# XVII NOTES FROM THE BENGAL FISHERIES LABORATORY, INDIAN MUSEUM.

## No. 3.—On Helminths from Fish and Aquatic Birds in the Chilka Lake.

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Dr. Annandale visited the Chilka Lake during the last two weeks of November 1914, in order to continue his enquires into the fauna of this area. I had the pleasure of accompanying him, and the parasites described in the following paper were collected during the investigations.

The fish from which the parasites were taken were caught in an otter-trawl about two miles east of Rambha. They appear to feed principally on prawns and crabs.

A number of small rays (*Trygon imbricata*) were also caught and examined, but no parasites were found. This species appears to feed on small crustaceans and on thin-shelled molluscs.

The little cormorant was shot on the shore of the lake near Rambha, and the pochard (*Nyroca ferina*) was shot in a swamp near Nalbano Island.

Other birds and fish were examined but no parasites were found.

The collection is an interesting one, but possesses no outstanding or distinctive features.

### Family TETRABOTHRIDAE, Linton, 1891.

### Tribe *TETRABOTHRIINAE*, Perrier, 1897.

### Genus I. **Phyllobothrium**, Van Beneden, 1849.

Body articulate, taeniaeform; head separated from the body by a neck, with four opposite sessile bothria, each bothrium lacinio-cristate on the margin and provided with a single ampulla-like supplementary disc. Genital apertures marginal.

#### **Phyllobothrium pammicrum**, Shipley and Hornell.

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| Z.E.V. $\frac{687.0}{7}$ | *Hypolophus sephen.* | Main area Chilka Lake, Dec. 1914. | T. Southwell. |
| Thirteen specimens. | | | |

Extreme length, 4·2 mm. to 5·5 mm.
Breadth of head, ·4 mm.

Breadth of last segment, ·25 mm.
Length of last segment, 1 mm.
Length of neck, ·25 mm.

The head consists of four sessile, crimpled bothridia, which have their edges slightly thickened. There is no myzorhynchus, and accessory suckers are absent.

There is a short neck. The worms consist of 5, or at most 6 segments. In many, what appeared to be the terminal vesicle was still intact. As in Shipley's specimens (*Ceylon Pearl Oyster Reports*, V, London, 1906, p. 53) the genital organs were developed in the very first segment, and no short, shallow, young proglottides were observed in any of our specimens. The genital aperture was only obvious in the last segment. This segment had the sides slightly curved, and the greatest breadth was across the middle, through the genital aperture.

The testes are very numerous and large, and were disposed on each side of the longitudinal axis of the proglottid. The cirrus pouch is not conspicuous. No spines were observed on the penis. The deferent canal runs transversely to the genital pore. The vitteline glands were disposed parallel, and external to the testes. The ovary and shell gland were situated posteriorly. The ducts from the vitteline glands also unite in the centre line posteriorly. The oviduct occupies a central position and runs anteriorly in a loosely coiled manner.

The genus *Phyllobothrium*, Van Beneden, is closely related to the genus *Crossobothrium*, Linton. The latter differs from the former only in having the bothria pedicelled and in possessing no neck. It will be noted that our specimens do not possess accessory suckers. No mention is made of accessory suckers in *Phyllobothrium blakei*, Shipley and Hornell (*Ceylon Pearl Oyster Reports*, V, London, 1906, p. 70, figs. 72 and 73), although suckers are shown in *P. pammicrum*, Shipley and Hornell. Johnstone was unable to find accessory suckers in specimens of *P. lactuca*, Van Beneden (*Trans Biol. Soc. Liverpool*, XX, 1906, pp. 159-160), and he refers to the absence of a myzorhynchus in both *P. lactuca*, Van Beneden, and *P. thridax*, Van Beneden.

No myzorhynchus was observed in our specimens and no myzorhynchus is described or figured for the following species:—

*P. minutum*, Shipley and Hornell,
*P. pammicrum*, Shipley and Hornell,
*P. blakei*, Shipley and Hornell,
*P. lactuca*, Van Beneden,
*P. thysanocephalum*, Linton.

A neck is absent in *P. blakei*, Shipley and Hornell, long in *P. lactuca*, Van Beneden, *P. minutum*, Shipley and Hornell, and *P. thysanocephalum*, Linton.

The characters of the genus *Spongiobothrium*, Linton, are as follows:—

Body articulate, taeniaeform. Head separated from the body by a neck. Bothria 4, opposite, pedicelled, broken up into laciniocristate folds which are transversely costate. Unarmed. Auxiliary acetabulum none, terminal papilla none. Genital apertures marginal.

The genus *Phyllobothrium* would thus also appear to be closely related to the genus *Spongiobothrium*, from which it differs only in the absence of the cristate folds on the rostellum. It will be observed that the characters of the genera *Crossobothrium* and *Spongiobothrium* relate almost entirely to external features, and the anatomical details are few and unsatisfactory. It is highly desirable that such details should be worked out so that the true relationships of the genera could be determined. It is not impossible that subsequent research may suggest the desirability of regarding external features such as the presence or absence of a neck, or supplementary suckers, or of a myzorhynchus, as specific, rather than generic, characters.

## LITERATURE.

Shipley and Hornell, *Ceylon Pearl Oyster Reports*, Part V, London, 1906.

### Genus II. **Parataenia**, Linton, 1889.

### **Parataenia medusia**, Linton, 1889.

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| Z.E.V. $\frac{6871}{7}$ | Intestine of *Hypolophus sephen.* | Main area, Chilka Lake, Nov. 29, 1914. | T. Southwell. |

Only two species of *Parataenia* are known, viz. *P. medusia*, Linton, and *P. elongatus*, Southwell. The latter differs from the former in being ten times longer, in possessing a neck, and in the ripe segments being broader than long.

Linton's specimens of *P. medusia* measured 6 mm. long, but he observed that "they must grow somewhat longer than this." Our specimen (we obtained only one) measured 15 mm. In other respects it agreed with Linton's description.

## LITERATURE.

Linton, Notes on Entozoa of Marine Fishes. *U.S. Fish Comm. Report for* 1887, pp. 862-866, plate xv, figs. 5-9 (Washington, 1891).

Southwell, *Ceylon Marine Biological Reports*, Part VI, p. 273, pl. iii, fig. 40 (Colombo, 1912).

### Tribe *CALLIOBOTHRIINAE*, Perrier, 1897.

### Genus **Calliobothrium**, Van Beneden, 1850.

### **Calliobothrium eschrichtii**, Van Ben.

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|---|---|---|---|
| Z.E.V. $\frac{6872}{7}$ | Spiral valve of *Hypolophus sephen.* | Main area, Chilka Lake, Dec. 1914. | T. Southwell. |

A single specimen is referred here with some hesitation. A definite identification was impossible because the spines were somewhat damaged. In other details it agreed with Van Beneden's species *eschrichtii*. The length of the worm is 9 mm. There were only about 13 segments the last of which measured 1 mm. long.

## LITERATURE.

Linton, *U.S. Fish Comm. Report for* 1887, pp. 812-1816, figs. 5-12 (Washington, 1891).

Van Beneden, *Acanthobothrium eschrichtii*. *Bull. Acad. Belg.*, Ser. 2, Vol. XVI, p. 280.

Van Beneden, *Calliobothrium eschrichtii*. *Mem. Acad. Belg.*, Vol. XXV, 1850, pp. 145 and 195.

## Family HYMENOLEPIDIDAE, Railliet and Henry, 1909.

### Genus **Hymenolepis**, Weinland, 1858.

### **Hymenolepis breviannulata**, Führmann, 1906.

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| Z.E.V. $\frac{6875}{7}$ | *Phalocrocorax javanicus* (the little Cormorant). | Chilka Lake, Dec. 1914. | T. Southwell. |

Two specimens, 57 mm. long and 5 mm. broad. Rostellum with 20 hooks.

Führmann in his original description states "leider fehlt der scolex."

The genital openings are unilateral and are situated near the anterior extremity of the proglottid.

## LITERATURE.

Führmann, *Centrbl. Bakter.*, I. Abt. Bd. XLI, Heft 4, pp. 445-446, fig 25, 1906.

## Family TAENIIDAE, Ludwig, 1886.

### Genus **Diploposthe** Jacobi, 1896.

### **Diploposthe laevis**, Jacobi, 1896.

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| Z.E.V. $\frac{6874}{7}$ | *Nyroca ferina*, (the Pochard). | Chilka Lake, Nov. 1914. | T. Southwell. |

A single specimen is referred here with some hesitation. No spines could be detected on the rostellum when the head was cleared in clove oil. Three testes were observed near the posterior border of the proglottides. The vesiculae seminalis is large. The cirrus is large, tubular, and armed with strong spines.

The female genital organs lie in the centre of the proglottid. No other details could be observed save that masses of eggs lay in

what appeared to be a lateral extension of the uterus, close to the cirrus sac, and of about the same size as the latter.

The synonymy of this species is extensive. For a full account the reader is referred to Johnstone (i).

## LITERATURE.

(1) Johnstone, T. H. H., On a re-examination of the types of Krefft's species of Cestoda in the Australian Museum, Sydney, Part I.
(2) Führmann, *Centrbl. Bakter.*, Vol. XL, 1906.
(3) Führmann, *Zool. Jahrb.*, Supplt. Bd. X, Heft I, 1908.

### Anaporrhutum largum, Lühe.

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|---|---|---|---|
| Z.E.V. $\frac{67.82}{7}$ | *Hypolophus sephen.* | Chilka Lake, Stations 140-141, Nov. 1915. | T. Southwell. |

This Trematode was found on the liver and in the coelom of the above ray. It is a transparent leaf-like form, and occasionally occurs in such numbers as to completely cover the outer surface of the liver. The fish was caught in the main area of the lake.

## LITERATURE.

Lühe, in Herdman's *Ceylon Pearl Oyster Reports*, Pt. V, London, 1906.
Southwell, *Rec. Ind. Mus.*, Vol. IX, Pt. II, Calcutta, June, 1913.