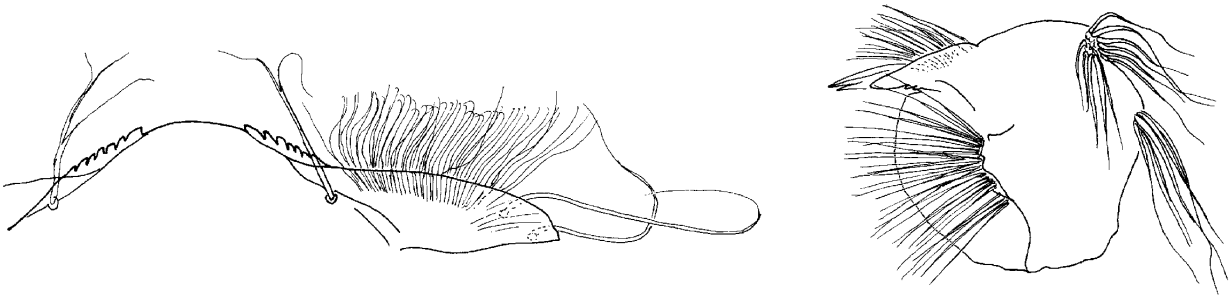
SUBFAMILY
PRODIAMESINAE 6

DIAGNOSIS: Antennae 4 segmented, not reduced; 3rd and 4th segments very small. **Labrum** with S I apically toothed or apicolaterally fringed; S II and S III simple; S IV normal or S IV A with long fringed terminal element mounted on long pedicellate base. Labral lamellae present. Premandibles present. **Mentum** with 15-18 teeth; ventromental plates large, with weak to well developed beard. **Prementum** without dense brush(es) of setae. **Body** with well developed anterior and posterior paropods, procerci and anal tubules.

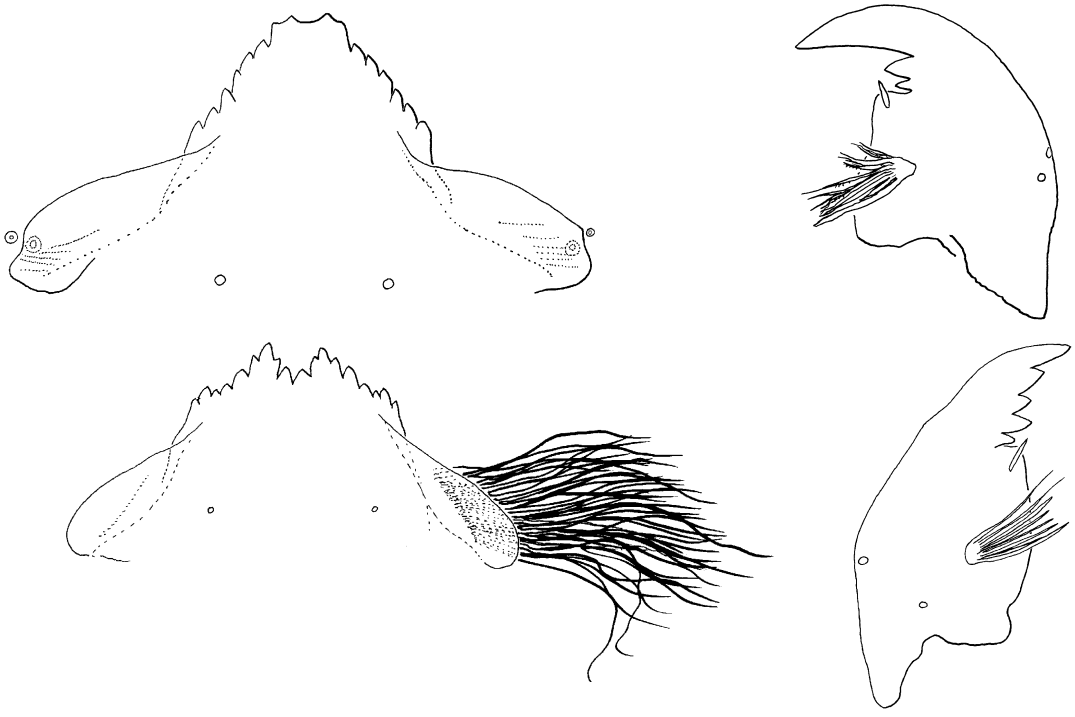
NOTES: Larvae are found in freshwater habitats such as springs, streams/rivers, ponds and the littoral zone of lakes. Three genera, each with a single species, occur in the Carolinas, with the strong possibility of a fourth genus, *Monodiamesa*, also being found here eventually.

Key to the genera of larval Prodiamesinae of the eastern United States

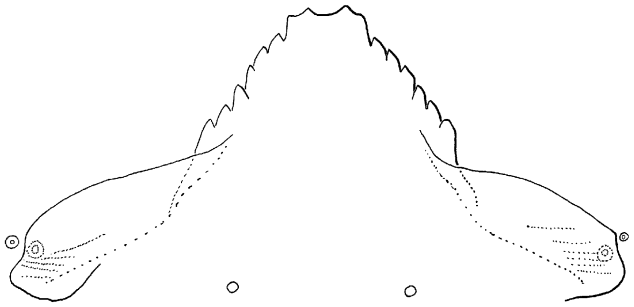
1 Mentum with median tooth pale, single, convex; mandible inflated ..... ***Odontomesa***



1' Mentum with median teeth dark, concave, or double; mandible not inflated as above 2

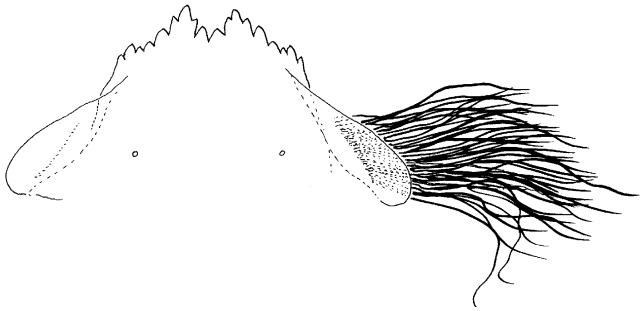


2(1') Mentum with two projecting median teeth separated by a concave area (may not appear concave due to wear) ..... ***Monodiamesa***

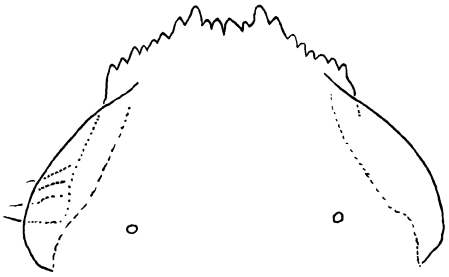


2' Mentum with two deeply sunken median teeth 3

3(2') Premandible apically bifid; ventromental beard well developed ..... ***Prodiamesa***



3' Premandible simple; ventromental beard weak ..... ***Compteromesa***



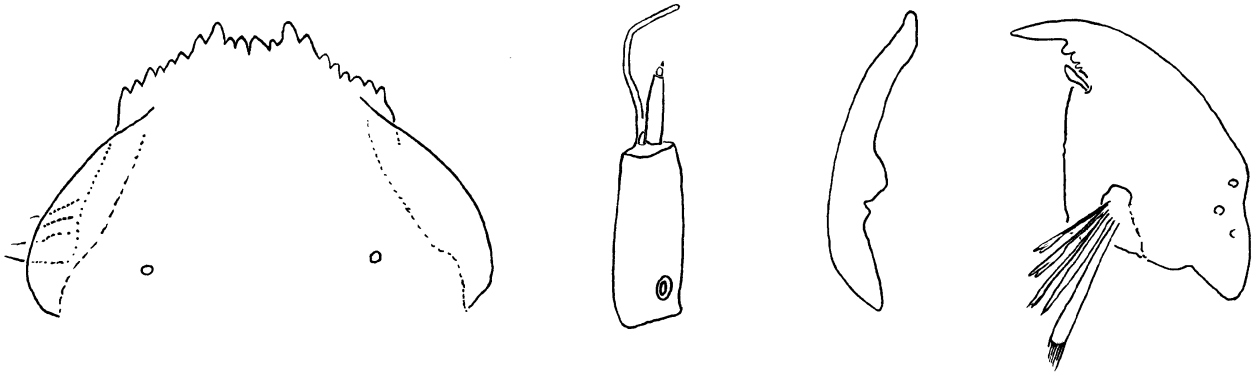
Genus *Compteromesa*

DIAGNOSIS: This genus is distinguished by the premandible with a single apical tooth; mentum with median teeth lower than second lateral teeth; and weak ventromental beard.

NOTES: One species, *C. oconeensis*, is known from South Carolina. The immature stages are unknown. Adults have been collected near seeps and small streams in the upper Piedmont.

The immature stages of another species, *Compteromesa haradensis*, were recently described from Japan (Niitsuma & Makarchenko 1997). Larvae were collected from a bottom sample of decomposed emergent plants, in a stream flowing slowly through a rice paddy.

ADDITIONAL REFERENCES: Niitsuma & Makarchenko 1997; Sæther 1981a, 1985d.



C. haradensis larval structures
(adapted from Niitsuma & Makarchenko 1997)

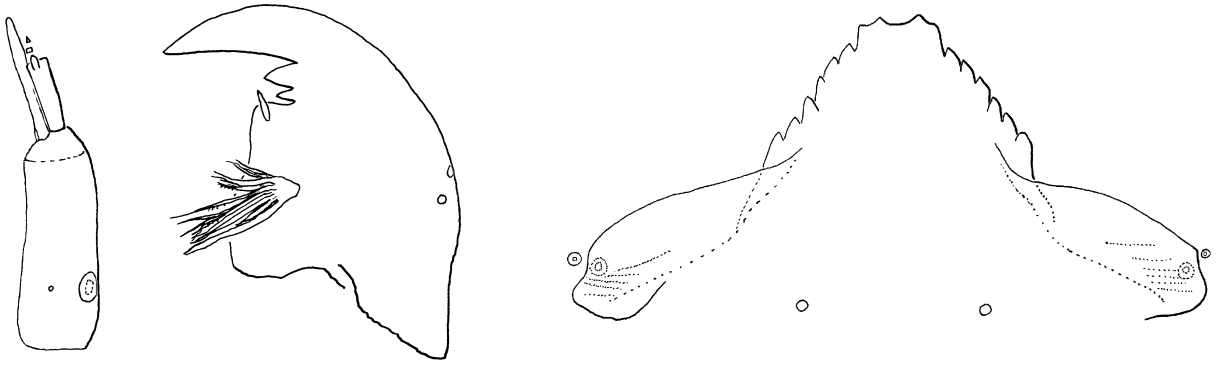
Genus *Monodiamesa*

DIAGNOSIS: Distinguished from other prodiamesines by the mentum with two projecting median teeth separated by a concave area; "normal" mandible; and weak ventromental beard.

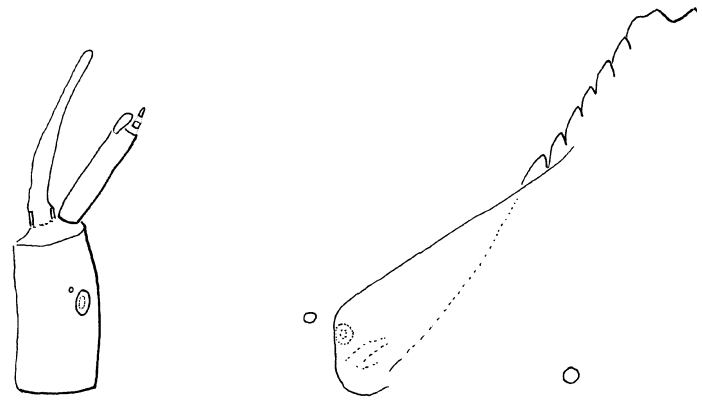
NOTES: Three species of *Monodiamesa* are recorded from the U.S. east of the Mississippi. In the Southeast, larvae have been collected in Alabama and North Carolina. Larvae of the genus are usually associated with littoral to profundal sandy substrata in mesotrophic to oligotrophic lakes; they have also been recorded from eutrophic lakes and in lotic situations.

I've examined a larva that is most probably *M. depectinata* from the Cullasaja River in the mountains of North Carolina and have also seen a larva from Mayberry Creek, Bibb Co., AL, that is probably *M. depectinata.* The Alabama specimen is apparently a 3rd instar; the basal segment of the antenna is much shorter in proportion to the second segment. The NC specimen has an AR of 1.82; the AL specimen's AR is 1.20; Sæther (1973) gives an AR of 1.39 for a 3rd instar *M. depectinata* and 2.03-2.25 for 4th instar larvae. The ventromental plates of both specimens are not concave posterolaterally, but have a generally straight outer margin.

ADDITIONAL REFERENCES: Sæther 1973.



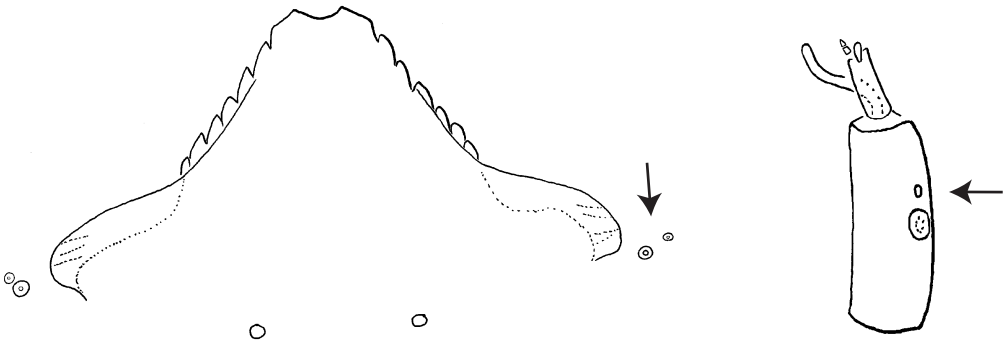
M. depectinata antenna, mandible, mentum



antenna and mentum of Alabama *Monodiamesa* specimen

Key to *Monodiamesa* larvae of the eastern U.S.

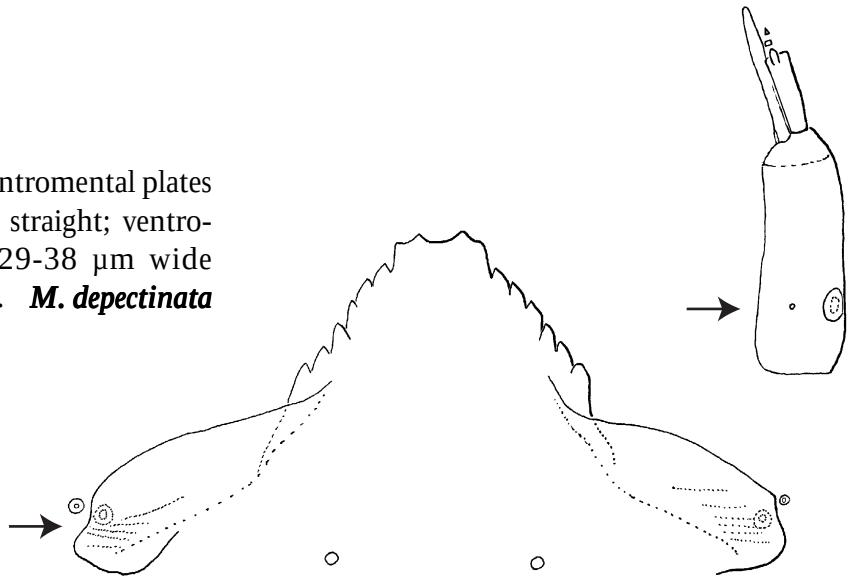
1 Ventromental plates small and narrow; posterolateral margin of ventromental plate does not cover large genal seta; basal antennal segment with setal mark above ring organ ..... ***M. tuberculata***



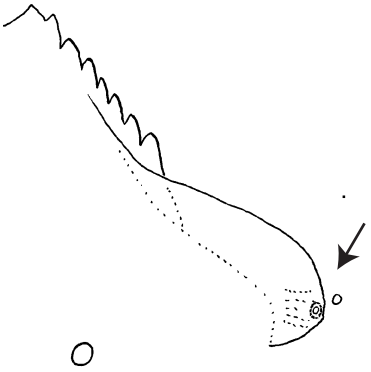
1' Ventromental plates larger and wider; posterolateral margin of ventromental plate covers or almost covers large genal seta; basal antennal segment with setal mark at same level as ring organ 2

2(1') Posterolateral margin of ventromental plates concave or approximately straight; ventromental plates broader, 29-38 µm wide ..... ***M. depectinata***

NOTE: 4th instar larvae are necessary for accurate measurements!!



2' Posterolateral margin of ventromental plates rounded; ventromental plates narrower, 24-26 µm wide ..... ***M. bathyphila***



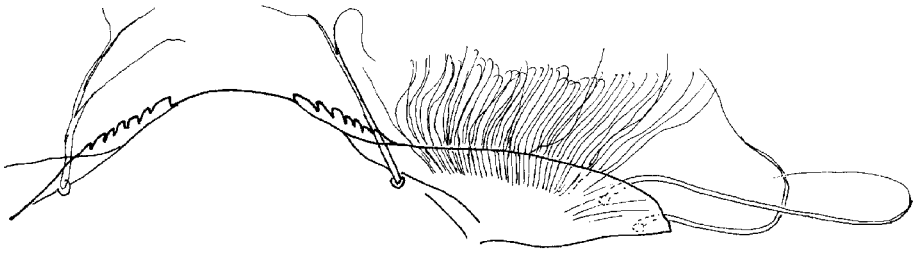
Genus ***Odontomesa***

DIAGNOSIS: The unique S setae of the labrum (see illustration below); odd number of teeth on the mentum, with a single, pale convex median tooth; well developed ventromental beard and the inflated mandible will distinguish this genus.

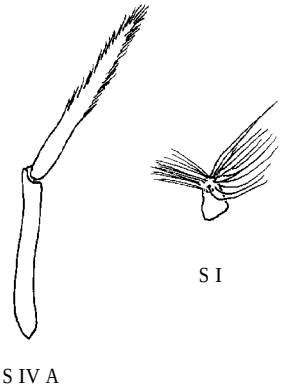
NOTES: A single species, *O. fulva*, occurs throughout the Southeast U.S. The larvae are filter feeders (Shilova 1966); they are usually encountered in sandy, lightly silted substrata in slowly flowing waters and in the littoral zone of lakes. The species is somewhat tolerant of pollution.

An additional species, *O. ferringtoni* Sæther, has been reported from Ohio (M. Bolton, pers. comm.). The larva can be separated from *O. fulva* by the basal external seta of the mandible: in *O. ferringtoni* this seta is single at the base and then split into 7-12 apical branches, while it is split to the base into 12-23 branches in *O. fulva* (see below).

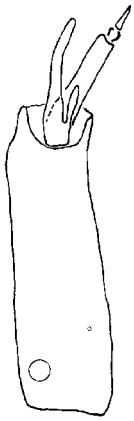
ADDITIONAL REFERENCES: Sæther 1985a; Shilova 1966.



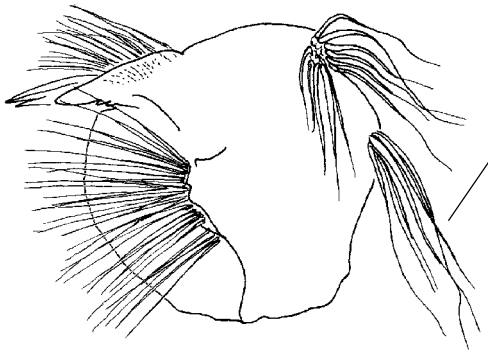
O. fulva
mentum



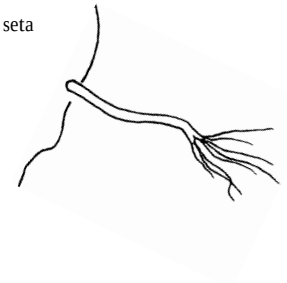
O. fulva labral setae



O. fulva
antenna



O. fulva
mandible



O. ferringtoni
basal external seta

O. fulva
premandible

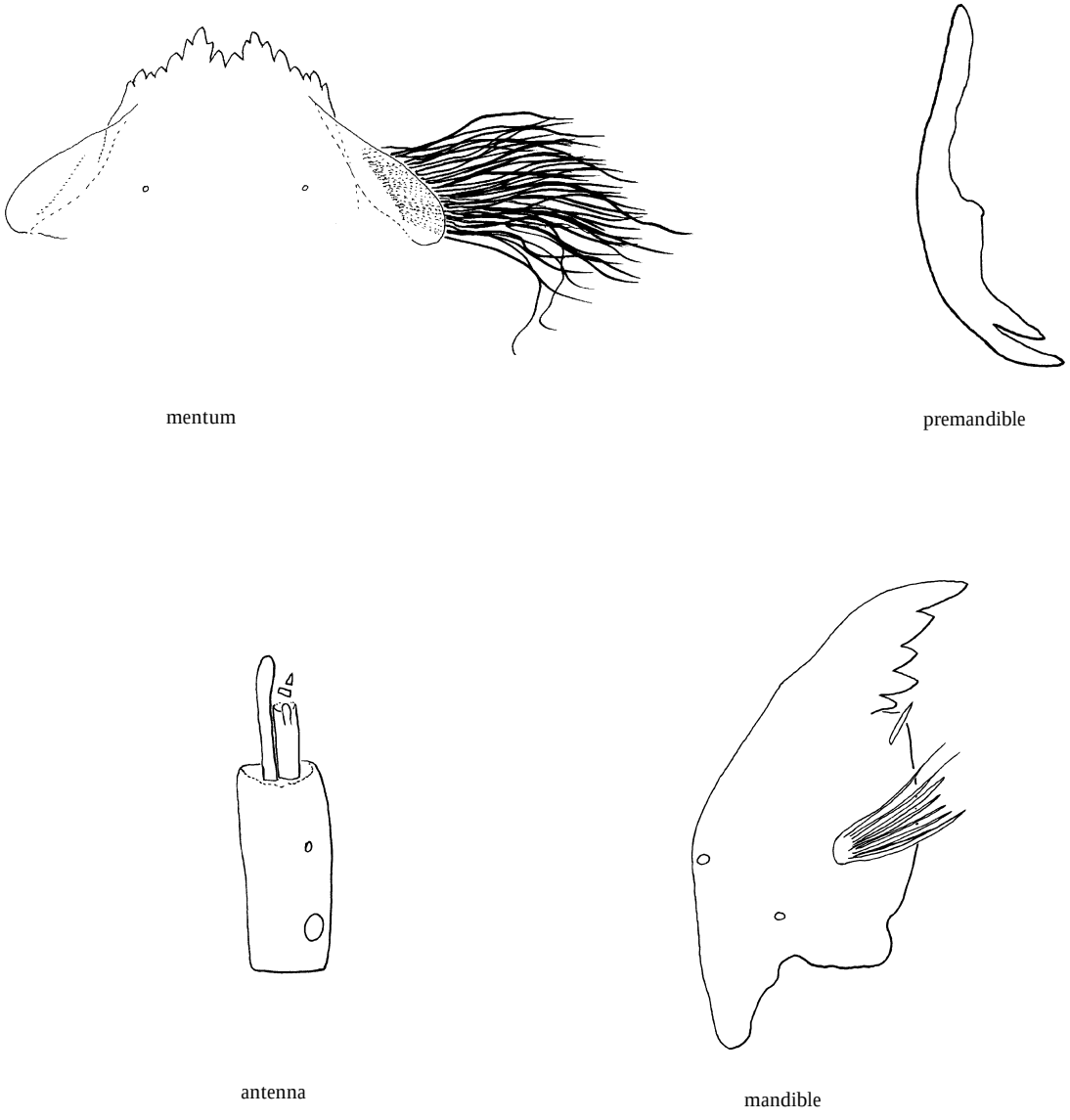
Odontomesa larval structures

Genus ***Prodiamesa***

DIAGNOSIS: The simple S setae; apically bifid premandible; mentum with 14 dark teeth (18 apparent teeth if accessory teeth on first lateral teeth are counted) with the median 2 teeth deeply recessed; and "normal" mandible will distinguish this genus from *Odontomesa*. As in *Odontomesa*, the ventromental beard is well developed.

NOTES: A single species, *P. olivacea*, is recorded from the Carolinas and Georgia. Larvae inhabit springs, streams and rivers, ponds and the littoral zone of lakes; they are moderately tolerant of pollution.

ADDITIONAL REFERENCES: Sæther 1985d.



mentum premandible antenna mandible

P. olivacea larval structures