

Short Communication

New host record for the *Diplotriaeana monticolae* (Filariidae: Nematoda) from the thoracic cavity of *Passer pyrrhonotus*, Blyth 1845, (Passeridae: Passeriformes) in Larkana, Sindh, Pakistan

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Abstract

The current examination was required to study nematodes of Sindh/Jungle Sparrow (*Passer pyrrhonotus*, Blyth 1845) from Larkana, Sindh, Pakistan. Fifteen *Passer pyrrhonotus* were examined for nematode parasites but only one bird has been found infected with five nematodes *Diplotriaeana monticolae* Yamaguti, 1935 (02 ♂, 03 ♀) belonging to family Filariidae; Nematodes were collected from the thoracic cavity of the *Passer pyrrhonotus*. Results of the present study revealed that *Passer pyrrhonotus* is a new host record for the *Diplotriaeana monticolae* (Yamaguti, 1935). The present specimen *Diplotriaeana monticolae* is accredited for the first time from Pakistan.

Keywords: *Diplotriaeana monticolae*; Larkana; Nematodes; *Passer pyrrhonotus*; Sindh/Jungle Sparrow

Introduction

Sindh Sparrow *Passer pyrrhonotus* (*Passer pyrrhonotus* Blyth, 1844), for the most part is called the Sindh /Jungle Sparrow or Rufous-backed Sparrow. Is a Passerine bird belongs to order Passeriformes, family Passeridae and is a member of the genus *Passer*. It is found in the Indus Valley region in South Asia. The Sindh Sparrow nourishes basically on the seeds of grasses and different plants, like; *Polygonum plebeium*. It might likewise

rummage for creepy crawlies, for example, caterpillars, particularly to nourish nestlings. Inside its Indus Valley breeding range in Pakistan and western India, the Sindh Sparrow is patchily passed on in riverine and wetland attribute surroundings with prickly scour and tall grass [1].

During, the non-breeding season, some birds enter drier living spaces as they scatter short separations from their raising natural environment, or migrate to Pakistan and the extreme east of Iran [1]. They are mainly

granivorous in diet except when feeding young[2].

Materials and methods

For the present study 15 *Passer pyrrhonotus* were collected in January 2016 from Larkana District, Sindh, Pakistan, situated at the distance of 30 km from world famous site Mohen Jo Daro. Latitude 27.3243° N, Longitude 68.1357° E [3].

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After anaesthetizing, birds were thoroughly examined for endo and ecto parasites.

Only one host was found infected with two male and three females of the *Diplotriaena monticola*, but during process one male was damaged. Nematodes were removed from the body cavity with the help of a soft brush were relaxed, cleaned in 20% ethanol and killed in 70% ethanol and preserved in a mixture of glycerin and 70% ethanol (1:1 by volume). For morphological study nematodes were cleared in lactophenol and temporarily mounted for detailed study under a light microscope. Diagrams were made with the help of Camera Lucida and for snapshots; Olympus DP-12 digicam was used. All measurements are given in millimetres (mm) otherwise stated. Nematodes were identified with the help of relevant keys and latest literature available [4].

Results

Species: *Diplotriaena monticola*

Host Type: Sindh Sparrow *Passer pyrrhonotus* Blyth (Passeriformes: Passeridae).

The site of infection: Body cavity

Locality: Larkana, Sindh, Pakistan

No. of specimen: 05 (02 ♂ & 03 ♀) from a single host.

Taxonomic standing

Family: Filariidae Claus, 1885

Subfamily: Diplotriaeninae Skrjabin, 1916

Genus: *Diplotriaena* Railliet and Henry, 1909.

Description

The body of the worm is delicate and slenderically long, simple and without lips. A pair of chitinoid tridents is present in female whereas, in the male, it is small or inconspicuous and situated on the lateral side of the anterior end of esophagus. The buccal capsule is present. Oesophagus consisting of two parts; an anterior shorter, narrow muscular portion and a posterior longer, wider, glandular portion. Cervical alea is well developed and cervical papilla inconspicuous.

Female

Body length of the female worm is 0.887-1.604 mm and 0.029-0.038 mm in width. Tridents (Fig.1A) are 0.014- 0.017 mm in length. The buccal capsule is present. Oesophagus overlapped by uterine tube hence not visible. Nerve ring is 0.057 mm. The vulva (Fig.1B) is 0.05 mm. The anus is subterminal. Eggs (Fig.3) are smooth, thick-shelled, oval, 0.005-0.006 mm long and 0.0034-0.0038 mm wide.

Male

Body length of the male is 1 mm and 0.2 mm in width. Tridents are 0.012 in mm. Buccal capsule and esophagus is present. Nerve ring is present. Excretory pore 0.017 mm from the anterior region. Five pairs of post-anal caudal papillae are present. Spicules are unequal, smooth and dissimilar. Spicule on the left side is about 0.091 mm (Fig.2A) and spicule on the right side is about 0.052 mm long (Fig.2B). Gubernaculum is absent.

Diplotriae namonticolae Yamaguti, 1935



Figure 1. Photograph of female anterior part showing: A. Tridents; B. Vulva; C. Eggs. (Scale bar: 0.1mm)

Diplotriae namonticolae Yamaguti, 1935



Figure 2. Photograph of Male posterior part showing: A. Left large spicule; B. Right small spicule. (Scale bar: 1mm)

Diplotriae namonticolae Yamaguti, 1935

Figure 3. Photograph of Eggs showing: Well-embryonated eggs (Scale bar: 0.5 mm)

Discussion

The Genus *Diplotriae na* Railliet Henry, 1909 was erected to deal with the nematodes from birds. Until now more than sixty-one species of Genus *Diplotriae na* has been described from diverse flying creatures around the world. *Diplotriae na passeri* was reported recently from Pakistan from House Sparrow (*Passer domesticus*), Sindh Sparrow (*Passer pyrrhonotus*) [5]. Previously from Pakistan *Diplotriae na nocti* Hoeppli et Hsu, 1929, from *Sturnus roseus* (Rosy Starling), *Acridotheres ginginianus* (Bank Myna), *Diplotriae na Streptopelia* from *Streptopelia senegalensis* (Laughing Dove) [4, 6]. Other than Pakistan *Diplotriae na monticolae* Yamaguti, 1935 was reported from White-Spectacled Bulbul (*Pycnonotus xanthopygos*) from Turkey [7]. Previously this species was reported from *Monticola solitariae* from Japan [4].

Conclusion

Results from the present study determined that the present specimens have close resemblance with *Diplotriae na moniticolae*

Yamaguti, 1935 in all essential features hence identified as such. *Passer pyrrhonotus* is a new host record for the *Diplotriae na monticolae* (Yamaguti, 1935) and this species is accredited for the first time from Pakistan.

Authors' contributions

Conceived and designed the experiments: I Chandio & AM Dharejo, Performed the experiments: I Chandio, Analyzed the data: I Chandio & AM Dharejo, Contributed materials/ analysis/ tools: I Chandio AM Dharejo, MM Khan & S Naz, Wrote the paper: I Chandio.

Reference

1. https://en.wikipedia.org/wiki/Sind_Sparrow.
2. Roberts, Tom J. (1992). The Birds of Pakistan. Vol 2: Passeriformes: Pittas to Buntings. Oxford: Oxford University Press. ISBN 978-0-19-577405-4.
3. <http://www.worldatlas.com/as/pk/sd/where-is-larkana.html>.
4. Yamaguti, S (1961). Systema Helminthum. Vol. III. The Nematodes of

- Vertebrates, Pt. II & I. *Inter science Publishers*, New York & London, pp 1261. ISBN 184535721.
5. Chandio I, Dharejo AM, Naz S & Khan MM (2015). New species of Genus *Diplotriaena* Railliet and Henry, 1909 (Filariidae: Nematoda) from *Passer domesticus* Linnaeus and *P. pyrrhonotus* Blyth (Passeridae: Passeriformes) in Jamshoro, Sindh, Pakistan. *Turk Psikol Derg* 39:265-9.
 6. Bilquees FM & Jahan N (1977). Helminth Parasites of Some Birds in Sindh Pakistan. *Pak J Scient Ind Res* 20: 26.
 7. Yaman M & Ayaz E (2007). Bir Arap Bulbulunde (*Pycnonotus xanthopygos*) *Diplotriaena monticolae* Yamaguty, 1935. (Fam: Filariidae) Olgusu. *Turk Psikol Derg* 31(3): 215-218.