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NEOECHINORHYNCHUS BRAYI SP.N. (ACANTHOCEPHALA: NEOECHINORHYNCHIDAE) IN FRESHWATER FISH *CATLA CATLA* L. FROM SINDH, PAKISTAN

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ABSTRACT

Catla catla L. is a freshwater fish of economic importance collected (September 2008) from Haleji Lake, Sindh, Pakistan. Nine acanthocephalan specimens were recovered from its intestine which when compared with literature indicated a new acanthocephalan species, *Neoechinorhynchus brayi*. The new species is characterized by having medium sized stout body; lacunar system prominent; proboscis small with three circles of hooks, six in each circle, anterior hooks larger, posterior small; proboscis receptacle small; lemnisci unequal; male genitalia situated near the posterior end of the body and the bursa with subterminal pore and two bursal glands.

Keywords: Acanthocephala, *Neoechinorhynchus brayi*, new species, freshwater fish, intestine, Sindh, Pakistan.

INTRODUCTION

Hamann (1892) erected the genus *Neoechinorhynchus* with *N. rutili* (Muller, 1780) as its type species in *Leuciscus rutilis* from Europe. The species of the genus reported from Pakistan are *N. karachiensis* Bilqees, 1972; *N. formosanum* (Harada, 1938) Bilqees, 1972; *N. nickoli* Khan *et al.*, 1999; *N. gibsoni* Khan and Bilqees, 1989; and *N. longiorchis* Shahina and Bilqees, 2007. This is the sixth record of the genus being reported from *Catla catla* (L.) from Haleji Lake, Sindh, Pakistan.

MATERIALS AND METHODS

Seventy nine fish *Catla catla* L. were purchased from Haleji Lake, Sindh, Pakistan. Acanthocephala were recovered from the intestine. Specimens were fixed in F.A.A. solution under slight cover glass pressure for 48 hours, washed several times with 70% alcohol, stained with Mayer's carmalum, dehydrated in graded series of alcohols, cleared in clove oil and xylene and mounted permanently in Canada balsam. Measurements are given length by width in millimeters. Drawings were made with the help of camera Lucida. Specimens are in collection of one of the authors (G.S.S.).

***Neoechinorhynchus brayi* n.sp.**
(Fig. 1a-b)

Host:	*Catla catla* (L.)
Location:	Intestine
Locality:	Haleji Lake, Sindh, Pakistan
No. of specimens:	9 (5 + 4) males from two fish, 79 examined

Description is based on 9 male specimens including holotype. Medium sized, stout worms, flattened and wider in the middle, narrower anteriorly and posteriorly. Anterior and posterior ends are rounded. Lacunar system is prominent. Body 2.15–4.8 × 0.5–1.15 in size. Proboscis small, rounded, 0.26–0.28 in diameter, with three circles of hooks, 6 in each circle, anterior largest 0.17–0.18 in length, middle 0.07–0.08 and posterior very small 0.03–0.05 in length. Proboscis receptacle small in relation to body size, with double muscular wall. Lemnisci two, unequal, long, more than two and half time longer than proboscis receptacle, 1.59–1.62 long and 0.19–0.20 in width, unequal, left longer than the right and slightly bent upward. Male genital organs situated near the posterior end of body. Testes two, large, unequal, anterior 0.50–0.52 × 0.3–0.4; posterior slightly smaller, 0.46–0.47 × 0.28–0.30 in size. Cement gland submedian, on the right of posterior testis 0.19–0.21 × 0.13–0.15 in size, cement reservoir elongate, 0.35–0.37 × 0.12–0.13 in size, saefftigen's pouch smaller than cement reservoir 0.29–0.32 × 0.10–0.12. Bursa with subterminal pore 0.35–0.37 × 0.29–0.31 in size with two bursal glands at the anterior part of bursa.

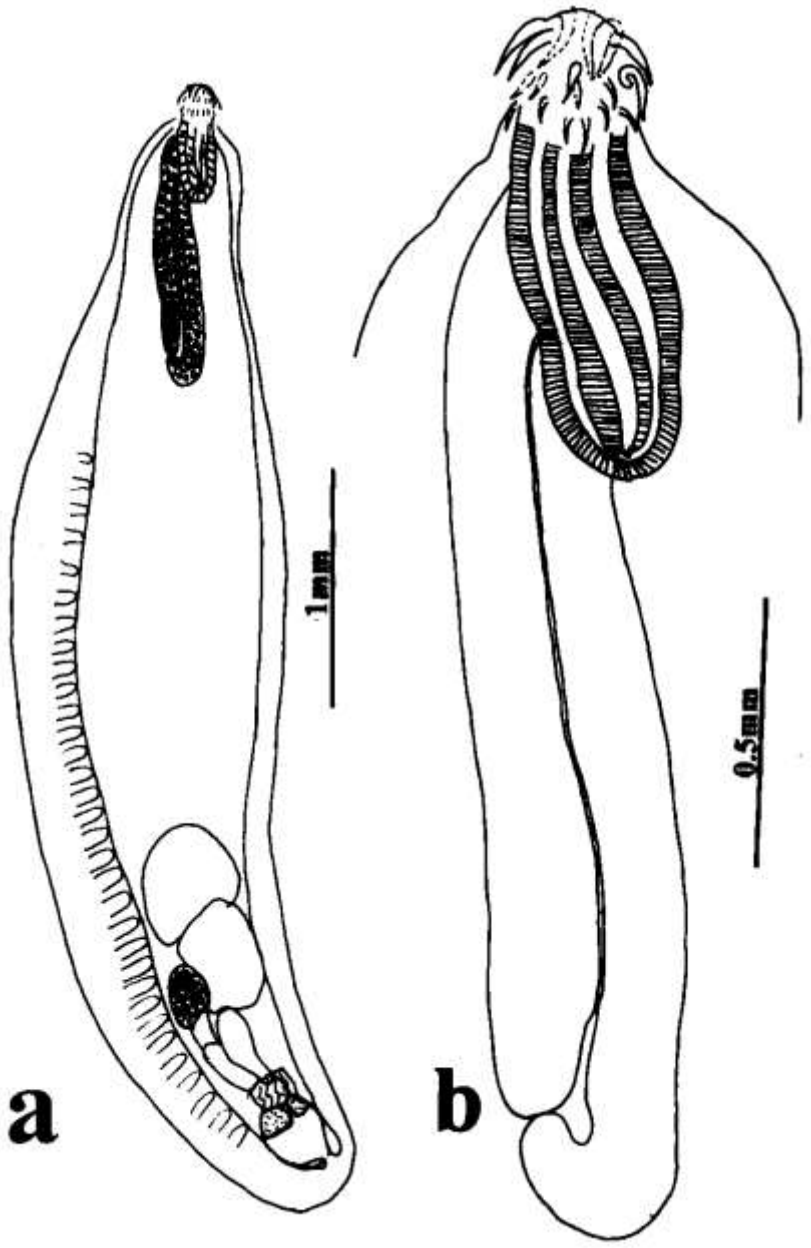

Fig. 1. *Neoechinorhynchus brayi* n.sp., a. Entire holotype, male; b. Proboscis region enlarged.

REMARKS

The genus *Neoechinorhynchus* Hamman, 1892 has been reported from marine and freshwater fish, batrachians and chelonians from a number of localities including Mediterranean, Pacific and Atlantic Ocean, Amazon, Bay of Bengal, N. America, Mexico, Brazil, India, Pakistan, Japan, Russia, Philippines etc. As compared to the species reported from Pakistan the present species differs from *N. longiorchis* Shahina and Bilqees, 2007 in the size of the middle row of proboscis hooks (0.02–0.03 by 0.005–0.01) which are smaller as compared to present species, also the shape of lemnisci in present specimens is different from *N. longiorchis*. When compared to *N. gibsoni* Khan and Bilqees, 1989 the proboscis in the present specimens (0.14–0.15 by 0.15); the testes in *N. gibsoni* are contiguous, length of cement gland is greater (0.25–0.26); bursa in present specimens is longer (0.35–0.37) as compared to *N. gibsoni* (0.26–0.27). The male in *N. formosanum* (Harada, 1938) Bilqees, 1972 is larger (8.26–9.31 by 1.03–1.13) as

compared to the present specimens (2.15–4.8 by 0.5–1.15), one lemnisci in the present species is slightly bent upward which is different from all the species reported so far.

As compared to *N. karachiensis* Bilqees, 1972 the cement glands are smaller (0.19–0.21 by 0.13–0.15), while in *N. karachiensis* these measure (1.3–1.44 by 0.50–0.58). Moreover, the testes are much larger (1.0–1.2) in length as compared to the present species. When compared to *N. nickoli* Khan *et al.*, 1999 the proboscis in the present species is larger (0.26–0.28 in diameter) as compared to *N. nickoli* (0.11–0.12 by 0.096–0.098) and cement gland is smaller (0.19–0.21 by 0.13–0.15) than *N. nickoli* (0.19–0.21 by 0.13–0.15). Similarly, cement reservoir in the present specimens is larger (0.29–0.32 by 0.10–0.12) as compared to *N. nickoli* (0.084–0.14 by 0.084–0.16). Bursa length is larger (0.57) in *N. nickoli* as compared to present specimens (0.35–0.37). The present species further differs from *N. nickoli* which has male genitalia extended almost to 80 percent of body length, greater extension of male genitalia was also recorded in *N. manashalensis* Kaw, 1951; *N. oreini* Fotedar, 1968; *N. tylosuri* Yamaguti, 1939; *N. topseyi* Podder, 1937; *N. elongates* Tripathi, 1959 and *N. hutchinsoni* (Datta, 1936) Kaw, 1951 reported from India. Similarly other workers have reported much extended male genitalia in *N. rutili* (Muller, 1780); *N. emydis* Leidy, 1851, *N. strigosum* Van Cleave, 1919; *N. prolixum* Van Cleave *et* Timons, 1952 as compared to present species. The present specimens differ from *N. idahoensis* Amin & Heckmann, 1992 which possess a posteriorly notched proboscis receptacle.

The present specimens are much smaller (2.15–4.8 by 0.5–1.15) in size as compared to *N. lingulatus* Nickol and Ernst, 1987. Also the testes in *N. lingulatus* are larger (0.91–2.73 by 0.28–0.47) and (1.05–2.85 by 0.24–0.46) as compared to the present specimens (0.50–0.52 by 0.3–0.4) and (0.46–0.47 by 0.28–0.30). Moreover, both the lemnisci are equal in length while in the present species they are unequal, the cement gland in *N. lingulatus* is larger (1.17–2.89 long) as compared to the present specimens (0.19–0.21).

The male in the present specimen are smaller (2.15–4.80 by 0.5–1.15) as compared to other species namely *N. bangoni* Tripathi, 1959 (9–12); *N. buttnerae* Golvan, 1956 (22); *N. copliae* Yamaguti, 1939 (6–9); *N. distroctum* Van Cleave, 1949 (5.9–7.3); *N. elongatum* Tripathi, 1959 (5.3–7.1); *N. hutchinsoni* Datta, 1936 (7.8–8.2); *N. longilemniscus* Yamaguti, 1934 (5–9); *N. macronucleatum* Machado Filho, 1954 (5–7); *N. prolixum* Van Cleave *et* Timons, 1952 (5.5–11.9); *N. topseyi* Podder, 1937 (upto 28.5); *N. tylosuri* Yamaguti, 1939 (16–42); *N. yalei* (Datta, 1936) Kaw, 1951 (5.39); *N. agilis* (Rudolphi, 1819) Petrotschenko, 1956 (7.13–8); *N. glyptosternumi* Dhar and Kharoo, 1984 (5.05); *N. hutchinsoni* (Datta, 1936) Kaw, 1951; *N. oreini* Fotedar, 1968 (8–11.75); *N. glytosternumi* Dhar and Kharoo, 1984 (5.05 by 0.82); *N. johnii* Yamaguti, 1939) Bhattacharya, 2007 (21.7–26.97); *N. oreini* Fotedar, 1968 (8.00–11.75 by 0.9–1.45) and *N. argentatus* Chandra *et al.*, 1987 (19.2 by 0.312). The present specimens are compared with the description of previously known (available and accessible) literature and it appears to be unmatched therefore, a new species *Neoachinorhynchus brayi* is proposed. The species name refers to the eminent Parasitologist of England, Dr. Rodney A. Bray.

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