SHORT COMMUNICATION

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SILUROID FISHES OF INDIA, BURMA AND CEYLON. 24. THE SYSTEMATIC STATUS OF *ARIUS SATPARANUS* CHAUDHURI (ARIIDAE : SILURIFORMES)

Chaudhuri (1916) described *Arius satparanus* from a single example 210 mm long (probably SL)*, collected from the channel between Satpara and Barnikuda (Chilka Lake, Orissa), ZSI Regd. No F 8784/1. He differentiated his species from *Arius arius* (Hamilton) and *A. maculatus* (Thunberg) and also from all the other known species of this genus in its having a single oval patch of sparsely arranged globular teeth on either side of the posterior extremity of the palate. He did not compare it with *A. tenuispinis* Day, 1877, convinced as he was that *tenuispinis* belonged to the genus *Hemipimelodus* (palate teeth absent) as indicated by Day 1877.

Chandy (1954) published a description of *Tachysurus* (=*Arius*) *tenuispinis* based on the topotype specimens and contended that there are two distinct pear shaped patches of globular teeth placed far back almost at the posterior extremity of the buccal cavity. However, she included *T.* (=*Arius*) *satparanus* (Chaudhuri) in her catalogue without any comment. Misra (1976) placed *tenuispinis* under the genus *Hemipimelodus* following Day and he considered *A. satparanus* as a distinct species. Talwar (1976) examined the holotype of *A. tenuispinis* Day (original of pl. 107, fig. 5, 280 mm in SL, registered as *Hemipimelodus tenuispinis* in the National Zoological Collections of ZSI, Regd. No. 482) and demonstrated the species as having two pear shaped teeth patches on the palate. He concluded thereby that *tenuispinis* cannot be placed under the genus *Hemipimelodus* confirming Chandy's (1954) earlier contention. In respect of *A. satparanus* Chaudhuri, he considered it as most closely related to *A. tenuispinis* Day and distinguished the two species on the presence or absence of dorsal tubercles and the nature of the dorsal and pectoral spines.

During the course of our studies on the fishes of the family Ariidae, we have examined and compared the holotypes of *A. tenuispinis* Day (280 mm. SL, ZSI, Regd. No 482) and *A. satparanus* Chaudhuri (200 mm in SL, ZSI, Regd. No. F 8784/1). We have also examined more than 150 fresh specimens of *A. tenuispinis* collected from various localities of east and west coasts of India, besides other non-typical material preserved in the collections of ZSI, Calcutta. The size range of the specimens of *A. tenuispinis* examined by us is also wide (80 to 415 mm in SL) which

* The preserved holotype of *A. satparanus* is 200 mm in SL measured by us, however, Chaudhuri (1916) measured the same as 210 mm. Probably this difference of 10 mm may be attributable due to a different standards adopted by Chaudhuri.

covers the size of the holotype (200 mm in SL) of *A. satparanus* Chaudhuri.

As stated earlier, Chaudhuri (1916) did not compare *A. satparanus* with the already described species *A. tenuispinis* Day, presumably because he was convinced that the latter species did not belong to the genus *Arius*. The morphometric proportions for six characters given by Chauduri for *A. satparanus* are compared with the same features derived from the samples of *A. tenuispinis* (Table 1) collected by us. Further, 23 morphometric and meristic characters of *A. tenuispinis* are analysed statistically and compared with those of *A. satparanus* so as to have a perspective picture of the intraspecific range of variation in respect of each character (Table 2).

From the above analysis it is seen that there is hardly any character which distinguishes *A. satparanus* from *A. tenuispinis*. All the 23 major taxonomic characters of the former species intergrade completely with

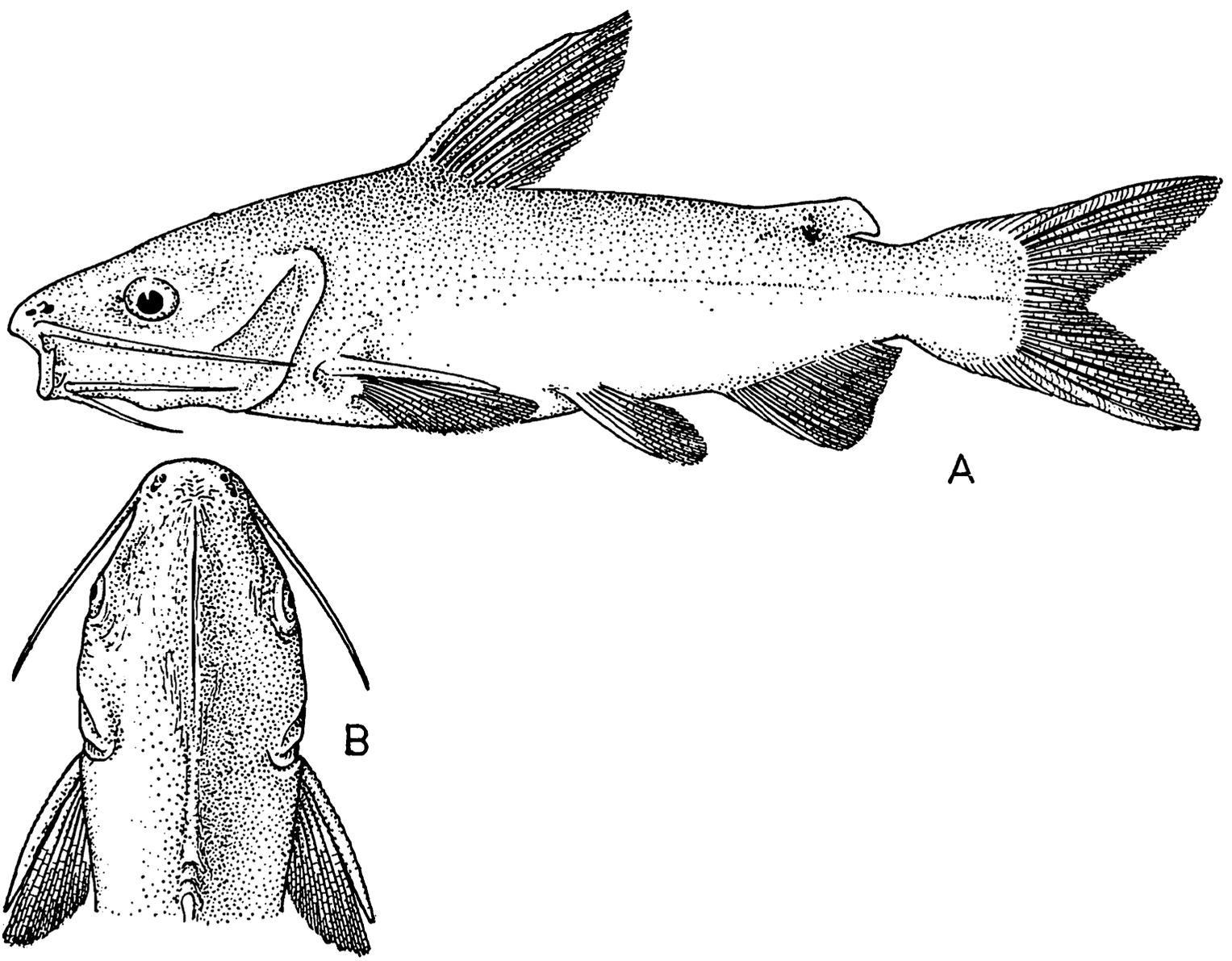

Fig. 1a. Lateral view of *Arius satparanus*, after Chaudhuri, 1916.
1b. Dorsal view of the head region of *A. satparanus*, after Chaudhuri, 1916.

that of the latter (Table 2). The morphological features considered by Talwar (1976) such as the dorsal tubercles and nature of the dorsal and pectoral spines are also not very helpful in distinguishing the two species when a series of large examples of all size groups are examined. Moreover it may be noted that there are no dorsal tubercles in the holotype of *A. satparanus* barring a few granulations on the occipital process which is very much similar to that of *A. tenuispinis*. It is also of interest to note that subsequent to Chaudhuri (1916), *A. satparanus* has not been recorded from Chilka Lake or any where else and no example has been so far identified by any ichthyologist as *A. satparanus*.

In view of the above reasons we relegate *A. satparanus* Chaudhuri (1916) as a junior synonym of *A. tenuispinis* Day (1877).

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TABLE—1

Showing the various morphometric characters in *A. satparanus* (after Chaudhuri) *vs.* in the samples of *A. tenuispini.*

As percentage of Standard length	*Arius satparanus* (after Chaudhuri)	*Arius tenuispinis* Range	Mean
1. Length of head	28.6	27.02-33.24	29.5913
2. Depth of body	20.00	16.66-23.33	20.6230
3. Length of snout	12.00	9.35-14.68	12.7321
4. Diameter of Eye	4.76	3.65- 5.76	4.3542
5. Length of pectoral fin	19.00	16.39-21.85	18.6291
6. Length of ventral fin	14.3	12.95-18.23	15.4512

TABLE—2

Biometric comparison of various taxonomic characters in the type specimens of *A. satparanus* Chaudhuri from Chilka Lake vs. sample means of 150 specimens of *A. tenuispinis* Day from different localities of east and west coast of India

	150 specimens of *A. tenuispinis* Day			Type specimen of *A. satparanus* Chaudhuri			
	Range	$\bar{X}$	S	X	$\bar{X}$ —X	t	p
LH/TL%	22.18-28.60	24.1316	1.5211				
HB/TL%	13.10-18.94	17.1800	1.2721				
LH/SL%	27.02-33.24	29.5913	1.4718	30.00	-0.4087	-0.2745	80%
HB/SL%	16.66-23.33	20.6230	1.0452	22.00	-1.377	-1.3023	20%
PDL/SL%	37.57-44.88	40.5830	1.2275	40.00	0.583	0.4695	60-70%
PAL/SL%	65.10-74.88	70.7618	2.2145	68.25	2.5118	1.1212	20-30%
PPL/SL%	23.35-30.98	27.0720	1.7871	30.00	-2.9298	-1.6196	10%
WDF/WAF%	52.38-75.00	61.1797	5.3731	58.62	2.5597	0.4713	60-70%
WH/LH%	59.63-71.62	66.5188	3.3731	65.83	0.6888	0.2009	80-90%
HH/LH%	51.16-60.00	55.8555	3.0645	58.33	-2.4745	-0.7992	40-50%
LS/LH%	32.53-39.70	36.51674	1.6110	35.83	0.6867	0.4193	70%

TABLE—2. *Concluded.*

	150 specimens of *A. tenuispinis* Day			Type specimen of *A. sataparanus* Chaudhuri			
	Range	X	S	X	$\bar{X}$—x	t	p
ED/LH%	12.50-17.64	15.4134	1.1514	16.66	-1.2466	-1.0759	30%
INW/LH%	13.68-19.11	16.2041	1.1271	16.66	-0.4559	-0.3599	70%
IOW/LH%	43.55-53.70	50.9695	2.5706	55.83	-4.8605	-1.8704	10%
ED/LS%	32.35-47.62	42.2586	3.1125	46.51	-4.2514	-1.3508	20%
INW/LS%	38.46-55.55	44.5311	3.8001	46,51	-1.9789	-0.5152	60%
INW/WS%	40.91-62.79	49.5476	5.1681	50.00	-0.4524	-0.0865	More than 99%
ED/IOW%	25.80-39.86	30.6939	2.2450	29.85	0.8439	0.37129	70%
WPMT/ LPMT%	20.00-37.50	25.6848	3.9990	28.83	-3.1452	-0.7379	40-50%
HCPD/ LCPD%	41.34-68.00	55.2386	4.7068	57.14	-1.9014	-0.3999	70%
PFR	10.00-12.00	11.2325	0.5272	11.00	0.2325	0.4360	70%
AFR	17.00-19.00	17.9534	0.5324	18.00	-0.0466	-0.0865	More than 99%
GR	12.00-15.00	13.5348	0.6672	14.00	-0.4652	-0.6892	50%

AFR : anal fin ray counts ; ED : eye diameter ; GR : Gill raker ; HB : height of body ; HCPD : height of caudal peduncle ; HH : height of head ; INW : inter-nostril width ; IOW : inter-orbital width ; LCPD : length of caudal peduncle ; LH : Length of head ; LPMT : length of premaxillary band of teeth ; LS : length of snout ; P : observed probabilities for confidence intervals given in Simpson *et al.* (1960), Appendix Tab. II, for the corresponding calculated 't' value, PAL : pre-anal length ; PDL : predorsal length ; PFR : pectoral fin ray counts ; PPL : pre-pectoral length ; S : standard deviation of the sample mean ; SL : standard length ; TL : total length ; WAF : width of anal fin base ; WDF : width of dorsal fin base ; WH : width of head ; WPMT : width of premaxillary band of teeth ; $\bar{X}$: arithmetic mean of the various observation ; X : single observation.

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