REVISION OF *EPSILONEMA* SPECIES FROM ANTARCTICA DESCRIBED BY STEINER (1931) (NEMATA)

BY

W. DE Craemer

Koninklijk Belgisch Instituut voor Natuurwetenschappen, Department of Invertebrates, Vautierstraat 29, B-1040 Brussels, Belgium

This study deals with *Epsilonema* species from Antarctica. A revision was made of epsilonematids from the German South Polar Expedition of 1901-1903 described by Steiner (1931). It is based on type specimens from Steiner's collection and on material from the U.S. Antarctic Research Program 1969-1970. Two *Epsilonema* species: *E. cyrtum* Steiner, 1931 and *E. docidocricum* (Steiner, 1931) Lorenzen, 1973 were identified. *E. docidocricum* is re-established as a valid species, characterized by a striated ornamentation of the body cuticle, 151-173 body rings, amphidial fovea without sexual dimorphism in shape and dimensions and situated posteriorly on the head, and in the male by the lack of copulatory corns. *E. cyrtum* is redescribed.

*Keywords: taxonomy, morphology, Epsilonema, Antarctica, free-living nematodes.*

The first extensive study on Epsilonematidae was made by Steiner (1931) based upon material collected during the German South Polar Expedition of 1901-1903. Lorenzen (1973) made a revision of the family and discussed the work of Steiner (1931). He reduced the 125 species and 8 varieties, based on 134 specimen only, to three species: *Archeepsilonema celidotum* Steiner, 1931, *Epsilonema cyrtum* Steiner, 1931 and *Bathyepsilonema drygalskii* Steiner, 1931 which he redescribed. Lorenzen (1973) also redefined the genera of the Epsilonematidae.

During my stay at the Nematology Department of the University of California, Davis in 1984, I had the opportunity to examine 44 slides with epsilonematids from Steiner's collection (1931), among them type material and undescribed specimens. The specimens were mounted in balsam and not always well preserved. Some slides needed to be remounted due to the damaged conservation medium. Apart from Steiner's collection, other epsilonematid material from Antarctica was put at my disposal. It was collected in the austral summer of 1969-1970 by Dr. D. R. Viglierchio and Dr. R. W. Timm from the bottom of McMurdo Sound as part of the 'Antarctic Biology Program of the U.S. Antarctic Research Program (Timm, 1978), and from the Weddell Sea by Wilson by triangular dredge during the 'Program Deep Freeze' No. 14, Cruise No. 611 on board the ship North-wind at station NW-8, from 135 m depth on January 28, 1959.
A first paper in this series treats the genus *Bathylepsilonema* Steiner, 1931. Two valid species: *B. drygalskii* Steiner, 1931 and *B. brachycephalum* Steiner, 1931 were identified among the 19 species and one subspecies of *Bathylepsilonema* described in Steiner (1931) (Decraemer & Noffsinger, in press).

In a redescription of *Epsilonema cyrtum*, the type species of the genus, Lorenzen (1973) remarked on the large range of the number of body rings: between 148 and 181, and explained it as due to Steiner’s counting method. He also described a large variability in the structure of the annules recognizing three types which usually occur together: 1. plain massive rings, 2. rings with well cuticularized anterior and posterior border and a median lumen, and 3. rings with an irregular vacuolar ornamentation; types 1 and 2 being best represented and a single type of ornamentation rarely was restricted to a single species.

Based upon Steiner’s paper of 1931, I could distinguish at least two groups of species among the *Epsilonema* specimens (*Epsilonema* sensu Lorenzen, 1973): In one group, the annules are more or less smooth annules and are provided with a spiny posterior border from the ventral body curvature on as in *E. cyrtum*; in the other group, the annules are provided with a longitudinal striated ornamentation of the rings. The second group was dispersed over two genera according to Steiner, 1931 and represented by five species; each species being described from a single specimen: *Epsilonema rhabdotum* (♂), *E. dictyotoricicum* (♂) and *Prochaetosoma striatum* (♀), *P. cosmetoricicum* (♀) and *P. docidoricicum* (♂).

Both groups of species were observed among Steiner’s type material and among the specimens from the U.S. Antarctic expeditions.

**MATERIALS AND METHODS**

*Material from Steiner’s collection*

The following species described in Steiner (1931) were observed: *Epsilonema tricolum* (♀, slide 7), *E. herpetum* (♂, slide 8), *E. metschnikoffii* (♀, slide 9), *E. symbioticum* (♂, slide 11), *E. cyclophorum* (juven., slide 13), *E. allohystera* (♀, slide 15), *E. hexastoichum* (♂, slide 15), *E. corynodes* (♂, slide 17), *E. poicilothrix var. strongylotum* (♂, slide 18), *E. homoiocricum* (♂, slide 19), *E. aphanum* (♂, slide 20 = USDA T-443t), *E. desmoricicum* (♂, slide 21 = USDA T-444t), *E. heteroricicum* (♂, slide 21 = USDA T-444t), *E. antarcticum* (♂, slide 22 = USDA T-445t), *E. semeonoides* (♀, slide 23 = USDA T-446t), *E. cyrtum* (♀, slide 23 = USDA T-446t), *E. primitivum* (♀, slide 24), *E. polycricum* (♀, slide 24), *E. frigidum* (♀, slide 26), *E. leptomeres* (♂, slide 30), *E. dicrocricum* (♀ type, slide 31), *E. mixtum* (♀, slide 31), *E. brachycraspedotum* (♀, slide 33), *E. camptoricicum* (♀, slide 36), *E. homaloricum* (♂, slide 42 = USDA T-447t), *E. mixtum* (♀, slide 43). *Prochaetosoma holocrinum* (♂, slide 3), *P. eumecum* (j, slide 3), *P. labidurum* (♂, slide 41c = USDA T-448t), *P. glaphyrum* (♂, slide 10), *P. stenoricicum* (♂, slide 11), *P. hadroctenum var. asymmetricum* (♀, slide 12), *P. eustegum* (♂, slide 41), *P.