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THE PEARL FISH *CARAPUS MARGARITIFERAE* (RENDAHL), A NEW RECORD FOR THE INDIAN WATERS*

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IN a recent communication (Mahadevan 1959) attention was drawn to an interesting association of the pearl fish *Fierasfer homei* (Richardson) with the wing mussel *Pteria* sp.,** found in the Gulf of Mannar off Tuticorin. A re-examination of the pearl fish showed that the position of the vent is at the base of a line just behind pectoral origin and the origin of the dorsal is in a line above the middle of pectoral (Plate, 1, Fig. C). Further, other distinguishing characters of this fish described elsewhere in this account justified the earlier doubts (Mahadevan *op. cit.*) of the likelihood of its coming under *Carapus* (syn : *Fierasfer*) *margaritiferae* (Rendahl), a brief account of which is given by de Beaufort (1951) based on specimens collected from Pulu Punga, Pulu Missa, coast of Flores and Cape Jaubert N. W. Australia, mostly in association with the wing mussel or sometimes with a holothurian. Smith (1955), while reviewing the family Carapidae has mentioned the occurrence of *C. margaritiferae* in South African waters also where three specimens, 75-93 mm. in length, were 'taken from inside clams at Durban.' The data on two specimens of 63.5 and 85.0 mm. examined by the present author indicate differences in some of the characteristics as compared with the South African form described by Smith. In order to facilitate comparison of the Indian form with others occurring elsewhere a detailed description of the material in hand is given below.

DESCRIPTION

Head and body compressed from side to side ; dorsal profile rises to just behind occiput from whence it gradually slopes to end of tail ; ventral profile conspicuously concave from below gill opening to vertically below 22nd dorsal ray from whence it gradually rises to caudal tip ; sides of the body show from behind head to tail V-shaped myotomes pointed anteriorly ; abdominal wall translucent, showing the disposition of the alimentary canal and the air-bladder ; eye without free orbital margin ; interorbital space convex ; mouth oblique ; maxillary with free margin reaching far behind hind border of eye ; jaws subequal ; a pair of recurved caniniform teeth on each side of symphysis of upper and lower jaw ; maxillary and mandibular teeth bluntly conical with tips worn out, especially in the larger teeth ; vomer knob-like projecting into the oral cavity and with a number of blunt conical teeth (Fig. 1, A) ; those in the centre being relatively large ; similar rows of smaller teeth present in the palatine ; pectoral well developed with 16 rays on either side ; dorsal originates in a line behind anal but above pectoral middle ; anal fin deeper

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** Vide Rao, K. V. on page 259 of this journal.

than height of dorsal, former with 171 and latter with 162 rays ; vent distinctly behind pectoral origin (Plate 1, Fig. D) ; vertebrae 89, of which anterior 8 appear to represent precaudal vertebrae ; (a check of the latter could not be made as the alizarin stained

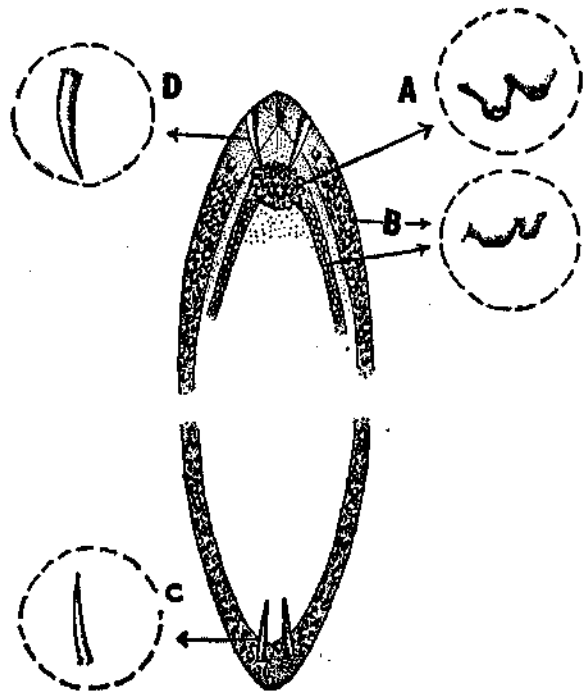

FIG. 1. Diagram showing the dentition of *C. margaritiferae*. A. Vomerine teeth. B. Maxillary and Palatine teeth. C. Caniniform teeth in lower jaw. D. Caniniform teeth in upper jaw.

material is not available now) first dorsal ray appears opposite the fifth vertebra ; lower limb of outer arch of gill carries three elongate gill-rakers of almost same length, being more than twice length of longest gill filament.

Table 1, gives details of body proportions and to facilitate comparison the available data on the South African form as given by Smith (1955) is also included.

REMARKS

From the foregoing account and the table 1 it would appear that the percentage of measurement of the different characters studied are uniformly greater for the Indian form than those from South Africa, although the specimens are more or less of the same size. Smith (1955) mentions the pectoral fin ray count as ' about 15.' There being no data regarding the dorsal and anal fin ray count for his specimens it is not possible to attempt any detailed comparison. Since we are likely to find differences in the body proportions in this fish as growth advances it is hoped that the data presented here will be useful to ascertain the extent of variations in such characteristics as and when material becomes available.

TABLE 1

Characters observed	*Locality*				
	Gulf of Mannar				Durban (S. Africa)
	Specimen A		Specimen B		
	mm.	%	mm.	%	%
Total length ..	85	100	63.5	100	100
Length of head ..	—	—	8.6	13.4	12.0
Width of head ..	—	—	3.7	5.83	4.3
Snout ..	—	—	1.9	2.99	2.1
Diameter of eye ..	2.0	2.3	1.7	2.68	2.2
Interorbital ..	—	—	1.8	2.83	1.6
Length of maxilla (snout to the angle of the mouth) ..	—	—	5.3	8.35	7.5
Depth of the body at anal..	10.0	11.7	7.5	11.81	10.0
Width of the body at the pectoral origin ..	—	—	3.2	5.04	3.2
Width of the body at the anterior part of the tail ..	—	—	2.0	3.14	—
Length of the pectoral ..	—	—	4.4	6.93	6.50
Predorsal ..	—	—	11.4	17.95	17.0
Prepectoral ..	—	—	8.6	13.50	11.50
Preanal ..	—	—	9.3	14.65	13.0
Greatest height of dorsal	—	—	0.7	1.10	1.40
Greatest height of anal ..	—	—	1.7	2.68	3.0

(de Beaufort (1951) gives the measurements as Height 9.4—11.6 in total length. Breadth 2.2—2.4 in height. Head 7.6—9 : Eye 3.6—4.4. Length of one fish 92 mm.)

The distribution, at present, of *C. margaritiferae* suggests the possibility of other species of the same genus also occurring in the Indian waters. Smith (1955) recognised 8 species from the Western Indian Ocean viz : *C. margaritiferae* (Rendahl), *C. parvipinnis* (Kaup), *C. neglectus* (Peters), *C. homei* (Richardson), *C. reedi*, *C. pindae*, *C. cinereus* and *C. mayottae*, the last four having been recorded by him as new to science. Of the accounts of *Fierasfer homei* (=*C. homei*) given by Day (1889), Mukerji (1932) and Munro (1955) from the Indo-Ceylon waters, the form described by Mukerji (Plate 1, Fig. B) appears to be more akin to the typical *C. homei*. Day's figure of *C. homei* shows the origin of the anal to be distinctly behind the base of the pectoral. However, the dorsal has been shown as originating in a line behind the tip of pectoral which condition is typical of *C. homei*. It is felt that a re-examination of Day's material is necessary.

Species of *Carapus* are known to be in association with echinoderms and molluscs and it is interesting to note that *C. margaritiferae* has been collected from a bivalve of the genus *Pteria* from the East-Indies as well as from the Gulf of Mannar. It may be mentioned here that during the pearl fishery off Tuticorin in 1957 Mr. Dumas, a French diver collected five specimens of the bivalve *Pteria* of which four specimens contained one each of the presently described *C. margaritiferae*. More recently Dr. Bascheri Salvadori, F.A.O. diving expert informed me that during the 1958-59

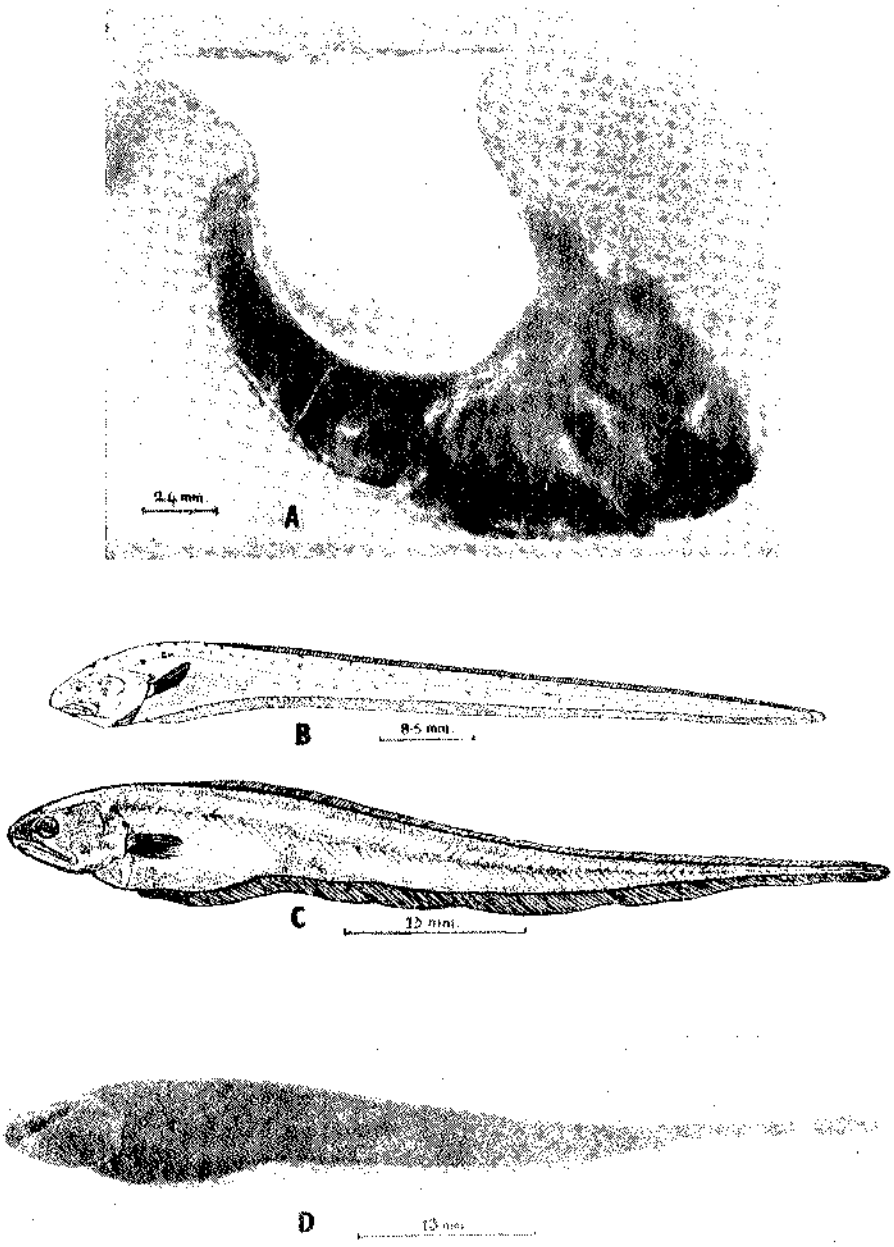

Plate I A. Photograph of *Pteria sp.* B. *Carapus homei* Rich. (figure after Mukerji). C. *Carapus margaritiferae* (Rendahl) D. *Carapus margaritiferae* (Rendahl) photograph.

pearl fishing he had collected five specimens of the same bivalve from the same locality, of which three contained one specimen each of *C. margaritiferae*.

The shell of the wing mussel is reproduced here in Plate 1, Fig. A to enable other workers to identify the form and obtain the pearl fish harboured in them.

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