Research Article

Systematic Status of New Species of *Diplotriaena murtazi* n. sp. (Nematode: Filariidae) from Common Myna (*Acridotheres tristis*) Linnaeus, 1766 (Passeriformes: Sturnidae) in District Larkana, Sindh, Pakistan

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Abstract | A new nematode, *Diplotriaena murtazi* n.sp., was recorded from the body cavity of common myna *Acridotheres tristis* of District Larkana, Sindh, Pakistan. In all, 20 nematodes (♂♂) were recorded. Present nematode reflects diversification from their congeners in the following charaters viz: body measurement; shape; size and shape of trident; shape of spicules and presence of 13-14 pairs of caudal papillae. On the basis of such morpho-metrical changes this species; *Diplotriaena murtazi* treated as a new species. This species is dedicated to author's father Advocate Ghulam Murtaza Soomro.

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Keywords | Avian nematode, *Diplotriaena murtazi* n.sp., Common myna (*Acridotheres tristis)*, District Larkana, Sindh, Pakistan

Introduction

Common myna commonly they are called as crested myna, house myna and Indian myna. They are very bold, active and popular bird of Asia. Its upper part contain very prominent brownish-chestnut, glossy black head, brownish to black upper-wing and white-tipped black tail. It has bare skin around the eyes. Their bill and legs are bright yellow and short crown formed by the bristly feathers (Grewal *et al*., 2003). Contrasting white patches are found during the flight time. Common mynas have strong feet that allow its walk on the ground rather than hop. Straight beak helps in choice of food (Perrins, 2009). Economically, it has very important role in agricultural areas, where they assist in decreasing population of insects therefore, sometimes considered as farmer's friend due to that they are more prone to the infection of parasites (Ponnundurai *et al*., 2009; Singh, 2014; Borji and Razamyar, 2011). They are also called as predator due to their dual nature of animal as well as plants (Khadim *et al*., 2013; Simberloff, 2014). They often feed on some species of annelids, sugary liquid of some flowers and tree of fig. Cutworms (*Spodoptera mauritia*) controlled by the common myna in Hawaiian Islands. They take part in pollination as well as dispersal of seeds. During the year 1883, common mynas were introduced in the

cane field of Australia where they reduce the insect pests including cane beetles and plague locusts. This article reflects the new species in the platform of taxonomy.

Materials and Methods

During the present studies a total of 100 common mynas (*Acridotheres tristis*) Linnaeus, 1766 were collected from different localities of Larkana District, Sindh, Pakistan and brought to the Parasitological Laboratory, Department of Zoology. After anesthetizing, birds were autopsied and examined for the helminths parasites. During examination 20 (♂♂) specimens were obtained from the body cavity of the hosts belonging to the genus *Diplotriaena* (Railliet and Henry, 1909). Live specimens were killed in hot 70% ethanol, cleared in lacto phenol and glycerol solution and preserved in alcohol-glycerol solution. Diagrams were made with the help of camera Lucida (Garcia and Ash, 1979). Photographs were taken with the help of camera DP12. Measurements were given in millimeters (Table 1). Specimens were deposited in the Department of Zoology, University of Sindh, Jamshoro.

Results and Discussion

Taxonomic status
Family: Diplotriaenidae (Skrjabin, 1916)
Genus: *Diplotriaena* (Railliet and Henry, 1909)
Species: *D. murtazi* n. sp.

Material observed
Host: *Acridotheres tristis*
No. of specimens recovered: 20
No. of hosts found positive: 05
Parasitic habitat: Body cavity
Locality: District Larkana, Sindh, Pakistan

Etymology
The new species is dedicated to author's Father, Advocate Mr. Ghulam Murtaza Soomro.

Description
Body of the worm highly muscular, thick, and elongated and the length and thickness measured 14.05 mm in length by 0.27 mm wide. Anterio-posteriorly rounded. The two tridents are overlapping to each other bearing rounded tips, having unequal prongs, located anteriorly and the length and thickness measured 0.14-0.04 mm in length by 0.14-0.07 mm wide. Caudal papillae 13-14 in pairs. Left spicule smaller than that of right spicule and measured 1.97 mm long respectively (Figures 1, 2).

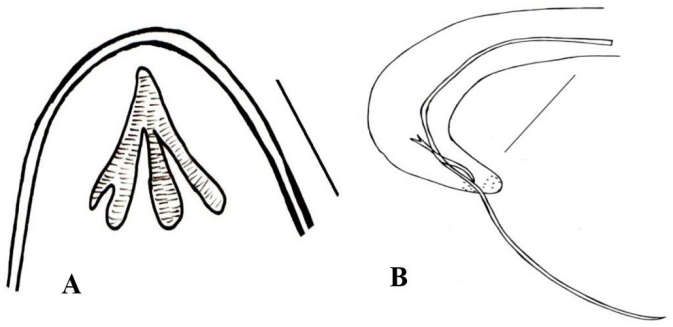

Figure 1: A and B *Diplotriaenae murtazi* n. sp. (♂♂): A: Line drawing of anterior portion; B: Line drawing of posterior portion (Scale bar A & B = Anterior and Posterior side= 0.2 mm).

Table 1: *Comparative characteristic of various species of genus diplotriaena* Railliet and Henry, 1909 *collected from different avian hosts (Measurements in mm).*

S.#	Parameters	Present species (♂♂)	*D. niltavae* Deysarkar and Sen, 2008	*D. tristisi* Deysarkar and Sen, 2008	*D. bargusinica* Soota and Chaturvedi, 1972	*D. almoraensis* Deysarkar and Sen, 2008
1.	Body length and width	14.05 x 0.27	24.0-24.4 x 0.496-0.512	32.94 x 0.455	31-46.4 x 0.72-0.77	39.2 x 0.32
2.	Tridents length and width	0.14 x 0.14	0.128-0.144	0.13	0.13-0.14	0.16
3.	No. of caudal papillae	13-14	ND*	9	1	5
4.	Length and width left spicule	1.97	0.656-0.720	2.39	0.64-0.66	0.84-1.07
5.	Length and width right spicule	0.25	0.46-0.49	0.58	0.38-0.5	0.44-0.56
6.	Host	Acridotheres tristis	Niltava grandis	Acridotheres tristis	Turdus roficollis	*Parus major*
7.	Parasitic habitat	Body cavity	Body cavity	Body cavity	Body cavity	Body cavity
8.	Locality	Larkana	Uttarakhand	Burdwan	Bhutan	Uttarakhand

**ND= Non detectable.*

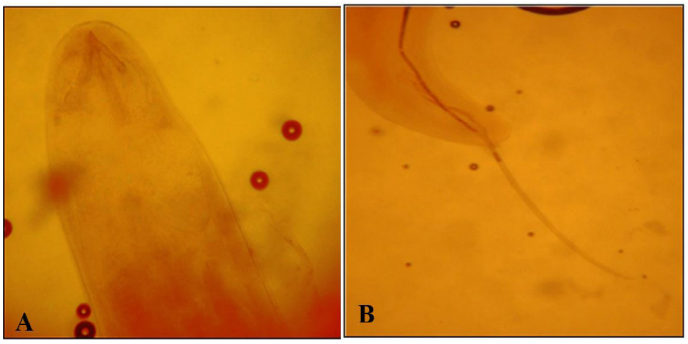

Figure 2: A and B *Diplotriaena murtazi* n. sp. (♂♂): A: Micrography of anterior portion; B: Micrography of posterior portion.

Majority of the species of genus *Diplotriaena* (Railliet and Henry, 1909) have been reported worldwide: (Majumdar and Chakravarty, 1963) recorded three species which includes: *D. sternopastori* in *Sturnus contra*; *D. tristisi* in *Acridotheres tristi* and *D. molpastisi* in *Acridotheres ginginianus* of Burden. Deysarkar and Sen (2008) recorded four species which includes: *D. champawatensis* in *Myiophoneus caeruleus temmincki*, *D. niltavae* in *Niltava grandis*, *D. almoraensis* in *Parus major* and *D. zootherae* in *Zoothra citrine citrine* of Uttarakhand of India. Soota and Chaturvedi (1972) recorded *D. bargusinica* in *Turdus ruficollis* of Bhutan; Baylis (1939) recorded six species including: *D. nagpurensis* in *Acridotheres tristis*; *D. tricuspis* in *Acridotheres tristis* of Nagpur; *D. bhamoensis* in *Acridotheres tristis* of Burma, *D. graculi* in *Pyrrhocorax*; *D. dubia* in *Pyrrhocorax* and *D. urocissae* in *Urocissa flavirostris* of Calcuta. *D. lagopusi* and *D. andersoni* Wilford and Braun (1971) recorded in *Lagopus leucurus* of Central and Northern Colorado. *D. thomasi* Seibert (1944) recorded in *Zonotrichia albicollis lllinois* of U.S.A. *D. utae* Wong *et al.* (1983) recorded in *Perisoreus canadensis* in Canada. Few species of the genus *Diplotriaena* Railliet and Henry (1909) have been reported in Pakistan which includes: *D. streptopelia* of Bilqees and Jehan (1977) recorded in *Streptopelia senegalensis* of Pakistan. *D. passeri* Chandio *et al.* (2015) recorded in *Passer domesticus* and *Passer Pyrrhonotus* of Pakistan.

D. sternopastori Majumdar and Chakravorty (1963) recorded in *Sturnus contra* of Burden which differs from *D. murtazi* in having larger body length and maximum body breadth; length of the trident is larger; length of the left spicule is larger while the length of the right spicule is smaller.

D. tristisi Majumdar and Chakravorty (1963) recorded in *Acridotheres tristis* of Burden which differs from *D. murtazi* in having larger body length and maximum body breadth; length of the trident is smaller; length of the left spicule is larger whereas the length of the right spicule is smaller.

D. molpastisi Majumdar and Chakravorty (1963) recorded in *Acridotheres ginginianus* of Burden which differs from *D. murtazi* in having larger body length; tridents larger; left spicule is larger whereas the length of the right spicule is smaller.

D. champawatensis Deysarkar and Sen (2008) recorded in *Myiophoneus caeruleus temmincki* of India which differs from *D. murtazi* in having larger body length and maximum body breadth; prongs of the tridents are equal and length of the trident is larger; the length of the left spicule is larger while the length of the right spicule is smaller.

D. zootherae Deysarkar and Sen (2008) recorded in *Zoothra citrine citrine* of Uttarakhand which differs from *D. murtazi* in having larger body length and maximum body breadth; prongs of the tridents are equal and length of the tridents are larger; the length of the left spicule is larger and the length of the right spicule is smaller.

D. niltavae Deysarkar and Sen (2008) recorded in *Niltava grandis grandis* of Uttarakhand, India which differs from *D. murtazi* in having larger body length and maximum body breadth; tridents contain equal prongs and the length of the tridents are smaller; the length of the left spicule is larger whereas the length of the right spicule is smaller.

D. almoraensis Deysarkar and Sen (2008) recorded in *Parus major* of Uttarakhand which differs from *D. murtazi* in having larger body length and maximum body breadth; tridents contain equal prongs and the length of the tridents are larger; the length of left spicule is larger whereas the length of the right spicule is smaller.

D. bargusinica Soota and Chaturvedi (1972) recorded in *Turdus ruficollis* of Bhutan which differs from *D. murtazi* in having larger body length and maximum body width; length of the left spicule is larger whereas the length of the right spicule is smaller.

D. tricuspis Baylis (1939) recorded in *Acridotheres tristis*

of Nagpur which differs from *D. murtazi* in having larger body length and maximum body breadth; length of the tridents are smaller; both spicules are unequal; caudal papillae is nine to eleven.

D. bhamoensis Baylis (1939) recorded in *Ethiopsar albocinclus* of Burma which differs from *D. murtazi* in having larger body length and maximum body breadth, both spicules are unequal.

D. graculi Baylis (1939) recorded in *Pyrrhocorax* of Calcutta which differs from *D. murtazi* in having larger body length and maximum body breadth; tridents are large; both spicules are unequal.

D. dubia Baylis (1939) recorded in *Pyrrhocorax* of Calcutta which differs from D. *murtazi* in having smaller body length and minimum body breadth; length of the left spicule is larger whereas the length of the right spicule is smaller.

D. urocissae Baylis (1939) recorded in *Urocissa flavirostris* of Calcuta which differs from *D. murtazi* in having larger body length whereas the length of the right spicule is smaller.

D. nagpurensis Baylis (1939) recorded in *Acridotheres tristis* of Nagpur which differs from *D. murtazi* in having larger body length and maximum body breadth; tridents are large; both spicules are unequal.

D. lagopusi Wilford and Braun (1971) recorded in *Lagopus leucurus* of Central and Northern Colorado which differs from *D. murtazi* in having larger body length and maximum body breadth; tridents are larger; both spicules are larger.

D. andersoni Wilford and Braun (1971) recorded in *Leucurus leucurus Richardson* of Canada which differs from *D. murtazi* in having larger body length and length of the left spicule is larger.

D. thomasi Seibert (1944) recorded in *Zonotrichia albicollis lllinois* of U.S.A. which differs from *D. murtazi* in having larger body length; length of the tridents are smaller; length of the left spicule is larger whereas the length of the right spicule is smaller.

D. utae Wong *et al.* (1983) recorded in *Perisoreus canadensis* of Canada which differs from *D. murtazi* in having larger body length and maximum body breadth, both spicules are unequal.

D. streptopelia Bilqees and Jehan (1977) recorded in *Streptopelia senegalensis* of Pakistan which differs from *D. murtazi* in having larger body length; length of the left spicule is larger whereas the length of the right spicule is smaller.

D. passeri Chandio *et al.* (2015) recorded in *Passer domesticus* and *Passer pyrrhonotus* of Pakistan which differs from *D. murtazi* in having smaller body length and minimum body breadth; both spicules are unequal.

Conclusions and Recommendations

Present recorded species reflect variations from their congeners with reference to the following characters via: body measurement; morphological shape; shape of the tridents, shape of the spicule and 13-14 numbers of caudal papillae. On the basis of such morpho-metrical changes this species *D. murtazi*is treated as new species in the kingdom of science and taxonomy.

Acknowledgement

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Novelty Statement

(*Diplotriaena murtazi*) it is new species in the domain of Taxonomy. Authoress dedicated this species in the honor of her father (Advocate Mr Ghulam Murtaza Soomro).

Author's Contribution

Shakeel Ahmed Memon: Collected data.
Bakhtawar Soomro: Collected data and wrote the manuscript.

Conflict of interest
The authors have declared no conflict of interest.

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