

THE GENERIC RELATIONSHIP AND IDENTITY OF *SCIAENA*
OSSEUS DAY, 1876 [PISCES : SCIAENIDAE]

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INTRODUCTION

Sciaena osseus was described and figured by Day (1876) from the Malabar coast of India and placed in the group 'No enlarged inner row of teeth in the lower jaw (*Johnius*)'.

Jordan and Starks (1917) listed *Bola ossea* (Day) from Ceylon and remarked 'The inner row of mandibular teeth are enlarged (Day places the species in "*Johnius*" a group without enlarged teeth ; his specimen was, however, very much larger than ours)'.

Fowler (1933) described *Johnius osseus* (Day) from Singapore on the basis of two specimens, 153 mm. and 168 mm. in length and was the first worker to give the gill-raker number, 2+7 of this species. These specimens were earlier (1931) listed by him under the name *Johnius cantori* Bleeker.

Weber and de Beaufort (1936) considered *Johnius osseus* as one of the doubtful species as to its synonymy and locality in the Indo-Australian region and surmised 'The presence of the continental Indian *J. osseus* (Day) at Singapore, at the western border of our faunistic province, is dubious as Fowler, who registered it from Singapore, says that it would seem that the specimen he originally described under the name *Johnius cantori* Bleeker, more closely approaches *Johnius maculatus* Bloch. It is an error when Jordan and Starks say : The inner row of mandibular teeth are enlarged'.

Fowler (1937) gave brief notes of four examples of *Johnius osseus* (Day) from Siam and stated 'These specimens seem to agree with Day's account. They differ only in that the second anal spine is longer and the pectoral dark or dusky'. Fowler (*l.c.*) figured an example and gave the lower gill-raker number as 10.

Herre (1937) recorded the species from Sumatra but gave no description of his specimen.

Munro (1955) described *Johnius osseus* (Day) from Ceylon with 2+7 gill-rakers. Misra (1959) listed *Johnius osseus* (Day) as one of the common commercial fishes of India and also gave 2+7 gill-rakers for the species.

Menon (1956) and Khalaf (1961) described *Johnius osseus* (Day) from Iraq but did not state the gill-raker number of their specimens.

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The above remarks by Weber and de Beaufort (*l.c.*) necessitated the need for an enquiry into the taxonomic position and specific identity of *Sciaena osseus* Day and in these circumstances it was essential to examine the type of the species. Fortunately, the figured syntype of *Sciaena osseus* Day corresponding to Day's plate 46, figure 3 is available in the National Zoological Collections with the Zoological Survey of India. Examination of the type revealed the species to have a significantly higher gill-raker number than the '*Johnius osseus*' specimens from the East Indies. Further, the examination of the type shows that it does not belong in the genera *Sciaena* Linnaeus or *Johnius* Bloch but is referable to the genus *Wak* Lin, 1938. Discussion of this identification and the generic relationship of *Sciaena osseus* Day follows.

SYSTEMATIC ACCOUNT

The type of *Sciaena osseus* Day has a terminal mouth with differentiated teeth in both jaws and a hammer-shaped Otolithine gas-bladder. This makes it evident that the assignment of *osseus* to either *Sciaena* or *Johnius* to which it was assigned by earlier workers, is most inappropriate. The species is, therefore, placed in the genus *Wak* Lin, 1938.

The type species of *Sciaena* namely *Sciaena umbra* Linnaeus, 1758 has a Sciaenine gas-bladder (*vide* Trewavas, 1962); the genus *Johnius* as is now understood (*vide* Trewavas, 1964) is used to include species with a hammer-shaped Otolithine gas-bladder, a subterminal mouth with undifferentiated teeth in the lower jaw; and *Wak* Lin is the substitute name for *Bola* Hamilton, 1822 (*vide* Lin, 1938).

Wak osseus (Day) comb. nov.

Sciaena osseus, Day, 1876, *Fish. India*, p. 193, pl. 46, fig. 3 (type loc. : Malabar coast).

Sciaena osseus, Day, 1889, *Fauna Brit. India Fish.*, 2, p. 193.

Bola ossea, Jordan and Starks, 1917, *Ann. Carnegie Mus.*, 11, p. 453.

Sciaena osseus, Jacob, 1948, *J. Bombay nat. Hist. Soc.*, 48 (1), p. 122 (name only).

Johnius osseus, Munro, 1955, *Marine and Freshwater Fishes of Ceylon*, p. 154, pl. 30, fig. 450.

Johnius osseus, Menon, 1956, *Rec. Indian Mus.*, 54, p. 150 (name only).

Johnius osseus, Misra, 1959, *Rec. Indian Mus.*, 57, p. 270.

Johnius osseus, Khalaf, 1961, *Fishes of Iraq*, p. 94.

Johnius osseus, Menon and Yazdani, 1963, *Rec. zool. Surv. India*, 61, p. 144.

Material : (Type specimen of *Sciaena osseus* Day).

No. 1340. 1 ex., 138 mm., in standard length, Malabar Coast of India, coll. Dr. F. Day; original of pl. 46, fig. 3—Syntype now designated Lectotype,

Meristic formulae : Dorsal X.I, 25 ; anal II, 7 ; left pectoral (damaged) 18, right pectoral (damaged) 18 ; pored lateral line scales 49 ; scales in the transverse series 6/15 ; gill-rakers on first arch 8+1+15, short and spinulose.

Measurements (in mm.) : Standard length 138 ; head length 41.5 ; maxillary length 17.5 ; lower jaw length 18.5 ; eye diameter 9.0 ; snout length 10.5 ; interorbital width 12.0 ; postorbital length 23.0 ; body depth 35.0 ; second anal spine 11.0.

Description : Body moderately compressed. Head cavernous ; snout obtuse, not inflated, the dorsal profile above eyes slightly concave. Mouth terminal, upper jaw scarcely overlapping lower jaw. Cleft of mouth slightly oblique, anterior extremity of lower jaw on level with lower edge of eye ; maxilla extends to posterior margin of orbit. Preopercle margin denticulate. Post-temporal flap serrated. Pores—three small pores on snout and five at edge of the slightly lobate rostral flap. Two small central pores in common pit below mandibular symphysis and two more large ones on either side behind this. Teeth—villiform, subequal, in both jaws ; outer premaxillary row enlarged but not as canines, and inner mandibular row also slightly enlarged. Scales—cycloid on opercles, anterior half of interorbital region and breast ; elsewhere ctenoid. Fins—first dorsal spine very short, second and third equal, fourth longest, slightly higher than posterior rays. Pectoral (damaged) as long as head behind middle of eyes. Second anal spine weak, half of first anal ray ; anal originates below 11th dorsal ray. Caudal (damaged) wedge-shaped. Gas-bladder—anterior end of bladder laterally expanded in front of a slight stranguation, posterior end tapering to a narrow tube extending to base of anal spine. 14 arborescent lateral diverticula on right side and 13 on left side of bladder, first appendage piercing septum transversum and branching among the upper pharyngeal muscles ; last appendage simple and parallel to tubular end of the bladder. Lateral expansion of bladder fits into a pocket above base of pectoral fin where there is a gap in the lateral body muscles. No sonific muscles. Sex not known as gonads removed. Colour in alcohol—Brownish grey along the back becoming dull white on sides and below. Opercle slightly dusky. Spinous dorsal dusky ; outer edges of pectoral, ventral, anal and caudal with brown dots. Inner border of operculum dusky.

Distribution : Malabar Coast of India, Ceylon and Iraq.

Remarks : Menon and Yazdani (1963) referred Day's figured type corresponding to Plate 46, figure 3 as the holotype of *Sciaena osseus* Day. Day (1876) did not designate types but nevertheless he appears to have attached more importance to those specimens which he figured. Since it is not definite that the original description of *osseus* was based only on a single specimen, the figured syntype is designated as the lectotype.

DISCUSSION

The author is uncertain about the specific status of Munro's (1955) and Misra's (1959) *Johnius osseus* as they state 2+7 gill-rakers for the species. This is certainly an inadvertent error as these authors obviously compiled their notes from Fowler's (1933) account of *osseus*.

The specific identity of the *Johnius osseus* specimens with 2+7-10 gill-rakers from the East Indies is most uncertain but they most likely are identical with

Johnius cantori Bleeker. This species was described by Bleeker (1874) on the basis of Cantor's (1849) *Johnius maculatus* variety from Pinang without having seen the type.

Day (1876) examined the holotype of *Johnius cantori* Bleeker on the British Museum but refrained from commenting on its taxonomic status. Fowler (1933), followed by Weber and de Beaufort (1936), relegated *Johnius cantori* Bleeker to the synonymy of *Johnius maculatus* Schneider, where it has remained since. Weber and de Beaufort (*l.c.*) noted in their discussion of *Johnius maculatus* that 'This series of errors is continued by Fowler, who compiled from Day's version his diagnosis of *Johnius maculatus* Bloch, to which he also added *Johnius cantori* Bleeker as synonym. After all the last named species seems still to be questionable and its identity with *maculatus* doubtful'.

A study of Day's (1876) material and topotypes collected by Menon (1961), of *Nibeia maculatus* (Schneider) shows the species to have a carrot-shaped Otolithine gas-bladder as illustrated by Dutt and Thankam (1968, fig. 6), whereas in the type of *Johnius cantori* Bleeker, 'the form of the air vessel and the number of lateral appendages resemble those of *Johnius belengeri*' (*vide* Cantor, 1849, p. 1051) i.e. a hammer-shaped Otolithine type as illustrated by Dutt and Thankam (1968, fig. 4). There is therefore, little doubt that Cantor's (*l.c.*) *Johnius maculatus* variety is not identical with the true *maculatus* so that, notwithstanding its present taxonomic status, *Johnius cantori* Bleeker has to be placed separately and not in the synonymy of *Nibeia maculatus* (Schneider) as usually has been done hitherto. It is impossible, for the moment, to clear the status of *osseus* with 2+7 gill-rakers unless more details of the holotype of *Johnius cantori* Bleeker are known. If, however, it is shown that the *osseus* specimens with 2+7 gill-rakers are not identical with *Johnius cantori* Bleeker, then they would require a new specific name.

SUMMARY

Sciaena osseus was described by Day (1876) from the Malabar Coast of India. The lack of gill-raker count in the original description led to the erroneous crediting of 2+7 gill-rakers to this species. Discussion of this identification and the generic relationship of *Sciaena osseus* Day with a redescription of the lectotype is given in this paper.

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