

A Description of some Deep Sea Fishes from the Gulf of Mannar and Adjacent Waters

By

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MOST of the species of fish described here are part of a collection of deep sea fishes taken from depths ranging from 60 metres to 320 metres. Three species, however, which belong to the families Exocoetidae and Hemirhamphidae, were collected from the surface at night. This collection was made during a survey of the off-shore waters on the edges of the Continental Shelves of Sri Lanka and India. It was a joint Soviet Union—Sri Lanka venture undertaken by Soviet and Ceylonese scientists to explore the deep sea resources, and included a study of the ichthyofauna of these waters. The survey commenced in March and was completed in December 1972 from the Soviet Union's stern trawler "Optimist" using a Russian type otter trawl.

These species, representative of 33 families have not been listed in any previous literature on fishes from waters around Sri Lanka, but by no means constitute the entire collection of deep sea fishes taken during the survey.

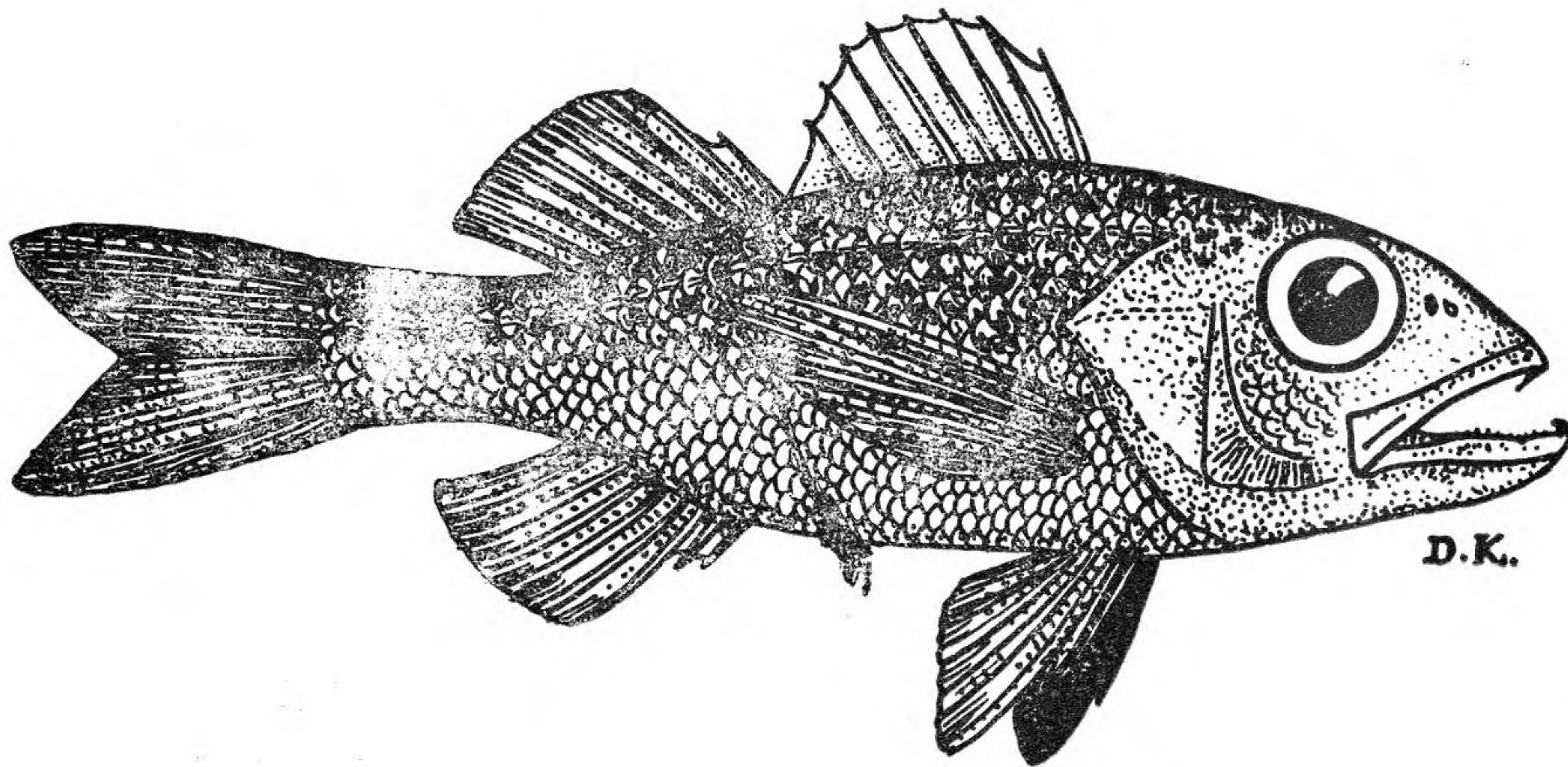
The description of a species is based on observed characters of the specimen or specimens examined. Where the observed characters differed from that in the literature referred to this is indicated in the text. The figures of species described have been made from specimens preserved in formalin, and are mainly an attempt to show as accurately as possible its form and shape.

A chart showing the Continental edges off the coasts of Sri Lanka and India with the areas of collection has also been included. The chart is on page 81.

Acknowledgements

I am thankful to Mr. A. S. Mendis, Deputy Director of Fisheries (Research), for the opportunity to participate in this research programme. My special thanks are due to Dr. T. P. Goonewardene, Assistant Director of Fisheries, on whose knowledge and experience I had to draw in the course of this work. Finally, my thanks are due to Mr. G. D. Kariyawasam, Artist, Department of Fisheries, for his skill in portraying the figures that appear here.

FAMILY APOGONIDAE

Synagrops malayanus (Weber)

D. VIII.1.9. A. II.7. L1. 29. Ht. 3.5. (in total length) Eye 3.2 (in head).

Canine teeth in jaws. Lateral line complete and continuous. Scales of body cycloid. Mouth oblique, lower jaw prominent. Maxillary reaches to below middle of eye. Two long canines directed backwards in upper jaw near symphysis followed by an emargination of the bone to fit the canine of upper jaw. Behind this emargination 2 distinct large canines with a smaller one in front. Superior part of head and snout and dorsal and caudal fins powdered with dark brown.

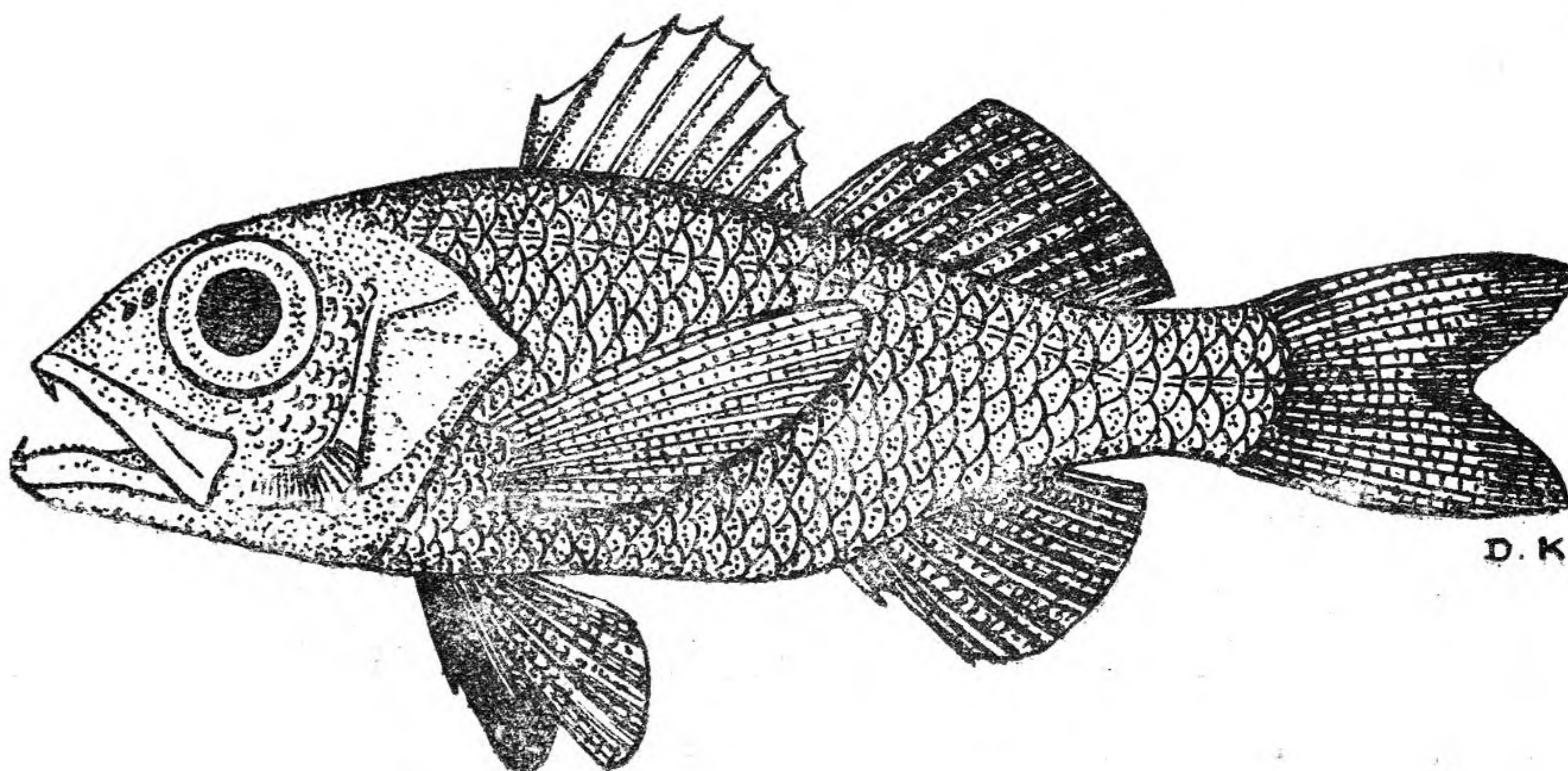
Depth.—235 metres

Gear.—Bottom trawl

Position.—7°05'N, 77°25'E (Wadge Bank)

Date.—19.3.72

Length.—8, 9.5, 9.6, 10, 10.2, 13.5 cms. (6 specimens)

Synagrops japonicus (Steindachner)

D, IX.1.10. A, II,8. GR. 10 in lower ramus.

Distinct canines in jaws. Two dorsal fins. Scales large. Depth $3\frac{3}{4}$ in total length. Interorbital less than eye. Colour silvery with a bluish sheen.

Depth.—280 metres

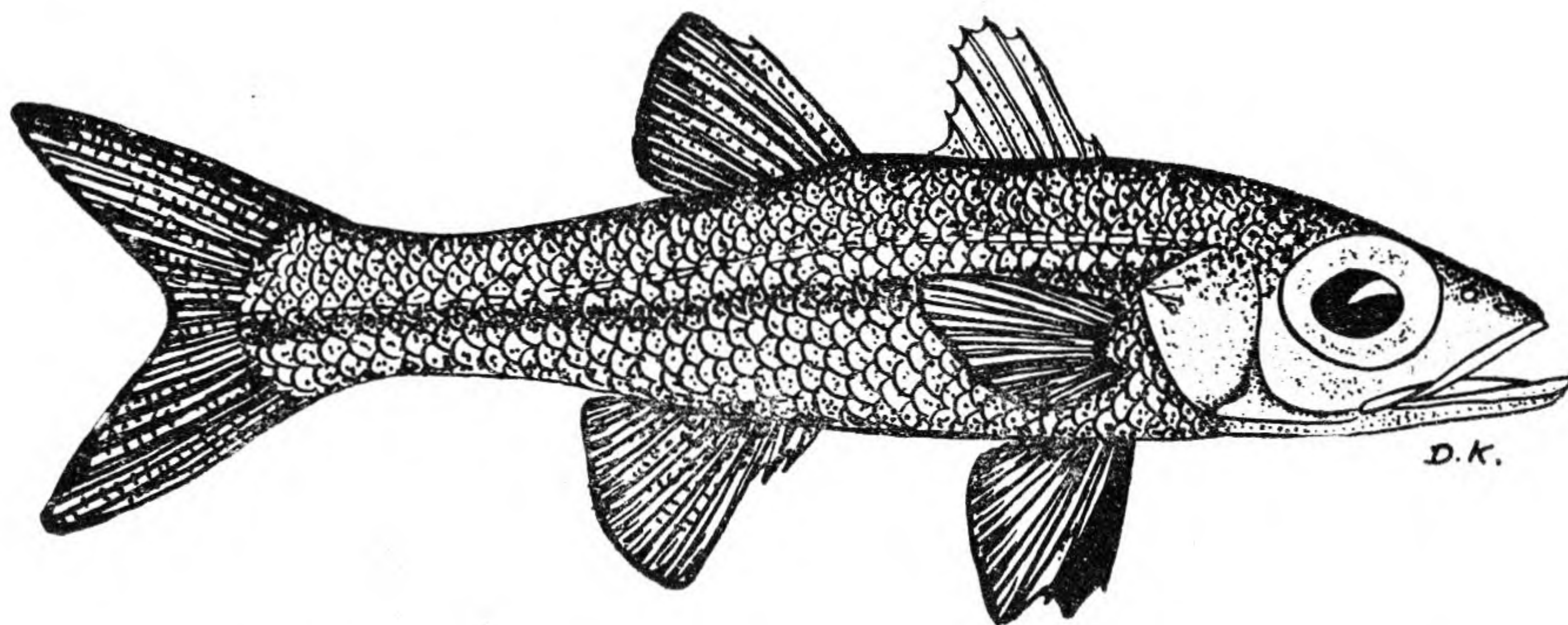
Gear.—Bottom trawl

Position.— $8^{\circ}52'N$, $78^{\circ}51'E$ (Gulf of Mannar)

Date.—12.3.72

Length.—10.6 cms.

***Hynnodus robustus* (Barnard)**



D. VII.1.9. A. II.9. LI. 48. GR. 22 (lower ramus)+12 (upper ramus). Depth 5 (in forked length)

No teeth. Elongate slender body. Eye very large equal to length of ventral fin. Interorbital flat $\frac{2}{3}$ eye diameter. Caudal peduncle long $3\frac{1}{2}$ in body length. Mouth large. Dorsal surface grey in colour. Dorsal, caudal, ventral and anal fins blackish. Red narrow stripe from upper opercle margin along mid side below lateral line reaching caudal base.

Depth.—235 metres

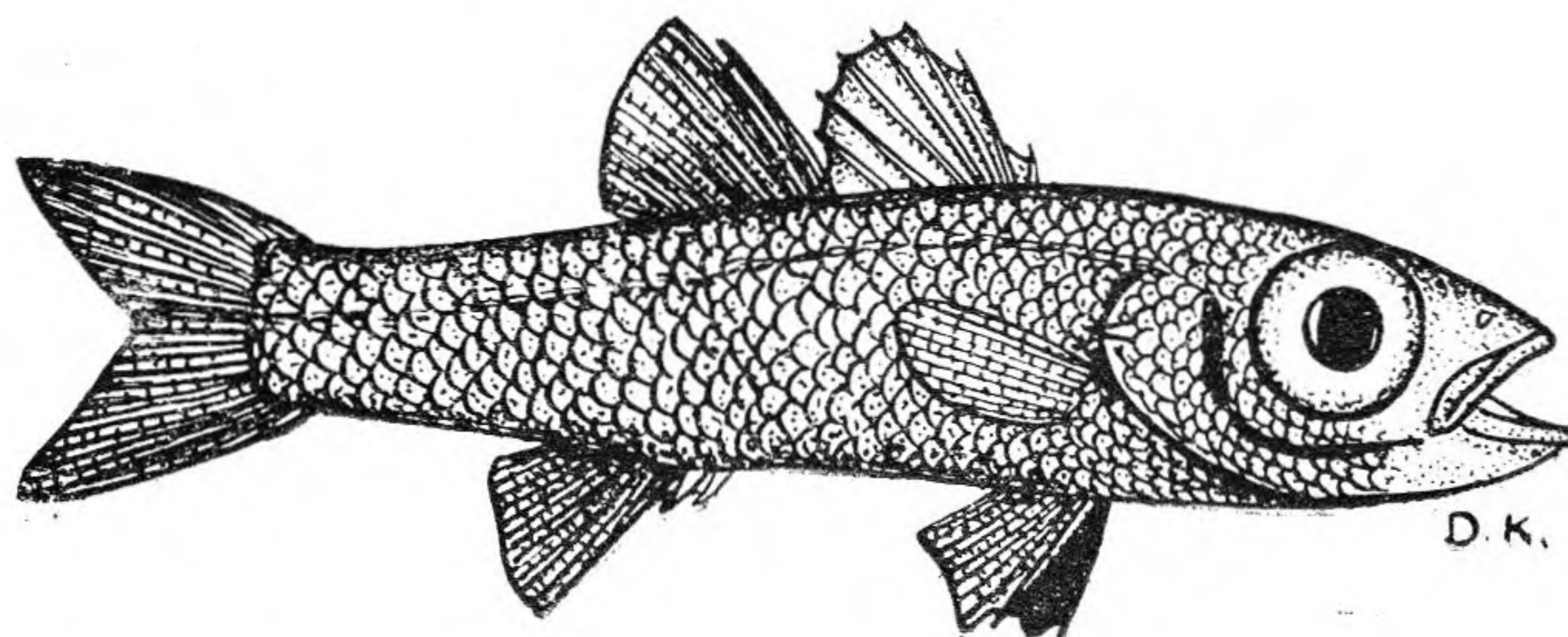
Gear.—Bottom trawl

Position.— $7^{\circ}05'N$, $77^{\circ}25'E$ (Wadge Bank)

Date.—19.3.72

Length.—16.4 cms.

***Epigonus telescopus* (Risso)**



D. VII.1.9. A. II.9 GR. 18.

Depth 4+ (in total length). Body elongate. Mouth large. Eyes very large. No canine teeth in jaws. Interorbital less than eye. Colour uniform dark grey. Fins darker than rest of body. The gill raker count is slightly more than that recorded by Smith.

Depth.—240 metres

Gear.—Bottom trawl

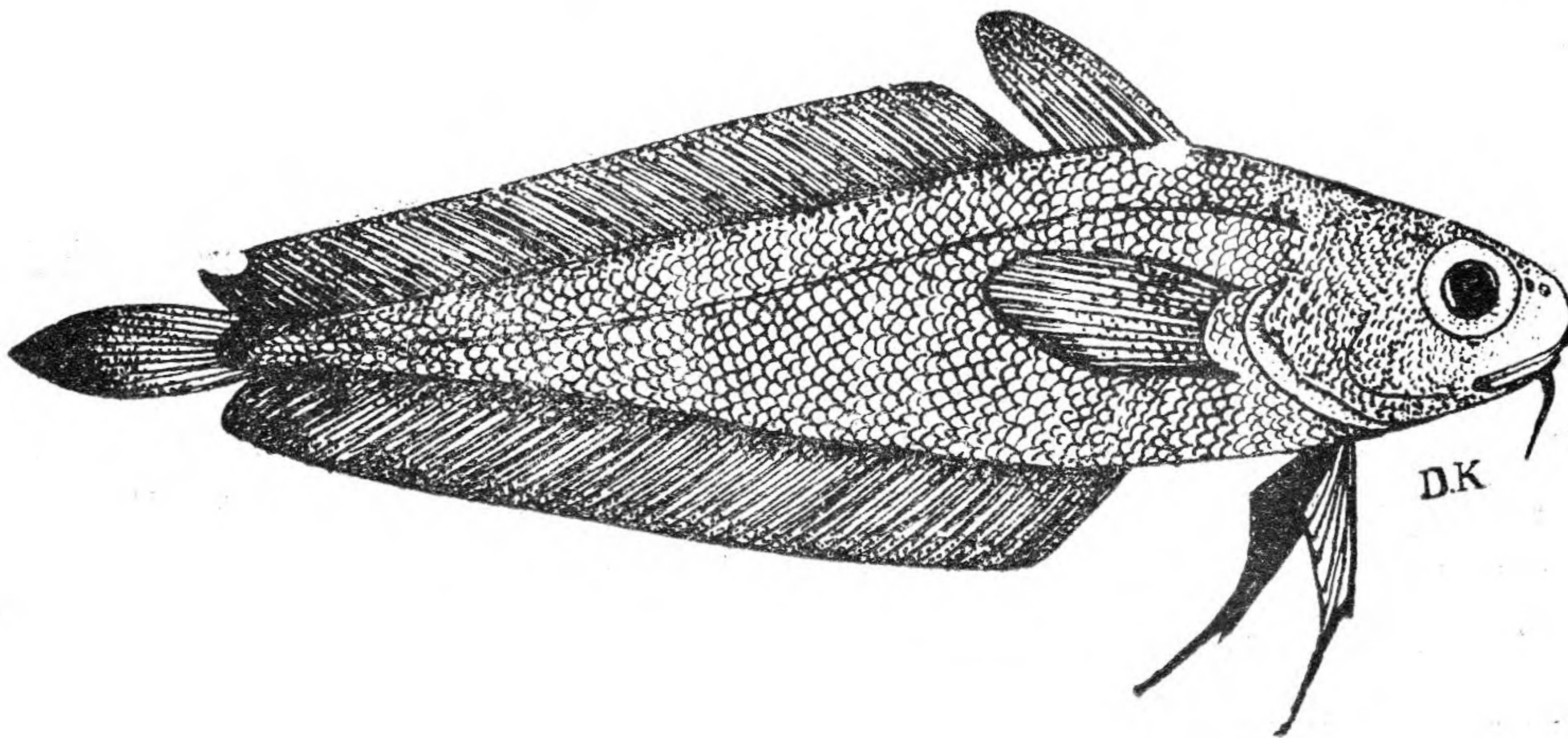
Position.—8°45'. 11"N, 76°06'E (S. W. Coast of India)

Date.—2.12.72

Length.—9.5, 10 cms. (2 specimens)

FAMILY GADIDAE

Physiculus peregrinus (Gunther)



D. 7.62. A. 66. V. I.3

Scales minute. Lower jaw does not project. Body elongate. Barbel present. Two dorsal fins. First dorsal ray not longer than head. Caudal pointed. Maxilla reaches to below centre of eye. Barbel about equal to eye diameter. Head broader than deep. Interorbital concave greater than diameter of eye. Outer ventral ray filamentous reaching beyond origin of anal to about 4th, anal ray.

Depth.—235 metres

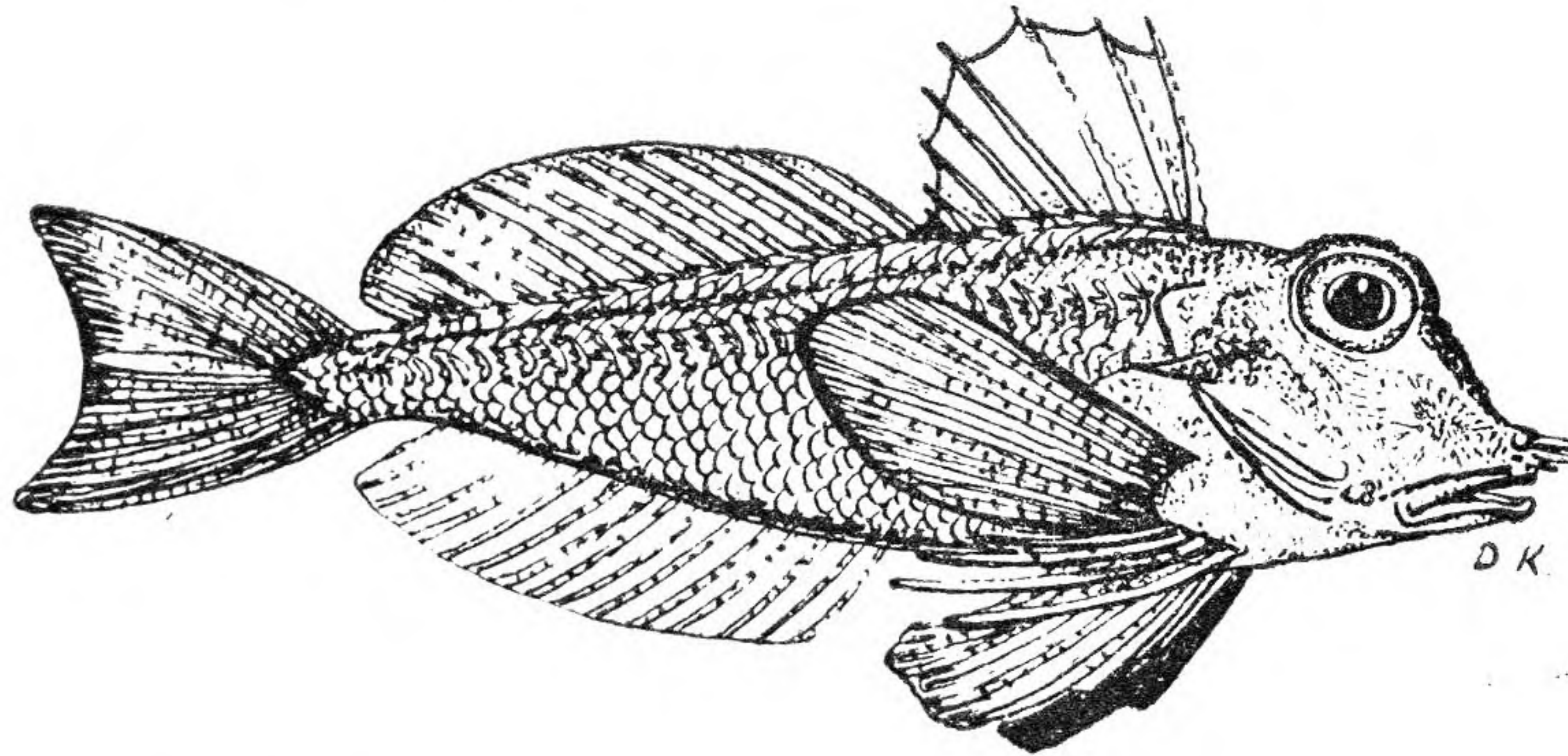
Gear.—Bottom trawl

Position.—7°05'N, 77°25'E (Wadge Bank)

Date.—19.3.72

Length.—26.2 cms.

FAMILY TRIGLIDAE

Lepidotrigla natalensis (Gilchrist & Thompson)

D. VIII.16. A. 16. L1. 56+

Head completely encased. Body with scales. Feeble preopercular spine. Lateral line not spiny. Three free pectoral rays. Pectoral fin as long as head. Breast naked. Preorbital with 4 spines. 23 spiny dorsal plates. Colour uniform red.

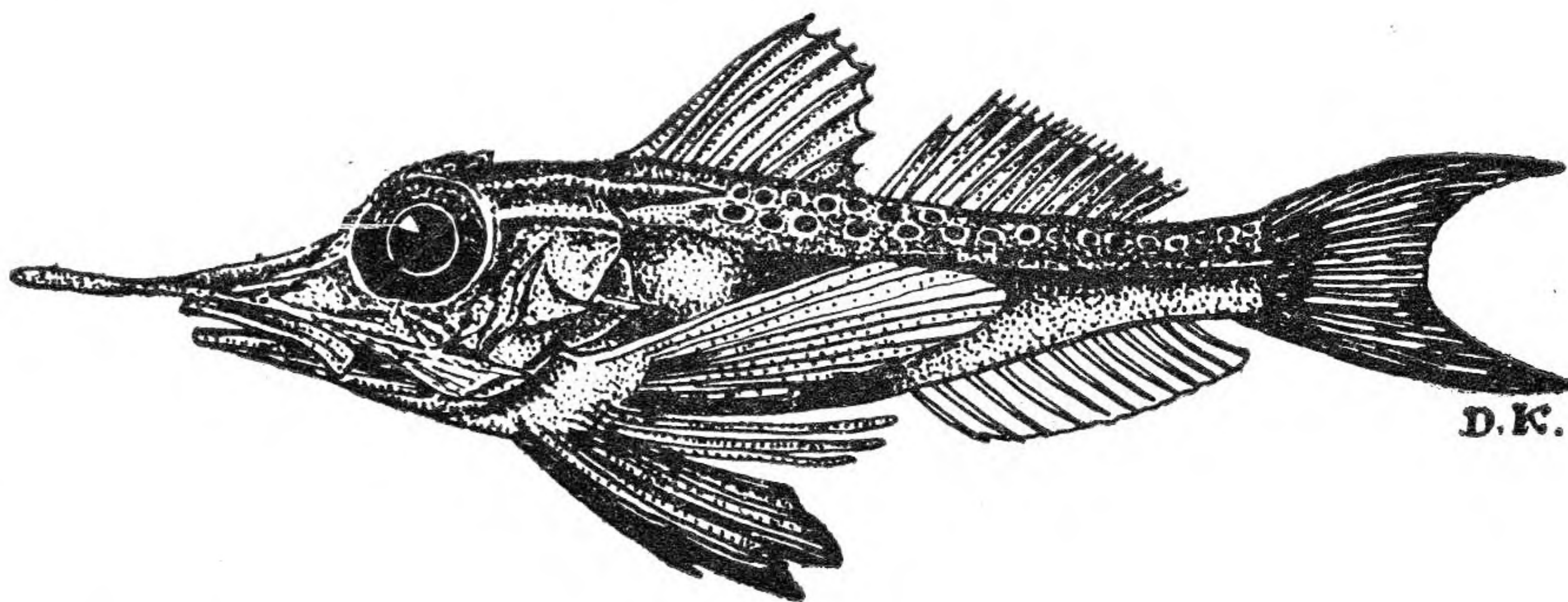
Depth.—240 metres

Gear.—Bottom trawl

Position.—7°05'N, 77°32'E (Wadge Bank)

Date.—18.3.72

Length.—11.2, 11.3, 11.8 cms. (3 specimens)

Trigla leptacanthus (Gunther)

D. VIII.1.11. A. 12.

Lateral line without spines. Scales on body exceedingly small. Preorbital and suprascapular spines slender and long : longer than eye diameter. Preopercular, opercular and humeral spines short. Interorbital space concave, equal to diameter of eye. Pectoral reaches 6th anal ray. Colour light reddish.

Depth.—300–320 metres

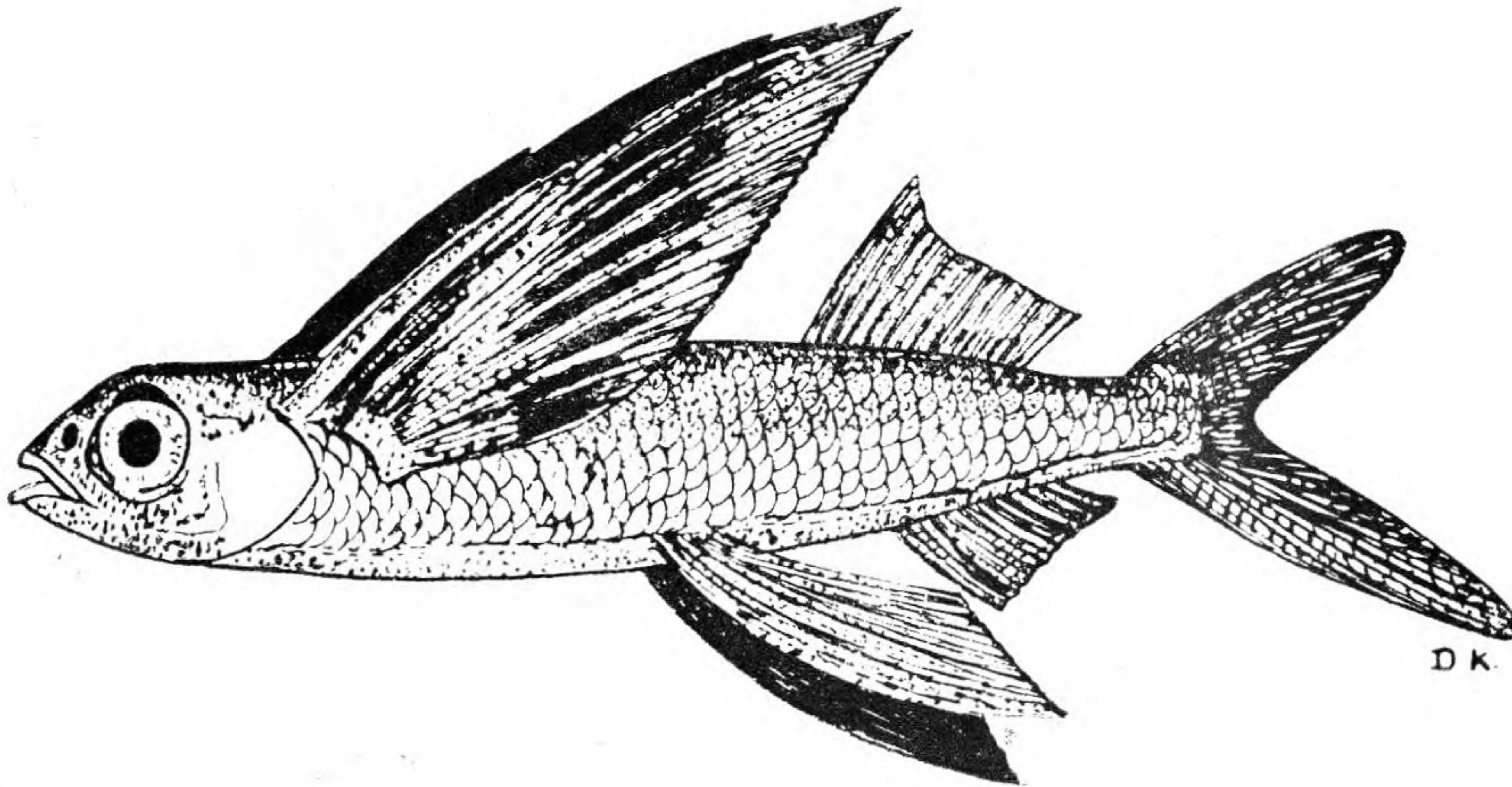
Gear.—Bottom trawl

Position.—8°38'N, 79°39'E (Gulf of Mannar)

Date.—11.3.72

Length.—16.5 cms.

FAMILY EXOCOETIDAE

Cypselurus oligolepis (Bleeker)

D. 12. A. 9. P. 1.13. V. 6. Ll. 45. L. tr. 8/13.

Predorsal scales 26. Gill rakers 16 (lower ramus) Head 4+. Breadth of body 1.4 in height. Interorbital space concave. Origin of anal below 4th dorsal ray. Pectoral reaching to posterior third of dorsal. Ventral longer than head reaching to middle of anal.

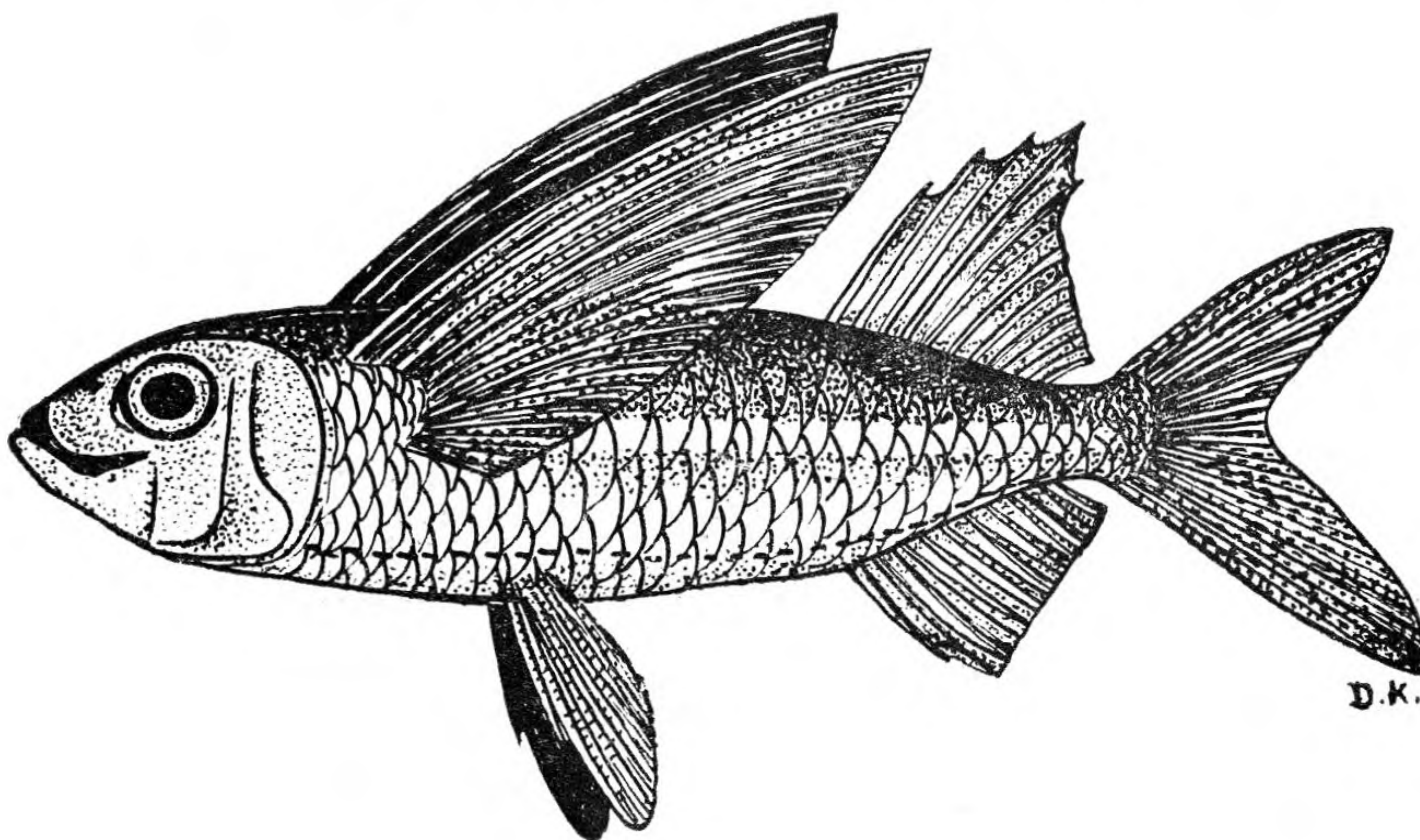
Depth.—Surface.

Gear.—Hand dip net (taken at night)

Position.—Gulf of Mannar

Date.—17.3.72

Length.—27 cms.

Parexocoetus mento mento (Valenciennes)

D. I.10. A. I.11. P. I. 11.

Predorsal scales 22. Preventral scales 16. Pectoral fin enlarged. Dorsal fin elevated. Median rays of dorsal fin longer than the others. Anal origin opposite 2nd dorsal ray. Pectorals reach anterior dorsal rays. Ventral fin slightly nearer snout tip than tail base. Colour dark blue above and silvery below. Dorsal and ventral fins black.

Depth.—Surface

Gear.—Hand dip net (taken at night)

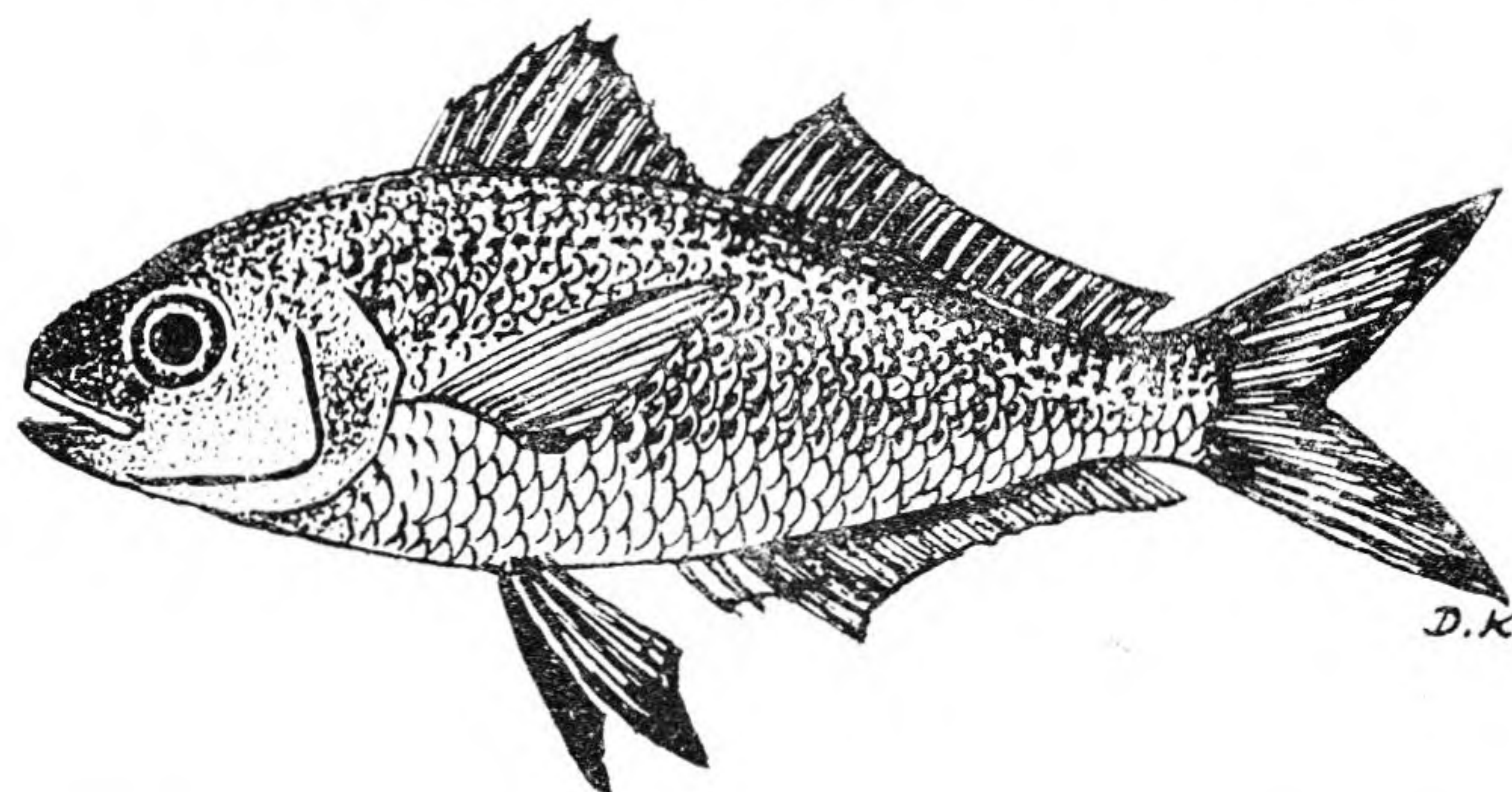
Position.—Gulf of Mannar

Date.—17.3.72

Length.—15.2 cms.

FAMILY STROMATEIDAE

Cubiceps natalensis (Gilchrist and von Bonde)



D. XI.I.20. A. III.20. Ltr. 5 (above)

Depth 3 in total length.

Dorsal deeply notched. Pelvics originate behind origin of pectoral base. Colour creamy; grey above and lighter below.

Depth.—240 metres

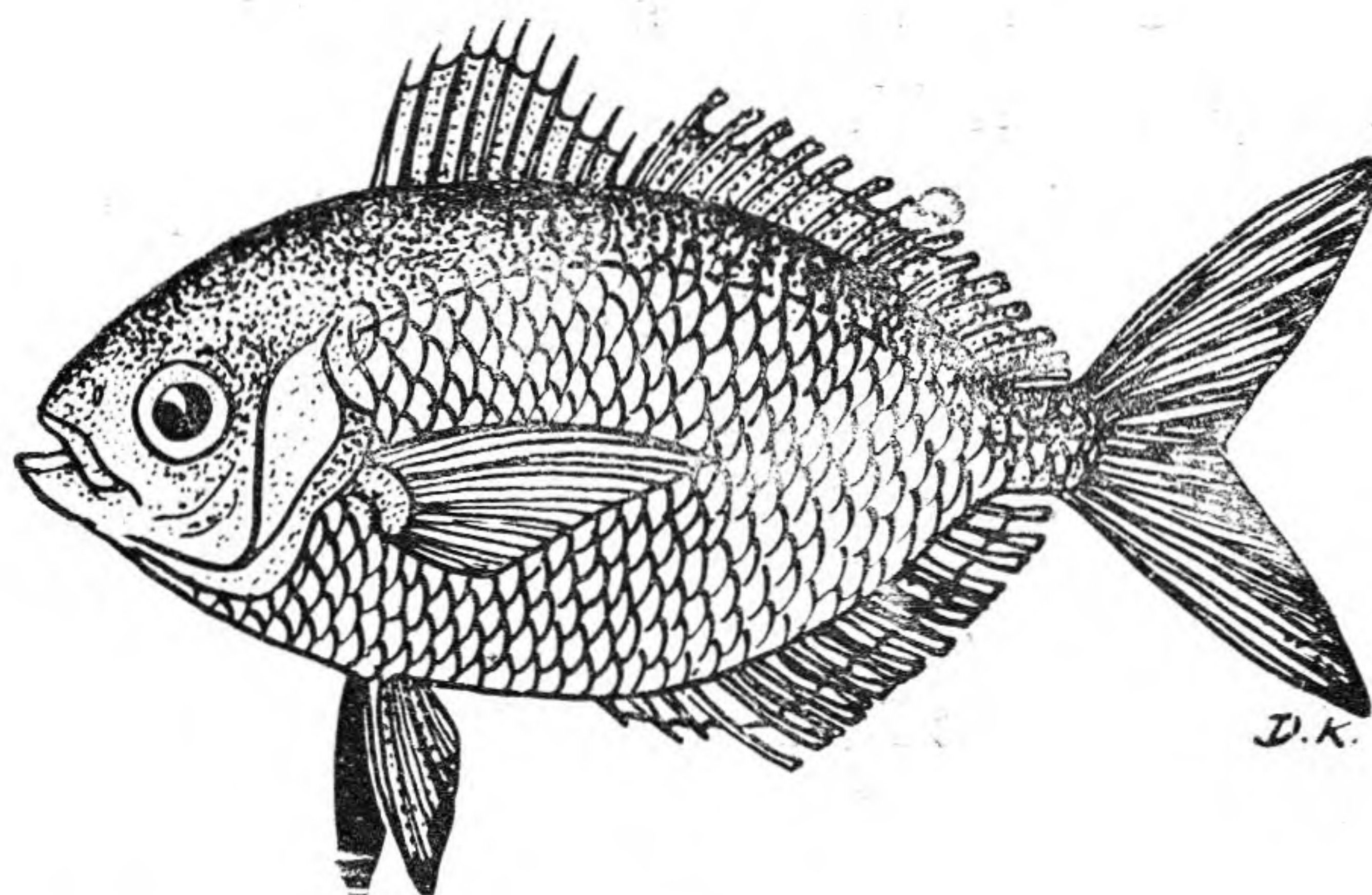
Gear.—Bottom trawl

Position.—7°05'N, 77°32'E (Wadge Bank)

Date.—18.3.72

Length.—14.8, 15, 15.5, 16, 16 cms. (5 specimens)

Psenes indicus (Day)



D. X. I. 15. A. III. 15. Ltr. 4 (above).

Compressed oval body. Two separate dorsal fins. Pelvics originate below pectoral base. No teeth on vomer or tongue. Uniform bluish grey in colour. Lower half of body silvery.

Depth.—120 metres

Gear.—Bottom trawl

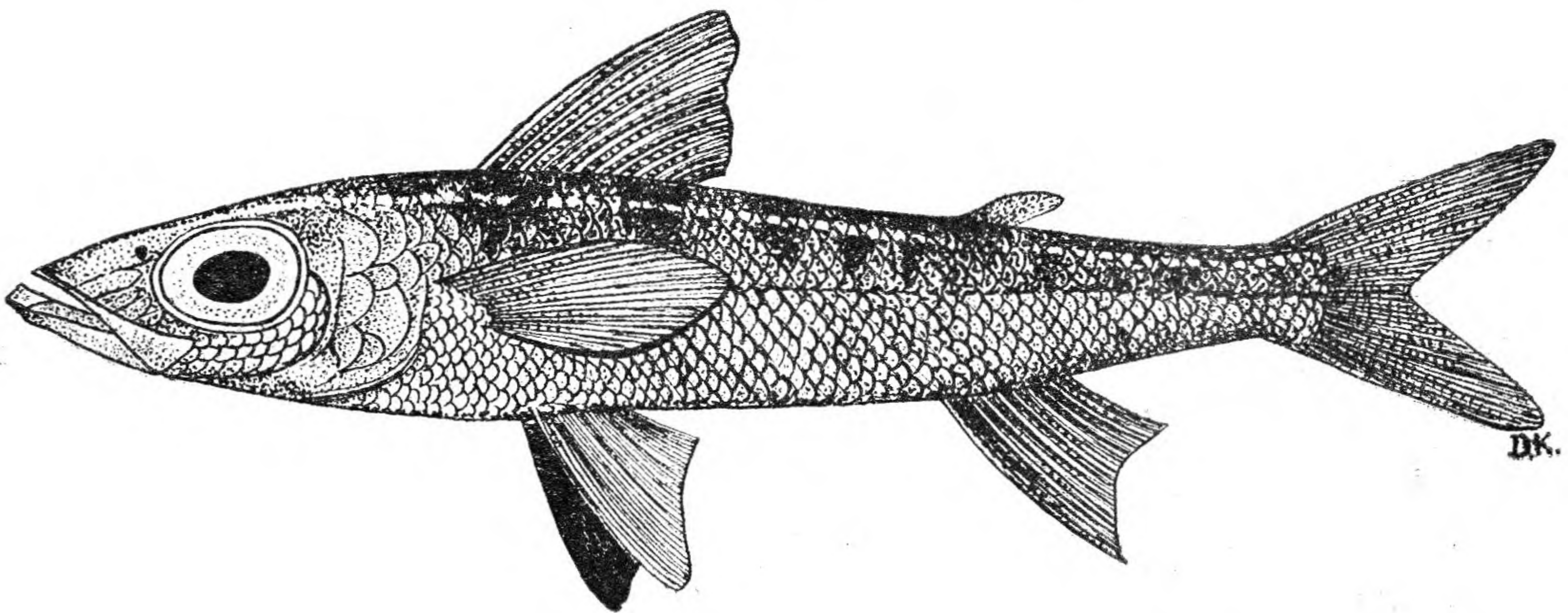
Position.—7°21. 5'N, 77°09. 5'E (Wadge Bank)

Date.—18.3.72

Length.—8 cms.

FAMILY CHLOROPHTHALMIDAE

Chlorophthalmus agassizi (Bonaparte)



D. 12. A. 9. GR. 4 (upper ramus)+16 (lower ramus)

Body elongate almost cylindrical. Normal dorsal and adipose fins present. Eye large luminescent green. Lower half of opercle greenish silvery and luminescent. Colour dorsal surface blackish and lateral surface silvery. Ventral surface flesh colour. Pelvic and pectoral fins blackish. Anal fin with a tinge of pink. Caudal fin dusky edged.

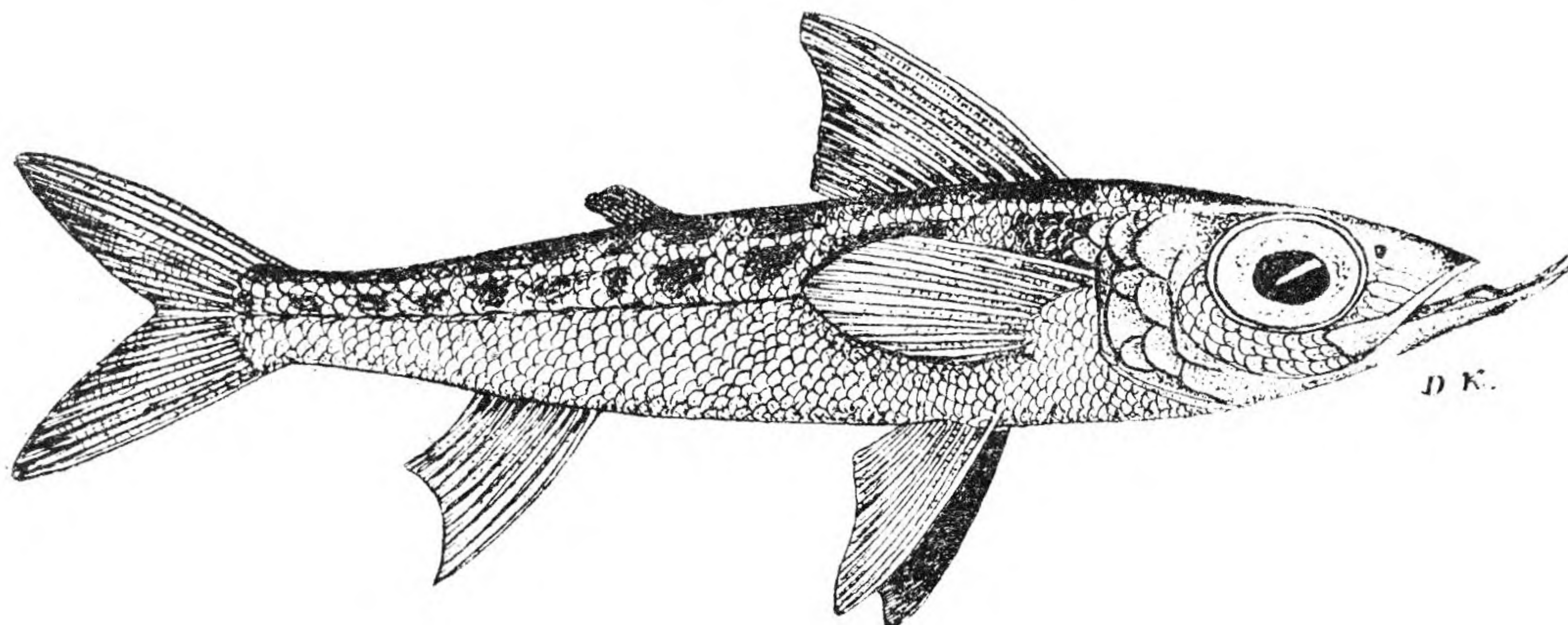
Depth.—240 metres

Gear.—Bottom trawl

Position.—7°05' N, 77°32' E (Wadge Bank)

Date.—18.3.72

Length.—16.5, 17, 18 cms (3 specimens)

Chlorophthalmus bicornis (Norman)

D. 11. A 10. P. I. 15 V. 18.

Height 5+ (in length to caudal base). Head 2.5+ in length. Eye 3 in head. Lower jaw terminates in a strongly projecting transverse horizontal plate the extremities of which are produced to form two teeth like processes. Origin of dorsal nearer to adipose fin than to tip of snout. Colour uniform grey with transverse bands on body. Eye large luminescent green.

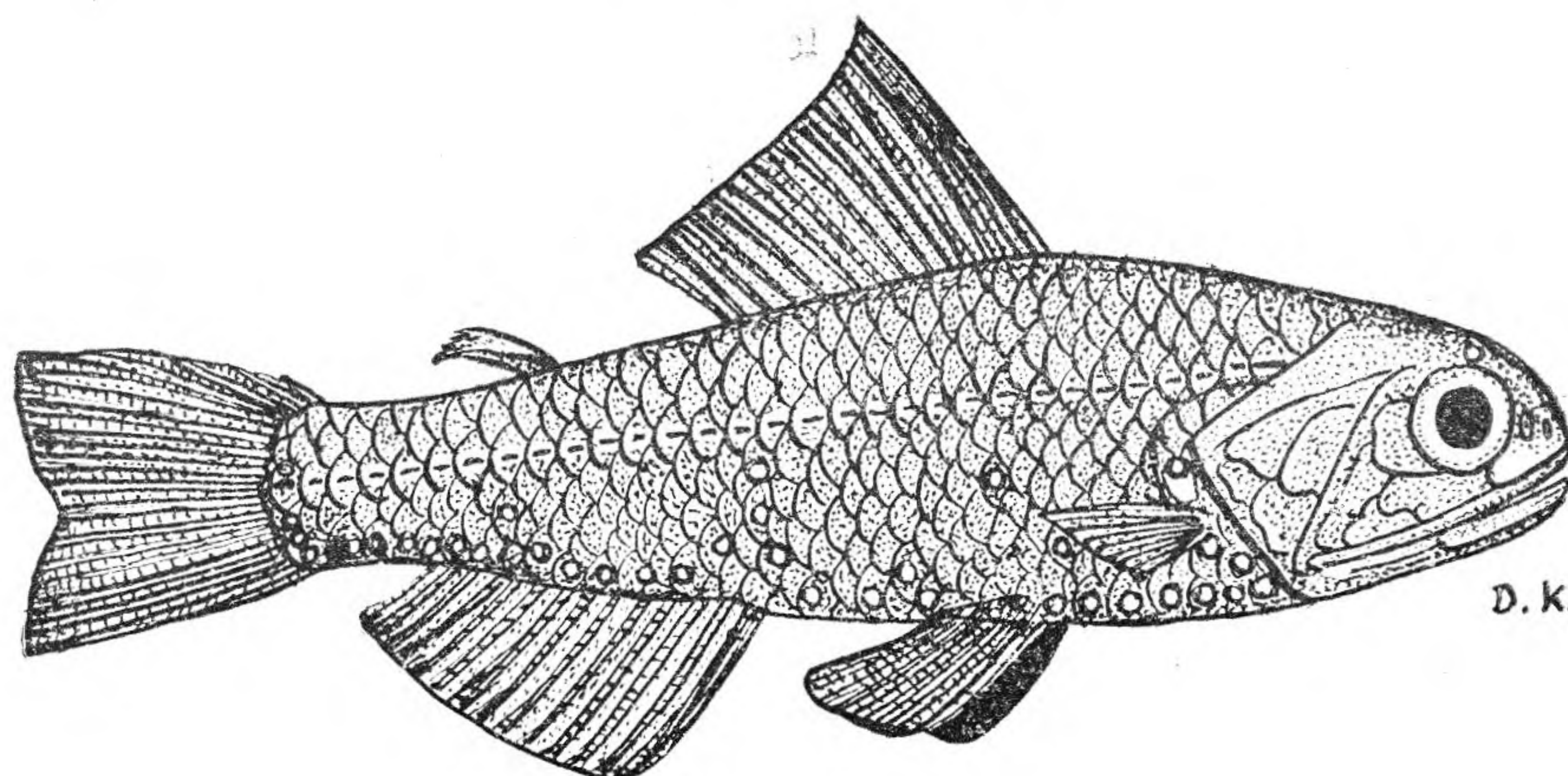
Depth.—240 metres

Gear.—Bottom trawl

Position.—7°05' N, 77°32' E (Wadge Bank)

Date.—18.3.72

Length.—9.6, 14.2, 14.5 cms. (3 specimens)

FAMILY MYCTOPHIDAE**Diaphus elucens** (Brauer)

D. 14. A. 15. Ll. 35.

Four precaudal photophores. No luminous plates above and below caudal peduncle. Two subpectoral photophores in line with 1st pectoral photophore. One photophore above pectoral and behind opercular margin nearer pectoral base than lateral line. Antorbital organs enlarged. Colour black iridescent.

Depth.—280-320 metres

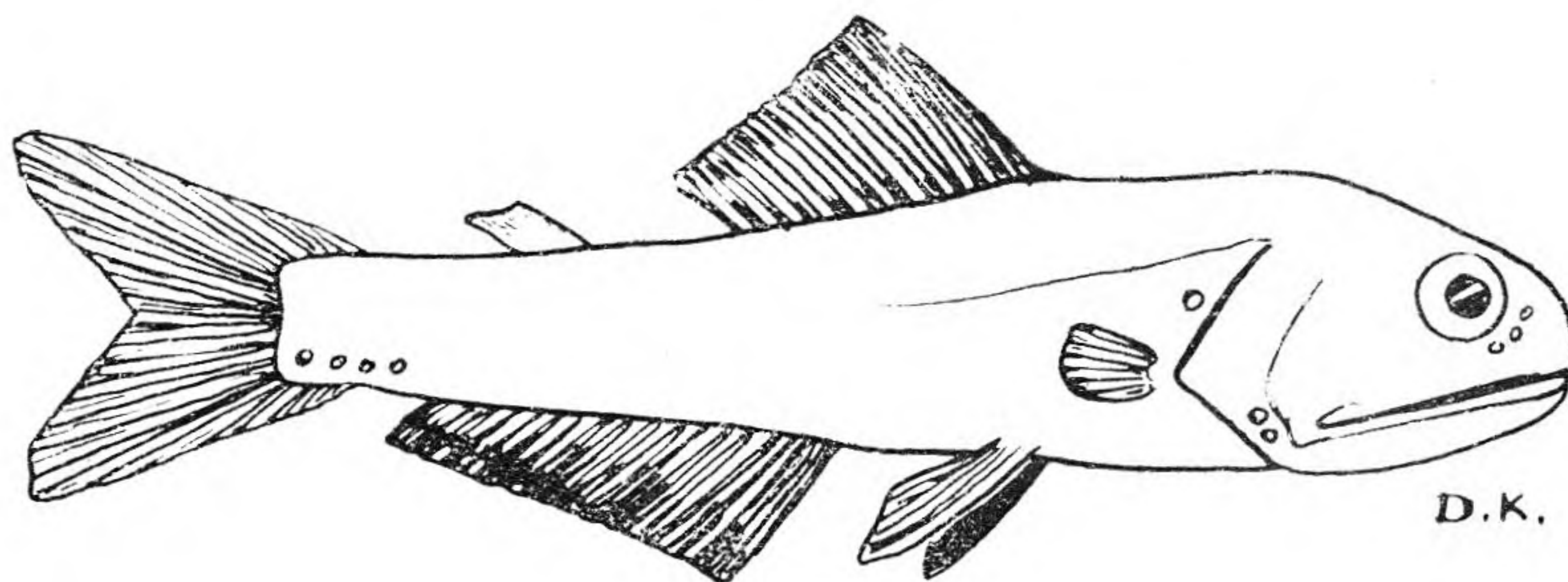
Gear.—Bottom trawl

Position.—8°38' N, 79°39' E (Gulf of Mannar)

Date.—11.3.72

Length.—15.5, 15.5 cms (2 specimens)

***Lampanyctus macropterus* (Brauer)**



D. 12. A. 18. Ll. 35

Photophores present. Ventrals below dorsal. Snout short and blunt. Gill membranes separate free. Adipose fin present. Caudal forked. Paired fins present. Luminous glands on head. Preopercle edge oblique. 4 precaudal photophores. Cheek without photophores, one on shoulder. Small preorbital ventral photophores at edge of eye in front. 2 photophores behind preopercle edge near jaw angle. Scales on body cycloid.

Depth.—280 metres

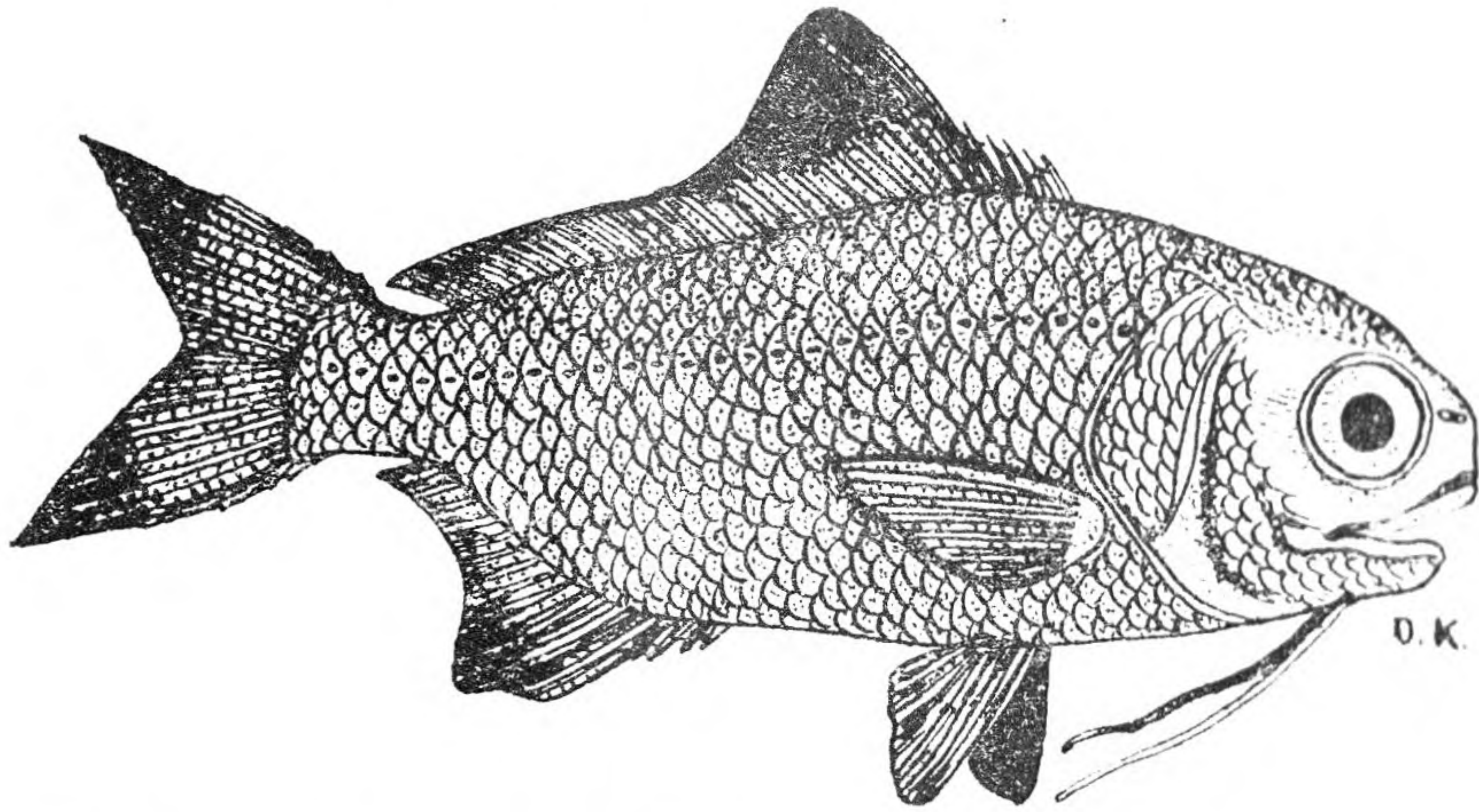
Gear.—Bottom trawl

Position.—8°52' N, 78°51' E (Gulf of Mannar)

Date.—12.3.72

Length.—7.2 to 7.5 cms (5 specimens)

FAMILY POLYMIXIIDAE

Polymixia japonica (Steindachner)

D. V. 33 (34). A. IV. 15. Depth $2\frac{2}{3}$ (in total length)

Barbels on chin. Fine teeth in jaws and palate. Interorbital less than diameter of eye. Barbels reach base of ventrals. Preopercle has a serrated margin. Body slaty blue in colour with grey on back and silvery below pectoral fin.

Depth.—235 metres

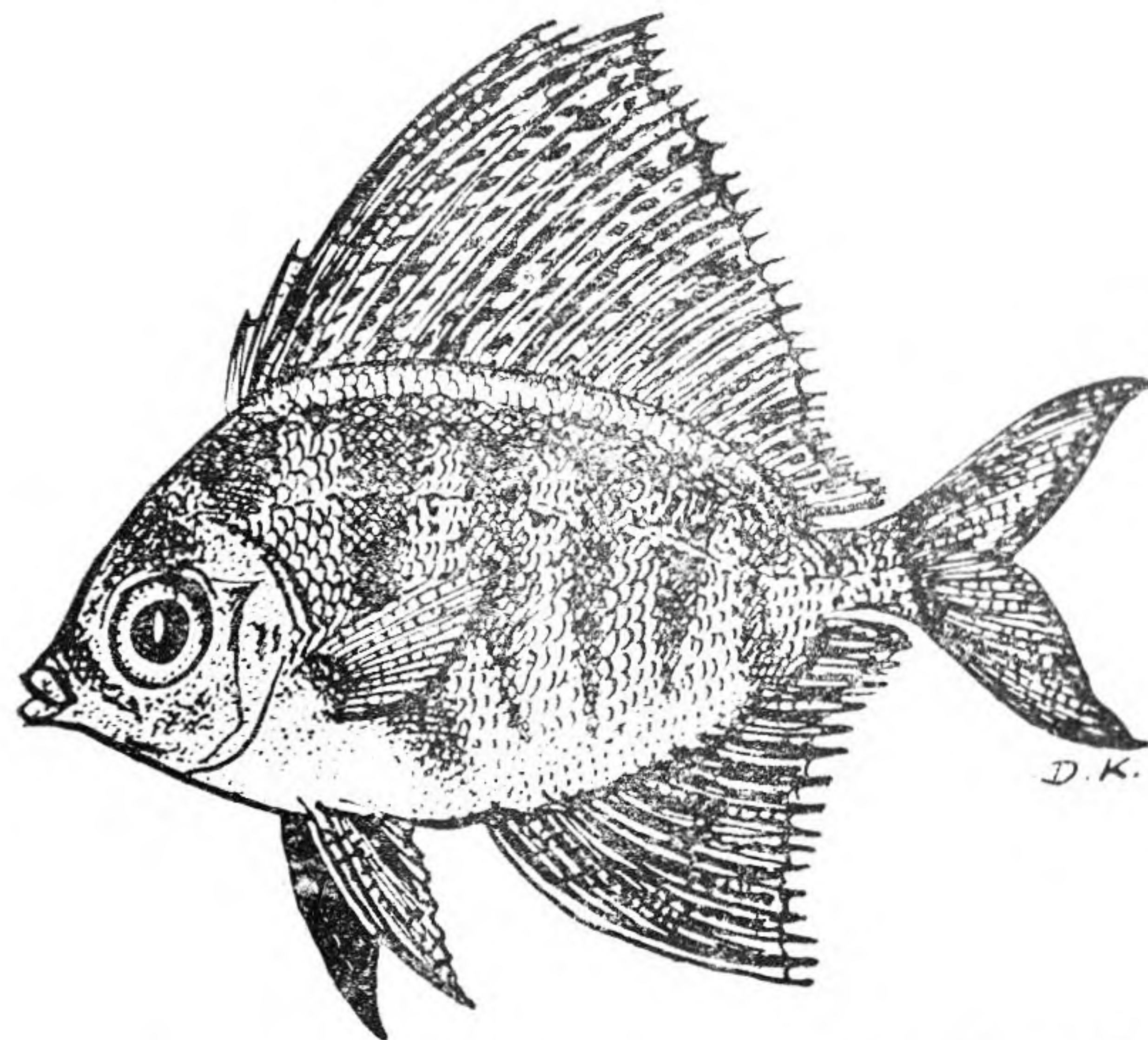
Gear.—Bottom trawl

Position.—7°05' N, 77°25' E (Wadge Bank)

Date.—19.3.72

Length.—12.5 cms (3 specimens)

FAMILY VELIFERIDAE

Velifer africanus (Smith)

D. II. 22.9 A. 15.9. Ll. 70+ GR. 12 (lower ramus)+6 (upper ramus)

First dorsal ray long. Third longest equal to depth. Dorsal rays joined by a greyish white membrane with yellow curvical base. 7 transverse blackish grey bands across body. First across eye, last across the posterior edge of dorsal and anal fins. Differs from Smith's description in that the first two dorsal rays are spiniform and also in dorsal and anal ray count.

Depth.—60 metres

Gear.—Bottom trawl

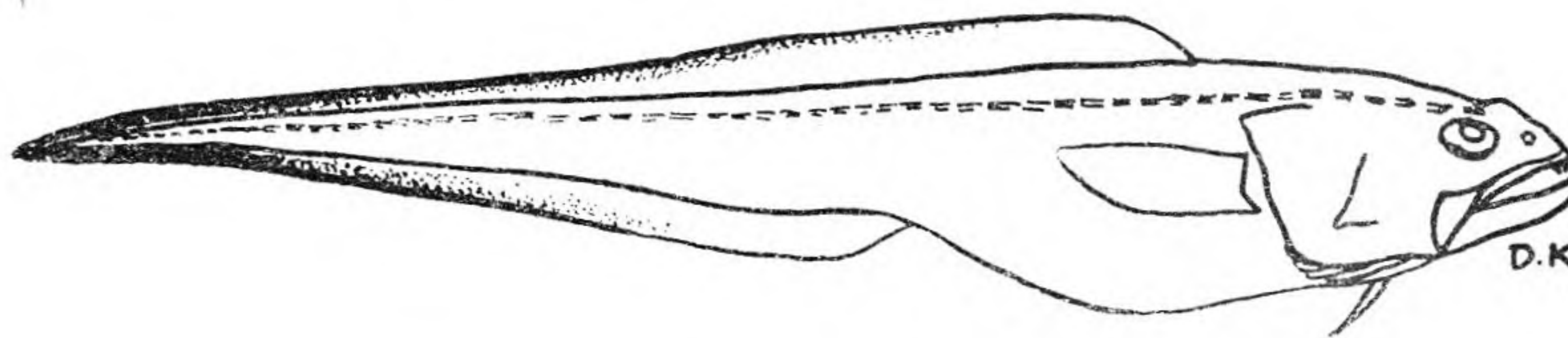
Position.—7°37'N, 77°43'E (Wadge Bank)

Date.—21.3.72

Length.—22.5, 25 cms (2 specimens)

FAMILY BROTULIDAE

Hypopleuron caninum (Smith and Radcliff)



Dorsal, anal and caudal confluent. Dorsal commences above posterior margin of opercle. Body slender and elongate tapering posteriorly to tail fin. Small seker present. Head depressed. Mouth large oblique. Two curved canines in front of upper jaw. Teeth on vomer in \wedge shaped patch. Lateral line broad and prominent. Colour greyish brown. Dorsal and anal fins with black margins which widen posteriorly to include entire fin.

Depth.—280 metres

Gear.—Bottom trawl

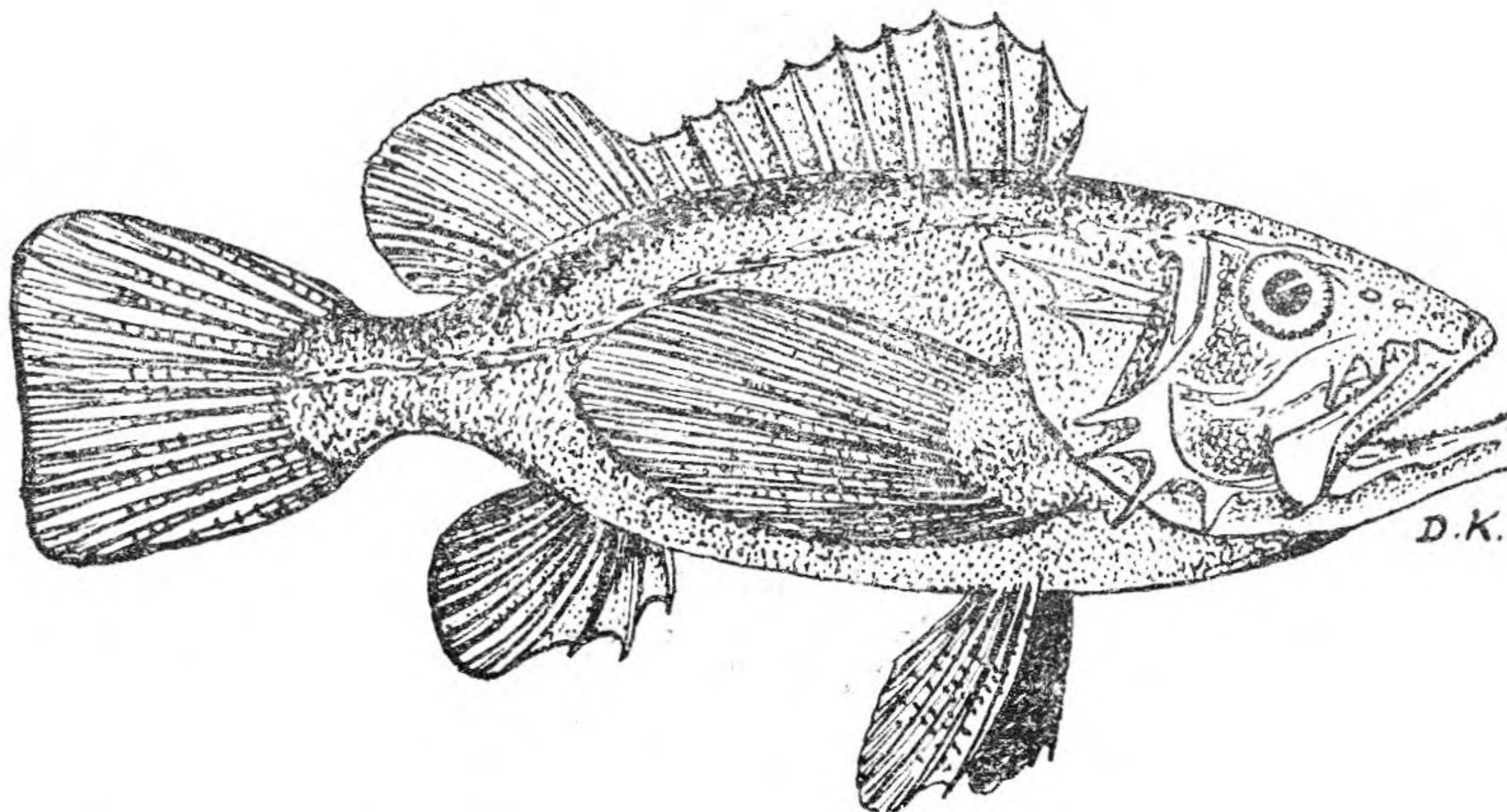
Position.—8°52'N, 78°51'E (Gulf of Mannar)

Date.—12.3.72

Length.—25, 28, 34 cms (3 specimens)

FAMILY SCORPAENIDAE

Setarches longiceps (Gunther)



D. XII, 10. A. III.5. Ll. 26 pores

Pectorals rounded. Some pectoral rays divided. Bones of head cavernous. Pectoral fin with 23 rays. Colour uniform dark red.

Depth.—235 metres

Gear.—Bottom trawl

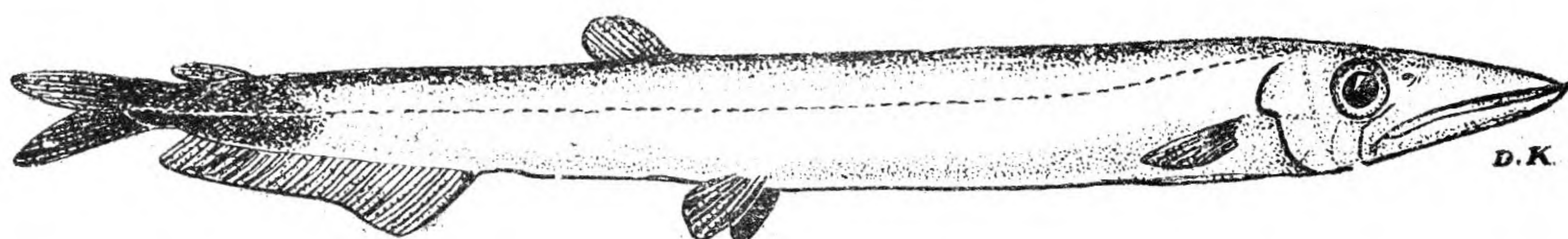
Position.—7°05'N, 77°25' E (Wadge Bank)

Date.—14.3.72

Length.—9 cms.

FAMILY PARALEPIDAE

Lestidium nudum (Gilbert.)



D. 9. A. 34. Depth 12 in total length. Head 4+ (in length).

Body completely naked. Teeth in lower jaw fang-like. Lower jaw blunt tip turned upwards. Ventral fin before dorsal origin. Maxilla extends well behind corner of mouth.

Depth.—280 metres

Gear.—Bottom trawl

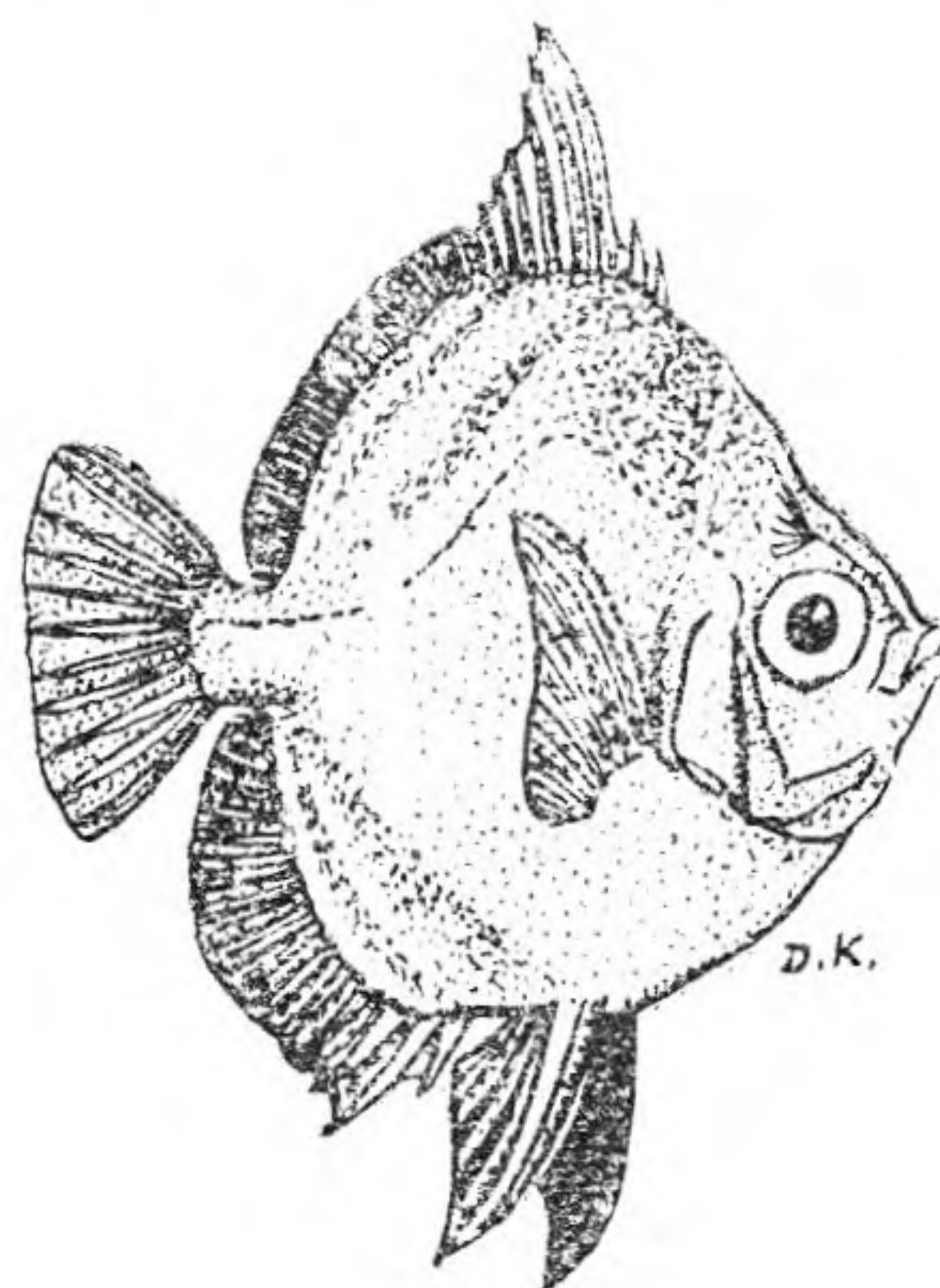
Position.—8°52'N, 78°51'E (Gulf of Mannar)

Date.—12.3.72

Length.—19, 19.8, 21.2 cms. (3 specimens)

FAMILY CAPROIDAE

Antigonia malayana (Weber)



D. VIII.30. A. III.29. Ht. 1.5. (in total length) L 1. 50+. Snout $\frac{2}{3}$ eye.

Preorbital serrated. Preopercular and opercular edges serrated. 4 horizontal rows of scales on cheek. First and second dorsal spines minute. Ventrals reach anal spine. Colour uniform red. Fins somewhat lighter.

Depth.—240 metres

Gear.—Bottom trawl

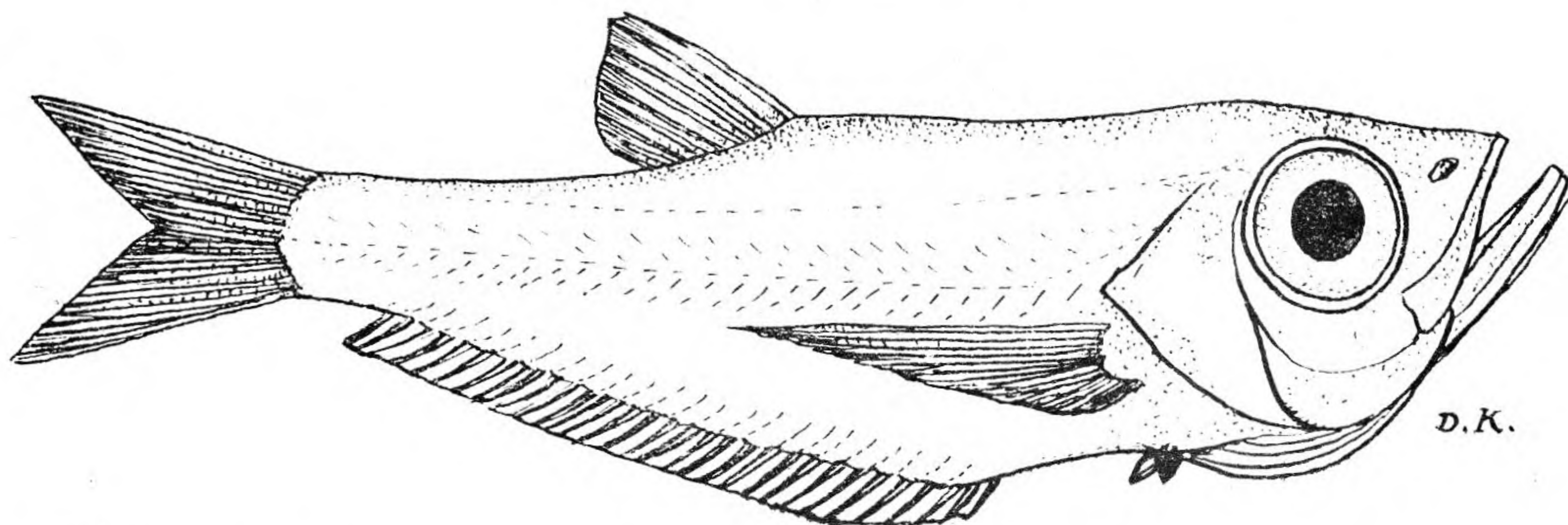
Position.—7°05'N, 77°32'E (Wadge Bank)

Date.—18.3.72

Length.—5.8 and 9.8 cms. (2 specimens)

FAMILY BATHYCLUPEIDAE

***Bathyclupea hoskynii* (Alcock)**



D. 9. A. 32. - GR. 26.

Head about 3 in length without caudal. Snout more than half diameter of eye which is a little more than twice interorbital space. Mouth nearly vertical. Lower jaw projecting. Maxillary extending to below anterior part of eye. Lower edge of preoperculum finely serrated. Colour silvery grey.

Depth.—280 metres

Gear.—Bottom trawl

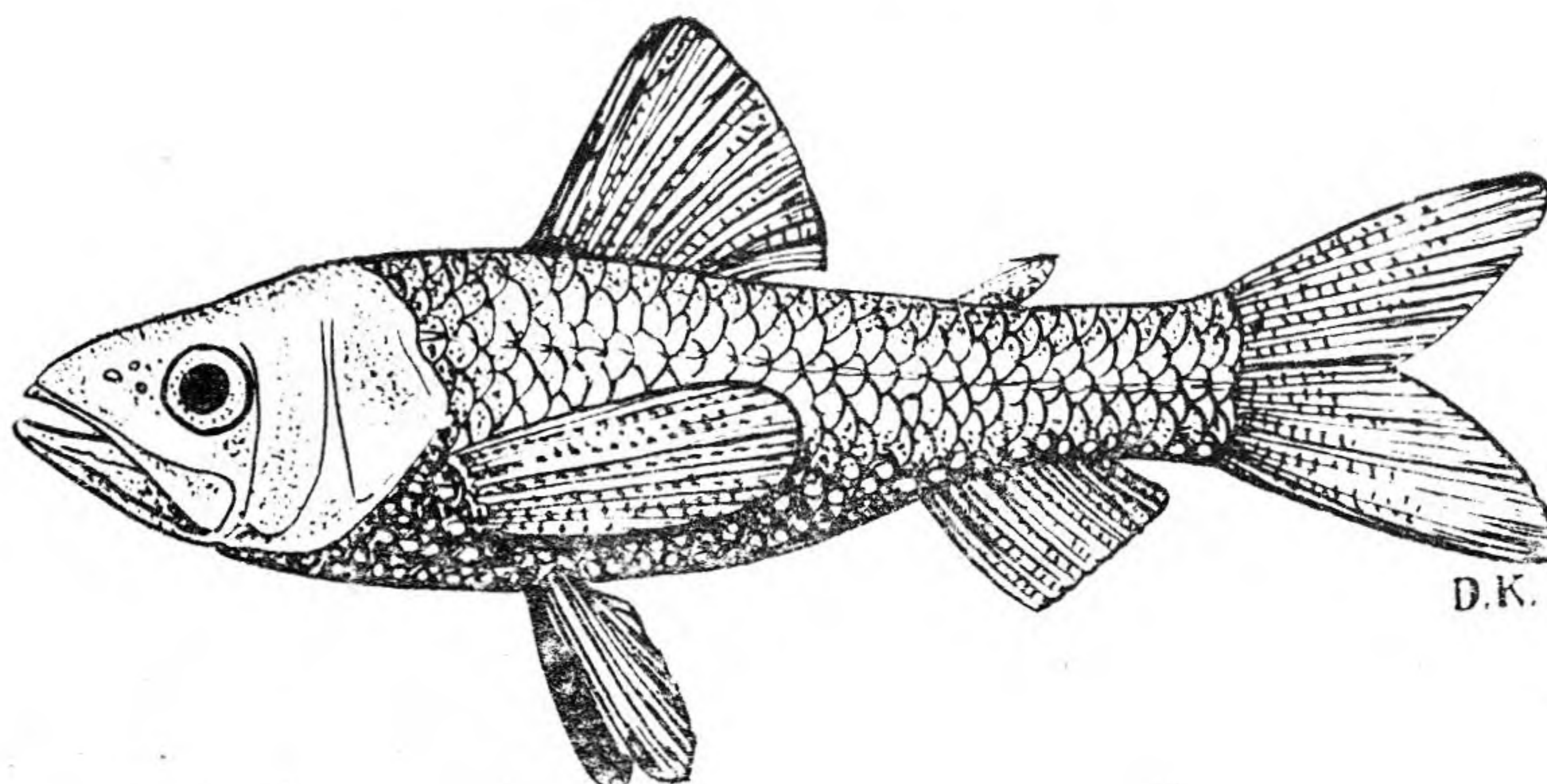
Position.—8°52'N, 78°51'E (Gulf of Mannar)

Date.—12.3.72

Length.—13, 15.5, 16 cms. (3 specimens)

FAMILY NEOSCOPELIDAE

***Neoscopelus macrolepidotus* (Johnson)**



D. 12. A. 11.

Eyes normal. Phosphorescent organs present on body. Photophores not as defined groups, Depth 4+. Interorbital slightly less than eye. Colour silvery with a pinkish sheen.

Depth.—280 metres

Gear.—Bottom trawl

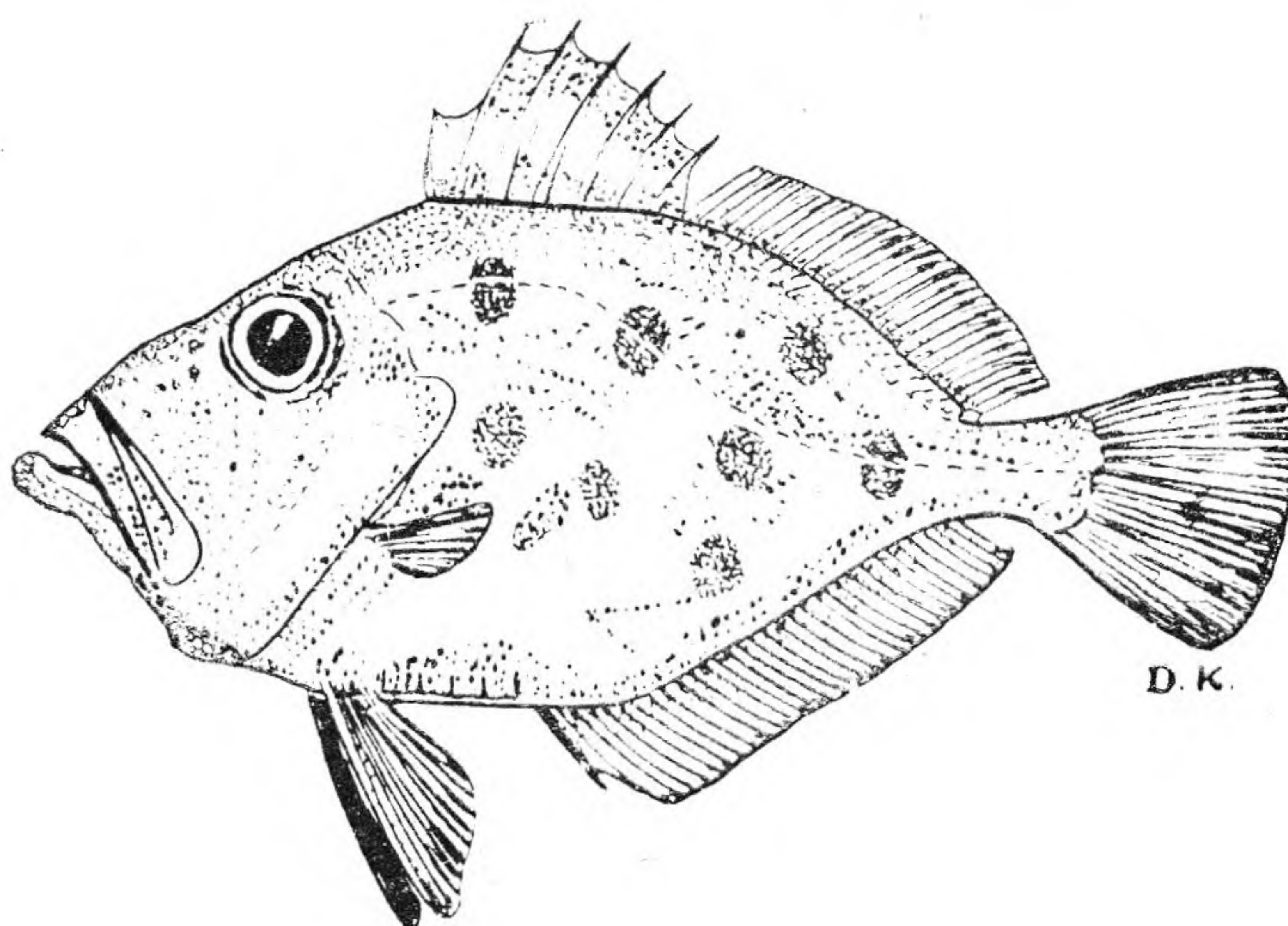
Position.—8°52'N, 78°51'E (Gulf of Mannar)

Date.—12.3.72

Length.—10.2, 10.4, 11.1, 11.2, 11.5, 11.5, 11.5, 11.8 cms. (8 specimens)

FAMILY ZEIDAE

Zenion leptolepis (Gilchrist & von Bonde)



D. VII. 28. A. 1.32. V. 18. Depth 2+ (in total length)

Body deep compressed with small scales. Mouth highly protractile. One anal spine. Eye large. Lateral line complete following closely the dorsal profile. Five prominent scutes on abdomen (like bucklers). Supraorbital serrated. Pectoral fin small. Caudal fin rounded. Colour silvery, with indications of dark grey blotches on body.

Depth.—280 metres

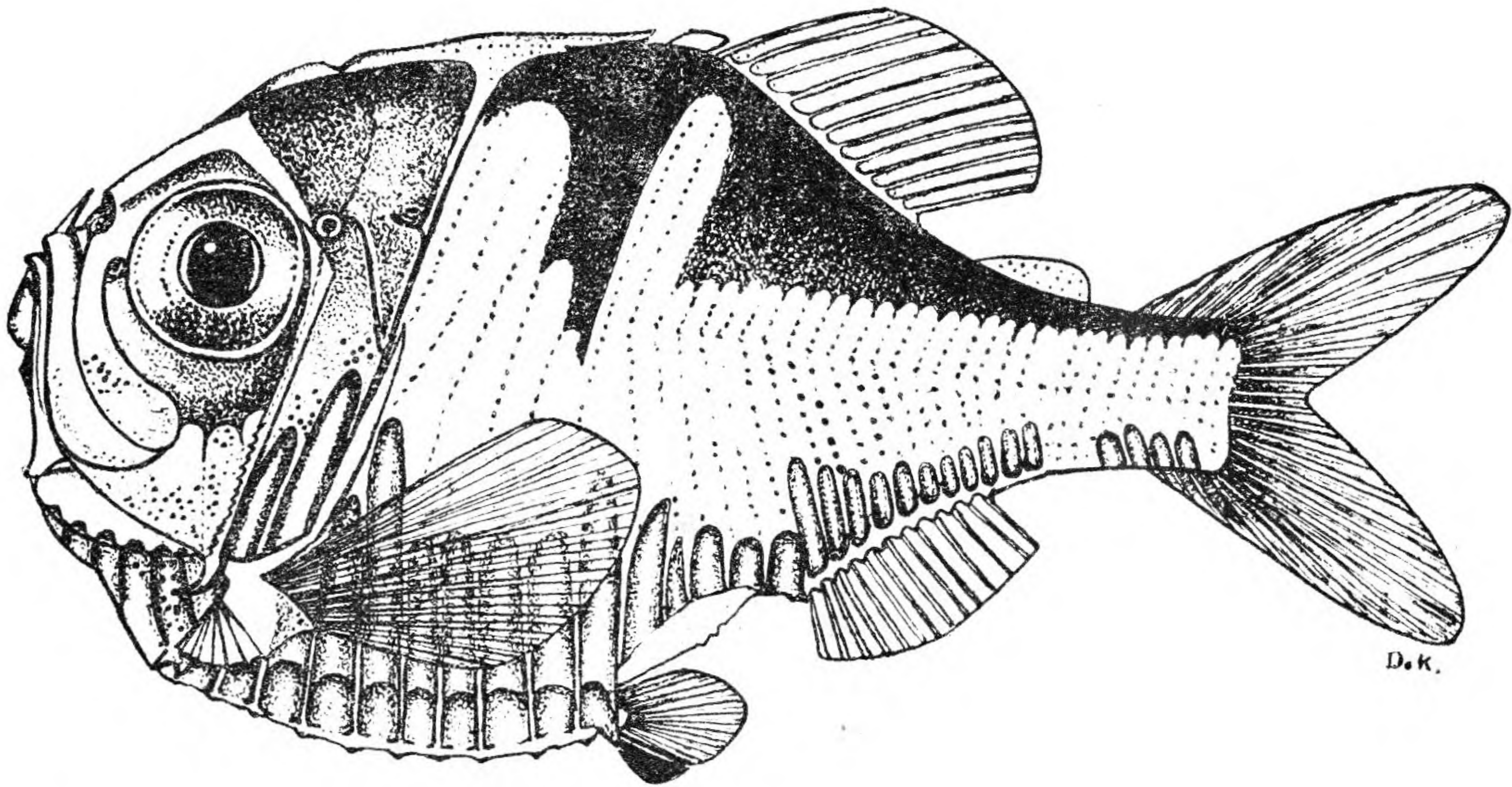
Gear.—Bottom trawl

Position.—8°52'N, 78°51'E (Gulf of Mannar)

Date.—12.3.72

Length.—14 cms.

FAMILY STERNOPTYCHIDAE

Polyipnus spinosus (Gunther)

D. 12. A. 14.

Short compressed body. Mouth oblique. Eyes large. Luminous organs on lower part of body. Adipose dorsal fin present. No erect bony plate before dorsal. Small backward directed pair of spines from head shield. Colour iridescent silvery, indigo above.

Depth.—300-320 metres

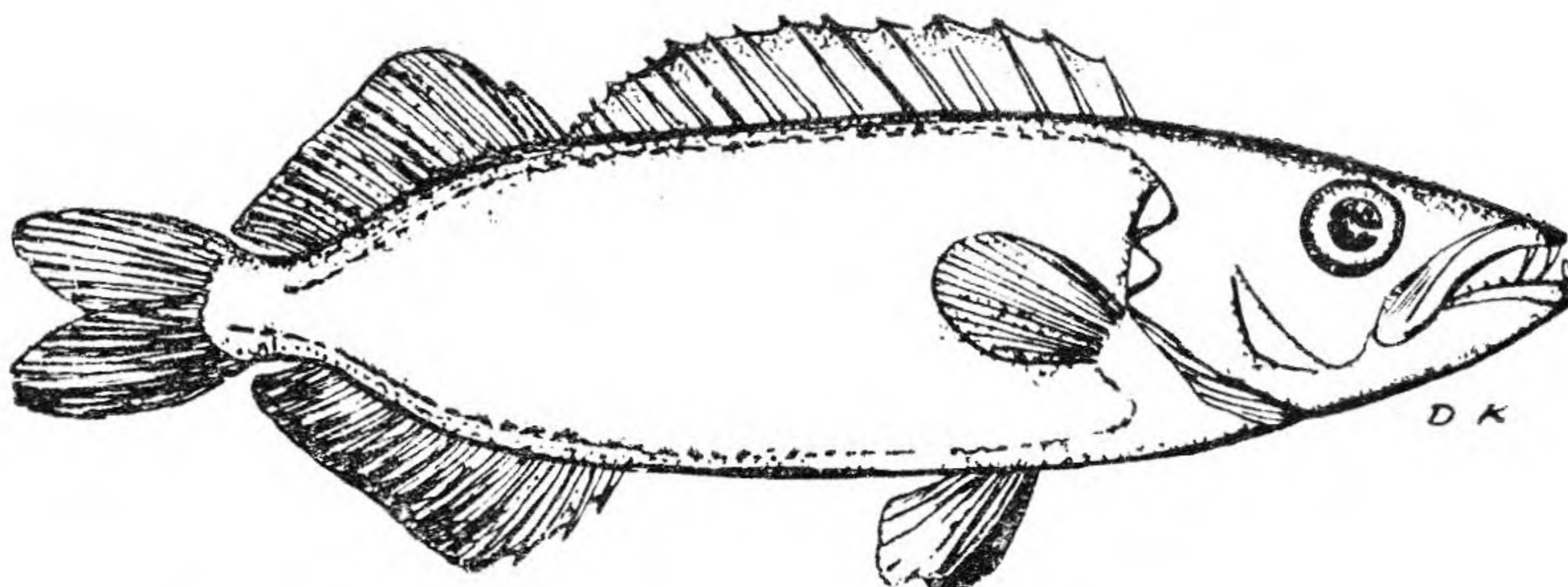
Gear.—Bottom trawl

Position.—8°38'N, 79°39'E (Gulf of Mannar)

Date.—11.3.72

Length.—6.5, 6.7, 7.1, 7.1, 7.5, 7.5 cms. (7 specimens)

FAMILY GEMPYLIDAE

Epinnula orientalis pacifica (Grey)

D. XVI.1.19. A. III.19. Depth 4 in length.

Two lateral lines. No dorsal finlets. Gill rakers, one long at angle of arch + 6 short spiny rakers. Lateral line commences above opercle margin close to nape and runs parallel to dorsal profile and ends behind and below last dorsal ray. Second lateral line runs along ventral profile and ends at base of caudal fin. Interorbital space wider than diameter of eye. Ventral origin beneath middle of pectoral. Inside of mouth and gill cover black. Colour of body purplish black.

Depth.—240 metres

Gear.—Bottom trawl

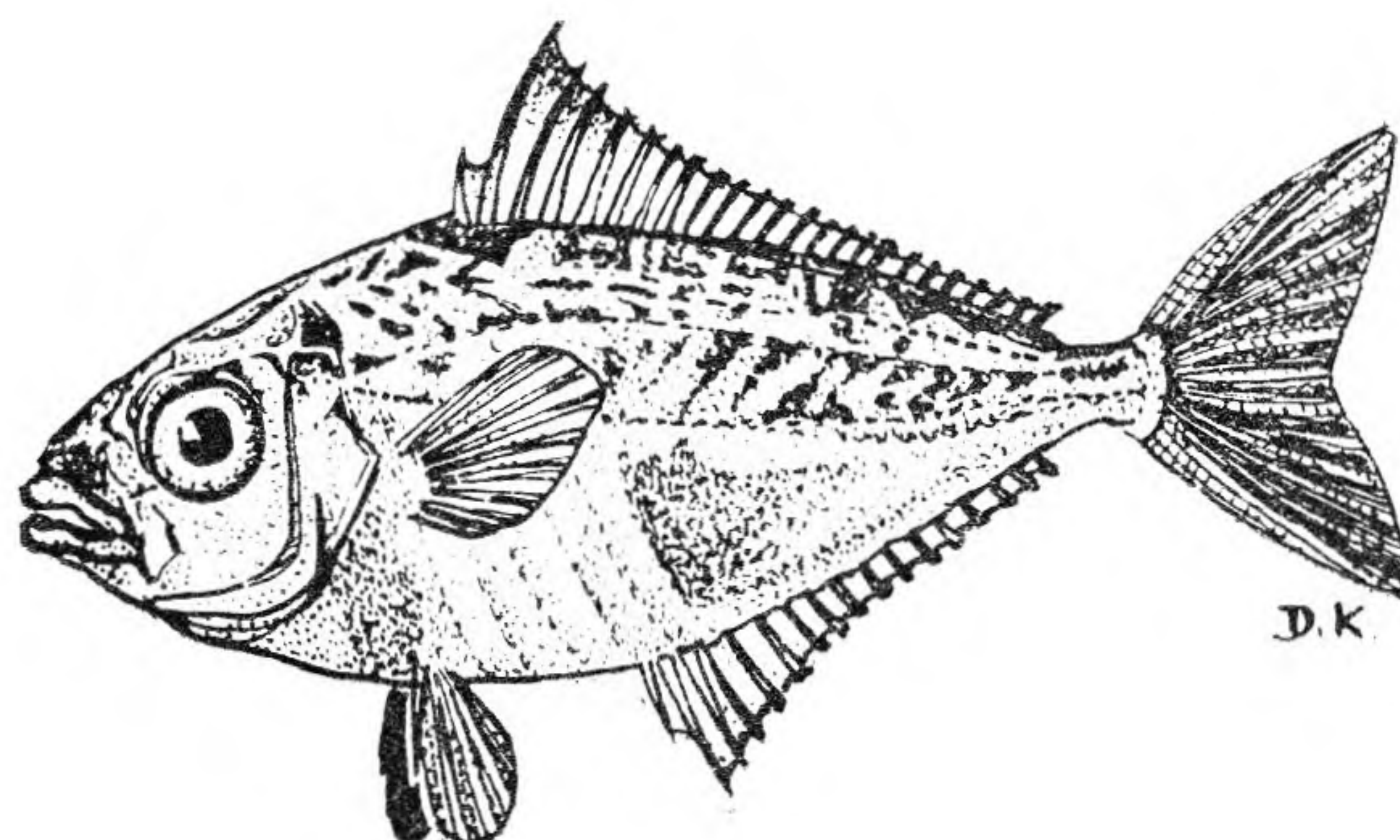
Position.—7°05'N, 77°32'E (Wadge Bank)

Date.—18.3.72

Length.—16, 17, 18.5, 19, 19 cms. (5 specimens)

FAMILY LEIOGNATHIDAE

Leiognathus rivulatus (Temmenki et Schlegel)



D.VIII.16. A. III.14. Depth 2.5+ (in total length)

Teeth minute. Mouth protractile directed slightly downwards. Mandible straight. Dorsal profile slightly more convex than ventral profile. Gape of mouth commences opposite lower third of eye. Upper half of body coarsely vermiculated with dark markings. Lower half of body powdered with black dots. Colour silvery.

Depth.—300-320 metres

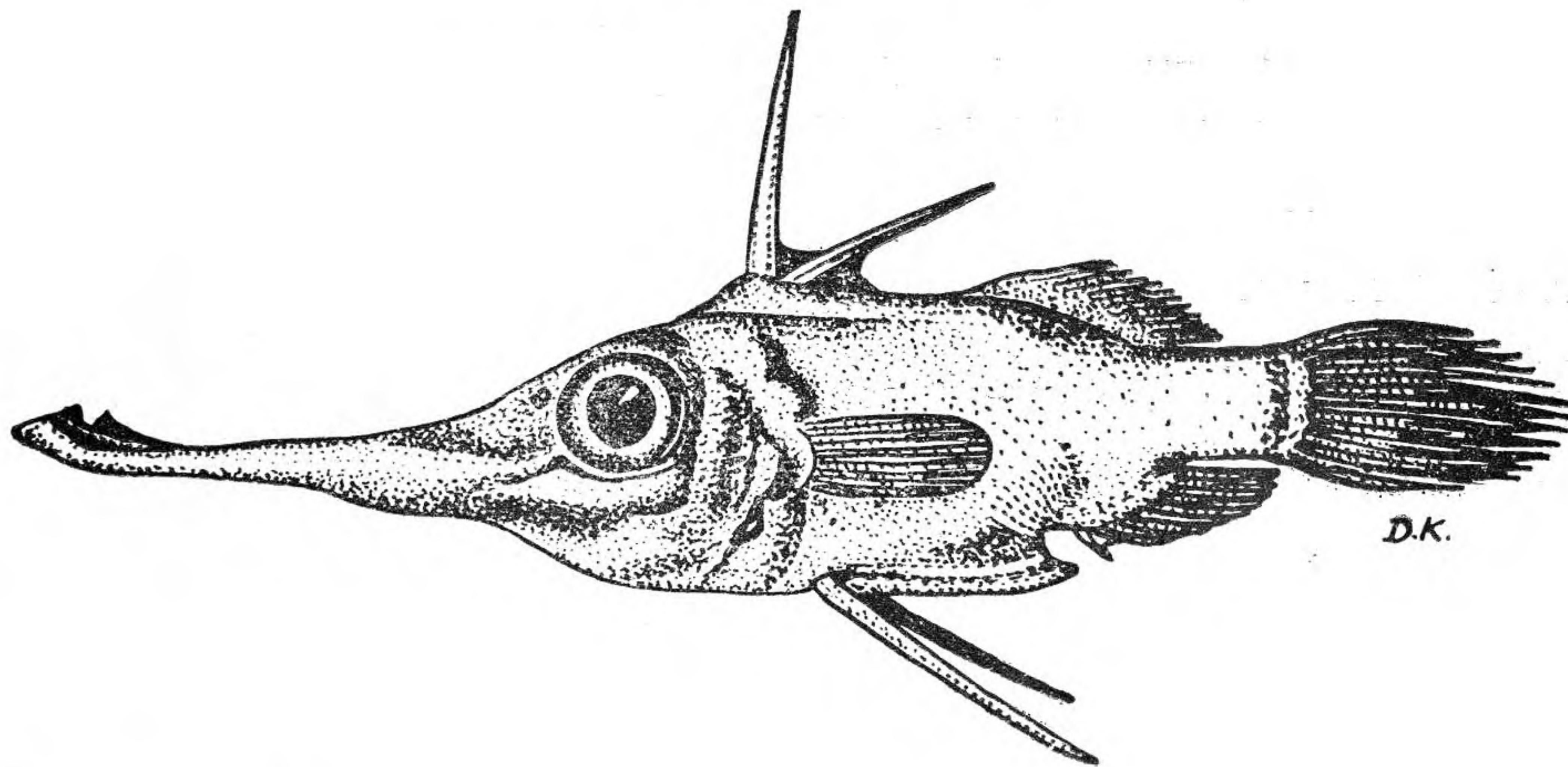
Gear.—Bottom trawl

Position.—8°38'N, 79°39'E (Gulf of Mannar)

Date.—11.3.72

Length.—10, 10.5 cms. (2 specimens)

FAMILY TRIACANTHIDAE
Halimochirurgus centriscoides (Alcock)



D¹. II. D². 10. A. 1.9.

Snout prolonged into a flute-like process. Eye large. One ventral spine directed sideways. A bony plate on ventral surface from below ventral spine to origin of anal. Caudal wedge shaped. Colour muddy brown. Skin very rough to the touch.

Depth.—240 metres

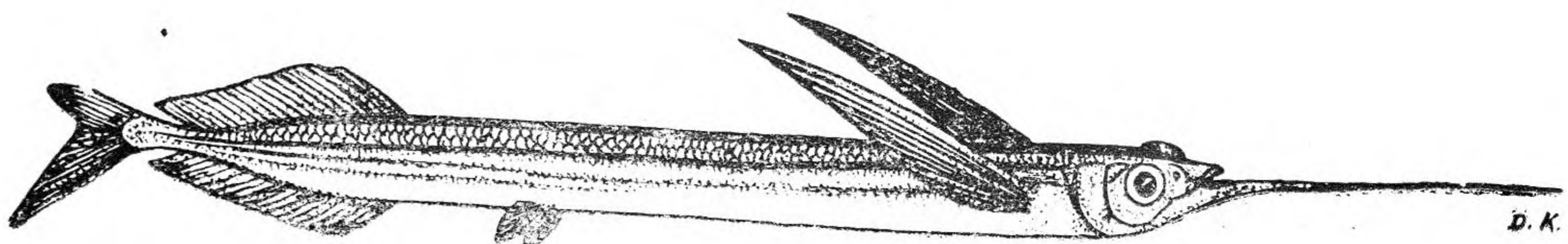
Gear.—Bottom trawl

Position.—7°05'N, 77°32'E (Wadge Bank)

Date.—18.3.72

Length.—9.4, 9.2, 9.0, 9.0 cms. (4 specimens)

FAMILY HEMIRHAMPHIDAE
Euleptorhamphus viridis (van Hasselt)



D. 19. A. 19. P. 8. L. 1. 100+ Depth about 20 in total length.

Lower jaw produced into a beak. Ventral fins small. Caudal deeply forked. Lower lobe longer than upper. Body extremely elongate and compressed. Pectorals twice head (without beak). Median ridge on back. Colour bluish above silvery below with a broad mid lateral silvery band. Ventrals nearer tail base than operculum.

Depth.—Surface.

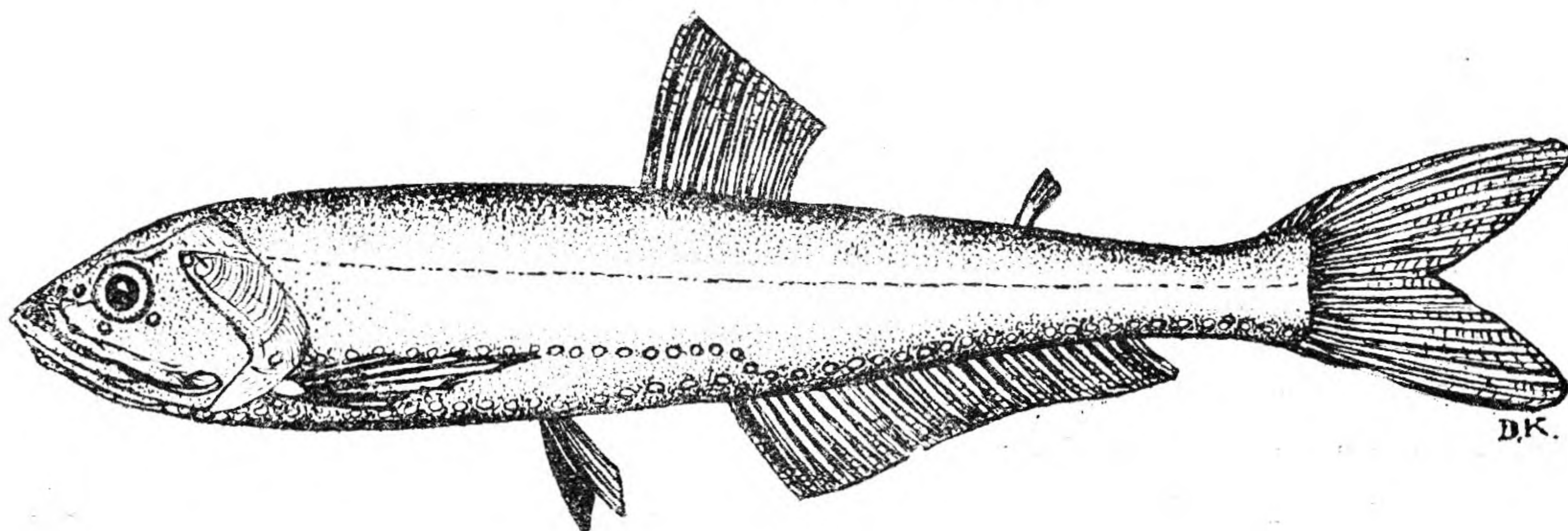
Gear.—Hand dip net (taken at night)

Position.—Gulf of Mannar

Date.—17.3.72

Length.—38.5, 39 and 40 cms. (3 specimens)

FAMILY GONOSTOMIDAE

Yarella corythaeola (Alcock)

D. 11. A. 26. Depth $6\frac{1}{2}$ (in total length)

Elongate body. Pseudobranchia absent. Photophores present along lower flanks of body. Gill rakers long and thin. Dorsal origin before anal origin. Dorsal ends above anal fin. Colour silvery with dark black markings.

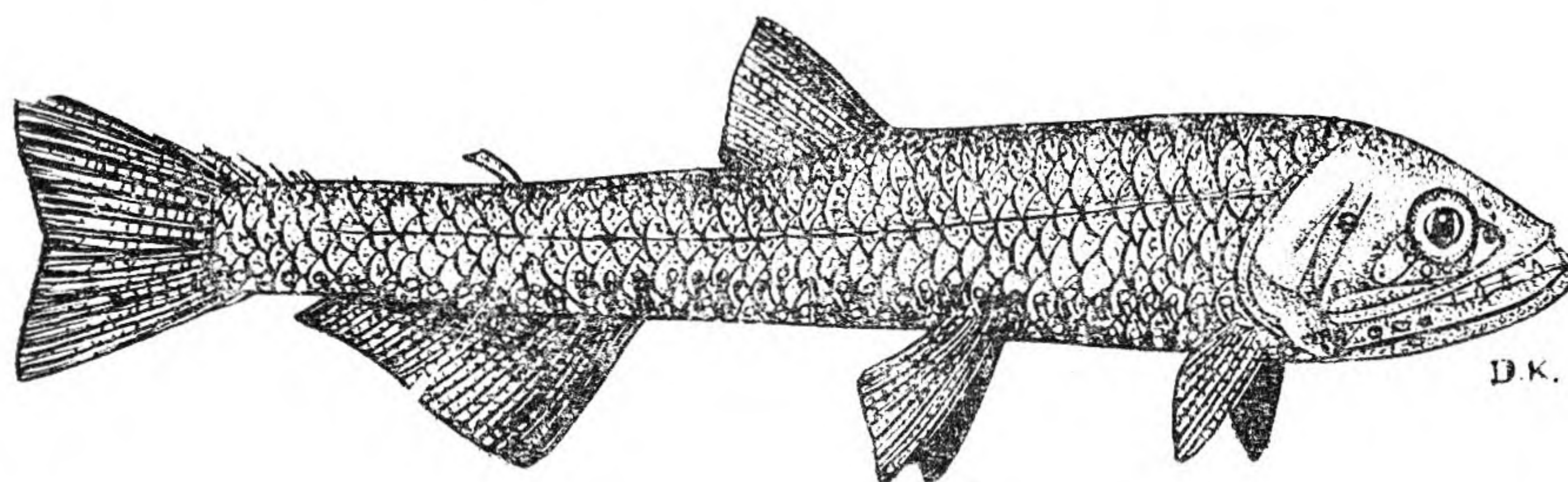
Depth.—280 metres

Gear.—Bottom trawl

Position.— $8^{\circ}52'N$, $78^{\circ}51'E$ (Gulf of Mannar)

Date.—12.3.72

Length.—10.5, 11.7, 12.5 cms. (3 specimens)

Photichthys argenteus (Hutton)

D. 12. A. 20.+

Elongate body. Photophores present. Mouth large with fang-like teeth. Dorsal origin before anal origin. Dorsal ends before anal. Whole dorsal in front of anal. No barbel. 11 Photophores before pectorals, 15 between pectorals and pelvics, and about 16 between pelvics and anal. Colour uniform black.

Depth.—250 metres

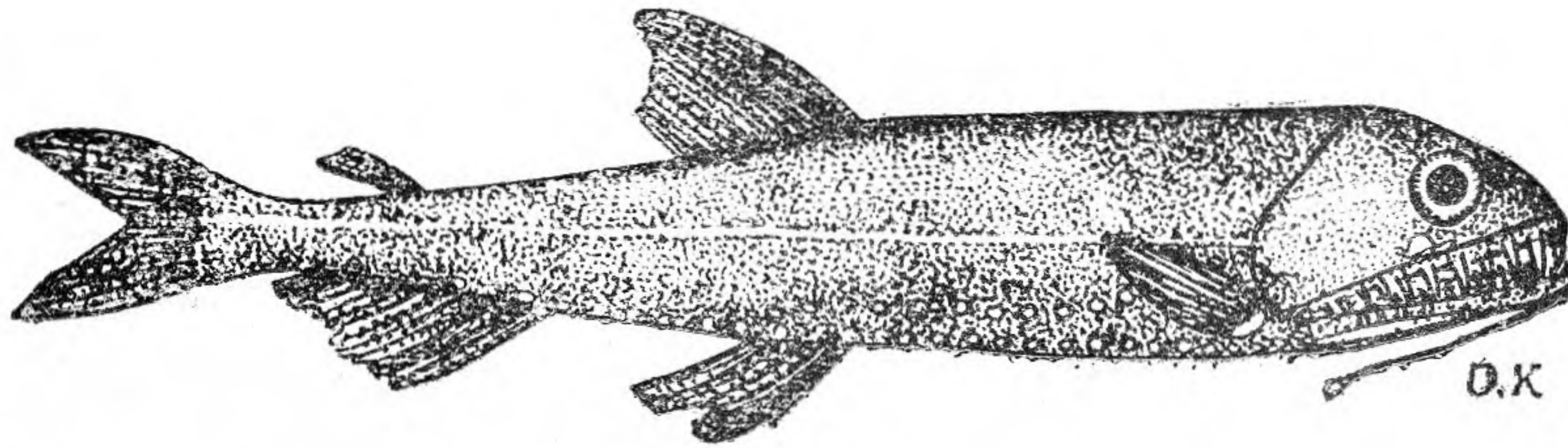
Gear.—Bottom trawl

Position.— $8^{\circ}18.7'N$, $76^{\circ}30.7'E$ (S. W. coast of India)

Date.—3.12.72

Length.—12 cms.

FAMILY ASTRONESTHIDAE

Astronesthes richardsoni (Poey)

D. 11. A. 14. Depth 6+ (in total length)

Elongate compressed naked body. Large mouth with long fangs. Barbel beneath chin. Photophores along lower flanks. No vomerine teeth. Teeth widely spaced on maxilla. Colour uniform black with bluish spots on entire body.

Depth.—280 metres

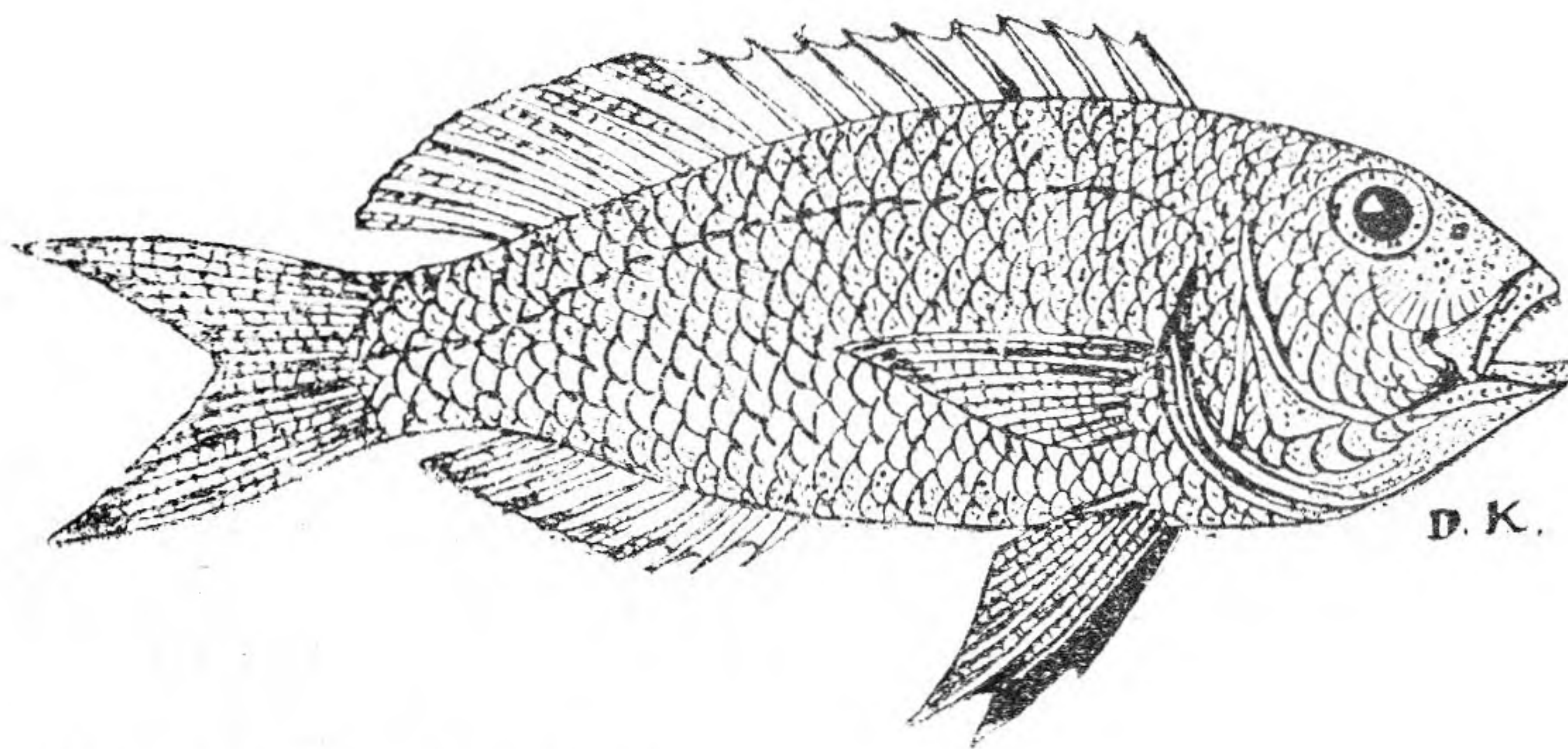
Gear.—Bottom trawl

Position.—8°52'N, 78°51'E (Gulf of Mannar)

Date.—12.3.72

Length.—11.5 cms.

FAMILY NEMIPTERIDAE

Nemipterus hexodon (Quoy and Gaimard)

D.X. 9. A. III.7. L1. 55. Ltr. 4/12

Preopercle with 3 transverse rows of scales. Palate toothless. Subocular shelf present. Suborbital without spines. Depth of suborbital equals diameter of eye. Posterior angle of suborbital not very obtuse, hind border forming a more or less straight line which when produced reaches the dorsal profile far before dorsal. Maxillary smooth. No molar teeth. Canines in both jaws. Scales on head beginning slightly before hind border of eye. Pectorals slightly shorter than head. Colour reddish brown.

Depth.—250 metres

Gear.—Bottom trawl

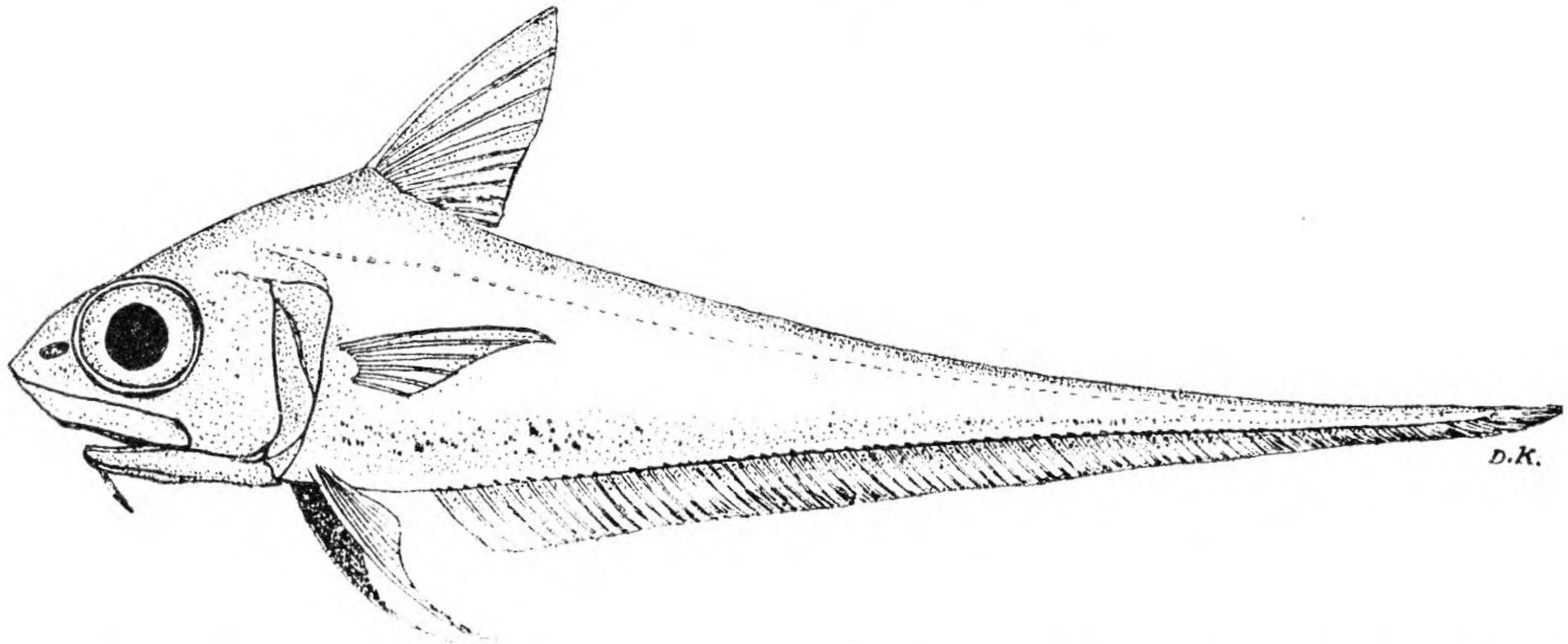
Position.—6°05'N, 81°34'E (S. E. coast of Sri Lanka)

Date.—6.5.72

Length.—16.5, 16.5, 17 cms. (3 specimens)

FAMILY CORYPHAENOIDIDAE

***Coelorhynchus flabellispinus* (Alcock)**



Elongate body tapering to a point. Anal long. Scales rough. 2nd dorsal ray spiniform. A barbel below chin. 6 branchiostegal rays. Dorsal spine smooth. Scales large with prominent spinules. First dorsal of 2 spiniform and 8 rays. Eight rudimentary rows of spinules on each scale. Snout pointed. Maxilla extends to below posterior margin of eye. Colour dusky grey, head darker.

Depth.—240 metres

Gear.—Bottom trawl

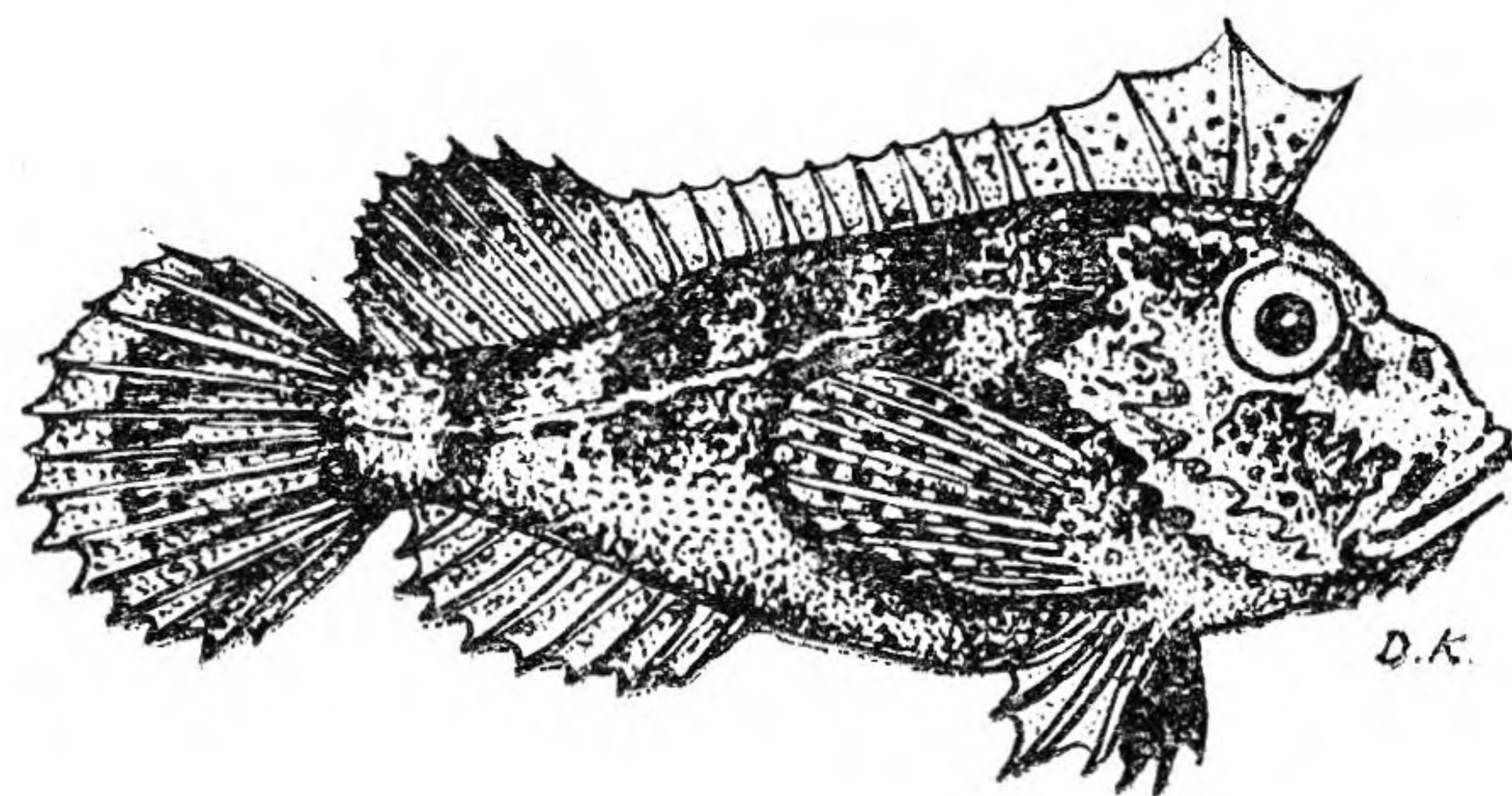
Position.—8°14'N, 76°33.5'E (S. W. coast of India)

Date.—4.12.72

Length.—11.2 cms.

FAMILY TETRAROGIDAE

***Cocotropus monacanthus* (Gilchrist)**



D. XIII.10. A. III.5. Depth 3 (in total length)

Bony ridge across cheek. Head not completely encased. Pelvics present. Nostrils double. Anal spines present. Interspinous membrane of thick skin. Colour reddish orange with brown blotches on body.

Depth.—240 metres

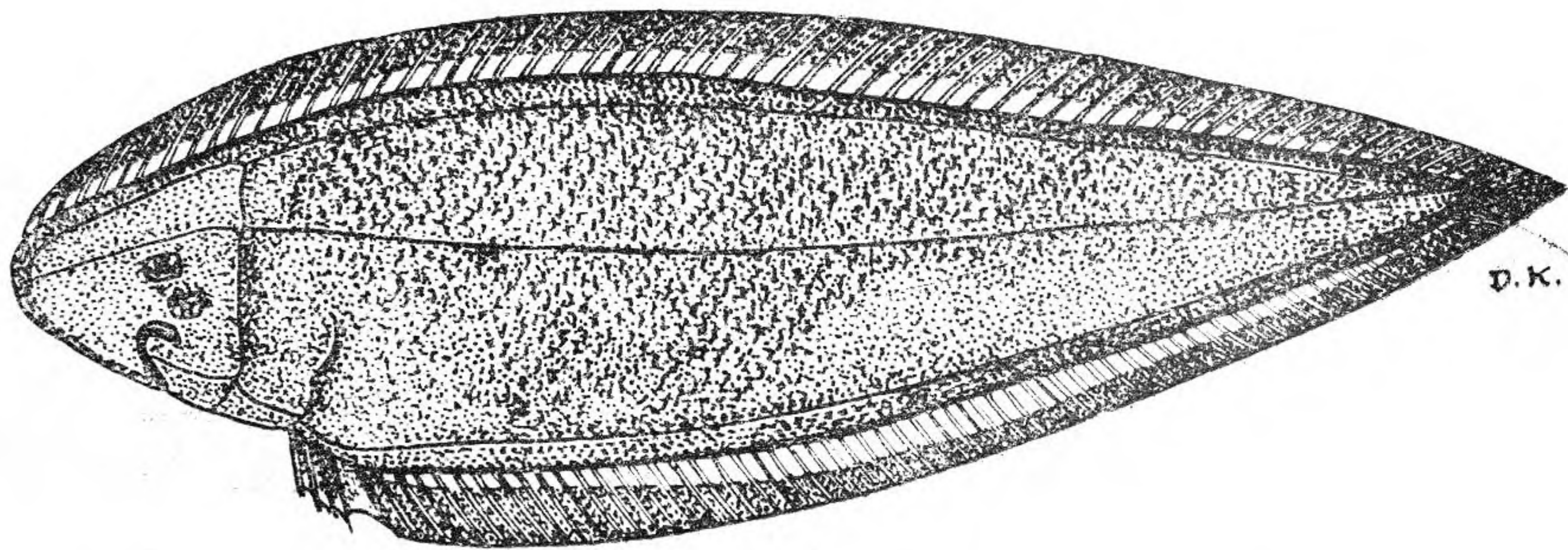
Gear.—Bottom trawl

Position.—8°14'N, 76°33.5'E (S. W. coast of India)

Date.—3.12.72

Length.—9.9 cms.

FAMILY CYNOGLOSSIDAE

Areliscus marleyi (Regan)

Dorsal fin commences on head. Preopercle margin covered by skin. Sinistral. Eyes on left side. Dorsal and anal confluent with caudal. Three lateral lines on eyed side. 20 scale rows between upper and middle and 25 scale rows between middle and lower lateral lines. Colour uniform brown. Posterior edges of dorsal, anal and caudal fins blackish.

Depth.—240 metres

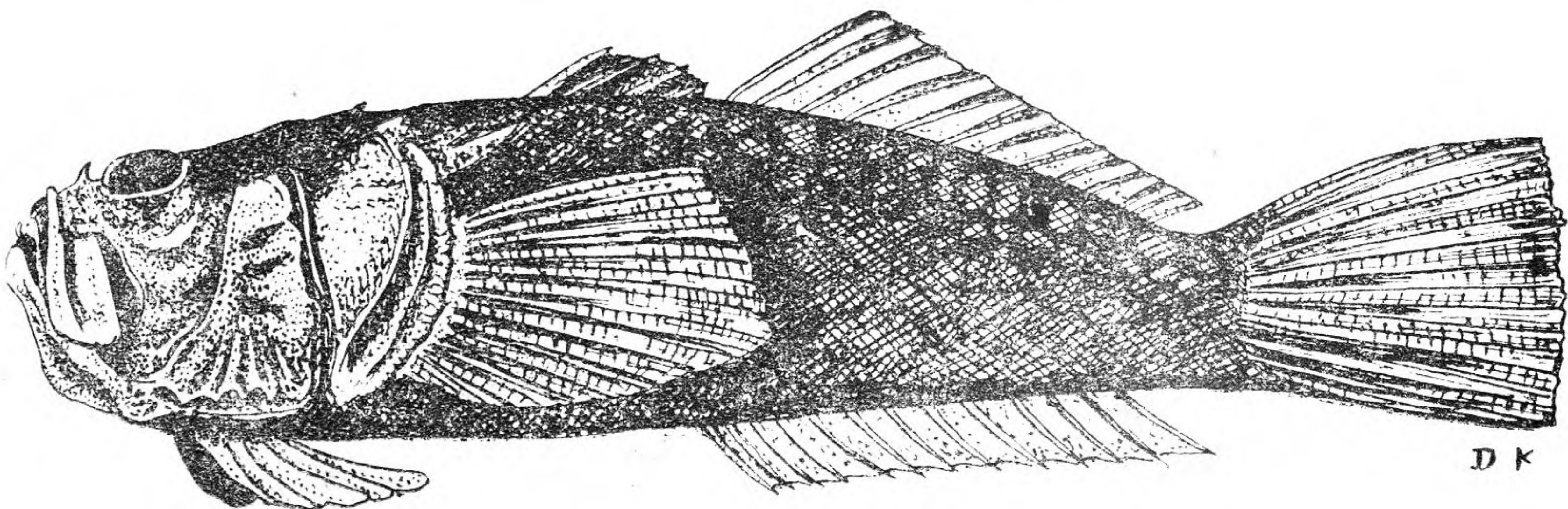
Gear.—Bottom trawl

Position.—8°14'N, 76°33.5'E (S. W. coast of India)

Date.—3.12.72

Length.—15.8 cms.

FAMILY URANOSCOPIDAE

Uranoscopus archionema (Regan)

D. IV. 13 A. 13 L1.48 (49).

Body elongate scaleless. Skin thick. Head bony, heavy and depressed. Eyes on dorsal surface of head. Mouth large, cleft almost vertical. Teeth small on palate also. One strong spine on edge of upper part of opercle. Another sharp spine above it. First dorsal black. Colour dark brown.

Depth.—250 meters

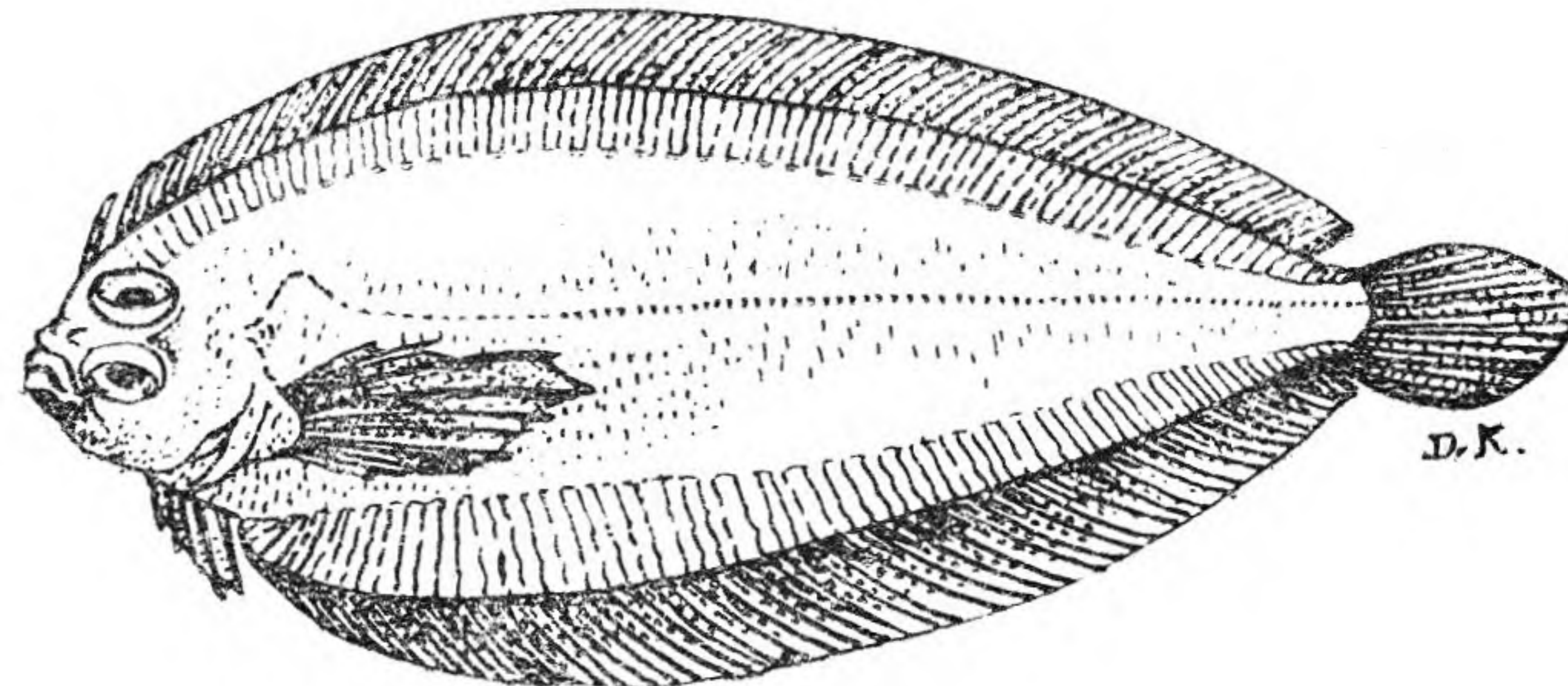
Gear.—Bottom trawl

Position.—8°18.7'N, 76°30.7'E (S. W. coast of India)

Date.—3.12.72

Length.—21.5 cms

FAMILY BOTHIDAE
Laeops kithare (Smith and Pope)



Dorsal on head. Preopercle margin free.

Sinistral. Pelvic of eyed side with longer base.

Mouth small not reaching beyond posterior edge of eye.

Interorbital a narrow bony ridge. Teeth on blind side of jaws only. First two dorsal rays separate. Pectoral not longer than head. Dorsal fin with about 90 rays. Dorsal, anal and caudal with dusky margins.

Depth.—280 metres

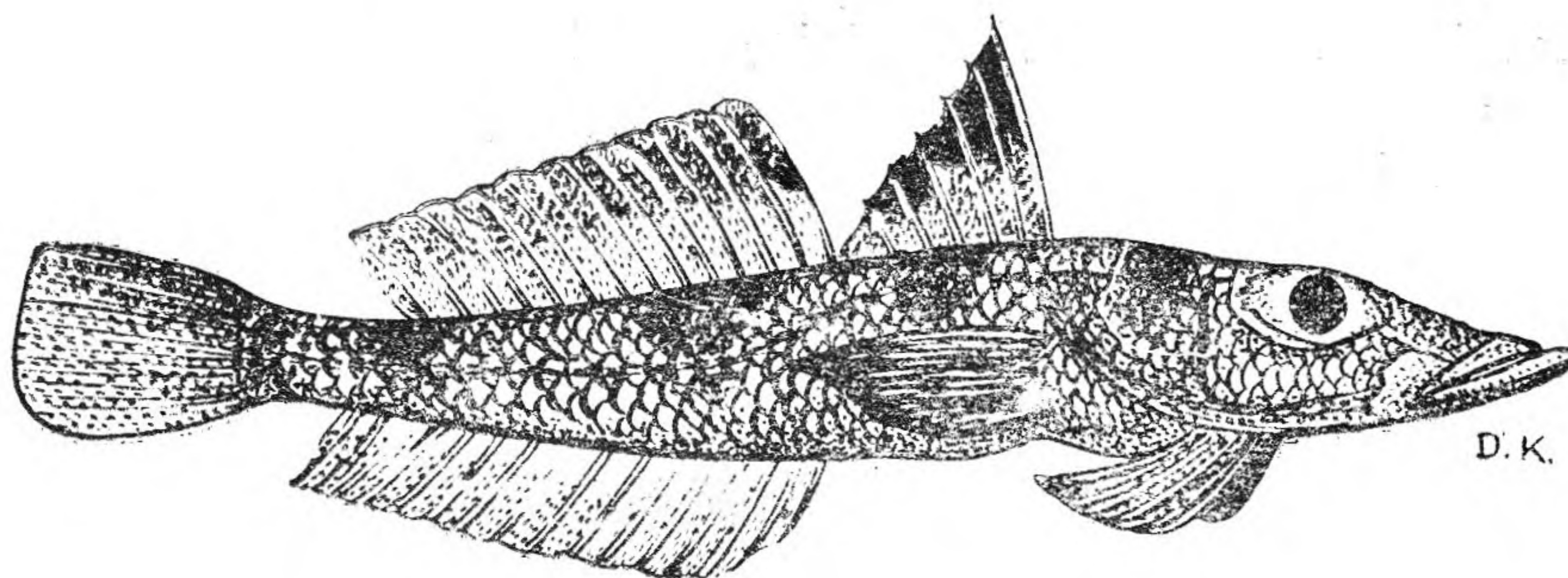
Gear.—Bottom trawl

Position.—8°49.9'N 76°03'E (S. W. coast of India)

Date.—2.12.72

Length.—14, 12.5, 12.5 cms. (3 specimens)

FAMILY BEMBROPSIDAE
Bembrops caudimacula (Steindachner)



D. IV. 14. (15). A. 16. L1.48. GR. 15 (in lower ramus).

Depth 6+(in total length).

Elongate body with moderate scales. Caudal truncate.

Head depressed. Mouth large. Lower jaw projects. Fine teeth in jaws. Fine teeth in a knob each side of apex of upper jaw. Colour brownish yellow with indications of dusky markings along body. One at base of caudal fin.

Depth.—250 metres

Gear.—Bottom trawl

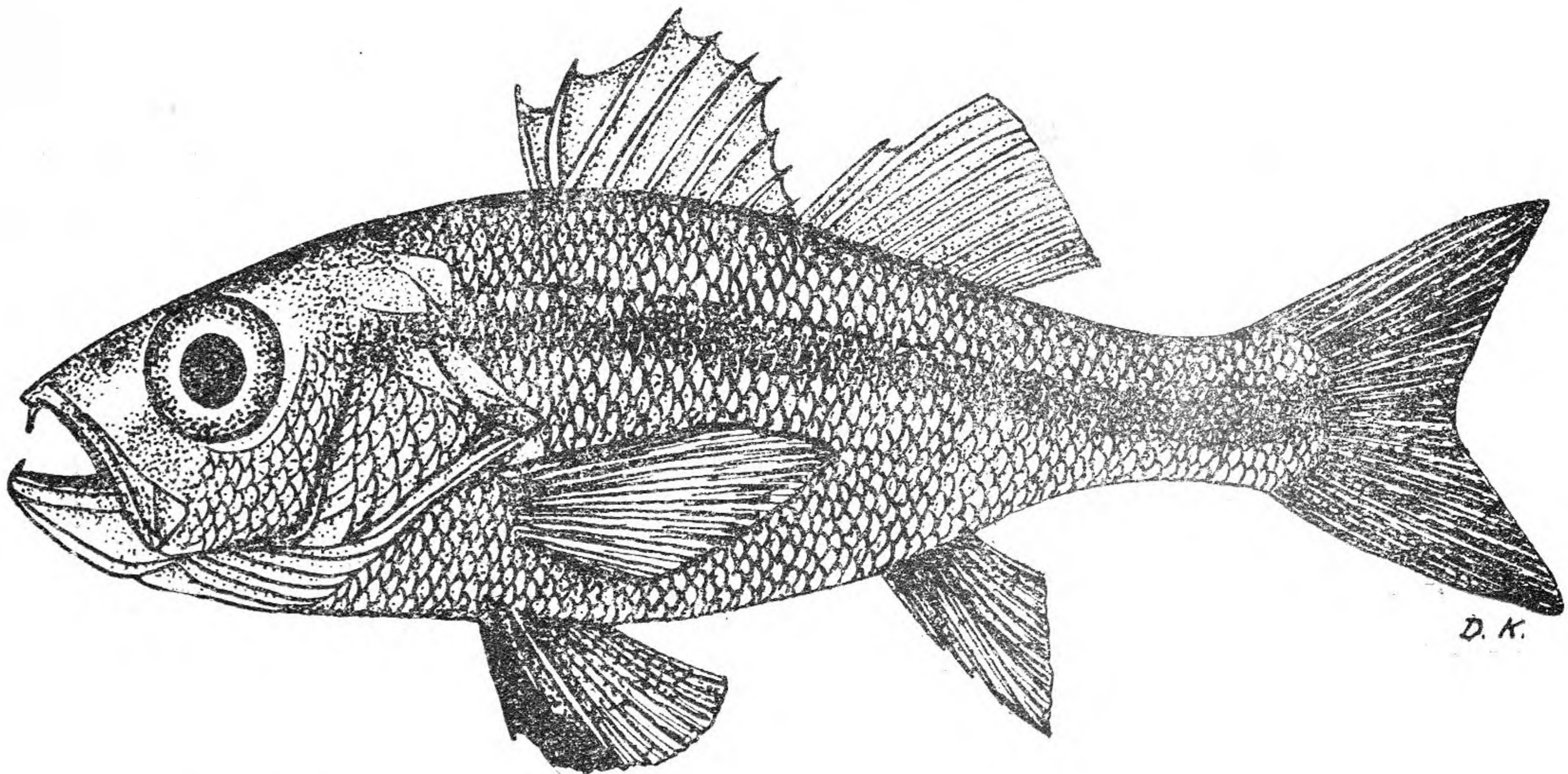
Position.—8°18.7'N, 76°30.7'E (S.W. coast of India)

Date.—3.12.72

Length.—16,19 cms. (2 specimens)

FAMILY ACROPOMIDAE

Acropoma japonicum (Gunther)



D. IX. I. 10. A. III. 7. L1. 48. Ltr. 3/10.

Two dorsal fins. Fairly elongate body with small scales.

Mouth moderate with fine teeth in bands in jaws and palate.

Preopercular edge serrated. Opercle with two feeble spines.

Eye large. Maxillary reaching to beyond middle of eye.

Colour uniform red with yellow band from upper edge of preopercle to caudal. Lower half of body silvery, fins yellowish.

Depth.—280 metres

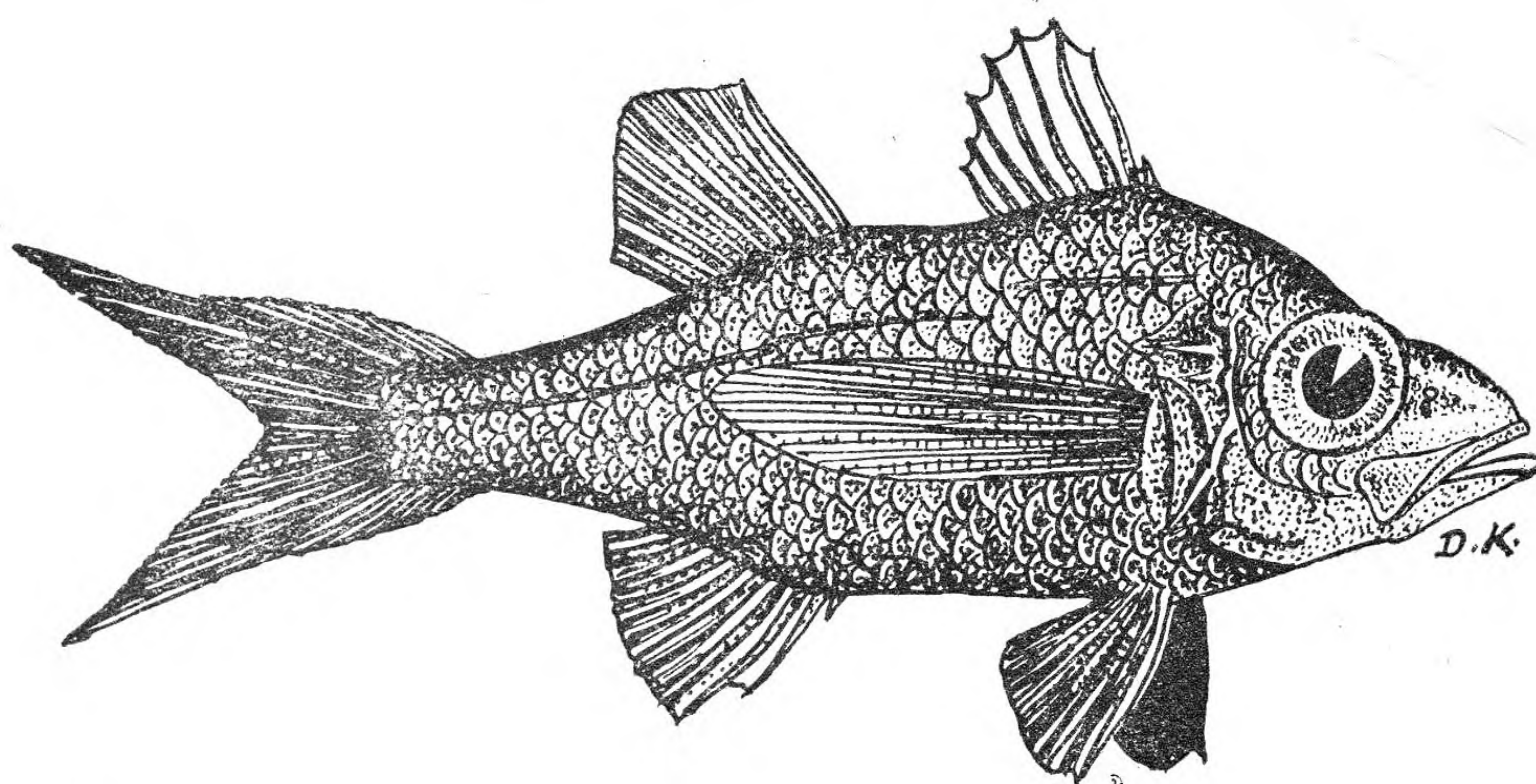
Gear.—Bottom trawl

Position.—8°49.9'N, 76°03'E (S.W. coast of India)

Date.—2.12.72.

Length.—14, 15.5, 16, 16.5, 17 cms. (5 specimens)

FAMILY SCOMBROPIDAE

Howella sherborni (Norman)

D. VIII. 1.9. A. III. 7. GR. 14.

Fairly elongate body. Scales easily shed. Large mouth.

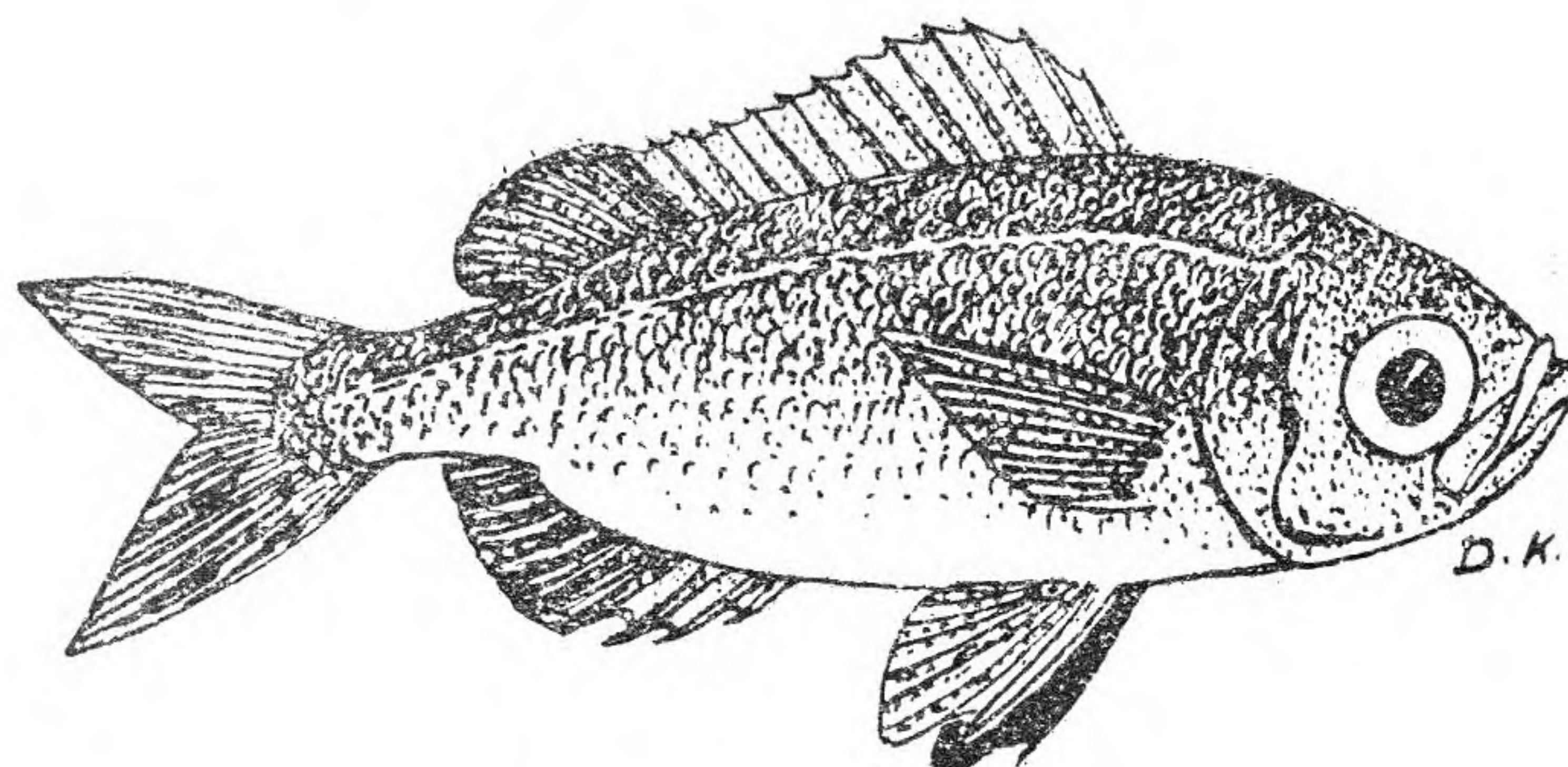
Canines present. Teeth on palate. Two dorsal fins.

Lateral line interrupted between 1st and 2nd dorsal fins.

Preopercle with 2 spines. Scales cycloid. Colour silvery grey.

Depth.—280 metres*Gear.*—Bottom trawl*Date.*—2.12.72*Position.*—8°49.9'N, 76°03'E (S.W. coast of India)*Length.*—12.5, 12.5, 14, 14.5, 15, 17.5 cms. (6 specimens)

FAMILY EMMELICHTHYIDAE

Plagiogenion rubiginosus (Hutton)

D. XII. 10. A. III. 9. L1.70. Ltr. 10/24. GR. 8+25.

Depth $3\frac{3}{4}$ (in total length). Eye 4 in head.

Elongate not very compressed but neat body with small scales. Dorsal fin continuous. Oblique extensible month.

Teeth absent. Maxilla expanded and scaly reaching to below middle of eye. Colour bright pinkish red.

Depth.—280 metres

Gear.—Bottom trawl

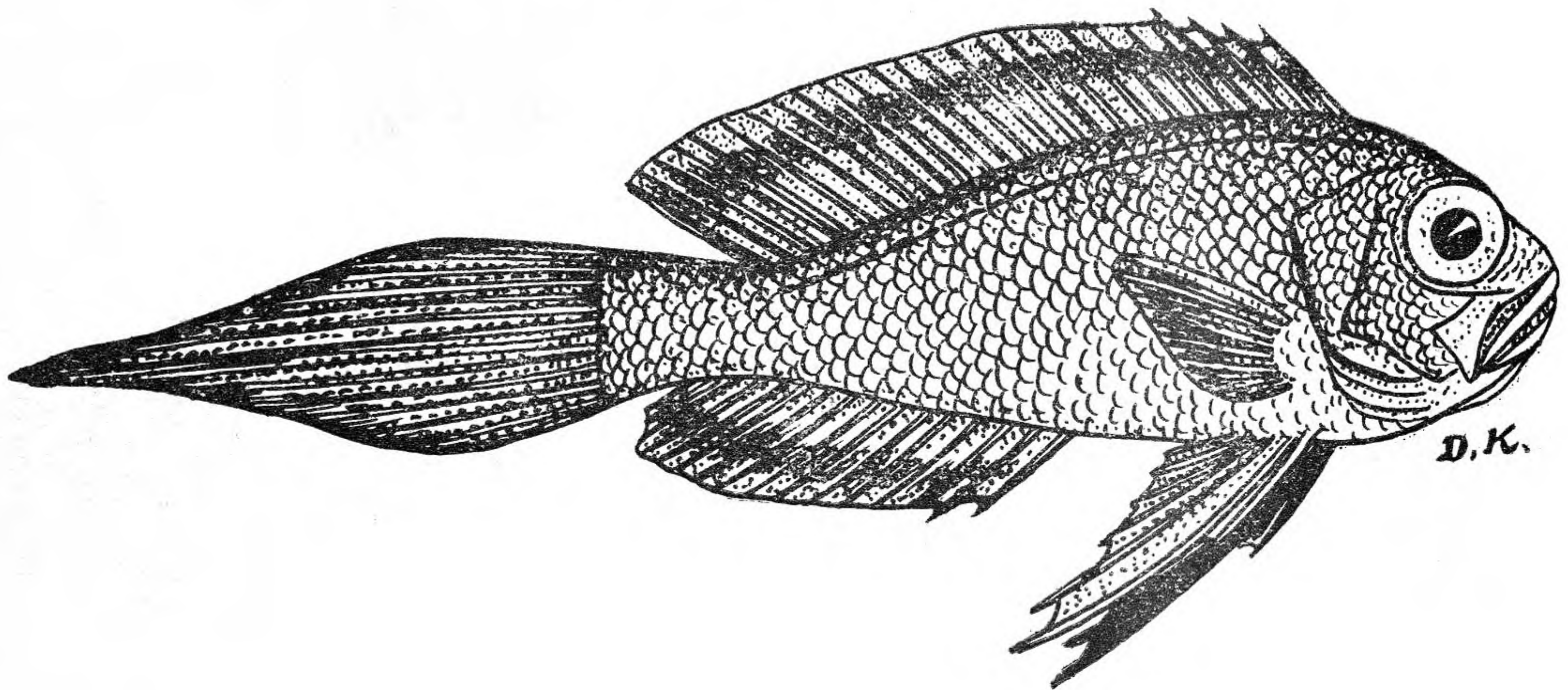
Position.—8°49.9'N, 76°03'E (S.W. coast of India)

Date.—2.12.72

Length.—20.5 cms.

FAMILY OWSTONIIDAE

Parasphenanthias weberi (Gilchrist)



D. 26 A.16 L1.44 Ltr. 16 GR. 40.

Eye 3 in head. Depth $3\frac{1}{2}$ (in length to base of caudal)

Elongate compressed tapering body. Mouth oblique with one series of moderate conical teeth in both jaws. Lateral line commences from above dorsal edge of opercle and runs up to dorsal profile and along base of dorsal ending below last dorsal ray. Caudal extremely elongate. Eye large. First 4 rays of dorsal fin weakly spiniform. First 2 rays of anal fin spiniform. Caudal $2\frac{1}{3}$ in length (to caudal base). Colour uniform red. Fins slightly darker. Length of ventral fin equal to head length. Differs from Smith in dorsal ray count.

Depth.—250 metres

Gear.—Bottom trawl

Position.—8°57'N, 79°05'E (Gulf of Mannar)

Date.—10.12.72

Length.—26.5 cms

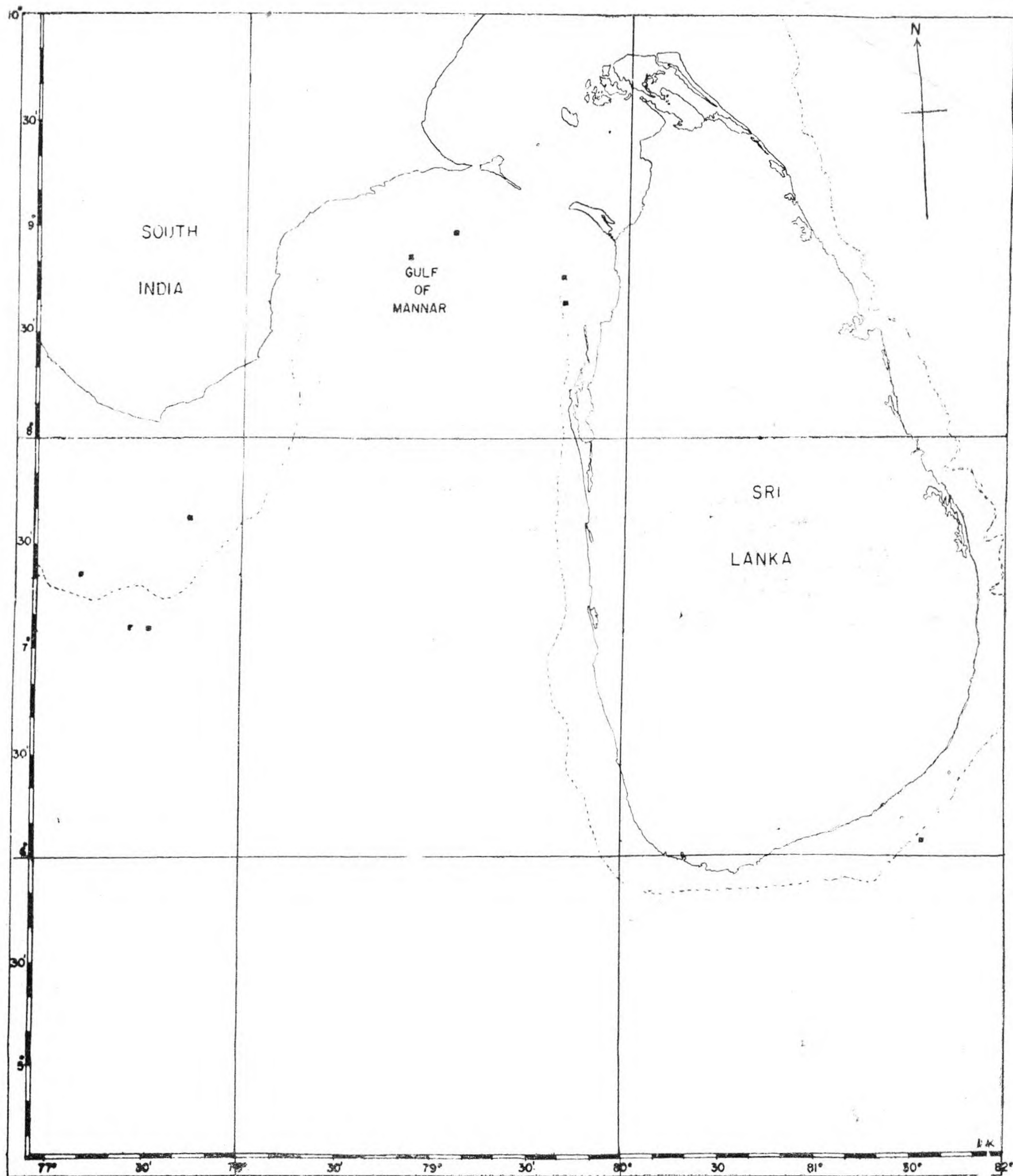


Chart showing the Continental edges off the coasts of South India and Sri Lanka and indicating areas of collection during the Survey.

(Copied from Admiralty Chart No. 828. Cape Comorin to Cocanada).