

perennial grass, with the aspect of a *Mulenbergia* or of a *Polygonum*, but with a coma of silky hairs around the flower, as in a *Calamagrostis*. Culm a foot and a half high, from a creeping rhizoma, retrorsely pubescent at the nodes. Sheaths scabrous, equalling the internodes; ligule short, fringed; leaves 3 or 4 inches long, dull green, rough on both sides. Panicle lead-colored, about 3 inches long; the branches solitary, appressed, densely many-flowered. Spikelets very short-pedicelled, compressed, pubescent, a line and a half long. Glumes narrow, very acute, serrulate on the keel, the lower a little the longer. Awn rough and flexuose, purplish, three or four lines long.—*G. Thurber*.

FILICES.

687. ASPIDIUM FILIX-MAS, Swartz.; apparently identical with the European plant. 688. CRYPTOGRAMME ACROSTICHOIDES, R. Br., by Sir Wm. Hooker regarded as a variety of *Allosorus crispus*. 689. ASPLENIUM SEPTENTRIONALE, L. This was collected by C. Wright farther south; and these two stations are the only known American ones. 690. CYSTOPTERIS FRAGILIS, Benth., mixed with a *WOODSIA*, the same as Parry's 394, formerly named *W. obtusa*; but it is of a different species. 691. CHEILANTHES FENDLERI, Hook. 692. ASPLENIUM TRICHOMANES, L. 693. NOTOCHLENA FENDLERI, Kunze, Filices, 2, p. 87, t. 136; the same as Parry's 396. A species recently distinguished from *N. dealbata*. 694. POLYPODIUM VULGARE, L. 695. P. DRYOPTERIS, L.

Catalogue of the FISHES of Lower California, in the Smithsonian Institution,
Collected by Mr. J. Xantus.

BY THEODORE GILL.

PART IV.

Subfamily *SERRANINÆ* (Swainson.)

Nine genera of this subfamily are now known to be represented by species along the western coast of America and the Gallapagos Islands. They may be thus distinguished:—

- I. Caudal with the lobes acuminate.
 Lateral line before superior, deflected behind..... Pronotoqrammus.
 Lateral line normal..... Brachyrhinus.
- II. Caudal not forked.
 A. Canine teeth developed.
 B. Dorsal spines XI.
 C Nostrils in a vertical row..... Myeteroperca.
 CC. Nostrils in a longitudinal row.
 Body oblong; smooth above lateral line..... Labroperca.
 Body oval, with ctenoid scales..... Epinephelus.
- BB. Dorsal emarginated; spines X.
 C. Head with profile decurved, scaly above..... Paralabrax.
 CC. Head conic; naked between eyes.
 Spinous dorsal rounded..... Atractoperca.
 Spinous dorsal, incurved behind the third elongated spine..... Gonioperca.
- AA. Canine teeth entirely obsolete Dermatolepis.

The preceding table gives only the more striking characters; those are accompanied by others, which appear to amply authorize their generic distinction. In the table, the genera do not follow each other in a strictly natural order.

Genus PRNOTOGRAMMUS Gill.

This genus has the form of *Brachyrhinus*. The body is covered by moderate,

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ctenoid scales. The lateral line runs high on the sides for the greater part of its length, but is abruptly deflected behind, and thence continued along the middle of the caudal peduncle. The head most resembles that of *Brachyrhinus*. The preoperculum is serrated on its posterior margin, and has a strong compressed spine at its angle. The operculum has three acute angles, the middle continued from an internal rib. The teeth are like those of *Serranus*, &c.; two large ones exist on each side of the front, in the margin of the upper jaw, and one on each side, near the symphysis in the lower; while there are also two on the sides. The vomer and palatine bones have villiform teeth. There are, apparently, only six branchiostegal rays. The dorsal is undulated, and has ten spines. The anal has three strong spines, the second of which is largest. The lobes of the caudal are acute; the pectorals acutely rounded; and the ventrals angulated.

PROXOTOGRAMMUS MULTIFASCIATUS Gill.

The greatest height equals or slightly exceeds a quarter of the length from the snout to the end of the median caudal rays. The head equals a third of that length, and contains the diameter of the eye,—which is oval,—three times. The snout is less than half the diameter of the eye. The spines of the dorsal rapidly increase to the fourth, which nearly equals a seventh of the length, and thence decrease to the last, which equals about an eleventh of the same. The longest ray about equals the longest spine. The second anal spine is more than twice as long as the first, equals the fourth dorsal one, and is considerably longer than the third anal one. The median caudal rays enter $6\frac{2}{3}$ times in the total length, while the longest exceed the greatest height. The pectoral fin commences little before the end of the first third of the length, (.32,) and equals a quarter of that length. The ventral is inserted considerably in advance of the pectoral, (.28,) and is rather shorter than it.

1

D. X. 15. A. III. 6 — P. I. 14. V. I. 5. C. 10. 1. 8. 7. 1. 9.

1

3 5

Scales $31+2+12$ — —

17 5

The latter is deflected on two scales. The color is tawny yellow, with numerous (.20) rufous bands descending nearly to the middle, and rather wider than the tawny intervals.

Only one specimen, whose extreme length was little more than two inches, was obtained.

Family *CHILODIPTEROIDÆ* Bleeker.

Genus *AMIA* Gronovius.

The *Monoprion* of Poey is perfectly congeneric with the type of the genus *Amia*; the genus *Apogonichthys* of Bleeker appears to be at least very closely related to it, while both genera include forms that do not appear to be strictly allied, but more distinct from the types of the respective genera than the latter are from each other. The species of the old genus may be divided as follows:

I. Preoperculum serrated.

Anal II. 7—9 (—10).

2—3

Scales 20—28 *Amia*.

5—8

Scales 33—36 (*Apogon kalosoma*, Blkr.)..... *Lepidamia*.

Anal II. 12—17 (*Apogon Bleekeri*, Gthr.)..... *Archamia*.

II. Preoperculum entire.

Scales 20—26 Apogonichthys.

5

Scales 40 — (*Apogon aprion*, Rich.) Glossamia.

13

As there is no gradation from one type to the other among the great number of species already known, the characteristics above given appear to be the indices of distinct genera. *Amia* and *Apogonichthys* are probably the most closely allied groups.

Family SPAROIDÆ (Cuv.)

Subfamily XENICHTHYINÆ Gill.

XENICHTHYS Gill.

Body moderately elongated and subfusiform, compressed, and with the caudal peduncle also compressed and robust. Scales deciduous, rather small, high and ctenoid. Lateral line tubular, in more conspicuous scales. Head compressed, conic, longer than high, with the occipito-rostral outline rectilinear. Upper surface of head to the nostrils covered with small scales. Occipital crest prominent. Eyes circular, large, and mostly in the anterior half of the head. Preorbital bones rather narrow and oblique. Operculum with two spines. Preoperculum pectinated behind, the teeth higher up progressively directed upwards.

Mouth rather small, with the lateral cleft very oblique, and not continued to eye; supramaxillary bones broad, enlarged in front below the intermaxillary, and behind the latter covered by a cutaneous flap from it. Lower jaw shorter than upper, but with the chin projecting beyond it, and with a pore on each side of the symphysis. Lower lip continuous and free at symphysis; plicated behind, where it is received under the upper jaw.

Teeth small, recurved, and in rather narrow bands on each jaw. Vomer with its projecting front provided with a villiform rhomboid patch; palatine bones and tongue edentulous.

Nostrils above anterior, and in a line with upper margin of orbit, near each other; the anterior circular: the posterior cleft transversely. Branchiostegal rays seven on each side.

Pseudobranchiæ present.

Dorsal fins connected by a low membrane at the base; the first with ten rather slender but perfectly rigid spines; the third, fourth and fifth of which are longest, (with no recumbent spine in front); the membrane has a fibrous appearance. Second dorsal lower than the first, and elongated. Anal fin about as long as second dorsal, but rather farther back, with three small, regularly increasing spines. Caudal fin emarginated, with rounded lobes.

Pectoral fins small, with the upper angle produced, but apparently rounded. Ventral fins inserted close behind the pectoral; each with a spine and five branched rays, and a pointed axillar scale.

As there might be some doubt as to the affinities of this genus, on account of the few palatal teeth and the number of branchiostegal rays, an extended description of its generic characters has been given. The spinous dorsal being received in a groove, the upper jaw closing under the preorbital bones and axillar ventral scales existing, it belongs to the family of Sparoids, as now modified. It cannot be referred to the Sciænoids, as its skull is smooth. The nearest allied genus appears then to be *Moronopsis*, (*Dules marginatus* C. V.*) That genus differs in its more compressed body, the scales and the similarity of those of the lateral line to the others, the stouter dorsal spines,

* The *Dules auriga* and *D. flaviventris* are, of course, not regarded as allied to *D. marginatus*, &c. I am unable to perceive any affinity between them, and they have been united only in accordance with an artificial system.

between which the membrane is acutely notched, the scaleless crown and little development of the occipital crest, the dentition and the number of branchiostegal rays, and, finally, the absence of axillar scales. With any other form it is unnecessary to compare the genus, as its natural affinities appear to be more intimate with *Moronopsis** than any other. Naturalists can decide from the above enumeration of the differential characters, in comparison with *Moronopsis*, if there is any other group to which it could be more naturally approximated. If it is stated that the physiognomy of the two genera is quite similar, the chief difference being caused by the procurrence of the occipital crest and the rectilinear profile, as well as the character of the scales, the ichthyologist can appreciate the aspect of the newly-described form.

XENICHTHYS XANTI Gill.

The greatest height equals three-tenths of the length (*exclusive of the caudal*). The head forms a third of the same. The diameter of the eye equals a third of the head's length, is about a third greater than the interorbital area, and nearly a third greater than the length of the snout. The fourth or longest dorsal spine equals nearly a fifth of the total length, and is nearly five times longer than the tenth. The third or longest anal spine is scarcely more than a twelfth of the length. The pectoral fin at least exceeds a seventh of the length, while the ventral equals a seventh.

D. XII. 14. A. III. 17. C. 11. I. 8. 7. I. 9. P. 1. 15. V. I. 5.

Scales, lat. line 50.

The color is light; on each side of the back are two indistinct, purple, longitudinal bands; and before the dorsal fin is another. The color below is silvery. At the base of the caudal there is an indistinct spot. The tip of the spinous dorsal fin is dark.

This most interesting and even remarkable type is dedicated to Mr. John Xantus, to whom we are indebted for the noble collection of fishes and other animals of Lower California, and who has, more than any other single man, contributed to our knowledge of the natural history of the Western coast.

Family CARANGOIDÆ.

Genus ARGYRIOSUS Lac.

Two representatives of this genus are found on the Atlantic coast of the United States: they are the *A. vomer*, of Linnæus, and the *A. capillaris*, Dekay, the *A. unimaculatus* of Batchelder and Storer, and the form which has been considered by Günther as the young of *A. vomer* or a new species,—appears to me to be the young of *Vomer setipinnis*, and at least belongs to the same genus. The *Argyriosus Spixii* of Castelnau is the unfortunate *Selene argentea* of Lacépède, first well made known by Mr. Brevoort, but which has received a number of names from different writers.

ARGYRIOSUS BREVOORTII Gill.

The greatest height in an oblique direction nearly equals nine-tenths ($\cdot 87$) of the length in a straight line, from the *vertical of the snout to the end of the median caudal rays*. The head forms less than a third of that length. The profile is oblique, and slightly incurved below the angular crown; its distance from the vertical of the snout equals an eleventh of the total length, and before the eyes, two-thirds of the preceding. The diameter of the orbit equals an eleventh of the length, and its distance from the profile equals two-thirds of the diameter. The height of the preorbital is twice as great as the diameter of the orbit. The base of the arched portion of the lateral line equals three-tenths of the total length, and its elevation above the horizon equals a

*The *Dutnia? ambigua* of Richardson, which has been referred by Günther to the genus *Dules* differs from *Moronopsis* by the shorter convex anal fin, the large second anal spine, the small eyes and the entire physiognomy. It may be called *Plectroplites ambiguus*.

third of the base; the straight portion equals a third of the total length. The second dorsal spine is very long; the third little longer than the base of its fin. The caudal lobes diverge at nearly a right angle; the length of the lower nearly equals three-fifths of the total. The pectoral fin equals a quarter, and the ventral two-fifths of the total length.

D. VIII. I. 22. A. II. I. 18.

The color is silvery, punctulated, with black near the edge of the back, and with a black bar on the head above the eye, parallel with the forehead. The filamentous dorsal spines and the elongated dorsal and anal rays are blackish. The ventrals have the terminal half blackish, and the other whitish, with a median black band.

This species is distinguished by its proportions, oblique profile, lateral line and color. It may be further remarked that the branch of the lateral line ascending from the scapula divides into two branches, diverging at less than a right angle; the anterior branch appears to be a groove.

I have dedicated this species to my excellent friend, Mr. Brevoort, who has paid much attention to the group of fishes of which the present is a member.

Genus HALATRACTUS Gill.

HALATRACTUS DORSALIS Gill.

The greatest height equals a quarter of the length to the end of the median caudal rays. The head enters more than three times and a half ($\cdot 28$) in that length. The diameter of the eye equals a quarter of the head's length, and is shorter than the length of the snout ($=\cdot 09$). The median caudal rays forms an eleventh of the length, and the longest equal a fifth. The pectoral fin nearly equals a seventh ($\cdot 13$), and the ventral nearly a sixth ($\cdot 16$) of the length.

D. VII. I. 37. A. II. + I. 21. P. 2. 19.

The color is brassy, purplish on the back, and with ten indistinct darker bands, twice as wide as their intervals; the second between the second and fifth dorsal spines. The dorsal and anal fins are nearly black; the anterior angle of the latter lighter. The ventrals dusky, with the rays externally white.

This species is most nearly related to *Halatractus zonatus* Gill, and *H. carolinensis*, Gill, of the Eastern American coast; but readily distinguished by the color and proportions.

Genus TRACHYNOTUS Lacépède.

TRACHYNOTUS CAROLINUS Gill.

This species is extremely variable, as are also the other well-known representatives of the genus. In extreme youth, the jaws and palate are dentigerous, and the angle of the preoperculum armed with three radiating spines! while the spinous dorsal and anal are elevated, and the angles of the soft fins scarcely produced. Later, the preopercular spines become obsolete; then the palatal teeth are lost; the spines of the fins meanwhile become abbreviated, and, finally, in old age, the teeth have entirely dropped out, the spines become much shortened, and the angle of the fins considerably produced. Half-grown specimens answer to the genus *Doliodon*, of Girard; nearly mature ones, with teeth in the jaws, *Trachynotus*, C.V.; and old ones, without teeth, to *Bothrocæmus*, Holbrook. Relying on the correctness of my predecessors, who had certainly the opportunities, if they had availed themselves of them, to avoid such errors, I adopted the several genera proposed by Holbrook and Girard in my Catalogue of the Fishes of the Eastern Coast; Günther first corrected the synonymy as lately given, and, under the other North American species, has brought together nine of Cuvier's species and two of other authors!

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The radial formula is also variable. Small specimens between one and two inches long exhibit the following variations :

- | | |
|--------------------|-----------------|
| 1. D. V. + I. 26. | A. II. + I. 24. |
| 1. D. VI. + I. 26. | A. II. + I. 24. |
| 2. D. VI. + I. 26. | A. II. + I. 23. |
| 3. D. VI. + I. 26. | A. II. + I. 22. |
| 1. D. VI. + I. 25. | A. II. + I. 23. |
| 2. D. VI. + I. 25. | A. II. + I. 22. |
| 1. D. VI. + I. 24. | A. II. + I. 21. |
| 1. D. VI. + I. 23. | A. II. + I. 21. |

TRACHYNOTUS RHODOPUS Gill.

The greatest height equals a third of the length from the snout to the end of the median caudal rays. The head forms scarcely more than a quarter of the length. The diameter of the eye exceeds a third of the head's length, and is a third greater than the length of the snout. The latter is as high as long, and truncated. The lower jaw is not received within the upper. The spinous dorsal from the third spine arched, and highest at its fifth spine, which equals an eighth of the length. The first two spines are short. The second anal spine equals a tenth of the total length. The median caudal rays form nearly a sixth of the length, and nearly equal two-thirds of the longest ones, or of the head. The pectoral fin is contained about five times and a half in the length.

D. VI. + I. 20. A. II. + I. 18, 19.

The color is bluish-silvery ; the spinous portions of the dorsal and anal fins punctulated with black ; the ventrals rose-colored ; the other fins yellowish and mostly immaculate.

Numerous specimens of this species were obtained by Mr. Xantus ; but all of them are young, (between one and two inches long,) and have the three radiating spines, &c., of the preoperculum. It must be remembered that the portion of the description referring to the spinous and soft dorsal and anal fins, is only applicable to the young ; the adult doubtless resembles *Trachynotus Carolinus*. * The present species is allied to the latter, but at once distinguished by the small number of dorsal and anal rays. The radial formula equally distinguishes it from all previously known species having the same form. The young of *Trachynotus ovatus*, Gthr., does not essentially differ in form from the adult.

TRACHYNOTUS NASUTUS Gill.

The greatest height equals two-fifths of the length from the snout to the end of the median caudal rays. The head forms three-tenths or more of the length ; the snout is produced and subconic, and equals the diameter of the eye, and scarcely less than a tenth of the head's length. The lower jaw is received within the upper. The spinous dorsal is highest at the fifth spine, which equals an eighth of the length, or nearly a third of the height of the body beneath. The second anal spine is as long or longer than the fifth dorsal one. The median caudal rays form an eighth or more of the total length, while the external rays only equal a sixth of the same. The pectoral fin is contained five times and a half in the length.

D. VI. + I. 20. A. II. + I. 19.

The color is silvery ; the spinous portions of the dorsal and anal fins thickly punctulated with black ; the ventrals white.

This species is very readily distinguished from *T. rhodopus* by the conoid

* The descriptions of *Trachynotus marginatus*, C.V. and *T. cayennensis*, C.V., must be accepted with similar reserve. The statement of the height of the fins of the two new species here described has been retained in order to show how great is the difference between the young and old.

produced snout and the reception of the lower jaw within the upper, as well as by the shorter and less emarginated caudal fin, greater height, &c. Several specimens were obtained, mostly under an inch long. The description of the dorsal and anal fins, as in *Trachynotus rhodopus*, refer only to the young.

TRACHYNOTUS FASCIATUS Gill.

This species is closely related to the *Trachynotus glaucus* of the Atlantic and Caribbean Sea, but is distinguished by the scarcely gibbous snout and the distribution of the vertical bands: the first commencing close in front of the first (erect) dorsal spine; the second between the fourth and fifth, and the third under the fourth and fifth rays. A black spot also appears to exist on the lateral line below the seventeenth dorsal ray, and a black blotch behind the dorsal fin. The produced dorsal and anal lobes are nearly coterminous with the caudal lobes.

A single dried specimen, nearly eight inches long, was given to the Smithsonian Institution by Capt. John M. Dow. The snout is doubtless always less gibbous than, or rather not vertical as in, *T. glaucus*. It cannot be the more mature form of *T. rhodopus* or *T. nasutus*, as the snout, when it does change, becomes more elevated with age. The colors are also quite different, and probably undergo no essential change with age.

Family SPHYRÆNOIDÆ Ag.

SPHYRÆNA LUCASANA Gill.

The greatest height equals a tenth of the length, and is a quarter the thickness. The head forms about three-tenths of the length. The snout enters $2\frac{1}{2}$ times in the head, and is more than twice as long as the diameter of the orbit ($\cdot 05\frac{1}{2}$). The maxillary bone ceases at a vertical, whose distance from the orbit equals the diameter of the pupil. The tip of the lower jaw has a square, thick flap.

The first dorsal fin commences more than four-tenths ($\cdot 42$) of the length from the lower jaw; its second spine rather exceeds the width of the body ($\cdot 08$); the second dorsal commences more than six-tenths ($\cdot 62$) from the jaw, and is rather lower than the first ($\cdot 07\frac{1}{2}$). The caudal enters $6\frac{2}{3}$ times in the whole length.

The pectoral fin extends for about two-thirds of the distance between its base and the ventral, and is less than of the length ($\cdot 07\frac{1}{2}$). The ventral is rather longer than the pectoral, and is inserted under the anterior margin of the first dorsal.

The first dorsal commences about over the thirty-fifth scale of the lateral line, and the second over the ninetieth.

D. IV. I. 8. A. 2. 9.

Scales 134.

The color is reddish-brown above the lateral line, and silvery below, with darker blotches along the line.

Family BERYCOIDÆ Lowe.

HOLOCENTRUM SUBORBITALE Gill.

The greatest height does not equal a third ($\cdot 31$) of the total length; the tail behind the vertical fins nearly equals a ninth of the total length, and nearly the length of the base of the rays; its least height is rather less than a twelfth ($\cdot 08$) of the same. The head, from the snout to the opercular margin, forms more than a fourth ($\cdot 26$) of the length; the opercular spine is long, and nearly equals a third of the diameter of the eye ($\cdot 03$). The preopercular spine extends to the vertical from the base of the opercular one. The diameter of the eye equals a tenth of the total length, and is a third greater than the length of the snout ($=\cdot 07$). The preorbital has six or seven moderate teeth, directed backwards.

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The spinous dorsal commences above the posterior margin of the scapular bone; its first spine equals the eye's diameter ($\cdot 10$), and the third is a half longer ($\cdot 15$). The second dorsal at its longest rays rather exceeds an eighth ($=\cdot 13$) of the total length; it ends over the twenty-fifth scale of the lateral line. The anal fin is somewhat larger than the second dorsal; the third spine is very large, its length entering nearly five times and a half ($\cdot 18$) in the total. The caudal fin forms more than a fifth ($\cdot 21$) of the length, while the median rays only equal a tenth.

The pectoral and ventral fins are equally long, and rather less than a fifth ($\cdot 19$) of length.

D. XI. 1. 12. A. IV. 9.

3

Scales 35 —
7

The color is steel, thickly sprinkled with dark dots, which become less numerous downwards. The fins are dark; the dorsal lighter at the anterior half at the base between the spines. The suborbital chain is bright silvery and immaculate.

Genus MYRIOPRISTIS Cuv.

MYRIOPRISTIS OCCIDENTALIS Gill.

The height of the body equals 28-100 of the extreme length, while the head forms 3-10 of the same. The snout is much decurved, and, from the apex to the eye, equals nearly half the diameter of the orbit and a fifth of the head's length. The pectoral fin equals a sixth of the extreme length, and the ventral enters $7\frac{1}{2}$ times in the same. The caudal forms a fifth of the whole length.

D. X. 1. 13. A. IV. 11.

3

Scales 35—36—
7

Color on the upper half reddish-purple merging into silvery below, punctulated with blackish, especially where the longitudinal rows overlap each other. The fins are immaculate, except a linear border which sometimes margins the spinous dorsal.

Numerous specimens were obtained by Mr. Xantus at Cape St. Lucas.

RHAMPHOBERYX Gill.

This genus is very closely related to *Rhinoberyx*, but has considerably smaller scales ($34-36$) and entire rostro-frontal carinæ, the spine at the angle of the preoperculum is not essentially enlarged, but simply forms the angle at the preoperculum.

RHAMPHOBERYX PÆCILOPUS Gill.

The height of the body equals nearly three-tenths ($\cdot 29$) of the extreme length, and the head forms 27-100 of the same. The snout is blunt, but considerably produced and forms about a fifth of the head's length; the diameter of the orbit is contained three times in the head. The pectoral and ventral fins are equally long, rather exceed a sixth of the extreme length, and nearly equal the caudal fin.

D. X. 1. 14. A. IV. 11.

3

Scales 35—36—
7

The color above the lateral line is olive green, golden green below, and
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cupreous in the opercula. The spinous dorsal is dark green in front of each spine, but light behind as well as above and below; the margin is also very dark. The ventral fins have each a broad blackish terminal band. The base of the caudal fin is punctulated with dark spots.

The specimens $1\frac{3}{4}$ — $2\frac{1}{3}$ inches long.

RHAMPHOBERYX LEUCOPUS Gill.

This species is very closely related to the preceding and has almost precisely the same proportions, but the snout is perceptibly less produced, and the spinous dorsal and ventral fins almost immaculate, the former having only a linear darker border, and the ventrals sometimes tipped with darker.

D. X. I. 14. A. IV. 12.

3
Scales 34—35—
7

Cape St. Lucas, (2 specimens.)

Family ECHENEIDOIDÆ.

Genus REMORA (A. Dum.) Gill.

The *Echeneis osteochir* of Cuvier and the *E. brachypterus* of Lowe should both be removed from this genus and accepted as the types of as many distinct ones. The *E. osteochir* is distinguished by the rhombic form of the pectoral fins and the ossification of the rays. I have therefore named the specimens in the Smithsonian Institution *Rhombochirus osteochir*. The *E. brachypterus* is distinguished by the shorter anal fin and angular upper jaw. It may be called *Remoropsis brachypterus*.

REMORA JACOBÆA Gill.

Echeneis remora Günther, Catalogue of the Acanthopterygian Fishes, &c., Vol. ii. p. 378.

A specimen of *Remora* obtained by Mr. Xantus at Cape St. Lucas is provisionally referred, as by Dr. Günther, to the old *Echeneis remora* of Linnæus.

Descriptions of some new species of PEDICULATI, and on the classification of the group.

BY THEODORE GILL.

The group called by Cuvier *Acanthoptérygiens a pectorales pédiculés* and estimated as a family, is a very natural one, distinguished by the incomplete ossification of the skeleton, the prolongation of the carpal bones to form "pedicles" for the pectoral fins, and, finally, by the abnormal position of the very small branchial apertures. While these characters are not sufficient to entitle the group to ordinal distinction, they seem to be of much more than family value; it may be called a suborder, for which the name *Pediculati* may be retained. The genus *Batrachus*, referred to the *Pediculati* by Cuvier, has really little affinity to the true representatives of the group, and has been, by general consent, separated from them by all the more modern systematists.

In the suborder, four very distinct types distinguished by difference of form and structure are comprised. Those types must therefore be regarded as representative of as many families. Dr. Bleeker has attempted to distribute the several genera among families, which have not been characterized, but which were evidently separated on account of superficial differences of form. This is apparent on an examination of his system.

Phalanx 1, Herpetoichthytes seu *Pediculati*, Cuv.

Ordo 15, Antennarii.

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