

SYSTEMATIC STATUS AND IDENTITY OF *OTOLITHUS*
VOGLERI BLEEKER, 1853 (PISCES : SCIAENIDAE)

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(With 1 Text-figure)

INTRODUCTION

During a study on the sciaenid fishes of the Hooghly estuary (north-east coast of India), several specimens referable to *Otolithus vogleri* Bleeker, 1853 and *Corvina sina* Cuvier, 1830 were collected. A study of the pertinent literature, however, indicates that considerable confusion exists about the status and identity of the former species.

Bleeker (1853) described *Otolithus vogleri* for the first time from Sumatra. This species was subsequently reported from other parts of the Indo-west Pacific (Day, 1876 ; Seale, 1910 ; Zugmayer, 1913 ; Fowler, 1931 ; Hardenberg, 1931) and the Western Indian Ocean (Norman, 1922 ; Barnard, 1927). Day (1876) described and figured both *Sciaena vogleri* (Bleeker) and *Sciaena sina* (Cuvier) from Indian waters. Barnard (1927) gave a description of *Otolithus vogleri* Bleeker from Delagoa Bay (South Africa) and then commented that "From Day's (*Fish. Ind.*, p. 186) descriptions of the two species it is difficult to find any specific differences, though the figure of *sina* shows a rather more prominent or inflated snout" but refrained from combining the two species. Fowler (1933) while describing *Johnius sina* (Cuvier) relegated *Otolithus vogleri* Bleeker to the synonymy of this species and this synonymisation was followed by subsequent workers (Weber & de Beaufort, 1936 ; Herre, 1953 ; Smith, 1953). Matsu-
bara (1937) erroneously treated *Corvina sina* Cuvier, 1830 as a synonym of *Nibea argentata* (Houttuyn, 1782) ; the species has, however, been shown to be even generically distinct (*vide* Chu, Lo & Wu, 1963).

A study of the available material (including Days' (1876) figured examples) of both *vogleri* Bleeker and *sina* Cuvier, however, indicates that both these species are congeneric but specifically distinct. We are in agreement with Chu, Lo & Wu (1963) in their treatment of *sina* Cuvier under the genus *Wak* Lin, 1938. Dutt & Thankam (1968) erroneously treated *sina* Cuvier under *Nibea* Jordan & Thompson though this species has a hammer-shaped otolithine gas-bladder. Descriptions of both these species are given below to facilitate comparison.

SYSTEMATIC ACCOUNT

a. *Wak vogleri* (Bleeker, 1853)

1853. *Otolithus vogleri* Bleeker, *Nat. Tijdschr. Nederland Indie*, 4 : 253, (type loc : Sumatra).
 1860. *Sciaena vogleri* : Günther, *Cat. Fish. Brit. Mus.*, 2 : 294.
 1876. *Sciaena vogleri* : Day, *Fish. India* : 186, pl. 45, fig. 1.
 1877. *Otolithes vogleri* : Bleeker, *Atl. Ichth.*, 9 : pl. 386, fig. 4.
 1908. *Sciaena parva* Gilchrist & Thompson, *Ann. S. African Mus.*, 6 : 183 (South Head Tugela River).
 1922. *Sciaena marleyi* Norman, *Ann. Mag. nat. Hist.*, (9) 9 : 319, (Natal).
 1927. *Sciaena vogleri* : Barnard, *Ann. S. African Mus.*, 21 : 571.
 1933. *Johnius sina* Fowler (nec. Cuvier) (partim), *Bull. U. S. natn. Mus.*, 100, 12 : 388.
 1936. *Pseudosciaena sina* : Weber & de Beaufort, *Fishes Indo-Australian Archipelago*, 7 : 513.
 1948. *Sciaena sina* : Pillay, *J. Bombay nat. Hist. Soc.*, 48 (1) : 53.
 1953. *Johnius sina* : Smith, *Sea fishes of Southern Africa* : 226.
 1955. *Johnius sina* : Munro (partim), *Marine and Freshwater Fishes Ceylon* : 155.
 1959. *Pseudosciaena sina* : Misra (partim). *Rec. Indian Mus.*, 57 : 268.
 1961. *Pseudosciaena sina* : Khalaf, *Marine and Freshwater Fishes Iraq* : 96.
 1963. *Wak sina* : Chu, Lo & Wu, *Fish. China* : 32, fig. 17.
 1968. *Nibea sina* : Dutt & Thankam (partim), *J. Bombay nat. Hist. Soc.*, 65 (2) : 341.

D X.1+26 - 29 ; A 11+7 ; P 17-19 ; L.l. 46-51 ; L.tr. 5-6/11-13 ; G.R. 5-6+10-12.

Depth of body 30.1-33.7, length of head 31.4-34.4, eye diameter 8.8-11.3, length of snout 8.7-11.7, interorbital width 7.4-9.0, post-orbital distance 15.3-17.8, length of lower jaw 10.2-12.7, length of maxilla 13.9-15.5, length of pectoral fin 22.3-25.8, length of pelvic fin 19.7-22.6, base of second dorsal fin 36.0-41.7, base of anal fin 8.7-11.7, length of second anal spine 9.2-12.8, depth of caudal peduncle 9.6-12.3 ; all in percentage of standard length.

Body oblong, not much compressed. Bones of head normal. Snout bluntly pointed, rostral flap slightly lobed. Mouth terminal, oblique ; maxilla extends to the middle of eye. Preopercle crenulate. Pores—snout with three pores on top and a large median pore at the free edge of skin. Five pores on mandibular symphysis, the median pore with two distinct pits ('False five-pored' form). Teeth—villiform, outer row of upper and inner row of lower jaw enlarged, not as canines. Scales—on head cycloid, on body ctenoid ; base of soft dorsal scaly. Fins—dorsal spines moderate, 3rd and 4th longest. Anal originates opposite 11th-12th dorsal ray ; second anal spine moderate, half as long as first ray. Caudal wedge-shaped.

Gas-bladder.—Hammer-shaped otolithine form with 15 pairs of arborescent diverticula. Sonific muscles present in males only. Colour in alcohol—greyish or brownish above, silvery below. Spinous dorsal blackish, soft dorsal and caudal grey. A blackish spot present on pectoral axil. Opercle with a diffuse blotch.

Distribution.—South Africa, Iraq, India, Ceylon, the East Indies and China.

Material Examined.—

990. 1ex., 210 mm. SL. ; Bombay ; Dr. F. Day (Original of pl. 44, fig. 2).

F 6146/2. 4exs, 70-104 mm. S. L. ; Hooghly ; *Dr. Bhusari*.

F 6147/2. 1ex., 113 mm. S. L. ; Diamond Harbour ; 16.i.69 ; *A. Joglekar*.

F 6148/2. 4exs, 89-136 mm S. L. ; Port Canning ; March '69 ; *A. Joglekar*.

F 6149/2. 4exs, 91-97 mm. S. L. ; Diamond Harbour ; March '69 ; *A. Joglekar*.

b. *Wak sina* (Cuvier, 1830)

1830. *Corvina sina* Cuvier, *Hist. nat. Poiss.*, 5 : 122, (type loc : Pondicherry, Malabar, Japan).

1860. *Sciaena sina* : Günther, *Cat. Fish. Brit. Mus.*, 2 : 292.

1865. *Sciaena sina* : Day (*nec.* Day, 1876), *Fish. Malabar* : 52.

1925. *Johnius sina* : Fowler, *Proc. : Acad. natn. Sci. Philad.* : 247.

1933. *Johnius sina* : Fowler (*partim*), *Bull. U. S. natn. Mus.*, 100, 12 : 388.

1955. *Johnius sina* : Munro (*partim*), *Marine and Freshwater Fishes Ceylon* : 155.

1959. *Pseudosciaena sina* : Misra (*partim*), *Rec. Indian Mus.*, 57 : 268.

1968. *Nibea sina* : Dutt & Thankam (*partim*), *J. Bombay. nat. Hist. Soc.*, 62 (2) : 241.

D X .1+28-30 ; A 11+7 ; P 15-17 ; L. l. 48-50 ; L tr. 5-6/9-11 ; G.R. 7-8+16-18.

Depth of body 29.0-32.8, length of head 29.4-32.0, diameter of eye 8.8-10.7, length of snout 7.0-8.3, interorbital width 8.0-9.3, postorbital distance 14.9-16.6, length of lower jaw 10.7-12.9, length of maxilla 14.5-16.4, length of pectoral fin 21.0-24.3, length of pelvic fin 18.2-22.3, base of second dorsal fin 37.6-43.9, base of anal fin 9.6-11.4, length of second anal spine 10.2-12.7, depth of caudal peduncle 7.5-10.4, all in percentages of standard length.

Body oblong, well compressed posteriorly. Bones of head cavernous. Snout blunt, rounded, rostral flap slightly lobed. Mouth terminal, oblique ; maxilla extends to posterior end of pupil. Preopercle denticulate. Pores—no pores on snout ; three pairs on mandibular symphysis, anterior pair most inconspicuous. Teeth-villiform, outer row of upper jaw and inner row of lower jaw enlarged but not as canines. Scales—on head cycloid, on body ctenoid. Fins—dorsal spines weak, 4th longest. Anal originates opposite 13th to 15th dorsal ray ; second anal spine moderate, more than 1/2 length of first ray. Caudal wedge—shaped.

Gas-bladder.—Hammer-shaped otolithine form with 12 pairs of arborescent diverticula. Sonific muscles present in males, absent in females.

Colour in alcohol.—Greyish on back and sides, silvery below. Spinous dorsal dusky, other fins except pelvics grey. Opercle with a diffuse blotch.

Distribution.—South Africa, India, Ceylon, the Philippines and Japan.

Material examined.—

F 6140/2. 2 exs, 93-96 mm. S. L. ; Port Canning ; 10.iii.69 ; A. Joglekar.

F 6141/2. 10 exs, 105-113 mm. S. L. ; Diamond Harbour ; 17.iii.69 ; A. Joglekar.

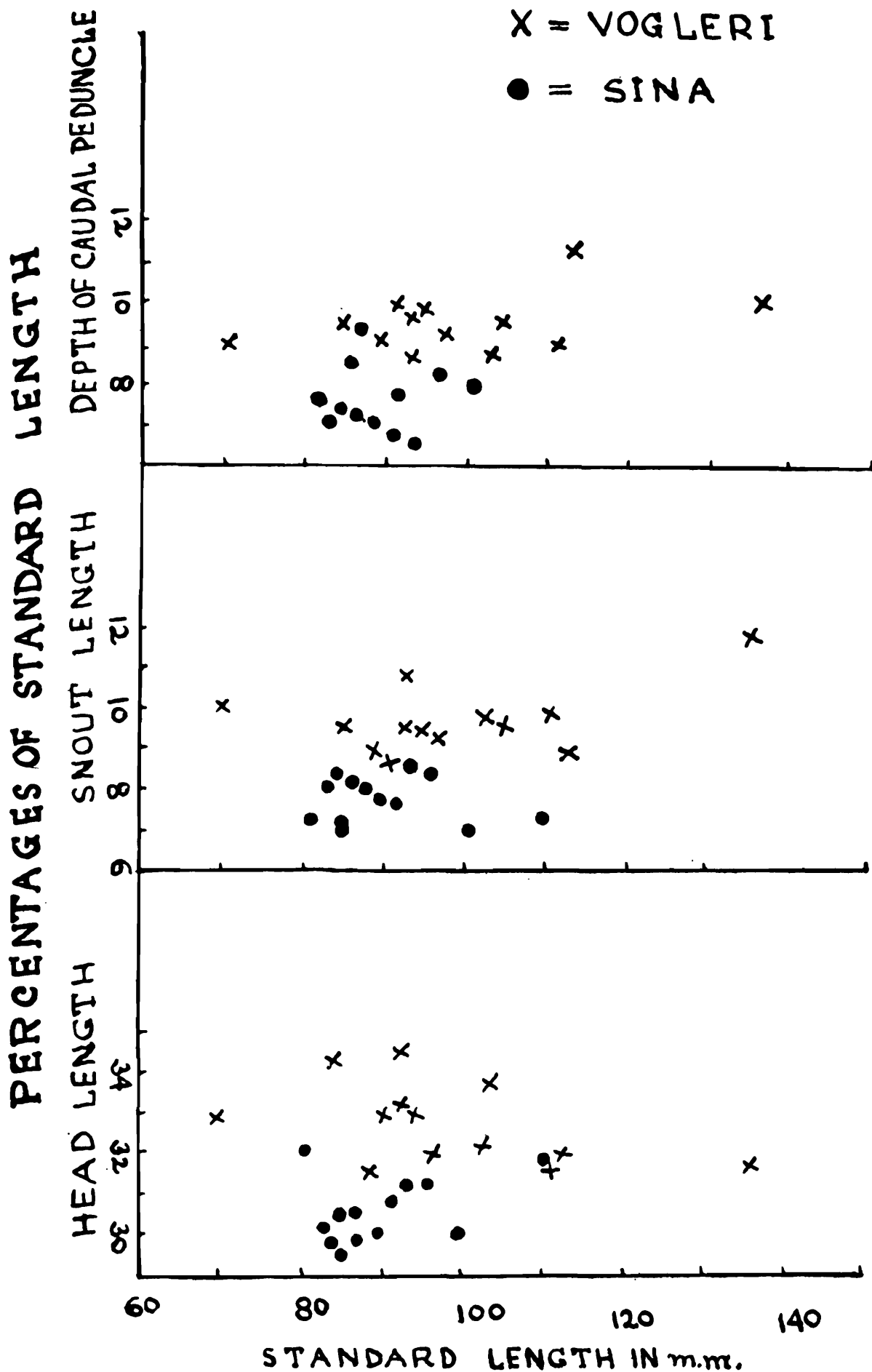
F 6142/2. 1 ex, 110 mm. S. L. ; Sunderbans ; B. S. Bhimachar.

DISCUSSION

As stated earlier, Day (1876) described and figured both *Sciaena sina* (Cuvier) and *Sciaena vogleri* (Bleeker). Both these species were considered identical by Fowler (1933), Weber & de Beaufort (1936), Munro (1955), Misra (1959) and Chu *et al.* (1963). Fortunately, Day's (1876) figured examples corresponding to pl. 44, fig. 2 and pl. 45, fig. 1 of both the species are available in the Zoological Survey of India, for study.

Day's *sina* (Reg. No. 972) may easily be distinguished from his *vogleri* (Reg. No. 990) in having a prominent snout and a ventral mouth (vs. terminal). The sharpest distinction, however, apparently lies in the lesser number of gill-rakers (4+8 vs. 6+12). Day's *vogleri* agrees well with the original description (Bleeker, 1853) and figure (Bleeker, 1877) of the species. It is, however, doubtful whether Day's (l.c.) description of *sina* applies to the true *sina*. Day's figured example of *sina* has five conspicuous mandibular pores and its snout margin is deeply lobed. Besides these, there are several other points of differences between his description and Cuvier's (1830) original description of the species. The identity of Day's *sina* is being studied.

The specimens of *sina* and *vogleri* from the Hooghly estuary agree well with Cuvier's (1830) and Bleeker's (1853) descriptions of the two species respectively. *Wak vogleri* (Bleeker) may be distinguished from *Wak sina* (Cuvier) by the following characters : pores on snout (present vs. absent) ; number of mandibular pores (5 vs. 6) ; nature of head bones (normal vs. cavernous) and lesser number of gill rakers (5-6+10-12 vs. 7-8+16-18). The percentage of several body measurements plotted against standard length (text-fig. I) also indicate notable differences between the two species. We, therefore, conclude that *Wak vogleri* (Bleeker) is specifically distinct from *Wak sina* (Cuvier). The gill-raker counts given by Fowler (1933), Munro (1955), Misra (1959) and Dutt & Thankam (1968) clearly indicate that they were dealing with a composite sample of both these species,



TEXT-FIG. 1.—Percentages of body measurements on Standard length in *Wak vogleri* (Bleeker) and *Wak sina* (Cuvier).

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SUMMARY

Considerable confusion exists about the status and identity of *Otolithes vogleri* Bleeker, 1853 originally described from the East Indies. Fowler (1933) relegated this species to the synonymy of *Corvina sina* Cuvier, 1830 and this synonymisation was followed by subsequent workers (Weber & de Beaufort, 1936 ; Herre, 1953 ; Smith, 1953).

A study of the material collected from the Hooghly estuary, Day's (1876) figured specimens of *vogleri* and *sina* and the pertinent literature, however, indicates that both these species are congeneric but specifically distinct. The generic relationship, synonymy and descriptions of both these species are given in this paper.

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