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Author(s)	YAMASHITA, Jiro; TSUMURA, Iwao
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ON A NEW TREMATODE,
PLATYNOSOMUM PASSERI N. SP., FROM THE GALL
BLADDER OF THE JAPANESE TREE-SPARROW,
PASSER MONTANUS SATURATUS STEJNEGER,
WITH A REVIEW OF DICROCOELIIDAE

Jiro YAMASHITA

*Department of Parasitology, Faculty of Veterinary Medicine,
Hokkaido University, Sapporo, Japan*

Iwao TSUMURA

Faculty of Agriculture, Tottori University, Tottori, Japan

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Mature specimens of trematodes were obtained from the gall bladder of 9 birds from among 48 Japanese tree sparrows, *Passer montanus saturatus* STEJNEGER which were captured during the period extending from November 30, 1961 to July 10, 1962 in Tottori. The infected birds are ones which were captured during the period from November 30 to December 5. It is to be noted that the rate of infection is high; the infected birds each harbored 2 to 10 individuals of this parasite with 7 or more parasites in the most.

The parasites were fixed in 70% alcohol under slide glass pressure, stained with DELAFIELD's hematoxylin and mounted in balsam. This trematode differs from the previously known species morphologically.

Many genera and species of Dicrocoeliidae have been known, but only a few genera and species in Japan. In the cases of collection of parasites in small wild birds, it is needful to examine fully not only the intestine but other organs. So, here the authors wish to review a part of the systematics of the trematodes belonging to Family Dicrocoeliidae with a report of a new trematode.

PLATINOSOMUM PASSERI N. SP.

Body elongated or rather fusiform with blunt-pointed extremities, 3.2~3.64 mm in length and 0.9~0.96 mm in maximum breadth at level of testes. Cuticle thin, unarmed. Suckers close to each other. Oral sucker subterminal, 0.336~0.352 mm in diameter. No prepharynx. Pharynx subglobular and small, 0.12~0.11 mm in size. Esophagus is very short. Ceca simple, terminating a short distance in front of posterior extremity. Acetabulum subequal to oral sucker, 0.37~0.39 mm in diameter and within anterior third of body. Testes large, subglobular, oval or rounded triangular, not intended, horizontal in position, immediately post-acetabular, 0.4~0.73×0.18~0.34 mm in size. Cirrus pouch plump or pyriform, preacetabular. Genital pore

TABLE 1. *Known Genera of Dicrocoeliidae*

PARASITIC IN	GENUS	HABITAT
Mammals	* <i>Eurytrema</i> LOOSS, 1907	Bile duct, Gall bladder, Pancreatic duct, Intestine
	<i>Metadelphis</i> TRAVASSOS, 1944	Gall bladder
	<i>Pseudathesmia</i> TRAVASSOS, 1944	Bile duct, Gall bladder
	<i>Controrchis</i> PRICE, 1929	Gall bladder
	<i>Canaania</i> TRAVASSOS, 1944	Bile duct
	<i>Dictyonograpyus</i> TRAVASSOS, 1919	Pancreas, Gall bladder
	<i>Brodenia</i> GEDOELST, 1913	Pancreas
	<i>Leiptrema</i> SANDOSHAM, 1951	Pancreas
Birds	* <i>Brachydistomum</i> TRAVASSOS, 1944	Bile duct, Gall bladder
	<i>Unilaterilecithum</i> OSCHMARIN, 1952	Liver
	<i>Lubens</i> (TRAVASSOS, 1920)	Gall bladder
	* <i>Lutztrema</i> TRAVASSOS, 1941	Bile duct, Gall bladder
	<i>Platynotrema</i> NICOLL, 1914	Bile duct, Gall bladder
	* <i>Proacetabulorchis</i> GOGATE, 1940	Liver, Intestine
	<i>Stromitrema</i> SKRJ. et EVRANOVA, 1940	Gall bladder
	<i>Skrjabinosomum</i> EVRANOVA, 1944	Intestine
	<i>Pancreatrema</i> OSCHMARIN, 1952	Pancreas
Mammals and Birds	* <i>Dicrocoelium</i> DUJARDIN, 1845	Liver, Bile duct, Gall bladder
	<i>Athesmia</i> LOOSS, 1899	Bile duct, Gall bladder
	* <i>Brachylecithum</i> STROM, 1940	Bile duct, Gall bladder
	* <i>Concinnum</i> BHALERAO, 1936	Bile duct, Gall bladder
	<i>Conspicuum</i> BHALERAO, 1936	Gall bladder
	* <i>Platynosomum</i> LOOSS, 1907	Liver, Gall bladder
	<i>Skrjabinus</i> (TRAVASSOS, 1920)	Gall bladder
	<i>Zonorchis</i> TRAVASSOS, 1944	Bile duct, Gall bladder
** <i>Lyperosomum</i> LOOSS, 1899	Bile duct, Gall bladder	
	<i>Corrigia</i> STROM, 1940	Bile duct, Pancreas, Intestine
Reptiles	<i>Euparadistomum</i> TUBANGUI, 1931	Gall bladder
	<i>Infidum</i> TRAVASSOS, 1916	Gall bladder
	<i>Paradistomoides</i> TRAVASSOS, 1944	Gall bladder
	<i>Paradistomum</i> KOSSACK, 1910	Liver, Gall bladder
	<i>Pintneria</i> POCHE, 1907	Intestine
Mammals and Reptiles	<i>Anchitrema</i> LOOSS, 1899	Intestine

* Genus including species known in Japan

** Genus including species known in Formosa, old Japan

level with intestinal bifurcation. Ovary subglobular or oval, submedian, post-testicular, $0.24\sim 0.27\times 0.14\sim 0.21$ mm in size. Receptaculum seminis subglobular or ellipsoidal, directly behind ovary, $0.072\sim 0.096\times 0.056\sim 0.064$ mm in size. Uterus occupying whole inter- and post-vitellarian fields, passing beside ovary and between the two testes, tightly convoluted dorsal to acetabulum, and finally running straight forward along cirrus pouch on its dextrodorsal side. Eggs elliptical, dark brown, thick-shelled, embryonated, $0.044\sim 0.052\times 0.028\sim 0.032$ mm in size.

Vitellaria similar to a bunch of grapes consisting of relatively large irregular follicles sized $0.15\sim 0.21\times 0.12\sim 0.13$ mm in the most of them, extending along each body side for a short distance from behind ovary, terminating at different levels.

The morphological aspect described above agrees with the characteristics of Genus *Platynosomum*, but in the form of vitellaria there is much difference from the known species of this genus. Only in the form of vitellaria it is rather similar to that of some species of Genus *Paradistomum* parasitic in reptiles. This difference recognized in vitellaria seems to be sufficient to justify the creation of a new species, *Platynosomum passerii* n. sp.

In Dicrocoeliidae, the species found in sparrows, Genus *Passer*, number only 2, *Brachylecithum filum* (DUJ., 1845) STROM, 1940 from *Passer domesticus* in Lausanne, *Passer hypsaniolensis hypsaniolensis* in Russia and *Passer* sp. in Rennes and *Zonorchis petiolatum* (RAILLIET, 1900) DENTON et BYRD, 1951 from *Passer domesticus* and *Passer montanus* in Europe and Morocco. On the other hand, in Japan, the trematodes known in the past from sparrows number only 4 species, *Prosthogonimus cuneatus* (RUDOLPHI, 1809) BRAUN, 1901 [Prosthogonimidae], *Plagiorchis muris* TANABE, 1922 [Plagiorchidae], *Microphalloides japonicus* (OSBORN, 1929) YOSHIDA, 1938 [Microphallidae], and *Tanaisia zarudnyi* SKRJABIN, 1924 [Eucotylidae], and will total 5 species with the addition of the present new species [Dicrocoeliidae, Dicrocoeliinae, Eurytrematini].

GENERA OF DICROCOELIIDAE

As present, the Family Dicrocoeliidae consists of 33 genera as shown in table 1. The most of the genera are parasitic in the biliary tracts, and 3 genera are known only from the intestine. However these intestinal ones may come to be found from other organs in future. There are 19 genera being parasitic in mammals, 19 genera parasitic in birds and 6 genera parasitic in reptiles. Among these, 10 genera are common to mammals and birds and one genus is common to mammals and reptiles.

In the past, 8 additional genera were created anew under Dicrocoeliidae by some investigators, but these genera have hitherto been dealt with as synonyms as shown in table 2. *Dicrocoelioides* DOLFUS, 1954 are using now by a few investigators, but the present authors endorse YAMAGUTI's opinion that it is prefer to relegate this genus to subgeneric rank.

There are found 14 species belonging to 9 genera of Dicrocoeliidae in addition to the present species in Japan; these are listed in table 3.

TABLE 2. A List of Old Genera in Dicaoceliidae

OLD GENUS	SYNONYM OF
<i>Oswaldoia</i> TRAVASSOS, 1919	<i>Lyperosomum</i> LOOSS, 1899
<i>Dicrocoelioides</i> DOLFUS, 1954	"
<i>Lyperotrema</i> TRAVASSOS, 1919	<i>Athesmia</i> LOOSS, 1899
<i>Hepatotrema</i> STUNKARD, 1923	"
<i>Orthorchis</i> TRAVASSOS, 1944	<i>Brachylecithum</i> STROM, 1940
<i>Olssoniella</i> TRAVASSOS, 1944 partim	"
<i>Lyperosomum</i> LOOSS, 1899 partim	"
<i>Praeorchitrema</i> OSCHMARIN, 1952	<i>Platynotrema</i> NICOLL, 1914
<i>Evandrocotyle</i> JANSON, 1941	<i>Euparadistomum</i> TUBANGUI, 1931
<i>Hoploderma</i> COHN, 1903	<i>Pintneria</i> POCHE, 1907

TABLE 3. Trematodes of Dicrocoeliidae in Japan

SPECIES OF TREMATODES	HOSTS
<i>Eurytrema pancreaticum</i> (JANSON, 1899)	Sheep, Cattle
<i>E. parvum</i> SENOO, 1907	Cattle
<i>E. satoi</i> KOBAYASHI, 1915	<i>Macaca irus</i>
<i>Brachydistomum microscelis</i> (YAMAGUTI, 1933) syn. <i>Lyperosomum microscelis</i> Y., 1933	<i>Microscelis amaurotis</i>
<i>Proacetabulorchis prashadi</i> GOGATE, 1940	<i>Halcyon coromanda major</i>
<i>Dicrocoelium lanceatum</i> STILES et HASSALL, 1898	Sheep
<i>Brachylecithum emberizae</i> (YAMAGUTI, 1941) syn. <i>Lyperosomum emberizae</i> (Y.) 1941 <i>Olssoniella emberizae</i> (Y.) TRAVASSOS, 1944	<i>Emberiza variabilis</i>
<i>Brachylecithum eophonae</i> (YAMAGUTI, 1941) syn. <i>Lyperosomum eophonae</i> Y., 1941 <i>Olssoniella eophonae</i> (Y.) TRAVASSOS, 1944	<i>Eophone personata</i>
<i>Brachylecithum halcyonis</i> (YAMAGUTI, 1941) syn. <i>Lyperosomum halcyonis</i> Y., 1941 <i>Olssoniella halcyonis</i> (Y.) TRAVASSOS, 1944	<i>Halcyon coromanda major</i>
<i>Brachylecithum mosquense</i> (SKRJ. et ISSAITSCH, 1927) syn. <i>Oswaldoia mosquense</i> S. et I., 1927 <i>Olssoniella m.</i> (S. et I.) TRAVASSOS, 1944	<i>Emberiza variabilis</i>
<i>Concinnum ten</i> (YAMAGUTI, 1939) syn. <i>Eurytrema ten</i> , YAMAGUTI, 1939	<i>Martes melampus melampus</i>
<i>Platinosomum passerii</i> n. sp.	<i>Passer montanus saturatus</i>
<i>Lutztrema attenuatum</i> (DUJARDIN, 1845)	<i>Merula merula</i> , <i>M. obscura</i>
* <i>Lyperosomum urocissae</i> YAMAGUTI, 1939	<i>Urocissa caerulea</i>

* Species known in Formosa, old Japan

In Dicrocoeliidae parasitic in birds, there are few species whose life cycles are known. In *Brachylecithum americanus*, some species of snails and slugs are known as the 1st intermediate hosts and the chrysomelid beetles as the 2nd ones; in *Conspicuum icteridorum* the snail (*Zonitoides arboreus*) and slug as the 1st intermediate hosts and *Oniscus asellus* and *Armadillidium quadrifrons* (Arthropoda) as the 2nd ones are known, and in *Zonorchis petiolatus* the land snail (*Helicella arenosa*) as the 1st one and *Armadillidium* as the 2nd one. The authors wish to make clear the life cycle of the present species in future.

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EXPLANATION OF PLATE

Platynosomum passerii n. sp.

- Fig. 1. Strongly pressed specimen, ventral view
Fig. 2. Slightly pressed specimen
Figs. 3~5. Vitellaria
Fig. 6. Cirrus pouch
Fig. 7. Egg

