

ACANTHOCEPHALA FROM THE LITTLE OWL, *ATHENE NOCTUA*, IN EGYPT¹

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A number of acanthocephalans were collected from the little owl, *Athene noctua*, in Egypt by the Department of Helminthology, United States Naval Medical Research Unit No. 3, and forwarded to the writer by Dr. Robert E. Kuntz. The parasites in the collection number PE3075A have been identified as *Centrorhynchus globocaudatus* (Zeder, 1800); those in the collection number PE3488A have been identified as *Centrorhynchus clitorideus* (Meyer, 1931); those in the collection number PE3411A have been identified as *Centrorhynchus milvus* Ward, 1956. The following descriptions extend the range of measurements and contribute additional details to descriptions given previously. The descriptions are based on stained whole mounts.

Centrorhynchus globocaudatus (Zeder, 1800)
(All measurements in millimeters)

Body cylindrical with anterior region slightly enlarged; posterior end of female slightly swollen and provided with a small papilla. Males 15 to 18 by 0.8. Females 20 to 35 by 1. Proboscis nearly cylindrical, 0.7 to 1 in length by 0.4 in diameter at base; anterior part of proboscis slightly swollen at base and about $\frac{2}{3}$ as long as posterior part. Proboscis hooks in 28 to 32 longitudinal rows, 19 to 22 in each. The first 4 or 5 hooks in each row large and provided with heavy roots. Ventral hooks longer and sharper than dorsal, 0.05 to 0.06 long, with roots slightly longer. Dorsal hooks 0.03 to 0.04 long with roots much longer, 0.05 to 0.075. Posterior to these large hooks are 4 or 5 smaller hooks, 0.03 to 0.04 in length, with a shield-like root. Posterior to these on the posterior part of the proboscis are 11 or 12 spines measuring about 0.02 in length, without roots. Proboscis sheath 1.1 to 1.3 by 0.3 to 0.45. Lemnisci 1.8 to 2.2 by 0.12. Testes in anterior region of body, each measuring 0.8 to 0.9 by 0.2 to 0.3. Cement glands 9 to 12 by 0.1. Hard-shelled embryos of mature females elliptical, with middle membrane slightly evaginated at poles; the embryos measure 0.04 to 0.06 by 0.02.

Collection no. PE3075A (11 males and 12 females in collection)

Host: *Athene noctua* (little owl)

Locality: Berg El Arab, West Desert, Egypt

Plesiotype specimens in Parasitology Collection, Department of Zoology and Entomology, University of Tennessee, and Department of Parasitology, U. S. Naval Medical Research Center, Bethesda, Md.

The length of the female specimens given in Meyer's (1932) description is 30 to 40, while the female specimens in the writer's collection vary from 20 to 35. The male specimens described by Meyer are also slightly longer than those in the writer's collection. The number of hooks given by Meyer agrees essentially with the number of hooks in the writer's specimens. Meyer's account does not include hook size. The measurements given for the hard-shelled embryos agree essentially with those of the writer's specimens. The specimens described by Meyer were reported from various owls and falcons (*Athene noctua*, *Tyto alba*, *Buteo lagopus*, *B. buteo*, *Circus cyaneus*, *Aquila pomarina*, *Milvus milvus*) in Europe and southwest Africa. The writer is not aware of any previous records of *C. globocaudatus* from Egypt.

Centrorhynchus aluconis (Müller, 1780) has been reported from *Strix aluco*, *Otus scops*, *Falco tinnunculus*, *Circus aeruginosus*, *Haliaeetus albicilla* and *Mergus albellus* in Europe, and from *Astur haplochrous* and *Graucalus lifuensis* in New Caledonia. Golvan (1956) placed *C. globocaudatus* in synonymy with *C. aluconis*. However, the body length of *C. aluconis* is much greater than that of *C. globocaudatus*, and the number of hooks per longitudinal row is 16 in *C. aluconis* as compared with 19 to 22 in *C. globocaudatus*. In the opinion of the writer, these two species should not be synonymized.

The writer (1956) described *Centrorhynchus milvus* from the kite, *Milvus migrans*, in Egypt. The body of *C. milvus* is relatively thicker than that of *C. globocaudatus* and the anterior swelling is much more pronounced. The shape of the proboscis of *C. milvus* is more distinctly vase-shaped than that of *C. globocaudatus*, and the number of large hooks in each longitudinal row is 8 or 9 in *C. milvus* instead of 4 or 5.

The genus *Centrorhynchus* is not well represented in North America. In 1940 Van Cleave and Pratt described *C. conspectus* from the barred owl, *Strix varia varia*, in North Carolina. This species differs from *C. globocaudatus* in the much greater body length, the females being up to 55 and the males up to 35 in length, and in the greater length of the embryos, 0.060 to 0.078. The females also differ in the absence of the papilla at the posterior extremity.

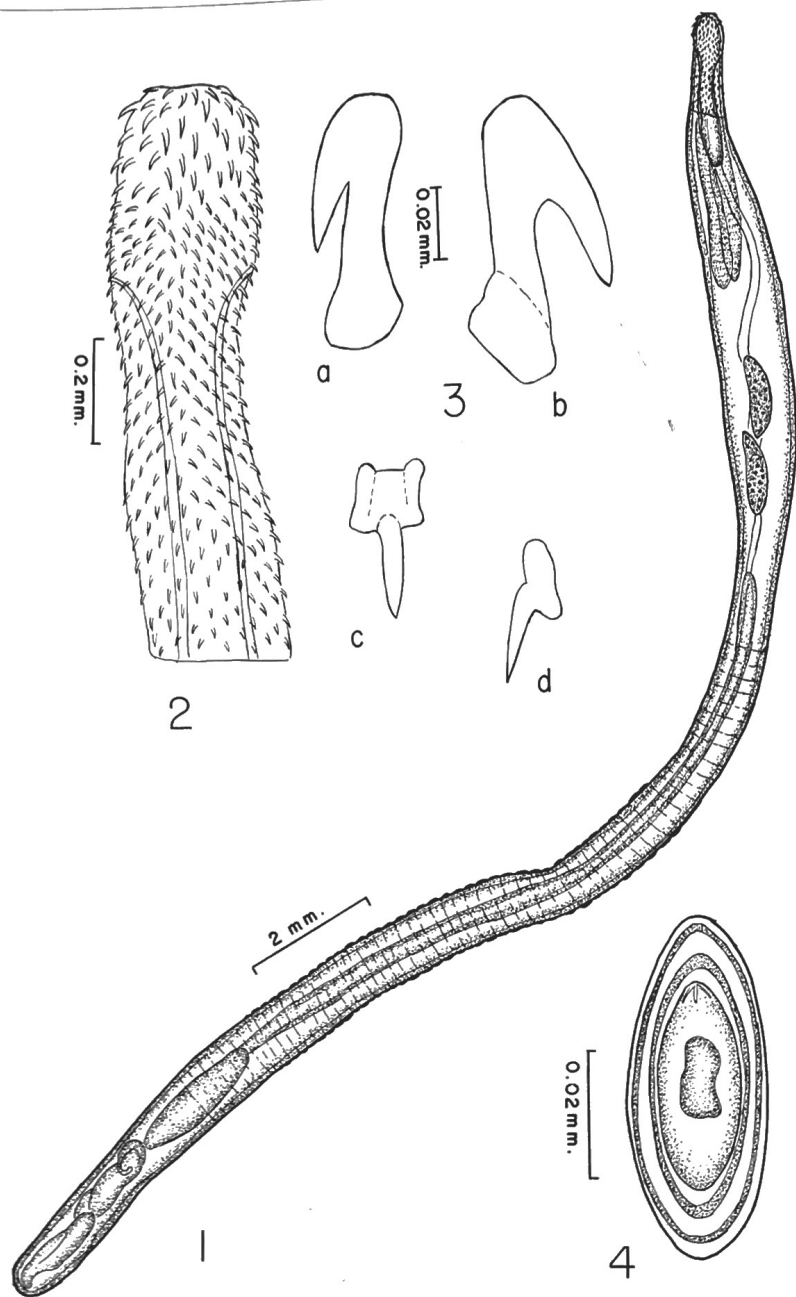
Centrorhynchus clitorideus (Meyer, 1931)
(= *Gordiorhynchus clitorideus* Meyer, 1931)

Figures 1 to 4

(All measurements in millimeters)

Body cylindrical with anterior fifth distinctly swollen; posterior extremity of female slightly enlarged with

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All figures are of *Centrorhynchus clitorideus* (Meyer, 1931). The drawings were made by Miss Rosemary Gaisser, Research Assistant.

Fig. 1. Adult male.
Fig. 2. Proboscis.
Fig. 3. Hooks from proboscis: a, dorsal hook from anterior part of proboscis; b, ventral hook from anterior part of proboscis; c, hook from basal region of anterior part of proboscis; d, spine from posterior part of proboscis.
Fig. 4. Hard-shelled embryo.

a small papilla projecting from posterior tip. Pseudosegmentation very pronounced. Females 26 to 43 by 0.5 to 0.6, anterior swollen region 1 to 1.2 in diameter. Males (Fig. 1) 16 to 24 by 0.5 to 0.6, anterior swollen region 0.8 to 1 in diameter. Anterior part of proboscis (Fig. 2) vase-shaped, posterior part nearly cylindrical. Length of proboscis 1.06 to 1.17 (anterior part 0.42 to 0.47; posterior part 0.64 to 0.70); diameter of proboscis 0.38 to 0.44 at base. Proboscis hooks in 30 to 32 longitudinal rows with 20 to 22 in each row. Anterior four hooks (Fig. 3a and b) are large, 0.05 to 0.06 in length, and provided with heavy roots; the next 5 or 6 hooks (Fig. 3c) are smaller, 0.03 in length, and provided with small roots; the 10 or 12 posterior spines (Fig. 3d) measure about 0.03 in length. Proboscis sheath 1.1 to 1.28 by 0.26 to 0.30. Lemnisci about 2 by 0.10. Mature embryos (Fig. 4) elliptical, 0.040 to 0.045 by 0.020 to 0.023, without polar prolongations of middle membrane. Testes in anterior swollen region of males, 0.64 to 1.1 by 0.16 to 0.38. Cement glands 9 to 14 by 0.12.

Collection no. PE3488A (9 males and 8 females in collection)

Host: *Athene noctua* (little owl)

Locality: near Salum, West Desert, Egypt

Plesiotype specimens in Parasitology Collection, Department of Zoology and Entomology, University of Tennessee, and Department of Parasitology, U. S. Naval Medical Research Center, Bethesda, Md.

Meyer (1931) erected a new genus, *Gordiorhynchus*, on the basis of very conspicuous pseudosegmentation and the presence of a small papilla at the posterior extremity of the female. In other respects this genus resembles *Centrorhynchus* Lühe, 1911. In 1956 Golvan placed *Gordiorhynchus* in synonymy with *Centrorhynchus* since the characteristics of pseudosegmentation and the female terminal appendage did not seem to justify the establishment of a new genus. The species described by Meyer (1931), *G. clitorideus*, was collected from the owl, *Otus scops*, in Europe. The measurements of the specimens from Egypt agree essentially with those of Meyer's specimens. Johnston and Best (1943) described two new species, *Gordiorhynchus bancrofti* from *Ninox strenua* and *G. falconis* from *Falco berigora* in Australia. These species differ from *C. clitorideus* in body size and in number of proboscis hooks. According to Yamaguti (1963) *C. clitorideus* has been reported from the dog and cat in Palestine by Witenberg, and from a cat in Egypt by Abdel Azim. The writer is not aware of any previous records of *C. clitorideus* from the little owl.

Centrorhynchus milvus Ward, 1956

(All measurements in millimeters)

All specimens immature; anterior half of body distinctly swollen. Females 8 to 9 by 1 to 1.1 in anterior swollen region and 0.4 to 0.5 in posterior region. Male 6.5 by 1 in anterior region and 0.4 in posterior region. Length of proboscis 0.7 to 0.92; diameter at base 0.32 to 0.36. Proboscis hooks in 30 to 32 longitudinal rows, 18 in each row. Anterior hooks large with heavy roots; length of hooks 0.04 to 0.05. Posterior spines about

0.02 in length. Proboscis sheath 0.95 to 1.2 by 0.22 to 0.32. Lemnisci 1.15 to 1.34 by 0.14 to 0.16. Testes 0.3 by 0.1; cement glands 3 in length. In the females a small ovary is present in the anterior region.

Collection no. PE3411A (1 male and 3 females)

Host: *Athene noctua* (little owl)

Locality: Idfina, Beheira Province, Egypt

Plesiotype specimens in Parasitology Collection, Department of Zoology and Entomology, University of Tennessee.

Adults of *Centrorhynchus milvus* have been described by the writer (1956) from the kite, *Milvus migrans*, in Egypt. Juveniles have been reported (Ward, 1960) from shore birds (*Burhinus senegalensis*, *B. oedicnemus saharae*, and *Hoplopterus spinosus*) of Egypt. Golvan (1956) reported this species from *Milvus migrans* in Senegal, and he also found juveniles encysted in *Boedon fuliginosus* (Colubridae). *Athene noctua* appears to be a new host record for this species.

SUMMARY

Three species of *Centrorhynchus* are reported from the little owl, *Athene noctua*, in Egypt. The specimens from Egypt are described and certain details of morphology are given which have not been included in earlier descriptions.

Egypt is a new locality record for *Centrorhynchus globocaudatus*.

Athene noctua is a new host record for *Centrorhynchus clitorideus* and *C. milvus*.

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ANNUAL MEETING

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Memphis State University

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Friday and Saturday

November 27, 28, 1964