

**CALLIONYMUS JONESII, A NEW CALLIONYMID FISH (PISCES :  
CALLIONYMIDAE) FROM THE EAST COAST OF INDIA**

By R. S. LAL MOHAN

*Central Marine Fisheries Research Institute, Mandapam Camp*

WHILE collecting fishes for biological studies from shore seines and trawls, a few callionymid fishes were also collected. This material consists of one new species and a few other known species of the genus *Callionymus*.

From the Indian coast only nine species of the family Callionymidae are reported ; six species by Day (1876), two by Alcock (1892) and one by Luther (1967), while Regan (1907) reported eleven species from Indian Ocean, Weber (1913) nine species from Siboga Expedition material, and Chapman (de Beaufort & Chapman 1951) twenty-two species from Indo-Australian Archipelago and Smith (1963) twenty-two species from Red Sea and western Indian Ocean.

The new species is named *Callionymus jonesii* after Dr. S. Jones, Director, Central Marine Fisheries Research Institute.

***Callionymus jonesii* n.sp.**

(Fig. 1A. Plate 1A, male, 1B. female)

**Holotype\*** : CMFRI No. 116 (male, 77.0 mm. T.L., 60.0 mm., S.L.) (Lat. 78° 50' Long. 9° 30'), Panaikulam, Palk Bay, Bay of Bengal, from shore seine, 10-10-68.

**Paratypes** : CMFRI No. 117 A. (4 males, 5 females, 35.0-63.0 mm. S.L.) Panaikulam, Palk Bay, Bay of Bengal. From shore seine, 10-10-68.

CMFRI No. 117 B. (1 male, 1 female, 51.0-59.0 mm. S.L.) (Lat. 78°50' long. 9.35) Durgavalasai, Palk Bay, Bay of Bengal. From Shore seine, 20-9-68.

CMFRI No. 117 C (1 male, 1 female, 76.80 mm.). From Trawl net. (Lat. 82°30'-Long. 17°0'), Kakinada, Bay of Bengal, 5-11-68.

**Diagnosis** : First dorsal with three spines ; in male, first dorsal spines filiform, elongated, with three oblique streaks between second and third dorsal spines ; in female first dorsal spines not elongated. Snout depressed, with truncated end. Body depth 7.1-8.8 per cent in total length, 8.7-10.9 per cent in

\* Holotype and paratypes are deposited in the Central Marine Fisheries Research Institute Museum, Mandapam Camp.

standard length. Preopercular process strong, curved inwards, with 2-3 barb-like hooks on inner side. An anterioretrose spine at base of preopercular process. Lateral line single, connected anteriorly and posteriorly with that of other side.

*Description*: D. III 9(1)-10(1); A. 9(1)-10(1); P. 18-20; C. 10. Branchiostegals 4; vertebrae 20.

Head 25.5 to 29.5\* (27.5)\*\* in standard length, 19.8 to 24.2 (21.5) in total length. Depth at origin of first dorsal 8.7 to 10.9 (10.0) in standard length and 7.1 to 8.8 (7.8) in total length. In head, eye 27.0-31.2 (30.3), snout 28.0-41.0 (38.9), preopercular spine 24.4 to 40.0 (30.0); width at preopercular spine 79.0-100.0 (79.0); in male, first dorsal spine 70.0-100.0 (100.0), second dorsal spine 40.0-80.0 (54.0), third dorsal spine 19.0-53.0 (41.0), caudal fin 90 to 107 (97.0); in female, 1st spine 59.0-66.0, second dorsal spine 55.0-61.0, third dorsal spine 42.0-52.0, caudal fin 83.0-93.0, first dorsal ray 33.0-50.0, last dorsal ray 39.0-54.0; first anal ray 26.0-35.0, last anal ray 28.0-39.0; pectoral fin 77.0-86.0 (80.0), least caudal peduncle depth 16.0 to 23.0 (21.0).

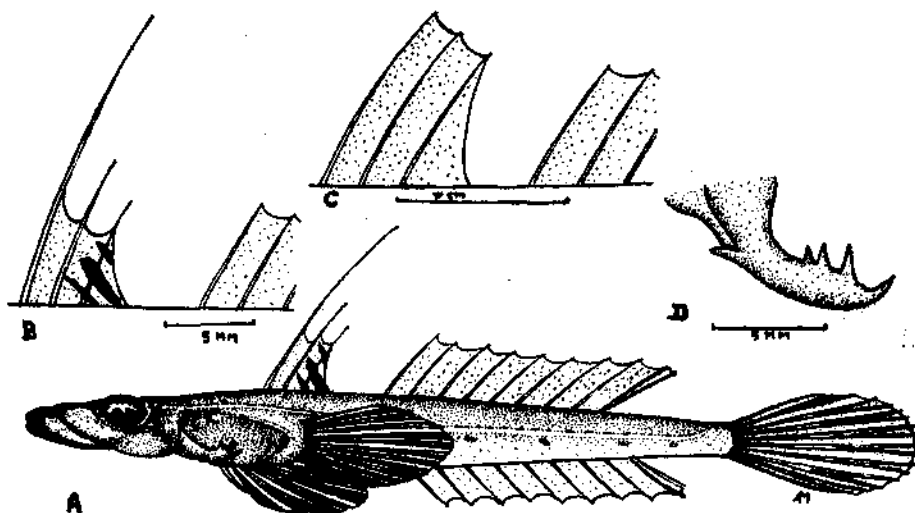


FIG. 1A. *Callionymus jonesii* n. sp. 77 mm. (T.L.), Male, CMFRI No. 116, Panaikulam Holotype.

- B. First dorsal of male with a few second dorsal rays.  
 C. First dorsal of female with a few second dorsal rays.  
 D. Preopercular process.

Head and body depressed, mouth protrusible, maxilla reaches  $1/3$  of eye, eye suppressed, supraorbital membrane with a lappet. Interorbital space narrow. Snout depressed, ends truncate, with a central ridge and a lateral ridge on each side. Opercular opening superior, 0.5 to eye. Preopercular spine curved at tip, with 2-3 barb-like hooks on inner side and an anterioretrose spine at the base outside (Fig. 1, D). Teeth minute, villiform, in 2 rows on premaxillary, single row in lower jaw about 25-30. Lateral line single, originates between the gill opening, connected

\* All measurements are in percentage.

\*\* Measurements in parenthesis are that of holotype.

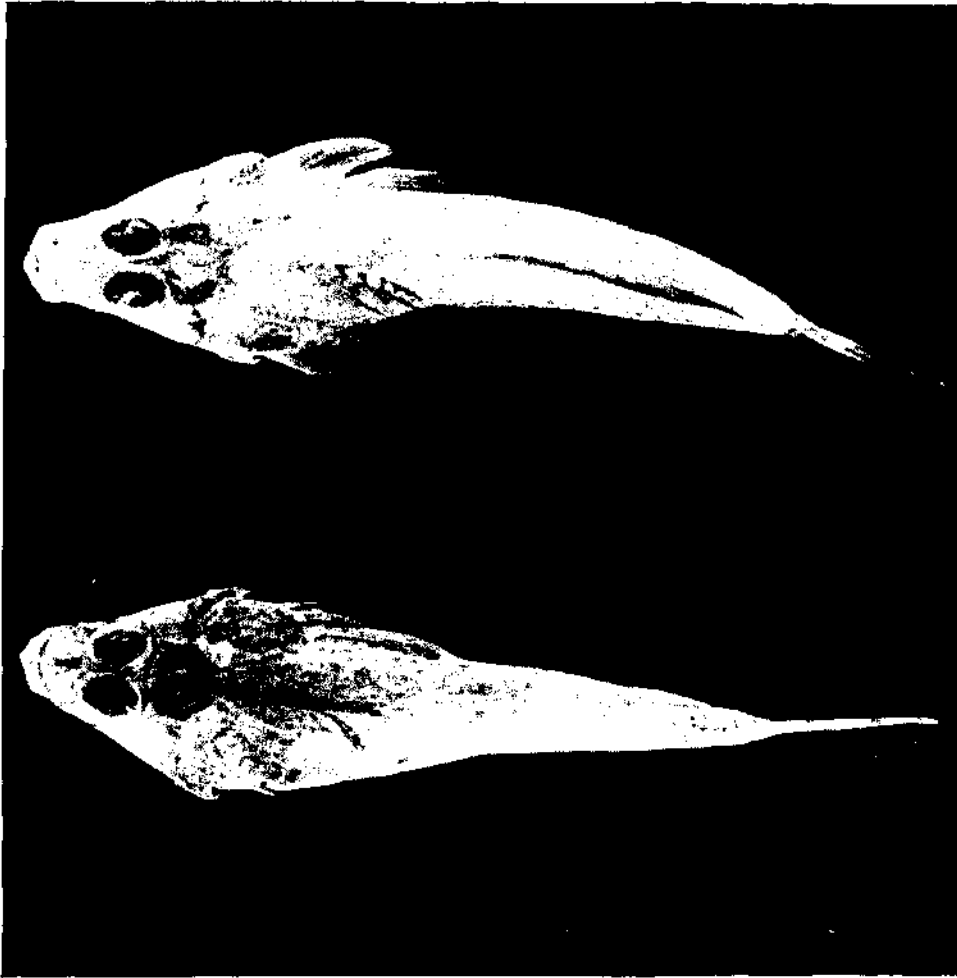


PLATE I. A. *Callionymus jonesii* n. sp. Holotype, Dorsal view. CMFRI No. 116, 77 mm. (T.L.), Male, Pannaikulam.

B. *Callionymus jonesii* n. sp. Paratype, Dorsal view. CMFRI No. 117 C., 76 mm. (T.L.), Female, Kakinada.

to that of other side anteriorly and posteriorly by a short commissure ; on head the lateral line bifurcates, one to opercle which divides into two branches and the other to infraorbital region giving a branch to supraorbital region extending to snout. Last rays of ventral fin connected to the middle of pectoral base. Dorsal fin originates before the origin of pectoral fin, second dorsal fin opposite to pectoral base. In male, first dorsal spine elongated, filiform and reaches base of 4th dorsal ray, its membrane low, second and third spines filiform, reach the base of first ray, membranes shallow. In female, the first dorsal spine not filiform and its membrane high. Last rays of dorsal and anal fins split from the base and each bifurcates terminally. Pelvic fins reach the origin of anal, all rays divided. Pectoral fin reaches second anal ray, all the rays divided except first and last ; caudal fin round, middle eight rays divided terminally. Last rays of second dorsal and anal fins free from caudal peduncle ; membrane of second dorsal, anal and pectoral fin membrane notched. Anal papillae present in male, lancelet-shaped, absent in female.

**Colour :** Body dorsally spotted grey. A few grey patches above the lateral line on both sides, intensity of colour varies with localities. Second dorsal, pectoral and anal fins hyaline, caudal and pelvic fins with few grey spots. In male the filiform elongation of first dorsal spine black, three dark bands on first dorsal. In female first dorsal fin faint grey, with no bands or blotch.

**Sexual dimorphism :** In male, first dorsal spine black, filiform, as long as head, reaching the base of fourth ray of second dorsal fin, membrane shallow, 3 dark bands between second and third spines of first dorsal (Fig. I, B). Anal papillae present. In female first dorsal spine not filiform or black, faintly grey, its membrane high (Fig. I, C) ; anal papillae absent. Sexual dimorphism in certain body proportions is shown in Table I.

TABLE I  
Sexual dimorphism in characters of *C. jonesii* n. sp.

Characters*	Male		Female	
	Range	Average	Range	Average
I dorsal spine	70.0-106.0**	89.5	59.0-66.0	64.4
II dorsal spine	40.0-81.1	50.6	55.0-61.0	56.2
III dorsal spine	19.0-53.0	32.1	42.0-52.0	49.1
Caudal fin	90.0-107.0	94.6	83.0-93.0	88.0

**Relationship :** *Callionymus jonesii* sp. nov. is related to *C. sagitta* Pallas in having a very flat body and head, three or four barb-like hooks in preopercular process† and in having the same pattern of lateral line system. It is also related to *C. kaianus* Günther in having a depressed body, elongated first dorsal spine (in male) and preopercular process with 3 barb-like hooks. But *C. jonesii* differs from *C. sagitta* Pallas and *C. kaianus* Günther in having 3 dorsal spines in first dorsal, truncate

\* Characters are shown in relation to head.

\*\* Measurements are in percentage.

† Smith (1963) records 3 (?4) dorsal spines in first dorsal though Day (1876) and others record four spines in *C. sagitta*. *C. sagitta* I have collected also have four spines in first dorsal.

snout and in colouration of first dorsal fin. *C. melanopterus* Bleeker=*C. fluviatilis* Day differs from *C. jonesii* in having shorter dorsal fin, colouration of dorsal fin, and presence of four dorsal spines. It also differs from *C. wilburni* Herre, another species from Philippines with three dorsal spines in first dorsal, in having truncated snout, body proportions, number of dorsal and anal fin rays and in colouration. However, *C. jonesii* can be placed between *C. sagitta* Pallas and *C. kaianus* Günther.

#### ACKNOWLEDGEMENTS

I am thankful to Dr. E. G. Silas and Dr. P. S. B. R. James of Central Marine Fisheries Research Institute, Mandapam Camp, for their helpful suggestions in preparing this paper. I am thankful to Dr. Victor G. Springer and Dr. K. Rutzler of U.S. National Museum, Washington for their help.

#### LITERATURE CITED

- ALCOCK, A. W. 1899. A descriptive catalogue of the Indian deep sea fishes in the Indian Museum. Being a revised account of the deep sea fishes collected by the Royal Indian Marine Survey Ship 'Investigator', 211 pp., 43 pls., Calcutta.
- BEAUFORT, L. F. DE and CHAPMAN, W. M. 1951. *The Fishes of the Indo-Australian Archipelago* 9: 50-81.
- DAY, F. 1876. *The fishes of India*, 1: 321-333.
- LUTHER, G. 1967. On a record of *Callionymus schaapi* Bleeker (Callionymidae: Pisces) from Indian coast. *J. Mar. biol. Ass. India*, 7 (2): 475-476.
- REGAN, C. T. 1907. Report on the Marine Fisheries Collected by Mr. Stanley Gardiner in Indian Ocean. *Trans. Linn. Soc. London*, 1907-1909, 12: 247-250.
- SMITH, J. L. B. 1963. Fishes of the families Draconettidae and Callionymidae from the Red Sea and Western Indian Ocean. *Ichthyol. Bull. Rhodes Univ.*, 28: 545-564.
- WEBER, M. 1913. *Siboga-Expedition*, LVII. Die Fische der Siboga Expedition: 522-524.