SOME NEW SPECIES AND NEW RECORDS OF MARINE ISOPODS FROM SAN JUAN ARCHIPELAGO, WASHINGTON, U.S.A.

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INTRODUCTION

Hatch (1947) has monographed the isopods of North West America, giving brief diagnoses of each species in the form of an extensive key. In the present paper the result of dredging, trawling and intertidal collecting of marine isopods occurring in the San Juan area, Washington, is reported. The new contributions to the isopod fauna of this area include the description of one genus and four species (three asellotes and one flabelliferan) new to science and record of twelve species (five asellotes, two flabelliferans, one valviferan and four epicarids) hitherto unknown from this area. Two of Hatch's less-known species are also redescribed. Menzies (1952) described *Ianiropsis magnocula* on the basis of a single female and now it is possible for us to add the description of the male.

A key to all known species belonging to the genus *Jaeropsis* is established, in the light of Kussakin's recent Russian publication (1961), with additional details and suitable modifications. At present, the authors are of the opinion that a key to the asellote genus *Munna* is not workable in view of the incomplete descriptions of several of the more than fifty known species.

The types of the new species are placed in the U.S. National Museum, Washington, D.C., U.S.A.

Grateful acknowledgement is made to Dr. Robert L. Fernald, Director of the Friday Harbor Laboratories wherein the present work was carried out. This study was supported by the National Science Foundation grant, GB-747.

Asellota

MUNNIDAE

Munnogonium gen. nov.

Generic diagnosis. Body subpyriform; pereon somewhat and pleotelson distinctly vaulted; first and last three pereonites small, the former with the lateral

parts anteriorly directed, enclosing the cephalon behind the ocular processes and those of the latter postero-laterally directed. Epimera visible on pereonites 2-7, more prominent on the three last segments. Cephalon in shape resembling that of *Pleurogonium* but having short ocular processes, in dorsal view partly hidden by the base of the antennulae. Eyes distinct but simple. Pleotelson narrowly cordate, widest at the middle, posteriorly obtusely produced. Antennula with first two peduncular articles slender and long, flagellum with few articles. Antenna of about half the body length, bigeniculate; peduncle of six and flagellum of few articles, and lacking squama. Molar process of mandible broad, distally transversely cut off; palp missing. Pereopods only slightly increasing in length posteriorly. Uropods biramous, lacking basipodite; exopodite more than double as long as endopodite, both rami cylindrical.

Remarks. — Of the eleven recognized genera of Munnidae (see Wolff 1962: 62) the present genus combines a number of characters from both *Munna* and *Pleurogonium,* hence the name *Munnogonium.* It differs from *Munna* in the relative width and shape of the cephalon, in the relative length of the two pairs of antennae (antennular peduncle with long and slender articles; antennal flagellum not multiarticulate), in the mandible lacking a palp and in the shape of the pleotelson. It also differs from *Pleurogonium* in having eyes and ocular processes, a broad distally widening (not finger-like) mandibular molar process and the body not distinctly depressed.

In general shape of the body and a number of details the present genus closely resembles *Pleurogonium.* However, the differences mentioned above are of such character that the creation of a new genus is necessary.

Type. — The type species is *Munnogonium waldronense* sp. n.

Munnogonium waldronense sp. n. (figs. 1, 2)

The holotype male (U.S.N.M. no. 119840) and the allotype female (U.S.N.M. no. 119841) were collected at Cowlitz Bay, Waldron Island, San Juan Archipelago, from about 50 m (mud dredge, August 17, 1964). Two other specimens have been collected, one from Satellite Channel, British Columbia, Canada (mud dredge, 60 m, July 1964), and one intertidally on the west side of Brown Island, San Juan Archipelago, among *Ulva* (July 1964).

Diagnosis. Width of cephalon slightly more than 1.5 times its length, frontal margin straight or a little concave. Ocular process short, in dorsal view almost completely hidden by the proximal part of the first peduncular article of the antennula. Lateral parts of pereonites 1-4 anteriorly directed (in female only those of the first). Antennula long, nearly ¾ of antennal length, peduncle of two elongate articles, flagellum of four articles, only the terminal one having a long sensory scale (longer than flagellum). Antennal peduncle of six articles, flagellum of five or six articles. Male and female gnathopods similar. Male first pleopod distally obtusely pointed and with a broadly triangular lateral expansion bearing three setae. Female operculum of same shape as pleotelson outline. Suburopodal shelf not evident. Body unpigmented.

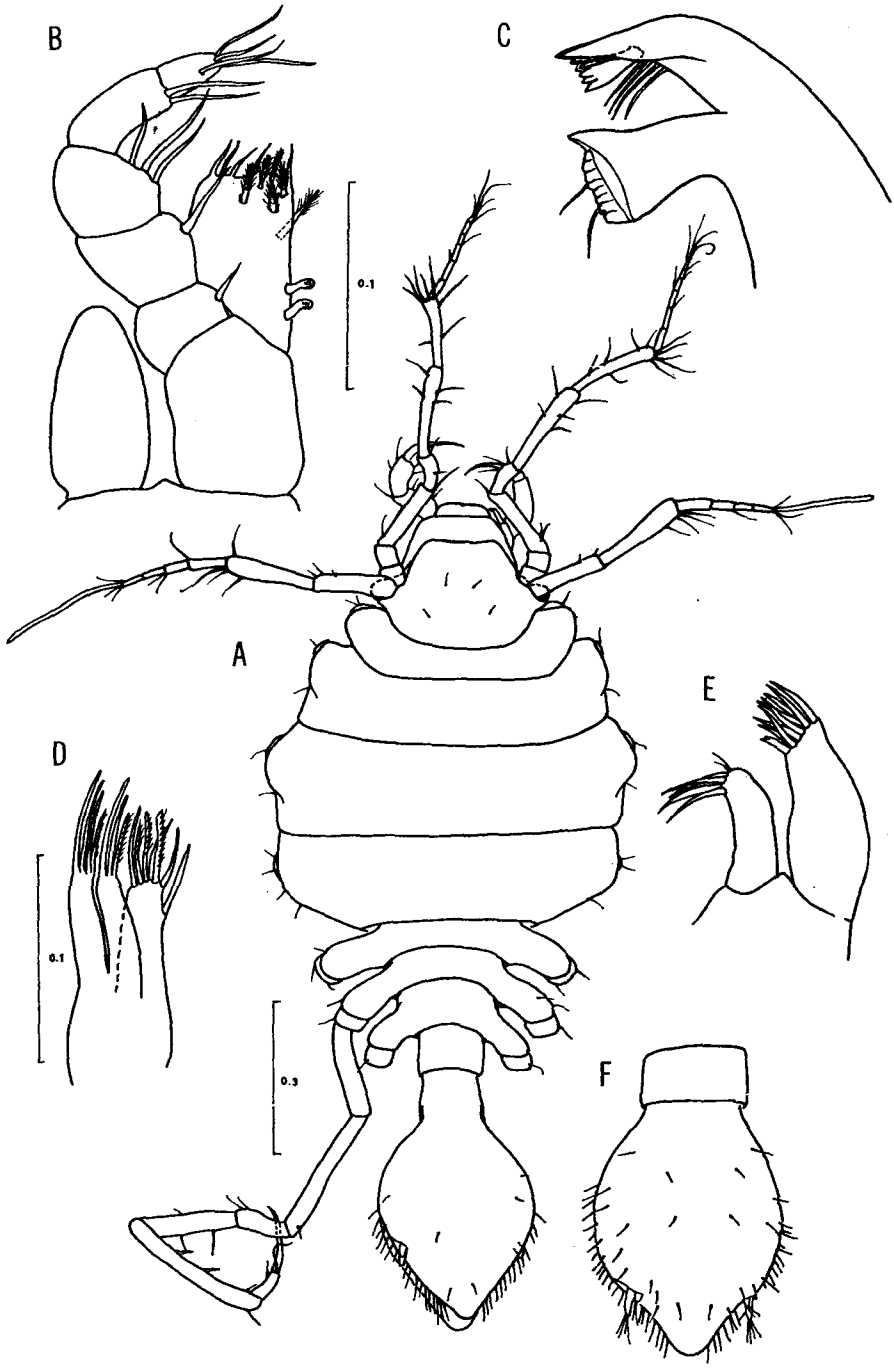

Fig. 1. *Munnogonium waldronense* sp. n. A, ovigerous female (allotype); B, right maxilliped of allotype in ventral view; C, left mandible of allotype; D, right maxilla of allotype in ventral view; E, left maxillula of allotype in ventral view; F, pleotelson of other female in dorsal view. Scales represent indicated length in mm. A and F of same magnification, B-E of same magnification.

Size. The holotype male has a length of 1.6 mm, its width at the second pereonite is 0.7 mm. The allotype, an ovigerous female, is 1.8 mm long, its width at the third pereonite is 1.1 mm.

Cephalon. The antennula inserted directly above the ocular process close to the lateral extremity of head. Eyes black and distinct, but of simple construction. No trace of separate ommatidia.

Pereon. Pereonites 1 and 5 to 7 short along median line, but lateral parts of first somite in male of same length as pereonites 2 to 4. Epimera visible on all pereonites (female) or on second to seventh (male).

Pleon. Composed of two somites, first narrow and as long as last pereonite. Pleotelson with constricted base, its length varying from a few microns to about 100 microns; widest over the middle, posteriorly obtusely pointed. Dorsal surface with few scattered setae; posterolateral margins fringed with several short setae.

Antennulae. The two peduncular articles subequal, together longer than flagellum; the latter of four articles, first being double as long as any of the subequal distal three articles.

Antennae. Bigeniculate. First two peduncular articles short and subequal, third double as long as the curved fourth article, fifth and sixth articles of same length. Flagellum as long as each of the latter, 5- to 6-segmented.

Mandibles. Incisor process with three, lacinia with four teeth, setal row of four spine-like setae. Molar process strong, distally broadening and transversely cut off. Palp absent.

Maxillulae. Inner lobe with four strong setae; outer lobe a little longer and double as wide as inner lobe, about 8 terminal setae.

Maxillae. Outer and inner lappets of lateral lobe with four and three setae respectively; inner lobe with more than seven distal setae.

Maxillipeds. Endite with two coupling hooks and distally with at least five plumose and four bare setae. Palp with five articles, the fourth being the longest.

Pereopod 1. Dactylus biunguiculate; propodus with two setal pairs on median margin; merus medially with one and carpus with three stout spines, each possessing a distal minute seta causing a bifid appearance.

Pereopods 2 to 7. Dactylus with a terminal strong claw and a minute accessory claw; merus with one and carpus with three two-pointed spines.

Female operculum. Of same shape as outline of pleotelson. Posterior half of lateral margins with numerous setae.

Uropods. Dorsally inserted almost 1/4 from the posterior tip along the lateral margin. Exopodite nearly three times longer than endopodite, the former bearing six distal setae and three which emerge from the ventral surface, the latter with two distal setae. Distal setae of exopodite two-segmented.

Remarks. — The present species is closely related to a species described by Schultz (1964) as *Austrosignum erratum,* but differs in a number of details from the latter. The front of the cephalon in our species is straight or slightly

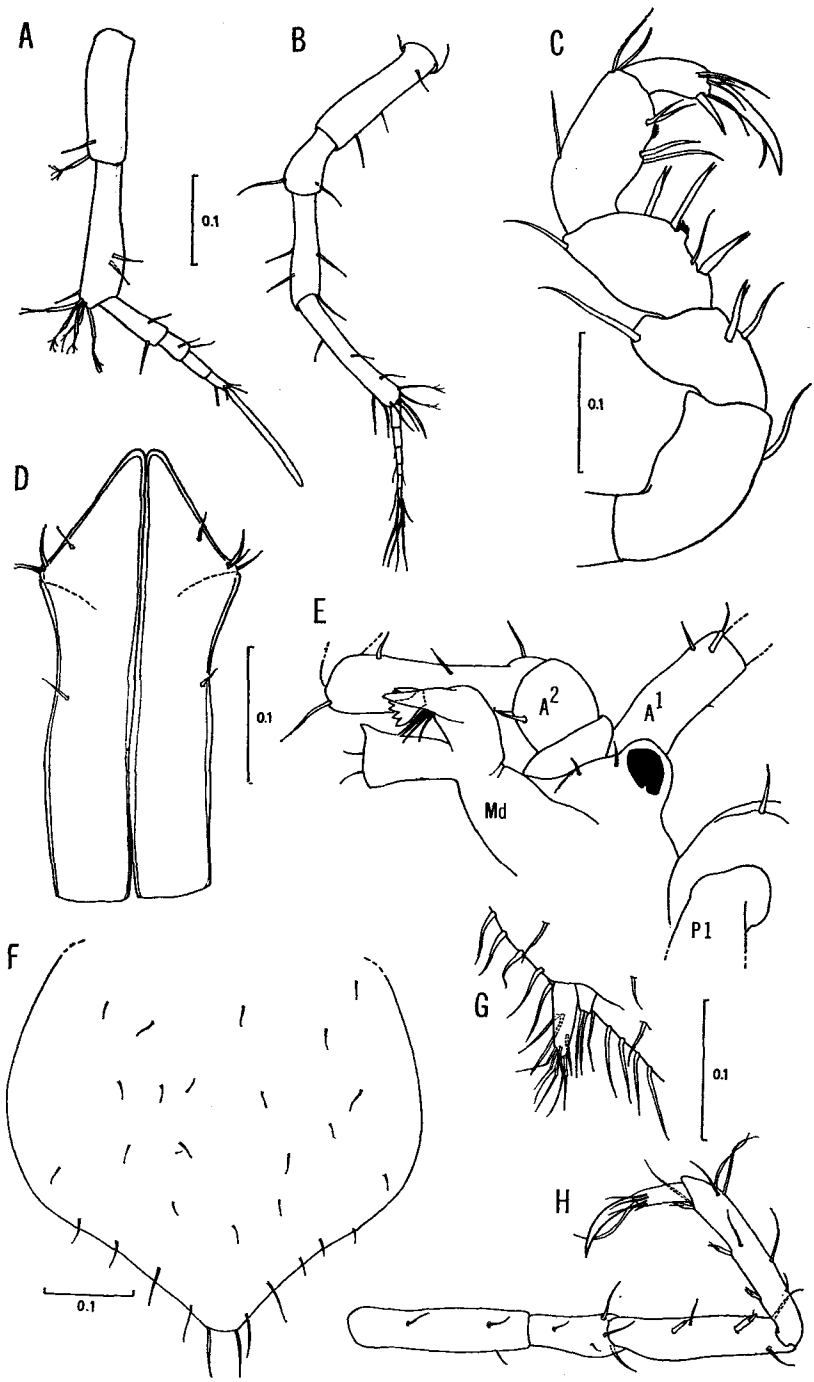

Fig. 2. *Munnogonium waldronense* sp. n. A, left antennula of allotype in dorsal view; B, left antenna of allotype in dorsal view; C, left first pereopod of allotype; D, first pleopods in ventral view, holotype; E, oblique ventral view of left side of cephalon, holotype, showing the eye; F, ventral view of female operculum, allotype; G, left uropod of allotype in dorsal view; H, right seventh pereopod of holotype. Scales represent indicated length in mm. A, B and F of same magnification; C-E and G, H of same magnification.

concave (not convex), the fourth pereonite is not distinctly separated from the anterior segments, the pleotelson is approximately as wide as the seventh pereonite and lacks the six setae along the apical margin described for *A. erratum,* the maxillipedal palp is relatively longer in the present species, the number of teeth and setae on the incisor process differs, and the lacinia mobilis is different.

However, the differences are of such character that they cannot justify a separation of the two species in different genera. Schultz placed his species in the genus *Austrosignum* although according to the generic description (cf. Nordenstam, 1933: 241) this genus is characterized by eyes on slender eye-peduncles, coxal plates visible only on pereonites 5 to 7, and a short but 3-segmented mandibular palp. These characters do not fit *A. erratum.* The general shape of the body, the relative length of the antennulae and antennae, the short eye-peduncles and the missing mandibular palps suggest that this species should be placed in the new genus *Munnogonium,* and should be known as *Munnogonium erratum* (Schultz). Whether *Austrosignum tillerae* Menzies & Barnard, 1959, also should be referred to this genus cannot be clarified at present. Unfortunately the specific description is very short. Furthermore the types are temporarily unavailable (information kindly provided by Dr. J. S. Garth).

Munna (Munna) fernaldi sp. n. (figs. 3, 4)

The holotype male (U.S.N.M. no. 119838), the allotype female (U.S.N.M. no. 119839), and 25 paratypes were collected intertidally from stones and algae in front of the Friday Harbor Laboratories, San Juan Island, San Juan Archipelago.

Diagnosis. Cephalon with frontal margin straight or slightly concave, furnished with a number of setae. Ocular processes prominent. Preocular lobes distinct. Dorsal surface with several long, scattered setae. Anterior four pereonites each with two transverse rows of setae and posterior three each with a single row. Epimera distinct on pereonites 2 to 7. Pleotelson with scattered setae, dorsal surface vaulted, posteriorly raised above level of margin, forming a three-lobed elevation, in lateral view with a concave outline, lateral margin entire but with numerous setae. Penultimate article of antennular flagellum elongated; terminal article about 1/10 as long as the preceding one. Antenna longer than body. First pereopod of male and female similar. Male first pleopod with apical, lateral expansion. Suburopodal shelf clearly visible in dorsal view. Uropods biramous, rami conical to cylindrical without terminal teeth.

Size. The holotype male is 1.13 mm long and 0.44 mm wide. The length of the allotype female is 1.46 mm, its width 0.48 mm.

Cephalon. Double as wide as long. Eyes large. Preocular lobe distinct but rounded and with one seta. Frons setose, straight or slightly concave.

Pereon. Epimera in dorsal view distinct on pereonites 2 to 7. First four pereonites of subequal length in male, in female pereonites 2 and 3 longer. Posterior three segments short, of subequal length.

Pleon. Composed of two somites. Anterior one short, narrow and devoid of

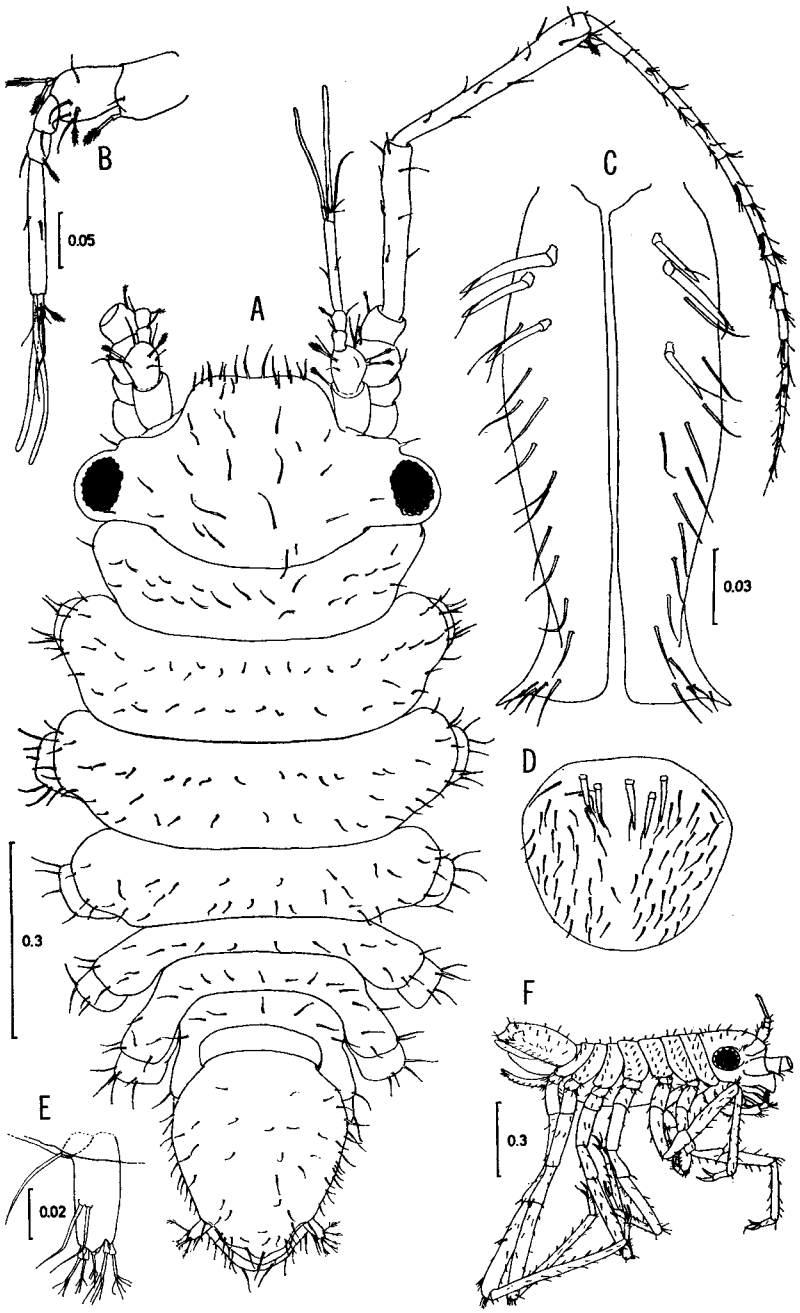

Fig. 3. *Munna fernaldi* sp. n. A, male in dorsal view (holotype); B, right antennula of holotype, dorsal view; C, first pleopods of holotype, ventral view; D, female operculum of paratype, ventral view; E, left uropod of holotype, dorsal view; F, lateral view of male paratype. Scales represent indicated length in mm.

setae. Pleotelson with dorsal surface highly arched, slightly anterior to rounded posterior margin much raised, forming a three-lobed elevation. Lateral margins entire. Suburopodal shelf evident, not serrated.

Antennulae. Composed of six articles. First two stout, with a few plumose setae, much wider than following articles and thus giving an impression of a two-segmented peduncle. The general conception of a three-segmented antennular peduncle in Munnidae (cf. Wolff 1962: 60) is not supported by the appearance of the antennula in the present species. Articles three and four subequal. Terminal article of flagellum very short, 1/10 the length of the long penultimate article; both bearing an apical long sensory scale.

Antennae. Peduncle of six articles, first four short and wide, each of the distal two longer than the proximal four together. Flagellum as long as peduncle, multi-articulated.

Mandibles. Incisor process of right mandible with four teeth, without lacinia but with a setal row of five strong serrated spines. Molar process strong, distally transversely cut off. Palp of three articles, first lacking setae and as long as second and third together. The two latter beset with pectinate scales. Second article with two strong, feather-like setae and a small spine with bristles on one side. Terminal article with three combed setae.

Maxillulae. Outer lobe with about 11 apical, serrated spines. Inner lobe with five apical setae plus a thin one.

Maxillae. Both lappets of outer lobe with four apical setae, one of which fringed with minute "hairs". Inner lobe with numerous apical setae including three plumose ones. Median margin with three "haired" long setae.

Maxillipeds. Epipodite broadly rounded. Endite with two coupling hooks, six *distal and two median plumose setae, dorsal surface with* numerous *bristles*; extending to middle of third article of palp. Palp of five articles.

Pereopod 1. Short, prehensile with all articles setose. Dactylus biunguiculate. Propodus with two and carpus with three median, two-pointed setae. Both these articles with few pectinate scales along median margin.

Pereopods 2 to 7. Increasing in length posteriorly. Dactylus biunguiculate. All articles setose, having two-pointed setae as well as normal. Propodus elongated, more than four times (7th pereopod) as long as dactylus with claw. Carpus long, slightly longer than merus and ischium combined.

Male first pleopod. Distally with a lateral expansion. Apical margin almost straight, devoid of setae. Ventral surface with several setae of which the proximal ones are two-segmented and two-pointed.

Female operculum. Posterior outline almost semicircular. Ventral surface beset with numerous setae, the medioproximal ones strong and two-pointed.

Uropods. Biramous. Endopodite small, conical with one apical seţa. Exopodite cylindrical, double as long as wide, apically with a few small tubercles; two ventro-median setae and 5 apical two-segmented setae.

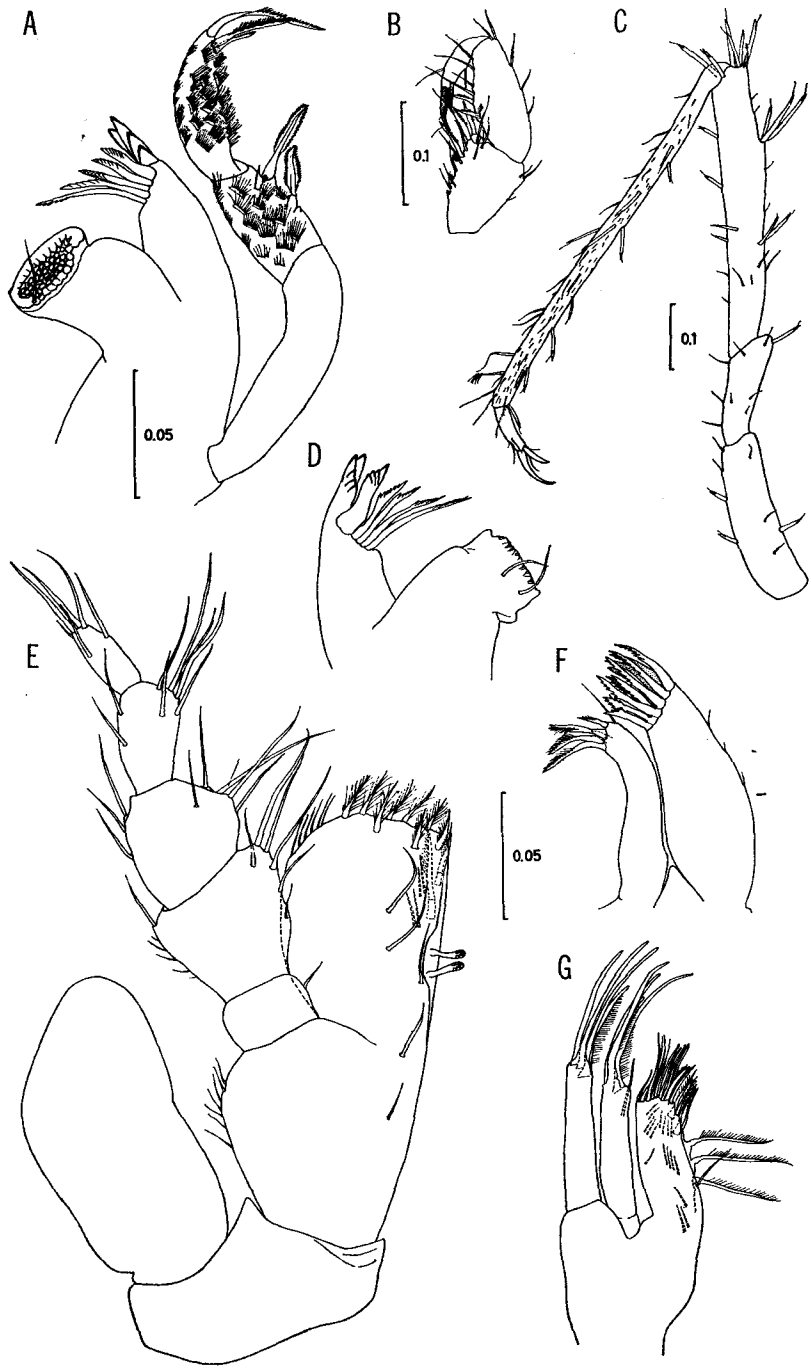

Fig. 4. *Munna fernaldi* sp. n., holotype. A, right mandible, dorsal view; B, carpus, propodus and dactylus of left first pereopod; C, right seventh pereopod; D, left mandible in dorsal view; E, right maxilliped in ventral view; F, right maxillula in dorsal view; G, right maxilla in ventral view. Scales represent indicated length in mm. A and D-G of same magnification.

Remarks. — According to the classification of *Munna* suggested by Menzies (1962) the present species belongs to the subgenus *Munna*. The uropods are not flattened and lack a recurved apical spine. However, a few small apical tubercles are present.

Because of incomplete descriptions 16 described species of *Munna* cannot be placed in any of Menzies' subgenera. A comparison between these and our species shows that the latter differs in a number of characters from all of the former. At present 18 species are to be grouped in the nominal subgenus *Munna*. Five of these have lateral denticles or spines on the pleotelson. Five other species have the first male pleopod without a pronounced lateral expansion. Our species can be distinguished from the remaining eight by the presence of several setae on the lateral margin of the pleotelson and the pattern of setation on the dorsal body surface. Besides these general characters each of the eight species can be distinguished by striking specific characters, like the absence of eyes and the mandibular palp (*M. argentinae* Menzies), the presence of two large tubercles on the cephalon (*M. bituberculata* Nordenstam), that of tubercles on the pleotelson and pointed epimera (*M. parvituberculata* Kussakin), the marked sexual dimorphism of the first pereopod (*M. neozelanica* Chilton), the presence of branched setae on the frontal margin of the head (*M. maculata* Beddard), the serrated suburopodal shelf (*M. halei* Menzies), and the presence of long ocular processes, slender legs and very long antennae (*M. limicola* Sars and *M. tenuipes* Kussakin).

Munna (Uromunna) ubiquita Menzies, 1952 (fig. 5 D)

Munna minuta - Hatch, 1947: 173, not figs. 42-44 (not *Munna minuta* Hansen, 1909).

A single female was collected on November 22, 1964, at False Bay, San Juan Island. It was found in the low intertidal zone among *Ulva*.

Our specimen differs from Menzies' description in the following respects: Frontal margin of cephalon straight (not concave), bearing three small setae. Pleotelson laterally armed with four serrations (not six) and posterior to these two spine-like teeth placed ventrolaterally. Endite of maxilliped with two coupling hooks (not three). Suburopodal shelf evident in dorsal view.

Munna (Neomunna) chromatocephala Menzies, 1952 (fig. 5 A-C)

Four mature females, two premature males and one juvenile were collected on February 28, 1966 at False Bay, San Juan Island. They were found intertidally on the red alga *Corallina vancouveriensis* (Foslie).

Our specimens differ from Menzies' description in the following respects: Lateral margin of preocular lobe not contiguous with outer extremity of eye. Premature specimens with very little pigment, almost whitish. Frontal margin of cephalon with 5 to 7 setae; pleotelson with branched, relatively strong apical setae; dorsal surface with numerous strong setae and on each side one stout

branched seta dorsolaterally placed at about the middle of the lateral margin. Female operculum with two ventral longitudinal rows of setae.

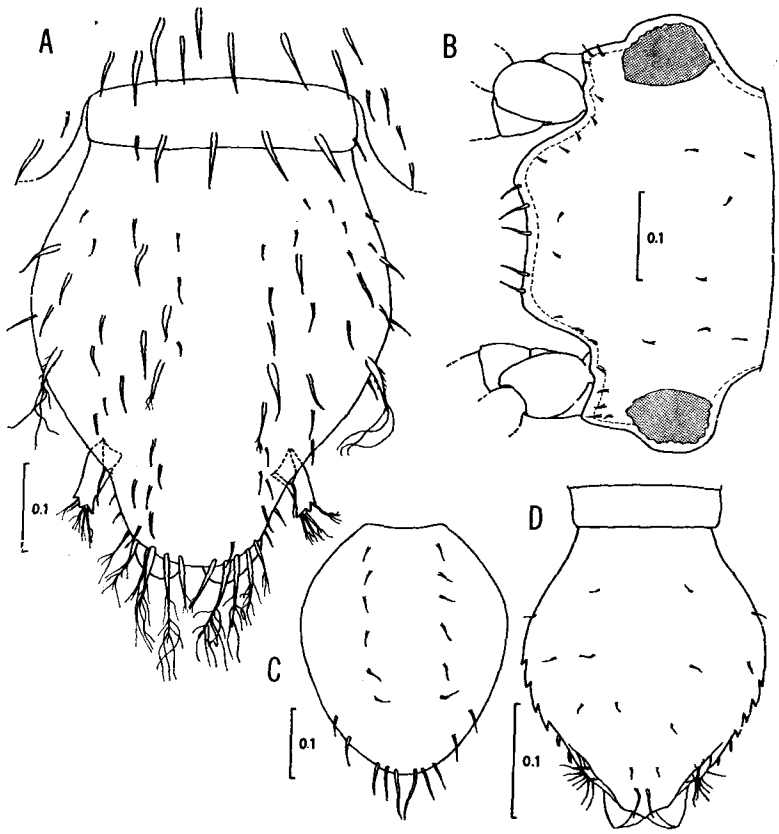

Fig. 5. A-C, *Munna chromatocephala* Menzies, 1952. A, pleotelson of female in dorsal view; B, cephalon of male; C, female operculum in ventral view; D, *Munna ubiquita* Menzies, 1952, female pleotelson in dorsal view. Scales represent indicated length in mm.

Pleurogonium rubicundum (G. O. Sars, 1864)

Pleurogonium rubicundum - Sars, 1899: 113.

Two specimens of this species have been collected intertidally opposite the Friday Harbor Laboratories, San Juan Island. The species is now reported from Washington waters for the first time.

JANIRIDAE

Ianiropsis magnocula Menzies, 1952 (fig. 6)

The present description is based on a male (U.S.N.M. no. 119843) and two females from Lopez Sound, San Juan Archipelago, 48° 30′ N 122° 51′ W.

Our specimens essentially agree with Menzies' description but show slight variations as mentioned below.

Cephalon. Antero-lateral angle acute and projecting; frontal margin with a

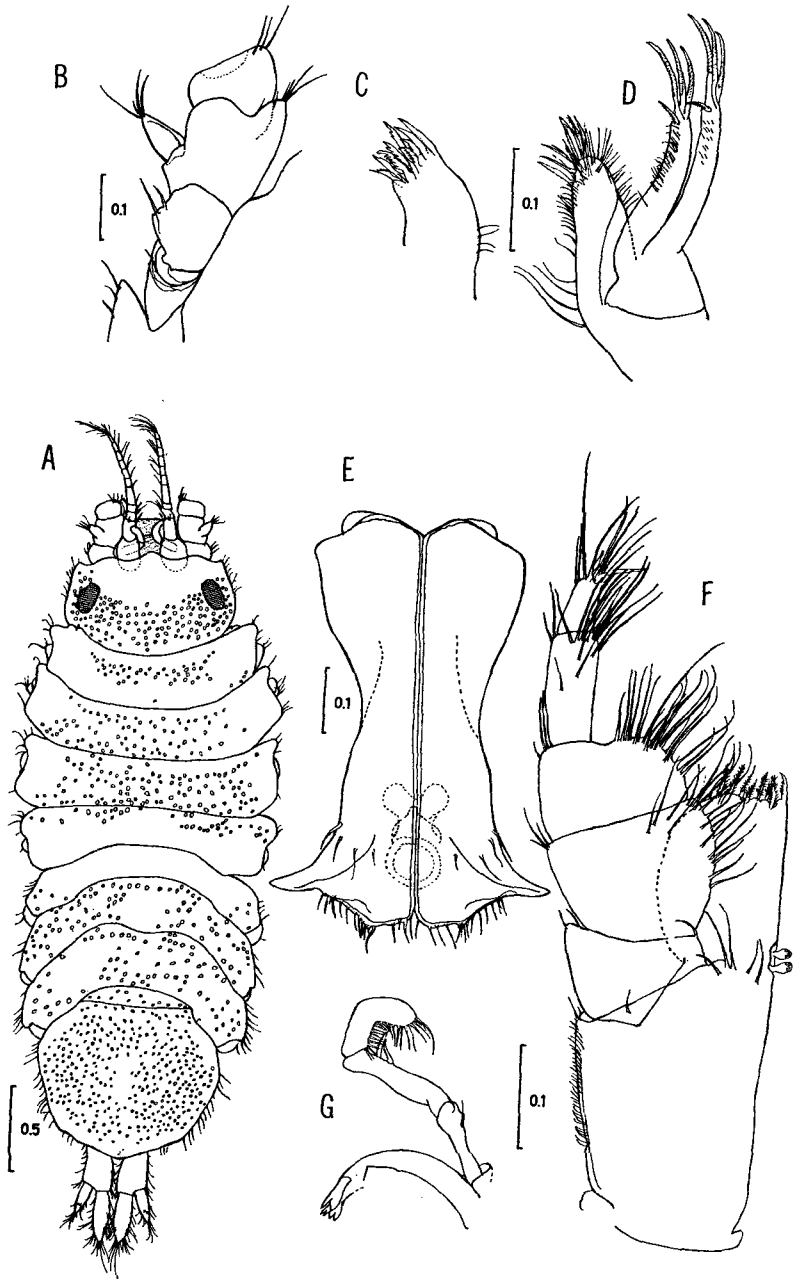

Fig. 6. *Ianiropsis magnocula* Menzies, 1952. A, male specimen; B, basal part of right antennal peduncle with squama; C, outer lobe of left maxillula; D, left maxilla; E, male first pleopods; F, right maxilliped; G, palp of left mandible. B-G seen in ventral view. Scales represent indicated length in mm.

small but evident triangular rostrum, flanked on both sides by a slight bulging of the front line, together giving a spinuous appearance; posterior half pigmented; as long as first two pereonites together.

Antennulae. Flagellum with eight articles.

Mandibular palps. Terminal article with long, densely arranged setae along lateral margin.

Maxillipeds. Endite with two coupling hooks; in line with these a short row of long setae occur; proximal lateral margin fringed with minute setae. Palp agreeing with Menzies' figure except for the presence of two terminal ribboned setae in our specimens.

Male first pleopods. Each male pleopod distally expanded, its margin laterally produced into a single, obtuse tooth-like process. Posterior margin at the middle with a small triangular protrusion and bearing several (about 15) setae.

Pleotelson. Lateral margin with several setae as figured by Menzies; distinct lateral angles.

Uropods. Slightly longer than half the length of pleotelson; exopodite narrower and of two thirds the length of endopodite.

Remarks. — The three specimens were collected by Prof. E. Dahl on August 7, 1964. They were found among red and brown algae brought up from 20 m by beam trawl. Unfortunately the single male is missing the pair of second antennae, the first, second and sixth pairs of pereopods and the uropods.

Our specimens differ from Menzies' holotype in the number of flagellar articles of the antennulae and presence of postero-lateral angles of the pleotelson. Moreover, the front of the head is of slightly different shape and the uropods are relatively longer. However, we do not find these differences to be significant enough to create a subspecies, even more so considering that the original description was based on a single female specimen.

The holotype was collected 3 miles off the mouth of Russian River, California, U.S.A.

Ianiropsis tridens Menzies, 1952

Eight specimens of this species have been collected intertidally in front of the Friday Harbor Laboratories, San Juan Island. This record is of interest since this species has so far been reported only from the Californian coast (Menzies, 1952).

JAEROPSIDAE

Jaeropsis setosa sp. n. (fig. 7)

The female holotype (U.S.N.M. no. 119842) was collected in Lopez Sound, San Juan Archipelago, at about 50 m depth (beam trawl, leg. Rev. P. Reischman). It was brought up together with red and brown algae.

Diagnosis. Body surface densely setose, setae long (up to 160 μ) and more concentrated along lateral margins of posterior pleonites and pleotelson. Lateral

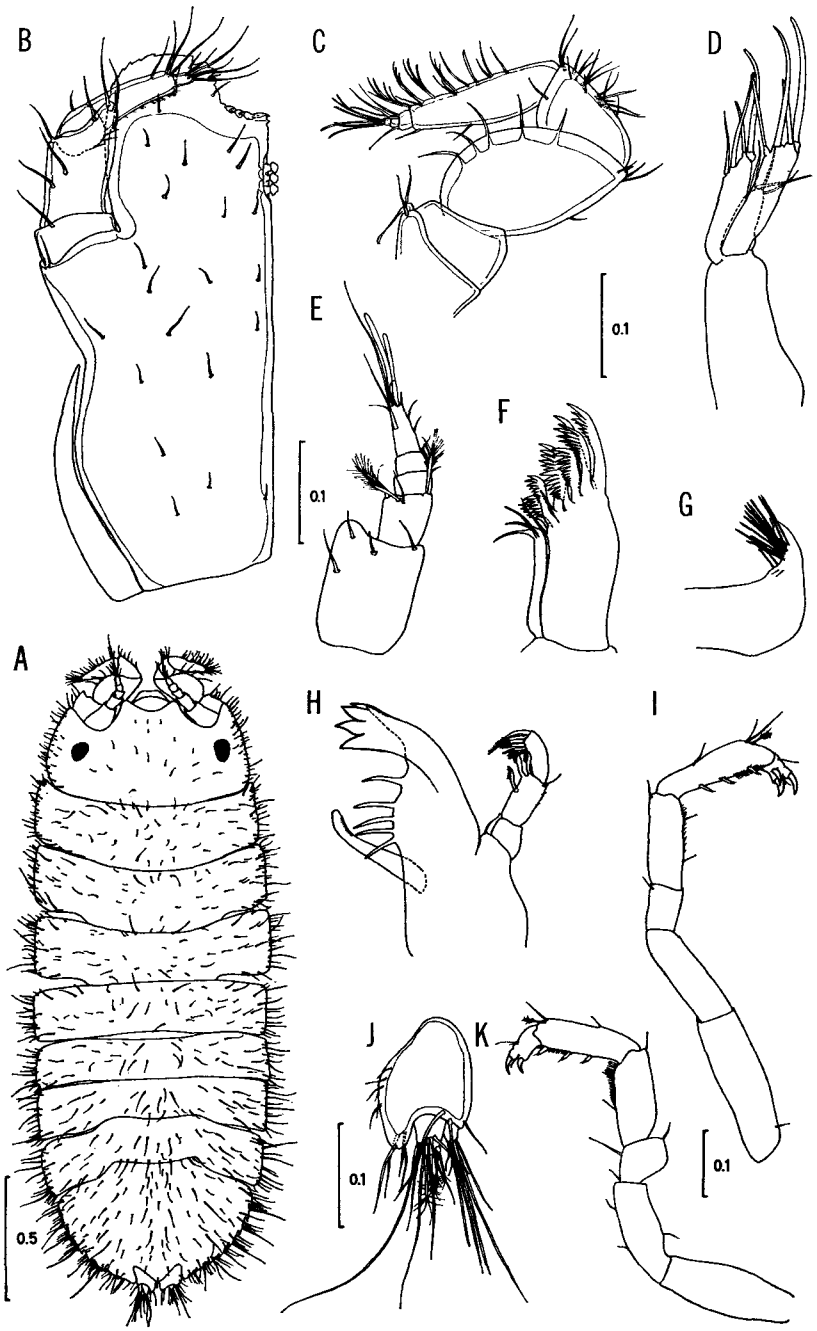

Fig. 7. *Jaeropsis setosa* sp. n., female holotype. A, holotype; B, right maxilliped in ventral view; C, left antenna in dorsal view; D, left maxilla in ventral view; E, left antennula, dorsal view; F, left maxillula, ventral view; G, left lobe of labrum, ventral view; H, left mandible, ventral view; I, right second pereopod; J, left uropod, ventral view; K, left first pereopod. Scales represent indicated length in mm. B-H and J of same magnification.

margins of head and pereonites smooth, devoid of serration or denticulation. Rostral process broadly rounded with margin entire, lacking scales. Anterolateral angles of head anteriorly projecting, distally obtuse. Eyes large, located posterolaterally to antennular socket, not close to lateral margin of head. Peduncles of first and second antennae with both inner and outer margin entire, without a fringe of scales. Maxilliped endite with three coupling hooks. Dactylopodite of first pereopod biunguiculate, those of pereopods 2 to 7 triunguiculate. Pleotelson laterally serrated with 7 incisions on each side. Head and pleotelson darker than rest of body.

Size. The holotype female is 2.3 mm long, measured from the rostral tip to the posteromedian tip of the pleotelson; its maximum width is 0.9 mm, measured at the third pereonite.

Body. Flattened, oval, approximately 2.5 times longer than wide, giving the animal a broad appearance. Sides subparallel, with lateral expansion of pereonites almost touching each other except between pereonites 3 and 4. Dorsal surface of pereon and pleotelson bearing numerous setae, more densely setose along lateral margin. Cephalon with rather few and short setae dorsally. Cephalon heavily pigmented. Pigmented area brown, of trapezoid shape, with definite markings on posterior half. Pereon lightly pigmented with chromatophores confined to dorsomedian part. Pigmentation of pleotelson more distinct than of pereon.

Cephalon. Twice as wide as long. Anterolateral angles obtuse, projecting rostrally. Front margin of head with three conspicuous concavities separated by two mediolateral protrusions extending nearly to anterior convex margin of rostral process. The latter lens-shaped, more than twice as wide as long and lacking a fringe of scales. Eyes large and black, situated dorsally, more than their own width from lateral margin of head directly posterior to antennular sockets.

Pereon. First and second pereonites subequal, together as long as last three pereonites, which are also subequal. Third pereonite as long as fourth, shorter than anterior two and slightly longer than posterior three.

Pleon. Composed of two somites, first short and completely overlapped by last pereonite. Pleotelson more than 1.5 times wider than long, its lateral margins serrated, with seven incisions on each side. Several of the lateral setae up to 160 μ long or as long as last pereonite. Posteromedian lobe semi-acute, not reaching beyond posterolateral angles.

Antennulae. Peduncle composed of two articles, flagellum of three. First peduncular article twice the length and width of second, without any fringe of scales but distally with a few setae; second with three distal plumose setae but lacking scales. Terminal article of flagellum more than twice as long as penultimate, tipped with two long sensory filaments, one very long and some short setae.

Antennae. Fifth peduncular article without scales on median or lateral margins but the latter bearing five prominent setae. Sixth article somewhat shorter than fifth. Flagellum composed of four articles, the first stout and long about five

times longer than distal three. Median margin of last peduncular and all flagellar articles furnished with groups of setae.

Mandibles. Incisor process with five teeth, lacking lacinia. Setal row with five setae on left and six on right mandible. Distance between outermost two setae more than twice as long as between the rest. Molar process long and slender, finger-like. Mandibular palp three-articulated; first article shorter and slightly wider than other two. Second article with three spinulate setae in distal half of median side. Terminal article with seven spinulate setae; distal seta much longer than rest.

Labium. Strongly developed into lateral lobes, medially furnished with a bunch of bristles and distally produced to a tooth-like process.

Maxillulae. Inner lobe slender with three apical setae. Outer lobe wide (six times wider than inner lobe) distally furnished with nine serrated setae and two small, spine-like setae.

Maxillae. Both lappets of outer lobe and inner short lobe each bearing four long bare setae.

Maxillipeds. With three coupling hooks. Palp five-articulated. Second article of palp distally with a medially produced lobe. Endite with serrated distal border and scattered setae on ventral surface. Epipodite nearly one half the length of the endite, with rounded outline (in fig. 7 B the epipodite appears pointed due to the oblique angle of view).

Pereopod 1. Dactylus with two claws. Median margin of propodus with three tooth-like spines, each possessing a minute seta and fringed with small setae on the distal half. Basis, ischium, merus and carpus with entire margins, devoid of scales, the latter article with a row of small setae on distal, median side.

Pereopods 2 to 7. Dactylus with three claws. The other articles same as in first pereopod.

Pleopods. Female operculum as wide as long, apically tapering. Ventral surface and posterolateral margin with scattered setae.

Uropods. Extending well beyond tip of pleotelson. Basipodite about as wide as long, with a median expansion distally produced, bearing setae but lacking median serration and distal claw. Endopodite thick, cylindrical, apically furnished with a circle of long setae and with a few terminal plumose setae. Exopodite less than half as long as endopodite with long setae at apex.

Remarks. — All the drawings of details were made from the fixed but intact animal, which explains why a few details are not shown. The first four peduncular segments of the antennae are not figured, being hidden by the antennulae.

The exact number of articles in the antennular peduncle is a matter of controversy. In previous descriptions the peduncle has been reported to consist of two articles (*J. dubia, J. affinis* and *J. lata*) or four articles (*J. b. brevicornis, J. marionis,* and *J. intermedius*). Generally in isopods the antennular peduncle seems to consist of three articles. However, among the Asellota the number tends

to vary from two to six, judging by previous descriptions. In our species the demarcation between the peduncle and the flagellum is not distinct, but we considered the peduncle as being composed of two articles on the basis of the presumption that usually the last peduncular article bears several distal setae; this presumption being often substantiated by an abrupt decrease in width of the next article.

A grouping of the species on the basis of the lateral armament, as is done below, is helpful as a key character for the purpose of identification. Of the eighteen species hitherto known four species have the lateral margins of head, thorax and abdomen smooth, and devoid of any serration or denticulation. Among the other fourteen species only *J. marionis* has the lateral margin of the head, thorax and pleotelson serrated. Two species have both the head and pleotelson laterally serrated (*J. lata*) or denticulated (*J. intermedius*). The remaining nine species have the margins of head and thorax smooth. Two of these, *J. curvicornis* and *J. patagoniensis,* have a single incision on the lateral margin of the pleotelson. Our species agrees with the other seven species which have the pleotelson serrated (*J. dollfusi, J. neozelanica, J. affinis* and *J. brevicornis*) or denticulated (*J. dubia, J. bidens* and *J. legrandi*). In spite of its affinity to the above seven species in the lateral armament of the pleotelson, our species is nevertheless different in several other characters and seems to be more related to Kussakin's species *J. lata.*

It resembles *J. lata* in the following characters: location of the eyes, shape of the rostral process, length of the head, shape of the pereonites, serration of the pleotelson and the setose and broad body. However, the present species differs from *J. lata* in many essential respects, e.g., the head is not serrated laterally, the fringes of scales are lacking on the peduncular segments of both pairs of antennae and all pereopodal articles, there is no serration on the uropodal basipodite, the dactylopodites of pereopods 2 to 7 have three instead of two claws and the first pleonite is completely overlapped by the seventh pereonite. This necessitates the creation of a new species, *J. setosa* n. sp. named in allusion to the strikingly long and numerous setae of the body.

Key to the species of *Jaeropsis*

The key to the species of *Jaeropsis* is based mainly on studies of literature. However types of *J. lobata, J. patagoniensis* and *J. rathbunae* were studied from the collections of the U. S. National Museum. The holotype of *J. rathbunae* was kindly shown to us by Dr. G. A. Schultz (Duke University Marine Laboratory, Beaufort, N. C.). Two species found by Drs G. A. Schultz and R. J. Menzies are not yet described and consequently not included in this key (personal communication).

In this key a distinction between serration, denticulation and incision is made. When the base of a small "tooth" is clearly defined it is called denticle, otherwise the term serration is used. When there are only one or two "teeth" present without clearly defined bases the term incision is used.

1. Lateral margins of cephalon and/or pereon and/or pleotelson denticulated, serrated or with incisions 2
— Lateral margins of body smooth 16
2. Lateral margins of cephalon, pereon and pleotelson serrated. Marion Island, Kerguelen . . . . . *J. marionis* Beddard, 1886
— Lateral margins of cephalon and pleotelson, or only pleotelson, serrated, denticulated or with incisions 3
3. Lateral margins of cephalon and pleotelson denticulated or serrated 4
— Lateral margins of pleotelson only denticulated, serrated or with incisions 5
4. Rostral process anteriorly pointed, with crenulated margin; cephalon with lateral denticulation only on the anterior half of margin; basipodite of uropod approximately as wide as long. S. E. coast of South America . . . . . *J. intermedia* Nordenstam, 1933
— Rostral process anteriorly slightly concave; cephalon with serrations along the whole of its lateral margin; basipodite of uropod considerably longer than wide; body with scattered setae. W. Kamchatka . . . . . *J. lata* Kussakin, 1961
5. Pleotelson laterally serrated 6
— Pleotelson laterally denticulated or with one incision 9
6. Cephalon subquadrate, as long as pereonites 1 and 2 together; first and second antennular articles with strong spine-like processes on distal margin; lateral margin of fifth antennal article crenulated. Mediterranean . . . . . *J. dollfusi* Norman, 1899
— Cephalon shorter than wide; first antennular article with median margin serrated or smooth, second article smooth; fifth antennal article with lateral margin entire, without crenulation 7
7. First antennular article with mediodistal serration; median margins of both articles 5 and 6 of antennal peduncle and uropodal basipodite serrated. West coast of France . . . . . *J. brevicornis brevicornis* Koehler, 1885
J. brevicornis littoralis Amar, 1949 differs from the above subspecies in having the third article of the mandibular palp beset with not more than 4 plumose setae and in having the uropodal setae double as long as the uropodal basipodite and not of same length. Mediterranean.
— No serrations on median margins of antennulae, antennae or uropods 8
8. Posterior, median lobe of pleotelson broadly rounded; lateral margin of pleotelson with few setae; female opercular plate ovate. New Zealand . . . . *J. neozelanica* Chilton, 1892
Species of doubtful validity. Most authors regard it as a synonym of *J. curvicornis,* although Chilton in the original description stated that the pleotelson was laterally serrated. *J. curvicornis* has only one incision there.
— Posterior, median lobe of pleotelson semiacute; lateral margins and dorsal surface of body with numerous setae; female opercular plate posteriorly tapering. Washington, San Juan Archipelago . . . . . *J. setosa* sp. n.
9. Pleotelson laterally denticulated; rostral process convex 10
— Pleotelson with one lateral incision on each side; rostral process slightly concave or with a blunt median projection 15
10. First antennular article (rostral process and probably also fourth antennal article) without a fringe of scales (or crenulation); lateral margin of pleotelson with 2 to 4 denticles . . 11
— If pleotelson with only 2 or 3 denticles, the first antennular article and rostral process crenulated or fringed with scales. Scales sometimes lacking on species with more than 5 denticles 12
11. Seventh pereonite much longer than first; lateral margin of pleotelson with 4 (in some cases possibly 3) denticles; uropods not extending beyond posterior margin of pleotelson, their median sides furnished with one large recurved tooth. Bermuda . *J. rathbunae* Richardson, 1902
— All pereonites of subequal length; lateral margin of pleotelson with 2 (male) or 3 (female) denticles; uropods extending beyond posterior margin of pleotelson, their median sides serrated and furnished with one large recurved tooth. Chile . . . . . *J. bidens* Menzies, 1962
12. Dactylopodites of pereopods 2 to 7 with 2 claws 13
— Dactylopodites of pereopods 2 to 7 with 3 claws 14

13. Anterior margin of rostral process entire; pleotelson with 6 to 8 lateral denticles on each side, approximately 1.5 times wider than long. E. Kamchatka and Kurile Islands . . . . . *J. affinis* Kussakin, 1961

— Anterior margin of rostral process somewhat crenulated; pleotelson with 5 lateral denticles on each side, longer than wide. Mediterranean . . . . . *J. legrandi* Juchault, 1962

14. Pleotelson with 5 to 7 lateral denticles on each side; fourth pereonite lightly pigmented or lacking pigment. California. . . . . *J. d. dubia* Menzies, 1951

— Pleotelson with 2 or 3 lateral denticles on each side; fourth pereonite heavily pigmented. California . . . . . *J. dubia* var. *paucispinis* Menzies, 1951

15. Anterior margin of rostral process with a small, median process; inner, distal margin of second article of maxillipedal palp not produced into a triangular process; basipodite of uropod with one distal tooth, median margin not serrated. S. E. coast of South America . . . . . *J. patagoniensis* Richardson, 1909
(Species of doubtful validity. It could possibly be synonymous with *J. curvicornis,* but is treated separately here following Nordenstam, 1933, and Amar, 1949).

— Anterior margin of rostral process slightly concave, without a median process (?); inner distal margin of second article of maxillipedal palp produced anteriorly; basipodite of uropod with one distal tooth and a serrated median margin. Chile, New Zealand, India . . . . . *J. curvicornis* (Nicolet, 1849)
This species has poorly defined characters. Menzies (1962a) considered *J. patagoniensis* as synonymous to *J. curvicornis.* According to Nordenstam (1933) both species should probably be valid. Schultz regards the specimens named *Jaeropsis curvicornis* but reported from different areas as all being different species (personal communication).

16. Median posterior lobe of pleotelson acute 17

— Median posterior lobe of pleotelson broadly rounded 18

17. Uropods extending beyond posterior margin of pleotelson; maxilliped with 5 coupling hooks; rostral process subrectangular, anterior margin somewhat sinuate. New Zealand . . . . . *J. palliseri* Hurley, 1957

— Uropods not extending beyond posterior margin of pleotelson; maxilliped with 3 coupling hooks; rostral process evenly convex. Hawaii . . . . . *J. hawaiiensis* Miller, 1941

18. Eyes large, situated directly posterior to antennular socket (not close to lateral margin of cephalon); maxilliped with 1 coupling hook; body uniformly pigmented. St. Paul Island, southern Indian Ocean . . . . . *J. paulensis* Vanhöffen, 1914

— Eyes small, close to lateral margin of cephalon; maxilliped with 4 coupling hooks; body of striped appearance (first, fifth and sixth pereonites lacking pigment, the rest pigmented). California, Oregon, U.S.A. . . . . *J. lobata* Richardson, 1899

Flabellifera

SPHAEROMIDAE

Exosphaeroma media sp. n. (fig. 8)

The types were collected in the upper intertidal zone on the sandy beach at Eagle Cove, San Juan Island, on July 26, 1964. The species can be found both in clean sand and among stones in slight depressions of the beach, where coarser material accumulates. During 1964 and 1965 a large material was secured. Besides the type locality this species was found on a number of places along the shores of southern San Juan Island, San Juan Archipelago.

Diagnosis. — Contractile into a perfect ball. No marked sexual dimorphism. Body surface glossy but with minute scales. Cephalon with a distinct narrow and obtusely pointed rostral process flanked at the sides by concave antennular sockets. Pereonites of subequal length. Body sides almost parallel. Telson posteriorly broadly truncate. Uropods not extending beyond tip of telson; exopodite slightly

shorter than endopodite but of same width; endopodite distally obtusely pointed, exopodite with rounded distal edge. Posterolateral margin of exopodite most often slightly crenulated with a tuft of small setae in each emargination.

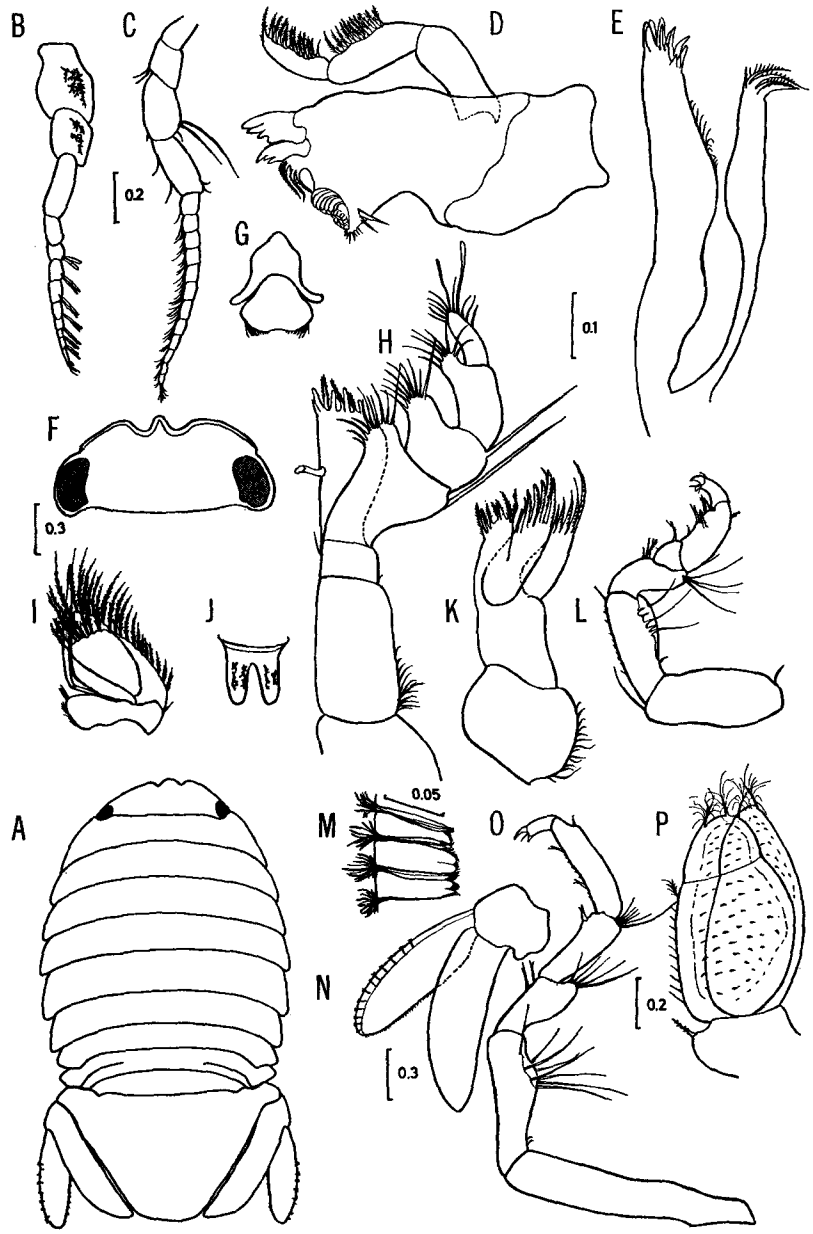

Fig. 8. *Exosphaeroma media* sp. n., holotype. A, holotype in dorsal view; B, right antennula; C, right antenna; D, right mandible; E, right maxillula; F, cephalon; G, epistome; H, right maxilliped; I, male second, right pleopod; J, peneal processes; K, right maxilla; L, right first pereopod; M, detail of lateral border of uropodal exopodite; N, left uropod; O, seventh right pereopod; P, fourth right pleopod. Scales represent indicated length in mm.

Size. The holotype male (U.S.N.M. no. 119835) is 3.8 mm long, and 1.9 mm wide at the sixth pereonite. The allotype female (U.S.N.M. no. 119836) is 4.0 mm long, and 2.0 mm wide at the sixth pereonite.

Cephalon. More than twice as wide as long. Anterior margin with two mediolateral concavities and a median obtusely pointed rostrum, which is almost in direct contact with epistome. Eyes large, slightly bulging and projecting beyond the posterior border of cephalon.

Pereon. Fusion lines between tergites and epimera clearly visible only at the posterior margin of pereonites 6 and 7. Lateral border of first pereonite more than twice as long as those of any other segment.

Pleon. Anterior segment with two suture lines; half as long as telson. Telson with broadly truncate posterior border, the width of which varying slightly in different specimens.

Epistome. With triangular apex, concave sides and evenly convex surface; posterior arms enclosing half the labrum.

Antennulae. Extending to second pereonite. Peduncle and flagellum of about same length, flagellum composed of about nine articles, all except the first with a pair of aesthetascs.

Antennae. Extending to middle of third pereonite. Peduncle of four articles, as long as flagellum; flagellum of about thirteen articles.

Mandibles. Incisor process with four teeth; lacinia tridentate; setal row of five curved setae barbed along one side; molar process strong, with distal edge armed with spines and denticles; palp of three articles, the terminal and the middle fringed with a row of plumose setae.

Maxillulae. Inner lobe slightly shorter and half as wide as outer lobe; the former distally bearing one spine and four stout spinose setae; the latter with about nine strong spines, some of which serrated.

Maxillae. Median margin fringed with setae; inner lobe somewhat narrower than each lappet of the outer lobe and bearing about seven stout, plumose setae. Median lappet of outer lobe with eight barbed spine-like setae, lateral lappet with five; setae decreasing in length distally.

Maxillipeds. Basal article with a lateral row of short setae; endite bearing one long coupling hook and distally four spines and at least four plumose spine-like setae. Palp of five articles, second to fourth medially lobed; second and third articles bearing a very long lateral seta; endite reaching to level of lobe of third article of palp.

Pereopod 1. A little shorter than the other pereopods; basipodite slightly longer than ischium; superior margin of latter with two rows of three to four setae; merus half as long as ischium, distally with a lateral lobe having about six setae; carpus short, triangular with a median two-pointed spine; propodus twice as long as dactylus (including distal claw), medially with two to three two-pointed spines in addition to a feather-like seta; dactylus biunguiculate.

Pereopod 7. Basipodite twice as long as ischium; superior margin of latter

with a very broad triangular two-ridged lobe with three to four setae on each ridge. Merus and carpus of subequal length, propodus a little longer; merus with lateral lobe furnished with about six setae; apical margin of carpus with a number of feathered setae (10 to 14), median margin with one two-pointed and few feathered setae. Propodus medially with three short two-pointed setae; dactylus biunguiculate.

Penial process. Paired, each being twice as long as wide.

Male second pleopod. Appendix masculina long, narrow, extending more than one third beyond apex of endopodite.

Other pleopods. Exopodite of fourth pleopod biarticulate; endopodite of fourth pleopod with one respiratory fold, of fifth pleopod with three complete and two rudimentary folds. .

Uropods. Basipodite laterally fringed with setae, endopodite slightly longer and wider than exopodite, with inner and outer margin having a row of minute setae; postero-lateral margin of exopodite with minute setae arranged in small groups; slight emarginations along border giving a crenulated appearance.

Remarks. — Different populations of the present species show a certain variation in a few characters, especially in the setation of the pereopods and the extent of the crenulation of the uropodal exopodite. In the shape of the telson and in the lack of tubercles our species seems to be closely related to *E. truncatitelson* Barnard (1940), *E. intermedia* Baker (1926), and *E. alii* Baker (1926). However, it differs from each of these in some important characters. None of the latter three species has a crenulated uropodal exopodite. The difference from *E. truncatitelson* is mainly the lack of a vertical shelf of the telson. An additional description of the latter species will most likely bring out further differences. A rostral process is missing in both *E. intermedia* and *E. alii*. Furthermore, the former has an epistome of different shape and the latter has the entire lateral margin of the telson slightly concave. *E. crenulatum* Richardson, 1902 bears a certain resemblance to the present species in its general body shape and crenulation of the uropodal exopodite. Although Richardson's description is brief, her species can be distinguished by the broadly rounded posterior border of the telson and the maxilliped endite which extends to the middle of the terminal article of the palp.

Dynamene sheareri Hatch, 1947 (fig. 9)

Several specimens were collected from different localities around San Juan Island, San Juan Archipelago.

Diagnosis. Body with sides nearly parallel; apex of telson strongly produced, nearly vertically deflexed on either side of the narrow emargination; dorsal surface of telson with two median ridges having three or four minute tubercles, flanked on either side by two longitudinal rows of distinct tubercles; outer row consisting of two discrete tubercles and inner row consisting of two prominent and one or two small tubercles; uropods with exopodite slightly shorter than endopodite, the latter not reaching level of apex of telson.

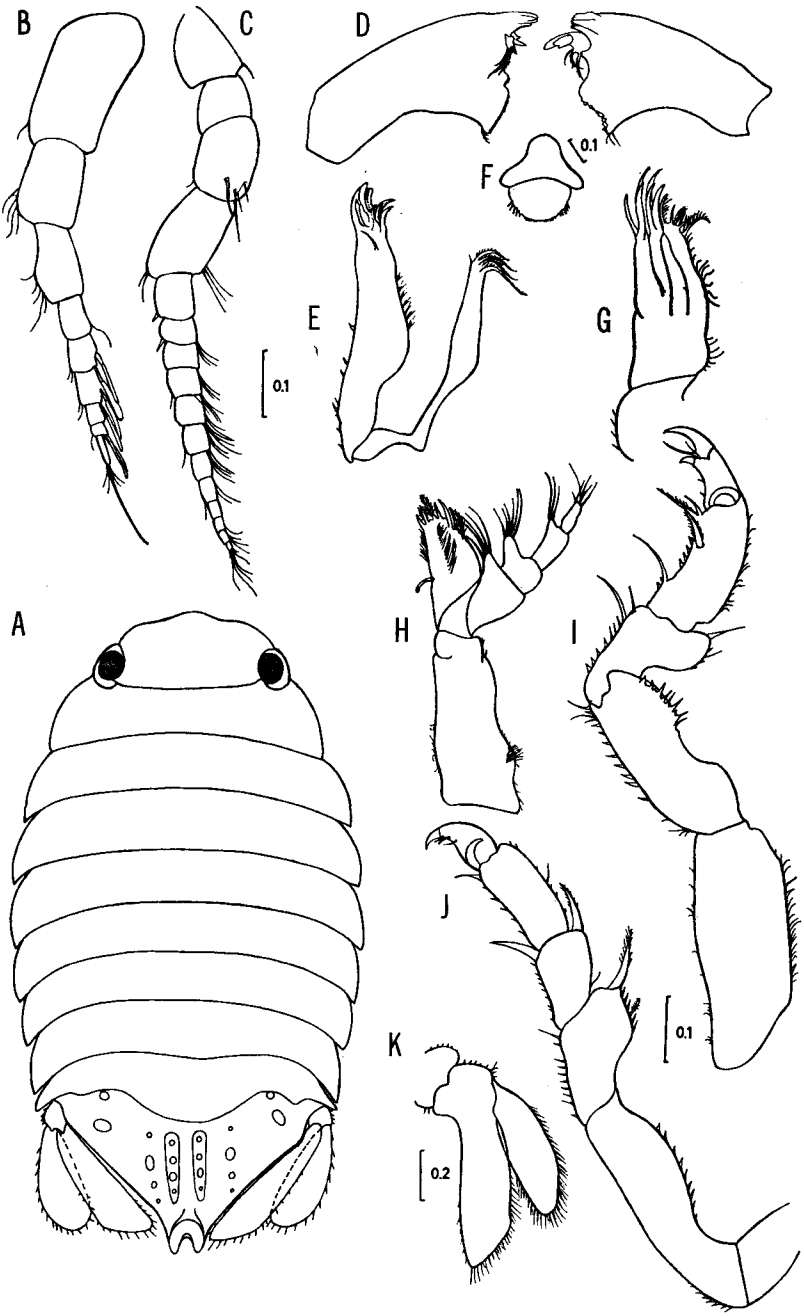

Fig. 9. *Dynamene sheareri* Hatch, 1947. A, male in dorsal view; B, left antennula; C, left antenna; D, mandibles; E, right maxillula; F, epistome; G, right maxilla; H, right maxilliped; I, first right pereopod; J, seventh right pereopod; K, right uropod. Scales represent indicated length in mm.

Cephalon. Twice as wide as long; frontal margin faintly three-lobed; postero-lateral angle obtusely produced.

Pereon. Sides nearly parallel; dorsal surface smooth; first pereonite longest, its antero-lateral angles acute, extending to anterior extremity of eyes; pereonites three to seven subequal in length, postero-lateral angles rounded.

Pleon. First segment as long as seventh pereonite, without any tubercles; telson sculptured with two median ridges having three or four tubercles and with two rows of longitudinally arranged tubercles on either side of ridge. Apex of telson strongly produced and deeply emarginated.

Antennulae. Extending to posterior end of first pereonite; peduncle composed of three articles, basal one longer and wider; flagellum of five articles, the third and fourth with a pair of aesthetascs.

Antennae. Extending to second pereonite; peduncle of four articles and flagellum of seven articles.

Epistome. Apex rounded, sides concave; posterior arms enclosing base of labrum which is hemispherical and distally armed with small spine-like setae.

Mandibles. Incisor process of right mandible with three teeth, lacinia bidentate, setal row of five long setae barbed along one side; molar process stout and denticulate; palp absent.

Maxillulae. Inner lobe somewhat shorter and half as wide as outer lobe; the former bearing four spinose setae apically; the latter with six stout spines and four barbed spines at its apex.

Maxillae. Median margin with a row of setae; inner lobe apically with three spinose setae and three normal setae; both inner and outer lappets of outer lobe distally furnished with three stout long setae, slightly barbed along one side.

Maxillipeds. Endite with a single coupling hook and at apex with three feather-like and three spine-like setae; palp with five articles, second to fourth distally produced into median lobes.

Pereopod 1. Dactylus biunguiculate; inner margin of propodus with conical spines, three long setae and a feather-like seta.

Uropods. Exopodite slightly shorter than endopodite, margin distally rounded and entire, bearing setae; endopodite with setae on outer margin only.

Remarks. — Hatch (1947) has given a few diagnostic characters of this species on the basis of four specimens collected at Coos Bay, Oregon, U.S.A. A full description of this species, hitherto not given, is now presented.

AEGIDAE

Rocinela tridens Hatch, 1947 (fig. 10)

Several specimens from Lopez Pass, San Juan Archipelago, dredged. This locality is about six miles from the type locality of the species, viz., Canoe Island, San Juan Co.

Diagnosis. — Cephalon with front margin medially produced into a large subspatulate lobe, slightly narrower at base and about as wide as long, flanked

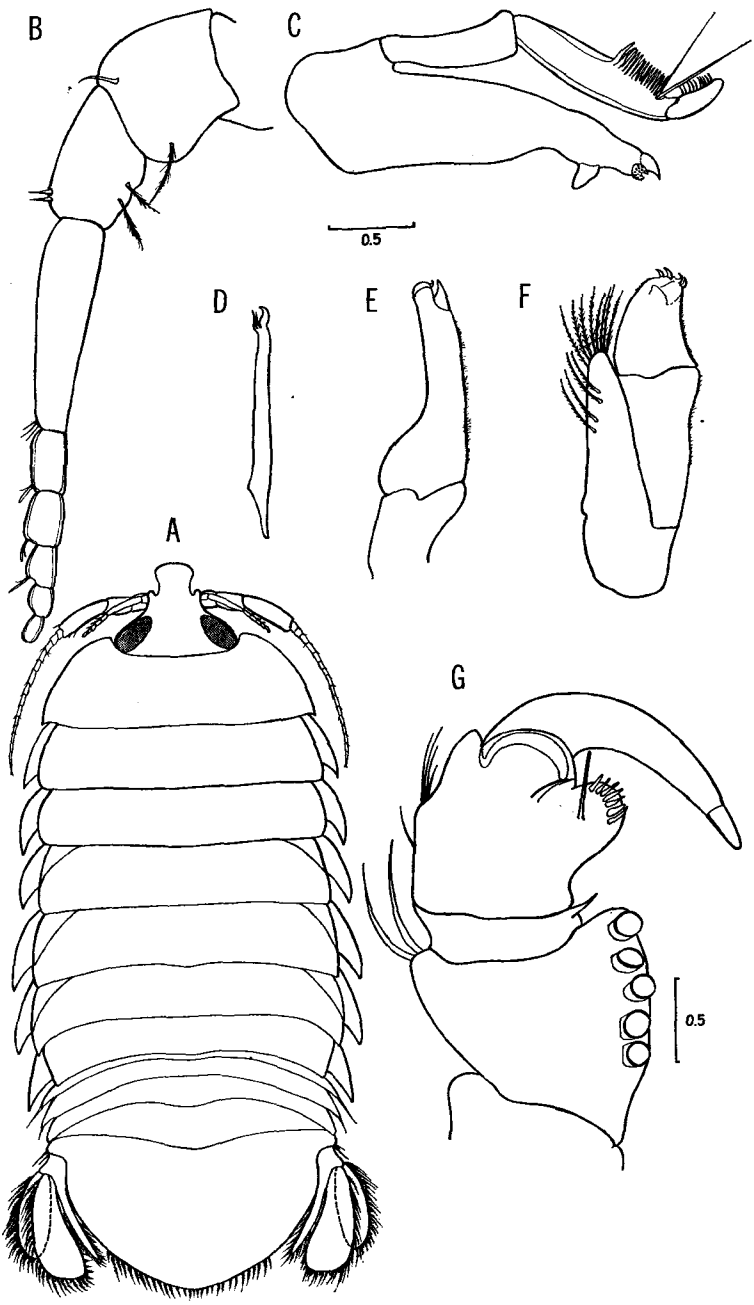

Fig. 10. *Rocinela tridens* Hatch, 1947. A, male in dorsal view; B, left antennula; C, left mandible; D, left maxillula; E, left maxilla; F, left maxilliped; G, distal articles of first left pereopod. Scales represent indicated length in mm.

on both sides with a small subquadrate protuberance; eyes large, not contiguous, separated by more than their own length; propodus of anterior three prehensile legs with a strongly arcuate lobe furnished with 6 or 7 spine-like setae and merus set with five rounded, knob-like teeth along inner margin; first segment of abdomen entirely concealed by last thoracic segment; telson posteriorly broadly rounded, fringed with plumose setae; basipodite of uropod posteriorly reaching end of exopodite.

Body. Oval, surface smooth; nearly twice as long as wide (33 × 17 mm).

Cephalon. Lateral margins rounded, posterior margin sunk into the anterior margin of first pereonite and front line with a median large subspatulate lobe flanked on either side by a much smaller slightly divergent lobe. Dorso-median part concave; eyes black and large.

Pereon. First pereonite with antero-lateral angles produced; first three pereonites subequal, slightly longer than any of posterior four; posterior border of former three almost straight and that of latter four curved. Postero-lateral angles of last two pereonites produced; epimera of all pereonites, except first, distinct with very acute posterior angles.

Pleon. First segment entirely concealed by last pereonite; fifth longer than any of preceding ones but not reaching the lateral margin; postero-lateral angles of second and third acute, tipped with a spine; telson posteriorly broadly rounded, fringed with plumose setae.

Antennulae. Extending slightly beyond posterior extremity of head; third and last peduncular article nearly as long as flagellum; the latter composed of six articles.

Antennae. Extending to second pereonite; peduncle of five articles, first two short, completely hidden by front of head; fifth longest; flagellum composed of 14 or 15 articles.

Mandibles. Incisor process claw-like with a bidentate accessory lobe bearing many minute spines; molar process distally rounded; palp composed of three articles, the middle being longest and furnished with a row of 15 spines and two long setae on inner margin; terminal article short, half as long as first.

Maxillulae. Reduced; slender and long; distally bearing two spines and a strong claw-like tooth.

Maxillae. Median margin with setae; outer lobe broadly rounded and with a tiny denticle; inner lobe triangular, apically produced into a tooth.

Maxillipeds. Endite with eight long plumose setae and four setae on ventral surface; palp composed of two articles, terminal one bearing four claw-like teeth.

Pereopods 1 to 3. Prehensile; dactylus narrow, curved and long; propodus with a strongly arcuate lobe bearing six or seven stout conical spines and a row of long setae in middle of outer margin; carpus short, four times as wide as long; merus set with five blunt teeth along inner margin.

Uropods. Basipodite distally produced into narrow long arm extending nearly to end of exopodite and fringed with long plumose setae on outer margin;

exopodite somewhat shorter than endopodite, both furnished with long plumose setae along entire margin; outer margin of exopodite and posterior border of endopodite beset with short conical spines.

Remarks. — The original description of this species by Hatch (1947) was very brief, being confined to the shape of the cephalon and the prehensile legs.

Epicaridea

LIRIOPSIDAE

Liriopsis pygmaea Rathke, 1843

Specimens have been collected intertidally from Brown Island and have been dredged west of Waldron Island (Cowlitz Bay) and east of Decatur Island (Dot Rock), all localities in the San Juan Archipelago.

As far as the present authors are aware, this species has not been recorded from the Pacific earlier. However, the occurrence of a *Liriopsis* species was brought to our attention by Dr. P. L. Illg and Rev. P. G. Reischman. *Liriopsis pygmaea* was found parasitic on the Rhizocephalans *Peltogaster paguri* Rathke (itself a parasite of the hermit crab *Orthopagurus schmitti* (Stevens)) and *Peltogasterella gracilis* (Boschma) (which lives parasitic on *Pagurus alaskensis* (Benedict) and *P. hirsutiusculus* (Dana)).

BOPYRIDAE

Pseudione giardi Calman, 1898

This species, originally described from Puget Sound, Washington, was reported from the San Juan Island area, San Juan Archipelago, Washington, in 1960 by P. W. Davis in an unpublished student report. The species is frequently found in the branchial cavity of the galatheid decapod *Munida quadrispina* Benedict.

Phyllodurus abdominalis Stimpson, 1857

This species was also reported in P. W. Davis' unpublished report. The present authors have found it to parasitize about 3 to 4 percent of a certain population of *Upogebia pugettensis* (Dana) at the mouth of False Bay, San Juan Island.

ENTONISCIDAE

Portunion conformis Muscatine, 1956

Being a parasite of *Hemigrapsus oregonensis* (Dana), the present species occurs intertidally in front of the Friday Harbor Laboratories, San Juan Island. It was not observed in Washington waters until the summer of 1964. Dr. M. E. Lowe (Texas Technical College, Lubbock, Texas), who found the first specimens, was kind enough to inform us about its presence. During the summer months more than 50 percent of the host species is found infested by this parasite.

CHECK LIST OF ISOPODS RECORDED FROM THE SAN JUAN ARCHIPELAGO

Flabellifera

CIROLANIDAE

1. *Cirolana harfordi* (Lockington, 1877)
2. *Cirolana kincaidi,* Hatch, 1947

LIMNORIIDAE

3. *Limnoria lignorum* (Rathke, 1799)

SPHAEROMIDAE

4. *Gnorimosphaeroma oregonensis* (Dana, 1852)
5. *Exosphaeroma amplicauda* (Stimpson, 1857)
6. *Exosphaeroma media* sp. n.
7. *Dynamene sheareri* Hatch, 1947

AEGIDAE

8. *Rocinela belliceps* (Stimpson, 1864) — ectoparasitic on *Hydrolagus* sp.
9. *Rocinela belliceps pugettensis* Hatch, 1947
10. *Rocinela angustata* Richardson, 1898 — ectoparasitic on halibut and *Raja binoculata*
11. *Rocinela propodialis* Richardson, 1905 — ectoparasitic on *Raja binoculata, Hippoglossus* sp. and *Sebastodes* sp.
12. *Rocinela tridens* Hatch, 1947

Valvifera

IDOTEIDAE

13a. *Idotea* (*Pentidotea*) *wosnesenskii* (Brandt, 1851)
13b. *Idotea* (*P.*) *wosnesenskii* var. *exlineae* Hatch, 1947
14. *Idotea* (*P.*) *resecata* (Stimpson, 1857)
15. *Idotea* (*P.*) *stenops* (Benedict, 1898)
16. *Idotea* (*P.*) *aculeata* Stafford, 1913
17. *Idotea* (*Idotea*) *urotoma* Stimpson, 1864
18. *Synidotea nebulosa* Benedict, 1897

Asellota

JANIRIDAE

19. *Ianiropsis analoga* Menzies, 1952 (= *Janira maculosa* sensu Hatch, 1947, not Leach, 1814)
20. *Ianiropsis kincaidi* (Richardson, 1904) (= *Ianiropsis pugettensis* Hatch, 1947)
21. *Ianiropsis magnocula* Menzies, 1952
22. *Ianiropsis tridens* Menzies, 1952
23. *Janiralata occidentalis* (Walker, 1898)
24. *Janiralata solasteri* (Hatch, 1947)

JAEROPSIDAE

25. *Jaeropsis setosa* sp. n.

MUNNIDAE

26. *Pleurogonium rubicundum* (Sars, 1864)
27. *Pleurogonium* sp.?
28. *Munna* (*Uromunna*) *ubiquita* Menzies, 1952 (= *Munna minuta* sensu Hatch, 1947, not Hansen, 1909)
29. *Munna* (*Munna*) *fernaldi* sp. n.
30. *Munna* (*Neomunna*) *chromatocephala* Menzies, 1952
31. *Munnogonium waldronense* gen. n., sp. n.

Epicaridea

LIRIOPSIDAE

32. *Liriopsis pygmaea* (Rathke, 1843) — parasitic on *Peltogaster paguri* Rathke and *Peltogasterella gracilis* (Boschma)

BOPYRIDAE

33. *Pseudione giardi* Calman, 1898 — parasitic on *Pagurus ochotensis* Brandt, *P. hirsutiusculus* (Dana) and *P. aleuticus* (Benedict).
34. *Pseudione galacanthae* Hansen, 1897 — parasitic on *Munida quadrispina* Benedict.
35. *Phyllodurus abdominalis* Stimpson, 1857 — parasitic on *Upogebia pugettensis* (Dana).
36. *Argeia pugettensis* Dana, 1853 — parasitic on *Crangon alaskensis* Lockington, *C. communis* Rathbun, *C. franciscorum* Stimpson, *C. munita* Dana, *C. munitella* Walker, *Argis dentata* (Rathbun), and rarely *Eualus suckleyi* (Stimpson).
37. *Bopyroides hippolytes* (Krøyer, 1838) — parasitic on *Spirontocaris arcuata* Rathbun, *S. lamellicornis* (Dana), *S. sica* Rathbun, *Eualus suckleyi* (Stimpson), *E. townsendi* (Rathbun) and *Heptacarpus brevirostris* (Dana).
38. *Hemiarthrus abdominalis* (Krøyer, 1840) — parasitic on *Lebbeus groenlandicus* (Fabr.), *Spirontocaris arcuata* Rathbun, *S. prionota* (Stimpson), *Eualus avinus* (Rathbun), *E. fabricii* (Kröyer), *E. suckleyi* (Stimpson), *E. townsendi* (Rathbun), *Heptacarpus tenuissimus* Holmes and *H. tridens* (Rathbun).

ENTONISCIDAE

39. *Portunion conformis* Muscatine, 1956 — parasitic on *Hemigrapsus oregonensis* (Dana)

Oniscoidea

LIGIIDAE

40. *Ligia pallasi* (Brandt, 1833)
41. *Ligidium gracile* (Dana, 1857)

ARMADILLIDIIDAE

42. *Armadillidium vulgare* (Latreille, 1804)

PORCELLIONIDAE

43a. *Porcellio scaber scaber* Latreille, 1804
43b. *Porcellio scaber* subsp. *americanus* Arcangeli, 1927

ONISCIDAE

44. *Philoscia* (*Littorophiloscia*) *richardsonae* Holmes & Gay, 1909
45. *Alloniscus perconvexus* Dana, 1854

SCYPHACIDAE

46. *Detonella papillicornis* Richardson, 1904
47. *Armadilloniscus tuberculatus* Holmes & Gay, 1909

RÉSUMÉ

Isopodes marins nouveaux obtenus au cours de chalutages, de dragages et de récoltes intertidales dans les parages des laboratoires de Friday Harbor, Washington, U.S.A. Ils comprennent un genre nouveau, *Munnogonium*, et quatre espèces nouvelles: *Munnogonium waldronense, Munna* (*Munna*) *fernaldi, Jaeropsis setosa* et *Exosphaeroma media.* Douze espèces précédemment inconnues de cette région sont signalées et deux espèces sont redécrites.

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