

**A NEW TREMATODE PARASITE *ZONORCHIS SANGLAENSIS* N.SP (DICROCOELIIDAE:  
DICROCOELIINAE) FROM A BIRD HOST *TURDOIDES STRAITUS ORIENTALIS* (JERDON)  
FROM SANGLA, HIMACHAL PRADESH, INDIA**

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**ABSTRACT**

A new species of the Dicrocoeliid trematode *Zonorchis sanglaensis* n.sp. collected from the gall bladder of *Turdoides straitus orientalis*(Jerdon) obtained from Sangla, Himachal Pradesh, India is described and illustrated. The new species is compared with other species of the genus *Zonorchis* Travassos, 1944 and found closer to *Z. microrchis* Travassos, 1944 but it differs from it by its unique feature of its smaller size of body, the broader caeca, testes partly overlapping acetabular region, ovary posterior to the equatorial level of the body and the large vitelline follicles commencing from the anterior acetabular region. A key to Indian species under the genera *Zonorchis* and a comparative chart has been provided to distinguish it from all the valid species under the genera.

**KEY WORDS:** Bird host, Himachal Pradesh, Trematode, *Zonorchis sanglaensis* n.sp.

**INTRODUCTION**

Birds harbor a good number of trematode infections in their internal organs. Two numbers of *Turdoides straitus orientalis* (Jerdon) were caught by mist net at Sangla, Rekong Peo (dist.), Himachal Pradesh during the faunal survey to Himachal Pradesh, during March-April, 2012 to inventories the trematode parasites. These birds were dissected for parasites and the gall bladder of one of the birds yielded two examples of trematodes. The trematodes are identified under the genus *Zonorchis* Travassos, 1944, considering the differences in the shape, size and position of the testes, ovary and vitellaria in comparison with the other valid species under the above genera. The present trematode species found to be new to science. It is named as *Zonorchis sanglaensis* n.sp after the place from where it is collected.

**MATERIAL AND METHOD**

Collected trematode specimens from the gall bladder of the bird host, *Turdoides straitus orientalis* (Jerdon) are stored in 4% normal saline solution as well as narcotized in 70% alcohol and stained with Borax carmine. The preserved trematodes were mounted on slide by Canada balsum. The sizes of the body parts were measured and the Camera lucida diagrams were made on the important characters necessary to establish a new species.

**RESULTS**

**SYETEMATIC POSITION**

Family: DICROCOELIIDAE Odhner, 1910  
Sub family: DICROCOELIINAE Looss, 1899  
Genus: *Zonorchis* Travassos , 1944  
*Zonorchis sanglaensis* n.sp  
(Figure 1)



**Figure 1.** *Zonorchis sanglaensis* n.sp.

The body is thin, transparent, broad and elongate measuring 2.51-2.91 mm in length and 1.09-1.14 mm in width at the level of the acetabulum, 1.20-1.23 mm in maximum width attained at the level of the ovary i.e., just below the equatorial zone. The cuticle is thin and the spines are absent. Oral sucker terminal and is 0.34 X 0.38-0.40 mm. The acetabulum is distinctly larger than oral sucker and is spaced at 0.82-0.85 mm away from anterior tip of body, measures 0.12 X 0.56 - 0.58 mm. The size ratio of suckers is 1: 1.4. The mouth is surrounded by the oral sucker, posterior to which is seen the globular pharynx measuring 0.08-0.09 X 0.13 mm. It is followed by a slender esophagus which is nearly twice as long as the pharynx, esophagus bifurcates into two long caeca which terminate at the posterior end. The testes are oval in shape, entire and are situated posterolateral to acetabulum with their anterior borders projecting into the acetabular region. They measure 0.22-0.24 X 0.16 – 0.19 mm and 0.18 – 0.21 X 0.19 – 0.22 mm respectively.

**Table 1. Comparison between *Z. microrchis* (Travassos, 1916) Travassos, 1944 with *Z. sanglaensis* n. sp**

Sr No	Name of the species	Size (in mm)	Size of the caeca (in mm)	Position of the testes	Position of the ovary	No. of vitelline follicles
1.	<i>Zonorchis microrchis</i> (Travassos,1916) Travassos, 1944	4.5 X 1.0	0.72 X 0.78	Anterolateral to the acetabulum	Situated just in front of the testes.	Lesser no. Commencing in the mid ventral region
2.	<i>Zonorchis sanglaensis</i> n.sp	2.51-2.91 X 1.09 - 1.37	0.86 X 0.89	Posterolateral to the acetabulum	Situated right after immediate posterior to the mid-level of the body.	Large vitelline follicles commencing from the anterior acetabular region.

**Table 2. Showing the comparative chart of the species under the Genus *Zonorchis* Travassos, 1944**

Sr. No	Name of the parasite	Host	Mesurment(mm)	Locality
1	<i>Z.alveyi</i> Martin et Gec.1949) Denton et Byrd, 1951	<i>Junco haemalis</i>	2.61-4.67 x 1.13-1.84	Texas
2	<i>Z. angrensis</i> Travassos,1920) Travassos, 1944	<i>Attrila rufus</i>	4.5-1.0	Brazil
3	<i>Z.confusus</i> Travassos,1944	<i>Formicarinus ruficeps</i>	2.0-2.58 X 05-09	Brazil
4	<i>Z.contarricensis</i> Brenes et Jamenez-Qiros,1959	<i>Gymnostinops montezuma</i>	7.61-7.64 X 1.45-1.92	Costa - Rica
5	<i>Z.delectans</i> (Braun, 1901) Travassos 1944	<i>Thraupis pulmarum</i>	2.9 X 1.0	Brazil
6	<i>Z.dollfusi</i> Richard, 1962	<i>Caracina cinereacineae</i>	2.5-5.0 x 0.7 – 1.0	Madagascar
7	<i>Z.furnarii</i> (Vogelsang et Cordero, 1928) Travassos,1944	<i>Farnarius rufus</i>	2 X 1	South America
8	<i>Z. hartwichi</i> Odening, 1964	<i>Acriditeres cristallus</i>	5.0 X 1.1 – 1.5	Vietnam
9	<i>Z. japuhybae</i> Travassos, 1944	<i>Chiroxiphia caudate</i>	3.6-6.4 X 08-0.9	Brazil
10	<i>Z. lanciformis</i> (Oshmarin,1953) Odening, 1964	<i>Filcus buteo</i>	4.6 X 1.74	Russia
11	<i>Z. macroovarius</i> Jimenez-Quiros et Arroyo Sancho, 1960	<i>Petroglossus torquatus</i>	3.65-3.79 X 0.53 – 0.76	Costa-Rica
12	<i>Z.macrorchis</i> Faust,1966	<i>Chlori sinica</i>	1.72-2.23 X 0.35	Peking, China
13	<i>Z.mazzai</i> (Vogelsang et Cordero, 1938) Travassos, 1944	<i>Speotyotocunicularia gallaria</i>	4.8 X 1.6	Uruguay
14	<i>Z.meyeri</i> Vercammen-Gandjean, 1966	<i>Laterallus jamaicensis</i>	1.83 x 0.53	Galapagos Islands
15	<i>Z.microrchis</i> Travassos, 1916) Travassos, 1944 Type species	<i>Laterallus melanophaius</i>	4.5 X 1.0	Brazil
16	<i>Z. multivitellatus</i> Faust, 1966	<i>Anthus</i> sp	3.2-5.1 X 1.07-1.46	Peking, China
17	<i>Z.panduriformis</i> (Railliet,1900) Timon-David, 1953	<i>Pica pica</i>	3.4 x 1.0	Europe
18	<i>Z.petirolatus</i> (Railliet,1900) Denton et Byrd, 1951	<i>Garrulus glandarius</i>	4.05 x 1.05	U.S.A.
19	<i>Z. rutschurensis</i> (Bear, 1959) Odening, 1965	<i>Apus caffer streubeli</i>	3 x 0.68	Belgium, Congo
20	<i>Z.singhi</i> Jaiswal, 1957	<i>Pava cristatus</i>	6.2 x 0.29	Hyderabad, India
21	<i>Z. travassosi</i> Jaiswal, 1957	<i>Sexicoloides fulvicata</i>	3.85-4.57-x 1.68-1.89	Hyderabad, India.

A small cirrus pouch is seen below the pharynx, opens in front through genital pore, near the posterolateral border of pharynx. The cirrus sac encloses feebly developed cirrus, coiled seminal vesicle and few prostatic cells. The ovary is oval in shape measuring 0.19 – 0.21 X 0.19 – 0.22 mm., situated to the right of the median line immediately posterior to the mid-level of the body, from the posterior border of the ovary arises the oviduct, attached to the oviduct there is a sac like receptaculum seminis and from the junction arises the Laurer's canal which takes a sinuous course and opens out. Mehli's gland is compact consisting of fairly big cells. The uterus occupies the major part of the body, its dense coils occupying all the available space in the posterior 2/3 rd of the body. The vitellaria consist of small irregularly spaced follicles distributed in lateral fields commencing from the anterior border of acetabulum anteriorly, terminating

a little bit away from the posterior border of the body. The eggs are large, measuring 31-35 X 20-23 u with thick amber coloured operculated shell and contain fully developed miracidia at the time of liberation.

**Key to the Indian species under the genus *Zonorchis* Travassos, 1944**

1. Size 6.2 X 0.29 mm.....*Z.singhi* Jaiswal, 1957  
Smaller size.....2
2. Size 3.85 – 4.57mm X 1.68 – 1.89mm; parasitic in *Sexicoloides fulicata*.....*Z.travassosi* Jaiswal, 1957  
Size 2.51 – 2.91mm X 1.9 – 1.57mm; parasitic in *Turdoides straitus orientalis*.....*Z.sanglaensis* n.sp.

**DISCUSSION**

The genus *Zonorchis* was established by Travassos, 1944 with the type species *Z.microrchis*(Travassos,1916) Travassos, 1944 of *Laterallus melnophaius* from Brazil, subsequently twenty one other species have been described under this genus so far. The present species resembles with *Z.microrchis* Travassos, 1944 but differs from it in the smaller size of the body, the broader caeca, testes partly overlapping acetabular zone, ovary posterior to the equatorial level of the body and the large vitelline follicles commencing from the anterior acetabular region. In the light of the foregoing the present form is considered as a new species and is named as *Zonorchis sanglaensis* n.sp.

**SUMMARY**

A trematode under the genus *Zonorchis* Travassos, 1944 is recorded from the gall bladder of *Turdoides straitus orientalis* (Jeder) which is new to science and is named as *Zonorchis sanglaensis* n. sp. After the locality from where it was collected.

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