J. Mar. biol. Ass. India, 1969, 11 (1 & 2): 316-319

A NEW SPECIES OF SILVER-BELLY, *LEIOGNATHUS JONESI* (FAMILY LEIOGNATHIDAE : PISCES) FROM THE INDIAN SEAS

BY P. S. B. R. JAMES*

Central Marine Fisheries Research Institute, Mandapam Camp

INTRODUCTION

DURING the course of studies on the fishes of the family Leiognathidae from the Indian Seas, all the 14 species described by Day (1876) as well as two additional species known to occur elsewhere in the Indo-Pacific but reported for the first time from the Indian region (James, 1968) were collected by the author. Further observations on the group brought to light another species which does not agree with any other known species of the group. Therefore it is described in this paper as new to science and named after Dr. S. Jones, Director, Central Marine Fisheries Research Institute in grateful acknowledgement of his interest in the work. The holotype and the paratypes were deposited in the Reference Collections of the Central Marine Fisheries Research Institute, Mandapam Camp.

OBSERVATIONS

Material: Holotype, 95 mm. S.L. (121 mm. T.L.) and 49 paratypes, 35 to 92.5 mm. S.L. (44 to 119 mm. T.L.) collected from the Palk Bay in the vicinity of Mandapam during April 1969.

Description (Fig. 1): D. VII, 16 ; A. III, 14. Compressed, dorsal profile more convex than ventral, the former almost forming a straight line opposite front border of eye to origin of dorsal fin. Height 1.77-1.96, head 2.95-3.94 in S.L., (2.25 -2.54 and 2.36-5.00 respectively in T.L.) eye 2.25-3.00 in head. Interorbital space flat, bounded by two ridges which continue posteriorly as outer edges of nuchal spine. A small ridge encircles the anterior end of nuchal spine and joins posteriorly the outer ridge on either side. The median portion of the nuchal spine is elevated, slightly more than $1\frac{1}{2}$ in head. Two small spines on top of head, opposite front border of eye, the outer more prominent than the inner which is opposite the ridge bounding the interorbital space. Mouth when protracted forms a tube directed downwards, gape of mouth below lower border of eye. maxilla reaching the front border of eye. Mandible almost straight. Preopercle with an obtuse angle, its lower margin finely serrate. Teeth small, numerous ; gill rakers in 10 specimens 35-99 mm. S.L. (46-126 mm. T.L.) on left outermost arch (21-24)+0+

* Present address : College of Fisheries, University of Agricultural Sciences, Mangalore.

(5-7), total 27-30. Gill rakers long with pointed tips, each with a double row of about 18 small lateral spines. Scales prominent, all over the body including the breast but absent on head. Lateral line scales 40-53 total, 35-45 upto end of soft dorsal, lateral transverse rows (11-13)+(22-26). First part of lateral line straight, followed by a convex portion which is less convex than dorsal profile. Lateral line extends beyond end of soft dorsal and anal fins but stops short of base of caudal fin. Dorsal and anal spines weak, laterally compressed, second dorsal spine 2.19-2.68 in height of body, 4.08-5.26 in S.L. and 5.15-6.74 in T.L., second anal spine 2.60-3.54 in height of body, the third and fourth dorsal spines and the third anal spine serrated anteriorly for about half length from base. Pectorals 3.53-4.52 in S.L., and 4.56-5.72 in T.L. Ventrals 4.08-7.47 in S.L., 5.38-9.65 in T.L. with an axillary scale and do not reach origin of anal fin. Caudal deeply forked, lobes appear round, with the hind margins convex.

Colour silvery, abdomen more silvery than back which has a background of brown with close-set grey zig zag lines. End of snout dotted grey, axil of pectorals black, membrane between second and sixth dorsal spines grey in the distal half which may be very faint at times.

Distribution : In the Indian Seas, the species has so far been collected from the Palk Bay and Gulf of Mannar in the vicinity of Mandapam, Tuticorin and Andaman Islands. It is abundant in the Palk Bay and Gulf of Mannar, especially off Mandapam in the Palk Bay up to about 10 fathoms depth where about ninety per cent of the catches of silver-bellies is constituted by this species.

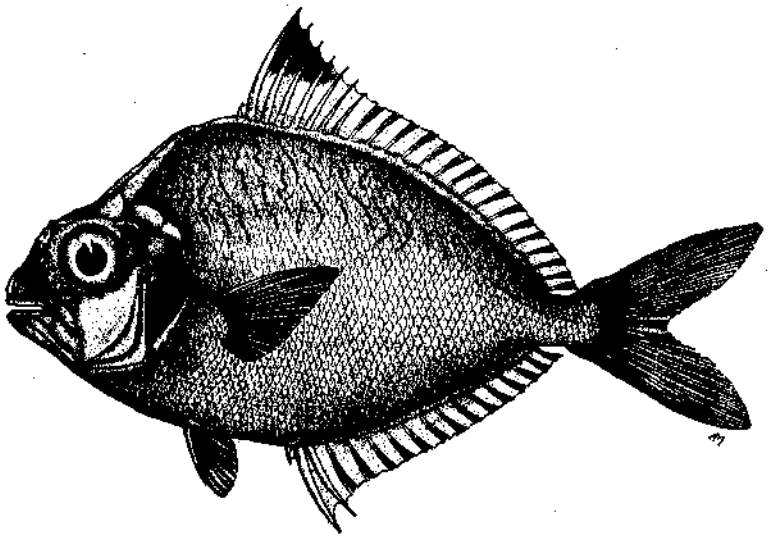

FIG. 1. *Leiognathus jonesi* sp. nov. Holotype, 95 mm. S.L. (121 mm. T.L.), Palk Bay off Mandapam.

Remarks : L. jonesi superficially resembles *L. splendens* in the general shape of the body, blotch on the spinous dorsal fin and other body marks but differs from *L.*

splendens in a number of characters, the following characters being the most important (Table I):

TABLE I

Differences between L. jonesi *and* L. splendens

	L. jonesi	*L. splendens*
1. Blotch as spinous dorsal membrane	Grey	Jet black
2. Dorsal and anal spines	Weak	Strong
3. First dorsal spine	Big, 4.6-7.0 in second dorsal spine.	Small, 3.3-8.0 in second dorsal spine.
4. First anal spine.	Big, 3.1-6.0 in second anal spine.	Small, 2.5-4.5 in second anal spine.

The new species is perhaps so far confused with *L. splendens* in India by earlier workers. Arora (1951) reported on the biology and fishery of the silver-belly, *L. splendens* based on samples obtained from Thangachimadam near Mandapam (Palk Bay). During the five years (1964-1968) of intense collection of samples and observations on silver-bellies from the Palk Bay and Gulf of Mannar in the vicinity of Mandapam, the present author had come across this species only in stray numbers in Gulf of Mannar. The collections of *L. splendens* made by Arora (1951) from the Mandapam region are not available for examination and therefore further comments on this aspect are not possible. However, if this new species has been confused for *L. splendens*, as suspected here, the detailed biology of the new species from the same region now under study should clarify the position as some aspects like age, growth and maturity for *L. splendens* were already given by Arora (1951). Studies on *L. splendens* from elsewhere along the Indian Coast, especially along the west coast where it has been found to be common are also expected to throw more light on the problem.

Munro (1964, 1967) described a new species of silver-belly, *Leiognathus rapsoni* from the New Guinea region. According to him, it comes closest to *L. splendens* but distinguished it from *L. splendens* in a number of characters, the most important of these being the presence of 5 rows of scales on the preopercle of *L. rapsoni* which are absent in *L. splendens*.

It is interesting to note that *L. jonesi* resembles *L. rapsoni* more closely than it does *L. splendens* especially in the general shape of the body, colouration and nature of spines, but *L. jonesi* differs from *L. rapsoni* mainly in the following characters (Table II):

TABLE II

Differences between L. jonesi *and* L. rapsoni

	L. jonesi	*L. rapsoni*
1. Scales on the cheek	Absent	Present
2. Lateral line scales	40-53	51-55
3. Lateral transverse scales	(11-13)+(22-26)	8+20
4. Gill rakers	(5-7)+0+(21-24)	(3-5)+(21-23)

L. rapsoni has been described based on four specimens only of the size range 78 to 90 mm. collected from 6-8 fathoms off Red Scar Bay, Gulf of Papua. Therefore it is not possible to strictly compare the body proportions of these with those of *L. jonesi* as the latter are based on 50 specimens of the size range 35 to 95 mm. S.L. (44 to 121 mm. T.L.). However, it may be mentioned that comparison of available data shows that the body proportions given for *L. rapsoni* are covered by the ranges for *L. jonesi* except that a slightly lesser body depth is indicated for the former (1.9-2.1 in S.L.) and greater body depth for the latter species (1.77-1.96 in S.L.), the average for 50 specimens of the latter being 1.88.

Extensive collections of silver-bellies collected and examined by the author so far from several localities along the Indian coast did not so far indicate the occurrence of *L. rapsoni* in the Indian Seas. The results also show that the occurrence of *L. splendens* is widespread along the Indian coast, especially along the west coast and that of *L. jonesi* comparatively limited to the regions mentioned already.

ACKNOWLEDGEMENT

I am grateful to Dr. S. Jones, Director, Central Marine Fisheries Research Institute for all the help and encouragement in this study. I am thankful to Dr. E. G. Silas for his valuable comments and suggestions. I am also thankful to Mr. M. Badrudeen for assisting me in this work.

REFERENCES

ARORA, H. L. 1951. A contribution to the biology of the silver-belly, *Leiognathus splendens* (Cuv.). *Proc. Indo-Pacific Fish. Counc. 3rd Meeting*, pp. 75-80.

DAY, F. 1876. *The fishes of India*, 1 : 237-244. Bernard Quartich, London.

JAMES, P. S. B. R. 1969. *Leiognathus leuciscus* (Günther) and *Leiognathus smithursti* (Ramsay & Ogilby) (Family Leiognathidæ : Pisces)—two new records from the Indian Seas. *J. Mar. biol. Ass. India*, 9(2) : 300-302 (1967).

MUNRO, I. S. R. 1964. Additions to the fish fauna of New Guinea. *Papua and New Guinea Agric. J.*, 16 (4) : 170-171.

MUNRO, I. S. R. 1967. *The fishes of New Guinea*, pp. 238, 240, 241.