

THE SYSTEM OF THE MONHYSTEROIDEA (NEMATODES) A NEW APPROACH

by

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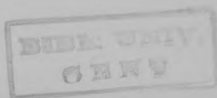
SUMMARY

In 131 marine, brackish, limnic and terrestrial species of the superfamily Monhysteroidea the following characters have been studied and evaluated phylogenetically : structure of the cuticle ; presence of ocelli ; structure of the amphids ; number, structure and length ratio of the cephalic setae ; presence and postembryonic development of subcephalic setae ; structure of the buccal cavity ; presence and position of the excretory gland and its opening ; number of testes ; position of the testes and the ovary relative to the intestine ; structure of the tail. As a result of this study an argumentation scheme is presented to demonstrate the phylogenetic relationship between the three families of the Monhysteroidea. These are :

1. Monhysteridae DE MAN 1876
2. Xyalidae CHITWOOD 1951
 - Cobbiinae DE CONINCK 1965, syn. n.
 - Rhynchonematinae DE CONINCK 1965, syn. n.
 - Scaptrellidae DE CONINCK 1965, syn. n.
3. Sphaerolaimidae FILIPJEV 1918, with two subfamilies :
 - Sphaerolaiminae FILIPJEV 1918
 - Parasphaerolaiminae LORENZEN 1978

The greatest taxonomic change is the splitting up of the Monhysteridae into Monhysteridae *sensu stricto* and Xyalidae. Both families are mainly distinguished on the basis of the cuticle (smooth in Monhysteridae, annulated in Xyalidae), the number of testes (always one in Monhysteridae, mostly two in Xyalidae), and the position of the gonads relative to the intestine (anterior testis and ovary on the right side in Monhysteridae and on the left side in Xyalidae ; posterior testis lacking in Monhysteridae and on the right side in Xyalidae). The distinction is matched by different ecological distribution, the Monhysteridae being predominantly brackish, limnic and terrestrial, the Xyalidae predominantly marine and brackish. It is assumed that the Monhysteridae live primarily in brackish and limnic biotopes and only secondarily in marine ones.

The Sphaerolaimidae live in marine and brackish biotopes. They differ mainly



from both the Monhysteridae and the Xyalidae in that the position of the gonads is variable. The Sphaerolaimidae are more closely related to the Xyalidae than to the Monhysteridae.

The full-length paper is published in *Zool. Jb. (Syst.)*, 105 (1978), 515-536.

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SIEVERT LORENZEN, 1978, pp. 1-111, 11 plates, 1 cm. x 1.5 cm., 100 copies.

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In 1911, the first monograph on the system of the Monhysteroidea was published by J. J. van Thiel. Since then, the system of the Monhysteroidea has been studied and revised by many authors. The present author has studied the system of the Monhysteroidea from a new point of view. The results of his study are presented in this monograph. The system of the Monhysteroidea is divided into three families: the Monhysteridae, the Xyalidae, and the Sphaerolaimidae. The relationships between the three families of the Monhysteroidea are discussed in detail. The monograph is illustrated with 11 plates and 100 figures. The text is written in German and English. The monograph is published in the series "Zool. Jb. (Syst.)" 105 (1978), 515-536.

1. Monhysteridae de Man 1878

2. Xyalidae (Lutwoud 1951)

Gobbius de Coenrae 1905, sp. n.

Hysterochaeta de Coenrae 1905, sp. n.

Sphaerolaima de Coenrae 1905, sp. n.

3. Sphaerolaimidae (Lutwoud 1951, with two subfamilies)

Sphaerolaiminae (Lutwoud 1951)

Parasphaerolaiminae (Lutwoud 1951)

The present taxonomic change is the splitting up of the Monhysteroidea into Monhysteridae, Xyalidae and Sphaerolaimidae. Both families are mainly distinguished on the basis of the position of the gonads. In Monhysteridae, the gonads are on the right side of the body, while in Xyalidae, the gonads are on the left side. In Sphaerolaimidae, the gonads are on the right side of the body. The position of the gonads is a very important character for the classification of the Monhysteroidea. The present author has studied the position of the gonads in many species of the Monhysteroidea. The results of his study are presented in this monograph. The monograph is illustrated with 11 plates and 100 figures. The text is written in German and English. The monograph is published in the series "Zool. Jb. (Syst.)" 105 (1978), 515-536.

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