

NEW RECORD OF FRESHWATER ERITHISTID CATFISH *CONTA CONTA* (HAMILTON, 1822) (TELEOSTEI: ERETHISTIDAE) FROM ARUNACHAL PRADESH (BIODIVERSITY HOTSPOT), INDIA

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ABSTRACT

A small catfish species *Conta conta* (Hamilton) has been recorded for the first time from the water bodies of the Arunachal Pradesh (AP), India. The species is characterized by the presence of elongated adhesive apparatus, serration on both edges of the dorsal fin spine and slender caudal peduncle region. It is easily distinguished from its nearest congeners *C. pectinata* Ng, 2005 in having distally directed vs. anteriorly-directed serrations on the anterior edge of the pectoral spine. A review of literature shows that there is no report of the species from the water bodies of the state. The present paper deals with the first record of *Conta conta* (Hamilton) from the state and brief description of the species and its geographical distribution up to the state of A. P.

INTRODUCTION

The genus *Conta* (Hora) belongs to the family Erethistidae and can be easily distinguishing from other genera by the presence of elongated narrow adhesive apparatus on the thorax extending up to the pelvic fin origin; serrated anterior margin on the dorsal fin spine; caudal fin upper lobe with filamentous prolongation and dorsolaterally located small eyes (Jayaram, 2006). The small erithistid catfish *Conta conta* was first described by (Hamilton, 1822) from the river Mahananda, type locality upper Bengal as *Pimelodus conta*. Later on, the same fish species was describe by different scholars with different names viz. *Hara filamentous* by (Blyth, 1860), *Hara conta* by (Guenther, 1864) and *Erithistis conta* by (Day, 1877) and finally *Conta conta* By (Hora, 1951). The genus *Conta* is a small catfish usually found in the slow to medium running water of the river and is distributed in the Indian subcontinent eastward to Western Thailand and northern Malay Peninsula (Ng, 2005). Before, Ng (2005) described a new species *Conta pectinata* from the middle part of Brahmaputra, North East India, and the genus *Conta* is considered as monotypic genus. Arunachal Pradesh (AP) is the largest northeastern state of India with a geographical area of about 83,743 km² situated at the easternmost tip of India, between 26° 28' to 29° 30' N L and 97° 30' and 97° 30' E L. The state is bisected by a number of river and rivulets which harbors a total of about 213 different fish species (Bagra et al., 2009). A number of scholars have documented ichthyofaunal diversity of the state viz. (Nath and

Dey, 2000; Tamang et al., 2006; Nebeshwar et al., 2007); Tamang et al., 2008; Bagra et al., 2009). However, none of the scholars has reported the present species *C. conta* (Hamilton) in his work, from any water body of AP. During the study on the ichthyofaunal diversity of Singen river (Fig. 1) of East Siang District, A.P., India, 13(thirteen) specimens of *C. conta* (Hamilton) were collected out from the river near New Seren village, East Siang District, A.P., India. Due to its less abundance in the water bodies of the state the authors presumes the present species *Conta conta* (Hamilton) as a highly threatened catfish species that needs necessary strategy for conservation. The river Singen is one of the main water bodies of Ramle Banggo area of East Siang district, A.P. It originates near Piirii-Sago village of West Siang District of AP and it enters into East Siang Districts near Rina village and flows southwards crossing a numbers of villages situated on its both banks before finally draining off its contents into the mighty Brahmaputra River in Assam.

The present paper deals with the first records of the catfish species *Conta conta* (Hamilton) from the Singen river of A.P. and also presents the geographical extension of the said species up to the state of A.P. The paper also deals with the description of the materials in brief.

MATERIALS AND METHODS

Measurements were made point to point on the left side of the

body with dial calipers and the data were recorded to the tenth of a millimeter. All the digital photograph of the specimens was taken by using Olympus (FE-5010 12 MP) and Sony Cyber-shot (DSC-S750 7.2 MP) digital camera. The sub units of the head were expressed as proportions of Head length (HL) while, the Head length and the measurement of body parts are given as proportion of standard length (SL). All the measurement and counts follows those of (Kottelat, 2001) and (Ng, 2005). And the morphometric measurements and counts of the species were compared and confirmed after (Hamilton, 1822), (Day, 1877) and (Jayaram, 2006).

The fish specimens were collected from the river Singen using cast net, near New Seren village, of East Siang District, AP, India. All the collected specimens were well preserved in 10 % Formalin and deposited in the Rajiv Gandhi University of Fish Museum (RGUMF), Rajiv Gandhi University, Itanagar, AP, India.

RESULTS AND DISCUSSION

Conta conta (Hamilton, 1822) (Fig. 2.)

Pimelodus conta Hamilton, 1822. *Fish Ganges*: 191, 378 (type locality North Bengal).

Hara conta Blyth, 1860. *J. Asiatic Society of Bengal*. 29: 152 p.

Hara conta Guenther, 1864. *Cat. Fishes of British Museum*. 5: 89. (Type locality Mahananda).

Erethistes conta Day, 1877. *Fish India*: 453, pl.102, Fig. 4.

Conta conta Hora, 1951. *Record of Indian museum (in part)*. 47: 195. pl.2, Fig. 4 and 5.

Conta conta Jayaram, 2006. *Cat fishes of India*. pp. 278-279, Fig.128.

Material Examined

RGUMF - 0202. Thirteen (13) examples 38-49 mm in standard length; Collection site, Singen River near New Seren village, Arunachal Pradesh, India. Collection: Kento Kadu. Dated: 22.08.2008.

Local name: Genik ao (Galo Tribe)

Diagnosis

Conta conta (Hamilton) differs from its nearest congener *C. Pectinata* Ng (2005) in having distally directed vs. anteriorly-directed (antrorse) serrations on the anterior edge of the pectoral spine (Fig. 3 and 5); shorter caudal peduncle length (23.5 ± 1.5 vs. 24.9 ± 0.5 mm in % of SL); shorter snout length (50.0 ± 4.6 vs. 56.5 ± 1.7 in % of HL) and a Shorter pectoral fin length (28.3 ± 3.3 vs. 27.9 ± 0.1 mm in % of SL); longer pre anal length (63.5 ± 2.0 in % of SL) vs. shorter pre anal length (60.9 ± 1.5) in % of SL.

Description

D. I, 6; P.I, 7; V. i, 5; A. ii (iii), 7(1); C. 17

Biometric data are given in Table 1 Dorsal profile rise from the tip of snout up to the base of rayed dorsal fin and the gently slop towards the caudal fin base. While ventral profile horizontal to pelvic origin, and then gently slop upward towards dorsal up to caudal peduncle. Abdomen rounded, not keeled. Adhesive apparatus on the thorax are slender and elongated, extending up to the pelvic fin origin (Fig. 4). Body elongated, sub cylindrical and compressed. Body depth highest

Table 1: Comparisons of morphometric measurements of *Conta conta* (Hamilton, 1822) and *Conta pectinata* (Ng, 2005)

In % of the standard length	<i>C. conta</i> (Hamilton,1822) N=13		<i>C. pectinata</i> (Ng, 2005)	
	Range	Mean \pm SD	Range	Mean \pm SD
Standard length	37.0- 49.0	42.7 \pm 4.2	-	-
Head length	19.6-24.3	21.7 \pm 1.8	20.9-21.8	21.5 \pm 0.4
Body width	11.9-13.6	12.7 \pm 0.6	-	-
Body depth	16.3-21.1	18.7 \pm 1.7	-	-
Pre dorsal length	36.7-43.2	38.8 \pm 2.2	38.4-40.3	39.2 \pm 0.9
Pre pectoral length	16.3-19	18.0 \pm 0.9	17.0-21.7	19.4 \pm 0.8
Pre pelvic length	36.8-45.9	43.3 \pm 3.1	39.8-44.6	42.2 \pm 2.0
Pre anal length	60.5-66.2	63.5 \pm 2.0	58.7-61.9	60.9 \pm 1.5
Pre adipose length	65.3-72.8	69.1 \pm 2.3	-	-
Pre anus length	51.0-56.7	54.1 \pm 2.3	-	-
Dorsal fin Height	20.5-26.2	23.5 \pm 1.9	20.9-24	22.4 \pm 1.3
Dorsal fin base length	8.1-10.8	9.4 \pm 0.8	9.5-11.3	10.5 \pm 0.8
Pectoral fin length	25.4-32.4	28.3 \pm 3.3	27.8-28	27.9 \pm 0.1
Pectoral fin base length	5.1-8.7	6.6 \pm 1.2	-	-
Pelvic fin length	13.2-16.2	14.9 \pm 0.9	14.2-16.4	13.5 \pm 0.9
Pelvic fin base length	2.0-3.4	2.7 \pm 0.5	-	-
Anal fin length	18.4-21.1	20.0 \pm 1.1	-	-
Anal fin base length	10.2-13.5	11.6 \pm 1.0	12.6-14.4	12.1 \pm 1.2
Caudal peduncle length	20.4-25.0	23.5 \pm 1.5	24.6-25.6	24.9 \pm 0.5
Caudal peduncle height	2.0-3.6	2.9 \pm 0.6	2.7-2.9	2.8 \pm 0.1
Adhesive pad length	27.4-34.2	30.3 \pm 2.0	-	-
In % of Head length				
Head length	9.0-11	9.3 \pm 0.7	-	-
Snout length	44.4-55.6	50.0 \pm 4.6	55.0-58.4	56.5 \pm 1.7
Eye diameter	11.1-13.6	11.5 \pm 0.9	10.4-18.1	14.6 \pm 3.3
Head height at occiput	63.6-77.8	69.9 \pm 5.7	-	-
Head width at eye	63.6-77.8	70.9 \pm 5.6	-	-

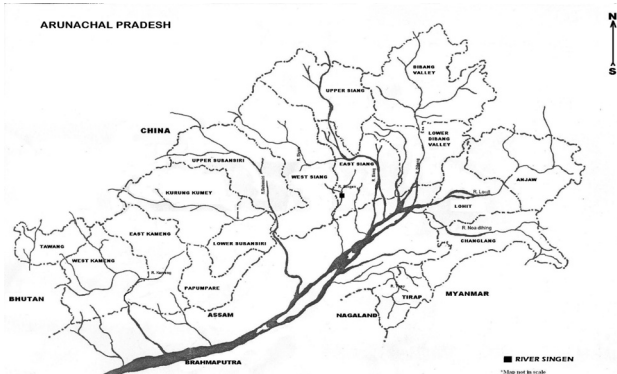


Figure 1: Map showing a collection sites of *C. conta* (Hamilton) and drainage systems of Arunachal Pradesh, India

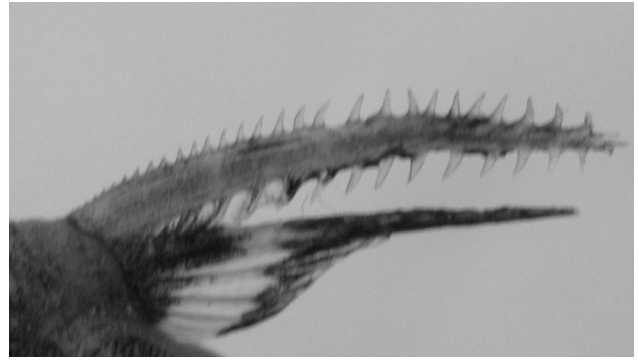


Figure 3: Serration of anterior and posterior edge of Pectoral fin spine of *C. conta* (Hamilton)

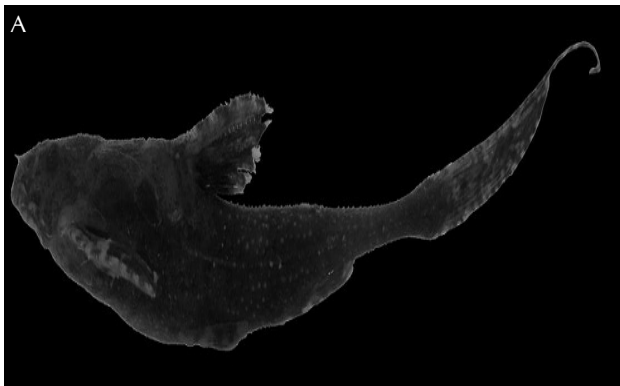


Figure 2: (A)Lateral, (B)Ventral and (C)Dorsal view of *Conta conta* (Hamilton)

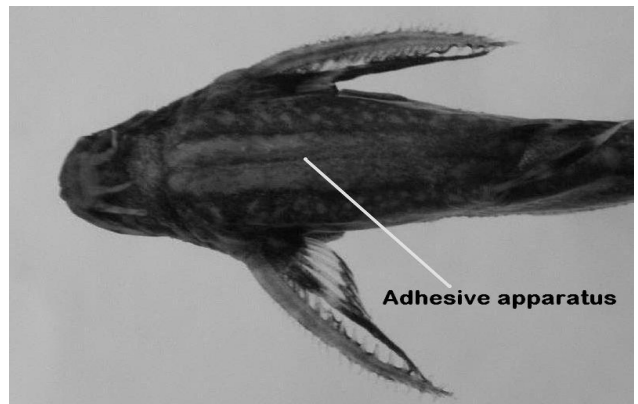


Figure 4: ventral view of head portion showing elongated adhesive apparatus of *C. conta* (Hamilton)

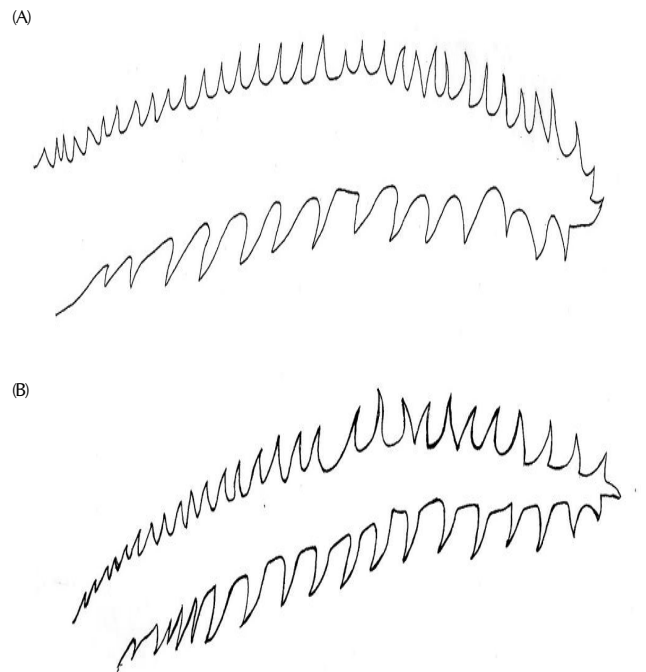


Figure 5. Schematic illustration of right pectoral fin spine serration of: (A) *C. pectinata* and (B) *C. conta*.

at dorsal fin insertion point (23.5 ± 1.5 mm in % of SL). Lateral head length of 21.7 ± 1.8 mm in % of SL. Head small, oval, and compressed. Snout bluntly pointed. Mouth small, sub-terminal (inferior) with papillated lips. Jaws unequal, upper jaw slightly ahead of lower. Eyes small, with an eye diameter of 2.6 mm in head length, subcutaneous, situated in the posterior half of head length. Eyes small, situated nearer to the tip of snout than the posterior margin of operculum, not visible from ventral surface. Villiform teeth arranged on both jaws. Barbels in four pairs, one pair each of maxillary, nasal, outer and inner mandibular, all shorter than head length but the maxillary pair reaching up to the base of pectoral fin.

Rayed dorsal fin with serrated strong spine inserted almost opposite of the pelvic fin insertion. Both sides of the spine serrated. Anterior edge of dorsal fin spine is guarded with 19-20 serrae and a posterior margin with 12-15 serrae. Pectoral fins with strong spine reaching almost pelvic fin origin. Spine serrated on both edge, external serration with 28-29 serrae; external serration on anterior portion or base of the spine directed towards backwards or towards the posterior end of the spine and on the middle portion 1-2 serration is of divergent type, while posterior portion directed slightly towards forward direction. Internal serration (17-18 serrae) on the pectoral fin spine directed inwards except 1-2 serration on the posterior margin of spine (Fig. 3). Pelvic fin not plaited and not reaching anal fin origin. Anal fin with ii, 7-8(1) rays when add pressed not reaching caudal base. Adipose dorsal fin short, low and inserted behind the opposite of anal fin insertion point. Caudal fin highly forked, principal ray on upper lobe produced into filament. Vent is situated almost in the middle in between anal and pelvic fin. Lateral line present, complete and mid-lateral in position with prominent tubercles. Skin rough, tuberculated. Vertebrae $15 + 18 = 33$. Body colour, in 10 % formalin preserved specimen dark grayish brown above, dirty white below. Outer margin of dorsal, pectoral, pelvic and anal fins with dark band.

The present specimen resembles the original description of *Conta conta* (Hamilton). There is a slight difference in morphometric measurement viz. caudal peduncle depth, caudal peduncle length etc. but the differences are minute which are within the range of *Conta conta* (Hamilton) and this difference may be due to different measurement techniques or may be due to different environmental factors. The present specimens were also compared with that of its nearest congener *Conta pectinata* (Ng, 2005) which was described from Brahmaputra River near Dibrugrah, Assam. The present specimen distinctly differs from its nearest congeners *C. pectinata* (Ng) in having distally directed vs. anteriorly-directed serrations on the anterior edge of the pectoral spine; shorter caudal peduncle length; shorter pectoral fin length in % of SL and a shorter snout length in % of HL. The specimens were collected from the Singen River near New Seren village, Arunachal Pradesh, India, during routine fish collection for the study of ichthyofaunal diversity of Singen River. This peculiar small catfish species is placed on the genus *Conta*,

under the family Erethistidae. The genus *Conta* is easily distinguished from its congeners in having an elongate body, and the presence of a slender and elongated thoracic adhesive apparatus (Fig.4). Earlier, Ng (2005) has described a new species *C. pectinata* Ng Form River Brahmaputra, Assam, India, the genus *Conta* is considered as monotypic.

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REFERENCES

- Bagra, K., Kadu, K., Nebeswahwar, K., Laskar, B. A., Sarkar, U. K., and Das, D. N. 2009.** Ichthyological survey and review of the checklist of fish fauna of Arunachal Pradesh, India. *Check List*. **5(2)**: 330-350.
- Blyth, E. 1860.** Report on some fishes of received chiefly from Sittang river and its tributary streams. *J. Asiatic Society Calcutta, Bengal*. **29**: 138-1742.
- Day, F. 1877.** Fishes of India being a natural history of the fishes known to inhabit the seas and freshwaters of India, Burma and Ceylon. p. 453.
- Guenther, A. 1864.** Catalogue of Fishes in the British Museum London. **5**: 89.
- Hamilton, F. 1822.** An account of the Fishes found in the river of Ganga and its branches. Archibold constable and Company, Edinburgh. p.191.
- Hora, S. L. 1951.** Record of Indian museum (in part) **47**: 195. pl.2, fig. 4-6.
- Jayaram, K. C. 2006.** Cat Fishes of India. Narendra Publishing House, New Delhi. 277.
- Kottelat, M. 2001.** Fishes of Laos. Cambodia. Wildlife Heritage Trust Publication. 198.
- Nath, P. and Dey, S. C. 2000.** Fish and fisheries of North East India. (Arunachal Pradesh) **Vol: I**. New Delhi: Narendra Publishing House.
- Nebeshwar, K., Bagra, K. and Das, D. N. 2007.** A new species of cyprinid genus *psilorhynchoides* Yazdani et al. from Arunachal Pradesh, India (Cypriniformes: Psilorhynchidae). *Zoos' Print J*. **22(3)**: 2632- 2636.
- Ng, H. H. 2005.** *Conta pectinata*, a new erethistid catfish (Teleostei: Erethistidae) from northeast India. *Ichthyological Exploration of Freshwaters*. **16(1)**: 23-28.
- Tamang, L., Chaudhry, S. and Choudhry, D. 2006.** On a new record of freshwater fish, *Pseudolaguvia shawi* (Hora) from Arunachal Pradesh, India (Teleostomi: Erethistidae). *Zoos' Print J*. **21(11)**: 2443-2446.
- Tamang, L., Chaudhry, S. and Choudhry, D. 2008.** *Erethistoides senkhiensis*, a new catfish (Teleostei: Erethistidae) from India. *Ichthyological Exploration of Freshwaters*. **19(2)**: 185-191.