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PHAGICOLA SEPTENTRIONALIS N. SP. (TREMODATA: HETEROPHYIDAE) FROM THE HARBOUR SEAL, PHOCA VITULINA L.

by

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With one text-figure

INTRODUCTION

During an investigation into the causes of mortality of the harbour seals (*Phoca vitulina* L.) in the Dutch Wadden Sea (Van den Broek & Wensvoort, 1959; Van den Broek, 1963), heterophyid trematodes have been regularly collected from the intestines. *Cryptocotyle lingua* (Creplin, 1825) was rather common. Often together with this trematode a second, less conspicuous species was found, which appeared to belong to the *Ascocotyle* species complex. The taxonomy of this complex is very complicated and has recently been reviewed by American authors: Burton (1958) and Sogandares & Lumsden (1963). The present author prefers to follow the traditional opinion as expressed by Hutton & Sogandares (1958) in dividing the complex into several genera. The new species possesses the following fundamental characters: (1) spines surrounding oral sucker placed in a single row, (2) vitellaria confined to postovarial region, (3) uterus not extending in front of ventral sucker, (4) cuticle spinous on forebody only. These characters are used to distinguish the genus *Phagicola* Faust, 1920, from *Ascocotyle* Looss, 1899, sens. strict. (see Price, 1936; Burton, 1958). The species therefore is placed here in the genus *Phagicola*.

***Phagicola septentrionalis* n. sp.**

Diagnosis (all measurements in μ). -- Body elongate, consisting of a rather narrow anterior part (50-70 % of total body length) which gradually

widens into a rounded posterior part. Body length 600-1000, maximum width 160-250. Cuticle spinous on anterior part of body, up to level of gonocotyl. Mouth surrounded by a single row of 16 to 20 spines of about 10-18 length. Width of oral sucker: 45-60. Dorsal lip not triangular but broadly rounded. Appendage of oral sucker rather short, 60-120, extending approximately half the distance to pharynx. Length of pharynx 40-55, width 25-37. Ventral sucker almost round, diameter 44-60. Length of oesophagus 80-140, bifurcation of caeca at about half the distance between pharynx and ventral sucker. Caeca extending behind ventral sucker, probably to level of ovary. Size of gonads not exactly determined, position very probably similar to that in other species of the genus. Testes oval, side by side, at posterior end of body. Gonocotyl single, oval, asymmetrically placed in front of ventral sucker, containing several chitinous bars or spines. Seminal receptacle indistinguishable. Seminal vesicle oval, median, in front of testes. Ovary single, in most cases covered by uterus coils. Uterus reaching from testes to ventral sucker, in several transverse loops, covering part of testes and whole ovary, containing many eggs. Vitellaria confined to posterior region, variable in shape, sometimes rather compact, more often forming a chain of rather homogeneous follicles, or consisting of 3 to 5 more dense clusters. Eggs oval, operculate, yellowish brown when mature, length 16-22, width 8.5-12.

Locality. — Dutch Wadden Sea. Found in the duodenum and ileum of *Phoca vitulina* L., 1758. The type specimens (syntypes) are in the Rijksmuseum van Natuurlijke Historie, Leiden (nr. 03100).

DISCUSSION

Comparison with other species of the genus, found in the eastern hemisphere. — *P. septentrionalis* is very similar in shape and in size to *P. longicollis* Kuntz & Chandler, 1956. The main difference is the presence of two gonocotyls in *P. longicollis*. Besides, this species seems to have shorter caeca. *P. septentrionalis* differs from *P. ascolongus* (Witenberg, 1929) and from *P. longus* (Ransom, 1920) in the length of the oral appendage, from the former species in shape as well as in extension of the uterus, from the latter one in the presence of a single gonocotyl. It differs from *P.inglei* Hutton & Sogandares, 1958, mainly in size, and from *P. italicus* (Alessandrini, 1906) in size and shape and also in the extension of the uterus. It can be placed in the *minutus* species group as defined by Sogandares & Lumsden (1963). Apart from in morphological characters, *P. septentrionalis* differs from all described species of the *Ascocotyle*-complex in geographical and in host distribution.

Geographical distribution. — This is the first record of a species of the *Ascocotyle*-complex from north-western Europe. Several species have been described from the Mediterranean where they have been found in domestic and in wild carnivores, but the majority of the species has been reported from North and South America.

Host distribution. — Although occasionally terns and gulls from the same

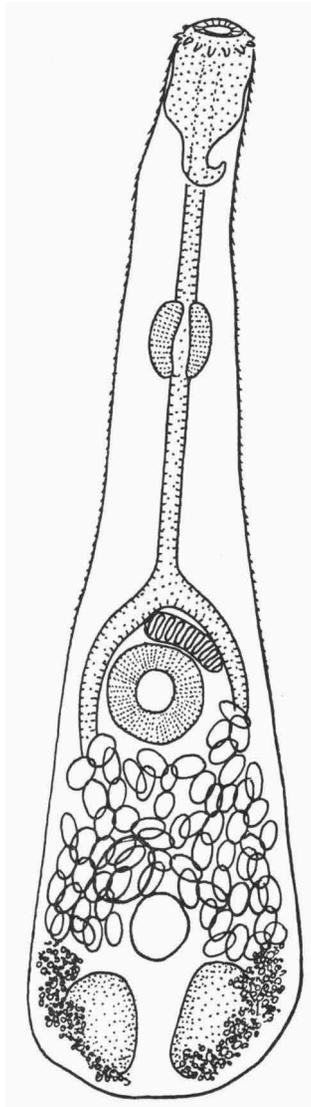


Fig. 1. *Phagicola septentrionalis* n. sp.

area in the Wadden Sea have been examined for endoparasites, *P. septentrionalis* has never been found in these or in other birds. It must be noted, however, that the small and slender parasites are easily overlooked. Other species of the *Ascocotyle*-complex show remarkably little host-specificity and have been collected from various mammals as well as birds. No details of the life cycle of *P. septentrionalis* are known as yet.

Locality. — The hosts have been found on several places along the shores of the Wadden Sea and probably all belong to the Wadden Sea population of seals. Parasites have been collected chiefly in the period from 1954 to 1962. The type material is from a juvenile host, found dead near Den Helder, summer 1958, and autopsied at the Netherlands Institute for Sea Research.

Infection rate. — Out of 39 examined seals, 24 specimens, juveniles as well as adults, were infected with *P. septentrionalis*. The number of parasites per host was estimated to vary between a few to several hundreds; they were found chiefly in the duodenum and in the proximal part of the ileum.

State of material. — During this investigation, the lapse of time between the death of the host and the collection and fixation of the parasites was at least three days. The condition of some of the samples is therefore rather poor. Regarding the most important characters, however, specimens of different samples do not show striking differences.

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