

***Johnius mannarensis* Mohan (Sciaenidae); a Valid Species Distinct from *J. macropterus* (Bleeker)**

Kunio Sasaki

Department of Biology, Faculty of Science, Kochi University, 2-5-1 Akebono-cho, Kochi 780, Japan

(Received September 27, 1993; in revised form December 11, 1993; accepted December 13, 1993)

Mohan (1969) described *Johnius* (*Johnius*) *mannarensis* from three specimens collected off Pamban, Gulf of Mannar, southeast coast of India, increasing to three the number of species possessing a chin barbel included in the subgenus at that time. Trewavas (1977), however, recognized only two species: *J. amblycephalus* (Bleeker), characterized by cycloid body scales, and *J. macropterus* (Bleeker), with cte-

noid body scales. *J. mannarensis* Mohan, 1969, was placed under the synonymy of the latter, an action subsequently followed by Mohan (1983). In the present paper, however, I recognize *J. mannarensis* as a valid species, distinct from *J. macropterus*.

Mohan (1969) distinguished *J. mannarensis* from *J. macropterus* on the basis of dorsal fin soft ray counts (given as 27 and 30-33, for each species, respectively) and three proportional measurements (head, chin barbel and second anal spine lengths). Reexamination of both species (28 *J. mannarensis*; 40 *J. macropterus*) supports Trewavas' (1977) statement that they cannot be distinguished from one another on body proportions. However, examination of several meristic and morphological characters, including the number of dorsal fin soft rays, demonstrated that the two species are clearly different.

The most obvious difference can be seen in scale size: small in *J. mannarensis*, large in *macropterus*.

**Table 1.** Frequency distributions of meristic characters of *Johnius mannarensis* and *J. macropterus* examined in this study

	Dorsal fin soft rays							<i>n</i>	$\bar{x}$			
	27	28	29	30	31	32	33					
<i>J. mannarensis</i>	5*	11	10	2				28	28.3			
<i>J. macropterus</i>			1	6	17†	12	14	40	31.3			
	Pectoral fin rays							<i>n</i>	$\bar{x}$			
	15	16	17	18	19							
<i>J. mannarensis</i>	1*	7	19	1				28	16.7			
<i>J. macropterus</i>			1	20†	15†			36	18.4			
	Scales above lateral line							<i>n</i>	$\bar{x}$			
	4	5	6	7	8	9						
<i>J. mannarensis</i>			1	14*	11	2		28	7.5			
<i>J. macropterus</i>	2	28†	7					37	5.1			
	Scales below lateral line							<i>n</i>	$\bar{x}$			
	9	10	11	12	13	14	15					
<i>J. mannarensis</i>				5	9	11	3	28	13.4			
<i>J. macropterus</i>	7†	15†	12	2				36	10.3			
	Scales above + below lateral line										<i>n</i>	$\bar{x}$
	14	15	16	17	18	19	20	21	22	23		
<i>J. mannarensis</i>						7	—	15	4	3	28	20.9
<i>J. macropterus</i>	7†	12†	12	4							34	15.4

\*Counts given by Mohan (1969) for the holotype and two paratypes of *J. mannarensis*; †syntypes of *J. macropterus*. For scale counts of *J. mannarensis* types, see text.

Although small overlaps of the counts for each species occur when scales above or below the lateral line are considered separately, the total number (above and below the lateral line) is significantly different: 19–23 ( $\bar{x}=20$ ) for *J. mannarensis*; 14–17 ( $\bar{x}=15.4$ ) for *J. macropterus* (Table 1). Mohan (1969) counted seven scales above and 10–12 scales below the lateral line in *J. mannarensis*. Since the former count, along with the dorsal fin soft ray and pectoral fin ray counts (see Table 1), as well as the scale condition (see below), all conform to *J. mannarensis*, it is likely that Mohan's below lateral line scale counts were erroneous.

Although Mohan (1969) counted only 27 dorsal fin soft rays in *J. mannarensis*, the increased number of specimens now available shows a range of 27–30 ( $\bar{x}=28.3$ ) for the species. Although, as anticipated by Trewavas (1977), the additional material here serves to bridge the gap in the counts between the two species, there remains a clear displacement between them (Table 1). *J. mannarensis* is also characterized by a lower number of pectoral fin rays (15–18,  $\bar{x}=16.7$ , compared with 17–19,  $\bar{x}=18.4$  in *J. macropterus*) (Table 1).

Moreover, scale condition adds to the species' distinctiveness. Head scales are all cycloid in *J. mannarensis*, as described by Mohan (1969), whereas those on the interorbital space, nape, and operculum are ctenoid in *J. macropterus*. It is clear that *J. mannarensis* should henceforth be regarded as a valid species.

The distribution of *J. mannarensis* is restricted to the southeast coasts of India and Sri Lanka, in which regions *J. macropterus* occurs sympatrically.

### Material Examined

Institutional abbreviations follow Leviton et al. (1985).

*Johnius (Johnius) mannarensis*. (Type material [C MFRI] not seen by me.) USNM 313735, (18 specimens), 106.6–150.3 mm SL, Porto Novo, Madras State, India; USNM 324470, 114.3 mm SL, Galle, Sri Lanka; USNM 324475, (2), 66.5–68.2 mm SL, Lunawa, Sri Lanka; USNM 325280, (6), 55.6–79.2 mm SL, Pondicherry, Madras State, India; USNM 325295, 159.7 mm SL, Porto Novo, Madras State, India.

*Johnius (Johnius) macropterus*. RMNH 5993 (Syn-types), (3 specimens), 92.0–123.4 mm SL, Sumatra; RMNH 4643, 97.8 mm SL, Krawang, Java; AMNH 77535,

67.8 mm SL, Calicut, India; ANSP 27634, 117.1 mm SL, Pedang, Sumatra; BMNH 1880.4.21.115–116, (2), 69.8–109.5 mm SL, locality unknown; BMNH 1865.6.18.3, 108.2 mm SL, BMNH 1889.2.1.3125, 121.4 mm SL, Madras, India; BMNH 1976.10.18.3–4, (1 specimen only, one other specimen: *Johnius elongatus*), 109.2 mm SL, Indian coast; CAS (SU) 14627, 94.7 mm SL, Calicut, India; CSIRO A 3031, 80.7 mm SL, CSIRO A3032, 79.2 mm SL, Kerema Bay, Gulf of Papua; CSIRO C1640, (2), 92.5–116 mm SL, Busaima, New Guinea; KFRS FO 3085, 78.5 mm SL, Yule Island, Gulf of Papua; NTM S.10922-011, 83.7 mm SL, Lombok, Indonesia, 60–80m; USNM 72690, 127.1 mm SL, Palaboean Ratoe, Java; USNM 324180, 96.3 mm SL, USNM 324578, (4), 92.5–103.4 mm SL, Burma, 20°27'N, 92°20'E, 19–20m; USNM 324463, (5), 69.1–80.8 mm SL, Beruwella, Sri Lanka; USNM 324476, 84.3 mm SL, Payagala, Sri Lanka; USNM 324541, 72.7 mm SL, Negombo, Sri Lanka; USNM 325274, (2), 81.9–84.4 mm SL, USNM 325285, (5), 86.5–128.7 mm SL, Gulf of Mannar, Madras State, India; USNM 325293, 123.5 mm SL, Thirumullivasal, Madras State, India; USNM 325297, 108.5 mm SL, Porto Novo, Madras State, India.

### Acknowledgments

I thank the following for loans of specimens and/or access to facilities during my examination of specimens in their care: E. Böhlke, D. Catania, M. Feinberg, A. Graham, G. Howes, T. Iwamoto, S. Jewett, H. Larson, P. Last, N. Merrett, M. Oijen, A. Richards, B. Russell, W. Saul, and J. Williams. I also thank the cataloging staff of USNM, who registered much USNM material upon my request. G. Hardy read the manuscript and offered valuable suggestions.

### Literature Cited

- Leviton, A. E., R. H. Gibbs, Jr., E. Heal and C. E. Dawson. 1985. Standards in herpetology and ichthyology: Part I. Standard symbolic codes for institutional resource collections in herpetology and ichthyology. *Copeia*, 1985: 802–832.
- Mohan, R. S. L. 1969. A new species of sciaenid fish *Johnius mannarensis* from the south-east coast of India. *J. Mar. Biol. Ass. India*, 11: 320–323.
- Mohan, R. S. L. 1983. Sciaenidae. 69 pp. in W. Fischer and G. Bianchi, eds. FAO species identification sheets for fishery purpose, western Indian Ocean; fishing area 51. Vol. 4. FAO, Rome.
- Trewavas, E. 1977. The sciaenid fishes (croakers or drums) of the Indo-West-Pacific. *Trans. Zool. Soc. Lond.*, 33: 253–541, pls. 1–14.

## Validity of Sciaenid

### コニベ属の *Johnius mannarensis* Mohan は有効

佐々木邦夫

Mohan (1969) はコニベ属 (コニベ亜属) の新種 *Johnius (Johnius) mannarensis* をインド南東岸, マナー湾産の標本に基づき記載した. 本種は下顎に1本の髭を持つことで同亜属の *J. amblycephalus* (Bleeker) と *J. macropterus* (Bleeker) に類似する.

Trewavas (1977) は本種を後者のジュニア・シノニムと考えた. 多数の標本を検討した結果, 両種は側線上方・下方の鱗数, 背鰭軟条数, 胸鰭条数, さらに頭部の鱗の状態などで分離可能であることが判明した. したがって, *J. mannarensis* は有効である. 本種の分布はインド南東岸とスリランカ周辺に限られ, 同海域では *J. macropterus* と同所的に出現する.

(〒780 高知市曙町 2-5-1 高知大学理学部生物学教室)