

PROCEEDINGS
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DESCRIPTIONS OF THREE NEW SPECIES OF AMPHI-
PODS FROM SOUTHERN CALIFORNIA.

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In a large collection of Crustaceans from the Venice Marine Biological Station, of Los Angeles County, California, sent to the U. S. National Museum for determination, the following new species of Amphipods were found.

Family LYSIANASSIDÆ.

Aruga macromerus new species.

This species, which is represented by a single male specimen, does not agree in a few minute details with Holmes' genus *Aruga*, but these differences do not seem to me of enough importance for the creation of a new genus. There are a few small setae at the distal end of the inner plate of the first maxillae. Plates of the second maxillae are not particularly narrow.

Eyes large, oval, and black. Lateral lobes of the head with front margin slightly curved and bearing a few minute setules, anterior angle rounding. First antennae with first joint robust; second and third much smaller. Flagellum short, 7-jointed. Accessory flagellum 5-jointed. Second antennae with 4th joint slightly expanded below. Flagellum 8-jointed. Posterior lateral angle of third abdominal segment quadrate. No dorsal prominences. First gnathopod simple, dactyl small and weak. Fourth, fifth and sixth joints provided on their under sides with brushes of fine setae. Second gnathopod long and very slender. Fourth joint provided below with fine setae. Fifth and sixth joints densely covered with fine setae. Dactyl very small and weak. First and second peraeopods with fourth joint expanded and having the lower anterior angle produced downward. At the lower end of the sixth joint of the first two peraeopods is a small backward pointing scale which is about half the length of the dactyl. Third, fourth, and fifth peraeopods have the second joint expanded into a broad backward and downward projecting lobe. The fourth joint of these three peraeopods is greatly expanded into a backward projecting lobe, the lower posterior angle of which dips down nearly

to the lower end of the fifth joint. Second gnathopod and first and second peraeopods have styliform accessory branchal vesicles. Epistome projecting forward beyond the lip in an evenly rounded curve. Mandibles long and narrow with palp situated back of the middle. Cutting-edge curved inward with edge smooth. Lobe projecting forward just above the cutting-edge. Three setae situated between the cutting-edge and the small backward-pointing tooth. First maxillae, inner plate narrow with several small setae at apex. Outer plate with six large teeth, serrated on their inner edge. Second joint of palp long with end gently curved and crenulate. The palp is concave and fits around the outside of the outer plate. The plates of the second maxillae are narrowly oval and armed at their upper ends with spines. Maxillipeds, inner plates narrow, armed on the upper third of their inner edge with setae, one or two small spines on their upper ends. Outer plates broad and oval, seven or eight small spines on their inner edge, crenulate on upper part of inner edge. Fourth joint of palp dactyliform. First uropods longest. Rami styli-form, somewhat shorter than peduncle, outer slightly longer. A few spines on upper surface of peduncle and rami. Second uropods shorter than first. Rami subequal, inner ramus with constriction containing small spine about one-third the distance from the end. Third uropod shortest, rami shorter than peduncle, outer ramus longer. Peduncle with upper posterior angle quadrate and produced. Telson short, sides slightly convex, end very obtuse angled with a small spine on each side midway between apex and side of telson.

Length.—5 mm.

Locality.—Venice, Southern California.

Type.—Cat. No. 49596, U. S. N. M.

Family AMPELISCIDÆ.

Ampelisca venetiensis new species.

Male.—Eyes four, upper pair very near front margin of head, lower pair at lower anterior corner of head. First antennae reaching beyond peduncle of second by about the length of last joint of second peduncle. First joint short and thick. Second joint slenderer and about twice the length of first. Third joint slenderer than second and a little shorter than first. Flagellum about three times as long as peduncle and composed of about 20 joints. Second antennae longer than body. Third joint short, fourth and fifth successively narrower and subequal in length. Flagellum very long and slender with many joints. The under surface of the second joint of the first antennae and the upper surfaces of third, fourth, and fifth joints of the second are provided with many tufts of fine setae. The under surfaces of the first joint of the peduncle and the first three or four joints of the flagellum of the first antenna are provided with many fine setae. The lower posterior margin of the third abdominal segment is broadly rounded and the middle, lateral margin deeply depressed. The fourth abdominal segment is saddle shaped, having a deep dorsal depression in the middle bordered at the front and back by promi-

nences. The one at the rear having two setules on the posterior border. First gnathopod with side-plate widened distally and lower corners broadly rounded. Lower margin provided with double row of fine setae. Dactyl with row of setules on back margin. Second gnathopod longer than first. Side-plate having sides nearly parallel and lower corners broadly rounded, double row of setae on lower margin. Dactyl having row of setules on back margin. First peraeopod with back margin of second joint provided with several long setae. Front and back margins of fourth, fifth, and sixth joints crowded with long plumose setae. Dactyl longer than fifth and sixth joints together. Second peraeopod having side-plate widest. Second joint with lower half of back margin provided with long plumose setae. The back margin of the third joint, and the front and back margins of the fourth, provided with plumose setae. Back margin of fifth joint, and front margin of sixth, provided with plumose setae. Dactyl longer than fifth and sixth joints together. Third peraeopod has front margin of second joint provided with a row of plumose setae. Fourth peraeopod has three or four plumose setae about the middle of the front margin of the second joint. Fourth joint of fifth peraeopod produced downward posteriorly into a deep lobe, the back margin of which is provided with long plumose setae. The fifth joint has a small notch containing several small spines about one-third the distance from the lower front edge. First uropod has the inner margin of the inner ramus provided with a row of spines. Second uropod has the inner margin of the inner, and the upper margin of the outer ramus provided with short spines. Inner ramus of third uropod slightly longer than outer. Both rami broad at the base, tapering to a point. Edges of rami smooth and provided with long plumose setae. Telson broad and oval and divided about two-thirds of the distance to the base. Lobes with outer edge evenly curved, each having a shallow notch containing two setules at its apex.

Female.—First antennae short, reaching beyond middle of fifth joint of second antennae. Flagellum 6-jointed. Second antennae with flagellum about twice as long as peduncle. Flagellum 32-jointed. The first two or three side-plates are bordered below by plumose setae. The posterior lobe of the fourth joint of the fifth peraeopod is somewhat longer than in the male, reaching almost to the bottom of the fifth joint. The dorsal depression in the middle of the fourth abdominal segment is not so deep as in the male. The outer edges of third uropods provided with setae which are not plumose. The inner edge of each lobe of the telson contains one or two setules.

Length.—Male about 7 mm.; female about 10 mm.

Locality.—Off Venice, Southern California.

Type.—Cat. No. 49594, U. S. N. M.

Family PHOTIDÆ.

Podoceropsis concava new species.

Male.—Eyes oval or slightly reniform. Antennae missing, all except a few basal joints. Gland cone of second joint of second antennae long,

slender, and pointed. Third abdominal segment, lower posterior angle broadly rounded with a small tooth at bottom, mid-lateral margin depressed. Fourth and fifth abdominal segments each with three small teeth on posterior dorsal margin. Each of these segments bears two setae, one from the base of either side of the middle tooth. First gnathopod with many long curved setae on the lower inside of second joint. Second gnathopod, fifth joint rather short. Sixth joint large and broadly oval. Palm oblique with prominent tooth near finger-hinge and two blunt teeth where palm and posterior margin of joint meet. Palm and posterior margin of sixth joint densely setose. Dactyl strong and curved with row of setules on inner margin. In some specimens the teeth on the palm are very obscure and in some the palm is quite smooth. First and second peraeopods slender, with fifth and sixth joints bearing evenly spaced setae on their hind margins. Third, fourth, and fifth peraeopods with second joint expanded behind into a broad lobe, the hind margin of which is convex in the third and fifth and concave in the second. Mandible with palp situated at anterior end. Third joint of palp broad and truncated with an indentation near upper end. End and lower margin of third joint, and lower margin of second, provided with long curved setae. Molar prominent. First and second maxillae and maxillipeds as in the rest of the genus. Epistome produced forward into a point. Upper lip evenly rounded. Lower lip with side-prominences pointed and slightly curved upwards. First uropod longest, rami subequal, long, curved, spine on under side of peduncle at base of the rami. Second uropod slightly shorter than first, inner ramus longer. Third uropod shortest, rami subequal. The lower posterior margin of the sixth abdominal segment is produced backwards beneath the peduncle of the third uropod. Telson, simple, about as broad as long, with a shallow concavity in the upper hind margin bordered by two truncated lobes from the upper surface of each of which rises a long spine, and from the ends of which several smaller spines project backward. Lower hind margin of telson without concavity.

Length.—5-7 mm.

Locality.—Venice, Southern California.

Type.—Cat. No. 49595, U. S. N. M.

Female.—Like male except that second gnathopod is smaller, with sixth joint weaker, fifth joint is longer and narrower, and sixth joint is narrower with oblique palm and no palmar teeth.