

The name *megacephalus*, since it has been published along with a diagnosis of its leading points of difference from *C. pugettensis*, must, I presume, be retained, instead of a more expressive term which might be drawn from the form of the dorsal fins.

C. megacephalus is tolerably abundant in moderately deep water outside the Bay of San Francisco. Specimens numbered 27185 are in the National Museum.

DESCRIPTIONS OF NEW FISHES FROM ALASKA AND SIBERIA.

BY TARLETON H. BEAN.

Most of the species here described were obtained for the United States National Museum during the summer of 1880, through the assistance of the United States Coast Survey schooner Yukon, whose party the writer was permitted to accompany for the purpose of making collections, more particularly of fishes and fishery statistics, in Alaska. It would have been difficult, if not impossible, to secure so valuable a collection of the fishes in any other way, the Yukon having called at numerous ports along the major portion of the Alaskan coast as well as at Plover Bay, Siberia, where several species not elsewhere found were taken. The whole number of species taken is above 80, and it is due to the Superintendent of the United States Coast Survey and to Mr. W. H. Dall to say that their generous help has made this result possible.

In this article, which is simply preliminary to a detailed account, short notices only are given of fishes which are to be more fully described hereafter.

***Lycodes coccineus* n. s.**

Museum Catalogue number 27748; collector's number (1712).

Big Diomedé Island, September 10, 1880.

Br. VI; D. including half of caudal 87; A. including half of caudal 69; P. 18; V. 3. Posterior two-thirds of tail covered with scales which are not in contact. Fins and all parts of the body and head scaleless.

The total length of the typical specimen in its fresh state was 19.7 inches (484 millimeters). In its present state of preservation it has shrunk to 475 millimeters.

The species resembles *L. mucosus* Rich., but may be readily distinguished by its more extensive squamation, shorter and deeper head, stouter tail, more advanced position of ventrals and vent, and by its coloration; *L. mucosus*, too, has a lateral line consisting of rounded open pores, while *L. coccineus* has simply a few faint, short linear scratches which are almost imperceptible to the eye. These traces are seen only on that portion of the skin which has scales.

The greatest height of the body is a little less than half the length of the head, which constitutes nearly one-fourth of the total length. The pectoral is twice as long as the intermaxillary and terminates at a dis-

tance from the vent equal to its own length. The distance of the ventrals from the tip of the snout equals one-fifth of the total length. The dorsal begins over the anterior half of the pectoral; the anal, under the twenty-first dorsal ray. The length of the palatine series of teeth equals half that of the maxilla. The tail is much stouter than in *L. mucosus*, resembling that of the species known in this Museum as *L. Vahlii*.

COLORS (taken from the fresh fish): The colors are somewhat faded. Ground-color brown, with red on the lower parts. Pectorals reddish-brown on the upper half, the lower part carmine; mottlings of whitish at base. Nine bluish-white bands on the dorsal. A few irregular blotches of the same color on the sides. Anal brown mingled with carmine; lips similar. The brown of the body is more or less tinged with carmine everywhere. Under side of head white. The top of the head and the gill-covers have a few small blotches of whitish. A whitish blotch about as long as the eye at the upper angle of the gill-opening.

Measurements.

(Taken from the fresh specimen.)

Current number of specimen	27748	
	Great Diomedé, Sept. 10, 1880.	
Locality	Milli- meters.	100ths of length.
.....		
Extreme length	484
Body:		
Greatest height	64	13
Greatest width	49	10
Height at ventrals	51	10½
Head:		
Greatest length	114	23½
Greatest length to upper gill opening	110	23
Distance from snout to nape	84	17½
Greatest width	73	15
Width of interorbital area	28	6
Width of interorbital area on bone	7	1½
Length of snout	34	7
Length of palatine series of teeth	29	6
Length of maxillary	60	12½
Length of intermaxillary	31	6½
Length of mandible	63	14
Distance from snout to orbit	39	8
Diameter of eye	11	2½
Dorsal:		
Distance from snout	143	30
Length of base	331	70
Length of longest ray	??	7
Anal:		
Distance from snout	265	52
Length of base	230	47½
Longest ray	27	5½
Distance of vent from snout	240	50
Pectoral:		
Distance from snout	124	25½
Length	63	13
Ventral:		
Distance from snout	96	20
Length	11	2½
Branchiostegals	VI
Dorsal	87
Anal	69
Pectoral	18
Ventral	3

Stichæus? Rothrocki, n. s.

Seventeen small individuals of the family *Stichæidae* were obtained in Plover Bay and at Cape Lisburne, the largest of them being only 36 millimeters long. The lateral lines are undeveloped, so that I cannot with certainty decide whether my species is a *Stichæus* or a *Eumesogrammus*, but the resemblance to *Stichæus punctatus* appears to me sufficiently great to warrant me in referring it to the same genus.

Catalogue numbers of the types: 27565, Head of Plover Bay, Siberia; 27580, Port Providence, Plover Bay; 27573, Cape Lisburne, Alaska, Arctic Ocean.

Br. VI; D. 48-49; A. I, 34-35; V. I, 4; P. 15; C. 21.

The height of the body equals the length of the head without the snout, and is contained 6 times in the total length without caudal. The length of the head is contained $4\frac{1}{2}$ times in total without caudal. Snout subconical, equal to eye, which is $\frac{1}{4}$ as long as the head. Distance between the eyes equals length of snout. The maxilla reaches the vertical through the anterior margin of the pupil. The nostrils are midway between the eye and the end of the snout. The dorsal begins in the vertical through the upper axil of the pectoral, and is connected by a low membrane with the caudal. The anal begins under the 14th dorsal spine, and, like the dorsal, is subcontinuous with the caudal. The pectoral is comparatively short and broad, its length being equal to the height of the body, and to that of the head without the snout. Ventrals short, only $\frac{1}{3}$ as long as the head and less than half as long as the pectorals; they are placed very close together. The distance of the vent from the snout is contained nearly 3 times in the total length with the caudal. The longest dorsal spines are equal to half the height of the body. The longest anal rays are about $\frac{2}{3}$ as long as the longest spines of the dorsal. *The expanded caudal is slightly emarginate*, in which the species differs from *S. punctatus* and *Eumesogrammus subbifurcatus*. Teeth in the jaws and apparently on the vomer and palatine bones. Branchiostegal membrane deeply cleft, free from the isthmus.

Colors.—Body very light brown, intermingled with numerous light spots in three series (supra-lateral, median, and infra-lateral), those of the median series in some individuals being longer and narrower than those of the other two series. The largest light spots of the supra-lateral series are about $\frac{2}{3}$ as large as the eye. On the top of the back, traversed by the basis of the dorsal fin, is a series of 10 or 11 whitish spots, the anterior ones being about as large as the eye. A dark stripe around the nose, and continued behind the eye to the end of the operculum. A very narrow dark stripe running along the base of the dorsal, its lower margin seeming to mark the course of the superior lateral line. In some individuals the origin of each anal ray is marked by a minute dark point. Body covered with minute scales.

If, as I suspect, the developed form of the species shows but one lateral line running along the whole length of the dorsal and not far re-

moved from it, this character, combined with the emarginate caudal, will entitle the species to rank as the representative of a distinct genus for which the name *Notogrammus* is here proposed.

The species is dedicated to my preceptor in zoölogy and medicine, Dr. J. T. Rothrock, of West Chester, Pennsylvania.

Murænoïdes maxillaris, n. (?) s.

? *Murænoïdes fasciatus*, (Bl. Schn.)

Catalogue number of the single type specimen 23999, collected in 1872 by Mr. Henry W. Elliott, at Saint Paul Island, Bering Sea.

Br. vi—v; D. 88; A. ii, 43; V. 3, 1.

This species, as well as *M. ornatus* Girard, may be at once separated from *M. nebulosus* Schleg. by its scaleless head.

When the mouth is closed the cleft is very little oblique and the tip of the lower jaw is in a horizontal through the middle of the eye; the width of the mouth across the tips of the maxillæ equals the length of the pectoral and almost one-half the length of the head. The length of the maxilla equals one-half the distance from the end of the snout to the beginning of the dorsal. The mandible is as long as the pectoral.

The greatest height of the body slightly exceeds the length of the head and equals one-seventh of the total length without the caudal; it equals, also, one-fourth of the distance from the end of the snout to the beginning of the anal. The length of the head is contained $8\frac{1}{2}$ times in the total length. The width of the interorbital space is a little less than the diameter of the eye, which equals the length of the snout. The length of the pectoral equals one-half the height of the body at the origin of the anal; the greatest width of the fully expanded fin is nearly equal to the length. The ventral spine is two-thirds as long as the eye.

The greatest height of the dorsal is not far from the origin of the fin, and equals one-half the length of the mandible. The length of the caudal equals one-half the length of the head. The vent is not far behind the middle of the total length, and is directly under the 43d dorsal spine.

Colors from the alcoholic specimen: A brown band occupies the whole interocular space, and is preceded and followed by a whitish band only one-half as wide. Immediately below the eye a brown band, whose width equals one-half the length of the eye, extends down to the throat; a whitish band a little wider than the brown one is immediately behind it. It seems as if the fresh fish may have on this part of the head two whitish bands with a brown one between them. Back with a series of 11 rounded or oblong light spots, the longest of which is one-half as long as the head; all of these spots include at the top a rather large brown spot and below numerous little brown spots. Between the first and second large light blotches are two very dark spots on the dorsal membrane, and between the dark spots there is a light one of similar size. On the sides are about 26 light bands, most of them very distinctly

defined, especially between the gill-opening and the vent. Behind the vent the bands are not so well marked, and a few small light spots are in the intervals between them. The ground color of the fish is brown. The longest light bands are about as long as the head.

I have not seen *M. fasciatus*, and know it only from the descriptions and figures. These seem to indicate a species with the maxilla only one-third as long as the space between the tip of the snout and the beginning of the dorsal, with the ventrals little developed and with the head less than one-tenth of the total length. *M. maxillaris* has a much longer maxilla, a wider mouth (measured over the tips of the maxillæ with the mouth closed), well developed and separate ventrals, and the head nearly one-eighth of the total length.

Liparis gibbus, n. s.

This is a species resembling *L. fabricii* Kröyer and *L. tunicata* Rhdt. in its dorsal and anal ray-formulæ; but it shows important differences from both.

From *L. fabricii* it may be at once distinguished by its smaller eye (one-fourth as long as the head) and its depressed snout (the distance from the angle of the mouth to the base of the anterior nostril being less than one-half the greatest depth of the head). It differs from *L. tunicata* in having (1) a larger eye, (2) a much smaller number of pectoral rays, (3) a much smaller number of unarticulated dorsal and anal rays.

In preparing the description, I have made use of the following specimens:

24010 (1203), Unalashka, W. H. Dall (1 specimen).

24047, Saint Paul Island, 1872, H. W. Elliott (1 specimen).

26625 (1654), off Cape Tchaplín, Siberia, 1880, Dall & Bean (1 specimen).

27535 (1722), Plover Bay, Siberia, 1880, Dall & Bean (1 specimen).

27545 (1638) Plover Bay, 1880, Dall & Bean (2 specimens).

Of these number, 24047 is in the best state of preservation, the lax integument being largely or partly separated from the body in most of the other individuals. I have examined number 27535 most closely to learn the structure of the fins, and find that it has 44 dorsal rays, of which only the first 12 are not articulated; the anal has 36 rays, only the first one being unarticulated; the pectoral has 35 rays, and the caudal 12. The radial formulæ of the other examples are as follows:

24010, D. 38+; A. 29+.

24047, D. 42; A. ca. 32.

26625, D. 41; A. ca. 33.

27545a, D. 42; A. 35.

27545b, D. 42; A. ca. 34.

The dorsal and anal are connate with the caudal, the free portion of the caudal being only about one-third as long as the head. The great-

est width of the head is nearly equal to its greatest length and exceeds its greatest depth. The interocular region is shallow concave, and the vertex and nape are somewhat elevated. The snout is obtuse and moderately depressed. The body is rather abruptly compressed at the vent, where its thickness equals only one-third of the length of the head. The anterior dorsal rays are regularly graduated, and much shorter than the rays in the middle of the fin. The longest dorsal ray is one-half as long as the head. The length of the eye is contained 4 times in that of the head, which equals one-fourth of the total length with caudal. The length of the snout equals one-third of that of the head. The nostrils are tubular, the anterior pair having much the longer tubes, their distance from each other equaling the length of the eye. The maxilla extends to below the anterior margin of the pupil. Dentition as in *L. fabricii*. The ventral disk is nearly circular, its length contained 8 to 8½ times in the total length. The distance of the dorsal from the snout equals nearly one-third of the total length without the caudal. The length of the caudal equals about one-seventh of the total length. The greatest height of the body equals the length of the head. The pectoral extends to the origin of the anal.

Colors of specimen 26625 taken from the living fish.

(Dredged off Indian Point (Cape Tchaplín), E. Siberia, Behring Strait, August 15, 1880.)

Upper parts gray, punctulated with brown; on the top of the snout and on head and back, as far as beginning of dorsal, two concentric stripes or elongated rings of brown inclosing gray areas; similar stripes along side of head, and extending back to near middle of body; also on posterior part of body; between these long stripes are two irregular rings of brown inclosing gray; a brown stripe along lower part of head and body, blending into a wider area of brown of the lower parts; belly yellow on the sides, and punctulated with brown; iris brown, mingled with a little vermilion; pupil has a yellow margin; fins brown and punctulated; a dark band at caudal base; snout whitish on top.

A more common pattern of coloration is the following:

Head and body very light brown or gray intermingled with brown; belly and under surface of head lighter; dorsal and anal with some irregular dark markings simulating bands; caudal with three dark bands; sometimes the posterior half of the body is mottled with dark blotches.

***Cottus humilis*, n. s.**

Museum number 27972; collector's number (1700). Chamisso Island, Eschscholtz Bay, August 31, 1880.

D. X, 16; A. 13, V. I, 3; P. 18; Br. VI.

Head broad, subtriangular, much depressed, contained 2⅔ times in total length, caudal included. Greatest depth of head contained 2⅔ times in its greatest length. Eye equal to interocular space, contained twice in length of snout and 4 times in postorbital portion of head to

end of opercular flap. Whole upper surface of head covered with small skinny tubercles. Vomerine patch of teeth very large.

Two strong spines above the snout, an obtuse prominence above each orbit and a pair on the occiput. In large individuals there is a tendency towards division and enlargement of the prominences and their extension, so as to form imperfect keels on the vertex. Behind the supra-orbital prominences are several radiating sharp ridges similar to those of *C. polyacanthocephalus*. Interocular space concave. There is also a depression on the vertex, becoming narrower posteriorly. Three preopercular spines, the uppermost being longest and equal to the eye in length. The longest dorsal spine (fourth) is half as long as postorbital part of head, or slightly more. The length of the maxillary bone is contained $2\frac{3}{4}$ times in the length of the head. End of maxilla reaches slightly past hind margin of eye. The ventrals when extended straight backwards are equal to their distance from the beginning of the anal. The pectorals reach the vertical from the beginning of the soft dorsal. Skin above the lateral line with a single series of rough bony tubercles which are finely toothed and sometimes depressed in the centre. A few similar but smaller spiny tubercles below the lateral line.

The dorsals are separated by a short interspace. The spinous dorsal begins in a line with the upper axil of the pectoral. The longest ray of the second dorsal is contained 4 times in the distance from the tip of the snout to the beginning of the second dorsal. Tail little rounded, contained $5\frac{1}{2}$ times in total length without caudal.

Colors of the alcoholic specimen: Purplish brown above, whitish below. First dorsal has two broad, oblique dark bands separated by a light area. Second dorsal has about 5 dark bands, anal about 6. The pectorals have about 4 interrupted bands; the caudal has 3. Ventrals whitish, faintly tinged in two areas with dark color. Sides with a few white blotches; a larger individual has, also, some small white blotches on the belly.

Length of type 240 millimeters ($9\frac{1}{2}$ inches).

	Inches.
Length of head	3.4
Length of snout.....	.8
Greatest height of body	1.5
Least height of tail.....	.4
Greatest width of body	1.6
Width of interocular space.....	.5
Long diameter of eye5
Length of fourth dorsal spine9
Length of fifth dorsal ray.....	1.2
Length of sixth anal ray.....	.9
Length of pectoral	1.9
Length of ventral	1.3
Length of caudal.....	1.4
Length of maxilla.....	1.4

Cottus niger, n. s.

Museum numbers 23929, 27952, and 27971. Collector's numbers (1621), (1622), (1623), (1624), (1625).

St. Paul Island, Bering Sea, 1872 (H. W. Elliott), and August 6, 1880 (Dall & Bean, from Mr. Armstrong).

Br. VI; D. IX, 15-17; A. 11-13; V. i, 3; P. 16-17.

Two very blunt prominences above the snout entirely enveloped in the skin in a specimen 10 inches long. No spines above the orbits or on the occiput. The spines at the upper angle of the preopercle are the only ones that are not covered up in the skin, and these are almost hidden. The two uppermost preopercular spines are the only sharp ones present. Top of head covered with fine skinny granulations and the vertex with numerous slender tentacles. The place of the supra-orbital spine is occupied by a soft tentacle of moderate length. The longest preopercular spine is as long as the eye, which is $\frac{1}{3}$ as long as the head to the end of the opercular spine, and equal to the width of the space between the eyes. Snout equals length of orbit. Jaws equal, the lower not at all received within the upper. Maxilla, longer than fourth dorsal spine, equals one-half length of head to end of opercular spine, and extends to hind margin of orbit. Head one-third, or slightly less than one-third of total length, caudal included. Longest dorsal spine is contained 7 to 9 times in total with caudal. The longest anal ray is contained about 3 times in length of head. Caudal and ventral equal to one-half length of head. Pectoral as long as post-orbital part of head and does not reach the vent, which is in the middle of the total length with caudal. Caudal rounded. Height of body at origin of dorsal is a little less than its width at the base of the pectorals and is contained from 5 to 6 times in total length, caudal included. The spinous dorsal begins at a distance from the tip of the snout equal to one-third of the total length without caudal. Skin smooth.

Colors of the alcoholic specimens: Very dark brown (almost black) with a purplish tinge in some individuals; sides mottled with lighter brown and whitish and frequently bearing large, roundish white blotches similar to those of the male *C. grønlandicus*. These white blotches in some instances become confluent over the greater portion of the belly. Posterior surface of the pectoral with white blotches near the margin in some examples, and uniform dark brown in others. There is no individual that is entirely free from white blotches. In some examples the belly is dark, very little mingled with whitish. Lips and lower surface of head in some examples have numerous nearly black spots, the largest of which are not more than one-third as long as the eye. The largest of the types is 10 inches long.

Cottus niger has many points of resemblance to *C. Brandti* Steind., but there are too many important discrepancies to allow me to identify it with Steindachner's species. (1) the length of the head is not more than $\frac{1}{3}$ of total length with caudal in any of our 14 examples; (2) the vomer-

ine, intermaxillary, and mandibular teeth are all of equal size and strength; (3) the distance between the eyes measured on the bone is always equal to the length of the eye ($\frac{2}{3}$ of length of eye in *Brandti*); (4) there are no prominent occipital ridges such as are figured in *C. Brandti*, but the vertex has numerous slender filaments; (5) the length of the ventral is $\frac{1}{2}$ that of the head ($\frac{2}{5}$ in *C. Brandti*); (6) the length of the caudal is nearly twice as great as the distance of the front margin of the eye from the tip of the jaws; (7) the bony plates of the lateral line are so thin and soft that they are inconspicuous under the skin; (8) the ventrals of *C. niger* are always either purplish dark-brown with whitish tips, or whitish with several dark bands. There are white blotches on all our examples notwithstanding the great variation in size.

Cottus verrucosus, n. s.

27547 (1638). Plover Bay, Siberia, August 13, 1880, T. H. Bean.

Br. VI; D. XI, 16; A. 15; V. I, 3; P. 17; C. 12 (developed rays).

Length of the typical specimen $3\frac{1}{2}$ inches (88 millimeters).

Two sharp spines above the snout. A short tentacle above the posterior part of each orbit and one on each side of the vertex. Vertex and interorbital space deeply concave. Crown, nape, and interorbital region with small skinny warts. Three preopercular spines, the uppermost being as long as the short diameter of the eye. Eye equals snout which is $\frac{1}{4}$ as long as the head to the end of the opercular spine. Lower jaw barely included within the upper. The maxilla is longer than the fourth dorsal spine, which is only a little longer than the eye and less than $\frac{1}{3}$ as long as the head. The maxilla equals $\frac{1}{6}$ of the total length without the caudal, and nearly $\frac{1}{2}$ the length of the head; it extends to below the middle of the eye. The mandible extends to the hind margin of the eye; its length equals $\frac{1}{2}$ the distance from the tip of the snout to the beginning of the dorsal. The head is $\frac{1}{3}$ of the total length with caudal. Teeth in the jaws and on the vomer. The longest dorsal spine equals the longest anal ray and $\frac{1}{10}$ of the total length with caudal. The length of the ventral equals $\frac{1}{6}$ of the total length without the caudal. The vent is slightly in advance of the middle of the length with caudal. The pectoral reaches to the origin of the anal. The caudal is $\frac{1}{2}$ as long as the head. The height of the body at the beginning of the dorsal is contained $4\frac{1}{2}$ times in the total length without the caudal, and is a little greater than its greatest width. The distance of the first dorsal from the tip of the snout equals about $\frac{1}{3}$ of the total length without the caudal. Skin smooth. Lateral line with numerous short accessory branches extending upward and downward and placed exactly opposite each other.

Colors of the alcoholic specimen: Upper parts very dark brown; belly and under surface of head whitish; whitish on the sides along and behind the anal fin; spinous dorsal colored like the body but with a median and a posterior light band; soft dorsal with about five dark-brown bands

alternating with whitish; caudal whitish on its anterior third, the rest of the fin having brown on the skin covering the fin-rays; the pectoral has five brown bands; the anal is all whitish except a dark stripe running through near its middle; the ventrals are whitish.

Gymnacanthus galeatus, n. s.

Museum catalogue number 28097; collector's number (1603). Five individuals were caught on a trawl-line at Iliuliuk, Unalashka, July 30, 1880, for Messrs. Dall & Bean, by Sylvanus Bailey.

As these specimens differ in several important details from our examples of *G. pistilliger* from the Atlantic and from Siberia as well, I will briefly indicate the differences and call attention to them by giving the species a new name.

The smallest example is $7\frac{2}{5}$ inches long; the largest, $10\frac{1}{2}$ inches.

Br. VI; D. XI, 16-17; A. 19; V. I, 3; P. 19-20.

No vomerine teeth. Two small spines above the snout; a small tubercle at the upper posterior margin of each orbit. Four preopercular spines, the upper as long as the short diameter of the eye, bearing two or three antler-like processes. The space between the eyes is deeply concave and *completely covered* by aggregated bony granulations, as are also the crown and the neck. Similar bony granulations are at the hind margin of the orbit, on the suborbital ridge, and on the opercles. The body is naked. The pectorals and, in males, the ventrals reach beyond the origin of the anal; in females the ventrals do not reach the vent. Dorsals and pectorals with interrupted black bands as in *G. pistilliger*; ventrals and anal uniform whitish; back with four distinct brown spots, the longest nearly twice as long as the eye, extending a little below the lateral line, and there blending into an interrupted wavy brown lateral stripe. The maxilla extends to below the middle of the eye. *The greatest height of the body is contained twice in the length of the head*, and $7\frac{1}{2}$ times in the total length including the caudal. Pectoral as long as the head without the snout, its upper axil immediately under the beginning of the spinous dorsal.

Gymnacanthus galeatus may be at once distinguished from *G. pistilliger* by its longer and more bony head and its elongate form. I have compared it with specimens of *G. pistilliger* from Norway, Cumberland Gulf, and Eastern Siberia.

Hemilepidotus Jordani, n. s.

Museum number 27598; collector's number (1602).

Length of larger type, 13 inches; smaller, $10\frac{1}{5}$ inches.

Taken at Iliuliuk, Unalashka Island, on a trawl-line, by Sylvanus Bailey, July 30, 1880.

Larger, D. X, i, 21; A. 17; V. i, 4.

Smaller, D. X, i, 21; A. 16; V. i, 4.

The dorsal band of scales contains 4 rows at the widest part (6 rows in *spinousus*).

Height of body $1\frac{3}{8}$ times in length of head, and $4\frac{1}{2}$ times in total length without caudal. Length of head $2\frac{3}{8}$ times in length of fish without caudal.

Eye equals snout and one-fourth of head. Interorbital space equals short diameter of eye (only half of short diameter in *spinus*).

Distance of spinous dorsal from tip of snout equals length of pectoral (the pectoral is much shorter in *spinus*).

First spine of dorsal equals maxilla in length (only half as long as maxilla in *spinus*). Longest dorsal spine (5th) is contained $2\frac{1}{2}$ times in length of head (4 times in *spinus*).

Pectoral reaches to origin of anal; ventral, nearly or quite to vent.

Maxilla extends slightly behind middle of eye; mandible, to posterior margin of eye.

Throat and belly pure white. No spots as in *trachurus*.

Hexagrammus scaber, n. (?) s.

? *Hexagrammus superciliosus* (Pall.)

In the collection of Alaskan fishes are two small individuals of the genus *Hexagrammus*, which I cannot refer definitely to any known species. They are nearest to *H. superciliosus* Pallas, but, as we have none of the young of this species, I must compare them with half-grown examples. From these and from the adult my species differs (1) in having a rudimentary but quite distinct median lateral line, (2) in the absence of palatine teeth, (3) in having a forked caudal, whereas *superciliosus* has a distinctly rounded caudal. It may be found that a large series of specimens of different ages will show a gradation into *superciliosus* by the acquisition of palatine teeth, the obsolescence of the median lateral line, and a change in the form of the caudal; but there is nothing to base such a conclusion upon at present, and I desire to call attention to the form by describing it as probably new.

The types are numbered 23961, Amchitka, W. H. Dall, and 27920, Unalashka, T. H. Bean. The first measures $2\frac{9}{10}$ inches and the second $2\frac{7}{10}$ inches to the base of the middle caudal rays.

23961—D. XX, 25; A. 23; V. i, 5; L. lat. about 100; 6 lateral lines.

27920—D. XXI, 25; A. 24; V. i, 5; L. lat. about 107; L. transv. about 50; 6 lateral lines.

In this description number 27920 is taken for the principal type, since, being a more recent specimen, it shows the characters more clearly.

Body oblong, moderately compressed, its depth near the origin of the dorsal equals the length of the head (excluding the opercular flap) and is contained $4\frac{1}{2}$ times in the total length to the base of the middle caudal rays; upper outline of head convex, but with a slight frontal depression. The least height of the tail equals one-half the length of the head, or one-ninth of the total length to base of caudal.

The distance between the eyes is contained three times in the length of the head. The snout is blunt and only two-thirds as long as the eye, which is one-third as long as the head and equals the interorbital dis-

tance. Jaws equal. The maxilla does not quite reach to below the anterior margin of the pupil, and is one-third as long as the head. The mandible extends to below the middle of the eye and is contained 10 times in the total length to base of middle caudal rays. A tentacle above each orbit. Teeth in the jaws and in the vomer; none on the palatine bones.

The spinous dorsal originates immediately over the base of the pectoral; its longest spine is one-eleventh as long as the fish without the caudal. The longest ray of the second dorsal equals the length of the post-orbital part of the head. The dorsals are separated by a deep notch, immediately under which the anal originates.

The length of the anal base equals one-third of total length without the caudal. The vent is equidistant from the tip of the snout and the base of the middle caudal rays.

The middle caudal rays are only $\frac{2}{3}$ as long as the longest rays, the caudal being decidedly forked.

The distance of the pectoral from tip of snout equals one-fourth of the total length to base of middle caudal rays; the pectoral does not quite reach to the vent; its length equals that of the head including the opercular flap.

The distance of the ventral from the snout is slightly more than twice the length of the ventral, which is one-seventh of the total length to base of middle caudal rays.

There are 6 lateral lines on each side, the uppermost of which meets its fellow of the opposite side in front of the dorsal, is continued forward on the nape by a single short line, runs backwards close to the dorsal, base and ends at about the beginning of the last third of the soft dorsal. The second begins on the nape, is one-half as far from the uppermost as it is from the third, and extends to the caudal. The third begins at the extreme upper limit of the gill-opening, curves very gradually to follow the dorsal outline until it reaches the end of the second dorsal, whence it runs straight out on the caudal. The fourth begins a little above the pectoral, curves very slightly downward and disappears about the middle of the body; it is not so well developed as the rest. The fifth originates close under the pectoral, near the gill-opening, passes above the ventral and on the lower part of the side of the body, ending at about the beginning of the last third of the anal. The sixth meets its fellow of the opposite side a little behind the ventral base (a single line extending forward from this junction on the median line of the belly as far as the throat) and runs backward close to the base of the anal fin, ending on the caudal. The scales are everywhere very rough.

Colors: Each of the dorsals has 3 black blotches, smaller than the eye, resembling bands but not extending to the bases of the fins. The pectorals, ventrals, and anal are uniform yellowish white. The body is light brown above and silvery or golden on the sides and lower parts.

Coregonus lauretæ, n. s.

Among the fishes brought down from northern Alaska during the summer of 1880 are 4 white-fish taken at Point Barrow by the U. S. S. Thomas Corwin, Capt. C. L. Hooper commanding, and one of the same species obtained at Port Clarence, by the U. S. Sch. Yukon. The museum catalogue numbers of these specimens are:

27695. Point Barrow, 1880, (4 examples).

27915. Port Clarence, 1880, (1 example).

The species is allied to *C. Artedi* Le Sueur and to (*C.*) *lucidus* Richardson. It differs from *C. Artedi* in the following particulars:

- (1) The eye is $\frac{1}{5}$ as long as the head ($\frac{1}{4}$ in *Artedi*);
- (2) The length of the dorsal base corresponds with that of 16 oblique series of scales immediately under it (10 in *Artedi*);
- (3) The length of the mandible is contained $2\frac{1}{3}$ times in that of the head ($2\frac{1}{8}$ times in *Artedi*);
- (4) The lateral line runs through 84 to 95 scales (not more than 77 in *Artedi*); there are 10 scales in a transverse series from the origin of the dorsal to the lateral line and as many from the origin of the ventral to the lateral line (9-9 in *Artedi*);

(5) The ventral has 12 rays (11 in *Artedi*).

From *C. lucidus* it is separated by the following characters:

- (1) There are lingual teeth (none in *lucidus*);
- (2) The ventral appendages are less than one-half as long as the ventral (more than one-half in *lucidus*);
- (3) The transverse rows of scales between the origins of dorsal and ventral and the lateral line are 10-10 (10-8 in *lucidus*);
- (4) The lower jaw is contained $2\frac{1}{3}$ times in length of head ($2\frac{1}{2}$ times in *lucidus* according to Richardson's measurements);
- (5) Judging from the figure given by Richardson the number of rows of scales under the dorsal base of my species is 6 greater than in *lucidus*.

DESCRIPTION.

Br. IX-X; D. 11-12 divided rays; A. 10-11 divided rays; V. 12; P. 16; L. lat. 84-95; length of types 12-16 inches.

The height of the body is greater than the length of the head and equals one-fourth of the total length without the caudal; the distance of the nape from the front margin of the jaw is contained $2\frac{1}{2}$ times in its distance from the beginning of the dorsal. The diameter of the eye equals the length of the snout and about $\frac{1}{5}$ that of the head. Maxillary reaches nearly to the middle of the eye, its length contained $3\frac{1}{2}$ times in that of the head; the supplemental bone is slightly more than half as long as the maxilla and its greatest width equals $\frac{1}{3}$ of its length. The length of the mandible equals $\frac{2}{7}$ of that of the head, reaching to the hind margin of the orbit. The appendage of the ventral fin is less than half as long as the fin and nearly equal in length to the 7 scales immediately over it.

This white-fish is also represented in the National Museum by two well-preserved specimens (Nos. 24023 and 24024) collected by William H. Dall, March 12 and March 19, 1867 (collector's numbers 666 and 672), at Nulato on the Yukon River.

I dedicate the species to my wife, Lauretta H. Bean.

Ptilichthys, n. g. (*Mastacembelida*?)

Body elongate, serpentiform, apparently covered with very thin scattered scales. Mandible little movable, projecting, with a skinny appendage at tip. Cleft of the mouth narrow. Minute teeth in a single series in the jaws, becoming larger and slightly curved posteriorly. Margin of upper jaw formed entirely by the intermaxillaries. Maxilla curved forward below. The gill-opening extends up to the middle of the base of the pectoral; the membrane is slightly emarginate behind and is free from the isthmus; 4 gills, a slit behind the fourth. Gill-rakers stout and short, moderate in number. Spinous portion of the dorsal consisting of many isolated spines, a narrow membrane behind each. Soft dorsal and anal with many rays. End of the tail free. Ventrals none.

Ptilichthys Goodei, n. s.

Museum number 26619, collector's number (1590)—Dall and Bean.

Dredged in 10 fathoms at the entrance to Port Levasheff, Unalashka, on the ridge, hard bottom, by Sylvanus Bailey, July 28, 1880.

I am indebted to the Alaska Commercial Company of San Francisco for the loan of the only other known specimen, an example 302 millimeters long taken at Unalashka. Length of type 160 millimeters. The species is dedicated to my colleague, Mr. G. Brown Goode.

Br. V; D. XC, 145; A. ca. 185; P. ca. 12.

Greatest height of body equals the post-ocular part of the head. Eye, equal to snout, 5 in head. Head $15\frac{1}{3}$ times in total length. Maxilla extends to a little beyond the front margin of the orbit; mandible to middle of the eye. The mandibular appendage is one-half as long as the eye. The dorsal begins slightly in advance of the pectoral; the spinous portion equals $6\frac{1}{2}$ times the length of the head. The distance from the tip of the lower jaw to the anus equals $4\frac{2}{3}$ times the length of the head. The anal begins under the fifty-third spine of the dorsal. The pectoral is half as long as the head. None of the dorsal spines are quite equal to half the length of the eye. The soft dorsal and the anal are highest near the middle of their length; the height of each equals about $\frac{3}{4}$ of the body height at the same point. The free caudal tip is about $\frac{2}{3}$ as long as the eye.

Raia parmifera, n. s.

Collector's number (1753); Museum number 27651.

Taken at Iliuliuk, Unalashka, October 12, 1880, and preserved almost entire after measurements and color notes were made.

Disk broader than long; tip of snout slightly projecting. Anterior margin of pectorals convex in front, then shallow concave, posterior margin convex. Interorbital distance, measured on the bone, is contained $3\frac{1}{2}$ times in distance from tip of snout to a line connecting the front margins of the orbits. Interocular space deeply concave in the preserved specimen.

Breadth of disk equals distance from tip of tail to shoulder-girdle. Length of tail equals distance from its root to middle of eye.

Tail nearly flat below with a well-marked lateral fold which is widest posteriorly, but nowhere equals the height of the caudal. Caudal small, its height (7^{mm}) contained 3 times in its length (21^{mm}).

Mouth slightly arched, its width equal to 3 times the length of first dorsal base. Nasal flaps with a few fringes posteriorly. Distance between nostrils contained $1\frac{1}{2}$ times in their distance from tip of snout. Teeth in 26 or 27 rows, with a short, moderately sharp median cusp, which is occasionally much worn in the front of the jaws.

The largest spiny bucklers on the back are 17 millimeters long at the base.

Snout above, supra-occipital region and the whole margin of pectorals and ventrals covered with small prickles, as is also an area along the tail, especially on its anterior half. Along the middle of the back and the top of the tail is a row of 29 large spines. Between the dorsals is a single large spine. Along the sides of the tail are spines a little larger than those around the margin of the disk. The greater portion of the disk is smooth. In a male, number 28098, of which we have portions only, the bucklers are in about 22 rows, with 6 in a row at the widest part; the claspers are slender and more than one-half as long as the tail.

Under surface smooth, with the exception of an elliptical patch of small spines near the tip of the snout.

General color olive-brown above. There are numerous indistinct light blotches on the disk, two of them larger than the rest; the largest is twice as long as the eye, and surrounds an inner blotch of white nearly as long as the eye. There are two small light blotches, one on each side of the tail, between the 17th and 18th spines of the median series.

Measurements.

Current number of specimen	} (1753) 27651 ♀
Locality	
	Millimeters.
Extreme length	975
Length of disk	507
Body:	
Greatest width of disk	685
Greatest width of tail at base	47
Length of branchial area	70
Width of branchial area in front	196
Width of branchial area behind	136

Measurements—Continued.

	Millimeters.
Head:	
Distance between outer edges of spiracles	119
Greatest width of mouth	105
Width of interorbital area on the bone	48
Length of snout from eye	153
Length of eye	30
Length of snout from mouth	140
Length of spiracles	32
Distance from snout to first dorsal	875
Distance between outer humeral spines	125
Dorsal:	
Length of base of first dorsal	32
Height of first dorsal	24
Interval between dorsals	16
Length of second dorsal	30
Height of second dorsal	26
Length of base of ventrals	134
Distance from snout to end of base of pectoral	510
Distance between outer edges of nostrils	90
Distance from snout to outer angle of disk	463
Caudal:	
Length of base	21
Height	7
Ventral:	
Length	68

* Taken where the ventral insertion ends.

Ammocetes aureus, n. s.

? *Petromyzon Fluvialis* Rich. Franklin's First Journey, 1823, p. 705; F. B. A., p. 294.

? *Petromyzon borealis* Grd. Pacific R. R. Report, Fishes, p. 377 (without description).

Maxillary tooth single, bicuspid; mandibular with seven cusps, those at the ends being larger than the other five. Head shorter than the space occupied by the branchial openings and contained $10\frac{1}{3}$ times in the total length ($5\frac{1}{3}$ times in the distance from the end of the lip to the beginning of the first dorsal). The distance from the eye to the first dorsal is 3 times as long as the first dorsal base. Second dorsal base is twice as long as the first, and the fin is twice as high as the first at its highest part. The interspace between the dorsals is about $\frac{2}{3}$ as long as the head. The distance from the vent to the end of the tail is one-fourth of the total length. Eye nearly twice as large as the largest branchial opening.

Colors of the alcoholic example: Back plumbeous, sides and belly golden yellow, under surface of head and neck silvery.

Length of type, 15 inches; catalogue number, 21524; collector's number, 1038, Anvik, Yukon River, Alaska, Lucien M. Turner (Lat. 63° N., Lon. 160° W. from Greenwich). Mr. Turner notes that it is extremely abundant and is used for food.

U. S. NATIONAL MUSEUM, May 5, 1881.