long.

*Dorsal surface of head.* Frons indistinctly separated from coarsely granulate to tuberculose clypeolabral area that lacks differentiated sclerites. S3 does not arise from tubercle.

*Antenna.* Short, with 4 simple, non-annulate segments; flagellum very short. Blade bifid, subequal to flagellum. Lauterborn organs small. Style weak.

*Labrum.* All S setae simple and well developed. Labral lamellae absent, but with anterior margin of labrum variably divided into 3 lobes. Chaetae serrate, in tuft. Pecten epipharyngis of 3 subequal toothed scales. Premandible broad, heavily sclerotised, with 1–2 weakly indicated apical teeth and well developed brush.

*Mandible.* Single apical tooth no longer than any of 3–6 inner teeth. Seta subdentalis long, extending nearly to apical tooth. Seta interna with 6 fine simple branches.

*Mentum.* With single median tooth bearing median nipple; 5–7 pairs of lateral teeth, outermost often very small. Ventromental plate weak; beard absent.

*Maxilla.* Tetrahedral lamellae at base of palpiger numerous and simple. Palp with all sensillae simple. Galea with few rounded hyaline lamellae. One anterior seta maxillaris developed as hyaline, multilobed lamella.


**Ecology and distribution**

*Thalassomya* live in the intertidal marine zone, particularly of the warmer seas of the world (with one freshwater lotic record from extra-limital Kenya). Larvae tend to favour reduced salinity waters around harbours and river mouths, with some preference for higher organic inputs around coastal sewage discharges.

The genus is distributed along warmer seas’ shores of the world with some 11 described species. Of these, two are known from the Nearctic, one from Western Palaearctic and one from Japan. Larvae were described by Wirth (1947b; 1952).

**References**


Naturelle de Metz 27:103–105.