

elongated and compressed, rather graceful in appearance. The head is contained four times and a half in the total length. The snout is pointed, the upper jaw overlapping considerably the lower one. The mouth is proportionally large, the posterior extremity of the upper maxillary extending to a vertical line which would fall in advance of the eye. The eye itself is above the medium size, sub-circular in form, and contained about four times and a half in the length of the side of head. There exists a space between each dorsal, more considerable between the second and third, than between the first and second. The anals are likewise separated by a space nearly equal to that which is observed between the second and third dorsals. The ventrals are exiguous, their second ray being prolonged into a filament. The pectorals are small.

D 12. 19. 20. A 25. 22. C 5. 1. 16. 16. 1. 5. V 6. P 17.

Upper region yellowish ash; sides and belly silvery white. Minute crowded blackish dots upon the dorsals, caudal and posterior anal. Anterior anal, ventrals and pectorals yellowish, unicolor.

9. PAROPHRYX VETULUS, Grd. Proc. Acad. Nat. Sc. Phi'ad. vii. 1854, p. 140.

10. PSETTICHTHYS SORDIDUS, G.—General form subellipsoid; greatest length about five inches in which dimension the greatest depth enters twice and a third of a time. The head constitutes about the fourth of the total length. The mouth is oblique, and when shut the jaws are even. The eyes are large, subelliptical, approximated, and situated on the left side; their longitudinal diameter is comprised four times in the length of the side of head.

D 82. A 72. C 1. 1. 6. 5. 1. 1. V 6. P 1. 10.

The scales are of medium size, equally conspicuous upon the head and opercular apparatus. The lateral line is nearly straight, raising but slightly as it reaches the head.

Ground color of a soiled yellow; the scales are margined with blackish. The fins appear as if covered with a coating of dust.

Observations upon a collection of Fishes made on the Pacific coast of the United States, by Lieut. W. P. Trowbridge, U. S. A., for the Museum of the Smithsonian Institution.

By CHARLES GIRARD.

It is praiseworthy for officers of the government, whether military or civil, when detailed upon special duties, to devote their moments of leisure in serving the cause of science. Lieut. Trowbridge, while engaged under instructions from the U. S. Coast Survey, in making tidal observations for the use of that office, availed himself of such opportunities at his command to secure the fishes enumerated below, and we leave it to Naturalists to decide whether his labors were at all rewarded.

There are three main points whence specimens were obtained. 1st, PRESIDIO, on the Bay of San Francisco, where Lieut. Trowbridge himself is stationed; 2d, MONTEREY, on the Bay of the same name, where the same gentleman made several excursions; and, 3d, SAN DIEGO, where observations are conducted by Corporal A. Cassidy, U. S. A.

PERCIDÆ.

1. LABRAX NEBULIFER, G.—The head which is contained about three times in the length, the caudal fin excepted, presents a subconical appearance, from the fact of its being rounded upon its upper region, and gradually sloping towards the snout. The anterior part of the body, from the origin of the dorsal to the occiput is continuous with the profile of the head, the middle region slightly convex. The body gradually tapers backwards; the greatest depth taken between the insertion of ventrals and origin of first dorsal, is a little less than the fourth of the entire length, including the caudal fin; the greatest thickness measures in the same region as the depth, is a little more than the half of the latter. The body, therefore, is compressed, as usual in this genus, and the

general outline subfusiform. The eye is subcircular, and its horizontal diameter contained about six times in the length of side of head. The posterior extremity of the upper maxillary extends to a vertical line intersecting the pupil. The lower jaw is the longest. The third dorsal spine is much the longest in the first dorsal fin, and higher than any of the rays constituting the second dorsal. The caudal is subemarginated posteriorly. The insertion of pectorals is placed immediately in advance of the origin of anterior dorsal; the insertion of ventrals is situated immediately behind the base of pectorals.

D X. 14. A III. 8. C 4. 1. 7. 6. 1. 3. V I. 5. P 17.

The scales are of medium size. The lateral line follows the curve of the back and middle of the peduncle of tail.

Ground color reddish brown above, yellowish beneath, upper part of body provided with large cloud-like blackish blotches. A dark vitta extends obliquely downwards and backwards from the lower rim of orbit to the throat, across the cheeks and branchiostegal apparatus. The fins are purplish blue, very intense on the ventrals, base of second dorsal, and space between the third and fourth spine of first dorsal. The snout is covered with small roundish spots.

From Monterey, Cal.

2. *LABRAX CLATHRATUS*, G.—The profile of upper part of head is more depressed, and the head more acute than in *L. nebulifer*. The lower jaw is more protruding, giving to the snout a pointed, instead of a rounded appearance, which it has in the preceding species. The fourth dorsal spine is the longest and equal in height to the highest rays of the second dorsal. The diameter of the eye is contained five times in the length of head. The origin of first dorsal is situated exactly opposite the base of pectorals.

D X. 13. A III. 7. C 3. 1. 7. 6. 1. 2. V I. 5. P 15.

Ground color purplish; belly whitish; upper part of back and sides covered with darker blotches, assuming an irregular fenestrated appearance. Pectorals yellowish, with a few sulphur transverse vittæ. Membrane of other fins purplish, second dorsal spotted. A subocular vitta passing nearer the angle of the mouth than in the preceding species.

From San Diego, Cal.

TRACHINIDÆ s. PERCIDÆ.

Genus HETEROSTICHUS, Girard.

First dorsal fin very long, the first five anterior rays of which constitute an apparently distinct fin. Anal very long, provided anteriorly with but few spines. Dorsal and anal extending to near the caudal. Body very compressed and flattened posteriorly. Caudal slender. Ventrals situated in advance of pectorals. Lower jaw longest; mouth moderate. Teeth small and conical. Scales very small. Lateral line arched above the pectorals. Six branchial rays. Opercular apparatus without either spines or denticulations.

3. *HETEROSTICHUS ROSTRATUS*, G.—The head is rather small and conical, contiguous to a body anteriorly deep, tapering posteriorly, and very much flattened throughout. The nose is very much depressed and concave. The greatest depth measured above the pectorals, is contained five times in the entire length; the least depth is about the fourth or fifth of the greatest. The head forms a little less than the fourth of the length. The mouth is moderate, lower jaw much the longest; and the posterior extremity of upper maxillary reaches a vertical line, which would pass in advance of the pupil. The teeth are conical, slender and exiguous. The eye is subelliptical, and its horizontal diameter contained seven times and a half in the length of side of head. The dorsal fin originates at a very short distance from the occiput. The five first rays constituting an apparently distinct fin, subtriangular in shape, and much higher than the portion which follows, and which upon its anterior half, is higher than the posterior half. The soft dorsal is short, but high and in perfect continuity with the spiny one; the tips of its posterior rays not reaching quite as far back as

those of the anal, which approximate to the base of caudal. The caudal is slender and forked. The anal is very long and higher than the corresponding portion of dorsal; it is highest posteriorly and lowest upon the middle. The base of the pectorals falls under the space between the third and fourth dorsal spines. The ventrals are inserted much in advance of the base of pectorals, immediately under the throat; they are quite small and slender. The pectorals themselves are of but medium development.

D XXXVII. 13. A II. 34. C 4. 1. 5. 4. 1. 3. V I. 3. P 13.

The scales are very small, extending over the upper part of opercular apparatus to the cheeks; also to the rays of the fins to about half their height or length. The lateral line, from the upper angle of opercle runs almost straight till about under the twelfth spine of dorsal, then obliquely downwards until near the middle of flanks, thence straight to the base of caudal.

Ground color above yellowish brown with irregularly transverse blotches, or else interrupted, and then constituting longitudinal bands of a deeper hue. Head above deep brown; upper part of opercular apparatus exhibiting an elongated triangularly acute blotch, starting from the rim of the orbit. Sides and inferior surface of head yellowish. Belly dull yellow. Fins yellowish, blotched, except the pectorals, which are barred transversely, and the ventrals which are unicolor.

Greatest length of specimen described about eleven inches.

From San Diego, Cal.

SPHYRÆNIDÆ s. PERCIDÆ.

4. *SPHYRÆNA ARGENTEA*, G.—A specimen of this species which lies before us, is thirty-five inches in total length, of which the head forms a little less than the fourth part. The body is stoutish, thickest upon its middle and somewhat compressed, the depth being about one-third more than the thickness. The mouth is moderate; the posterior extremity of upper maxillary leaves a distance of three fourths of an inch between it and the vertical of the anterior rim of the orbit. Teeth on the intermaxillary, minute; on the lower jaw, moderate; on the palate, conspicuous and strong.

The eye is subelliptical, its anterior rim a little nearer to the tip of lower jaw than to the posterior flap of opercular apparatus. The scales on the cheeks are smaller than upon the opercular pieces; there are none to be seen in advance of the eye. The posterior extremity of anterior dorsal is nearly equidistant between the tip of lower jaw and the base of central rays of caudal. The latter is deeply forked. The extremity of pectorals is very far from reaching the anterior margin of first dorsal. The upper margin of both, the second dorsal and anal, is concave.

D V. I. 11. A 1-9. C 4. 1. 8. 8. 1. 3. V I. 5. P 13.

The scales are of rather medium size on the flanks, smaller on the back. The lateral line is straight.

The ground color of the upper region of head and body above the lateral line, is bluish black; whitish on the sides and yellowish on the abdomen. The scales have an argentine reflection which extends to the sides of the head and lower jaw. The lateral line is black. The membrane of the dorsal, caudal, anal and pectorals is yellowish, and their rays greyish; the ventrals are uniform yellowish.

From San Diego, Cal.

COTTIDÆ s. CATAPHRACTI.

5. *COTTOPSIS PARVUS*, G.—May readily be distinguished from *Cottopsis gulosus* by a more compact and more fusiform body, a smaller head and consequently a much smaller mouth. The pectorals and ventrals are less developed, and the outline of the first dorsal is more convex. The caudal is posteriorly subtruncated. The insertion of ventrals is situated immediately behind the base of pectorals, and a little in advance of the origin of the first dorsal; and when brought backwards, their tip does not reach the anus. The tip of pectorals extends to a vertical line which would pass in advance of the origin of anal. The anal is much over than the second dorsal.

D VIII. 21. A 15. C 5. 1. 4. 4. 1. 4. V I. 4. P. 15.

The head constitutes the fourth of the total length; it is quite depressed, and slopes gradually towards the snout; its width is one fourth greater than its depth. The eyes, of medium size, are placed near the summit of the head; their form is subcircular, and their horizontal diameter contained four times and a half in the length of side of head. The posterior extremity of upper maxillary reaches a vertical which would pass in advance of the pupil.

Minute prickles are scattered all over the skin, more developed above the lateral line than beneath it. The lateral line, itself very conspicuous, follows the curve of the back uninterrupted to the base of caudal.

Ground color yellowish brown above and on the sides; dull yellowish beneath. Sides and back with darker somewhat confluent blotches, or else groups of crowded dots resembling blotches. The pectorals, dorsals and caudal are barred; the anal and ventrals unicolor. First dorsal with a blackish blotch upon its upper and posterior portion. Base of caudal with a black bar, upper surface of head covered with dark roundish small spots.

From Presidio, Cal.

6. *LEPLOCOTTUS ARMATUS*, Grd. Proc. Acad. Nat. Sc. Philad. vii. 1854, p. 131.

Specimens of this species, most of which are in an immature condition, were obtained at Presidio, Monterey, San Pedro, and San Diego, Cal.

7. *SCORPÆNICHTHYS MARMORATUS*, Grd. Proc. Acad. Nat. Sc. Philad. vii. 1854, p. 131.

From Presidio, Cal.

8. *SCORPÆNICHTHYS LATERALIS*, G.—We know but a few small individuals of this species, the largest of which is less than four inches long. The body is compressed and tapering; the head being contained about three times in the length, excluding the caudal fin. The occipital region is flattened; the interocular space, convex, and the rostral distance, decliv. The mouth is large; the posterior extremity of upper maxillary extends to a vertical line, which would intersect the posterior margin of the pupil. The eye is large, subcircular, and placed near the summit of the head; its horizontal diameter is contained four times in the length of the side of head. The interocular space is quite narrow. The opercular apparatus exhibits but a double spine of moderate development, situated upon the upper half of the limb of preopercle, with its point directed obliquely upwards. The caudal fin is posteriorly subrounded. The insertion of ventrals is situated under the middle of the base of pectorals. The origin of the dorsal is in advance of base of the same fins. The first dorsal is rather low, and not contiguous to the second, which is considerably higher.

D IX. 17. A 11. C 2. 1. 5. 4. 1. 1. V I. 3. P 15.

On the upper portion of dorsal region, alongside the dorsals, may be seen an elongated area covered with small pectinated scales or plates, disposed upon oblique or transverse rows. The skin is otherwise smooth, and the lateral line conspicuous, making a slight inflexion downwards upon the middle of the abdomen.

Upper region of head and body deep chestnut brown, variegated on the sides with shining yellowish areolæ and dots. Inferior surface of head, belly and tail uniform yellow. Fins spotted or barred.

From Monterey, Cal., and San Luis Obispo, Cal.

SCORPÆNIDÆ s. CATAPHRACTI.

9. *SCORPÆNA GUTTATA*, G.—The head has a pretty rough appearance: in the first place, the orbits seem as if emerging from the upper part of the skull, the middle line of which exhibits an obtuse groove. Three spines are observed along the upper edge of the orbit, behind which three more may be seen on either side of the occipital region and nape. Several supratympanic spines, but small; two diverging ones, upon the body of opercle, and four upon the limb of preopercle, the uppermost of which being much the stoutest and longest. Next we see four other spines irradiating downwards from the suborbitals, and finally the nasal bone terminates into a sharp and acute point directed upwards and slightly backwards. Intermingled with these numerous spines there are but two

pairs of small membranous and arborescent flaps,—we were going to say,—adorning the head, but in reality contributing to render it still more repulsive to an eye uninitiated to scientific pursuits: the first pair is situated above the posterior part of the orbit, whilst the second occupies the inner upper edge of anterior nostril. The body is about eleven inches in total length, the head forming the third of it. The eye is large and elliptical: its horizontal diameter being comprised nearly five times in the length of side of head. The posterior extremity of upper maxillary reaches a vertical line which would intersect the posterior rim of orbit. The second dorsal has nearly the same height as the first. The caudal is subrounded posteriorly. The tips of posterior rays of anal are even with those of the second dorsal. The insertion of ventrals is under the base of pectorals; they are elongated. The pectorals are broad and very much developed; their posterior extremity extending considerably beyond that of ventrals.

D XII. 10. A III. 5. C 5. 1. 6. 5. 1. 3. V I. 5. P 18.

The scales of body are of medium size, and very small upon the occipital region and the head. The opercular apparatus is naked; scales being observed upon the posterior flap of opercle only. Ground color deep reddish brown above; yellowish brown beneath. The anterior portion of back and head almost black. Clouded patches of blackish, here and there, with numerous small black spots, more defined on the head than on the body, and much larger on the fins. Belly dull white; throat yellowish; inferior surface of head whitish and brownish.

From Monterey, Cal.

10. *SEBASTES AURICULATUS*, Grd. Proc. Acad. Nat. Sc. Philad. vii. 1854, p. 131. From Presidio, Cal.

11. *SEBASTES ROSACEUS*, G.—The general form of this species might at first be suggestive of *S. norvegicus*, were the central rays of the first dorsal not so much higher than in the latter species, giving to that fin a decided convexity. The fish is rather stout than elongated, though much compressed, the depth of body being about equal to the third of entire length, which is about fourteen inches, and nearly equal to the length of head. The profile from the anterior margin of first dorsal to the end of snout is rather depressed, whilst it tapers quite rapidly from the second dorsal backwards, the peduncle of the tail being rather detached from the general shape. The upper part of head exhibits but two small horizontal spines, whilst the preopercle has five of them, rather stout and conspicuous. The upper part of opercle has two spines, the uppermost of which is the largest. The eyes are large and subcircular, reaching the upper profile of head, in the length of which their horizontal diameter is comprised four times, once in advance the anterior rim of orbit, and twice behind its posterior rim. The mouth is broad, but the posterior extremity of upper maxillary does not extend beyond a vertical line which would intersect the centre of the pupil. The second dorsal is scarce higher than the first. The posterior margin of caudal is slightly concave. The second spine of the anal is strong and robust; the tips of the posterior soft rays of that fin extend somewhat farther back than those of the second dorsal, but do not reach the base of the rays of the caudal. The insertion of ventrals is situated immediately behind the base of pectorals. The pectorals are very long, their tips extending beyond that of ventrals, and reaching a vertical line which would fall between the two dorsals.

D XIII. 13. A III. 7. C 5. 1. 5. 5. 1. 6. V I. 5. P 17.

The scales of the body are of medium size; those upon the head, cheeks, opercular pieces and throat are quite small. The course of the lateral line is parallel to the outline of the back.

The color is of a uniform reddish or crimson tint, lighter beneath. There exists, on the upper part of opercle, in the region occupied by the spines above alluded to, a large, elongated spot of a much deeper hue.

From San Diego, Cal.

12. *SEBASTES FASCIATUS*, G.—The species which we propose here to characterize, has more of the general aspect of a *Scorpena*, than of the genus to which it belongs. The body, anteriorly, is very stout and deep, the head more rounded,

with its upper profile more inclined from the occiput to the snout than in the preceding species. The total length of the fish is about eleven inches, of which the head forms more than the third. The greatest depth is equal to the length of head. The upper surface of the latter exhibits conspicuous spiny ridges, very acute posteriorly. Five triangular spines occupy the limb of preopercle and two the upper part of opercle. The posterior extremity of upper maxillary reaches a vertical line which would pass behind the pupil. The outline of anterior dorsal is convex and about the same height as the second. The caudal, posteriorly, is subrounded. The tips of posterior soft rays of anal are even with the tips of posterior soft rays of second dorsal, and both fins approximate the base of caudal. The ventrals are long and their tip reaches the vent. The pectorals are broad and extend a little farther back than the ventrals, the insertion of which is situated upon a line behind their base.

D XIII. 13. A III. 7. C 2. 1. 6. 5. 1. 3. V I. 5. P 18.

The scales are rather above the medium size; those on the head and opercular bones being comparatively more developed than in the preceding species. The lateral line is parallel to the outline of the back.

The ground color is greenish sulphur yellow; purplish black patches over the head, sides of body, and fins, in the midst of which patches appear crowded whitish spots. An area of ground color may be traced from the third and fourth dorsal spines obliquely downwards and backwards, towards the base of the caudal; in an oblique direction from the dorsal fin to the lateral line; then along the course of lateral line to the base of caudal fin. The throat is deep sulphur yellow; the inferior surface of the head and belly is spread all over with a more dull tint.

From Presidio, Cal.

HETEROLEPIDÆ s. CATAPHRACTI.

13. *CHIRUS GUTTATUS*, Grd. Proc. Acad. Nat. Sc. Philad. vii. 1854, p. 132.

From Presidio, Cal.

14. *CHIRUS CONSTELLATUS*, Grd. Proc. Acad. Nat. Sc. Philad. vii. 1854, p. 141.

From Presidio, Cal.

GASTEROSTEIDÆ s. CATAPHRACTI.

15. *GASTEROSTEUS PLEBEIUS*, G.—The general appearance of this species is subfusiform in its profile and rather short. The depth upon the middle region of the body is a little less than the fourth of the length, whilst the head is contained in it three times and a half. The eye is of medium size and circular, its diameter entering four times in the length of the side of head. Mouth of medium size, lower jaw the longest. Upper surface of head minutely granular under a magnifying glass. Two well developed spines on the back, and a much smaller one preceding the soft rays of the dorsal. Posterior margin of the caudal, slightly crescentic. Ventral spines very much developed, inserted slightly in advance of the second dorsal spine, and denticulated upon either edge. Base of the pectoral situated in advance of the first dorsal spine.

D I. I. 11. A I-9. C 3. 1. 5. 5. 1. 2. V I. 1. P 10.

The body is anteriorly plated from the head to the second dorsal spine; otherwise smooth and keelless on the sides of the peduncle of tail.

Ground color reddish yellow, blotched with blackish brown; blotches assuming sometimes the shape of vertical bands. Beneath silvery. Minute and crowded black dots are spread all over the body, head and fins.

From the salt marshes about Presidio, Cal.

16. *GASTEROSTEUS INOPINATUS*, G.—General form slender, elongated, tapering considerably from the origin of anal backwards. Peduncle of the tail slender and long. The greatest depth, measured above the ventrals, is contained five times in the entire length; the head, on the other hand, falls a little short of the fourth of the same length. The eye rather large, is subcircular; its horizontal diameter enters three times and a half in the length of side of head; once in advance of the anterior rim of the orbit. The mouth is shaped as in the preceding

species. The upper surface of head exhibits some minute granules when examined with a magnifying glass. There are two slender dorsal spines and another, small, precedes the soft rays of dorsal fin. Posterior margin of caudal subconcave. Ventral spines slender, inserted immediately in advance of the second dorsal spine and very minutely serrated above, inconspicuously beneath. Base of pectorals just in advance of anterior dorsal spine.

D I. I. I. 10. A I. 9. C 3. 1. 5. 5. 1. 3. V I. 1. P 10.

The body is anteriorly plated as in the preceding species, and smooth posteriorly.

Ground color above yellowish, densely dotted with blackish; abdomen silvery.

From a fresh water lagoon about one mile back of Presidio, Cal., where according to Lt. Trowbridge, no larger fish occur.

SCIÆNIDÆ.

17. *UMBERINA UNDULATA*, G.—Greatest length of specimen described, six inches, the head being comprised in it four times and a half. Body much compressed, particularly the upper part of flanks. Head and snout rounded; mouth rather small; posterior extremity of upper maxillary extending to a vertical line which would pass in advance of the orbit. Eye subelliptical, its horizontal diameter being contained five times in the length of side of head. First dorsal subtriangular; its anterior margin is situated a little behind the base of pectorals. The second dorsal, a little higher anteriorly than posteriorly, is twice and a half as long as the first. The caudal is posteriorly subtruncated. The anal is about one third deeper than its base is long, and as deep as the first dorsal is high. The posterior extremity of pectorals extends to a line which would intersect the first ray of second dorsal. The tip of ventrals extends beyond that of pectorals without reaching the vent.

D IX. 1. 25. A I. 9. C 3. 1. 7. 7. 1. 2. V I. 6. P 20.

The scales are of medium size; those on the cheek and opercular apparatus are quite conspicuous. The lateral line is slightly arched under the first dorsal fin, otherwise parallel to the dorsal outline of the body.

Upper regions silvery-ash; inferior regions dull yellowish. Sides beneath the lateral line exhibiting oblique and undulated series of small greyish spots in the midst of a somewhat lighter ground of the same hue.

From San Diego, Cal.

18. *GLYPHISODON RUBICUNDUS*, G.—The head has a very short appearance as well as the body itself. The largest specimen measures nine inches and a half in total length, of which the head forms a little less than the fourth. The anterior upper part of body is very convex and the profile of the head very declive with two depressions, one above, the other below the ocular region. The mouth is small and the lips very fleshy. The eye is situated high up, small and circular, and contained five times in the length of the side of head by its diameter. The greatest depth, measured above the ventrals, is a little less than twice the length of head. The dorsal fin begins a little behind the base of pectorals; its spinous portion is low and its upper margin almost straight; the soft part rises into a subtriangular shape. The peduncle of tail is well defined, free above and below; the dorsal, however, coming nearer to the base of caudal than the anal does. The caudal is very large, deeply emarginated, but the lobes are uniformly rounded and broad. The soft portion of anal has the same conico-triangular shape as the soft dorsal. The ventrals are elongated and inserted behind the base of pectorals. The latter are quite broad, rounded upon their external margin; their posterior extremity falling short of that of the ventrals.

D XII. 16. A II. 15. C 3. 1. 6. 7. 1. 2. V I. 5. P. 19.

The scales of the body are very large, and so are those of the opercle. On the preopercle and cheek they are smaller. The scales extend to the dorsals, caudal and anal fins to nearly their extremity; on the spinous dorsal they are very conspicuous, whilst they become very small and almost minute on the caudal, soft dorsal, and anal.

The color is uniform deep crimson red throughout. The ventrals are exter-

nally margined with black. The lips appear to have had a deeper hue, as also the two cephalic depressions above alluded to.

From Monterey, Cal.

SCOMBERESOCES.

19. *BELONE EXILIS*, G.—The head forms a little more than two sevenths of the entire length, which measures about twelve inches and a half. The body is very slender and exiguous. The head is flattened upon the occiput, and grooved between the eyes. The eye is well developed and its longitudinal diameter comprised about eleven times in the length of the side of head; seven times in advance of its anterior rim, and three times backwards of its posterior rim. The anterior portion of anal is more developed than the same part in dorsal, the posterior extremity of which is but seven tenths of an inch distant from the rudimentary rays of the caudal: the anal does not extend quite as far back. The anterior margin of the latter is situated considerably in advance of the dorsal, and its base is longer also. The insertion of ventrals is equidistant between the base of caudal fin and the centre of the pupil. The posterior margin of the caudal is emarginated.

D 16. A 13. C 4. 1. 7. 6. 1. 3. V 6. P 14.

The scales are quite small, few of which only are preserved on the specimen described.

Back deep greenish; sides and belly rufous with an argentine reflection upon the sides. Pectorals, ventrals, and anal greenish yellow; dorsal and caudal greenish grey.

From San Diego, Cal

BLENNIDÆ.

20. *BLENNIUS GENTILIS*, G.—The body is very much compressed and tapering, from head, where deepest, to the base of caudal. The head constitutes the fifth of total length; the snout is very abbreviated and rounded. The greatest depth is about equal to the length of head. The mouth is rather large; the posterior extremity of upper maxillary reaching a vertical line which would intersect the middle of the pupil. The eye is large and circular, and its diameter contained four times in the length of side of head. A flattened and slender membranous flap is inserted above the eye. Soft portion of dorsal higher than the spiny part; anal much lower than dorsal. Ventrals long and filiform. Caudal posteriorly rounded, tips of both dorsal and anal reaching its base. The lateral line terminates under the eleventh ray of the spiny dorsal.

D XII. 17. A 19. C 6. 1. 5. 4. 1. 5. V I. 2. P 12.

Ground color yellowish-brown. Dorsals, caudal, and pectorals maculated with dark purple. Blotches of the same hue may be seen all along the back. Sides of abdomen and head marked with small subquadrangular spots also of dark purple. Upper part of head, snout, ventrals, and anal deep purple. Tips of rays of anal yellowish.

From Monterey, Cal.

21. *GUNELLUS ORNATUS*, G.—Body very much compressed, preserving its depth from head to origin of anal, hence gradually diminishing towards the caudal. Head small, rounded anteriorly, and contained nine times and a half in the total length. Posterior extremity of upper maxillary extending to a vertical line which would pass slightly behind the anterior margin of the orbit. Eye circular and of medium size; its diameter being contained about four times in the length of side of head. Dorsal and anal fins very low and united to the caudal. Origin of dorsal immediately behind the base of pectorals. Caudal posteriorly rounded. Origin of anal equidistant between base of pectorals and extremity of caudal. Ventrals reduced to a small spine, inserted immediately in advance of the base of pectorals.

D 76. A 35. C 2. 1. 8. 8. 1. 1. V I. P 12.

The scales are very minute; the lateral is not discernible.

Ground color yellowish; back marked with thirteen roundish spots of blackish

brown, two of which situated in advance of the dorsal fin. Occasionally, vertical bands of a lighter hue may be observed on the sides, though in a very obsolete manner in the specimen before us. There is an oblique vitta upon the occiput extending from the eye towards the back, an interocular spot, and a suborbital vitta from the orbit to the inferior surface of head. Lips blackish. Pectorals and anal yellow. Caudal greyish yellow.

From Presidio, Cal.

Genus APODICHTHYS, Girard.

This genus is framed to include such species, as, having the general fascies of *Gunellus*, are characterized by the total absence of ventral fins.

The *Gunellus apos* of Kamtschaka is to come under this heading, under the appellation of *Apodichthys apos*.

22. *APODICHTHYS FLAVIDUS*, G.—The species referred to is between eleven and twelve inches long. Its head is anteriorly rounded and truncated, and is contained over nine times in the total length. The eye is rather small and sub-circular, contained about seven times in the length of side of head. The mouth is large, obliquely directed upwards, and the posterior extremity of the upper maxillary extends to a vertical line which would pass behind the orbit. The origin of dorsal is situated opposite the base of pectorals. A stylet-shaped bone in advance of the anterior margin of anal, which is much nearer the extremity of caudal than to the base of pectorals. The pectorals are short and rounded upon their margin. The rays of the fins, as nearly as we can ascertain, are as follows:

D 86-90. A 40. C 4. 1. 11. 10. 1. 3. V 0. P 17.

The scales are exceedingly small, and the lateral line not visible.

Uniform yellowish, with a slight greyish hue. A narrow oblique black vitta from eye to occiput, and a similar one from the inferior rim of the orbit to the angle of the mouth.

From Presidio, Cal.

23. *APODICHTHYS VIOLACEUS*, G.—The specimen before us is much smaller than that from which the above species was described, having but three inches and three-fourths of total length, in which the head is contained seven times. The eye is subcircular, of medium size, and its horizontal diameter contained five times in the length of the side of head. The mouth is likewise obliquely directed upwards; but the posterior extremity of the upper maxillary extends only to a vertical line which would intersect the pupil. The origin of the dorsal is situated immediately behind the base of the pectorals: its anterior third is lower than the rest. The origin of the anal, which is much lower than the two posterior thirds of the dorsal, is much nearer the base of the pectorals than to the extremity of the caudal. The latter is very small, posteriorly rounded, and contiguous to both the dorsal and anal. The pectorals are short and rounded.

D 65. A 42. C 2. 1. 7. 6. 1. 2. V 0. P 10.

The scales are small, but proportionally larger than in the preceding species; and the lateral line, which is very conspicuous, may be traced from the upper margin of the opercle to near the caudal; from the opercle it ascends obliquely for a certain distance, and then follows the outline of the back, keeping much nearer the base of dorsal fin than the middle of the flanks.

The anterior portion of body and head is of a uniform deep violet; the posterior portion exhibits a somewhat brownish ground, over which is spread a violaceous tint; the fins are all deep violet. A deep purple crescent-shaped vitta extends from either eye to the occiput. Two oblique vittæ on the sides of head, starting, one from the anterior, the other from the posterior half of orbit to the branchiostegal apparatus. The interocular space is likewise marked with a transverse narrow band slightly convex backwards.

From San Luis Obispo, Cal.

24. *ANARRICHAS FELIS*, G.—Two large specimens of this fish were received in such a precarious state of preservation that there was no possibility of keeping

the whole, and accordingly the bony frame alone lies before us. The zoological characters of the species, as far as we could ascertain, differ from those of each of the species previously described; but having mislaid the notes taken at the time of unpacking the collection, we do not feel justified in giving a diagnosis of them from recollection, and merely record the species under the above specific name.

From Monterey, Cal.

LOPHIDÆ.

25. *PORICHTHYS NOTATUS*, Grd. Proc. Acad. Nat. Sc. Philad. vii. 1854, p. 141.
From Presidio and Monterey, Cal.

LABRIDÆ.

26. *JULIS MODESTUS*, G.—Body slender, elongated, and much compressed, tapering posteriorly from the origin of anal. The greatest depth, measured upon the middle of the abdomen, enters five or six times in the total length. The head is subconical, and constitutes about the fifth of the entire length. The eye is large, subcircular, and its horizontal diameter is contained four times and a half in the length of side of head. The dorsal commences above the base of the pectorals, being quite low for about half its length, and terminating at about three quarters of an inch from the base of the caudal. The origin of the anal is opposite the eleventh ray of the dorsal, and extends a little further back; the depth of that fin is equal to the height of the portion of the dorsal opposite to it. The caudal is posteriorly subtruncated. The insertion of ventrals is opposite the posterior extremity of base of pectorals, and their tips do not extend as far back as those of the latter fins.

D IX. 13. A III. 12. C 4. 1. 6. 5. 1. 3. V I. 5. P 12.

The scales are very large; the fall of the lateral line takes place in advance of the posterior extremity of the base of dorsal fin.

Rufous brown above, yellowish upon the sides, and dull whitish yellow beneath. Anterior seven dorsal spines with a black spot at their base; a blackish blotch at the base of the caudal.

From Monterey and San Diego, Cal.

ATHERINIDÆ.

27. *ATHERINOPEIS CALIFORNIENSIS*, Grd. Proc. Acad. Nat. Sc. Philad. vii. 1854, p. 131.

From Presidio, Cal.

EMBIOTOCIDÆ.

28. *EMBIOTOCA JACKSONI*, Agass. Amer. Jour. of Sc. Second series, xvi. 1853, p. 387.

From Presidio, Cal.

29. *EMBIOTOCA LINEATA*, G. Proc. Acad. Nat. Sc. Philad. vii. 1854, p. 134.

A large specimen of this species, collected at San Diego, Cal., contained five young ones, the total length of the largest being nearly three inches, and its depth equal to the third of its length. Their bodies are light reddish orange, with the peculiar longitudinal light stripes very conspicuous. The two anterior thirds of dorsals, the anterior third of anal, and the base of ventrals exhibiting a deeper reddish orange; the posterior portion of dorsal and of anal fins are rather yellowish. An elongated jet black spot exists near the base of the anterior portion of the soft dorsal; the tip of ventrals is black; the margin of the anterior dorsal fin also black.

The caudal is long and truncated; the extremities of both the dorsal and anal fins extend beyond the base of caudal as appears to be the case in the young of *Rhacochilus toxotes*.

From Presidio and San Diego, Cal.

30. *EMBIOTOCA CASSIDYI*, G.—There is another species of *Embiotoca*, the young of which exhibit the same structure of the fins as observed in those of *E. lineata*

and *Rhacochilus toxotes*. We have before us five immature specimens, the largest of which measures but two inches and a half, and is consequently smaller than the largest of *E. lineata*. They were collected by A. Cassidy, and sent with other specimens, without mention being made whether caught freely swimming in the water, or taken by him from the parent fish. At any rate they are easily distinguished from those of *E. lineata* in possessing numerous transverse greyish bands more or less regular from head to tail and from dorsal to ventral line. The anterior portion of anal, the anterior edge of soft dorsal, the tip of spines of first dorsal, and the ventrals are blackish: the remaining parts of these fins, as well as the caudal and pectorals, are yellowish. The caudal is slightly emarginated posteriorly.

Adult specimens of this species have not yet fallen under our examination. We have not hesitated in establishing it as distinct from those already described after the careful study of the young in that family.

From San Diego, Cal.

31. *HOLCONOTUS RHODOTERUS*, Agass. Amer Jour. of Sc. Second series, xvii. 1854, p. 368.

Sixteen young were taken from the parent body; they are from eight-tenths of an inch to an inch long. A small vitelline sac is still to be observed at the abdominal region. The general form is slender and elongated. The head is deeper than the body and rounded; the snout much less prominent than in the adult; its general outline resembling more that of an adult *Amphistichus*. The vertical fins are much more developed than in the parent; the caudal is rounded off, the central rays being the longest. The soft dorsal and anal are likewise higher and extend posteriorly to the base of the caudal if not slightly beyond it, the dorsal at least.

Coloration uniform light yellowish; fins whitish of an extreme transparency owing undoubtedly to their having but shortly escaped from the egg.

Specimens were obtained at Presidio and San Diego, Cal.

32. *HOLCONOTUS TROWBRIDGII*, G.—This species is about the size of *H. rhodoterus* of which it has the general appearance. The body, however, is proportionally less elongated and consequently more deep. The greatest depth, measured between the origin of the first dorsal and the base of the ventrals, is contained three times in the total length, whilst the head enters in it four times and three fourths. The anterior portion of the body is superiorly very convex, and the upper surface of head sloping rapidly towards a rounded snout terminated by a very small mouth; considerably smaller than in *H. rhodoterus*, whilst the teeth are much shorter than in the latter species. The eye is large and circular, and contained but three times in the length of the side of head; the distance between the anterior rim of the orbit and the end of the snout is less than one diameter of the eye. A line drawn vertically down from the origin of the first dorsal would pass immediately behind the base of the pectorals. The base of the anal is comprised six times and a half in the total length of the fish, whilst in *H. rhodoterus* the base of the same fin enters in the length of said species but five times. The base of the ventrals is nearly equidistant between the symphysis of the lower jaw and the posterior extremity of the base of anal; in *H. rhodoterus* it is nearer to the snout.

D IX. 13. A III. 14. C 5. 1. 6. 6. 1. 4. V I. 5. P 1-16.

The size of the scales is nearly the same in both *H. trowbridgii* and *H. rhodoterus*.

The upper region, from the end of the snout to the base of caudal is reddish brown, with irregular interspersed clouded purplish spots. The side of head and abdomen are silvery. The fins are yellowish; a cloudlike purplish spot at the anterior portion of anal. The posterior half of ventral is of a deep purple.

Obs. The label accompanying this species was unfortunately lost, consequently its location we are not prepared to give.

33. *HOLCONOTUS MEGALOPS*, G.—This species, six inches and a half in total length, is the largest of its species, as far as observations go. The body is very much compressed and very deep upon its middle region, tapering rapidly from

the origin of anal backwards. The greatest depth measured under the anterior dorsal, is contained a little more than thrice and a half in the total length. The head forms a little less than the fourth of the whole length. The cephalic region is concave. Mouth rather above the medium size, its cleft being obliquely directed upwards; the teeth are very exiguous; the posterior extremity of upper maxillary does not extend beyond the vertical line of the anterior rim of orbit, owing to the oblique position of mouth. The eye is very large and circular; its diameter being contained less than three times in the length of side of the head. The anal is very long and low posteriorly. The caudal is forked. The origin of ventrals is under the second spine of the anterior dorsal.

D IX. 27. A III. 32. C 4. 1. 6. 6. 1. 3. V I. 5. P 1-26.

The scales are of medium size, and on the middle of flanks they are higher than long, and subrounded.

Dorsal region and head above, ash colored or greyish brown; dorsal and caudal greyish. Sides of abdomen and belly dull yellow or white, with a silvery reflection. Pectorals yellowish. Base of ventrals yellowish; tip blackish or deep purple. Anal yellowish at base with tips of rays greyish, and a diffused spot upon its anterior third.

From Presidio, Cal.

Genus PHANERODON, Girard.

Mouth rather small; jaws very protractile; teeth large and subconical. Lips not very fleshy; lower one attached to the symphysis of the jaw. Anterior part of dorsal fin gradually rising from the first to the last spine, which, however, is a little shorter than the first articulated ray. Anal very low but quite long, furnished with bifurcated rays.

This genus is allied to *Embiotoca* by the presence of one row of teeth only upon both the upper and lower jaws, and by the lower lip in not being free all around. The structure of the dorsal reminds us of *Amphistichus*, whilst the shape of the anal is strongly suggestive of *Holconotus*.

31. PHANERODON FURCATUS, G.—Body very flat, seven inches in total length, tapering more or less rapidly backwards from the origin of both the soft dorsal and anal. The greatest depth of body, measured above the insertion of ventrals, is contained a little less than three times in the total length, in which the head enters about four times and a half. The cleft of the mouth does not extend to the anterior rim of the orbit. The eye is large and circular, and its diameter comprised three times and a half in the length of side of the head. The insertion of ventrals is opposite the fourth dorsal spine. The base of anal is nearly equal to that of soft dorsal and lower than the latter, its spiny rays are very small. The caudal is slender and deeply forked.

D X. 23. A III. 33. C 4. 1. 6. 6. 1. 3. V I. 5. P 1-19.

The scales are large and provided anteriorly with numerous grooves.

Color yellowish brown above, lighter on the sides; whitish under the throat. Fins yellowish. Margin of dorsal and caudal greyish. A diffused marginal spot upon the anterior portion of anal.

From Presidio, Cal.

35. AMPHISTICHUS ARGENTEUS, Agass. Amer. Jour. of Sc. Second series, xvii. 1854, p. 367.

From Presidio, Cal.

CYPRINIDÆ.

36. POGONICHTHYS ARGYREIOSUS, G.—This species is allied to *P. inæquilobus*; it is, however, distinct from the latter by the structure of the caudal which is equilobed like that of *P. symmetricus*. The head is contained five times in the total length, which, in the specimen before us, is about three inches and three quarters. The eye is large, subelliptical, and its horizontal diameter contained a little over three times in the length of the side of head. The body is compressed, regularly fusiform in its outline. The insertion of ventrals is situated some-

what behind the anterior margin of the dorsal. The pectorals and ventrals are rather small.

D I. 9. A II. 8. C 6. 1. 9. 8. 1. 5. V I. 9. P 16.

The scales are well developed; the lateral line is conspicuous and slightly bent downwards upon the abdomen.

The upper regions are rufous brown; the sides and belly shining silvery. Minute blackish dots are scattered all over, more densely on the dorsal region. A double series of these spots may be traced along the course of the lateral line. Dorsal and caudal fins greyish yellow; pectorals, ventrals and anal light yellow.

From Presidio, Cal.

37. *FUNDULUS PARVIFINNIS*, G.—Greatest length of specimen observed, three inches and one third; head contained in it a little more than four times. The body is compressed, the back slightly arched anteriorly to the dorsal fin. Greatest depth a little less than the fifth of the length. Eyes subelliptical, their horizontal diameter contained four times in the length of side of head: once in advance of the anterior rim of the orbit. Anterior margin of dorsal equidistant between tip of snout and posterior margin of caudal, which is subconvex. The origin of anal is opposite the middle of base of dorsal. All the fins are of small dimensions.

D II. 11. A 11. C 5. 1. 9. 8. 1. 4. V 5. P 16.

Scales rather large; twelve longitudinal rows may be counted on the line of greatest depth of body.

Ground color greenish yellow; upper part of head, back and sides blackish, resulting from the accumulation of minute dots upon the scales, less crowded on the flanks. Belly and inferior surface of head, unicolor, yellowish. A black stripe exists upon the middle of the flanks, from the anterior third of body to the base of caudal fin.

From San Diego, Cal.

GADIDÆ.

38. *GADUS PROXIMUS*, Grd. Proc. Acad. Nat. Sc. Philad. vii. 1854, p. 141.

From Presidio, Cal.

CLUPEIDÆ.

39. *CLUPEA MIRABILIS*, Grd. Proc. Acad. Nat. Sc. Philad. vii. 1854, p. 138. An immature specimen, a few inches in length, the label of which was mis-carried.

40. *MELETTA CÆRULEA*, Grd. Proc. Acad. Nat. Sc. Philad. vii. 1854, p. 138.

From Presidio, Cal.

41. *ENGRAULIS MORDAX*, Grd. Proc. Acad. Nat. Sc. Philad. vii. 1854, p. 138.

From San Diego, Cal.

42. *ENGRAULIS DELICATISSIMUS*, G.—The fascies of this species is widely different from that of either *E. eucrasicholus* or *E. mordax*: the body being more compressed, less tapering, and the head much shorter and less acute. The entire length of the largest specimen before us is about three inches, the head being comprised in it nearly five times and a half. The greatest depth of body is a little less than the length of head, the upper surface of which is convex and but slightly declive. The eye is large and circular, and its diameter contained twice and three fourths of a time in the length of the side of head. The origin of dorsal is nearer the end of snout than to the extremity of caudal fin. The latter is forked. The base of anal is almost twice as long as that of dorsal, and its anterior margin situated opposite the middle region of the latter. The ventrals are small and short; the pectorals long and slender.

D 14. A 24. C 7. 1. 8. 8. 1. 6. V 5. P 12.

The few scales left scattered all over the body are very large.

Ground color yellowish; a silvery band, about a tenth of an inch, or slightly more, in width, occupies the middle of the flanks from head to base of caudal.

From San Diego, Cal.

SALMONIDÆ.

43. *ARGENTINA PRETIOSA*, G.—The body is gracefully elongated, compressed, fusiform in its outline, six inches and one-third in total length, in which the head enters for a little less than the fifth. The eye is large and circular, and its horizontal diameter is contained a little over four times in the length of side of head. The posterior extremity of upper maxillary extends to a vertical line which would pass in advance of the pupil. The origin of dorsal fin is a little nearer the tip of lower jaw than to the base of caudal fin. The adipose is situated opposite the posterior fourth of anal. The caudal is forked. The origin of ventrals is placed a little behind the vertical line of anterior margin of dorsal; the fins are well developed. The pectorals are a little more slender and longer than the ventrals.

D 11. A 13. C 10. 1. 9. S. 1. 8. V 8. P 1-16.

Scales of medium size. Upper region of head and back yellowish; outlines of scales marked by minute blackish dots. Sides of head and middle of flanks silvery, shining; lower part of flanks and belly dull yellowish.

From Presidio, Cal.

PLEURONECTIDÆ.

44. *PLEURONECTES MACULOSUS*, G.—Body elongated, subelliptical; dorsal and ventral outline forming most regular curves into which the head immerses anteriorly with but a very slight depression above the eyes. The peduncle of the tail is slightly contracted immediately behind the posterior margin of both the dorsal and anal fins, which terminate evenly. From this point to the base of caudal fin, the caudal region assume a dove tail shape. The caudal fin itself is undulated posteriorly, the external and central rays being slightly longer than the intermediate ones. The total length of the fish is about seven inches and a half, in which length the head enters four times and one third. The lower jaw is the longest. The posterior extremity of upper maxillary reaches a vertical line which would pass behind the posterior rim of the orbit. The eyes, placed on the right side, are of medium size, elliptical, and their horizontal diameter is contained about five times and a half in the length of the side of head. The origin of dorsal is opposite the anterior rim of the orbit; that of the anal is in advance of the base of pectorals, as also the insertion of the ventrals, which are short and broad.

D 68. A 52. C 3. 1. 7. 6. 1. 2. V 6. P 1-10.

Scales quite small, extending over the head and opercular apparatus. Anterior arch of lateral line representing the section of a cupola in miniature.

Ground color reddish brown, with numerous scattered spots of a much deeper hue.

From San Diego, Cal.

45. *PLATICTHYS RUGOSUS*, Grd. Proc. Acad. Nat. Sc. Philad. vii. 1854, p 139.

Out of five immature specimens, two have the eyes situated on the right side, otherwise similar in every respect to those in which these organs are placed upon the left.

From Presidio, Cal.

46. *PAROPHRYS VETULUS*, Grd. Proc. Acad. Nat. Sc. Philad. vii. 1854, p. 140.

From Presidio, Cal.

47. *PSETTICHTHYS SORDIDUS*, Grd. Proc. Acad. Nat. Sc. Philad. vii. 1854, p. 142.

Specimens, smaller than those formerly described, exhibit upon their body and fins irregular small black spots, in addition to the color elsewhere alluded to.

From Presidio, Cal.

DISCOBOLI.

48. *LEPADOGASTER RETICULATUS*, G.—Head broad, semielliptical when viewed from above; upper surface declive towards the sides, as well as towards anterior extremity. It forms nearly the third of the entire length, which, in the specimen described, is about three inches and a half. Its inferior surface is flattened.

The mouth is broad in front, but not deeply cleft; its angle extending to the vertical of the anterior rim of the eye. The latter is small, subelliptical in shape, and situated near the upper surface of head; its horizontal diameter is contained about six times in the length of the side of head. The body is anteriorly broader than deep; it diminishes gradually in both height and depth towards the origin of the tail, which is quite compressed and very much reduced, and terminated by a slender caudal fin, rounded upon its posterior margin. The origin of the dorsal fin is situated a little in advance of the anus, but does not unite with the caudal, between which and the posterior extremity of its base, a space of three tenths of an inch is left; even the tips of its posterior rays do not reach the base of the caudal. The anal begins a little further back than the dorsal, is as deep as the latter is high, and extends likewise a little further behind; the tips of its posterior rays nearly reaching the base of the caudal. The pectorals are broad but short, the ventrals are imbedded in the membranous disk peculiar to that group of fishes.

D 14. A 13. C 3. 1. 5. 4. 1. 3. V 8. P 20 + 3.

The three inferior rays of pectorals are the stoutest, and situated under the throat, connected with the disk, which is very large. The surface of the anterior portion of the said disk exhibits large pavement-like cells.

The ground color is greenish brown, with a mesh work of black lines all over the head and body. The inferior surface of head and belly are dull yellow.

From San Luis Obispo, Cal.

LOPHOBRANCHII.

49. *SYNGNATHUS BREVIROSTRIS*, G.—Greatest length six inches and a half; head forming about the eighth of it. Snout abbreviated, distance from anterior rim of eye to tip of snout, equal to remaining portion of head. Dorsal fin quite low, and thirteen twentieths of an inch long. Posterior margin of same fin nearly equidistant between tip of snout and extremity of caudal. Pectorals small. No anal fin. Abdominal pouch, for the reception of the eggs after their laying, very long. Caudal of medium size and rounded.

D 30. C 1. 4. 4. 1. P 12.

Ground color greenish, tessellated with brown.

From San Diego, Cal.

50. *SYNGNATHUS LEPTORHYNCHUS*, G.—Entire length six inches; head contained in it six times and a half. Snout elongated and slender. Dorsal fin very low, and six tenths of an inch long; its posterior margin nearer the extremity of caudal fin than to the tip of the snout. Pectorals small. A rudimentary anal. Caudal slender and rounded posteriorly.

D 32. A 1. C 1. 4. 4. 1. P 10.

Dorsal region greenish yellow; sides bluish; abdomen whitish. Tail beneath dull yellow.

San Diego, Cal.

The Committees to which were referred papers by Dr. Leidy, read Aug. 8th, by Prof. Baird and Mr. Chas. Girard, read Aug. 22d, and by Dr. Le Conte, read same date, severally reported in favor of publication in the Proceedings.

Synopsis of extinct Mammalia, the remains of which have been discovered in the Eocene Formations of Nebraska.

By JOSEPH LEIDY, M. D.

CARNIVORA.

1. *MACHAIRODUS PRIMEVUS*: Proc. Acad. Nat. Sc. 1851, v. 329; Owen's Report of a Geolog. Survey of Wisconsin, etc. 1852, 564; Ancient Fauna of Nebraska, 1853, 95.
2. *DINICTIS FELINA*: Proc. Acad. 1854, vii.