

FIRST REPORT OF *DESPORTESIUS EQUISPICULATUS* WU & LIU, 1943 (NEMATODA: ACUARIIDAE) FROM NEW HOST *ARDEA ALBA* AND LOCALITY LARKANA, SINDH, PAKISTAN

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ABSTRACT

In a study of helminth parasites associated with the Great egret *Ardea alba* (Ciconiiformes: Ardeidae) of District Larkana Sindh, Pakistan, 94 nematodes (38 ♂ and 66 ♀) were found in the gizzard of twenty two (22) hosts. Specimens under study shares all essential characteristics with *Desportesius equispiculatus* Wu & Lui, 1943 such as: shape of body, Pseudolabia, cephalic papillae, cordons, vulva position in female and caudal papillae in male thus it has been categorized as same. *Desportesius equispiculatus* Wu & Lui, 1943 is first time reported from new host *Ardea alba* and locality District Larkana, Sindh, Pakistan.

Keywords: *Desportesius equispiculatus*, *Ardea alba*, Larkana, Sindh, Pakistan.

INTRODUCTION

The genus *Desportesius* was established by Skrjabin *et al.*, 1965 belongs to family Acuariidae Seurat, 1913 Sub-family Acuariinae Railliet, Henry and Sisof, 1912 and order Spiruridea Diesing, 1861. The genus is cosmopolitan and only one speices *Desportesius hyderabadense* Unar *et al.*, 2011 has been reported in *Egretta garzetta* from Hyderabad, Sindh, Pakistan. *Desportesius invaginatus* Linstow, 1901 is the type speices of genus. Present specimens are in close resemblance to *Desportesius equispiculatus* Wu & Liu, 1943 in body shape, Pseudolabia, cephalic papillae, cordons, position of vulva in female and caudal papillae in male and therefore regarded as same. This is first record of *Desportesius equispiculatus* from new host *Ardea alba* (Great egret) and locality Larkana, Sindh, Pakistan. *Ardea alba* (Ciconiiformes: Ardeidae) are found near the water bodies and feed on fishes, snails, amphibians, snakes, crustaceans, insects and very small mammals.

MATERIALS AND METHODS

During a survey of helminth parasitic infection in birds of District Larkana, Sindh, Pakistan, thirty one Great egret *Ardea alba* were trapped from different areas of District Larkana and kept in cages. These were carried to Department of Zoology, University of Sindh, Jamshoro for further study. The birds were anesthetized with chloroform in large glass bowls, dissected and internal organs were kept separately in petri dishes for examination of helminth parasitic infection. Twenty two birds were found infected with *Desportesius equispiculatus* Wu & Lui, 1943. The nematodes were removed from the gizzard of birds with fine brushes and kept in normal saline. The live nematodes were first killed by steaming and boiling 70% ethanol, preserved in an alcohol-glycerol solution (9 parts alcohol: 1 part glycerol), and then cleared with lactophenol solution. Camera Lucida was used for the preparation of line drawings. All measurements were taken in millimeters (mm). The specimens are in the safe custody of Prof. Dr. Sanjota Nirmal Das, co-author and head of the Parasitology section at Department of Zoology, University of Sindh, Jamshoro, Sindh, Pakistan.

Desportesius equispiculatus Wu & Liu, 1943 (Fig 1 A-D)

Host	:	<i>Ardea alba</i> (Great egret)
Locality	:	Larkana, Sindh, Pakistan.
Location	:	Gizzard
Host examined/ Infected	:	31/22
Specimen recovered	:	94 (38 ♂ and 56 ♀)
Prevalence	:	70.96%

DESCRIPTION

Worms are medium-sized and stout in shape. Two pseudolabia are visible on the anterior end, and four cephalic papillae are present at the base of the pseudolabia. Four Cuticular cervical cordons arise from the base of cephalic papillae expand posteriorly recurrent anteriorly from the middle of the esophagus and anastomosing in lateral fields near the posterior end of pharynx. Circumesophageal commissure (nerve ring) visible, surrounding the anterior narrow portion of muscular esophagus. Cervical papillae tricuspid, heading backward and present posterior to the cordons. The esophagus consists of short anterior muscular part and large glandular posterior part. Male has nine pairs of caudal papillae. The spicules are almost the same size. Vulva is present in the posterior part of female body.

Male:

Male smaller than female and 11.6 -15.7 X 0.55-0.62 in diameter. Two pseudolabia present at mouth and 4 cephalic papillae present at the base of pseudolabia. Vestibule 0.32-0.34 in diameter. Cordons starts from the base of cephalic papillae extends posteriorly for 0.8-0.87 in diameter and anastomosing at 0.49-0.62 at the level of pharynx and excretory pore. Esophagus 4.23-4.43 in diameter. Anterior muscular part of esophagus is 1.24-1.31 in diameter and posterior glandular part is 3.05-3.47 in diameter. Cervical papillae tricuspid and situated posterior to cordons and 0.85-0.90 far from the anterior end of body. Nerve ring visible, surrounds the narrow muscular part of esophagus and 0.42-0.53 far from anterior end of the body. Small excretory pore is located close to the posterior end of the cordon and 0.55-0.59 away from the anterior end of the body. Spicules are nearly of the same size, left spicule is 0.85-0.88 in diameter and right spicule is wider than left one and 0.85-0.90 in diameter. Nine pairs of caudal papillae are present, five pre-anal and four pos-tanal.

Female:

Female larger than male and 16.4-19.2 X 0.31-0.41 in diameter. Vestibule 0.34-0.38 in diameter. Cordons starts at the base of cephalic papillae extend posteriorly for 0.72-0.77 and anastomosing at the base of pharynx and 0.37-0.42 far from cephalic end. Esophagus 5.43-5.68 in diameter. Muscular part 0.99-1.67 and glandular part 4.6-5.31 in diameter. Cervical papillae tricuspid, directed backward situated posterior to the cordons and 0.85-0.88 away from anterior end of the body. Nerve ring surround the muscular esophagus and 0.42-0.47 far from the anterior end of body. Excretory pore is located close to the posterior end of the cordon and 0.52-0.56 far from the anterior end of the body. Vulva is present the in posterior part of the body. Tail short and 0.054-0.059 in diameter. Eggs small, oval and 36-41 X 26 - 29 in diameter

DISCUSSION

The genus *Desportesius* was erected to accommodate nematodes that infest birds. Railliet, Henry and Sisoff, (1912) originally described it as a subgenus of *Synhimantus* but Skrjabin *et al.* (1965) raised it to own genus based on the distinctive posterior vulva, monodelphy, posteriorly expanding cordons, and vesicular and inflated caudal alae. Type species *Desportesius invaginatus* Linstow, 1901 was reported in Europe from *Ardea cineria*, *A. purpurea*, *Bubulcus ibis*, *B. lucidus*, *Egretta alba* and in *E. garzetta*. This species was originally placed within the genus *Dispharagus* however, Skrjabin *et al.* (1965) later reclassify it into genus *Desportesius*.

Literature review shows the genus *Desportesius* is cosmopolitan. Several species of the genus have been reported in fish-eating birds specifically in the order ciconiiformes (Barus, 1978) includes: *D. brevicaudatus* (Dujardin, 1845); *D. Canadensis* (Mawson, 1956); *D. equispiculatus* (Wu & Lui, 1943); *D. groffi* (Li, 1934); *D. invaginatus* (Linstow, 1901) Chabaud and Campana-Rouget, 1949; *D. longevaginatus*, (Molin, 1860) Wong and Anderson, 1986; *D. orientalis* (Wu, 1933); *D. raillieti* (Skrjabin, 1924); *D. sagitatus* (Rudolphi, 1809); *D. Skrjabin* (Skrjabin *et al.*, 1965); *D. spinulatus* (Chabuad and Campana, 1949); *D. triaenucha* (Wright, 1879) in *Egretta alba*, *E. garzetta*, *E. magurai*, *E. thula*, , *Botarus stellaris*, *Ixobrychus minutes*, *Ciconia ciconia*, *Nycticorax nycticorax*, *Bubulcus ibis*, *Ardea cinerea*, *A. purpurea*, *A. grayii*, *Botaurus stellaris*, *Pelecanus onocrotalus* and *Ciconianigra* from Europe, Canada, china, Japan, Brazil, Senegal, Rumania, Bulgaria, Uzbekistan, France and India. Only one species have been reported from Pakistan is *D. Hyderabadense* Unar *et al.*, 2011 in *Egretta garzetta* from Hyderabad, Sindh.

From all above described species the present specimens have close resemblance to *D. equispiculatus* Wu & Lui, 1943 in body shape, Pseudolabia, cephalic papillae, cordons, position of vulva in female and caudal papillae in male and therefore regarded as same *Desportesius equispiculatus* Wu & Lui, 1943 is first time reported from new host *Ardea alba* (Great egret) and locality Larkana, Sindh, Pakistan.

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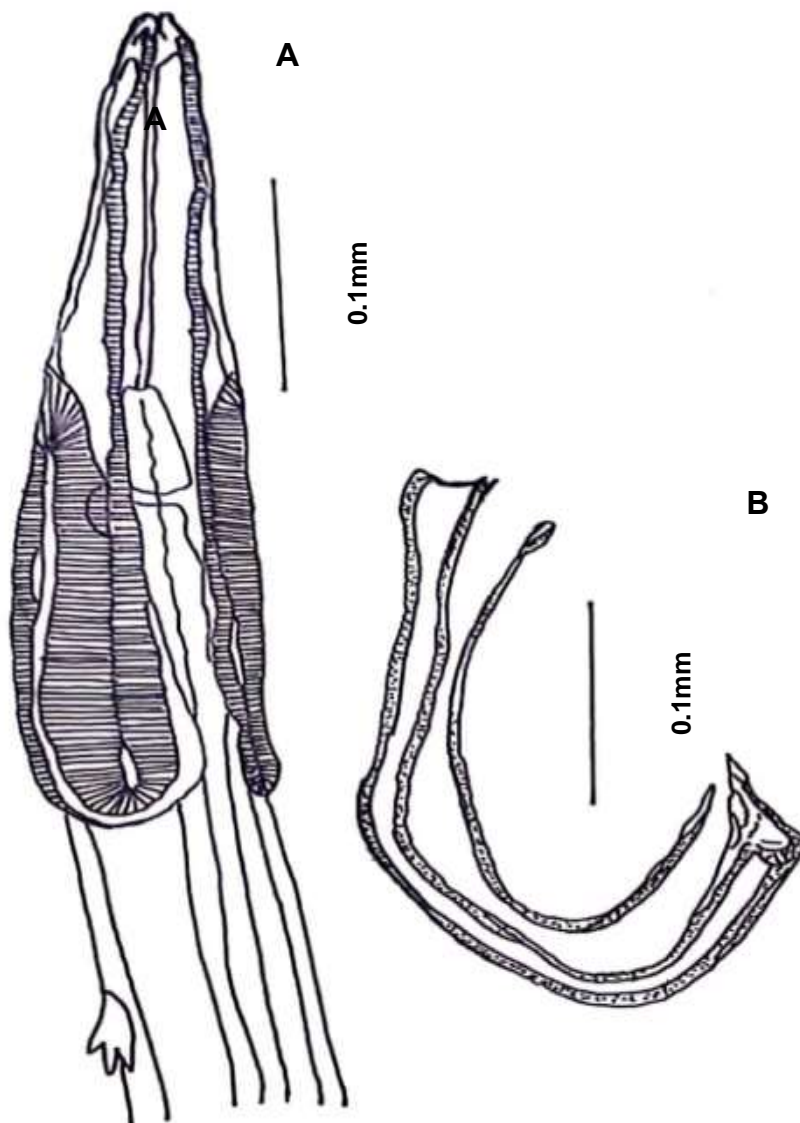
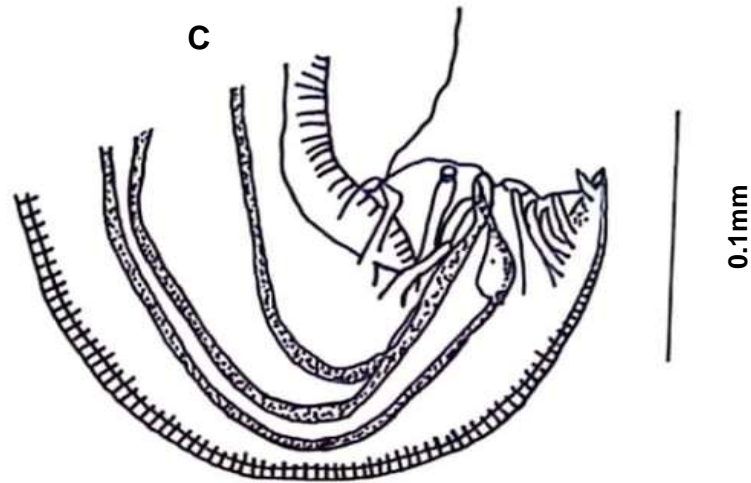


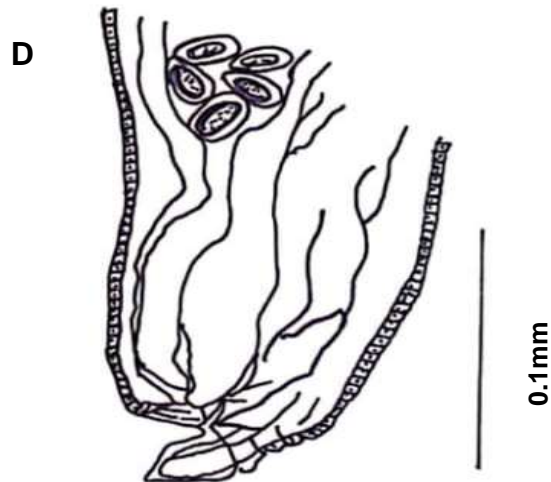
Fig. 1. *Desportesius equispiculatus* Wu & Liu, 1943.

- A. Anterior end
- B. Spicules (Left 1; Right, 2)



C

0.1mm



D

0.1mm

C. Posterior end of male

D. Posterior end of female

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