

CONTRIBUTION
TO THE
ICHTHYOLOGY OF AUSTRALIA.

No. V.—NOTES ON FISHES FROM NORTH
AUSTRALIA.

Most of the fishes I have seen from the northern part of the Australian Continent were kindly sent to me by Mr. Waterhouse, the Curator of the South Australian Museum, and are from Port Darwin. As might be expected, a great part of them belong to Indian sorts.

The only sort here described from a different locality is a most curious little fish, which was given to me by Mr. Ch. French, and was found by one of the members of the Melbourne Eclipse Expedition. I have been unable to ascertain to what family it belongs.

THERAPON THERAPS.

Therapon Theraps, *Cuv. and Val.*, vol. iii, p. 129.

Remarkable by its silvery colour, marked with three obscure longitudinal narrow streaks; the two superior ones arched and the third straight; the latter situated below the middle of the body and extending to the extremity of the caudal. This has also two other similar oblique bands, one on each lobe of the caudal; the extremity of the upper one is also obscure. A large purple spot covers a considerable part of the spinous dorsal, and some spots of the same colour are also on the soft portion of the same. Common in the Indian and Chinese Seas.

Port Darwin.

TOXOTES JACULATOR.

Scæina Jaculatrix, *Pall. Spicil.* viii., p. 41.

Labrus Jaculatrix, *Lacep.* iii., p. 429.

Toxotes Jaculator, *Cuv. and Val.*, vol. vii., p. 314, pl. 192.

The specimen is only two and a quarter inches long, and does not appear to differ from the Indian ones; the transverse spots of the body are very slightly marked.

Port Darwin.

NOTA.—This genus is placed with the *Squamipennes*, but appears to me to constitute a separate family; I would propose to call *Toxotidæ*.

LETHRINUS JOHNNI.

Anthias Johnii, *Bloch.*, pl. 318.

Mesoprion Johnii, *Gunth., Cat.*, vol. i., p. 200.

———— *Unimaculatus*, *Quoy. and Gaim., Voy. Freycinet*,
p. 304.

———— *Cuv. and Val.*, vol. ii., p. 441.

Coius Catus *Buch., Gang. Fish.*, p. 90, pl. 38, fig. 30.

Remarkable by the large oval black blotch it has on each side; over the lateral line there are on the back rather numerous black, narrow, and oblique lines; the palatine teeth are few and feeble.

This fish is very much like *Lethrinus Harak*, of Farskal.

Its usual *habitat* is the Indian Sea.

Port Darwin.

EQUULA EDENTULA.

Scomber Edentulus, *Bloch.*, pl., 426.

Equula Ensifera, *Cuv. and Val.*, vol. x., p. 66.

The specimen is only two inches long; it agrees well with the description of the authors, but the second spine of the dorsal is shorter than stated by Dr. Gunther (three-quarters of the length of the head); it is, as Cuvier and Valenciennes describe it, one-sixth of the total length of the fish.

The colour, after having been in spirits, is silvery, with the back of a fine light blue ; head and fins of a rather brownish yellow.

There is no trace whatever of the transverse bands or lines mentioned by Cuvier and Valenciennes, but this may depend on the age of the specimen.

Dr. Gunther (*Catal.*, vol. ii., p. 499) places doubtfully, with this species, the *Equula Serrulifera* of Richard., *Ereb. and Terror*, p. 137, pl. 59 ; but, judging by this plate, it would be very distinct by the strong denticulations which arm some of the dorsal spines.

Port Darwin.

ELEOTRIS MOGURNDA.

Eleotris Mogurnda, *Richard., Ereb. and Terror*, pl. 2, fig. 1.

————— *Gunther, Catal.*, vol. iii., pl. 111.

Several small specimens about two inches long, appear to belong to that sort by their broad snout and the three rather oblique dark stripes they have on their cheeks and opercles. The body appears yellow, marbled with brown ; the upper parts of the last colour ; a series of round dark blotches extend along the lateral line ; the one at the base of the caudal generally darker than the others. The dorsal and caudal are finely marked with brown. Some of the dorsal rays are rather produced in one of the specimens.

Port Darwin.

ELEOTRIS MODESTA.

Body very elongate, contained four times and five-eighths in the total length of the fish, or a little over four times in the same without the caudal ; head three times and a half in the same ; eye three times and a fifth in the length of the head.

The snout is considerably shorter than the diameter of the eye ; it is rather depressed but not very broad, its breadth in front of the eyes being equal to the distance from its extremity to the first third of the diameter of these organs. The cleft of the mouth is oblique, and does not extend to the perpendicular from the anterior edge of the eye. Operculums

simple; head entirely scaly; body covered with large scales, thirty-one on the longitudinal line and eleven on the transverse one; these scales are striated and finely serrated on their edge. The lateral line is very feebly marked, and only extends to the thirteenth scale. The first dorsal has six feeble spines; the first of which is shorter than the others; these are rather produced in filaments; the second dorsal has one spine and eight rays; the caudal has fifteen long rays and several shorter on each side; anal with one spine and nine rays; ventrals inserted below the pectorals, very near one another; they have one feeble spine and five rather long rays; pectorals not longer than the ventrals of seventeen rays.

General colour of a light yellow, with the upper parts rather brown; a very small and faint obscure spot at the upper angle of the base of the pectoral, and a rather dark but very faint line along the body to the base of the caudal. The dorsals have some irregular oblique transverse spots and the extremity of the second is black; the caudal is transversely speckled with brown.

Length less than two inches.

Port Darwin.

PERIOPHTHALMUS KOELREUTERI.

Periopthalmus Koelreuteri, *Bl. Sch.*, p. 65.

————— *Cuv. and Val.*, vol. xii., p., 181.

Gobius ————— *Pallas. Spic.*, viii., p. 8, pl. 2,
fig. 1.

The specimen is two inches and two-thirds long. After having been preserved in liquor, it is of a light grey, indistinctly marmorated with purple, and the lower parts are of a dirty white; the ventrals and anal are of the latter colour; the pectorals and caudal are punctured with brown; the dorsal is spotted, and has on both of its portions a broad obscure longitudinal band running at some distance from the edge.

The first dorsal is not produced and the ventrals are separated.

It is found in all parts of the Indian and in the Red Seas.

Port Darwin.

APOCRYPTES MACROPHthalmus.

The genus *Apocryptes* has been formed by Valenciennes to place fishes which, with the united ventrals of *Gobius*, have only one line of canine teeth at each jaw. The sort I here describe has the prominent eyes of *Periophthalmus* and of *Boleophthalmus*, but the body much more elongate, and the fins absolutely united, does not admit of it being placed with either.

Height of body eight and a quarter times in the total length, or six and eight-tenths in the same, without the caudal; head four times in the last dimension or five in the first; eye four and a half times in the length of the head; snout very convex, and a little longer than the diameter of the eye. The head is broad at its back part, being in this portion only contained once and a third in the length of the head; the upper jaw is a little longer than the lower; the eyes are prominent, placed at the upper part of the head; gape of the mouth nearly horizontal, and extending near to the line from the posterior part of the eye. Teeth strong, canine-like, apart one from the other; lower jaw with a series of rather short tentaculæ; the entire fish is covered with very minute scales imbedded in the skin. The body is narrow, compressed, not more than one-half the breadth of the head; it goes tapering to the extremity. The lateral line is deeply marked, as are also the muscular flakes. The anus is situated a little nearer to the snout than to the base of the caudal; the first dorsal is inserted in front of the anus, it is formed of five rays, the last of which are prolonged more or less, in filaments; the second dorsal is very long, and is united with the base of the caudal; it is rather high, formed of twenty-seven rays, the two first of which are rather prolonged in short filaments. Caudal lanceolate of fifteen rays; anal united by a membrane to the base of the caudal, of about twenty-five rays; ventrals placed below the throat, in front of the pectorals, absolutely united, each being formed of one simple and of five branched rays; they are not adherent to the belly. Pectorals large, extending a little further than the ventrals, of eighteen or nineteen rays.

The fish, after having been preserved in liquor, appears of a light silvery grey, with the upper parts rather darker.

My largest specimen is over four inches long, its dorsal is very little prolonged ; the other is about three inches and a half, and that I believe a male ; has a long dorsal filament.

Port Darwin.

ZANTECLA.

Teeth on one single row at the upper jaw ; they are very numerous, rather large, pointed, and arched ; at the lower jaw they are similarly disposed, but shorter and straighter.

The centre of the snout arched and rather produced in front ; maxillaries not extending to the perpendicular from the anterior edge of the eye.

A strip of strong teeth on the vomer.

General form oval, compressed ; head pointed, covered with large scales ; eye large ; no lateral line ; two dorsals, both situated on the second half of the back, and each having one long and strong spine ; anal very long, having one spine and numerous rays ; ventrals abdominal.

This genus appears to me to differ by its characters from all the families established till now ; by most of them it comes near the *Atherinidæ*, but, by its unic strong spine at each dorsal, and at the anal, and also by its well developed dentition, I think it will be the type of a new family, that might be called *Zanteclidæ*.

ZANTECLA PUSILLA.

Height three times in the length to the base of the caudal, or three and a third with this included. Head three times and two thirds in the first of these dimensions ; eye twice and one-third in the length of the head.

The general form is oval ; the profile being a little more convex than the upper one ; the head is attenuated and pointed in front ; the lower jaw a little longer than the upper one and much thicker ; the opercular pieces are simple and covered with scales ; the operculum is round behind ; the

scales of the body are rather large ; they are covered with very faint concentric lines, and their edge is entire ; they number thirty-five on the longitudinal line, and ten on the transverse one.

Two dorsal fins, the first inserted at an equal distance from the snout and the base of the caudal, formed of one strong arched spine, and of five rather filamentary rays. The second dorsal is separated from the first by a space equal to the diameter of the eye ; it is formed of one long arched spine, and of nine rays ; the two last extend as filaments over the tail ; caudal rather bifurcated, of sixteen long rays and several shorter ones on each side ; anal very long, beginning rather in front of the first dorsal, and formed of one long arched spine, and of seventeen rays ; the height of these go increasing as they are placed backwards, and the last are rather prolonged.

The ventrals are placed very near one another, at a considerable distance behind the pectorals, and are formed of a slender spine and of five rays ; the pectorals have thirteen rays.

The general colour, after having been in spirits, is silvery, with the back of a light lilac ; a rather broad straight longitudinal stripe runs from behind the eye to the extremity of the caudal ; it is silvery, bordered with black ; the rays of the dorsal and the end of those of the anal are obscure. Two inches long.

Port Darwin.

POMACENTRUS BILINEATUS.

This sort has to be placed in the section characterised by "Body without cross-bands ; its height is more than one-third of the total length ; blue lines along the nape and the forehead."

It comes near *Unilineatus* of Cuv. and Valen. ; but is easily distinguished from Ruppel's figure (*Biocellatus* N.W. fish., pl. 31, fig. 3) by the form of the caudal, which is rounded and rather prolonged in its centre in mine, and strongly emarginated in the other. The general form of mine is also much

more elongate, and the disposition of the colours is rather different, as there is no trace of a spot on the upper part of the tail.

The height of the body is contained twice and two-thirds in the entire length ; the head is a little over four times in the same ; eye contained twice and a half in the length of the head.

The præorbital and the præoperculum are strongly crenulated ; the operculum is entire ; the lateral line follows the upper profile in approximating it gradually ; it stops a little behind the centre of the soft dorsal, and runs over eighteen scales. The number of scales on the longitudinal line is about thirty ; the transverse one has twelve ; the lateral line running over the third ; the dorsal has thirteen spines ; the first is shorter than the others, which all go increasing in length as they extend backwards ; the soft portion of the dorsal is formed of fourteen rays ; the caudal of seventeen, and of a few small ones on each side ; the central ones are longer than the others.

Anal with two spines, the second of which is more than twice the length of the first, and fourteen rays ; the ventrals are formed of a spine and of five rays ; the two outer ones of these prolonged in long filaments, which extend to the base of the second anal spine ; pectorals nearly as long as the head, of seventeen rays.

The general colour (in liquor) is of a light purple brown ; a narrow blue line runs over each eye, from the mouth to the base of the dorsal ; these lines unite over the mouth, several other longitudinal blue lines, irregular and interrupted, run on the sides of the head. Each scale is marked with two or three light blue spots, which are more visible on the back and belly than on the sides ; there is no trace of a spot on the tail ; the fins are yellow, the end of the dorsal fins is rather obscure.

I have two specimens of this sort, which measure each a little over two inches long.

Port Darwin.

AMPHIPRION RUPPELI.

This sort is nearly allied in form to Ruppel's *Amph. Bicinctus*, the dorsal not being notched.

Height of body contained twice and two-thirds in the total length of the fish, or twice and one height in the same, without the caudal; head three times in the latter dimension; eye three times also in the length of the head.

The general form is high; the upper profile very convex; the lower jaw is longer than the upper one; the infraorbital is very strongly serrated; the snout is considerably shorter than the diameter of the eye; the præoperculum is feebly denticulated on its posterior part, and not at all on its lower one; the operculum is very strongly serrated and four-lobed; the lateral line rises at first and then follows regularly the profile of the back, but ends before the extremity of the dorsal; it covers about thirty-eight scales.

Dorsal of nearly equal height in all its length, of ten spines and eighteen rays; caudal rounded, with the four central rays prolonged in short filaments, of seventeen long rays, with four or five short ones on each side; anal with two spines and fourteen rays; the second spine being much stronger and longer than the other. Ventrals placed under the base of the pectorals; they are long and attain at least the first anal spine; they are formed of a long slender spine and of five rays; the pectorals are about as long as the ventrals, and have eighteen rays.

The general colour, after preservation in spirits, is of a light pink, with a very large black blotch covering all the back and the sides up to the height of the base of the pectorals; backwards it extends to the end of the dorsal; a broad pearly white transverse band runs rather obliquely from the nape of the neck to the lower edge of the operculum; its anterior edge runs behind the eye, and it ends downwards by a point; it is bordered with black. On the back, below the end of the spiny dorsal, there is another faint transverse white line that does not extend far below the lateral line; the fins are of a light yellow.

Length of the specimen one inch and six-eighths.

Port Darwin.

AMPHIPERON BICOLOR.

This sort is very nearly allied to the *Lutjanus Percula* of Lacepède, and, if Dr. Gunther is right in uniting with it the *Amp. Tunicatus*, *Ocellaris*, *Melanucus*, of Cuvier and Valenciennes, it might possibly prove to be also a simple variety of this sort; but the form is shorter, and the number of dorsal spines seem very different.

The body is nearly like the figure of *Tunicatus*, given by Lesson (*Voyage de la Coquille*, pl. 25, fig. 3) but is shorter, and the upper profile more convex. The height is twice and two-thirds in the total length of the fish; the head is four times in the same, and the eye three times in the length of the head.

The præoperculum is bilobed and each lobe is very strongly serrated.

The dorsal is formed of thirteen spines and of thirteen rays; the spines are as follows: the first is about one-third longer than the second; the five following are nearly equal to this, and rather curved; the seventh, eighth and ninth are straight, and become gradually shorter; the others are also straight, the tenth and eleventh are equal to the precedent, the twelfth a little longer, and the thirteenth twice as long, slender, and forming a part of the second portion of the dorsal. The caudal is oblong, of twenty-two rays; the anal has two spines and twelve rays; the ventrals are rather large; they have one rather long and slender spine and five rays; the pectorals are rounded posteriorly, rather shorter than the ventrals, and formed of seventeen rays. The lateral line begins over the upper end of the operculum, curves towards the back, which it approaches gradually; from whence it reaches the back part of the body; it is only marked posteriorly by a series of very feeble and interrupted ridges, which extend to a little more than the second portion of the dorsal, where they disappear.

The colour is of a deep black, with three broad transverse pearl-white bands; the first arched, and covering the posterior part of the head; the second beginning behind the high spines

of the dorsal, and covering the ninth, tenth, and eleventh of them ; it descends almost straight on its posterior edge, but presents a very strong dilatation in front, below the pectorals ; the third band is on the tail ; the fins are black, with the edge of the second dorsal, the caudal, the anal, and the pectorals white.

The total length is one inch and two-thirds.

Port Darwin.

MELETTA SCHLEGELII.

This species would be placed by Dr. Gunther in the section of *Clupea*, characterised by : minute teeth on the palate, none on the vomer ; root of the ventrals opposite to the middle of dorsal ; height of body less than one-third of the total length without the caudal.

This author, contrary to his habit, divides the species according to their *habitat*, but his only *Australian* species is *Meletta Novæ Hollandiæ*, Cuv. and Val., which is very different from this. I cannot either place it with any of the Indian sorts of *Clupea*.

Height of body three times and one-third in the length without the caudal, or a little over three times and a half to the central end of this fin. Head contained four times in the length (without caudal) ; eye twice and three-fourths in the head.

The snout is considerably shorter than the diameter of the eye ; the lower jaw much longer than the other ; the maxillary extend to below the first third of the eye ; the cheeks and the two operculums are finely striated ; the lower profile is rather more convex than the upper one ; scales regularly arranged, rather firm ; they are strongly striated, with their margin finely crenulated ; dorsal of nineteen rays ; the end of this fin is at an equal distance to the snout, and to the end of the tail. The caudal is deeply forked, of sixteen long rays, with several shorter ones on each side ; anal of twenty-eight or twenty-nine rays ; the ventrals are small ; the pectorals nearly twice as long, of sixteen rays.

The general colour is bright and silvery, with the back of a

light purple ; the anterior part of the head and the fins are yellow ; the operculum gilt.

Length three inches.

Port Darwin.

NOTA.—In the *Fishes of New Zealand*, p. 133, Dr. Hector describes a sort from that island nearly allied to *Clupea Sprattus*, but differing chiefly by the dorsal fin being placed further back. He considers it as a simple variety of the European sort, and, following Dr. Gunther's habit of naming varieties, he calls it *Clupea Sprattus var. Antipodum*. It is useless to add that the characters we have just mentioned prove it to be a most distinct species.

TETRODON DARWINII.

Entering in the division called *Gastrophysus* by Muller and characterised by : no scutes forming a carapace ; nasal organs very conspicuous ; back broad, not compressed ; nasal openings two on each side, opposite to each other, and situated on a rather prominent papillæ ; a fold along the lower part of the tail, receiving the anal fin ; body in part spiny.

The height of the body contained four times in the total length of the fish, and the breadth four and a half in the same ; head contained three times and two-thirds in the above ; eye three times and a half in the length of the head ; the nostrils are situated just in front of the line from the anterior parts of the eyes, and they are placed from these organs at a distance equal to one-half the diameter of the orbit. Snout rather obtuse, this being nearer to its extremity than to the gill opening. Two rooted minute spines cover the upper part of the head and the back up to near the end of the pectorals where they terminate in forming a triangle. The front part of the head and cheeks are smooth ; the spines beginning behind the nostrils ; the space between the end of the spiny part and the base of the dorsal is equal to two-thirds the length of the head ; the throat and belly are covered with small spines and pores. The dorsal begins at a point equally distant from the extremity of the snout and the end of the

caudal ; it is rather long, and formed of eleven rays, the first of which is short. The tail is nearly equal in length to the breadth of the back ; it is truncated, and formed of nine rays with a few shorter ones on the side ; it is considerably longer than the distance that separates it from the dorsal ; the anal is inserted below the dorsal, and extends a little further backwards. It is received in a rather deep longitudinal cavity of the tail, which only extends to its length ; it is formed of six rays ; the pectorals are large, almost square, of eighteen rays.

After having been in liquor, it appears to have been yellow, with the upper parts of a slaty blue ; fins yellow. It presents no trace of spots whatever.

Length three and a half inches.

Port Darwin. Dedicated to the greatest naturalist of the age.

ELLERYA.

The extraordinary little fish on which I propose forming this genus, presents an assemblage of characters such as to leave me in complete uncertainty as to the family to which it belongs ; the complete absence of spines to its fins places it amongst the *Anacanthini*, but its general form does not allow it to be placed in any of the natural group this order contains.

The general appearance is something like that of some *Coryphæna* but shorter ; its form is very compressed, oval, and almost truncated in front ; the upper part of the head is very convex ; the mouth saillant, and the lower part forming a chin ; the teeth are small, numerous, sharp, and on one series on each jaw ; the eye is of moderate size ; the opercular pieces simple ; the body naked, finely puncturated, with the muscular flaxes well-marked ; the dorsal is unic ; the caudal rather large, rounded ; the anal well developed ; the ventrals placed a little behind the insertion of the pectorals.

ELLERYA UNICOLOR.

Height of body the greatest over the insertion of the pectorals, where it is contained a little over twice in the length

up to the insertion of the caudal, or twice and two-thirds to the end of this fin ; the head is a little over one quarter of this last dimension, and the eye is four times in the length of the head ; the forehead is very convex, and protruding a little in front of the eyes ; the profile is convex, and the nasal bone forms a rather sharp point ; the membrane which unites the maxillary to it is very apparent and stops considerably backwards ; the cleft of the mouth is very oblique, and the maxillaries extend to the perpendicular from the posterior edge of the orbit ; the lower jaw is about of the same length as the upper one, or very slightly shorter ; the profile under the mouth becomes strongly concave, and then protrudes a little obliquely, to form a sort of chin ; the lower profile extends to the ventrals in a rather convex way. The upper profile presents a little notch over the eye, and then extends to the back, in forming a rather concave line, with a feeble bump over the end of the operculum ; the highest part is over the lower part of the insertion of the pectorals ; the præoperculum is rounded, and is marked with feeble radiated striæ ; the operculum is also rounded ; the branchial aperture is broad, and extends to the length of the base of the pectorals, but not below : the lower edge of this opening is longitudinally striated ; there are no scales on the head nor on the body ; the skin is finely punctured ; the lateral line is elevated, at its base, up to near the end of the pectorals, and from thence it is marked by a depression to the end of the tail ; there are two other lines almost parallel to it, one on the back and the other below ; the muscular flaxes are very apparent ; the dorsal is unic ; it is inserted a little in front of the base of the pectorals on the dorsal bump I have mentioned ; it is formed of sixteen rather strong rays, the two first seem rather detached from the others in my specimen (but this may be the effect of dessication) ; it is higher at its posterior part than at its anterior one ; the caudal is as long as the head, subtruncated, or rather rounded at its extremity. The angle is high ; the front rays rather longer than the last ; the first a little shorter than the others ; the ventrals small, of five

multiradiated rays ; pectorals large, having, at least, one and a-half the length of the ventrals, of seventeen rays.

The colour, after dessication, is of a light reddish brown ; the specimen I have seen is only an inch and a half long, and was found by a member of the Victorian Eclipse Expedition, at about half a mile from Eclipse Island, Cape Sidmouth.

I have dedicated the genus to Mr. Ellery, the learned Government Astronomer of Melbourne, who was the director of the expedition during which the specimen was found.





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