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***Conspicuum murtazae* sp.n (Trematode Dicrocoeliidae) from common Myna *Acridotheres tristis* (Passeriformes: sturnidae) in District Larkana, Sindh Province-Pakistan**

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Abstract

A new trematode *Conspicuum murtazae* sp.n is recorded in gall bladder of Common Myna *Acridotheres tristis* of District Larkana, Sindh, Pakistan. A total of 5 trematodes were collected. Present trematodes differ from their congeners in body shape and size; presence of shoulder type outgrowths; subterminal oral sucker; wider ventral sucker; presence of testes in parallel to the ventral sucker; pre-equatorial bean-shaped ovary; distribution of vitellaria and post-testicular space. On the basis of such variabilities, this species; *Conspicuum murtazae* may be treated as a new species. This new species is dedicated in the name of loving Father Mr Ghulam Murtaza Soomro of first author.

Keywords: Avian trematode, *Conspicuum murtazae* n. sp., Common Myna *Acridotheres Tristis*, District Larkana, Sindh, Pakistan.

1. Introduction

Family Dicrocoeliidae Loss, 1899 is a large family, which refers morphometric changes in body size, shape and form of the internal organ. This family contains around 400 species. There are many systems for the family, suggested by Shtrom (1940),^[8] Travassus (1944),^[8] Skrjabin and Evranova (1952),^[8] Yamaguti (1958, 1971)^[8] Odening, Panin (1981).^[8] A comparison of these systems shows huge peculiarity in affiliation of genera to the higher taxa as well in the assessments of the vitality some genera.

Number of species of the genus *Conspicuum* (Bhalerao, 1936) Shtrom, 1940^[8] are known from various countries but only one from Pakistan.

The Common myna or Indian mynah (*Acridotheres tristis*) is an indigenous species of south Asia, from Afghanistan, Pakistan, and India, through to South western China and Indochina. (Salim, Ripley, Dillon, 2001).^[7] The Common mynah is a rather omnivorous bird, eating a wide range of invertebrates, fruits, and seeds. It causes imperative damages in orchards of soft fruits and berries, such as bananas, papayas, guavas, pineapples, apples, and etc.

2. Material and Method

Live 52 host birds belonging to Family Sturnidae were collected from different location of District Larkana, Sindh, Pakistan and were dissected in Laboratory. Live 5 trematodes were recovered from gall bladder *Acridotheres tristis* and were put into Petri dishes in 2% normal saline solution. Endohelminth parasites were collected and dehydrated in graded series of ethanol. Specimens stained in borax carmine, cleared in xylol and passed through clove oil for shining and finally mounted permanently on slide with the help of Canada balsam. Diagrams were made by using camera Lucida (Garcia and Ash, 1979).^[6] The key was prepared for the identification of species. Photographs were taken by digital camera. All international parameters were used for measuring various variabilities in milimeters (Table: 1).

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Table 1: Comparative characteristics of various species of genus *Conspicuum* collected from different host (Bhalerao, 1936).

Species	Present species	<i>C. alykhani</i>	<i>C. orientale</i>	<i>C. icteridorum</i>	<i>C. macrorchis</i>
Body size	0.055-0.044×0.094-0.078	ND	ND	2.20-5.97×0.70-1.97	4.27-5.47×1.40-2.04
Hind body	0.529-0.31	ND	ND	ND	ND
Oral sucker	0.052-0.238×-	0.39-0.40(0.35)×0.37-0.38(0.37)	0.22	0.20-0.58	0.30-0.50
Pharynx	0.020-0.013	0.30-0.33(0.31)×0.09-0.10(0.09)	0.06	0.08-0.40	0.14-0.24
Esophagus	0.05-0.194	ND	ND	0.08-0.40	0.15-0.20
Ventral sucker	0.055-0.104×0.094-0.164	0.51-0.54(0.52)×0.5-0.55(0.52)	0.33	0.38-0.82	0.55-0.84
Distance between Oral and Ventral sucker	0.144-0.122	ND	ND	ND	ND
Right testis	0.026-0.024×0.061-0.208	0.18-0.21(0.19)×0.20-0.24(0.22)	0.28	0.09	0.25
Left testis	0.032-0.031×0.058-0.040	0.12-0.14(0.13)×0.20-0.22(0.21)	0.24	0.45	0.77
Ovary	0.05-0.03×0.0794-0.0598	0.24-0.25(0.24)×0.23-0.25(0.24)	0.144	0.10-0.36	0.30-0.37
Post testicular space	0.470-0.329	ND	ND	ND	ND
Eggs	0.017	0.058-0.060(0.059)×0.039-0.04(0.039)	34-36×21-23	27-33×17-23	27-31×19-21
Host	<i>Acridotheres tristis</i>	<i>Saxicoloides fulvicata</i>	<i>Numenius arquatus lincalus</i>	<i>Quiscalus quiscalus aeneus</i>	<i>Corvus brachyrhynchus</i>
Location	Gall bladder	Gall bladder	Bile ducts and small intestine	Gall bladder	Gall bladder
Locality	District Larkano, Sindh Pakistan	Karachi	Peking, China	N.America	Texas: Clodines and Sealey

ND=Not detectable

Parameters measured in mm (Table: 1)

3. Results

3.1. Taxonomic position

Host: Common myna, *Acridotheres tristis*

Parasitic Habitat: Gall bladder

Locality: Larkana District, Sindh, Pakistan

No: of host examined: 52

No: of host infected: 02

No: of specimen recovered: 05

3.2. Description

Body of present species was recorded as large, elongated thick, highly, muscular, rounded anteriorly and tapering posteriorly measuring 0.055-0.044mm long by 0.094-0.078mm wide (Table: 1; Fig: 2). Fore body smaller measuring 0.020-0.011mm long while hind body is 0.529-0.31mm long (Table: 1; Fig: 2). Oral sucker sub terminal, highly muscular, rounded in shape measuring 0.052-0.238 in diameter (Table: 1; Fig: 2). Pharynx kidney shaped, overlapped by oral sucker measuring 0.020-0.013mm long (Table: 1; Fig: 2). Esophagus tubular narrow to broad measuring 0.05-0.194mm long diverticulating into intestinal

ceca at the region between oral sucker and ventral sucker (Table: 1; Fig: 2). Cecae run in lateral fields of body not reaching up to the posterior extremity (Table: 1; Fig: 2). Ventral sucker broader than elongated with slight constriction on lower level located in between the two testes, measuring 0.055-0.104mm long by 0.094-0.164mm wide (Table: 1; Fig: 2). Both testes are bean- shaped located at lateral sides of the ventral sucker (Table: 1; Fig: 2). Right testis measuring 0.026-0.024 mm long by 0.061-0.208mm wide and left testis measuring (0.032-0.031) mm long by 0.058-0.040 mm wide (Table: 1; Fig: 2). Ovary bean- shaped sub median located behind the ventral sucker and right testes, measuring 0.05-0.03mm long by 0.0794-0.0598mm wide (Table: 1; Fig: 2). Vitellaria running in lateral fields of body and overlap ceca, commencing from the level of testes reaching far behind the ovary, not reaching posterior extremity. Uterus filling entire body of the species (Table: 1; Fig: 2). Eggs measuring 0.017-0.064mm long (Table: 1; Fig: 2). Genital pore is located at the level of esophagus (Table: 1; Fig: 2).

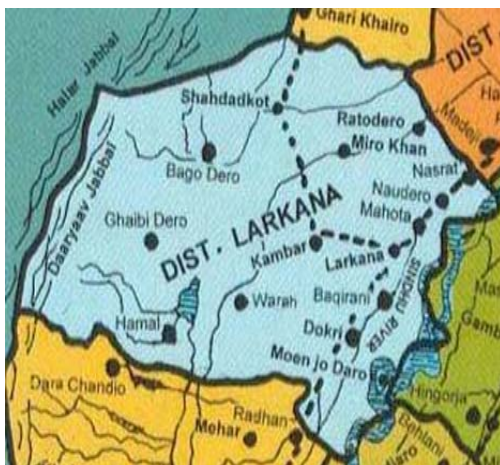


Fig 1: Study area of host, *Acridotheres tristis*



Fig 2: *Conspicuum murtazae* sp.n entire holotype, lateral view

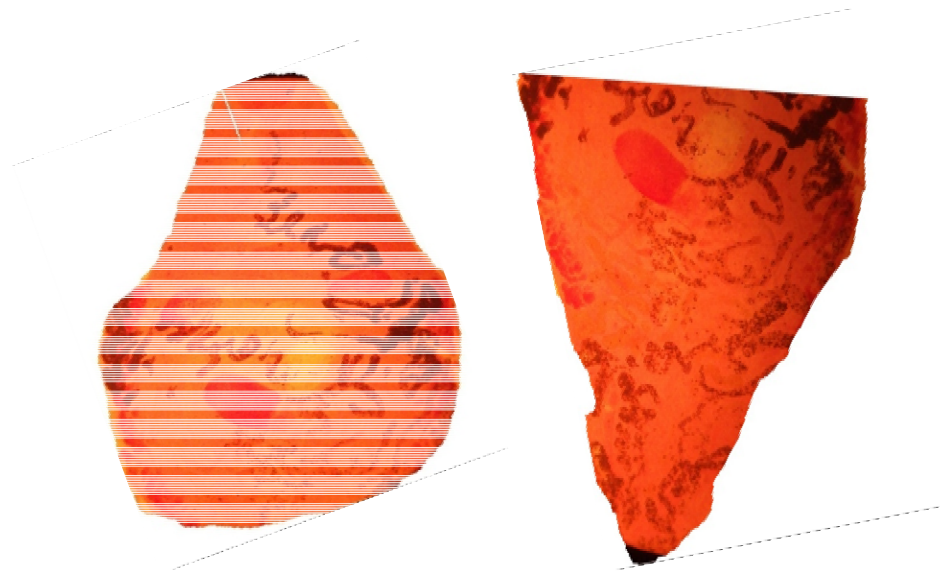


Fig3. 4: *Conspicuum murtazae* sp.n entire holotype, photographic view

4. Discussion

Species of genus *Conspicuum* Balerao, 1936^[5] reported from Pakistan include only one *C. alykhani* Sanjota N. Das and Raffia Rehana Ghazi, 2014^[9] and majority species of genus *Conspicuum* Balerao, 1936^[5] reported from various countries include *C. icteridorum* Denton and Bryad *et al.*, 1951,^[1] *C. macrorchis* Denton and Bryad *et al.*, 1951,^[1] *C. orientale* Faust *et al.*, 1966,^[3] *C. popvi* Odening, 1964,^[2] *C. acuminatum* (Nicoll,1955) Travassos, 1944,^[5] *C. kalmikese* (Skarjabin *et al.* Issaaitchikoff, 1927^[5] *C. conspicuum* (Gomes De Faria, 1912 Balerao, 1936),^[5] *C. alectoris* Travassos, 1944,^[5] *C. rarum* (Shtrom,1940) Odening, 1964,^[5] *C. durenii* (Vercammen Grandjean, 1960) Odening, 1964,^[5] *C. morenoi* Odening, 1964,^[5] *C. biliosum* (Shtrom,1940) Odening, 1964,^[5] *C. latum* (Shtrom, 1940) Odening, 1964,^[5] *C. pulchrum* (Travassos, 1920) Travassos, 1944^[5] *C. icteridorum*, Denton and Bryad, 1951^[1] collected from the host *Quiscalus quiscula aeneus* of North America differs in having body larger smooth or with fine transverse wrinkles when slightly contracted. Papillae much more numerous on the conspicuous dorsal lip like protection. Cerebral ganglion conspicuous, ventral to posterior margin of pharynx. Excretory pore terminal, excretory vesicle simple, tubular extending anteriorly. Flame cell pattern 2(2+2+2) s+ (2+2+2). Genital pore medium at the level of pharynx. Vasa efferentia arise from anteriomedial margin of the testis and pass anteriorly and medially to unite as they enter cirrus sac. Cirrus sac containing a convoluted seminal vesicle, ejaculatory duct surrounded by prostatic gland cells and eversible cirrus lies in ventral sucker. Seminal receptacle globular located dorsal to posterior to caudal margin of ovary. Mehlis gland situated medially to seminal receptacle. Laurer's canal present mature ova dark brown in color. Present species *Conspicuum murtazae* n.sp. differs from this one (Table: 1; Fig: 2)

C. macrorchis, Denton and Bryad, 1951^[1] collected from the host *Corvus brachyrhynchos* of Brehm, Texas: clodine (type) and Sealey differs in having body rather thick and muscular. Contractile sensory papillae visible only on margin of preacetabular region of body. Oral sucker is cup-shaped situated at the junction of anterior third part of body. Excretory system like the *icteridorum* with exception of collecting duct tubule pass ventral to inner margin of testis.

Genital pore median at the level of pharynx. Testes rounded, vasa efferentia arising from anterior margin of testes and passing anteriorly. Cirrus sac elongated and oval lying anterior to acetabulum, containing convoluted seminal vesicle, ejaculatory duct surrounded by prostatic gland cells and eversible cirrus. Ovary oval, seminal receptacle small located just posterior to ovary. Present species *Conspicuum murtazae* n.sp. differs from this one (Table: 1; Fig: 2).

C.oriental, Faust, 1966^[3] from *Numenius aquatus lincatus* (Cuvier) (eastern curlew) of Peking, China differs in having genital pore immediately posterior to ceceal bifurcation. Testes ovoidal. Cirrus sac overlapping at the border of acetabulum. Ovary ovoidal to triangular. Excretory system well defined, bladder long. Pair of collecting tubules emptying into anteriolateral horns. Present species *Conspicuum murtazae* n.sp. differs from this one (Table: 1; Fig: 2).

C.alykhani Sanjota, N.Das and Rehana Ghazi, 2014^[9] collected from the host *Saxicoloides fulvicata* of Karachi differs in having larger oral sucker; esophagus longer; pharynx smaller and oval-shaped. Ventral sucker larger and rounded in shape; testes oval to rounded in shaped; right testis smaller and lies at little distance beneath the acetabulum, separated from the other by the uterine coils. Left testis smaller, slightly oval shaped located beneath the acetabulum slightly towards lateral field. Genital pore is situated above the prebifurcal level, below the pharynx. Ovary larger rounded and lie beneath the left testis. Vitelline follicles commence from the level of the acetabulum at the anterior region. Eggs are thin shelled. Present species *Conspicuum murtazae* n.sp. differs from this one (Table: 1; Fig: 2)

C. popovi (Kasimov, 1952)^[2] collected from the host *Teraogallus* of Russia differs in having oral sucker larger and rounded -shape. Pharynx rounded lie beneath the oral sucker; ventral sucker larger oval to rounded shape lie at the mid line of body. Ovary smaller rounded in shape. Testes overlapping each other and lie beneath the acetabulum. Anterior testis is oval-shaped like posterior one. Present species *Conspicuum murtazae* n.sp. differs from this one (Table: 1; Fig: 2)

C.lanceatum (Shtrom, 1940)^[4] collected from the host *Anthus* of Turkestan differs in having oral sucker slightly rounded. Pharynx overlapped rounded in shape. Esophagus

narrows to broad. Ventral sucker rounded in shape. Testes are slightly rounded in shape having slight constriction on upper side. Ovary rounded. Vitelline follicles commence at the level of acetabulum. Present species *Conspicuum murtazae n.sp.* Differs from this one (Table: 1; Fig: 2)

5. Conclusion

On the basis of body shape; size; presence of shoulder type lateral growth; sub terminal oral sucker; wider ventral sucker; presence of testes in parallel to the ventral sucker; pre-equatorial bean-shaped ovary; distribution of vitellaria and post-testicular space, a new species *Conspicuum murtazae n.sp.* is proposed. This species is new addition to the taxonomy which is also recorded as new host from Common myna, *Acridotheres tristis*.

The name of new species refers in the honour of Loving Father Mr: Ghulam Murtaza Soomro of first author.

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