

DESCRIPTION OF *BRACHYLECITHUM BILQEESAE* N.SP. (DIGENEA: DICROCOELIIDAE) IN THE CATTLE EGRET FROM SINDH, PAKISTAN

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خلاصہ

کی تجی نوئے سندھ میں Cattle egret کی شکل اس نوع کو دوسرا انواع سے ممتاز بنادیتی Tastes سے دریافت کی گئی ہے۔ Brachylecithum bilqueesae ہے۔ جنس کا پاکستان سے چوتھا بار یکارڈ ہے۔

Abstract

Body long, muscular; oral sucker small subterminal; ventral sucker round to oval in shape, larger than oral sucker; pharynx globular and oval. Esophagus short bifurcated almost between the suckers. Caeca terminating short of posterior end of the body. Ovary rounded to oval; uterus highly coiled extends from caecal bifurcation to the posterior end of the body. Testes symmetrical, larger than ovary, cirrus sac just posterior to caecal bifurcation with hinder region extracaecal. Genital pore just behind caecal bifurcation. Uterus well developed. Eggs numerous, slightly curved, small and elongated. This is the fourth record of the genus *Brachylecithum* from Pakistan.

Introduction

The Cattle Egret (*Bubulcus ibis* Linn, 1758) is a cosmopolitan species of heron found commonly in the warm temperature zones, tropics and subtropics. It mostly nest in groups, usually near bodies of water and often with wading birds. They often accompany cattle or large mammals catching insect and small vertebrate prey disturbed by these animals. Mullarney *et.al* (2001) reported that cattle egret is typically found in fields and dry grassy habitats, reflecting its great dietary reliance on terrestrial insects rather than aquatic prey. Current work was carried out to study the helminth fauna in cattle egret of Sindh, Pakistan.

Materials and methods

Five birds Cattle Egret (*Bubulcus ibis* Linnaeus, 1755) were caught from Oderolal Station, District Matiari, Sindh, Pakistan.

The three trematodes recovered from biliary duct and small intestine were washed in 0.85% saline, fixed and preserved in 70% ethyl alcohol, stained with Mayer's carmalum, then dehydrated, cleared in clove oil and mounted in Canada balsam. Drawings were made with the aid of camera Lucida. Photomicrograph was prepared with the courtesy of Department of Zoology, University of Karachi. Specimens are deposited in senior author's collection, Department of Zoology, University of Karachi, Pakistan. Measurement are given length by width in millimeters.

Results

Brachylecithum bilqueesae n.sp. (Figs. 1-2)

Host:

Cattle Egret

Habitat:

Biliary duct and small intestine

Locality:

Oderolal Station, district Matiari, Sindh, Pakistan

Number of Specimens:

3 from 5 hosts

Number of birds examined:

5

Diagnosis (Based on three adult worms)

Body long, muscular, thick measuring 1.71-1.79 by 0.43-0.47. Oral sucker small, subterminal measuring 0.10-0.13 by 0.10-0.14. Ventral sucker round to oval in shape, larger than oral sucker measuring 0.18-0.22 by 0.19-0.23. Pharynx globular or oval, prominent measuring 0.08-0.15 by 0.11-0.15, located in the region of the oral sucker. Esophagus short bifurcated almost between the suckers. Bifurcation of caeca terminating short of posterior end of the body. Ovary rounded to oval post testicular, submedian, measuring 0.14-0.16 by 0.14-0.17. Uterus highly coiled extends from caecal bifurcation to the posterior end of the body. Testes symmetrical, varying in shape from oval to elongated, larger than the ovary, the left measuring 0.27-0.29 by 0.12-0.13, while the right measuring 0.27-0.29 by 0.12-0.14. Cirrus sac just posterior to caecal bifurcation with its hinder region extraecaecal at a distance of 0.25-0.27 from oral sucker and contains unarmed coiled seminal vesicle. Genital pore just behind caecal bifurcation. Vitellaria extraecaecal occupying small lateral area in hindbody. Mehli's gland and Laurer's canal not noted. Uterus well developed. Eggs numerous, slightly curved, elongated, small measuring 0.024-0.026 by 0.0060-0.0061.

Discussion

The Dicrocoelids are parasites of birds and mammals. Yamaguti (1971) reported sixty three species of the genus *Brachylecithum* Shtrom, 1940 from different hosts. The type species *B. filum* (Dujardin, 1845) Shtrom, 1940 has been reported in *Passer h. hypsanolensis* and other *Passer* spp. from Russia.

Later the species added to the genus were *B. andamanensis* Soota et.al 1972, *B. philippinense* Fischthal and Kuntz, 1973; *P. palawanense* Fischthal and Kuntz, 1973; *B. attenuatum* Fischthal and Kuntz, 1974; *B. microfiliforme* Eduardo, 2003; *B. glaeroli* Hildebrand et.al 2007 *B. dacelonis* Madeline and Pearson, 1977; *B. insulare* Madeline and Pearson, 1977; *B. podagri* Madeline and Pearson, 1977 *B. jehangiri* Soomro and Soomro, 2016; *B. mackoi* Casonova and Ribas, 2004; *B. glareoli* Hildebrand et.al 2007; *B. myadestis* Carney, 1972 and *B. accipiteri* Bhutta and Khan 1975. *B. chapmani* (Singh, 1962) was redescribed by Bhutta and Khan, 1975 in Babbler collected from Khanspur (Ayubia), Punjab.

From the species listed by Yamaguti (1971) the present specimens are smaller (1.71-1.79 by 0.43-0.47) as compared to *B. filum* (Dujardin, 1845) Shtrom, 1940 (7 by 0.49); *B. alaude* (Layman 1926) (2.166-2.394 by 0.274); *B. alfortense* Railliet in Dollfus, 1954 (1.86-5.7 by 0.15-0.25). *P. amurense* (Shcherbovich, 1946) Yamaguti, 1958 (2.87 by 0.38); *B. asovi* (Layman, 1926) Shtrom, 1940; *B. baskakowi* (Ivanizky, 1926) Shtrom 1940 (2.1 by 0.6); *B. bubo* Chibichenko, 1959 (5.5-6 by 0.46); *B. burjatmongolicum* Oshmarin, 1948 (4 by 0.28); *P. capilliforme* Oshmarin in Skrjabin and Evranova, 1952 (8 by 0.3). *B. chivosca* (Pratt et Cutress, 1949) Skrjabin et Evranova, 1952 (3.76-6 by 0.175-0.3); *B. coturnixi* Oshmarin, 1952 (2.62 by 0.34); *B. cuculi* Oshmarin in Skrjabin and Evranova, 1952 (3.2 by 0.36); *B. emberizae* (Yamaguti, 1941) (3.8-4.03 by 0.47); *B. eophonae* (Yamaguti, 1941) Skrjabin and Evranova, 1952 (3.4-6.8 by 0.27-0.3); *B. eugenia* Oshmarin, 1948 (9 by 0.34) *B. filliforme* (Skrjabin, 1913) Shtrom, 1940 (4.25-4.5 by 0.17-0.22); *B. filliforme biologicum* (Semenov, 1927) Shtrom, 1940 (3.8 by 0.19); *B. fringillae* (Layman, 1923) Shtrom, 1940 (2.3-2.56 ×?); *B. gorbunovi* (Shtrom, 1935) Shtrom, 1940; *B. gruis* Denton et Byrd, 1951 (5.24 by 0.26-0.3); *B. haleyonis* (Yamaguti, 1941) Skrjabin et Evranova, 1952 (5.1-5.25 by 0.25-0.3); *B. harrisoni* (Johnston, 1917) Skrjabin et Evranova, 1952 (3.6 by 0.37); *B. idahoense* Schell, 1957 (4-6 by 0.20-0.28); *B. kirghisense* Evranova in Skrjabin and Evranova, 1952 (5.1 by 0.23); *B. lari* (Travassos, 1971) Shtrom, 1940 (3.0-3.5 by 0.3-0.5); *B. lobatum* (Railliet, 1900) Shtrom, 1940 (7.5-9 by 0.38-0.40); *B. lobatum glandarii* (Semenov, 1927) Shtrom, 1940; *B. lobatum strioci* Oshmarin in Skrjabin et Evranova, 1952 (6.65-7.17 by 0.53-0.65); *B. loossi* (Layman, 1926) Shtrom, 1940 (2.56 by 0.17); *B. magnitesticum* (Layman, 1922) Shtrom, 1940 (4.5 by 0.3-0.4); *B. marinolutzi* (Travassos, 1941) Skrjabin et Evranova, 1952 (3.5-5.7 by 0.35-0.46); *B. megastomum* (Johnston, 1917) Skrjabin et Evranova, 1952 (3.68 by 0.19); *B. microtesticulatum* (Timon-David, 1955) (4.5 by 0.39); *B. moorei* Denton et Byrd, 1951 (3.38-4.31 by 0.27-0.52); *B. ndeleleense* Baer, 1959 (2.5-3.0 by 0.18-0.22); *B. orfi* Kingston et Freeman, 1959 (4.4-11.2 by 0.21-0.43); *B. parvum* (Johnston, 1917) Skrjabin et Evranova, 1952 (3.6 by 0.37); *B. platynosomoides* Potekhina, 1948 (2.97 by 0.36); *B. practenue* Oshmarin in Skrjabin and Evranova, 1952 (5 by 0.205); *B. raoi* Jaiswal, 1964 (5.7-7.43 by 0.26-0.38); *B. rarum* (Travassos, 1917) Shtrom, 1940 (5 by 0.4-0.5); *B. sayeedi* Jaiswal, 1957 (2.02-4.3 by 0.26-0.38); *B. schamurati* Gagarin, Ablasov et Chibichenko, 1957 (6.5-7.5 by 1.0); *B. schoutedeni* Vercammen-Grandjean, 1960 (1.85-1.86 by 0.17-0.18); *B. skrjabini* Jaiswal, 1957 (2.81-4.0 by 0.14-0.24); *B. strigis* (Yamaguti, 1939) (4.4-6.8 by 0.3-0.63); *B. strigosum* (Looss, 1899) Shtrom, 1940 (3.5 by 0.5); *B. stunkardi* (Pande, 1939) (5.8-6.6 by 0.21-0.27); *B. transversogenitale* (Layman, 1922) (4.5 by 0.22); *B. tuberculatum* (1.93-3.43 by 0.17-0.2); *B. uigurica* Evranova in Skrjabin and Evranova (3.3 by 0.3) and *B. vanellicola* (Layman, 1922) Shtrom, 1940 (2.6 by 0.127).

As compared to other three species reported from Pakistan the present species is different in shape and smaller in size (1.71-1.79 by 0.43-0.47) while *B. chapmani* (4.695-5.151 by 0.294-0.313); *B. accipiteri* (2.272-

3.666 by 0.212-0.272) and *B. jehangiri* (3.54-3.49 by 0.20-0.23). The oral sucker (0.10-0.13 by 0.10-0.14) is smaller as compared to *B. chapmani* (0.196 by 0.196-0.24) and *B. accipiteri* (0.137-0.208 by 0.117-0.186). The testes in the present species are not tandem while in all the other species they are tandem, which have been reported from Pakistan. It differs from *B. rarum* which has ovary transversely oval in middle of the body, from *B. tuberculatum* which has anterior testes touching acetabulum, *B. nanum* differs in position of testes which are one behind the other and acetabulum lemon shaped. It differs from *B. gruis* which has oral sucker and acetabulum equal in size; *B. seiuricum* *B. exchocotyle* Denton et Byrd, 1951; *B. delicatum* have larger egg size from *B. microtesticulum* which has tandem testes close to acetabulum; from *B. andamanensis* which has a thin, smooth and elongated body; from *B. attenuatum* which has anterior testis and ovary somewhat sinstral; *B. stunkardi* having anterior testes larger than the posterior testis; from *B. insutare* which has anterior testis close to or overlapping posterior border of testis; from *B. podagri* which has rounded testes and testes only slightly larger than ovary; *B. hydromyos* has uterus intercaecal; *B. strigosum* having anterior testis partly overlapping acetabulum; *B. microfiliforme* has anterior testis close to acetabulum, ovary transversely oval close to or partly overlapping posterior testis. It differs from *B. glareoli* which have large vitellaria and nearly symmetrical and larger body size; from *B. myadestis* which has tandem testes and maximum width postvitellarian region; *B. palwanense* which has pharynx with nipple like projections and has oral sucker pear shaped, inverted, truncate or nearly so; *B. philippinense* which has cirrus sac thick walled and oval and has pharynx very small; *B. mackoi* which has bold vitelline fields approximately of the same length.

As the present specimens do not match with the reported species of the genus *Brachylecithum* Shtrom, 1940 and thus it is proposed as a new species *B. bilqueesae*. The species name is in honour of Prof. (Late) Dr. Fatima Mujib Bilquees, Department of Zoology, University of Karachi, Karachi-75270.

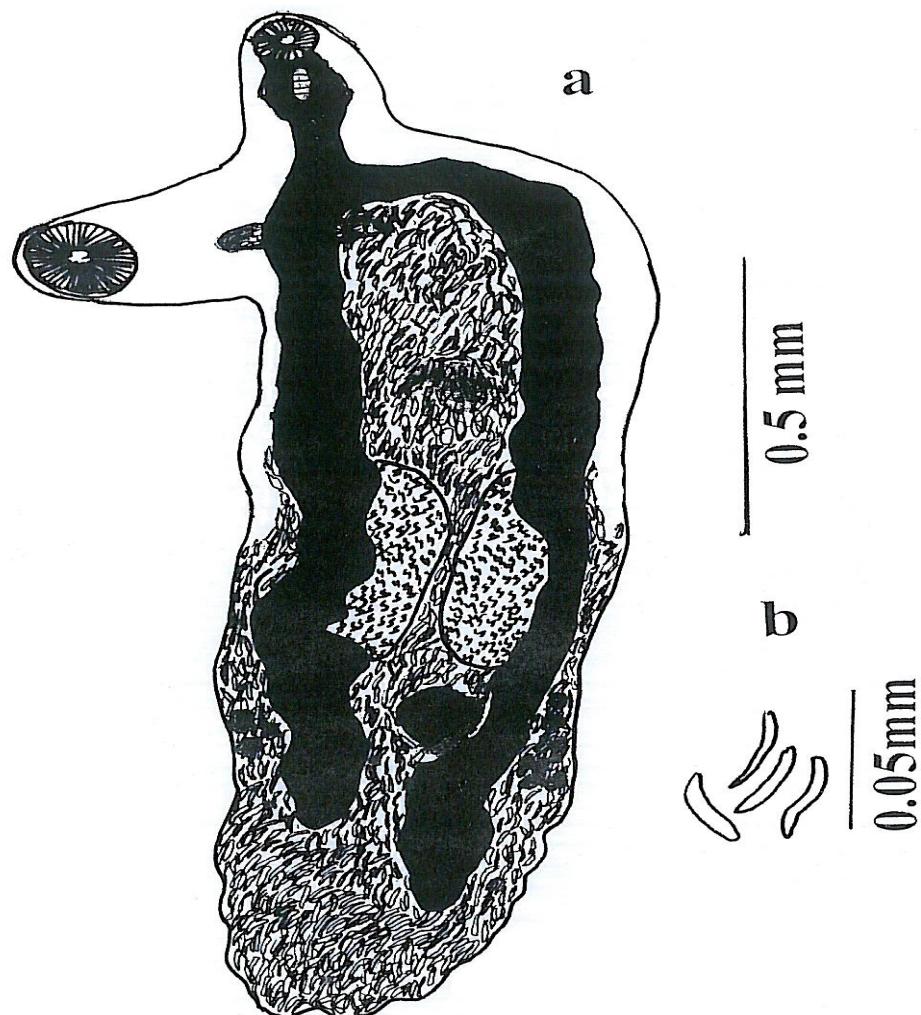


Fig. 1. *Brachylecithum bilqueesae* n. sp.

- a. entire specimen
- b. eggs enlarged

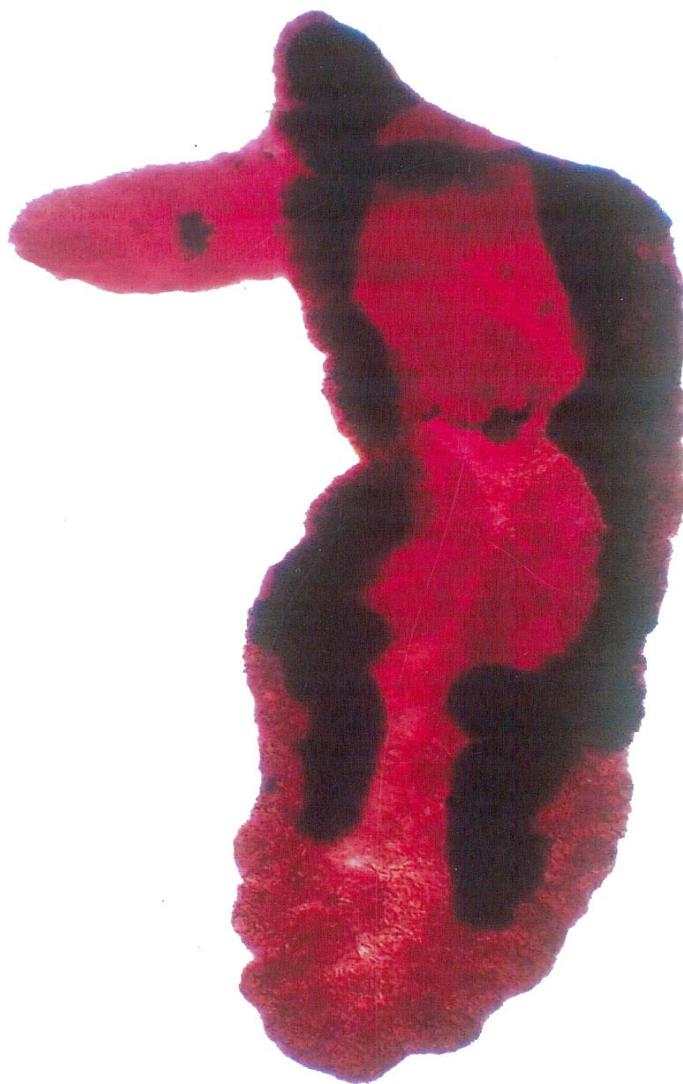


Fig. 2. Photomicrograph of *Brachylecithum bilqueesae*, n. sp. entire specimen.

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