

AUSTRALIAN MUSEUM SCIENTIFIC PUBLICATIONS

Waite, Edgar R., 1901. Additions to the fish-fauna of Lord Howe Island, No. 2. *Records of the Australian Museum* 4(1): 36–47, plates v–viii. [29 March 1901].

doi:10.3853/j.0067-1975.4.1901.1081

ISSN 0067-1975

Published by the Australian Museum, Sydney

nature culture **discover**

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ADDITIONS TO THE FISH-FAUNA OF LORD HOWE
ISLAND, No. 2.

By EDGAR R. WAITE, F.L.S., Zoologist.

(Plates v. – viii.)

THE present contribution to the Fish-fauna of Lord Howe Island is the result of an examination of two collections obtained in 1900. The first, made by Mr. W. S. Thompson, a resident on the island, to whom the Trustees owe other courtesies, consists of but half-a-dozen species. One of these, however, is an interesting new Labroid. The second collection is the result of gatherings by our friend Mr. Frank Farnell, Honorary Visiting Magistrate to the island. It is more extensive, and, though not yielding novelties, enables me to add six species to the known fauna, and to specifically recognise an undetermined record, namely, *Scarus pyrrhostethus*, Richardson. I have also added two species obtained in 1894, but not previously recorded.

The new records are as follows; species unrepresented on the New South Wales mainland being denoted by an asterisk (*) :—

- Anguilla reinhardtii*, Steindachner.
- **Hyporhamphus* sp.
- **Upeneus pleurostigma*, Bennett.
- Nomeus gronovii*, Gmelin.
- **Thalassoma umbrostigma*, Rüppell.
- **Inivistius cacatua*, sp. nov.
- **Chatodon tricinctus*, sp. nov.
- Sillago ciliata*, Cuvier and Valenciennes.
- Antennarius commersonii*, Lacépède.

The following species are figured for the first time :—

- Upeneus pleurostigma*, Bennett.
- Apogon norfolcensis*, Ogilby.
- Inivistius cacatua*.
- Chatodon tricinctus*.
- Monacanthus howensis*, Ogilby.

ANGUILLA REINHARDTII, *Steindachner*.

Of the two common fresh-water eels of New South Wales, *Anguilla australis*, Rich., and *A. reinhardtii*, Steind., the former has been recorded from Lord Howe Island. I am now able to include *A. reinhardtii*, an example having been forwarded by Mr. Farnell to the Fishery Commissioners, and by them presented to the Museum.

HYPORHAMPHUS, *sp.*

For the present I leave a small *Hyporhamphus* undetermined. It differs markedly from *H. intermedius*, Cantor, and *H. regularis*, Günther, of the mainland, the former of which has been recorded from the island. Both these species are referable to the genus *Hyporhamphus*, distinguishable from *Hemirhamphus* by the anterior position of the ventral fin.

UPENEUS PLEUROSTIGMA, *Bennett.*

(Plate v.)

This species was originally described by Bennett¹ in 1831, and in 1859 Günther² placed it as doubtfully synonymous with the later described *Upeneus brandesii* of Bleeker.³ In 1873-5, however, he confirmed his suspicions, as indicated by unreservedly placing the last-named as a synonym of Bennett's species.⁴

The next step is not quite so clear to me. The Mullidæ are contained in the last part of Bleeker's unfinished "Atlas." Of this part (Vol. ix.) we possess the plates, but not the text (of which I understand eighty pages were issued).

Bleeker publishes a figure under the name *Parupeneus pleurostigma*, Blkr.,⁵ having apparently accepted Günther's ruling as to the specific identity of *U. pleurostigma* with *U. brandesii*, but in changing the generic name added, as was his custom, his own to the species. Since then the matter does not appear to have been referred to. A comparison of this figure with the descriptions of *U. pleurostigma* by Bennett and Günther shows that the two cannot possibly be reconciled.

By the kind services of Mr. Farnell, the Trustees have received from Lord Howe Island a very fine example which I unhesitatingly pronounce to be *U. pleurostigma*, Bennett. With the material at my command, and having neither of the descriptions of Bleeker, I am disposed to regard his illustration as of *U. brandesii*, which is really a good and very distinct species.

U. pleurostigma has not therefore been illustrated, and I have pleasure in publishing the accompanying figure of the Lord Howe Island example (Plate v.) This specimen exhibits the following characters:—

D. viii., i. 8. A. ii. 6. V. i. 5. P. 16. C. 7+8. L. lat. 31.
L. tr. 2+6.

Length of head 3.0, of caudal fin to end of central rays 8.9, height of body 3.5 in the length (caudal excluded). The eye is

¹ Bennett—Proc. Zool. Soc., i., 1830-1, p. 59.

² Günther—Brit. Mus. Cat., Fish., i., 1859, p. 407.

³ Bleeker—Nat. Tyds. Ned. Ind., 1851, p. 236 (not seen by me).

⁴ Günther—Fische der Sudsee, ii., 1873-5, p. 58.

⁵ Bleeker—Atlas Ichth., ix., pl. ccxciii. (iii.), fig. 3.

situated in the hinder half of the head, in the whole length of which its diameter is contained 5.5 times. The snout is noticeably produced, its length being slightly more than half that of the head; the posterior nostril is a vertical slit, close to the anterior margin of the eye; the anterior one is a small round pore, rather nearer to the end of the snout than the eye; the interorbital space, which is rather flat above, but declivous above the eyes, is one-fourth the length of the head. The length of the maxilla is twice, and its greatest width equal to, the diameter of the eye; the lips are very fleshy.

The barbels are thick for their proximal third, are contained 1.6 times in the length of the head, and extend barely to the angle of the preopercle. Opercle with a rather strong flat spine. Gill-rakers slender, sixteen on the lower limb of the first arch; the longest equal to half the diameter of the eye. The small conical teeth are arranged in a single series in each jaw; the palatines and vomer are edentulous.

The upper edge of the snout is straight; the profile is rounded from above the eye to the first dorsal spine, which marks the highest point of the body.

The first dorsal spine is very short, the third and fourth are equal and longest, one-half the length of the head. The second dorsal fin is little more than half the height of the first; it has a somewhat more forward position than the anal. The first anal spine is very small, and being applied closely to the second, may easily be overlooked. The pectoral is equal to the ventral in length, or 1.4 in that of the head; the spine of the latter fin is very broad, and the first ray reaches two-thirds of the distance of its origin from that of the first anal spine. Caudal deeply forked; the lobes equal, pointed, five-eighths the length of the head; the least height of the peduncle 3.4 in the same.

Scales large, those on the anterior part of the snout not distinct, between these and those of the cheek is a naked space. Cheek scales very irregular, with more or less jagged margins. The anterior scales of the lateral line with branched tubules, those of the posterior scales simple; three series of scales between the dorsal fins; a long pointed scale in the axilla.

Colours.—General colour red, the upper part of the snout brown, with a darker streak occupying the naked space between the eye and the mouth. Some bright red spots on the area between the eye and the first dorsal. On the lateral line, below the intradorsal space, is a deep black blotch, occupying four or five scales and the corresponding portions of the row above and below; beneath the second dorsal is a faint pink blotch, embracing the 15–18 scales of the lateral line, and the adjoining scales of the row above. The second dorsal fin is set in a large median black blotch, which extends its whole length and includes the first row of scales on

each side. The basal half of the fin is likewise black, its upper portion marked with dark longitudinal lines. The other fins are without markings, but the upper caudal rays are black, and a few rays below these have towards their free margin black spots; the lower lobe of the caudal is also, but much more narrowly edged with black.

Length of specimen, 275 mm.

This species is known from Mauritius and Zanzibar in the Indian Ocean; Apamana (Gilbert Islands), Tahiti (Society Islands), and now Lord Howe Island, in the Pacific.

Not having the original description of *U. brandesii*, I can only contrast our fish with Bleeker's figure, which, as above suggested, probably represents that species. The most important points of difference appear to be as follows:—In *U. pleurostigma* the snout is much longer, due to the backward position of the eye, which lies wholly in the posterior half of the head; in *U. brandesii* the eye is but little out of centre. The barbels in Bennett's species do not reach beyond the angle of the preopercle; in Bleeker's they extend far beyond it. In colouration both species agree in having a black blotch on the lateral line, followed by a light one, but the former is very much larger in *U. pleurostigma*. This latter species has also the black mark at the base of the second dorsal fin, and the basal half of the fin itself black, also black marks on the caudal, none of which occur in *U. brandesii*.

NOMEUS GRONOVII, *Gmelin*.

Included in Mr. Farnell's collection is an example of this widely distributed pelagic form. In 1894, I first recorded it from the coast of New South Wales;⁶ since this time I have had several examples from Maroubra Bay, and have myself seen it there. It is not infrequently left in the rock-pools after the tide has receded. It swims very leisurely, and seems to be incapable of making the sudden darts so common with most fishes; when moving gently in the water, the dark-coloured ventral fins are extended, and the long tail with its slender peduncle, wriggled from side to side. This action, in conjunction with the narrow elongate body, so greatly resembles the movements of a Lizard in water that on first seeing the fish, my colleague, Mr. T. Whitelegge, thought it was a Skink that had fallen into the rock-pool. He tells me that, on a second occasion, he was similarly deceived.

It is noticed that *Nomeus* is only found on our coast when the Portuguese Men-of-war are driven ashore, and this is quite in accord with the known habit of the fish in swimming beneath the *Physalia*. These latter are slow moving organisms, dependent on wind and wave for conveyance, hence any associate would need but the slightest power of locomotion in order to keep the pace

⁶ Waite—Proc. Linn. Soc. N.S.W., (2), ix., 1894, p. 219.

and direction of its companion. Goode and Bean write⁷:—"The large fan-shaped ventrals are used as support in resting on the bottom, and in swimming they are generally closed in their groove unless the fish is moving leisurely, when they may be partly expanded." If the ventrals are fully operative only when the fish is resting on the bottom they can, considering the truly pelagic habit, be of little service. In the Sargossa sea, where the species abounds, a resting-place would be afforded by the weed, but elsewhere, the coasts excepted, no support would be encountered. As the ventral fin of *Nomeus* by its large size is perhaps the most striking character of the fish, it must have a more important function than an adaptation to a condition in which it would, by the remotest chance, find itself.

That the fish should extend its fins when on the bottom of a rock-pool can only be regarded as an unnatural attitude, such as a caged animal might assume, the fish not previously having encountered bar to its downward progress.

The relationship which exists between *Nomeus* and *Physalia* is a very curious one, and invites speculation as to the advantage of the association. A similar partnership is known between Fishes and Medusæ. The benefit must primarily be with the fish, for it is a voluntary agent, whereas the *Physalia* has no power of locomotion. If the fish secures safety from its enemies by entering the area embraced by the deadly tentacles of the *Physalia*, which attain a length of ten to twelve feet, it must be immune to their influence; a remarkable condition considering that, as I have previously recorded, small fish have often been seen in their stomachs and entangled in their tentacles.⁸

Garman⁹ seems to consider that there is no such immunity:—"On several occasions *Physaliæ* have been taken with partially digested *Nomei* in their grasp, which would indicate that the little fishes were sometimes preyed upon by the 'men-of-war.'"

It has yet to be shown that the partially digested *Nomei* were not ejected by other fishes before entering the grasp [tentacles] of the *Physalia*, digestion being performed by the stomach and not by the tentacles.

Goode and Bean, in the work already quoted, inform us that ten individuals were taken in a dip-net, from the deck of the "Albatross," off the Florida coast, all swimming under one Portuguese Man-of-war.

It is probable that, in addition to protection, the fish derives its food from association with the *Physalia* much as does the Remora in accompanying a Shark. The *Physalia* doubtless

⁷ Goode and Bean—U.S. Nat. Mus., Bull. Oceanic Ichth., 1895, p. 220.

⁸ Waite—Aust. Mus. Mem., iv., 1, Fishes, 1899, p. 15.

⁹ Garman—Bull. Lab. Nat. Sci. Iowa, 1896, p. 81.

paralyses many more animals than it can consume—the residue falling to the lot of the fishes, which, as already noted, may be present to the number of ten.

APOGON NORFOLCENSIS, *Ogilby*.

Apogon norfolcensis, Ogil., Proc. Linn. Soc. N.S.W. (2), ii, 1887, p. 990.

(Plate vi.)

The specimen figured, of the natural size, is the largest of five examples received from Mr. Farnell per the Fishery Commissioners.

THALASSOMA UMBROSTIGMA, *Rüppell*.

Julis umbrostigma, Rüppell, Neue Wirbelt. Fische, 1837, p. 11, taf. 3, fig. 2.

This species, of which we have received an example 122 mm. in length, has not been previously recorded from Australian waters. The nearest published locality to Lord Howe Island is Aneiteum, in the New Hebrides, whence there is an example in the British Museum. Should the published colour illustrations of the species be accurate, it must vary considerably; our example is generally green, which is also the hue of the longitudinal markings on the dorsal and anal fins. The dark body markings are more nearly represented by the figure of Eydoux and Souleyet,¹⁰ than by that of Bleeker.¹¹

INIISTIUS CACATUA, *sp. nov.*

(Plate vii.)

All the fishes sent to the Trustees from Lord Howe Island by Mr. W. S. Thompson in August last, have, with one exception, been already recorded.

This fish, a labroid, belongs to the *Novacula* group, and to the restricted genus *Iniistius*, Gill, which differs from *Xyrichtys* only by having the two anterior dorsal spines produced and entirely separated from the other portion. The following species seem to enter the genus:—*Xyrichtys pavo*, Cuv. & Val. (the type); *Iniistius mundicorpus*, Gill; *Novacula tetrazona*, Bleek.; *Xyrichtys dea*, Schleg.; and *Novacula aneitensis*, Günth. The two latter, however, scarcely satisfy the definition of the genus.

Novacula kallosoma, Bleek., has features which also ally it with *Iniistius*; indeed, if the various divisions are worthy of name, they are scarcely entitled to more than sub-generic rank, while, as Jordan remarks,¹² "It is not unlikely that it will be found necessary to unite *Iniistius*, *Hemipteronotus*, *Xyrichtys*, and *Xyrula* into one genus, as Günther has done. In this case the name to be used is *Hemipteronotus*, not *Novacula* nor *Xyrichtys*."

¹⁰ Eydoux and Souleyet—Voy. Bonite, Poiss., pl. vi., fig. 2.

¹¹ Bleeker—Atlas Ichth., taf. xxxiv., fig. 2.

¹² Jordan—Report U.S. Comm. Fish, 1887 (1891) p. 662.

For reasons stated below, I regard the Lord Howe Island example as the type of a new species. It may be characterised as follows:—

D. ii. vii. 12. A. iii. 12. P. 10. V. i. 5. C. 11 + 4. L. lat. 21 + 6. L. tr. 3 + 10.

Length of head 2·9, height of body 2·4 in the total length (caudal excluded). The eye is 5·6, the pectoral 1·4, and the central caudal rays 2·57 in the length of the head. The height of the head, which is trenchant above, is equal to its length, and its anterior profile very steep. Jaws equal, each with a pair of canines anteriorly, followed by a single series of rather spaced conical teeth to the number of 9 – 10. The eye is set high on the head, leaving the cheek deep. The body is deep and compressed, the height of the caudal pedicel slightly more than its length behind the last dorsal ray, or 2·2 in the length of the head.

The first two dorsal spines are widely and entirely separated from the remainder of the fin; the anterior spine, which measures 1·5 in the length of the head, arises on the occiput slightly behind the eye; the second spine is two-thirds the length of the first; the third spine is one-third the length of the first, and the fin gradually increases in height, the last ray being rather more than half the length of the first spine, and reaching the base of the caudal rays.

The first anal spine stands beneath the twelfth scale of the lateral line, and is little more than half the length of the third, which equals the third dorsal. The fin terminates a little posterior to the end of the dorsal.

The pectoral is 1·4 in the length of the head; its upper ray is broad and strong. The ventral is somewhat shorter, but its first ray, which is produced beyond the others, attains the length of the pectoral; its spine is weak, equal to the ninth dorsal in length. The caudal is rounded posteriorly.

Scales.—The head is naked with the exception of two or three rudimentary scales at the hinder margin of the orbit. The lateral line is placed on the third row of scales below the dorsal fin, is interrupted on the twenty-first scale, but continued three rows lower, along six scales in the median line of the caudal pedicel.

Colours.—After immersion in spirits for two or three weeks the general ground tint is a dirty cream. There is a dark bluish line down the centre of the forehead and on the preopercle from below the eye, running obliquely backwards and downwards, a dark grey mark, relieved by light blue lines, which in part become broken up into dots. The hinder part of the opercle is similarly tinted and ornamented. Three dark vertical bands encircle the body, the first from the spinous dorsal to behind the origin of the ventral, the second from the anterior dorsal rays to

the corresponding part of the anal, and the third connecting the posterior part of these fins. These bands are as wide as, or slightly wider than the interspaces, embracing from three to five scales. There is also a dark band at the base of the caudal rays; this is connected with the last body band by a less indistinct median streak. Each scale has a broad, slightly darker margin, immediately within which is a vertical line of light blue. This line is much broader on the scales, covered by and above the pectoral, and on the ground colour posterior to this fin is a large sulphur-yellow blotch. Beneath the sixth and seventh dorsal spines, on the row above the lateral line, two scales have the margin quite black, and the light blue lines within are very broad; they thus form a conspicuous feature. The first dorsal, or occipital fin is of bluish grey colour, its membrane diagonally crossed by dark green lines, and its filamentous portion black. The dorsal proper is greenish, with darker margin, and a blue submarginal band; below this is another darker broken band, which gives off irregular diagonal lines to the base of the fin. The anal is reddish at the base, greenish towards its free edge; it has a dark margin and blue intramarginal band, within which are a number of blue spots. The first ray of the pectoral is light, followed by a dusky streak, which suffuses the posterior margin of the fin, leaving the lower base pale. The ventral is bluish-grey, has a dusky margin, and the produced portion of the first ray black. The caudal is greenish, and the markings are similar to those of the anal, a broad dark margin and some blue spots within; the upper and lower rays are also blue.

Total length 320 mm.

The intestines contained small shells, including a *Trochus*, pieces of coral rock, and bladders of a seaweed (*Sargassum*).

A consideration of all the characters leads me to regard this specimen as allied to, but distinct from, the fish obtained on the coast of California, and described by Gill as *Inistiustius mundicorpus*.¹³ Not having the original description, my comparison is made with the account published by Jordan and Evermann,¹⁴ from which it will be seen that some differences occur in the relative proportions, particularly of the pectoral fin. The American examples taken at Cape San Lucas (at the entrance to the Gulf of California) and the adjoining coast of Mexico, do not exceed eight inches in length, whereas ours measures nearly thirteen inches.

In deciding to regard this fish as distinct from *I. mundicorpus*, I have also been influenced by a consideration of geographical conditions. Unlike the surface or deep-sea fishes, which have

¹³ Gill—Proc. Acad. Nat. Sci. Phil., 1862, p. 145.

¹⁴ Jordan & Evermann—U.S. Nat. Mus., Bull. 47, 1896, p. 1620.

wide distribution, members of the Labridæ usually inhabit rocky shores, and are frequently very local. An exception is when a species occurs in an island studded area, for by numerous short journeys it may stray from shore to shore, and so spread itself over an extensive ocean. We can so explain the wide distribution of many coast fishes in Polynesia.

Between the eastern fringe of this island-area and the western coasts of America is a great expanse of open sea; it does not possess an island which a shore fish might use as a stepping-stone to the land beyond. We should thus expect to find—and experience teaches us this is so—that few but the pelagic and bathybic forms traverse this unbroken oceanic area.

Another bar to the shore-fishes, and to a certain extent the pelagic forms also, is the Antarctic drift of cold water, named Humbolt's current, which flows northward along the American coast.

The Novacula Labroids are subject to considerable variation in colour, and the sexes of the same species may be of quite different colouration. Thus, while the males of *I. mundicorpus* are strikingly ornamented, the females, first described, are quite plain.

The only specimen we possess of *I. cacatua* has been partially gutted. I am, therefore, unable to determine the sex.

SCARUS PYRRHOSTETHUS, *Richardson*.

Pseudoscarus, sp., Ogilby, Aust. Mus. Mem., ii., 1889, p. 22.

A specimen, 350 mm. in length, is identified by Mr. Whitelegge with the large example (26 inches) taken by the Museum party and recorded as *Pseudoscarus* sp. This fish was not preserved.

Notwithstanding the difficulty and consequent uncertainty of satisfactorily determining members of the Scarinæ, I have no doubt that our example is correctly referred to *Scarus pyrrhostethus*, Rich.

Of *Pseudoscarus* Jordan and Evermann write¹⁵.—"This genus differs from *Scarus*, as here understood, chiefly in the deep green or blue colour of its highly modified jaws and teeth." This feature, if unsupported by other characters, seems rather slight for generic distinction and presupposes that the teeth are naturally coloured, and not stained by some particular coral or seaweed upon which the fish may habitually feed. The teeth of the Port Jackson Shark (*Heterodontus philippi*, Lacépède), are usually of a purplish hue, due to the habit of feeding upon the Echinoderm (*Centrostephanus rodgersi*, Agassiz), the handling of whose spines at once stains the fingers their characteristic colour. If admitted, it necessitates the removal of *S. pyrrhostethus* from *Pseudoscarus*, where it was placed by Bleeker.

¹⁵ Jordan and Evermann—*Loc. cit.*, p. 1655.

CHETODON TRICINCTUS, *sp. nov.*

(Fig. 12).

D. xii. 20. A. iii. 17. V. i. 5. P. 16. C. 17. L. lat. 40. L. tr.
14 + 26.

Length of head 3·1, height of body 1·25 in the length (caudal excluded). Diameter of eye 2·8, and length of snout 4·5 in that of the head. Interocular space very slightly convex, equal to the diameter of the eye. Preopercle denticulated. Body short, deep, and strongly compressed. Dorsal fin high, the spines very strong, the sixth the longest, it equals the head in length. The anterior rays are longer than the hinder spines, and the longest ray is a little shorter than the longest spine. The first anal spine is weaker, but longer than the first dorsal; the second is the longest and strongest, equal to the third dorsal or 4·5 in the length of the

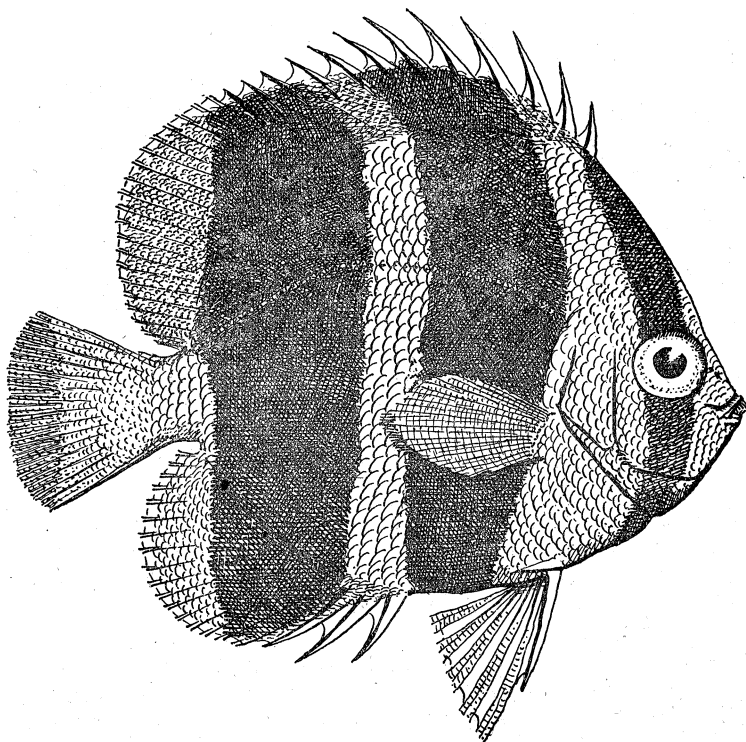


Fig. 12.

head; the rays are similar to, but lower than those of the dorsal. The ventral spine is as long as, but weaker than the second anal; the rays reach to the base of this spine; the pectoral is of the same length. The caudal is rounded and is a trifle shorter than the head. The lateral line forms an even curve from the opercle to the end of the dorsal, where it terminates at the juncture of the fin with the caudal peduncle. The scales of the upper part of the body do not form an angle with those of the lower part.

Colours.—The ground colour is yellowish in spirits, vertically and entirely crossed by three broad black bands; the first (the ocular) embraces the base of the first dorsal spine, passes through the eye, and obliquely backwards on to the chest. The second is twice the breadth of the first; it arises from the 4–8 spines, and with a forward sweep attains the lower profile between the ventral and anal fins, being narrower below than above. The third band is equal in breadth to the second, and is of uniform width; it commences on the tenth spine, and leaving a band of the ground colour, an eye-diameter wide, reaches the base of the third anal spine. The caudal has a faint terminal band, convex anteriorly; the paired fins are without markings.

Length of specimen 97 mm.

This *Chatodon* was obtained by Mr. T. R. Icely, formerly Visiting Magistrate, in August, 1894. I was unable to find it for inclusion in my first "Additions to the Fish-fauna of Lord Howe Island,"¹⁶ but having since recovered it, furnish the above description for the present contribution.

Other three *Chatodontoids* have been recorded from the island, these are:—*Chatodon strigatus*, Cuv. & Val.; *C. aphrodite*, Ogil.; and *Chelmo truncatus*, Kner.

MONACANTHUS HOWENSIS, *Ogilby*.

(Plate viii.)

To the present time this species was known from a single specimen, the type. I am pleased, therefore, to be in a position to record a second occurrence. The original example, which I now have before me, measures 200 mm. in length; the recent specimen is smaller, being 177 mm. in length. Its colour is well preserved in formaline; this enables me to correct and supplement the original description, and to give a reliable figure of the species.

The general colour of the body is bluish-grey, with rather small white spots disposed regularly all over, the upper surface of the snout excepted (these spots are probably pale blue in life). The lower half of the body, behind the pectoral fin, has black spots also, equal in size to the white ones, but more irregularly spaced.

¹⁶ Waite—Aust. Mus. Rec., iii., 7, 1900, p. 193.

The lips are white, with black margins. The dorsal and anal fins are colourless, each with three dark marks at its base; the anterior is the broadest, the posterior the narrowest; these respectively pass on to the body, and tend to form bands, but are soon lost; complete bands would possibly be traceable in young examples.

The membrane of the caudal is black; the rays are grey, crossed by two curved grey bands of which the posterior is the narrower.

SILLAGO CILIATA, Cuvier & Valenciennes.

The examples received are young, and differ from any specimen I have seen on the mainland in having faint oblique markings above the longitudinal yellow line. These marks recall *S. maculata*, Quoy and Gaim., but the general features, and in particular the smaller number of anal rays, and fewer scales on the lateral line, unquestionably point to *S. ciliata*.

This is the first *Sillago* recorded from the island.

ANTENNARIUS COMMERSIONII, Lacépède.

The example now recorded was received from the island in August, 1894, in company with the *Chaetodon* above described, but for similar reasons a notice of its occurrence has been delayed. Günther has lavishly illustrated this species, and shown how extremely it varies in colouration and pattern.¹⁷

Our specimen, which is a very fine one, measuring 260 mm. in length, is to be at once identified with Bleeker's *A. moluccensis*, and with one or two trifling exceptions, might have been the one from which his drawing was made.¹⁸

This is the second member of the genus recorded from Lord Howe Island, Ogilby having identified *A. coccineus*, Lesson and Garnot, therefrom.

¹⁷ Günther—Fische der Südsee, v., 1876, p. 163, pl. c.-cvi.

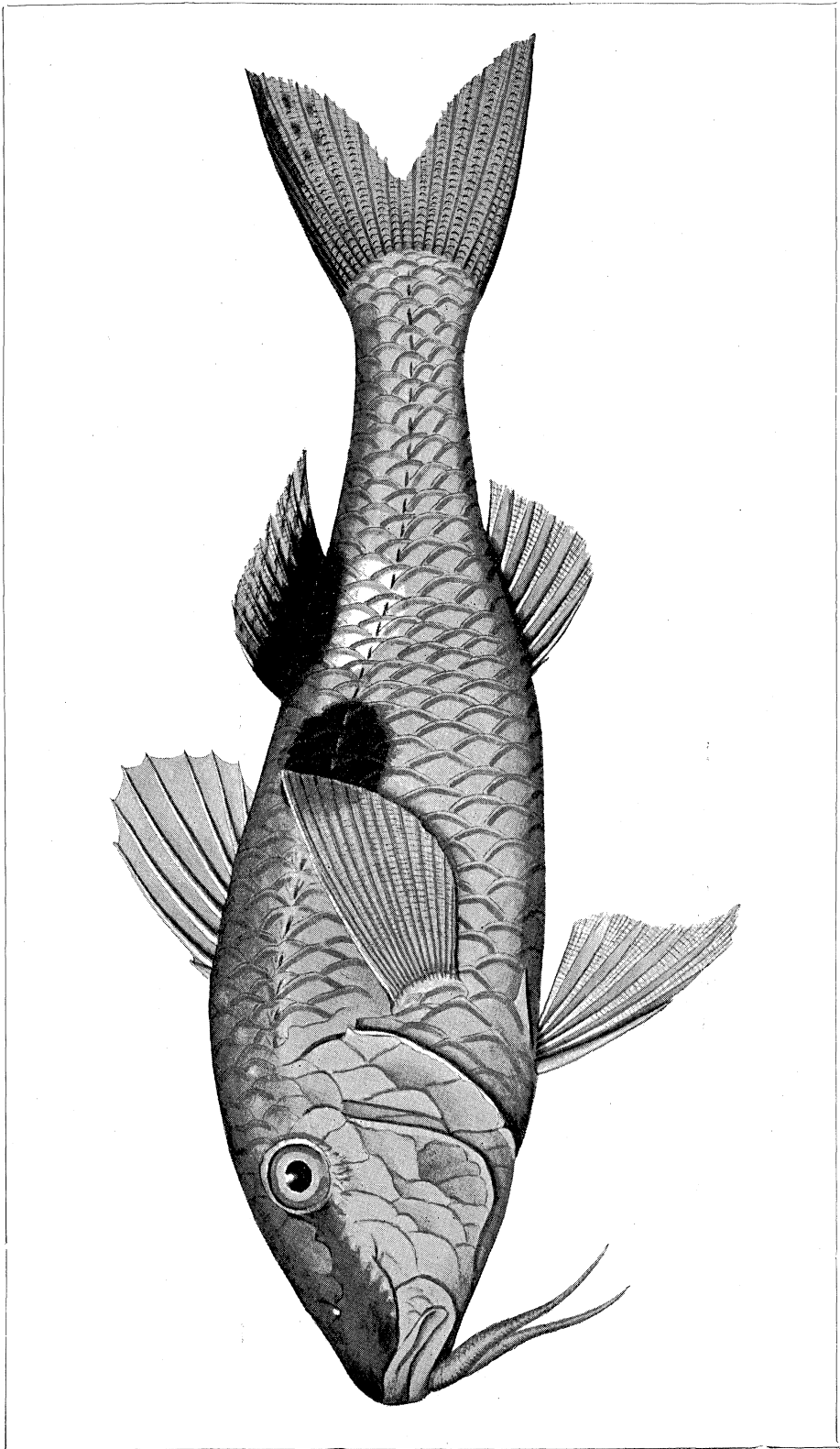
¹⁸ Bleeker—Atlas Ichth., v., 1865, p. 17, pl. cxvii., fig. 2.

EXPLANATION OF PLATE V.

Upeneus pleurostigma, Bennett.

About two-thirds natural size.

[Reproduced from a drawing by the author].



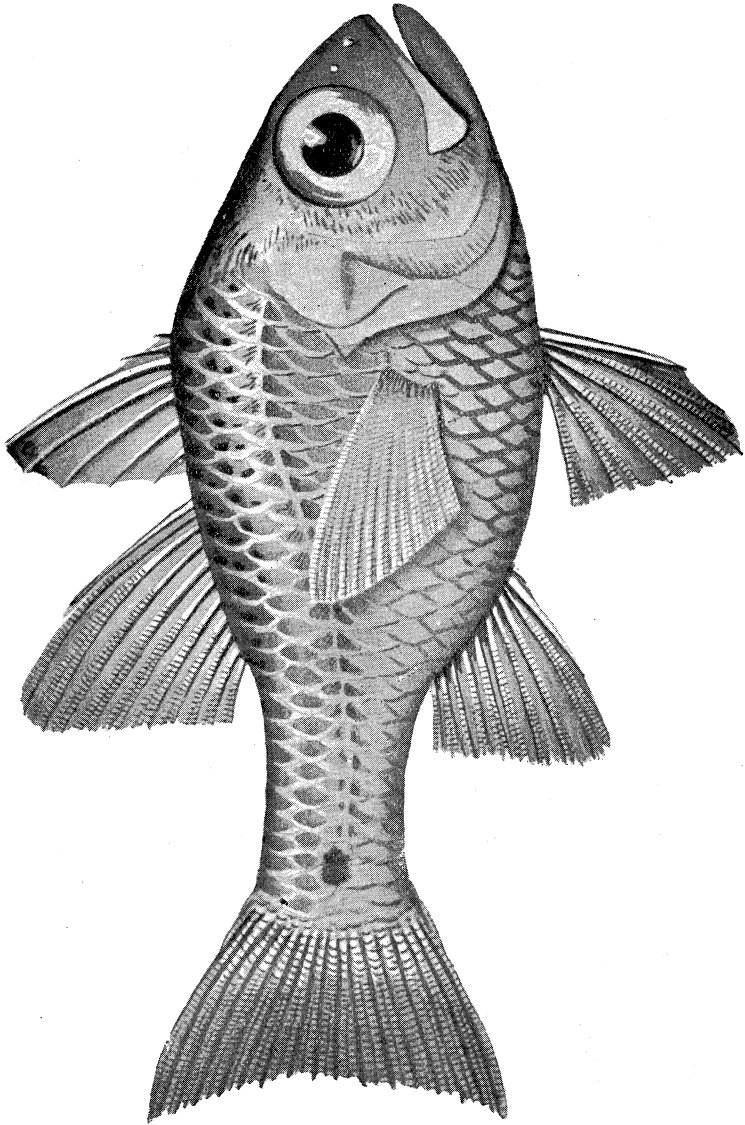
EDGAR B. WAITE, Del.

EXPLANATION OF PLATE VI.

Apogon norfolcensis, Ogilby.

Natural size.

[Reproduced from a drawing by the author].



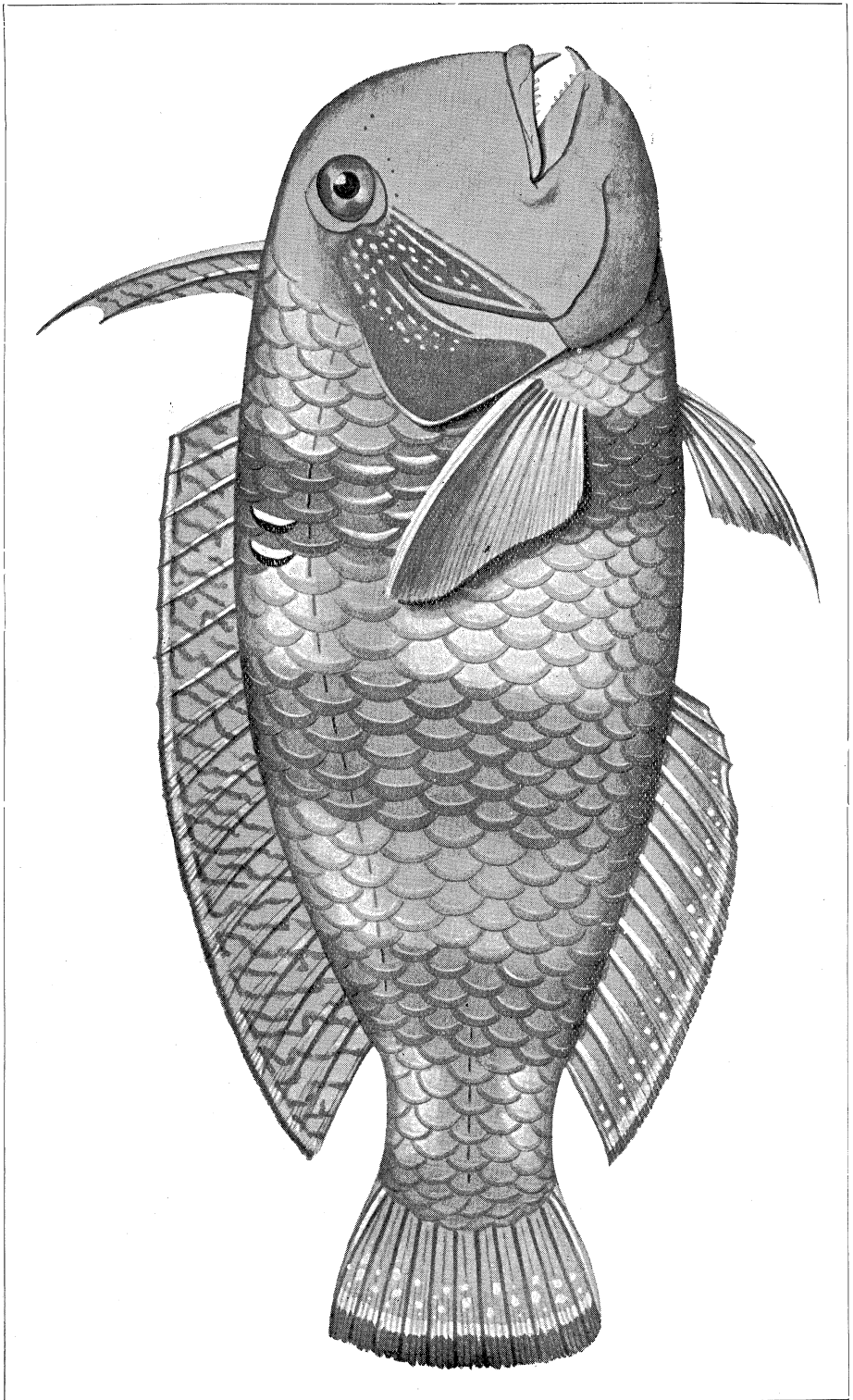
EDGAR R. WAYTE, Del.

EXPLANATION OF PLATE VII.

Iniistius cacatua, Waite.

Three-fifths natural size.

[Reproduced from a drawing by the author].



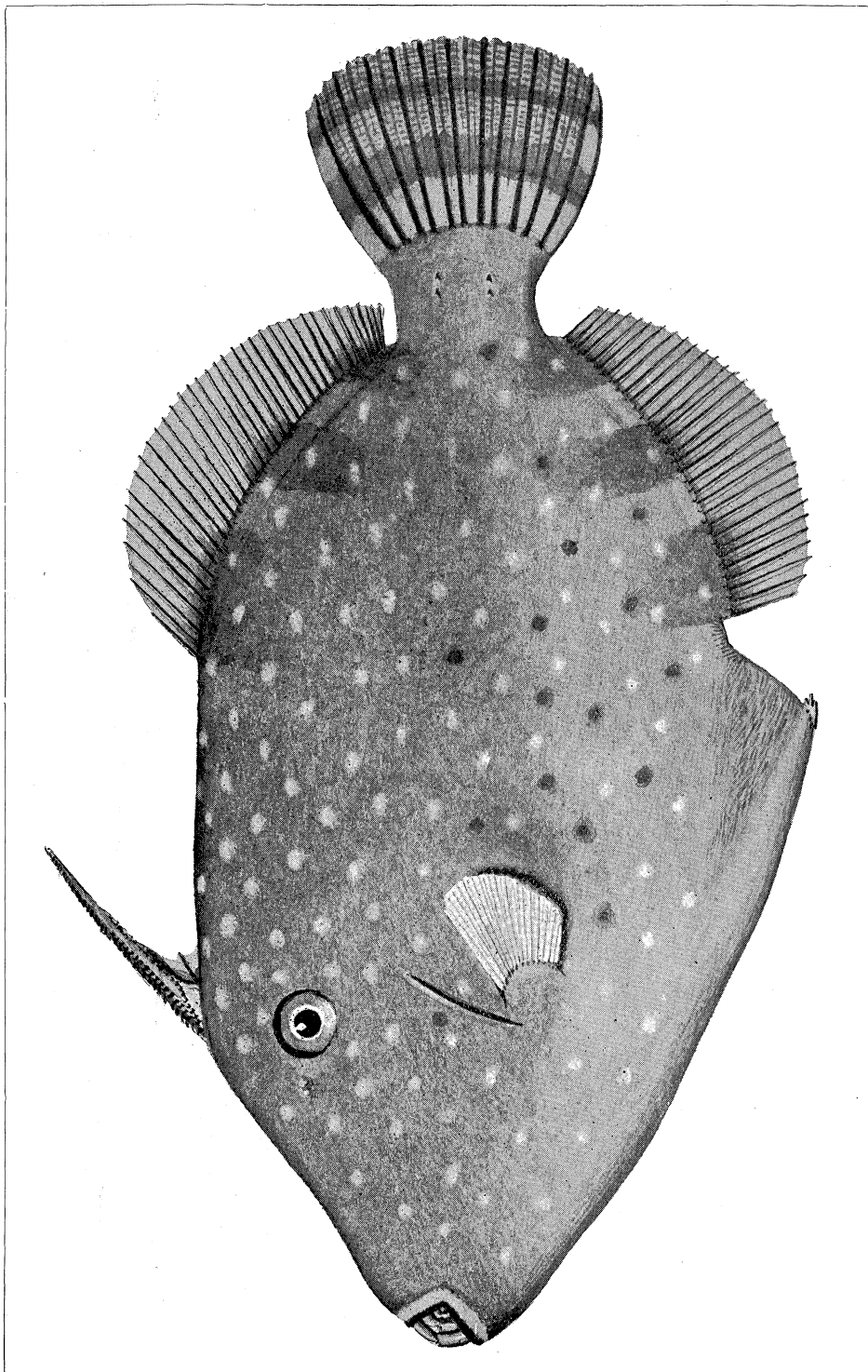
EDGAR B. WAITE, Del.

EXPLANATION OF PLATE VIII.

Monacanthus howensis, Ogilby.

Natural size.

[Reproduced from a drawing by the author].



EDGAR R. WAITE, Del.