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Psilochasmus oxyurus gallinae, new sub-species of *P. oxyurus* (Trematoda, Psilostomidae) from the domestic fowl, *Gallus gallus domesticus*

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During the course of a survey of the helminth parasites of domestic fowl, *Gallus gallus domesticus*, from the suburbs of Trivandrum (India), two specimens of a trematode of the genus *Psilochasmus* were recovered from the jejunum of one of the fowls. Careful study of the specimen indicated that they resemble very closely *Psilochasmus oxyurus* (Creplin, 1825) in overall size and other features. However, they differ significantly from the above species as regards the relative proportion and size of the various reproductive structures. These features along with their occurrence in a new host, the domestic fowl, appear to justify their assignment to a sub-species, *P. oxyurus gallinae*. The present communication deals with the description of this sub-species of *P. oxyurus*.

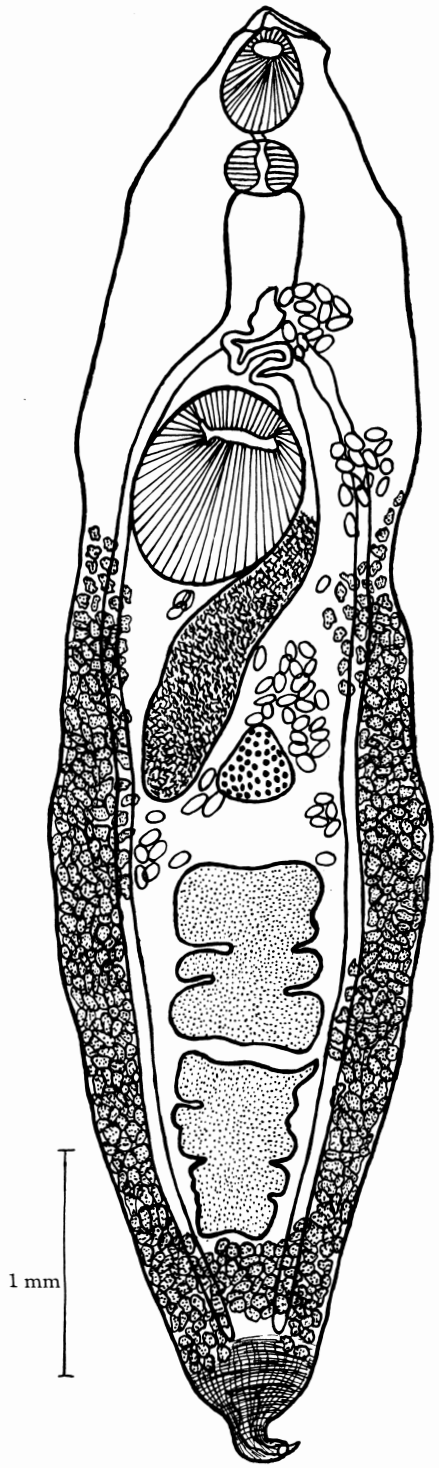
Lühe (1909) erected the genus *Psilochasmus* to include the species *Psilochasmus oxyurus* (Creplin, 1825). Since then, the same species was described from various parts of the world, in different species of ducks, *Aythya marila*, *A. fuligula*, *Bucephala clangula*, *Clangula hyemalis*, *Oidemia nigra* and *Tadorna tadorna*. In India this species was described by Baugh (1949) from a duck, *Anas poecilorhyncha* and Singh (1954) from the pintail duck, *Anas acuta*. Skrjabin (1913) described another species *Psilochasmus longicirratus* from the white eyed pochard, *Fuliqula nyroca*. Inamdar and Bhalerao (1944) recorded the same from the wild duck, *Aythya ferina ferina*. But this species was later found to be a synonym with *P. oxyurus* (Stunkard and Dunihue, 1931 ; Singh, loc. cit). Travassos, in 1926, reported another species *P. agilis* from the duck, *Poecilonetta bahamensis*. Inamdar and Bhalerao (loc. cit) doubts the validity of this species eventhough it is still retained as a species by Yamaguti (1958) and Loos-Frank (personal communication). Recently, Loos-Frank (1968) described a new species *P. aglyptorchis*, obtained from Herring Gull, *Larus argentatus*, experimentally infected with *Psilostomatid* metacercariae.

Psilochasmus oxyurus gallinae

Description

Body lanceolate, blunt anteriorly and tapering posteriorly to a conical tail-like process. Concentration of muscle fibres is seen in the posterior extremity. Cuticle devoid of spines. Body measures 6.46 to 6.46 mm in length and 1.192 to 1.491 mm in breadth (over ventral sucker). Sub-terminal oral sucker more or less oval of 0.383 to 0.454× 0.354 mm, well developed ventral sucker of 0.752 to 0.908×0.539 to 0.724 mm situated in the anterior third of the body. A short pre-pharynx present and measures 0.028 to 0.085 mm. Muscular pharynx is of 0.213 to 0.241×0.213 to 0.312 mm and oesophagus of 0.482 to 0.596×0.284 to 0.355 mm. Bifurcation of intestinal caeca starts 0.024 to 0.027 mm in front of ventral sucker. The intestinal caeca slightly tend to converge below the posterior testis. The testes are tandem, post equatorial and lobulated. Anterior testis measures 0.681 to 0.837× 0.507 to 0.667 mm and posterior testis 0.667

PL. 480—Research scheme, Department of Zoology, Mar Ivanios College, Trivandrum-15, KERALA.



to 0.823×0.426 to 0.568 mm in size. Genital pore situated just a few mm. in front of intestinal bifurcation. The club shaped cirrus sac is very long measuring 1.846 to 2.428× 0.255 to 0.354 mm with one or two convolutions nearing the genital opening and in front of the ventral sucker. It is extended from the anterior level of the ovary in one of the specimens and from the posterior level in the other. Ovary more or less round or triangular, situated in the middle of the body, measures 0.284 to 0.346×0.248 to 0.323 mm. Vitelline follicles rounded and overlapping with each other extending from mid-level of the ventral sucker to just below the extremity of the intestinal caeca. The follicles of both sides meet behind the posterior testis. In mounted stained specimens, the course of the uterine coils observed by the distribution of eggs. Eggs about 31 to 70 in number, measure 0.085 to 0.130× 0.056 to 0.090 mm. Excretory pores seem to be situated at the tip of the conical tail-like process. Y-shaped excretory bladder is indistinctly visible in one of the specimens.

Discussion

It has been observed that the criteria such as the length and the posterior extent of the cirrus sac, and the anterior extent of the vitellaria adopted by various authors to distinguish one species of *Psilochasmus* from another, are inadequate ; for they show variations within the same species. The present specimens differ from other known species in certain morphological characters. However, they show a general resemblance to *P. oxyurus* in overall size (Table 1) and in the disposition of various internal organs. It is evident from the table that the testes, ovary, cirrus sac and ventral sucker in the present specimens are markedly larger than those in *P. oxyurus*. Slight variations in the size of organs may be explained as result of differential growth in a new host. In the present instance, however, the differences are so pronounced that it seems justifiable to consider them as a sub-species of *P. oxyurus*. As far as we are aware this is the first re-

Table 1 Measurements (in mm) of different species of *Psilochasmus*

Measurements	*Psilochasmus longicirratus*		*Psilochasmus oxyurus*			*Psilochasmus aglyptorchis*	*Psilochasmus oxyurus gallinae*
	Skrjabin, 1913	Inamdar & Bhalerao, 1944	Lühe, 1909	Baugh 1949	Singh, 1954	Loos-Frank, G 1968	
Length	3.7~5.0	4.52~5.64	6.5~7.3	2.27	5.1	3.00	5.950~6.460
Breadth-Maximum	1.0~1.5	1.03~1.25	1.0~1.8	0.82	0.98	0.642 over oral sucker 0.717 over ovary	1.192~1.491
Oral sucker	0.34	0.26~0.35× 0.28~0.313	0.44	—	0.31	0.266×0.254	0.383~0.454 ×0.354
Ventral sucker	0.64	0.47~0.62× 0.43~0.55	0.64	—	0.52	0.376×0.439	0.752~0.908× 0.539~0.724
Prepharynx	—	0.215~0.228× 0.165~0.190	—	—	not seen	—	0.028~0.085
Pharynx	0.255×0.204	—	0.135	—	0.22×0.155	0.144×0.116	0.213~0.241× 0.213~0.312
Oesophagus	—	0.44~0.48	—	—	0.6	0.290	0.482~0.596× 0.284~0.355
Anterior testis	—	0.42~0.48× 0.38	—	—	0.50~0.33	0.387×0.318 Testis. I	0.681~0.837× 0.507~0.667
Posterior testis	—	0.47~0.62× 0.27~0.37	—	—	0.58~0.29	0.405×0.272 Testis. II	0.667~0.823× 0.426~0.568
Cirrus sac	1.3×0.24	1.42~1.44	0.5×0.1	—	1.2×0.13	—	1.846~2.428× 0.255~0.354
Ovary	—	0.198~0.240× 0.176~0.226	—	—	0.24×0.19	0.220	0.284~0.346× 0.248~0.323
Eggs	0.116~0.124× 0.072~0.087	0.099~0.102× 0.055~0.063	0.082~0.110× 0.06~0.07	—	0.0897~0.11× 0.052~0.07	0.103~0.113× 0.052~0.068	0.085~0.130× 0.056~0.06

cord of the occurrence of a species of *Psilochasmus* in the domestic fowl.

Summary

Two specimens of a trematode belonging to the genus *Psilochasmus*, recovered from the intestine of the domestic fowl were found to show general resemblance to *P. oxyurus*. However, based on the larger size of the reproductive structures and the new host record, they are assigned to a sub-species *P. oxyurus gallinae*.

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