

AUSTRALIAN FISHES.

New or little known Species.

By COUNT F. DE CASTELNAU.

Plates II. and III.

The Paper that I present to the Linnean Society of New South Wales contains the description of a number of Australian Fishes, which appear to me to be either little known or entirely new to science. It forms a succession to those I have published in the proceedings of the Zoological and Acclimatisation Society of Victoria for the years 1872 and 1873, and also in the Essays contained in the official reports of the Victorian Intercolonial Exhibitions for 1873 and 1876.

BERYX AFFINIS.

Beryx affinis, Gunther Catal., vol. 1, page 13.

Height of body, twice and a quarter in total length without the caudal; head, twice and three-quarters in the same, eye nearly one-third of the length of the head, præopercule, with a rather strong flat spine at its inferior angle; the lower limb finely serrated; the interopercule is strongly denticulated on its lower angle, and is finely serrated at its lower margin; operculum has three strong spines, and its margin is serrated.

The dorsal fin is low at its anterior part, very high towards its centre, and from thence becomes shorter to its extremity; it has seven spines and twelve rays; the first ray is the highest; this dorsal fin is long, and begins on a line perpendicular to the centre of the base of the pectoral; caudal very strongly forked; its inferior lobe considerably shorter than its upper one; anal formed of four spines and twelve rays; ventrals with one strong spine and seven rays, pectorals with thirteen rays.

Lateral line straight with six scales above and twelve below; it extends over about forty-three scales.

The general colour is of a most beautiful pink, with silver stripes on the body, the edges of the opercules of the last colour.

This fish is known in Sydney under the specific name of "*Nanegai*"; its usual length is about twelve inches, but some specimens attain twice that length; it appears towards the middle of October, and lasts for about two months; it is highly esteemed for the table. It is with doubt that I describe it as *affinis*, as, on about two hundred specimens I have seen, nearly all had the inferior lobe of the caudal much shorter than the upper one; two or three specimens only had the two lobes of equal length.

APOGONICHTHYS ADSPERSUS.

Height of body contained three times in total length of fish with the caudal; head twice and two-thirds in the same; first dorsal formed of six spines; the first very short, the second thickest of all, but not quite so long as the following: 2nd dorsal with one spine and nine rays; caudal truncated; anal with two spines (the 1st very short) and eight rays; the lateral line extends over thirty scales.

The specimen preserved in liquor, seems to have been reddish, and marked with irregular small brownish spots on most of the scales; belly white; it is four and a-half inches long; and is from Rockhampton, where it bears the name of "*Stinker*."

THERAPON HILLII.

Teeth small, very numerous, villiform; no canines; a transverse line of teeth on the palate; opercule with two spines, præ-opercule having its limb entirely and equally serrated; the head is rather pointed; the back straight; the height is contained three times in the length without the caudal; the head is three times and two-thirds in the same, and the diameter of the eye a little over four times and a-half in the length of the head; five series of scales on the cheeks; opercule covered with scales similar to the last, and much smaller than those of the body, these numbering sixty-one on the lateral line without counting five or six small ones on the base of the caudal; this line passes over the 12th, and nearly twice as many extend below on the transverse line, but the inferior ones are very small; all these

scales are ciliated on their edge ; dorsal having a very long spinous portion composed of thirteen rays and a much shorter soft one having eleven rays ; the dorsal fin is received in a sulcate of the back ; caudal large, forked, scaley at its base and on the membranes between the rays on two-thirds of their length ; it has seventeen long rays ; anal formed of three large spines, the first of which is the shortest, and the two others about equal in length, but the second much thicker than the others ; it has ten rays ; the ventrals are very large, being more than two-thirds of the length of the head ; the pectorals smaller, of sixteen rays.

The specimen preserved in spirits is uniformly of a dark yellowish colour ; a rather large rounded black spot is seen on the opercule near its upper spine, and seven or eight similar ones are dispersed on the back and sides of the body ; they are very distant one from the other ; the specimen is twelve inches long, and comes from Taroom on the upper Dawson River ; it is entirely a fresh water fish. I have dedicated it to Mr. Hill, the able Director of the Brisbane Botanical Gardens.

Therapon terre-reginæ.

The height of the body is twice and a half in the total length without the caudal, and is equal to the length of the head ; the snout is shorter than the diameter of the eye ; præoperculum rounded, and having a line of strong acute spines, becoming larger on the rounded part, but disappearing on the lower edge ; operculum with two spines, the lower one very acute ; dorsal with twelve spines, of which the two first are much shorter than the third, and the fourth is the longest ; soft dorsal of nine rays ; caudal bifurcated ; anal with three spines of which the middle one is much larger than the others ; it has eight rays at its soft part ; cheeks with five series of scales, the lateral line extends over forty-five of them.

The specimen is in liquor, and seems to have been entirely silvery ; there is the appearance of four narrow transverse bands which do not extend to the belly ; the fins have probably been

red, and have no trace of spots or bands. The specimen is two and a half inches long, and was taken in a river in the northern part of Queensland—probably the Fitzroy.

NOTE.—I have seen a specimen of this sort belonging to the Brisbane Museum, six inches long, from the above-named river. I had taken it for *fasciatus*, but it is certainly distinct, and I believe this latter is confined to the Western Coast of Australia.

DIACOPUS SUPERBUS.

The superior profile of this sort is strongly convex, and the body broad; the height is twice and three quarters in the total length without the caudal fin; the head is twice and a-half in the same; the eye is contained four times and one quarter in the length of the head; at the upper jaw there is in front on each side a very large canine, and on the lower one six or seven of different sizes; the notch of the præopercule is very distinct, and receives a slight knob of the interopercules; below this notch are several arched spines directed forward; the operculum ends in a point; the body scales are large.

The first dorsal has ten strong spines, of which the 4th is the longest; caudal truncate; anal with three spines and eight rays, the 1st spine is straight and short; the 2nd, very large, arched and thick; the 3rd, very little longer than the second, rather arched and slender; the 2nd, 3rd, and 4th rays are the longest; pectorals of seventeen rays; the ventrals are far from reaching the base of the anal.

This beautiful fish is brown on the back, with the centre of each scale obscure; the lower parts are of a handsome pink colour; dorsal, caudal and anal of a brilliant scarlet. Pectorals and ventrals pink.

My specimen is twenty inches long, but it is said to attain a larger size.

This fish inhabits Moreton Bay, and is called at Brisbane, Red Bass; it is said to be a very good table fish.

The general form is very much like Lesson's figure of *Diacopus Tiea* (Voyage Duperrey, pl. 23), but the form of the caudal and of the spines of the anal and other characters do not allow me to unite the two sorts.

CENTROPOGON ROBUSTUS.

Centropogon robustus (Gunther Cat., vol. 2, p. 128.)

This sort is very nearly allied to *C. australis*, but is easily distinguished by the pectorals which do not extend to the vent and the dorsal spines of which the 4th and 5th are the longest. Dr. Gunther is quite right in supposing that there is no cleft behind the fourth gill. I have little to add to his excellent description; the colours are very similar to those of *australis*.

The specimen, preserved in liquor, is eight inches long, and is from the Brisbane River.

BERIDIA.

This new genus belongs to the *Triglidae*, and its spinous dorsal being rather less developed in length than the soft, ought probably to be placed in the group *Cottina*, but the general form is very different from all the other fishes of *Triglidae*, and is more like some sorts of *Gobiidae*.

Head and body very compressed; general form oval; head very large, with its anterior profile strongly concave in front of the eyes, and convex below; teeth very numerous, very small, granular; none at the lower jaw nor on the palate; two dorsals well developed, the first not quite as long as the second, of eight spines, the second with three spines; caudal very long; anal large, with one spine; ventrals behind the pectorals; pectorals large, with the upper ray branched and all the others simple.

BERIDIA FLAVA.

Plate II.

Head contained twice and one-third in the total length without the caudal fin; lower jaw longer than the upper one; eyes moderate, being five times and a half in the length of the

head; head, body, and all the membranes of the fins covered with very minute scales having the form of small tubercles; opercles very much prolonged over the insertion of the pectorals, and ended by two smooth points; maxillaries not extending as far as the anterior margin of the eyes; the body concave behind the first dorsal; this fin is inserted over the eyes and is formed of seven spines, of which the third and fourth are the longest, the others decreasing in length; the space between the first and the second dorsal does not exceed the diameter of the eyes; the length of this first fin is once and three-quarters in the length of the head, and it is about as high as long; the second dorsal is formed of three spines and ten strong rays; these extend rather further than their membranes, and are higher than the spinous dorsal; this fin is about one-fifth longer than the first, and has a posterior membrane which almost unites it to the base of the caudal; this latter is as long as the first dorsal and formed of twelve long rays rather prolonged, the second being branched, and the two lateral ones shorter than the others; it is truncated, and there is also a supplementary very short fin on each side; the anal fin is similar to the second dorsal—it is formed of two spines and eight rays; the ventrals are large, inserted one near the other, and formed of one spine and five rays; the pectorals are very large, nearly as long as the head, with one upper branched ray and nine simple ones; these rays are thick and rather prolonged; the lateral line is continuous, follows the back, and is bent downwards over the end of the pectoral; the total length of the fish is about seven and a half inches long; it is entirely of a beautiful orange colour; the external part of the fins seem to have been rather obscure.

This specimen was found in Portland Bay, on the Western Coast of the Colony of Victoria. Having received it in a dry state, I put it in warm water to extend some parts of the fins; the water became almost immediately of the same beautiful yellow colour as the fish.

PATECUS MACULATUS.

Patecus maculatus, Gunth. Catal., vol. III., p. 292.

I believe this sort to be Dr. Gunther's species, but it presents some slight differences.

The general form seems exactly the same, but the dorsal is not perfectly continuous, there being a rather strong notch at the insertion of the caudal; there are a few very small scattered tubercles on the cheeks and opercles, and a series of flat warts forming a line on the lower part of the body; the body is flesh colour with the head yellow—the latter in its greater part covered with irregular brown marmorated spots; on the body these spots are rounded and not so numerous; the fins are dark brown with a few transverse flesh colour narrow lines especially on the dorsal; pectoral in great part brown, spotted and bordered with flesh colour.

Total length of specimen, three and a half inches.

This most interesting fish was sent to me by Mr. Yagoe from St. Vincent's Gulf. Dr. Gunther, who has only seen one single specimen says first, that it came from North Australia, and afterwards from Fremantle. It is probable the last locality is the correct one.

PERIOPHTHALMUS KOELREUTERI?

Ventrals united; height of body contained five times and one-third in the total length without the caudal, head three and two-thirds in the same; first dorsal with thirteen rays, none produced; colour, in liquor, very dark; sides of the head with white dots, which may have been blue on the living specimen; four rather broad black bands on the body which do not generally extend below the lateral line; fins marmorated with black and yellow.

The specimen is only a little over two inches long, and comes from the sea at the entrance of the Brisbane River.

Dr. Gunther unites many of the author's sorts under this name, but I believe he goes too far in this way. The present specimen would, I believe, belong to Dr. Bleeker's *Periopthalmus dipus*.

SILLAGO TERRÆ-REGINÆ.

The fish I here describe is very different from *punctata* and *maculata* by its uniform colour; it cannot be united with *ciliata* on account of its præoperculum being absolutely entire. I thought it might be *Burrus* of Richardson, Ann. and Mag. of Nat. History, vol. IX., p. 128, but this is said to be spotted like *maculata*, and that the head is one-third of the total length without the caudal. This *burrus* is only known by a drawing, and Dr. Gunther has very properly neglected it in his catalogue. I am inclined to believe that it is simply *maculata*, as it appears principally to differ from this by the absence of the longitudinal streak which may have been forgotten by the draftsman. *S. bassinus* is, as I have already said, probably a variety of *punctata*. Height of body contained a little less than four times in total length without the caudal fin; head three times and one-third in the same; diameter of the eye four times and a half in the length of the head, and twice in the snout; the space between the eyes is one-half the length of the snout; præopercule entire without spines or teeth of any sort; operculum terminated by a strong spine; the lateral line extends over sixty-four scales; first dorsal of ten rays, the third being the longest; second dorsal with one spine and eighteen rays; the caudal very slightly concave; anal with two spines and fifteen rays. The fish is silvery with the upper parts greenish; on the body some very feeble transverse dark bands that disappear on the dried specimen.

This fish is called *Whiting* at Brisbane, and is caught in large numbers in Moreton Bay. Its flesh is, as usual, in this genus, very savoury. The average size of the adult specimen is about twelve inches.

SCIÆNA AQUILA?

The *Sciæna aquila* is one of the European fishes that have been most particularly studied—a sort from the Cape of Good Hope named *hololepidota*, by Lacepede and Cuvier, and *Capensis* by Smith, seems not to differ from it. When I published my first paper on Australian fishes in the Proceedings of the

Zoological Society of Victoria for 1872, I found that a large Australian sort, called King Fish, was very nearly allied to it, but having no specimen of the European sort to compare it with, I was led by the study of the best Ichthyological Works to consider it as different. Even on studying Dr. Gunther's Work I was led to doubt if it belonged to the genus.

Since, Professor McCoy has told me that he had compared the Victorian Fish with a specimen of *aquila* in the Melbourne Museum and that he could find no difference between them; the Victorian sort is always very scarce, and I had only seen two specimens of it in six years; both were of very large size.

During a late stay at Brisbane, Queensland, I was astonished to find that a *Sciæna* was amongst the most common fishes of Moreton Bay, and is considered the best edible fish of the country. It is called *Dew-fish*, on account of its beautiful silvery grey colour; the lower parts are white, the first dorsal obscure; the second with a yellow tinge; the caudal dark; ventrals and inside of the mouth, orange colour; pectorals yellow, with their extremity obscure; a black spot at the base of the pectorals. It attains the weight of fifty pounds. During my stay in the months of June and July, numerous specimens of all sizes were caught every day; the great majority were of a foot long, or even less; the præopercule is slightly denticulated.

The colours, and particularly the one of the inside of the mouth, make me doubt of the identity of this fish with *S. aquila*.

NOTE.—The caudal fin is pointed at its upper edge, and the lower part is rounded; the two dorsals are united by a membrane nearly half as high as the last spine of the first dorsal.

At Sydney this fish is common, and I have seen rather large specimens of it towards the end of summer. It is generally called *Jew-fish*

KURTUS GULLIVERI.

Height of body contained twice and a half in the total length without the caudal fin; head, not quite three times and one-third in the same; the upper profile is convex in front; very convex, and almost gibbous over the præopercule, very elevated in front

and below the dorsal; from thence it forms a regular convex curve up to the caudal fin; the lower profile is very concave up to the anal, and then runs straight; the cleft of the mouth is very oblique; there is a series of eight spinous tubercles along the anterior part of the back; dorsal truncated posteriorly with the last ray two-thirds as long as the first; this fin has two spines and thirteen rays; the caudal is large; the anal has two spines and from forty to forty-two rays: on a considerable number of specimens, none have the anterior protuberance, believed to be sexual in *Kurtus Indicus*.

Preserved in spirits, the fish is of a yellow flesh colour, but when alive Mr. Gulliver says it was entirely diaphanous; he found this sort in a fresh water pond near the Norman River.

The largest specimens are a little over four inches long.

ECHENEIS NAUCRATES.

Echeneis Naucrates, Linn. Syst. Nat., vol. I., p. 446.

„ „ White, Voyage New South Wales, p. 296,
pl. 64, f. 3.

The fish of this genus are remarkable by a suction disk formed of numerous pairs of laminæ situated at the hinder part of the anterior portion of the body, and by means of which they adhere to rocks, other fishes, &c. This sort inhabits the West Indies, Brazils, the China and Indian Seas. The specimen from Australia is about seven inches long, and is from Cardwell, in the north of Queensland. It was given to me by Mr. Duboulay.

SCATOPHAGUS ARGUS.

Chaetodon argus, Linn. Edit. Gmel., p. 1248.

This sort that I had frequently observed in India and China is met in considerable numbers at the mouth of the Brisbane River in Moreton Bay. It is often called by the fishermen *Leather Jacket*. When the thick skin has been removed it is sometimes used for food.

The largest of my specimens measures near fourteen inches, and I find that the dorsal spines seem to become lower in those old individuals than in the others. In this specimen for instance

the fourth dorsal spine is contained over three times in the height of the body, but I do not believe that *Scatophagus ornatus* of Cuvier and Valenciennes can be united with it on account of the difference of the colours. On the living specimen the general colour is of a light grey with the lower parts white; the head is copper colour, and the numerous rounded spots on the body are of a dark grey.

I have lately received through Mr. Gulliver a specimen of this sort caught at the entrance of the Norman River, in the Gulf of Carpentaria, and also a small one by Mr. Duboulay, from Cardwell, in the north of Queensland.

NOTE.—I have obtained a large specimen of *Scatophagus multifasciatus* at Sydney in the month of September; it measures fifteen inches long.

PSETTUS ARGENTEUS.

Chaetodon argenteus, Linn. Amœn. Acad. IV., p. 249.

Psettus argenteus, Richard, Ereb. and Terror, Fishes, p. 57, pl. 35.

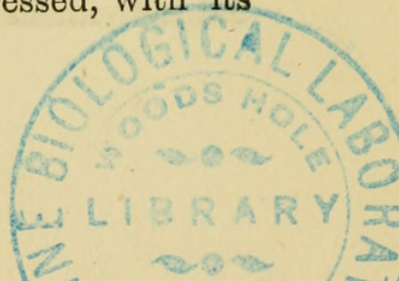
This pretty little fish which I had often observed at Singapore and Malacca is remarkable by its broad compressed form and the height of its dorsal and anal fins. It is of a fine silvery colour with the fins yellow; the higher part of the dorsal and anal are partly obscure; an oblique band of purple colour over the eyes; the scales of the body fall off very easily.

The specimens are, one three inches long and the other over six. They were caught in the Brisbane River, near its mouth, in salt water. This sort bears in Queensland the name of *Sweep*; since, in the month of May, I have observed this fish in great numbers in the Sydney market.

PLATAX VESPERTILIO.

Chaetodon vespertilio, Block, pl. 199, f. 2.

I have received a specimen of this curious fish from Cardwell, Queensland. It was known to inhabit all the Indian Seas, and has been found on the coast of New Guinea, by Messrs. Quoy and Gaimard. It is higher than long, very depressed, with its



dorsal, anal, and pectoral fins prolonged in long filaments. The colour is black, with the caudal and pectoral fins of a bright yellow. There is a rather broad light grey band behind the eye and extending below to the mouth.

The specimen is about five inches long. It was given to me by Mr. Duboulay.

ARIUS CURTISII.

I have lately received from Moreton Bay a fish which is very nearly allied to *Arius*; it is, perhaps, the same as *Bagrus venaticus* of Richardson (Ereb. and Terror, fishes p. 33.) The only point on which the description differs from my sort is in the number of the anal rays which are said to be *about* thirty. Dr. Gunther places it in his catalogue (Vol. V., p. 174) in his genus *Arius* of which it forms the 67th species.

The head is large, smooth in front, but covered on the crown with strong granulations, or small tubercles disposed anteriorly on rather radiated lines; occipital process extending to near the base of the dorsal spine, with a deep sulcate on the centre; the sides of the head smooth, the nostrils are remote from each other, and do not carry barbels; the upper jaw very broad, rounded in front, its breadth being equal to one-half the length of the head; the upper jaw is rather longer than the other, and has, on each side, a rather long compressed barbel more than half the length of the head, and the lower jaw two shorter ones, equally on each side; the palate is very smooth, but has on each side a small dental plate, which is much more visible on the young specimens than on the old ones, as in these the teeth take a more tubercular form; the opercles end by a strong, rounded, flap; the eye is inserted before the anterior third of the head; dorsal spine as long as the pectoral one; it is straight and serrated on both sides; the rays of the dorsal are nine in number; on a very old specimen, principally the first is rather prolonged and attenuated. The distance between the adipose fin and the posterior edge of the root of the dorsal is equal to that from the extremity of the opercle to the anterior edge of the eye; this adipose is as long as the soft part of the dorsal; the caudal

is large, forked and formed of two pointed lobes; the anal is composed of fifteen rays, and extends a little further back than the adipose; the ventrals are large, and placed in front of the last named fin; they have six rays, between several of which are short, abbreviated ones; the pectorals are considerably in front of the dorsal, they are formed of a strong spine, rather arched, and denticulated on both sides and of twelve rays; the distance between the insertion of the pectoral to the base of the ventrals is equal to four-fifths; the height of the body is contained three times and a-half in the length without the caudal fin; the head forms a third of the same length. The body is covered with a rather loose silvery skin, with the upper parts of a dark blue; the upper fins seem to have been reddish; the throat white; the caudal has in the dried specimens a yellowish olive tinge.

I have several specimens, but all badly preserved; the largest is nearly fifteen inches long, the others are about six inches. They come from Moreton Bay, in salt water, and were sent to me by Mr. Curtis, late of the Queensland Museum.

NOTE.—The teeth are numerous, small, conical, pointed, placed at some distance from one another on an irregular line in front of the mouth; behind these there is a broad band of small tubercular ones forming a sort of pavement, interrupted in the middle in front; the basal bone of the dorsal has the form of an oblong nail truncated at the base. The large number of the dorsal fin rays may add to the separation of this sort from *Arius*; in that case I propose calling this genus *Neoarius*.

PLOTOSUS ELONGATUS.

Height of body eleven times in the total length, head seven times and a quarter in the same; eye eight times and a quarter in the length of the head; eight barbels, the upper ones about equal, their length being contained about twice and a half in the distance from the end of the snout to the base of the first dorsal, those of the lower jaw rather shorter; teeth on the upper jaw, and on the vomer, molar like, a transverse line of longer

ones in front ; these are quite blunt and, except in their length, of the same form as the others ; in the lower jaw there is a similar line of rather large but truncated teeth, behind which are numerous and rather large molar teeth ; the body is entirely naked, and the lateral line well marked. The spine of the first dorsal strong and straight, it is equal in length, to the distance between the end of the snout and the anterior edge of the orbit, the soft part is considerably longer than the spine, and formed of four rays ; the distance between the two dorsals is about equal to the space from the end of the snout to the anterior margin of the eye ; the dorsal, anal and caudal are united ; the latter is very acutely pointed ; ventrals about as long as the spine of the dorsal ; colour, after having been in liquor, of a very dark slaty brown, with the lower parts of a whitish yellow. Length nearly one foot.

Found in the Brisbane River, in fresh water ; from the Queensland Museum.

This fish constructs a nest formed of a heap of stones in which the spawn is deposited, and round this heap is a circle of stones some as large as an apple ; the female fish is larger than the male, and keeps guard over the spawn, swimming round and round, as if on an axis, and rushing furiously after any fish that comes within the outer circle, serving the male fish in the same manner if it ventures near. There are many nests in the brooks round Brisbane, but they are never found in more than twelve inches of water on a fine gravelled bottom. These notes were furnished to me by Mr. E. C. Curtis, of Brisbane. The habits he mentions are very much like those of my *Chromys lapidifera*. Exped. Castel. Animaux rares ou Nouv. de l'Amér., p. 16, pl. VIII., fig. 1.

NEOSILURUS.

One very short dorsal fin with simple spine ; no adipose fin ; anal and caudal fins confluent and obliquely truncated ; barbels six—one to each maxillary and two to each mandible on each side ; teeth forming on the upper jaw a line of isolated, short, conical ones, with two larger in front on the palate and vomer ;

numerous tubercular teeth placed at a distance one from the other; on the lower jaw also conical teeth in front and isolated tubercular ones behind; mouth small; eyes rather small above the angle of the mouth; nostrils remote from each other; head and body covered with soft skin, the upper profile of the head oblique; the dorsal fin is inserted before the ventrals; these composed of twelve rays; there is no adipose fin; the lateral rays of the caudal extend a little over the tail, those of the caudal itself become almost immediately as long as two-thirds of the head; they decrease in length after joining the anal, and thus give the caudal the form of a rather acute point; the rays of the anal are very numerous, this fin extending to the vent which is a little behind the insertion of the ventrals. These fish have rather the form of *Plotosus*, but without the dorsal fin. This genus comes near *Silurichthys*.

NEOSILURUS AUSTRALIS.

Height of body contained rather less than five times in the total length, without the caudal; length of head, four times and two-thirds in the same; eye, seven times and one-third in the length of the head, the outside barbel of the maxillary longer than the others and nearly as long as half the head; the lower jaw is shorter than the upper; the interocular space is contained three times in the length of the head, and is covered with longitudinal lines; the lateral line is well marked, continuous; the ventrals are rather small and have twelve rays; the pectorals are contained about one and a half times in the length of the head; they are formed of one rather strong spine slightly arched and barbed on its inner side, and of nine rays; the dorsal is narrow, rather high, with a slender simple spine and three rays. The fish in spirits, is of a dark slate colour with the belly rather white; fins dark.

The specimen is about eleven inches long; it is from the fresh water lagoons of Rockhampton and is called Jew Fish.

BELONE FEROX.

Belone ferox, Gunth. Catal., vol. VI., p. 242.

This sort is very nearly allied to my *B. gavialoides*, but in this latter sort the diameter of the eye is contained twice in the

interocular space, when in *ferox* this diameter is two-thirds of the same space. These two gigantic sorts have also numerous other distinctive characters. *B. gavialoides* inhabits the West Coast of Australia and *ferox* the North-Eastern one. I have seen a fine specimen of the last in the Brisbane Museum, and I possess a head of a specimen, also from Queensland.

HEMIRHAMPHUS BREVICEPS.

Total length of the head contained three times and one-third in the length of the fish without the caudal; the beak is equal to the distance between the anterior end of the mandible and the posterior edge of the orbit; the portion of the beak extending in front of the upper jaw is contained twelve times in the length of the fish without the caudal; the height of the body is six times and two-thirds in the same measurement; the back is short, straight, and pointed at its extremity; the diameter of the eye is less than the interorbital space; the caudal is forked, the lower lobe rather longer than the other; the dorsal is inserted rather behind the anal; ventrals inserted nearer to the anal than to the end of the operculum; pectorals rather longer than the inferior jaw, and rather longer than half the total length of the head; body with a silvery lateral band surmounted by a blue-black streak; the back brown; dorsal 15, anal 15, pectorals 12, lateral line 48; the end of beak is red.

The specimens are about five inches long. They are from the mouth of the Brisbane River, in salt water. This fish is called Snub-gar at Brisbane; it is generally found in great quantities with *H. melanochir*, the latter bearing more particularly the name of *Gar-fish*.

CHATOËSSUS EREBI.

Chotoëssus erebi, Gunther Cat. VII., p. 207.

„ *ocme*, Richards, Ereb. Terr., p. 61, pl. 38.

A specimen, absolutely similar to the one figured by Richardson, has been sent to me by Mr. Staiger, as coming from the mouth of the Brisbane River, and as being known in the Brisbane market under the name of *Sardine*.

NOTE.—Mr. Gulliver has lately sent me a *Ohatoëssus* from the Norman River on the Gulf of Carpentaria; it is similar to the one from the Western coast of Australia, and so *C. erebi* would be found at Swan River, in Dampier's Archipelago, in the Norman and Brisbane Rivers; and *C. Richardsoni* would only inhabit the Murray River; the first is easily distinguished by its more elongate form, and by the last ray of its dorsal extending to the end of the body. The Murray River species has a more convex profile, and its last dorsal rays covers very little more than half the distance to the base of the caudal.

ELOPS SAURUS.

Elops Saurus, Linn. Syst. Nat. 1, p. 518.

„ *machnata*, Forsk. Ruppel.

„ *purpurascens*, Richards.

„ *capensis*, Smith, Castelnau, olim.

I had often seen this fish at Singapore and Malacca, and also at the Cape of Good Hope, and I was very much pleased when at Brisbane a fisherman brought me a fine specimen twenty-five inches long.

The fish is of a fine silvery colour, with the back of a beautiful blue; the upper part of the head almost black; the opercles iridiated; dorsal and caudal fins of an obscure yellow; anal and ventrals white with a yellowish tinge; the pectorals are black with the inner part white.

It seems to be admitted that this *Elops* is found in almost all the warm or even temperate seas of the world. It has been observed on the coast of the United States, in the West Indies, at Zanzibar, at the Mauritius, in India, in China, and in Australia.

BRISBANIA STAIGERI.

Pl. III.

In my *Researches on the Fishes of Australia*, published at Melbourne in 1875 in the *Official Records of the Philadelphia Centennial Exhibition*, I mentioned that a drawing of a fish, caught

in a Lagoon near Brisbane, had been sent to me by Mr. Staiger, and that by its absence of teeth and its general form, it seemed to belong to the *Cyprinidæ* and to come near *Leuciscus*.

The curious form of this fish, and what was said of its remarkable edible qualities, had caused some interest at Brisbane, and when in the month of June, 1876, I went to that capital of Queensland, it was arranged between Mr. Staiger and the Director of the Botanical Gardens, on whose land the Lagoon is situated, that able fishermen should be called, and that the waters of the land should be thoroughly searched. During this operation, which proved a complete failure, and only produced a number of very large Mulletts, it was found that the fish had been caught in the upper waters of the Brisbane River, and had been put in the Lagoon many years before. I had given up all hopes of being able to solve this little scientific mystery, when a fisherman who was in the habit of bringing me all the sorts he did not see habitually, brought me a specimen. I immediately recognised it as the so-much desired fish. It had been caught in the upper part of the Brisbane River.

It was then easy to see that the fish had small teeth that had escaped the attention of the draughtsman, and that it belonged to the *Clupeidæ*, and came very near to *Chatoëssus*. By its long tapering maxillary, it is also allied to *Gnathobolus* of Cuvier, which M. Valenciennes placed immediately before *Chatoëssus*, and Dr. Gunther unites with *Pristigaster*, near which the great French Naturalist had placed them. It seems by its characters to constitute a particular groupe in the family to which it belongs; the genus can be characterised as follows: Mouth very wide, opening upwards, the lower jaw being much longer than the upper one; maxillary very large, broad, moveable, rounded in form of a sword; teeth fine, and very numerous on a line in the jaws; they also extend on the vomer, and palatines, in three large patches of which the central one has the form of a heart, and the lateral ones are elongated; the opercle rounded, the single dorsal is inserted a little behind the centre of the fish; its lower ray is prolonged as in *Chatoëssus*, and *Megalops*; it is formed of eighteen rays, of

which the three first are simple ; the caudal fin is strongly bifid ; the anal is long with its anterior part much higher than the other ; the ventrals are placed a little in front of the dorsal, the pectorals below the end of the operculum ; the body is covered with large scales, and the abdomen is not serrated. The characters that we may consider as specific are the following :—body oval, elongate ; head nearly as long as the height of the body, and contained three times and two-thirds in the total length without the caudal ; eye, very large—contained three times in the length of the head ; the upper jaw much shorter than (nearly twice in) the diameter of the eye.

The lateral line extends over forty-four scales, and is marked by a succession of fan-like striæ ; on the transverse line the scales number eleven, the lateral line passing over the fifth.

The dorsal is much higher than long, formed of eighteen rays, of which the fourth is the longest ; the others go decreasing in length ; the last is very long, arched, and attains to near the upper base of the caudal ; this latter has its lobes pointed, and three times longer than the centre ; the anal is nearer to the caudal than to the ventrals ; it is rather long, and formed of twenty-four rays, of which the three first are simple ; this fin is rather longer than one-half of the head, and its 4th, 5th, and 6th rays are higher than the length of the fin ; the others go on decreasing, and the central ones are only about one-third of the length of the others ; the two or three last are longer, and about one-half the height of the longest ; ventrals formed of one long slender spine, and of nine rays ; at the base of this fin, and also of the pectorals, there is a long-pointed, detached scale ; pectorals rather longer than the ventrals, formed of one long slender spine and of thirteen rays.

The general appearance of the fish is very silvery ; the back is green ; the head has golden tinges ; the fins are green, with the exception of the ventrals, which are pink.

My specimen is about sixteen inches long, but it is said that this fish sometimes measures two feet.

MURÆNESOX CINEREUS.

Muraena cinerea, Forsk. Descr. An., pp. X and 22 (according to Dr. Gunther.

Ophisurus rostratus, Quoy & Gaim. Voy. Uranie, Zool., pl. 51, fig. 1.

Conger oxyrhynchus, Eydoux & Soul., Voy. Bonite, pl. 9, fig. 2.

Muraenesox bagio, Peters; Kaup, Apod., p. 116, pl. 14, fig. 73.

This fish, remarkable by the strange tricuspid teeth of its vomer, has very much the form of an *Ophidian*, but its fins, and particularly its pectorals, are well developed. The specimen I possess is from the Brisbane River, and is about thirty inches long.

NOTE.—It is singular that in his Règne Animal, Cuvier considers this sort as belonging to the genus *Ophisurus*, with which it has so little resemblance.

The specimen was sent to me by Mr. Curtis.

OPHICHTHYS EPISCOPUS.

This sort has its teeth large and pointed; the pectoral small but well developed; the maxillary teeth in a double series, the mandibulary ones in a single series; lips not fringed; snout moderately produced.

In this division of Dr. Gunther, which corresponds to the genus *Herpetrichthys* of Kaup, two species seem nearly allied to the Australian fishes *regius* and *ornatissimus*, but in both the dorsal is spotted and the annular body bands seem to be of a different form; the height of the fish is contained fifty-one times in its total length; head fifteen times and a quarter in the same; the pectoral is contained three and a half times in the length of the head, dorsal commencing behind the end of the pectorals; general colour lilac, with twenty-three broad transverse bands of a darker colour; they do not extend to the lower part of the body, which is white; the space they cover is broader than the one they have between them; the interspaces immaculate, dorsal fin grey; the head is covered with small purple spots, and there is a broad longitudinal band of the same colour, but of lighter

tinge on the sides of the head, leaving a large oblong white spot on the posterior part of the head, which extends to the rest of the pectorals.

From Moreton Bay. The specimen is nearly sixteen inches long.

NOTE.—This species resembles *Ophisurus alternans*, Quoy and Gaim. Voy. Freycinet Zoology, pl. 45, fig. 2.

TRACANTHUS BIACULEATUS.

Triacanthus biaculeatus, Block, p. 148, fig. 2.

A specimen about four inches long of this curious fish was sent to me from Cardwell, in the north of Queensland. It is entirely of a silvery colour; the anterior profile of the head is more elevated than Block's figure.

This sort inhabits the Indian Archipelago, and Dr. Gunther quotes it from Port Essington. We see that it follows also the North East Coast of Australia.

MONACANTHUS YAGOI.

It is always with much reluctance that I describe a species of this genus as new, for it is stated that they are subject to great variations during their life. This is rendered probable by the fact that it is very rare that I can place the specimens I obtain under any of the species described by the authors, and it would be very desirable that large numbers of specimens were studied to well establish their specific differences. Unfortunately the Australian fishermen not only cannot be induced to collect them, but always throw away any *Leather Jackets* that they may get by chance. They are very rarely caught with the net, and they only take the hook with difficulty. They also generally inhabit the vicinity of rocks where the fishermen do not willingly carry their researches. The present sort is in form, nearly allied to *Monacanthus variabilis* of Richardson, but its anterior profile is much more convex; the mouth is not protruded; the dorsal spine is straight and is inserted over the centre of the orbit; the body is velvety; the centre of the tail is covered with short stiff slender spines, and behind these are two tubercular arms with

four short spines directed backwards (two on each side); the ventral spine is very small; the caudal is rounded; the dorsal is formed of thirty-three rays and the anal of twenty-nine; after having been preserved in liquor the colour is of a uniform light greyish yellow, with the belly and fins of a light yellowish green; on the space between the mouth and the eye there are traces of rather numerous transverse light blue stripes running rather obliquely, and the lower parts have longitudinal lines of the same colour; on the throat are rounded similar spots; on the living specimens the colours seem to have been very beautiful, as Mr. Yagoe, who caught them in St. Vincent's Gulf, writes that "the colours were something magnificent, from orange to red, from the lightest to the darkest green, and from azure to purple, were all splendidly shaded." The total length is ten inches and a half, and the greatest height of the body four inches and two-thirds.

MONACANTHUS SANTI JOANNI.

Enters Dr. Gunther's division. "Anal fins with less than forty rays; dorsal spine with four series of barbs, the front series much closer together than the hinder series, and formed by small barbs."

The profile of the head is rather concave in front and slightly convex towards the spine; skin entirely covered with small tubercles, radiated at the base and terminated by a keel, truncated and rather crenulated at its extremity; these tubercles are placed irregularly, but forming rather transverse than longitudinal lines; the tail has no spines, and is like the other parts of the body; the head is contained three times in the length without the caudal; the height of the body is about one-half of the length; the dorsal spine is nearly as long as the head; it is straight and slender; the posterior barbs are large and directed downwards, but they only occupy the lower half of the spine; this last is inserted a little in front of the centre of the eye; the pectoral is rather behind; the second dorsal is formed of twenty-eight rays; the caudal is rounded; the anal has twenty-six rays; the ventral spine is rather large; it is star like in front and bifid

behind. I have only seen dried specimens, and can say nothing of the colours; on the caudal there is a mark of a rather narrow black band placed obliquely on each lobe.

This sort seems to be rather common in Hobson's Bay, and attains from ten to twelve inches long. The first specimen I saw was given to me by Mr. St. John, a most able taxidermist.

MONOCANTHUS PERONII.

I have obtained a specimen of this sort from Hobson's Bay, which would be according to Dr. Gunther a male; it has on each side of the tail an elongated patch of long, straight, slender but very stiff bristles, having entirely the form of a tooth brush; these bristles or spines are higher in the centre where they are nearly an inch long; the specimen is near ten inches long, and has been dried; in that state the colour is of a rather light brown, marked on the lower parts with light grey; the skin is covered with very small tubercles.

NOTE.—A careful comparison has satisfied me that my *Monacanthus obscurus* is identical with my *M. margaritifer*; the differences observed are only due to the state of preservation of the specimens; the first is dried and from Swan River; the others were in liquor and from South Australia.

TETRODON BIBRONI.

Body naked; snout obtuse and short; eye nearer to the end of the snout than to the gill opening; the interorbital space is flat; its breadth taken at the centre of the eye, is equal to one-half the distance, from the end of the snout to the base of the dorsal; it has no ridges; all the upper part of the head is rugose; the belly has a rugose appearance, caused by a quantity of very minute spines. The colour is dark purple with the lower parts white; three broad black bands cross the upper part of the body, one over the eyes, one behind the pectorals, the other shorter, almost round, at the base of the dorsal; fins white.

The specimen is two inches and a-half long, and comes from the entrance of the Brisbane River, in salt water.

This sort by its nasal organ, very conspicuous, composed of one opening on each side, being a simple circular cavity, would enter the late Bibron's genus *Monotretus*.

TETRODON STAIGERI.

Rather large spines cover the body, except the snout, and stopping just before the insertion of the dorsal fin, leaving all the posterior part naked; these spines are numerous, but rather distant over from the other, and about one line long; those of the upper part of the body have three roots, and those of the belly four; the length of the orbit contained twice and a-half in the interorbital space which is convex; length of the caudal fin equal to its distance to the posterior edge of the dorsal. The upper part of the body is of a dark slatey colour, with rounded black irregularly placed spots; the lower part is white, a large obscure spot at the base of the pectorals.

The specimen is not four inches; it comes from the Brisbane River, where Mr. Staiger says it is called *Toad Fish*.

This sort is very nearly allied to *T. hispidus*, and comes in the same division, but is very distinct by its spines being much longer and set considerably more apart.

Description of a new species of *Ianthænas*, from the
Duke of York Islands.

By E. P. RAMSAY, F. L. S., &c. &c.

IANTHÆNAS PALLIDICEPS, *sp. nov.*

Like *I. metallicus*, *Temm.*, but having the whole of the head and throat white.

The whole of the head and throat white, with a faint opaline rosy tint in certain lights; the quills of the wings and tail, the primary-coverts above, the under wing-coverts, outer series of the under tail-coverts, slatey black; the neck, and all the upper and under surface of the body, upper tail- and wing-coverts, slatey black at the base but broadly margined at the tips of the



Castelnau, Francis. 1878. "Australian fishes. New or little known species."
Proceedings of the Linnean Society of New South Wales 2, 225–248.

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