

The Secretary read a communication from the President, giving data concerning the solar eclipse of March 25th, 1876.

W. N. Lockington presented a second paper "On the Crustacea of California," containing a description of seventeen new species.

### Description of Seventeen New Species of Crustacea.

BY W. N. LOCKINGTON.

*Platyes*, nov. gen.

Rostrum simple, post and pre-orbital spines wanting, hinder feet laminate.

*Platyes edentata*. nov. sp.

Rostrum laminate, triangular, simple; carapace tuberculate, the tubercles not prominent, and each covered with smaller tubercles.

Form of carapace broad, pyriform; antero-lateral margin not well defined, indistinctly lobed; postero-lateral and posterior margins forming a continuous curve, without spines or projections. Eyes not projecting, rostrum and antero-lateral margin forming a continuous line.

Propodus of first pair smooth, oblong; fixed finger and dactylos closing only at the tips, which are somewhat spoon-shaped, manus with an alveolate upper edge. Hinder four pairs broadly laminate.

Length of largest specimen, a female, 0.44, greatest width, 0.38.

Three specimens of this small and curious species from Mazatlan, presented by Hy. Edwards. Not having seen anything similar, or met with any generic description which seems to apply in every respect, I propose to make it the type of a new genus.

*Atergatis cristatissimo*.

Carapace transverse, elliptic, the front and antero-lateral border forming the greater portion of an ellipse, the front not projecting beyond the line of the ellipse. Antero-lateral margin cristate, the crest divided by short sulci into four lobes, of which the 2d is short, the 1st and 3d long, and the 4th turns somewhat abruptly inwards, the crest ending half way along the postero-lateral border, which is short and only slightly concave. Front slightly waved. Areolation distinct upon the central and antero-lateral regions, but becoming obsolete posteriorly.

Chelipeds about equal in size, manus with three distinct low beaded ridges on the outer side, and a sharp crista above, the latter continued along the carpus. Fixed finger short, with a long sharp tooth on its inner face. Dactylos cristate above, inserted some distance below the upper margin of the manus. The fingers are pointed at the ends, and knife-like on their inner edges. Hinder limbs cristate, compressed, claws long and sharp. Color

(dried specimens) a bright vermilion red throughout, except the fingers, which are brown.

Length, 0.50; width, 0.70.

The specimens are from La Paz, Lower California, and were collected and presented by Dr. D. E. Hungerford.

*Xantho multidentatus.*

Areolets of anterior part of carapax distinct. 1 M confluent with 2 M, which is partially cleft by a furrow; all the antero-lateral areolets (1, 2, 3, 4, 5, 6 L) distinct; also, the postero-lateral (1, 2 and 3 R) and posterior (1, 2 P) sufficiently distinct to be made out.

The projecting lateral teeth are the normal ones, D being simple, E and T double, N and S triple. The upper margin of the eye is enclosed in a semi-circle of teeth, the outer of which is the first of the antero-lateral series. Two teeth intervene between the outer tooth and the front, which is four-toothed, and deeply emarginate in the centre.

Upper parts of hand and carpus covered with sub-seriate tuberculations. Posterior feet short, compressed, cristate.

The single dried specimen, a male, shows traces of a dark purple tint on the carapax and anterior feet.

It was collected at Mazatlan, by Mr. Hy. Edwards.

*Acteodes Mexicanus.*

Carapax smooth, unarmed, transverse, wide, antero-lateral border forming, with the front, the greater part of an ellipse. Teeth of antero-lateral border reduced to slight curves. Front somewhat waved, and slightly projecting beyond the general curve of the ellipse.

Areolets indistinct throughout, yet the median can be distinguished from the antero-lateral. The sulcus between the gastric and cardiac is well-defined, and most of the sub-regions can be made out. Postero-lateral border only slightly concave, forming a very obtuse angle with the posterior border.

Right cheliped the larger, entirely unarmed, smooth; fixed finger with two large tubercles on the inner face, dactylos with two large and two small tubercles; the fingers not spoon-shaped, gaping, and touching at the points only. Left cheliped smaller, and differing from the right in the fingers, which fit pretty closely throughout their length, tips spoon-shaped.

Hinder limbs smooth, weak, slightly heavy in the last two joints.

A single male specimen from Mazatlan, collected and presented by Mr. Hy. Edwards.

Length, 0.56. Width, 0.80.

The general color of the dried specimen is a dull reddish brown, inclining to red on the under side of the chelipeds. Fingers dark brown.

As the fingers of the smaller hand are distinctly spoon-shaped, I have called this an *Acteodes*, but it is evidently a connecting link between that genus and *Actea*.

*Amphitrite Edwardsi.*

Inter-antennal front four-toothed, the teeth rounded, and the central emargination by far the deepest. A deep sinus between the front and the pre-orbital tooth, which is two-lobed; thus there are altogether eight teeth between the eyes. Antero-lateral margin nine-toothed, the teeth alternately large and small, commencing with a post-orbital. Meros of left cheliped (the right is wanting in our specimen) with four teeth on the inner margin, the tooth next carpus much smaller than the others. Carpus with a long spine on the inside, and four spines on the outside. Mannus with three spines above, and three rows of small tubercles on the outside. Fingers sulcate, tuberculate on inner border. Two transverse ridges across the carapax, one in the center of the length, divided into three portions by the sulci separating the central region from the antero-lateral ones; the other shorter, crossing the central region in its widest portion. These ridges are beaded.

Length, 0.87. Width, 1.25.

The specimen is a male, and was brought from Mazatlan by Mr. Hy. Edwards. This, and *Lupa bellicosa* Sloat, are the only Portunidae yet known on the Pacific Coast north of Central America.

*Betaeus equimanus.* n. s.

Base of inner antennæ three-fourths the length of base of outer antennæ; flagella about half as long as those of the external antennæ. Outer appendage of inner antennæ about two-thirds as long as the inner. External antennæ considerably more than half as long as in the body. Outer maxillipeds as long as base of inner antennæ. Hands of first pair of legs about equal in size, oblong ovate; dactylos with a sharp recurved point, and a straight cutting edge margined with setæ; the cutting edge is opposed to a similar straight cutting edge, also margined with setæ, on the palmar surface, which also ends in a sharp incurved point. The fingers gape somewhat at the proximal end, where they are tuberculate. Second pair of feet slenderer than the third and fourth; but not much longer.

Front curvately emarginate between the eyes, which are clearly visible through the projecting part of the carapace. Carapace recurved. Body considerably depressed. Epimera (Coxæ) of second abdominal segment large, overlapping those of the adjoining segments.

Length of larger specimen, 1.05.

Two specimens, both females with ova, which in one case are large and evidently mature.

This species lives under the mantle of *Haliotis rufescens*, and the specimens were procured at Catalina Island by S. A. L. Brannan. Color in alcohol, a light flesh color, the liquor itself taking the same tint; when fresh, a dark purple.

*Alpheus clamator.*

Front tri-spinose, the largest point forming the rostrum, and slenderer than the others, from which it is separated by a deep sulcus; the lateral spines quickly widening out into a shield curved closely over the eye. Carapace

smooth, body not greatly compressed. Epimera of second segment overlapping those of preceding and succeeding segments.

Flagella of inner antennæ about half as long as body, those of outer antennæ more than three-quarters as long as body.

Hands of first pair of legs dissimilar both in size and form. Fingers of smaller pair straight, parallel and slender, closely fitting; the manus with a spine above, and a constriction posterior to the insertion of the dactylos. Manus of larger or right hand large, with a large spine on the outer side, continued as a carina for a considerable distance backwards, and with a deep sulcus above the carina. Dactylos short, curved obliquely downwards, thick and swollen at the extremity. A deep transverse sulcus between the dactylos and manus, ending in an oblique longitudinal sulcus having its origin on the upper edge of the manus; from the latter sulcus a second transverse one is continued down the inner side of the manus.

Both hands setose, the hairs long and numerous.

Carpus of second pair five-jointed, third and fourth joints shortest, the manus and dactylos slender.

Length, 1.05.

Color, in alcohol, a light flesh tint, much deeper on the large hand. A darker spot on the upper surface of the carapax, also on the anterior edge of the two first abdominal segments.

This species lives in pools on rocky reefs at low-tide level, and is capable of producing, by clapping together the fingers of the larger hand, a snapping noise like that which can be made with the finger-nail.

Collected at Santa Barbara Island by S. A. L. Brannan.

#### *Idotea pulchra.*

Body stiffly articulated. Cephalic shield emarginate in centre of front forming two lobes. \*

First thoracic segment concave in front, advancing around the head; first four thoracic segments sub-equal in length; 3d and 4th about equal in width; three hinder thoracic segments much shorter. Abdomen one-jointed, one short partial suture on each margin near thorax, tapering to posterior extremity, which is narrow, but concave. Margins of all the thoracic segments deflected outwards horizontally.

Flagellum of outer antennæ not quite as long as base, 16-jointed, base somewhat setose. Inner antennæ very short.

Length 1.15 in, breadth 0.52 in. •

When recent, the coloration of this species is very beautiful, consisting of red cloudings on a lighter ground.

The two specimens, male and female, in this collection were brought from the W. coast of Alaska, N of Bhering's Strait, by W. J. Fisher, Naturalist of the U. S. S. *Tuscarora*, Deep-Sea Sounding Expedition.

#### *Idotea*. nov. gen.

Last pair of abdominal appendages operculiform, and concealing all the preceding pairs, as in *Idotea*, but with four posterior pairs of legs, with

small claws, and the three anterior pairs sub-dactyle, as in *Pterelas* in the family *Egidae*.

*Idotea longicauda*.

Thorax increasing in width to the central segment, length of segments nearly equal, the posterior slightly shorter. Cephalic shield deeply emarginated at sides, each border forming two blunt teeth. Epimera large, pointed, extending behind their respective segments, the backward curvature increasing with each successive segment. Abdomen at origin as wide as thorax, first three segments pointed on each side, the point directed backwards; fourth segment narrower and shorter than the others, and enclosed laterally by the third; terminal segment very long, more than one-third the total length of animal, and gradually diminishing to a truncate point.

Eyes remote, inconspicuous. Flagellum of external antennæ nine-jointed. First joint very long, flagellum about equal in length to base, which is hirsute on interior margin. Internal antennæ reaching to near middle of ultimate basal joint of outer antennæ. First three pairs of legs sub-didactyle, with a short hatchet-shaped process on the joint preceding the manus, which is broad and margined with short hairs on palmar border. Four posterior pairs of legs with short stiff hairs on the upper margin of 3d, 4th, and 5th joints.

Two specimens showing a slight difference in the form of the caudal segment, which in the smaller specimen has an obtuse angle on each lateral margin, at about one-third of its length from the extremity.

Length of large specimen, 2.80 in.; greatest breadth across epimera, 1.00 in.

Length of smaller specimen, 1.80 in.; greatest breadth, 0.66.

The larger one was found by Capt. T. W. Williams, in lat. 67.30 N., long. 163.02 W., near the coast of Alaska. The smaller specimen was found by J. W. Fisher.

The larger is a skeleton only, the smaller, a male, in alcohol.

This species is totally distinct from any yet found on the Pacific Coast, but, since it occurs so far to the north, it is possible that it may be identical with some previously described species from the Arctic waters of the northeast of America.

*Spheroma olivacea*.

Cephalic shield curved anteriorly, distinct from the first thoracic segment, which is but slightly longer than either of the succeeding four segments; last two thoracic segments very short. Abdomen with two distinct joints, the first marked with two partial sutures; the hinder segment curved posteriorly; caudal process not reaching beyond the caudal segment.

Length,  $\frac{1}{2}$  of an inch.

This species is exceedingly common in the lagoons of the salt-marshes at Fort Point, San Francisco, where it resides among weeds, or adhering to the underside of sticks, etc.

The chief distinctions between this species and *S. Oregonensis* as figured by Dana, are the more projecting cephalic segment, and the small size of the two hinder thoracic segments.

*Aega Harfordii.*

Sides of thorax almost straight, segments sub-equal. Cephalic shield rounded in front, eyes conspicuous, situated at the postero-lateral angle of shield. Abdominal segments five or four, last segment pointed. Exterior antennæ more than half the length of body, flagellum more than twice the length of base, many-jointed.

Epimera of all the thoracic segments except the three first, pointed behind, and extending further back than the segment to which they are attached. Claws of first three pairs of legs comparatively feeble.

Length, 0.63 in.

Collected at Santa Rosa Island by W. G. W. Harford, under stones at mid-tide in muddy places. Numerous.

*Aega alaskensis.*

Body broadest at 5th thoracic segment, sides regularly curved, 5th and 6th thoracic segments greatly larger than first four thoracic segments, 7th segment longer than 4th.

Head pointed in fronted, the sides continuing the curve of the thoracic segments. Epimera of 4th segment pointed posteriorly, as are also those of 5th, 6th and 7th thoracic segments.

First four segments of abdomen concave posteriorly, and ending laterally in a point directed backwards; 5th segment with a straight posterior margin, pointed at sides; terminal segment a half oval.

Eyes large, conspicuous, not projecting. Antennæ short, the outer reaching to the suture between 1st and 2d thoracic segments; flagellum about equal in length to base. Last four pairs of legs somewhat spinose.

Color (in alcohol) 4th, 5th, 6th and 7th thoracic segments dark brown, a little dark brown on posterior part of 4th and 5th abdominal segments, rest of body yellowish; egg-case dark brown.

Three specimens, all females, taken from codfish caught in Ounimak Pass, Alaska, lat. 54° 40', long. 165°, by Capt. T. W. Williams.

Length of largest specimen, 1.30 inch; greatest breadth, 0.48 inch.

*Lygia septentrionalis.*

Two posterior thoracic segments much shorter than the anterior ones, and greatly curved. Caudal stylets short, about half as long as abdomen.

Outer antennæ about half as long as body, flagellum with twelve somewhat oblong joints, somewhat shorter than base. Cephalic shield with a waved, somewhat two-lobed posterior margin.

Length, without caudal stylets, 0.80 in. Width, 0.45.

The sides, from the second to the sixth thoracic segment, are almost parallel. Two specimens from Tanaga, one of the Aleutian Islands, presented by Mr. W. J. Fisher, naturalist of the U. S. Exploring Ship *Tuscarora*.

The general facies of this species is very like *L. occidentalis*, but it is easily distinguished by its short posterior stylets.

*Caprella tuberculata.*

Inner antennæ long with a fringe of long setæ on their underside; second, third and fourth joints about equal in length. Outer antennæ without setæ, almost as long again as inner ones: flagellum somewhat larger than the two last basal joints; second basal joint larger than the preceding or succeeding ones; the entire base not quite as long as inner antennæ.

Propodus of 1st and 2d pairs oblong ovate, without teeth or spines, dactylos long and slender, fitting close to palmar surface. Manus of second pair spinose at extremity. Branchiæ short and thick.

2d, 3d, 4th and 5th segments long, sub-equal, the 1st segment somewhat shorter, the 6th and 7th very short. The whole of the dorsal surface sparsely covered with small sub-spinose tubercles.

Length of a large female, 0.90: ditto, from extremity of larger antennæ to top of posterior dactyli, 1.75; of outer antennæ, 0.56; of inner, 0.30 in.

Several specimens, chiefly females, were brought from Icy Cape by Mr. W. J. Fisher, who procured them by dredging, at a depth of from seven to fifteen fathoms.

*Megalorchestia franciscana.*

Body smooth; superior antennæ one-third longer than the body, the flagellum longer than the base, with about thirty-five oblong joints. Superior antennæ reaching to middle of 2d joint of inferior. Second epimerals longer than deep, fifth short, bi-lobed. Anterior feet unguiculate, joints scabrous. Hand of second pair very large, oblong ovate, with an almost transverse palm, having a low oblong tooth near centre of palm. Dactylus much curved, touching palm at point only when closed.

Length of body, 0.87: of inferior antennæ, 1.15 inch.

A single specimen of this species was found by myself among the debris at high-tide level, Alameda Co., Cal.

The antennæ in the recent specimen were red.

This amphipod resembles *O. scabripes*, Dana, but differs from the figure of that species in Dana's work in the greater number of joints of the inferior antennæ, the shape of the tooth of the hand, and the proportion of the second epimerals. From *M. Californiana*, Brandt, it differs in the short fifth epimeral, and the scabrosity of the feet.

*Edicerus Behringiensis.*

Cephalic shield rostrate, the rostrum about one-third the length of superior antennæ, curved downward, pointed. Eyes moderately large, contiguous. First six thoracic segments much shorter, with a slightly raised keel in the centre of each. Seventh and abdominal segments long, the seventh thoracic and two first abdominal with the carina divided into two sub-equal teeth, the third abdominal with a long low carina ending in a spine posteriorly.

Fourth epimeral much longer than the fifth. Superior antennæ about three-fourths the length of the inferior; flagellum twice the length of last basal joint. Inferior antennæ about one-third as long as the body, proportions like those of superior. Hands of first two pairs of feet oblong ovate, palms nearly

straight, dactyli long, fitting close. Seventh pair of feet larger than the others, but not extending much beyond the end of the caudal stylets, which are nude.

Length from end of rostrum to end of caudal stylets, 1.25 in.

Four specimens from West coast of Alaska, North of Behring's Straits.

Presented by the Alaska Commercial Company.

*Lysianassa Fisheri.*

Segments of thorax about equal in length, smooth; third segment of pleon one-fourth longer than the second, with a well-defined sinus on the posterior margin, bounded by a sharp tooth below.

First epimera larger than two succeeding pairs, and extending forwards at their lower portion; fourth epimera largest. First joints of superior antennæ very stout, touching each other, so as to appear a prolongation of the cephalon; second joint very short and stout.

Length, including stylets, 1.38 in.

A single specimen of the above species was obtained on the West coast of Alaska, and presented to this museum by W. J. Fisher.

As the specimen is unique, and dried in such a way that the four first pairs of feet are folded together within the epimera, it is impossible to describe them.

Mr. Gruber read the first of a series of popular papers on Ornithology, illustrating his remarks with appropriate specimens prepared by himself.

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REGULAR MEETING, APRIL 3D, 1876.

President in the Chair.

The following propositions for membership were received:

Albert Arents, C. A. Lockhardt, Louis Falkenau, H. W. Reese, Emlen Painter.

Donations to the Museum: From C. B. Turrill, specimens of *Batrachiceps attenuatus*, *Gerrhonotus*, *Actinemys marmoratus*, *Plestiodon*, sp., *Bufo Columbiensis*, trout from Donner Lake, *Bryttus*, Myriapods, *Arachnidæ*. From Henry Edwards, specimens of *Diemyctylus torosa*, twenty-seven specimens of *Myriapoda*, and sp. of *Pseudobdella*. From W. N. Lockington, specimens of *Asterias*.

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~~PART I.~~

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1877.

# Committee on Publication—1876.

GEORGE DAVIDSON,

HENRY EDWARDS,

CHARLES G. YALE.

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## ERRATA.

PAGE.			
18,	9th line from	top,	for " <i>melanstchthys</i> " read " <i>melanostictus</i> ."
18,	13th	"	" " <i>Librocedrus</i> " read " <i>Libocedrus</i> ."
18,	4th	"	" " <i>chalcedomys</i> " read " <i>chalcedony</i> ."
20,	16th	"	" " <i>Astragalus</i> " read " <i>Astragalus</i> ."
21,	12th	top,	" " <i>Fuschia</i> " read " <i>Fuchsia</i> ."
22,	3d	"	" " <i>Zygæindæ</i> " read " <i>Zygænidæ</i> ."
24,	8th	"	" " <i>Fuschia</i> " read " <i>Fuchsia</i> ."
27,	7th	"	" " <i>Equisiti folia</i> " read " <i>equisetifolia</i> ."
38,	8th	"	" " <i>Nevadensis</i> " read " <i>Nevadense</i> ."
38,	12th	"	" " <i>Newberryi</i> " read " <i>Newberryi</i> ."
38,	7th	"	" " <i>Marselia</i> " read " <i>Marsilia</i> ."
38,	9th	"	" " <i>Cyclademia</i> " read " <i>Cycladenia</i> ."
38,	10th	"	" " <i>pulsifera</i> " read " <i>Pulsifera</i> ."
38,	10th	"	insert " <i>A.</i> " before " <i>Webberi</i> ."
38,	15th	"	for " <i>microcephalum</i> " read " <i>microcephala</i> ."
38,	15th	"	" " <i>cecaule</i> " read " <i>algida</i> ."
38,	16th	"	" " <i>Emmenanthus pusillus</i> " read " <i>Emmenanthe pusilla</i> ."
38,	16th	"	" " <i>librocedri</i> " read " <i>libocedri</i> ."
38,	17th	"	" " <i>Leucothæ Davisæ</i> " read " <i>Leucothœ Davisæ</i> ."
38,	18th	"	" " <i>occidentalis</i> " read " <i>occidentale</i> ."
38,	18th	"	" " <i>euphosbia</i> " read " <i>euphorbia</i> ."
38,	19th	"	" " <i>scapigerum</i> " read " <i>scapigerum</i> ."
38,	19th	"	" " <i>Pattensis</i> " read " <i>Plattensis</i> ."
38,	4th	bottom,	" " <i>Artemesia</i> " read " <i>Artemisia</i> ."
44,	5th	"	" " <i>Bhering's</i> " read " <i>Behrings</i> ."
44,	3d	"	" " <i>Idotæga</i> " read " <i>Idotæga</i> ."
49,	4th	top,	" " <i>nebulosum</i> " read " <i>nebulosum</i> ."
49,	6th	"	" " <i>Dyadophis</i> " read " <i>Diadophis</i> ."
49,	9th	"	" " <i>forma also on</i> " read " <i>found also in</i> ."
49,	7th	bottom,	" " <i>Echui</i> " read " <i>Echini</i> ."
49,	4th	"	" " <i>Brickelia</i> " read " <i>Brickellia</i> ."
59,	6th	"	" " <i>Segnathus</i> " read " <i>Syngnathus</i> ."
82,	10th	"	" " <i>Sasmicossiphus</i> " read " <i>Semicossyphus</i> ."
91,	18th	"	" " <i>Tamelpais</i> " read " <i>Tamalpais</i> ."
91,	5th	"	" " <i>obtusiloba</i> " read " <i>obtusiloba</i> ."
92,	15th	"	" " <i>ciliata</i> " read " <i>ciliata</i> ."
111,	5th	top,	" " <i>Aralea</i> " read " <i>Aralia</i> ."

## PAGE.

- 112, 12th line from top, for "*Leucothœ Davisæ*" read "*Leucotiœ Davisæ*."
- 114, 5th " " " "Alfred A. Pinaut" read "Alphonse Pinart."
- 115, 2d " " " "tenells" read "tenellus."
- 115, 6th " " " "*Rannunculus. Eisenii*" read "*Ranunculus Eisenii*."
- 121, 7th " " " "demar" read "Damar."
- 121, 11th " " " "McGillwray" read "McGillivray."
- 126, 3d " bottom, " "*echeneus maceatus*" read "*Echeneis nau-crates*."
- 130, 13th " top, " "*intecinnatarite*" read "*metacinnabarite*."
- 130, 11th " bottom, " "*andaluriate*" read "*Andalusite*."
- 130, 8th " " " "*anceforsil*" read "and fossil."
- 130, last line, for "*inormtum*" read "mountain."
- 132, 5th line from top, for "*Lithobre*" read "*Lithobii*."
- 143, 8th " top, " "*Castaneopsis*" read "*Castanopsis*."
- 151, 9th " bottom, " "*strigosus*" read "*strigosa*."
- 156, last line, " "*cristala*" read "*cristata*."
- 167, 16th line from " " " "*Erguni*" read "*Ergane*."
- 168, 13th " " " "*Ausoniedes*" read "*Ausonioides*."
- 170, 5th " " " "*Argynuis*" read "*Argynnis*."
- 171, 5th " top, " "*Behr*" read "Bdy."

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