

NOTES ON FISHES COLLECTED IN KAMCHATKA AND
JAPAN BY LEONHARD STEJNEGER AND NICOLAI A.
GREBNITSKI, WITH A DESCRIPTION OF A NEW BLENNY.

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THE Kamchatkan fishes mentioned in this article were obtained in the fall of 1883. A small collection was secured by Mr. Grebnitski at Yesso, Japan, in 1894, and one of these species is here described as new to science and as a representative of a new genus.

For purposes of comparison reference is also made to a specimen of *Lumpenus medius* from Plover Bay, Siberia, collected by Dall and Bean in 1880 and mentioned in the published account of their fishes under the name *Lumpenus fabricii*. Attention is called to the close similarity of *Cottus tenuiopterus*, Kner, with *C. platycephalus*, Pallas; it is possible that the two are identical. The *Lumpenus fabricii* of Kröyer appears to agree fully with the *L. anguillaris* of Pallas. It may be found, as suggested in this paper, that *Muraenoides maxillaris*, Bean, is identical with *M. tenia*, Pallas.

Another interesting fact shown by this collection is the great variability in the number of dorsal spines in *Opisthocentrus*; and the re-description of the white-spotted *Salvelinus* of Kamchatka will be welcome to students of the Salmonidæ.

CLUPEA PALLASII, Cuvier & Valenciennes.

No. 33812, U.S.N.M. (2613). Petropaulski, September 24, 1883; L. Stejneger. From the inner harbor.

No. 38994, U.S.N.M. Avatcha Bay, Kamchatka, September, 1883; N. Grebnitski. One example.

No. 38995, U.S.N.M. Avatcha Bay, September, 1883; N. Grebnitski. Two specimens.

SALVELINUS LEUCOMÆNIS (Pallas).

No. 33814, U.S.N.M. (2612). Petropaulski, September 24, 1883; L. Stejneger.

This species has the hyoids feebly developed. Similar in form to *S. malma*, but with a less elongate and stouter body. The length of the head is about equal to the height of the body, and is contained $4\frac{1}{2}$ to $4\frac{3}{4}$ times in the total length without caudal. The eye is two-thirds as long as the snout; it equals about one-half the width of interorbital space, and is contained $5\frac{1}{3}$ times in the length of the head. The maxilla extends to or beyond the vertical through the hind margin of the orbit, the upper jaw being nearly one-half as long as the head. Lower jaw slightly shorter than the upper. Scales small, about 36 in a transverse series from the origin of the dorsal to the lateral line; 195 rows in the lateral line, 122 of which bear pores.

All the fins short; dorsal nearly midway between tip of snout and root of upper caudal lobe, its base nearly as long as longest ray, half as long as the head; its upper margin very slightly concave; last ray one-half as long as the longest. The adipose fin is placed over the end of the anal, its width about equal to one-half its length, which is about equal to the length of the eye. The length of the pectoral is contained from 7 to $7\frac{1}{2}$ times in the total without caudal. The ventral is placed under the middle of the dorsal; it does not nearly reach to the vent; its length is about one-half that of the head. Ventral appendage minute in some specimens, in others nearly as long as the eye. The caudal is emarginate, its middle rays, measured from the end of the scales, one-half as long as the outer. The anal is scarcely concave when expanded.

Pyloric cœca 22; branchiostegals 12. Gill-rakers 6+10, the longest less than one-half length of eye.

Color bluish gray above, whitish below; the sides with numerous large white spots, some of which are two-thirds as long as the eye.

Four individuals were obtained in the inner harbor by Dr. Stejneger among the herrings. He says it is called Kundscha.

No. 38998, U.S.N.M., is a specimen 9 inches long, collected at Petropaulski in September, 1883, by N. Grebnitski, who says it is called Chaiko.

ONCORHYNCHUS CHOUICHA (Walbaum), Jordan and Gilbert.

A skin preserved in salt was in the collection of Dr. Stejneger. From Petropaulski.

ONCORHYNCHUS KETA (Walbaum), Gill and Jordan.

No. 33804, U.S.N.M. (2625). Sarauna, Kamchatka, September, 1883; L. Stejneger. Spent female.

ONCORHYNCHUS KISUTCH (Walbaum), Jordan and Gilbert.

No. 33815, U.S.N.M. (2611). Petropaulski, September 24, 1883; L. Stejneger. Four specimens, $5\frac{1}{2}$ to 6 inches long. Anal rays developed, 13-14; branchiostegals 12-13; pyloric cæca 66. "Miakischea, inner harbor, among the herrings."—(Stejneger.)

HYPOMESUS OLIDUS (Pallas), Günther.

No. 33809, U.S.N.M. (2617). Petropaulski, Kamchatka, September 24, 1883; L. Stejneger. D. 10; A. i, 14; scales 62.

No. 38977, U.S.N.M. Petropaulski, August, 1883; N. Grebnitski.

OSMERUS DENTEX, Steindachner.

No. 33808, U.S.N.M. (2617). Petropaulski, September 24, 1883; L. Stejneger.

No. 33874, U.S.N.M. (2705). Avateha Bay, September 27, 1883; L. Stejneger. Young. D. 11; A. i, 15; P. 14; V. 8; scales 68. Length of specimen, $1\frac{2}{3}$ inches.

No. 38996, U.S.N.M. Petropaulski, August, 1883; N. Grebnitski. Three examples.

HEXAGRAMMUS ASPER, Steller.

No. 38991, U.S.N.M. Petropaulski, August, 1883; N. Grebnitski. D. XXIII, 21; A. 24; scales 103.

No. 33857, U.S.N.M. (2586). Petropaulski, September 17, 1883; L. Stejneger. Three young individuals ranging from 96 to 115 mm. in length. D. XX, 21; A. 24; scales 103 in the largest. D. XXII, 22 in another. The upper lateral line ends under the middle of the spinous dorsal in all.

No. 33811, U.S.N.M. (2618). Petropaulski, September 24, 1883; L. Stejneger.

No. 47557, U.S.N.M. Petropaulski; L. Stejneger. One young example, $3\frac{5}{8}$ inches long.

HEXAGRAMMUS DECAGRAMMUS, Pallas.

No. 38993, U.S.N.M. Petropaulski; N. Grebnitski. D. XXI, 24; A. 23; scales 109.

HEXAGRAMMUS ORDINATUS, Cope.

No. 33866, U.S.N.M. (2585). Petropaulski, September 17, 1883; L. Stejneger.

Length of the specimen, 87 mm.; D. XIX, 26; A. 25; lateral line 95. The lateral line, which begins at the throat and ends at the origin of the ventral, sends a branch on each side obliquely upward, ending usually under the middle of the pectoral. Although this branch is variable in length, it is one of the characteristics of the species. The anal has seven and the ventral two black cross bands; a black blotch somewhat

larger than the pupil a little above the base of the pectoral, just below the lateral line.

No. 33854, U.S.N.M. (2704). Avatcha Bay, September 27, 1883; L. Stejneger.

Two young specimens, 69 and 73 mm. long. The larger one of these has, in addition to the short branch running up toward the pectoral, a short line immediately in front of the ventral origin not extending as far forward as the one on the middle line of the throat. The smaller example is normal, except that the line on the ridge of the throat is not continued forward far from the origin of the ventral.

COTTUS PLATYCEPHALUS, Pallas.¹

No. 38982, U.S.N.M. Petropaulski, September, 1883; N. Grebnitski. D. IX, 16; A. 13. Vomerine patch of teeth greatly developed.

COTTUS TÆNIOPTERUS, Kner.

No. 47558, U.S.N.M. Petropaulski, Kamchatka; L. Stejneger.

Length, 3½ inches. Eye nearly equal to snout, 4⅔ in head. Head two-fifths of length without caudal. Interorbital space about two-thirds eye. Pectoral reaches to anal origin; the ventral nearly to vent. The longest preopercular spine is a little longer than eye. The maxilla reaches nearly to the hind margin of the eye.

D. VIII, 15; A. 13; lateral pores, 37.

Cottus teniopterus should be carefully compared with *C. platycephalus*, Pallas; the two are closely related and may prove to be identical.

COTTUS NIGER, Bean.

No. 33844, U.S.N.M. (2589). Petropaulski, September 17, 1883; L. Stejneger.

No. 33879, U.S.N.M. (2590). Petropaulski, September 17, 1883; L. Stejneger. D. IX, 15; A. 11.

COTTUS POLYACANTHOCEPHALUS, Pallas.

No. 33816, U.S.N.M. (2616). Petropaulski, September 24, 1883; L. Stejneger.

ENOPHRYS DICERAUS (Pallas), Jordan and Gilbert.

No. 33817, U.S.N.M. (2614). Petropaulski, September 24, 1883; L. Stejneger.

No. 33852, U.S.N.M. (2686). Avatcha Bay, Kamchatka, September 27, 1883; L. Stejneger. An individual 3 inches long. D.VIII. 12; A. 11.

No. 38978, U.S.N.M. Petropaulski, August, 1883; N. Grebnitski. A male in breeding dress; the anal papilla much enlarged.

GYMNACANTHUS PISTILLIGER (Pallas), Gill.

No. 33807, U.S.N.M. (2615). Petropaulski, September 24, 1883; L. Stejneger. From the inner harbor.

¹ ? = *C. decastrensis*, Kner.

LIPARIS GIBBA, Bean.

No. 38974, U.S.N.M. Petropaulski, September, 1883; N. Grebnitski. Length of specimen, $8\frac{1}{4}$ inches. D. 46; A. 36.

The width of the mouth over the extremity of the maxillaries slightly exceeds the length of the eye and snout combined, and is considerably more than one-half length of head. The eye is one-half as long as the snout, equaling one-sixth length of head, and nearly one-half inter-orbital space. The maxilla extends almost to the vertical through the front margin of the eye. The teeth are in very broad bands in the jaws; blunt conical.

The depth of the gill opening is contained $2\frac{1}{3}$ times in length of head; the distance between the lower ends of the gill opening equals the length of the head without the snout. The front margin of the ventral disk is almost directly beneath the hind margin of the eye. The width of the disk equals its length, which is nearly equal to the post-orbital length of the head. Thirteen papillae form an outer circle around nine smaller papillae, which are in the center of the disk. Each of the papillae of the outer row has a brown spot in the center, except the anterior one which has two of these spots. The lower portion of the pectoral is procurrent on each side, the two portions separated at their origin by a very narrow interspace only about half the length of eye. The pectoral, when extended, reaches almost to the origin of the anal; it is very large, the width of its base equaling the length of the head without snout. The longest pectoral ray is about three-fourths as long as the head. The distance of the dorsal origin from the tip of the snout is contained $3\frac{1}{4}$ times in the total length without caudal. The greatest depth of the body, at the pectorals, is almost equal to the length of the head and slightly exceeds one-fourth of the total length without caudal. The caudal is connate with the dorsal and anal; its length equals that of the head without the snout, and slightly more than one-sixth of the standard body length.

The color in spirits is grayish, much mottled with large, pale areas. The same peculiarities of marking are found on the pectorals. The fish may have been purplish in life. It was taken from a depth of 18 fathoms.

BRACHYOPSIS ROSTRATUS (Tilesius), Gill.

No. 47569, U.S.N.M. Yesso, Japan; N. Grebnitski.

Measurements of Brachyopsis rostratus.

	Inches.		Inches.
Length of specimen.....	$8\frac{1}{2}$	Eye	$0\frac{1}{6}$
Length of head	$1\frac{3}{4}$	Interorbital space	$0\frac{1}{6}$
Length of snout	$0\frac{1}{2}$	Maxilla length	$0\frac{1}{15}$
Body depth	$0\frac{2}{3}$	Pectoral length.....	$1\frac{1}{8}$
Body width	$0\frac{3}{4}$	Ventral length.....	$0\frac{3}{8}$

First dorsal from snout, $2\frac{2}{3}$ inches; anal from snout, $3\frac{1}{2}$ inches. The mandible extends to below middle of eye.

D. VIII, 8; A. 13; lateral line, 42.

SIPHAGONUS BARBATUS, Steindachner.

Siphagonus barbatus, STEINDACHNER, Ich. Beitr., V, 1876, p. 140.

No. 33858, U.S.N.M. (2587). Petropaulski, Kamchatka, September 17, 1883; L. Stejneger.

No. 38977, U.S.N.M. Petropaulski, August, 1883; N. Grebnitski; sixteen specimens.

LUMPENUS ANGUILLARIS (Pallas), Gill.

No. 38959, U.S.N.M. Petropaulski, September, 1883; N. Grebnitski; one specimen; length, 105 mm.

D. LXVI; A. 45; V. I, 3. No teeth on vomer; palatines apparently present, but doubtfully made out. The head is contained $5\frac{2}{3}$, the depth 10 times, in length to base of caudal. The eye is placed high; its long diameter is equal to the length of the snout and one-fourth the length of head. The lower jaw is distinctly shorter than the upper. Mouth small and narrow; the maxilla reaches to below the front of the eye. The interorbital space is very narrow, scarcely two-thirds as long as the eye. The pectoral fin is nearly as long as the head, reaching to below the thirteenth spine of the dorsal. Ventral very slender, two-fifths as long as head. The vent is under the twenty-third spine of the dorsal, much nearer the tip of the snout than the base of the tail. The caudal is long and tapering, nearly as long as the head without the snout. The dorsal and anal fins are low; the anterior spines of the dorsal graduated, the longest spine one-third length of head. The anal fin is not quite so high as the dorsal. The gill-rakers are short and stout, less than half as long as the eye, 12 below the angle on the first arch. There are about 206 rows of scales on the body.

In spirits the ground color is pale olive-brown. The body is profusely mottled with irregular dusky mottlings, most distinct along the middle line and close to the ridge of the back. The caudal fin is also mottled in its anterior half. The pectorals, ventrals, and anal are pale.

Another example, No. 27575, U.S.N.M., collected in Plover Bay, Siberia, by Capt. E. P. Herendeen, is 132 mm. long and has the dorsal LXIII; A. I, 40; V. I, 3. In this example the mottlings are absent from the dorsal fin, but otherwise the color is similar to that of the specimen above described.

The palatine teeth are very weak and easily rubbed off, but can be determined with certainty. The lower jaw is included as in the other specimen. Branchiostegals, 6. The gill membranes are united at the isthmus without free posterior border; the angle is very deep, so that the distance from its apex to the root of the ventrals equals two-fifths the length of the head. The spinous dorsal begins immediately

over the posterior edge of the opercular flap, and the first six or seven rays are regularly graduated, the first being much shorter than the pupil. The eye is as long as the snout and nearly one-fourth as long as the head. The interorbital space is very narrow, less than one-half the diameter of the eye. The vent is under the twenty-third spine of the dorsal.

The *Lumpenus fabricii* of Gaimard¹ is represented with dorsal LXIV; A. I, 41. It agrees in every respect, as far as we can make out, with the examples of *L. anguillaris*, above described. Its long, tapering caudal is perfectly distinct from the dorsal and anal. Mouth small, lower jaw short, six branchiostegals, the spinous dorsal beginning over the upper angle of the gill opening, and other characters possessed by *anguillaris* are present. The anterior spines of the dorsal are regularly graduated. The vent is under the twenty-first dorsal spine.

Color exactly as in the preceding.

LUMPENUS MEDIUS (Reinhardt), Kröyer.

No. 27544, U.S.N.M. Plover Bay, Siberia, August 13, 1880; Dall and Bean. Two specimens, 100 to 138 mm. long.

These were at first referred to *Lumpenus fabricii*, but we are now satisfied that the specimens do not belong to that species, but to *L. medius*.

The length of the larger specimen is 133 mm., of which the caudal fin equals 15 mm. The smaller example is 100 mm. long, the caudal measuring 11 mm. The caudal is long and moderately tapering, and is connate with the dorsal and anal. The jaws are equal, the maxilla extending to below the front margin of the eye. Teeth in the jaws in two rows, rather wide set, uniform in size; the teeth of the outer row of the upper jaw are larger than those of the inner row; the outer row of the lower jaw is on the lips. No teeth on the vomer; a few weak palatine teeth. Gill membranes very deeply cleft and attached to the isthmus, the distance between their point of attachment and the root of the ventral equaling one-half the length of the head.

Eye large, slightly longer than snout, $3\frac{1}{2}$ in head. Interorbital space narrow, convex, less than one-half the diameter of the eye. Lips well developed. The ventral fins originate in front of the pectoral base; they are short and slender, scarcely longer than the eye. Gill-rakers very short; 17 on the first arch. Pectorals long, with a broad base, their length nearly equal to that of the head without the snout. Width of pectoral base equals length of eye; when extended this fin reaches to below the eleventh spine of the dorsal. The vent is under the twentieth spine of the dorsal. The dorsal origin is almost directly over the top of the base of the pectoral. The anterior spines of the dorsal are regularly graduated up to about the seventh, the first spine being one-half as long as the eye, the longest spine as long as the eye. The longest anal rays equal the length of the eye. The length of the head is

¹ Voy. en Scandinavie, pl. xiv, fig. 1.

contained $5\frac{1}{2}$ times in the total length to caudal base; the greatest depth of the body is nearly one-ninth of the same length, in this respect differing greatly from *L. anguillaris*.

In spirits the body is uniformly pale olivaceous. There are no traces of mottlings anywhere. The fins are all pale.

About 26 rows of scales can be counted obliquely upward and forward from the origin of the anal to the base of the dorsal, and about 50 rows between the upper angle of the gill opening and the vertical from the vent. In the smaller specimen there are about 47 rows.

ANOPLARCHUS ALECTROLOPHUS (Pallas).

No. 38960, U.S.N.M. Petropaulski, September, 1883; N. Grebnitski.

This lot contains seven specimens, varying in length from 88 to 105 mm. The crest on the head of most of the individuals is remarkably well developed, while in one or two it is very much smaller. In two of the examples the caudal is well united with the dorsal and anal. D. LXIV; A. 44.

In the example measuring 105 mm. the crest on the head is very low. D. LXIII; A. 45. This appears to be a female. One of the large specimens with a high crest is a male with the spermaries moderately developed.

PHOLIS TÆNIA (Pallas).

Blennius tania, PALLAS, Zoog. Ross.-Asiat., III, p. 178.

? *Muraenoides marillaris*, BEAN, Proc. U. S. Nat. Mus., IV, 1882, p. 147.

B. aculeis jugularibus, corpore longissimo fasciato, cauda subdistincta. Hunc subeodem nomine ex insulis Curilorum missum accepi quondam.

Descr.—Spithamalis, forma Tæniæ, maxillæ *dentibus* osseis subdistinctis obtusiseulis. *Caput* compressum operculis planis, subtriangularibus; *membrana* branchiostega quadriradiata. *Corpus* ensiforme, squamulis minimis, cuti innatis sparsum. *Anus* in medio longitudinis. *Pinna dorsalis* ab ipso capite ad eandam, radiis osseis, intra cutem spinescentibus 87 subæqualibus. *P. ani* radiis 47 apice mollioribus, flexis, ab ano itidem ad eandam. *Cauda* subdistincta. P. pectorales parvæ, et loco ventralium spinæ duo osseæ recurvatæ, communi ossiculo fultæ, jugulares, sub ipsis p. pectoralibus. (Pallas.)

A specimen, No. 38966, U.S.N.M., was collected at Petropaulski in August, 1883, by N. Grebnitski. It is 165 mm. long. D. LXXXIX; A. II, 44.

The height of the body is contained eight times in the total without caudal, the length of the head nine times. The eye is one-fifth as long as the head. The maxilla is one-fourth as long as the head and extends to below the front of the pupil. The mouth is very oblique. The mandible is two-fifths as long as the head. Pectoral nearly one-half length of head. Ventral small, two-thirds length of eye.

The distance of the dorsal origin from tip of snout equals length of

head. The vent is under the forty-second dorsal spine. The caudal contains 17 or 18 rays, and is connate with the dorsal and anal fins.

A narrow, dark band from each eye around the throat, continued on the interorbital space by narrower dark lines inclosing a diamond-shaped pale area between the eyes. Pale bands in front of and behind the eye continued over the top of the head, the hinder one as broad as the eye in its widest portion and bounded behind by a narrow, dark line. Fourteen or 15 broad, dark bands on the sides alternating with saddle-shaped markings on the back and dorsal fin, the widest bands nearly one-half length of head. The markings become indistinct posteriorly.

The type of *Muraenoides maxillaris* was destroyed in 1883, and the published description is now the only means of comparison with *M. tania*. The differences observed are too important to be passed over without notice. The length of the maxilla in *M. maxillaris* equals one-half the distance from the tip of the snout to the dorsal origin (one-third in *tania*); the mandible is as long as the pectoral in *maxillaris* (about two-thirds as long in *tania*). It may be found that a series of specimens from St. Paul Island will establish the identity of *maxillaris* with *tania*.

A smaller example, No. 38967, U.S.N.M., was obtained by N. Grebnitski at Petropaulski, in September, 1883. Length, 74 mm. This has alternating dark and light bands on the sides, about 18 to 20 of each. The tops of some of the light bands on the dorsal fin inclose a brown blotch as in *maxillaris*. D. LXXXVIII; A. II, 44.

PHOLIS RUBERRIMUS (Cuvie and Valenciennes).

No. 47568, U.S.N.M. Five specimens. Yesso, Japan, July, 1894; N. Grebnitski. D. 92; A. 50 (the largest). Length from 5 to 8 inches. These are from Volcano Bay, Port Mororan.

The pink color is not fixed, but comes off upon the hands and the muslin wrappings.

PHOLIS NEBULOSUS (Schlegel).

No. 47566, U.S.N.M. (47567). Yesso, Japan; N. Grebnitski. D. LXIII; A. II, 42 (?). Length, 6½ to 7¾ inches.

PHOLIDAPUS, new genus.

(Plate XXXIV.)

Body and tail as in *Pholis*, but shorter and deeper; head small, compressed, naked, provided with numerous mucous pores; anterior nostrils narrow slits, posterior nostrils tubular; mouth small, oblique; intermaxillary teeth in two rows, blunt conical, the last one on each side of the outer row enlarged, canine like; mandibular teeth conical, moderately sharp-pointed, uniserial; no teeth on vomer or palate; upper

jaw very slightly protractile. Gill membranes broadly united, free from the isthmus. Scales very small, cycloid, with concentric striae; no lateral line.

Dorsal fin as in *Pholis*, beginning over the end of the head; anal long and low, composed of two very slender, short spines, and many rays; caudal rather long and rounded, barely separate from dorsal and anal; pectorals moderate, on a broad base; no ventrals. Intestinal canal slender and short, with a few pyloric coeca of unequal size.

PHOLIDAPUS GREBNITSKII, new species.

(Plate XXXIV.)

This Xiphidiine blenny strongly resembles some species of *Pholis*, but the body is deeper and shorter, and the ventrals are wanting. The species is based upon two individuals, No. 47564, U.S.N.M., from Yesso, Japan, where they were obtained by Mr. N. Grebnitski.

The specimens are 141 mm. long, including caudal; 126 mm. to base of caudal. The head (22 mm.) is equal to the greatest depth of body. The eye is slightly longer than the snout and one-fourth as long as the head. The interorbital space is narrow, two-thirds of the length of the eye.

The naked head resembles that of *Pholis*; its length is contained about $5\frac{1}{2}$ times in total length without the caudal. The mouth is small and very oblique; the mandible is slightly included and has a well-developed lip. The maxilla is partly concealed under the preorbital bone; it does not quite reach to below the anterior margin of the pupil. The anterior nostril is midway between the eye and the tip of the intermaxilla. Seven mucous pores around the orbit; three on the preorbital bone. The pore in the origin of the semicircular dark band around the nape is continued backward by a series of 6 similar ones ending near the upper angle of the gill opening. A series of 10 or 11 pores beginning near the front of the chin on each side, extending backward and curving upward to the upper anterior edge of the operculum. The gill membranes are broadly united, but they are not joined to the isthmus.

The dorsal origin is over the end of the head; the fin is low, and consists of spines, the longest and strongest in the posterior third being slightly longer than the eye. The distance of the vent from the tip of the snout contains the head length $2\frac{2}{3}$ times. The anal is slightly lower than the dorsal, the rays longest posteriorly. The caudal is rounded, and is barely separated from the dorsal and anal. The pectoral base is broad, and the fin is two-thirds as long as the head.

The intestine is slender, and is more than twice as long as the head. Stomach short, pear-shaped, with 6 slender pyloric coeca of unequal length, the longest about twice as long as the eye.

The body is completely scaled, the scales very small, cycloid, closely imbricated, with numerous concentric striae, and they extend halfway up the membrane connecting the dorsal spines.

The general body color is brown, the sides sparsely and vaguely mottled. The pectorals are pale. A narrow, dark band extends from the middle of the eye downward and forward, a similar band running backward from the eye on the preopercle; an interrupted semicircular band from eye to eye across the nape. D. LVII; A. II, 39-40.

The species is named for Mr. N. Grebnitski, to whose industry and zeal the Museum is indebted for many valuable collections.

OPISTHOCENTRUS QUINQUEMACULATUS, Kner.

(Plate XXXV.)

Opisthocentrus quinquemaculatus, KNER, Sitzb. Ak. Wiss. Wien, LVIII, 1 Abth., June-December, 1868, pp. 340, 341, pl. VII, fig. 20.—STEINDACHNER, op. cit., LXXXII, 1 Abth., July, 1880, p. 262.

The genus *Opisthocentrus*, Kner, differs from *Centronotus* [*Muraenoides*] in its thicker body, in the flexibility and height of its dorsal rays, except the last 11 to 13, which are spiny; from *Stichæus* in lacking ventrals and also in the flexibility of the numerous anterior unarticulated dorsal rays. Jaw teeth rounded at the point. Vomerine teeth; palatines absent. (Steindachner.)

No. 38937, U.S.N.M. Petropaulski, 1883; N. Grebnitski. Two specimens, male and female. Drawn; one specimen, sex not determined.

No. 38958, U.S.N.M. Petropaulski, September, 1883; N. Grebnitski. Eight specimens.

No. 47555, U.S.N.M. Petropaulski; L. Stejneger. One specimen, 7½ inches long, female. Dorsal 58, the last 9 or 10 being stout spines. Six black blotches on dorsal.

No. 33859, U.S.N.M. (2588). Three specimens, 3.1 to 3.6 inches long, and with the dorsal blotches varying in number from five to seven in regular gradation.

No. 33848, U.S.N.M. (2620). One specimen, 6 inches long. Petropaulski, Kamchatka, September 23, 1883. Dorsal rays 58, the last 8 stout spines. Five black spots on the dorsal.

Dr. Steindachner is justified in his remark that this species was not first taken at Pinang or Singapore, but in De Castries Bay; it is a resident of Kamchatka and the adjacent region, as the collections of Stejneger and Grebnitski will show.

OPISTHOCENTRUS QUINQUEMACULATUS, Kner (?).

No. 47565, U.S.N.M. Yesso, Japan; N. Grebnitski. D. 54, the last 15 spines; A. 38.

Length of fish to caudal base, 5½ inches; length of head, 1 inch; depth of body, seven-eighths of an inch; eye equal to snout, 4½ in head. Maxilla reaches to front of eye. A narrow, dark band under eye. Body with narrow, dark-brown reticulations. About seven roundish black spots on the dorsal.

The increased number of dorsal spines and greater compression of the body throw some doubt upon the identification with Kner's species.

ELEGINUS NAVAGA (Kolreuter).

No. 33810, U.S.N.M. (2582). Petropaulski, inner harbor, September 17, 1883; L. Stejneger.

No. 33899, U.S.N.M. (2584). Petropaulski, inner harbor, September 17, 1883; L. Stejneger.

POLLACHIUS CHALCOGRAMMUS (Pallas), Jordan and Gilbert.

No. 33805, U.S.N.M. (2619). Petropaulski, September 24, 1883; L. Stejneger.

PLEURONECTES GLACIALIS, Pallas.

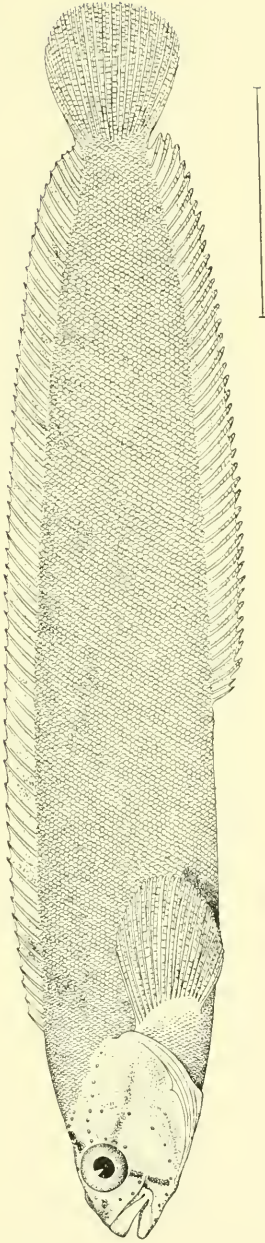
No. 33839, U.S.N.M. (2583). Petropaulski, Kamchatka, inner harbor, September 17, 1883; L. Stejneger. D. 58; A. 41.

PLEURONECTES STELLATUS, Pallas.

No. 33813, U.S.N.M. (2680). Avatcha Bay, Kamchatka, September 25, 1883; L. Stejneger. D. 56; A. 39.

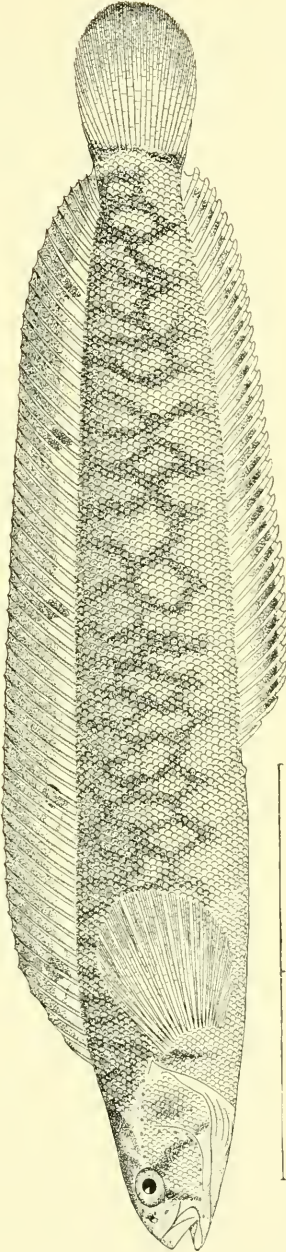
GASTEROSTEUS PUNGITIUS BRACHYPODA, Bean.

No. 33888, U.S.N.M. (2035). Petropaulski, May 16, 1883; L. Stejneger. Length, 60 mm.



PHOLIDAPUS GREBNITSKII, Bean and Bean.





OPISTHOCENTRUS QUINQUEMACULATUS, Kner.

