

## TREMATODES OF VERTEBRATES FROM KARACHI, PAKISTAN

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### ABSTRACT

During a survey of helminth parasites of vertebrates from Karachi, Sindh, Pakistan *Opisthorchis felineus* (Rivolta, 1884) Blanchard, 1895 was recorded from Gall bladder of dog. Slight variations were observed in the shape of ovary and testes. Besides these all characters were similar to *O. felineus* (Rivolta, 1884) Blanchard, 1895. *Paradistomoides brayi* n.sp. was recorded from *Gecko* sp. This species is characterized by an oval to elongate body, oral sucker terminal, pharynx well developed; esophagus short; acetabulum in anterior half of body; testes oval, unequal; ovary post-acetabular; vitellaria follicular bunches extending from level of acetabulum to posterior level of cirrus sac; seminal vesicle inverted C-shaped, cirrus sac funnel-shaped; genital atrium prominent, eggs yellowish brown, oval, numerous measuring 0.025 – 0.030 by 0.020 – 0.025.

**Key-words:** *Opisthorchis felineus*, dog; *Paradistomoides brayi* n.sp., *Gecko* sp., Karachi, Pakistan.

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### INTRODUCTION

During a survey of helminth parasites of vertebrates from Sindh, Trematodes *Opisthorchis felineus* (Rivolta, 1884) Blanchard, 1895 was collected from Dog and *Paradistomoides brayi* n.sp., from *Gecko* sp. of Karachi University, Sindh, Pakistan. Previously only one species *P. mujibi* of the genus *Paradistomides* is known from *Calotes* sp. and a snake *Psammophis leithii*. Present is the second species of the genus from reptiles in Pakistan (Kaikobad and Bilqees, 1972; Bilqees, 1978).

### MATERIALS AND METHODS

Dead vertebrate hosts were collected from the vicinity of Karachi University, Sindh, Pakistan and examined for intestinal parasites. Trematodes were removed and placed in tap water until dead, fixed in F.A.A. (Formalin, acetic acid and 50% ethanol) and stained in Mayer's carmalum for light microscopy. Measurements in the description are given in millimetres. Photomicrographs were taken by Nikon (Optiphot-2) photomicroscope. The specimens were deposited in the collection of second author (A.K.).

Family: Opisthorchiidae (Looss, 1894) Braun, 1901

*Opisthorchis* Blanchard, 1895

Host: Dog

Location: Gall bladder

Locality: Karachi, Sindh, Pakistan

No. of specimens recovered: 1 from a single host

*Opisthorchis felineus* (Rivolta, 1884) Blanchard, 1985

(Figs. 1a-d)

### Description

Body elongated measuring 4.44 by 1.48. Oral sucker large, well developed measuring 0.22 by 0.39; Pharynx well developed 0.22 by 0.19. Caeca more or less straight; acetabulum smaller as compared to oral sucker measuring 0.20 by 0.18, situated in anterior third of the body; testes oval, near posterior extremity, the anterior at a distance of 3.2 from anterior end of body measuring 0.24 by 0.16, while the posterior is at a distance of 0.76 from posterior end measuring 0.28 by 0.16, distance between the two testes 0.16. Genital pore is immediately preacetabular; ovary median, lobed, post-acetabular measuring 0.18 by 0.15. Vitellaria largely in lateral fields extending from posterior end of acetabulum to anterior end of the ovary; seminal receptacle large; uterus winding between acetabulum to ovary. Eggs small, oval, numerous, measuring 0.22 – 0.024 by 0.008 – 0.010.

### Remarks

Slight variations from *O. felineus* (Rivolta, 1884) Blanchard, 1895 were observed in the present specimen such as shape of ovary which in the present specimen is lobed while in the original description it was oval, the shape of

testes which in the earlier reported specimens were lobed while in the present specimen it is oval. Besides these all other characters are similar to *O. felineus* (Rivolta, 1884) Blanchard, 1895 and thus is regarded as the same species.

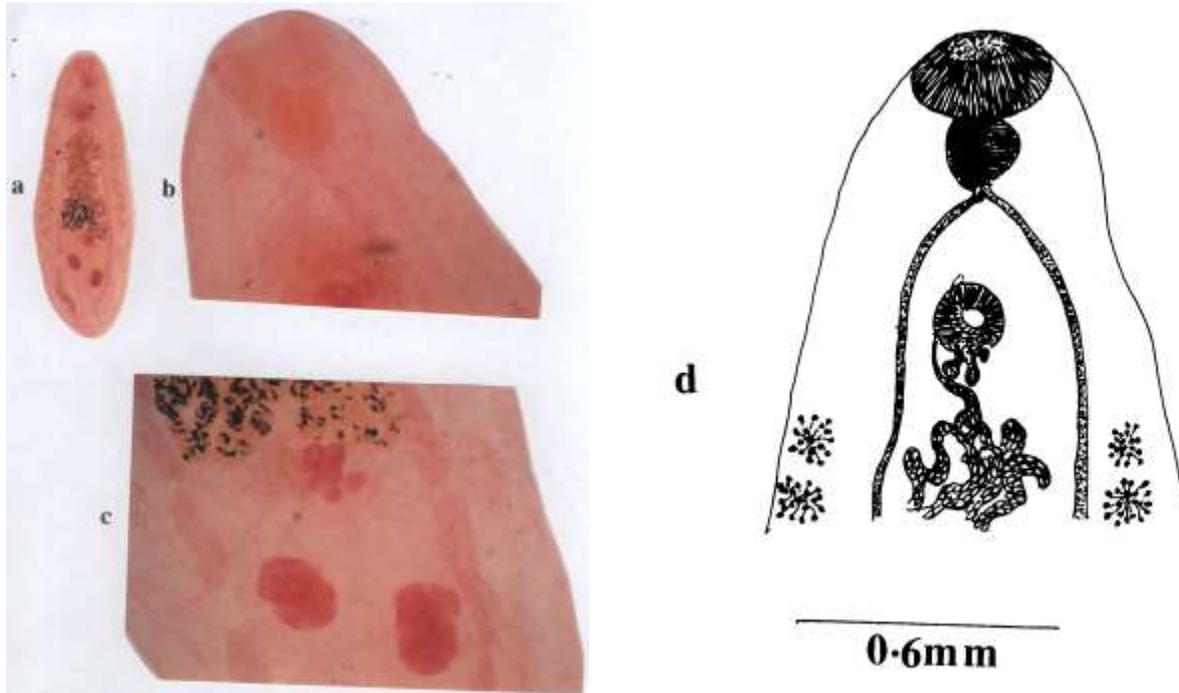


Fig.1. *Opisthorchis felineus* (Rivolta, 1884) Blanchard, 1895; a: Entire (x 5); b: Oral sucker and pharynx enlarged (x 25); c: Testes, ovary enlarged (x 25); d: Camera Lucida drawing showing genital opening.

Family: Dicrocoeliidae Odhner, 1910

*Paradistomoides* Travassos, 1944

Host: *Gecko* sp.

Location: Gall bladder

Locality: Karachi, Sindh, Pakistan

No. of specimens recovered: 2 from a single host

*Paradistomoides brayi*, new species

(Figs. 2a-b)

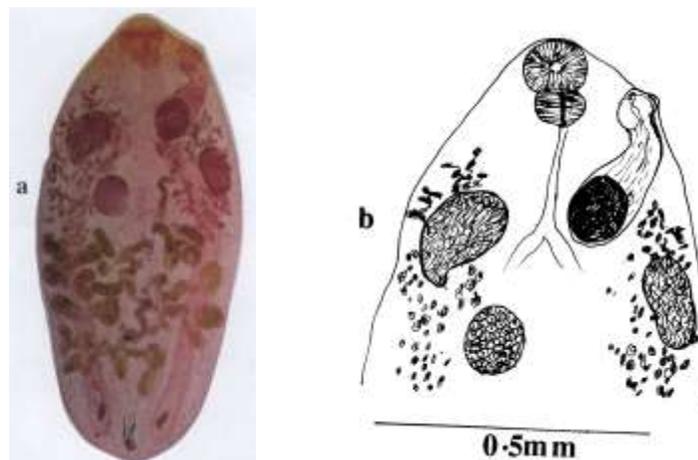


Fig.2. *Paradistomoides brayi*, new species; a: Entire (x 25); b: Camera Lucida drawing of cirrus sac and associated structures.

### Description

Body oval to elongated 1.39 – 1.42 by 0.65 – 0.17 bluntly pointed anteriorly and rounded posteriorly. Oral sucker terminal measuring 0.14 – 0.16 by 0.15 – 0.17. Pharynx is well developed 0.10 – 0.12 by 0.11 – 0.13; esophagus short 0.17 – 0.19 long and 0.19 – 0.21 wide. Caeca are 0.10 – 0.11 wide, terminating at a distance of 0.18 – 0.10 from posterior end of the body. Acetabulum is larger than the oral sucker, weakly developed in the anterior half of the body at a distance of 0.19 – 0.22 from the ovary measuring 0.12 – 0.13 by 0.095 – 0.11. Testes oval unequal, the right measuring 0.15 – 0.16 by 0.10 – 0.11, left measuring 0.16 – 0.17 by 0.11 – 0.13; distance between ovary and left testis 0.11 – 0.12. Ovary post-acetabular at a distance of 0.19 – 0.20 from the acetabulum measuring 0.09 – 0.12 by 0.09 – 0.11.

Vitellaria in follicular bunches extending from the level of acetabulum to the posterior level of cirrus sac. Excretory vesicle tubular and simple. Seminal vesicle is inverted C-shaped, cirrus sac funnel-shaped; genital atrium prominent. Genital pore median, uterine coils extending, laterally across caeca and occupying most post-ovarian region. Eggs are yellowish brown, oval, measuring 0.025 – 0.030 by 0.020 – 0.025.

### Remarks

The present species is smaller as compared to *P. ceratophorae* (Dollfus, 1923), Travassos, 1944 (2.8 by 1.8); *P. couteleni* Deblock, Capron *et* Brygoo, 1962 (4.1 by 1.7); *P. geckonum* (Bhalerao, 1929) Travassos, 1944 (2 by 0.85); *P. indicus* (Narain *et* Das, 1929) (6 - 6.5 by 2.0); *P. intestinalis* Simba, 1956 (3.9 – 4.4 by 0.69 – 0.97); *P. malayanus* Balasingam, 1964 (3.7 – 3.8 by 1.42 – 1.43); *P. moghei* (Narain *et* Das, 1929) (4.16 – 4.83 by 2.27 – 2.47); *P. orotermiosus* (Bhalerao, 1929) Travassos, 1944 (3.38 by 1.35 – 1.78); *P. palonensis* (Tubanguí, 1933) Travassos, 1944 (in Yamaguti, 1972) (4.73 by 2.43) and *P. spatulatus* Simha, 1958 (4.67 – 7.24 by 2.55 – 3.31).

The species of genus *Paradistomoides* reported previously from Pakistan is *P. mujibi* from *Calotes* sp. (Kaikobad and Bilqees, 1972) and the same was found in snake (Bilqees, 1978). The present species differs from *P. mujibi* reported from Pakistan in the following characters.

In the present specimen oral sucker (0.14 – 0.16 by 0.15 – 0.17) is smaller as compared to *P. mujibi* (0.24 – 0.45 by 0.21 – 0.41). The position of vitellaria is different as compared to *P. mujibi* in which these extend from the level of testes to posterior end while in present specimens these are from the level of acetabulum to posterior level of cirrus sac; position of ovary is also different. Therefore, is considered as a new species with the specific name *C. brayi*. The new species is named in honour of Dr. Rodney A. Bray, Natural History Museum, London, U.K.

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