Subfamily MICROLAIMINAE Micoletzky, 1922

Diagnosis. Microlaimidae. Body length usually 1 mm or less. Cephalic setae at the neck region. Buccal cavity sclerotized, teeth present. Terminal bulb of oesophagus pyriform. Female reproductive system with ovaries outstretched, exceptionally reflexed. Spermathecae may be present. Gubernacular apophyses apparently lacking. Caudal gland cells with one common outlet, exceptionally with separate outlets.

Type genus: *Microlaimus* De Man, 1880

Remarks. Microlaiminae accomodate microlaimids with a sclerotized buccal cavity in two or more compartments (posterior ones as pouches); teeth present as one dorsal tooth and one or more subventral teeth further posteriorly. This type of buccal cavity (*Microlaimus*) is thought to be a primitive situation leading to the development of the buccal cavity in the Desmodorida and Chromadorida (see Gerlach 1963, pp. 100–102 and 1966, pp. 28–29). The Microlaiminae are further characterized by having a pyriform terminal bulb of the oesophagus and a copulatory apparatus with a plate or rodlike gubernaculum apparently without apophyses (see further p. 162).

Key to the genera of Microlaiminae

1. Each caudal gland cell with a separate outlet; cuticle smooth
Ixonema Lorenzen, 1971
— Caudal gland cells with a common outlet; cuticle annulate 2
2. Cervical region elongated; amphids far behind front end; somatic setae usually long and/or stout; tail slender
Calomicrolaimus Lorenzen, 1976
— Cervical region not elongated; amphids close to cephalic setae; somatic setae short or absent; tail conical
Microlaimus De Man, 1880

Calomicrolaimus Lorenzen, 1976

Diagnosis. Microlaiminae. Cervical region elongated. Cuticle striate to coarsely annulate over the entire body or only parts of it. Somatic setae very long and slender or reduced to papillae, specialized thornlike or spinelike setae sometimes present (porids). Amphids at posterior end of cervical region. Cephalic setae rather long and slender. Female reproductive system with outstretched ovaries; reflexed ovaries may occur. Tail slender, gradually tapering.

Type species: *Calomicrolaimus rugatus* Lorenzen, 1976

Remarks. *Calomicrolaimus*, established by Lorenzen (1976, p. 80) for the type species *C. rugatus* Lorenzen, 1976, has three outstanding features, presumed to be unique in the subfamily but also among free-living marine nematodes. These characters, which apply to males, are:

1. Conspicious cervical setae.
2. A special ventral thickening of the body annules in front of the cloaca.
3. Amphids of males smaller than those of females, and with a rodlike corpus gelatum.

In the shape, these stout, thornlike cervical setae are indeed unique. Functionally I regard them as differentiated somatic setae, perhaps associated with hypodermal gland cells as in at least 9 other microlaimids and molgolaimids (see p. 161, Fig. 2). *Microlaimus pecticauda* has stout spinelike setae on the tail (females); these setae are longer than those of *C. rugatus* and apparently each seta is penetrated by a duct. Because the differentiated somatic setae, as well as the position of the amphids and the shape of the tail, I transfer this species to *Calomicrolaimus*. *Microlaimus spinosus* is also included in *Calomicrolaimus* for the same reasons, but this species has long stout setae distributed in four longitudinal rows over the whole body.

I do not consider the presence of ventral body annules in front of the cloaca in *C. rugatus* (otherwise striate cuticle) as a generic character, because such a cuticular ornamentation seems to be very similar to that found in the cervical region of *C. pecticauda* (compare fig. 1*B* of *C. rugatus* in Lorenzen 1976, p. 81, with fig. 4*A* of *C. pecticauda* in Murphy 1966, p. 27); (such a coarse annulation I also found ventrally in front of the cloaca of males in *Microlaimus* aff. *honestus* (unpublished material from Tvärminne, Finland and unpublished material from Dr L. A. Bouwman, University of Groningen, Holland). This feature is in the present revision used as an additional character for distinguishing species.

The fact that amphids of males are smaller than those in females and have a rodlike corpus gelatum is here considered as an additional specific character within the genus. Three other microlaimids are reported to have the corpus gelatum outside the amphids, i.e., *C. pecticauda* (Murphy 1966, p. 36, fig. 4*A;* apparently only in males), *Ixonema sordidum* (Lorenzen 1971, p. 267, figs. 1*A–B, E;* both sexes, 2 males and 2 females) and *Microlaimus ostracion* (Jensen 1976, p. 241, fig. 14; in 2 out of 3 males, absent in 4 females and 3 juveniles).

The present diagnosis of *Calomicrolaimus* includes as a generic character an elongated cervical region with amphids situated at the posterior end of this region, because the type species shows this condition, as do *C. pecticauda* and *C. spinosus*, however, the elongation of the cervical region is not as pronounced as in the type species. An elongated cervical region with posteriorly situated amphids is also

characteristic for *Microlaimus tenuicollis* as in the coarsely annulate cuticle; this species is therefore transferred to *Calomicrolaimus*.

The presence of reflexed ovaries in *C. pecticauda* and *Microlaimus spirifer* are exceptions within the Microlaimidae. In most other respects, however, the two species are referable to *Calomicrolaimus*, and *M. spirifer* is therefore transferred to this genus, even though it has the excretory pore anterior to the nerve ring.

Microlaimus formosus, *M. honestus*, *M. parahonestus* and *C. spinosus* has been described without information about the gonads and excretory pore. In most other respects these species are referable to *Calomicrolaimus*, however, the somatic setae have only been described in *C. spinosus*.

Paramicrolaimus acanthus Jayasree & Warwick, 1977 was placed in this genus because the presence of preanal supplements. This character I, however, disregard as a generic feature (see pp. 161 and 167). The species belongs without any doubt to *Calomicrolaimus* characterized by: situation of amphids, presence of thornlike setae, shape of tail, cuticular striation/annulation and habitat).

At present *Calomicrolaimus* includes 10 species all of which normally inhabit supralittoral sediments. However, Riemann (1966) described females of *C.* aff. *parahonestus* (as *Microlaimus* aff. *parahonestus*) from the German Bight, at 21 m, together with the interstitial ostracod *Microcythre parva*, which is usually found in the intertidal region. These females differed from the specimens originally described in having slightly longer tails; however, as long tails are common in the genus (both males and females), this character is not necessarily sufficient found to warrant establishing a new species.

Key to the species of Calomicrolaimus

1. Amphids 3–5×head diameter behind front end — 2
— Amphids about 1–2×head diameter behind front end — 5
2. Somatic setae absent — 3
— Somatic setae present — 4
3. Amphids 25–27 μm behind front end
C. parahonestus (Gerlach, 1950) **comb.n.**, syn. *Microlaimus parahonestus* Gerlach, 1950
— Amphids 38 μm behind front end
C. tenuicollis (Gerlach, 1952) **comb.n.**, syn. *Microlaimus tenuicollis* Gerlach, 1952
4. Four slender somatic setae at level of excretory pore, cuticle striate; amphids with 6.5 turns
C. spirifer (Warwick, 1970) **comb.n.**, syn. *Microlaimus spirifer* Warwick, 1970
— Cervical setae in male stout (thornlike); cuticle striate, precloacal region coarsely annulate at the ventral margin; amphids circular — *C. rugatus* Lorenzen, 1976
5. Amphids oval — 6
— Amphids circular — 7
6. Female with thornlike setae on tail
C. pecticauda (Murphy, 1966) **comb.n.**, syn. *Microlaimus pecticauda* Murphy, 1966
— Male with precloacal thornlike setae at the ventral margin
C. acanthus (Jayasree & Warwick, 1977) **comb.n.**, syn. *Paramicrolaimus acanthus* Jayasree & Warwick, 1977
7. Precloacal region coarsely annulate
C. honestus (De Man, 1922) **comb.n.**, syn. *Microlaimus honestus* De Man, 1922
— Precloacal region not coarsely annulate
8. Somatic setae long (10–16 μm)
C. spinosus (Gerlach, 1957) **comb.n.**, syn. *Microlaimus spinosus* Gerlach, 1957
— Somatic setae short or absent — 9
9. Cephalic setae 3 μm long (0.3×head diameter)
C. microseta (Gerlach, 1953) **comb.n.**, syn. *Microlaimus microseta* Gerlach, 1953
— Cephalic setae 18 μm long (1,3×head diameter)
C. formosus (Gerlach, 1957) **comb.n.**, syn. *Microlaimus formosus* Gerlach, 1957