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A NEW SPECIES OF *ATROBUCCA* (PISCES : SCIAENIDAE) FROM THE ARABIAN SEA

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ABSTRACT

A new species of the genus *Atrobucca* Chu, Lo & Wu, 1963, belonging to the family Sciaenidae, is described based on a unique specimen collected from off Bombay, in the Arabian Sea, by the bottom trawl operated by the Polish vessel M. T. *Muraena* at a depth of 60 m. This sciaenid probably lives considerably deeper in the benthic realm than from which the holotype was collected.

INTRODUCTION

As a result of trawling in the upper continental slope in the Arabian Sea off the north western coast of India by the Polish vessel M. T. *Muraena*, a unique specimen of an undescribed species of *Atrobucca*, belonging to the family Sciaenidae, was taken. Taxonomic recognition may be warranted when additional material is available but it does not seem prudent to await further specimens. The objectives of this paper are to describe the new species and to demonstrate that the species probably lives considerably deeper in the benthic realm perhaps off the continental shelf beyond the 100 fm (= 160 m) line, than from which the holotype was collected. I have great pleasure in naming this species after Colonel A. Alcock, the author of a most commendable review of the deepwater fishes of our region.

Sub-family OTOLITHINAE

Atrobucca alcocki sp. nov.

Material : HOLOTYPE (Fig. 1) a ♂ specimen, 154 mm in standard length, collected from the Arabian Sea off Bombay, *ca* 60 m by the bottom trawl, July-August, 1977, Zoological Survey of India regd. no. F. 7591/2.

DESCRIPTION

Depth of body 39.0 mm (25.3 % SL), length of head 58.5 mm (38.0% SL), snout length 13.0 mm (8.4% SL., 22.2% head), eye-diameter 14.5 mm (9.4% SL., 24.9% head), interorbital width 12.0 mm (7.8% SL., 20.5% head), length of upper jaw 24.5 mm (15.9% SL., 41.9% head), length of lower jaw 28.0 mm (18.1% SL., 47.9% head) and length of gill-filaments 8.5 mm (5.5% SL., 58.6% eye).

Body elongate, moderately laterally compressed. Snout blunt, not projecting ; mouth terminal, lower jaw with a moderate mental process ; maxilla ending below posterior part of iris ; gape at an angle of about 30° with the horizontal. Preopercular margin crenulate, opercular spines distinct. Interdistance between origin of pelvic fin and vent considerably less than head length.

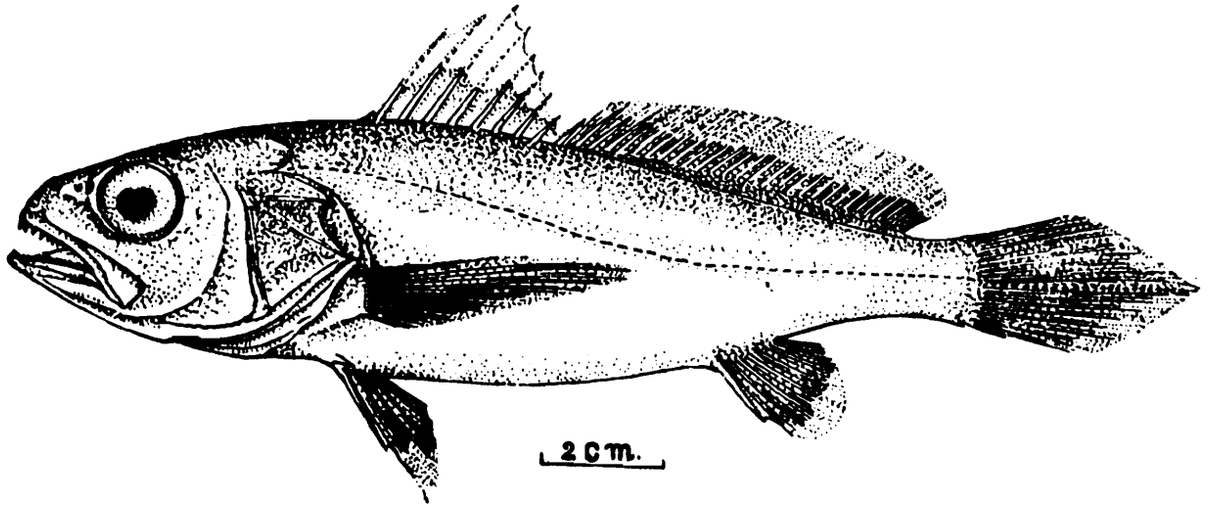

Fig. 1. *Atrobucca alcocki*, new species, holotype, 154 mm SL from off Bombay

Pores on snout : no upper found ; five marginal, the median above the edge of the rostral flap, inner pair under edge, lateral pair at edge in a very slight embayment. Three pairs of mental pores, the first minute, on front of chin separated by the symphysis of lower jaw ; the others small but conspicuous —such an arrangement has been referred to as the "*Argyrosomus*-form" or "Six-pored form" (Chu, Lo & Wu, 1963).

Teeth sharply differentiated in size in both jaws ; teeth of upper jaw with an outer series of sharp, needle-like, well-spaced enlarged teeth and a narrow inner band of minute teeth ; lower jaw with a group of strong teeth in front and an inner row of strong spaced teeth posteriorly with an irregular row of tiny teeth between and outside them.

Gill-rakers 4 + 1 + 10, lanceolate, on first arch.

Most of the scales are lost, but some cycloids remain on the snout and under the eye and some finely ctenoid on body.

Dorsal fin IX. I. 29, no deep notch between spinous and soft parts ; dorsal fin spines weak, the first minute. Anal fin II 7, 1st spine minute, 2nd spine moderate, 13.5 mm (8.7% SL). Pectoral fin long, *ca* 45.0 mm (*ca* 29.2% SL). Caudal fin (?) rhomboid.

Swim bladder carrot-shaped, with 30 pairs of appendages arising from the bladder along the whole length, all but the last pair arborescent, ramifying in a wedge of tissue flanking the bladder on eaeh side. The two anterior branch profusely between the bladder and the transverse septum. Behind these each appendage is first divided into well-developed dorsal and ventral limbs, the ventral with its axis so turned that its branches are directed anteriorly ; the dorsal limbs have their branches directed posteriorly, together forming an elaborate filgree pattern on the dorsolateral wall of the bladder, and near the posterior end nearly meet their fellows of the other side. The bladder ends just before the vent. The specimen is an immature male, with sonific muscles.

Colour : in alcohol, drab grey above, paler

below ; symphysis of lower jaw dusky. Pectoral fin dusky ; pelvic fin pale. Lining of mouth speckled, branchial cavity dusky, peritoneum jet black.

RELATIONSHIPS

Current concepts of sciaenid classification are largely based on morphology of the swim bladder, otoliths (sagitta), and snout (rostral) and mandibular (mental) pores and/or barbels (Chu, Lo & Wu, 1963 ; Trewavas, 1962, 1977 ; Mohan, 1972 ; Chao, 1978). The species described above as new is referable to the genus *Atrobucca* primarily because of the similarity of the swim bladder structure. Its inclusion is further supported by other features apparent in the key to the genera of the tribe Otolithini drawn up by Trewavas (1977). The genus *Atrobucca* was established by Chu, Lo & Wu (1963) for the reception of *Sciaena nibe* Jordan & Thompson, 1911. The genus remained monotypic until Talwar & Sathiarajan (1975) added a new species *Atrobucca trewavasae* from the Bay of Bengal, and transferred (at Dr. E Trewavas' prompting) *Sciaena marleyi* Norman, 1922, from the Western Indian Ocean, to this genus. All the three species are caught offshore in the Indo-West Pacific.

The new species differs from both *Atrobucca nibe* (Jordan & Thompson) and *A. marleyi* (Norman) in the conspicuously larger eye (9.4 vs 7.2-8.3% SL), longer head (38.0 vs 32.5-34.3% SL), narrower interorbital width (20.5 vs 23.5-27.7% head), shorter lower jow (47.9 vs 51.4-56.0% head), and longer gill-filaments (5.5 vs 3.0-4.2%SL ; 58.6 vs 36.2-52.0% eye-diameter). The new species differs from *A. trewavasae* Talwar & Sathiarajan most obviously in the higher number of dorsal soft rays (29 vs 24-26) and the relatively larger eye (24.9 vs 17.0-20.0% head ; 9.4 vs 7.1-7.9% SL). Further, the new species has a slightly longer pectoral fin (*ca* 29.2 vs 25.5-28.5% SL) than the other three species of *Atrobucca*.

The new species has long gill-filaments (5.5% SL) and in this feature there is a striking resemblance with *A. trewavasae* (5.5-6.4% SL) as opposed to *A. nibe* and *A. marleyi* (3.0-4.2% SL). The lengths of both jaws are a lower percentage of the length of head in both *A. trewavasae* and *A. alcocki* but these measurements compare closely with those of *A. marleyi* and *A. nibe*. Trewavas (1977) concluded that it is the postocular part of the head that is enlarged in *A. trewavasae*, that is the part including the branchial chamber, and this is true also for *A. alcocki*. She surmised that the enlargement of the branchial chamber in *A. trewavasae* is the functional explanation of this striking difference and concluded that the greatly increased respiratory surface of this deep-water species is probably an adaptation to lower oxygen concentration. Her contention supports our suspicion that this very distinctive new species inhabits the deep water off the continental shelf beyond the 100 fm (=160 m) line.

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