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PRELIMINARY DESCRIPTIONS OF THIRTY-SEVEN NEW SPECIES
OF HERMIT CRABS OF THE GENUS *EUPAGURUS* IN THE U. S.
NATIONAL MUSEUM.

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1. Subgenus **EUPAGURUS**.

Typical species *Eupagurus bernhardus* (L.).

Eupagurus with the large surface of the left hand horizontal. Species not inclined to be hairy.

2. Subgenus **TRIGONOCHIRUS**.

Typical species *Eupagurus trigonocheirus* Stimpson.

Eupagurus with the outer face of the left hand oblique and more or less triangular. In some cases it is flattened, in others concave, or very much swollen, as in *hirsutiusculus*. The species are frequently very hairy.

3. Subgenus **ELASSOCHIRUS**.

Typical species *Eupagurus tenuimanus* (Dana).

Eupagurus with the left hand very small, in some cases almost rudimentary. The large hand is always wide or broadly ovate, excepting in *munitus* and *gilli*, where the carpus is exceedingly wide, and the hand moderately so. Eye scale semicylindrical, grading to triangular, sharp pointed. Species not hairy; many of them very smooth and glabrous.

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4. Subgenus **LABIDOCHIRUS**.

Typical species *Eupagurus splendescens* (Owen).

Eupagurus with the manus of the left cheliped cylindrical. Under this section I have included but three species, the type, *E. mertensi* Brandt, and *E. parvus* nov.

Subgenus **EUPAGURUS**.

Eupagurus alaskensis.

Anterior portion of carapace a little broader than long. Rostral tooth produced to the base of the eye scales; lateral projections much less produced. Eye-stalks short and stout, constricted in the middle. The eye scales taper from the base to a blunt apex; the subterminal spine is conspicuous from above. The acicles of the antennæ reach the proximal end of the flagella and are three-sided; sides flat, iridescent. The inner margin is armed with from 12 to 16 short conical teeth, and is set with bunches of hair.

The merus of the right cheliped is very stout and strong, and extends beyond the eye by about one-half its length. The carpus is armed on its inner margin with a line of stout spines; there are also two longitudinal rows of spines on its upper surface; elsewhere thickly set with spiny granules. The hand is set with spiny granules forming a border on the outer margin. On the fingers the surface is very coarsely granular.

The left cheliped is much smaller than the right; its carpus has a row of strong spines on the inner margin, and a parallel row further down on the outer surface; otherwise it is set with spiny granules as in the large hand. The dactyl does not show from above any flattened surface, but from the prehensile edge to the outer margin it is evenly rounded.

The ambulatory legs of the right side overreach the right cheliped but little; in very large specimens not at all. The upper surface of the merus joints are a little flattened. The upper margin of the carpus is armed with a single row of spines. Upper surface of propodal joints flattened, armed with a row of short spines on the summit and elsewhere with spiny granules. The dactyls are very wide, compressed, and twisted. The upper surface is convex, its summit and margins each set with a row of granules. Between these rows are long, smooth, surfaces. The inner surface of the dactyl is flat. The outer surface is very convex near the proximal end, but becomes much more flattened near the tip.

In alcoholic specimens the general color above is a light purple with iridescent reflections; below, light, tinged with reddish. A red streak runs around the prehensile edge of the thumbs and behind the dactyls to the inner margins of the hands. There is an oblong patch of red

on the outer distal margins and on the inner upper surface of the merus joints of the cheliped. The lower outer surface of the carpal joints of the ambulatory legs are pointed with red. The propodal joints and dactyls are longitudinally streaked with red.

This species is very close to *bernhardus*, but is easily distinguished by its broader and shorter left hand, by the wide dactyls of the ambulatory legs, by the acicula, and by its pearly iridescence.

Alaska.

Eupagurus aleuticus.

Front with three teeth sharper and a little more prominent than in *alaskensis*. The middle or rostral tooth is not quite so much produced. Eye-stalks much stouter and some longer than in *alaskensis*. The eye scales are larger and less acuminate. The subterminal spine does not show from above. The acicles are broader at the base than in *alaskensis*.

The chelipeds are stout. The carpal joints are armed with numerous sharp spines. That of the left cheliped is three-sided, and not four, as in *alaskensis*. The dactyls of both hands show from above a smooth oblique surface, either flat or a trifle concave. In the small hand this surface is free from hair and granules; in the large hand it is bordered with short spiny granules, and the granules inclosed are very small. The spines of both hands are bifurcate, except those of the margin, which are simple. The dactyls of the ambulatory legs are very wide and thin. The upper surfaces are entirely occupied by a sulcus, deep at the base of the article, becoming shallow at the end. This character of the dactyls is sufficient to distinguish this species from any other species of the *bernhardus* type. The color is dark in most specimens.

Aleutian Islands.

Eupagurus patagoniensis.

Anterior portion of carapace a little broader than long. Front with three rounded lobes equally produced. Lateral lobes armed with a single small sharp spine pointing directly forward. The eye-stalks are stout, smallest in the middle, dilated and flattened at the corneæ, and enlarged but cylindrical at the base. Eye scales much as in *alaskensis*. The subterminal spine is black-tipped and shows from above. The acicles reach the base of the flagella. In form they are very closely like that of *bernhardus*, and not so much flattened as in the related Alaskan species.

The chelipeds are a little shorter than the ambulatory legs of their respective sides. Carpus of large cheliped shaped like that of *bernhardus*, but it is evenly set with short sharp spines with black points. Spines of upper surface of hand black pointed and arranged in about seven more or less distinct longitudinal rows. The hand is more than twice as long as broad. The outer margin is arcuate; the inner margin

is nearly straight. The prehensile edges of the fingers are armed with large tubercles slightly horny near the tips. The merus joints of both chelipeds are very smooth on their large surfaces, but bordered with spines below.

The left cheliped reaches to the base of the dactyl of the large hand. It is similar in shape and armature, with the exception of the prehensile edges of the fingers, which are much more horny. The carpus has an evenly convex outer and upper surface armed with spines.

The dactyls of the ambulatory legs are curved, bent and twisted as in *bernhardus* and allied species, but are not compressed.

Although this species differs from the typical species of the genus, in the horny tips of the fingers of the large hand, yet in all other respects it so closely resembles the characteristic species that I cannot place it outside the limits of the genus under consideration.

East coast of Patagonia.

Eupagurus smithi.

The three projections of the front are about equally advanced; all are angular but not sharp; the lateral are each armed with a short spine. The eye-stalks are short, stout, and much dilated at the cornea. The eye scales are short and round. The small subterminal spine shows from above. The second article of the antennal peduncle has its outer spine produced and spinulose on the inner edge. The terminal article extends beyond the eye one-half of its length. The terminal article of the antennular peduncle originates opposite the distal end of the eye-stalk.

The merus of the large cheliped is compressed. Its anterior upper margin and a flattened patch on the distal upper surface are spiny. The carpus is covered with small spines, and the inner margin is set with about eight large sharp spines curved slightly forward. The outer surface of the carpus is flattened, making a distinct surface, but there is no dividing line of spines or granules. The hand is broadest at the middle of the palm. The outer margin is fringed with short, sharp spines. The inner margin is unarmed except the distal half of the dactyl, which has a few short spines. The upper surface is paved with flattened plates or tubercles, each of which is surmounted by a small spine. The plates are raised above the true surface of the hand and, as in similar cases, there are many irregular-shaped fissures between them. The plates themselves are not all circular, but many of them have a small deep sinus on one side.

The left cheliped is strong and reaches the proximal end of the dactyl of the large cheliped. Its merus is much compressed, making its upper margin thin. The distal end of this margin is armed with two strong spines, which project directly forward over the carpus. The carpus is broad; its inner edge is crested with sharp spines. The upper surface is covered with small spines, as in the other cheliped. The hand is en-

tirely bordered with spines, and its surface is horizontal and covered with plates, as in the large hand.

The ambulatory legs are moderately stout, with slender, curved, and twisted dactyls. The carpal and propodal joints are crested with spines. The spines on the propodal joints of the second pair are very small. The dactyls are broadest two-thirds of their length from the propodal joints and are bordered with hair above and with spines and hair below.

The color in alcoholic specimens is pink.

Gulf of California.

Eupagurus impressus.

Anterior portion of carapace about as broad as long, flattened. Rostral projection on a line with lateral projections, much rounded. Lateral projections angular. Eye-stalks long, slender, dilated, and flattened at the corneæ. Scales semioval. Subterminal spine large. Aciculæ slender, very hairy, not extending beyond the eye-stalks.

The chelipeds are stout and strong. The large hand is much wider than the carpus. Its outer margin is arcuate, set with about twenty blunt teeth. The inner margin is without marginal spines or granules except at the distal end of the dactyl, where the margin beyond the angle is spiny. The upper surface is covered with granular plates, making a nearly even surface above the true surface. There is a depression near the outer margin opposite the base of the dactyl, and another running from the carpus nearly to the gape of the fingers in each hand.

The left hand is broader in proportion to its length than the right. Its surface is about the same in character. The arcuate outer margin is set with teeth, with small angular projections near the base of each. The inner margin is nearly straight, behind the dactyl having a row of five or six teeth. The margin of the dactyl is tuberculate.

The ambulatory legs extend but little beyond the cheliped. The dactyls are hairy and a little bent and twisted.

This species is allied to *pollicaris*.

Florida.

Eupagurus floridanus.

Anterior portion of carapace wider than long. Rostral projection rounded; lateral projections angular and a little in advance of the rostral. Eye-stalks slender, much flattened and dilated at the corneæ, and dilated at the base. Eye scales elongated, conical, with a large subterminal spine. The aciculæ of the antennæ do not extend beyond the eye. The ultimate joint of the antennulæ is more than twice as long as the penultimate.

The chelipeds are very much as in *pollicaris*, but the hands are much narrower. The angle of the outer margin of the dactyl of the large hand is much nearer its base. The outer margin of the hand is not so much rounded and the bordering granules are not so prominent as

in *pollicaris*. The upper margin of the carpal and propodal joints of the ambulatory legs are spinulose. The dactyls are slender, curved and twisted.

Florida.

Eupagurus exilis.

Carapace flattened, depressed, wider than long. Front with a sharp triangular rostral tooth in line with the much rounder lateral lobes, which are armed with two short sharp spines directed forward and outward. The eye-stalks are short and stout, flattened at the cornea. The scales are short, wide, and round at the end, the subterminal spine not showing ordinarily from above. Aciculæ of the antennæ not quite reaching the extremity of the eyes.

Chelipeds long and slender. The carpus is about as in *longicarpus*. The hand is much more than twice as long as broad, about equally arcuate on both margins. The fingers are slightly hooked at the tips. The left cheliped is as in *longicarpus* with the exception of a raised row of granules on the outer margin of the pollex.

The dactyls of the ambulatory legs are long, slender, curved, and twisted. The upper carpal margins are set with a row of small spines. These do not exist in *longicarpus*.

This species, while very closely related, is sufficiently distinct from *longicarpus*.

Off the Rio de la Plata.

Eupagurus albus.

Front with median projection angular, not produced much if at all beyond the lateral projections, which are also angular and are armed with a short spine which points outward. This spine or point does not arise below the margin, as is commonly the case with spines at this point, but is produced from the slightly raised margin. The eye-stalks are short, stout, and flattened; the cornea are dilated. Eye scales short, triangular, wide at the base; the subterminal spine very small, sometimes seen from above, often not. The peduncles of the antennula and antenna extend beyond the eyes. The acicles are about as long as the eyes.

The right cheliped is long and slender. The upper anterior margin of the merus is armed with a few stout conical spines. The carpus is flattened on the inner surface and much rounded above and on the outer side. The upper surface is longitudinally divided into two parts by a median line of small spiny granules. The surface of the inner division is concave; the outer is convex. The hand is long, narrow, and is very slightly bent upward. The surface above and below is thickly set with rough, flattened granules. The inner border is conspicuously marked by a raised ridge. The fingers are slender and shorter than the palm.

The small cheliped barely reaches the large hand in large specimens.

The carpus is single crested; lower down is a parallel line of spiny granules which terminates with rather a large spine at the manus. The outline of the manus is slightly concave on its outer margin, while the inner outline is strongly convex. A sharp ridge runs along the outer margin of the hand and pollex. At the base of the pollex the depression is much deeper than farther along at either end of the ridge. The prehensile edge of the pollex is armed with small calcareous teeth, while the prehensile edge of the dactyl is armed with a comb of horny denticles.

The meral, carpal, and propodal joints of the ambulatory legs are stout, while the dactyls are very slender, much curved, and twisted. On each side of each dactyl a deep groove originates at the articulation with the propodus and disappears towards the end of the dactyl. There is a line of hairs on the upper margin.

This species is common in the Gulf of California.

Eupagurus gladius.

Anterior portion of carapace much broader than long. Rostral projection angular, pointed. Angles of the lateral projection more obtuse, pointed. Eye-stalks very stout, flattened. Scales short, wide. Subterminal spine small, often not showing from above. The acicles of the antennæ extend well beyond the eyes.

The right cheliped is very long. Merus rugose, its lower external distal angle produced and armed with several small spiny teeth. Carpus long, convex, its inner margin marked with a row of small spines of unequal length. Its upper surface is evenly set with spiny granules. The outer margin is marked by a dense row of these granules. The hand at its base is much narrower than the carpus. It attains its full width at the base of the dactyl, where it is not quite so wide as the carpus. The length of the hand in a typical specimen is 16 mm.; width 5 mm. The inner margin is marked by a line of granules. The granules of the upper surface are sharp and have a tendency to stand in more or less transverse rows. The outer margin is thin and is bordered by a row of very small blunt teeth. The fingers are thin and their prehensile edges are armed with calcareous tubercles.

The left cheliped scarcely reaches the base of the large hand. Its carpus has a double crest of spinules. The hand is bent outward. The fingers are thin and curved downward.

The ambulatory legs are slender. The outer spines of the crest on the carpus often have two or three points. The crest of the propodus is composed of much smaller spines than that of the carpus. The dactyls are thin, wide, curved, and twisted.

This species is closely allied to *longicarpus* and related species.
Gulf of California.

Eupagurus defensus.

Anterior portion of carapace broad and convex. Median process rounded, the margin of the front between the lateral processes being an

even curve. Lateral processes slender, pointed, and armed with a short spine. The eye-stalks are stout, much dilated, and flattened at the cornea. The eye scales are broad, rounded, the anterior margin being a semicircle. The large, subterminal spine makes them appear at first sight very acute. The peduncle of the antenna extends beyond the eye by one-half the length of the terminal segment. The peduncle of the antennula extends beyond the eye by two-thirds the length of its terminal article. The acicle is a little longer than the eye.

The merus of the large cheliped is cylindrical at its base and swells out to the carpus. It has no angular surfaces. The carpus has three lines of sharp, slender spines, one on the inner margin composed of much larger spines, one on the outer margin, and one part way between the two. The hand is a little wider than the carpus at the base of the dactyl; its margin is set with a comb of long slender spines. A row of spines of about the same size and character runs from the gape of the finger to the wrist. Between the marginal and central rows are two diagonal rows of spines. On the outer surface of the hand, near the base of the pollex, is a patch of seven or eight spines. On the ridge of the pollex there are several rows of plates irregularly placed, and a small spine arises from the center of each. The fingers are hooked and gape widely.

The small cheliped reaches the base of the dactyl. Its merus is compressed. The carpus carries a double crest of spines; inner margin straight and flat; outer convex. The hand is armed with spines, as in the large cheliped, with the exception of the spine-bearing plates, which it lacks altogether. The fingers gape as in the large hand. In the small specimens the fingers do not gape in either hand.

The description is made from two specimens from the *Albatross* collection in the Gulf of Mexico.

Subgenus **TRIGONOCHIRUS.**

Eupagurus capillatus.

Anterior portion of carapace a little longer than broad. Lateral areas with numerous tufts of hair. Front with a broadly rounded, slightly produced, median projection. Lateral projections or lobes each armed below the margin with a strong spine. Eye-stalks long, slender, nearly straight. Scales semioval, with a strong subterminal spine. Acicle of the antenna not quite reaching the tip of the eye. Ultimate article of the antennula as long as the eye-stalk and extending nearly its full length beyond.

Right cheliped large. The merus is convex on the outer surface, nearly smooth; inner surface flattened and very hairy; spiny below. Carpus above convex, with small scattered spines; inner margin marked with a row of strong spines. Hand ordinarily twice as long as broad, rather sparsely set with stout spines.

Left cheliped with merus compressed. Carpus compressed, bicristate. Hand narrow and slender. Ambulatory legs stout. Dactyls curved and slightly twisted.

This species is much nearer its Atlantic representative *pubescens* than is any other North Pacific *Eupagurus* to its Atlantic analogue, and has long been confounded with it. The two are however distinct, and can be separated by careful comparison. *Capillatus* has the appearance of being much more hairy, the hairs often holding mud and dirt. Under the microscope, the main shaft of each hair is crowded with long fine hairs. In *pubescens*, the hairs show occasional spinules along the main shaft. The oblique face of the left hand in *capillatus* is more angular at its base and is not quite so long in proportion to its width as in *pubescens*. The large hand is more rounded. The spines are larger and not so numerous. The propodal joints are a little more flattened and a little shorter. The eyes are a trifle longer.

Alaska.

Eupagurus brandti.

Median projection of the front very little produced beyond the lateral. Lateral projections rounded and armed with a submarginal spine. Eye-stalks rather stout, a little dilated at the corneæ. Scales triangular, bearing a bunch of coarse bristles. The acicle of the antenna extends a little beyond the eye.

The chelipeds are stout. Carpus armed above with small scattered spines. Hand very much swollen; outer margin arcuate; inner margin of palm and finger making nearly a straight line. Prehensile edges of fingers armed with three or four stout tubercles; tips horny.

Left cheliped small. Carpus compressed, bicristate. The oblique triangular face of the hand is markedly concave.

Ambulatory legs moderately slender, almost entirely unarmed. The dactyls are wide, curved, and slightly twisted.

The color of alcoholic specimens is reddish, the middle of the joints light. Spines everywhere red or red pointed.

This species is closely related to *kröyeri*, *trigonocheirus* and *dalli*. The small chelipeds of all have the triangular outer face, and in general the species resemble each other very much. With a large series of all I find substantial specific characters. *Brandti* and *dalli* are found together in a depth of from 15 to 85 fathoms in the Aleutian Island region. They grow to a length of three inches. They are separated at sight by a sharply defined band of white on the distal end of the merus joints of *dalli*, which is entirely wanting in *brandti*.

Eupagurus dalli.

Anterior portion of carapace very convex, about as broad as long. Median projection of the front triangular, produced beyond the lateral projections. Lateral projections rounded, each armed with a submar-

ginal spine. Eye-stalks smaller than in *brandti*. Eye scales triangular, with a large subterminal spine. The acicles reach but little beyond the eyes.

The width of the carpus of the large cheliped is less than two-thirds of its length, while the hand is more than twice as long as broad. The outline of the hand is nearly the same on both margins. The fingers are a little hooked, and the points cross when the fingers are closed, giving the pollex the appearance of being a little longer than the dactyl. The spines of the carpus and hand are small, slender, and sharp. The small cheliped has a triangular outer face.

The ambulatory legs are slender, the dactyls on the right side extending beyond the cheliped by about one-third their length. The dactyls are spinulose, a little curved, but not at all twisted. The chelipeds and ambulatory legs are hairy; the hair is very fine and not very conspicuous.

Alaska.

Eupagurus tanneri.

Front tridentate; teeth pointed, well defined. Rostriform tooth much larger and more produced than the lateral teeth. Ocular peduncles stout; corneæ dilated; scales ovate, with subterminal spine prominent, pointed. Second article of antenna short, stout; its outer angle produced to or beyond the middle of the penultimate article; inner angle armed with a slender spine. Acicle thin and flattened at its base, slender and subcylindrical for the greater part of its length. It reaches beyond the middle of the last article.

Right cheliped long, its merus extending beyond the eye for two-thirds of its length. Upper and outer side of merus cylindrical, its distal surface rendered uneven by tubercles and hairy rugæ, the rugæ becoming shorter at the proximal end. Carpus four-sided; upper side a little convex; much more so below; sides concave. Hand elongate, about as wide as the carpus; from about the middle of the palm it tapers gradually each way. Fingers thin and bent downward like curved scissors. A ridge beginning at the articulation of the carpus near the inner angle of the hand, runs diagonally across the hand and along the inner portion of the immovable finger. Another ridge beginning near the outer proximal angle of the hand runs across the hand and joins the first ridge a little behind the gape of the fingers. At this point the ridge is most elevated. The two ridges inclose a subtriangular area, in which there are five or six short spines. The ridges are spiny, the first one from its origin to the pollex, the second throughout its length. Both margins of the hand are spiny. On the outer margin the spines are regularly placed in a single row, extending to near the tip of the pollex. On the inner margin they form a double row, irregularly placed. There is a single row of spines on the margin of the dactyl. A row higher up unites with the first near the tip. Two marked depressions occupy the large part of the upper surface of

the hand. The one on the outer side begins on the pollex and runs backward, becoming deeper opposite the base of the dactyl and widest a little back of this. On the inner part of the hand the second depression begins along the articulation of the dactyl and runs back to the proximal margin. There are no granules or spines in this depression, and but few scattered spiny granules in the other. The surface of the hand is glabrous.

The left cheliped is small, reaching to the middle of the large hand. Merus compressed above, thickened below, and armed with sharp spines. Carpus compressed; upper surface flattened, each margin armed with a row of prominent sharp spines; lower surface convex, set with small tubercles. Outer face of the hand subtriangular, deeply concave. Upper margin of this face armed with a single row of spines, and the lower margin with a double row irregularly placed and much smaller. A short row of spines from the carpal margin unites with the upper marginal row, making this row appear double for a part of its length in small specimens. Fingers slender, bent downward; prehensile edges thin, even, and horny.

Ambulatory legs slender, in large specimens reaching but little beyond the cheliped on the right side, in small specimens extending beyond by one-half the length of the dactyl. Merus joints much compressed; upper surface flattened, rugose; rugæ hairy. Carpal joints armed on the upper margin with a single row of sharp spines. Propodal joints compressed above, irregularly set with short spines. Dactyls long, slender, twisted. Two lines of hair near the margins of the inner surface are very conspicuous. Outer surface convex, glabrous.

Alaska.

Eupagurus confragosus.

Front tridentate; teeth pointed; median tooth but little produced beyond the lateral. Eye stalks stout, tapering gradually to the dilated corneæ. Scales acuminate; subterminal spine long, stout. Second article of antenna stout, its outer angle produced to about the middle of the penultimate article. Acicles reaching but little beyond the eyes. Penultimate article subconical.

The right cheliped is stout, falling short of the tips of the ambulatory legs. Merus and carpus very much as in *tanneri*, but the merus is more spiny below and the spines of the inner upper margin of the carpus are larger in comparison with those of the outer margin than in that species. The hand is wider and stouter than in *tanneri*, but made up in much the same way. The outer margin is spiny while the inner margin is set with spiny granules. The raised triangle with its base on the articulation with the carpus is much broader. The ridge which runs from the inner angle to the immovable finger is granulate rather than spiny. The ridge on the inner side of the triangle is broken by a V-shaped notch, the broken parts changing direction at this point. The outer ridge of the triangle, a short line inside, and the apex are sparsely

set with spines. Depressions occur on both sides of the hand, as in the last species, but do not reach the carpal margin, the inner depression being entirely cut off by the ridge. The whole upper surface of the hand is set with spiny granules, between which the surface is glabrous. The fingers are thin, but do not curve downward.

The left cheliped is shorter and more slender than the right. Carpus compressed; upper surface flat; both margins armed with spines, those of the outer margin much the longer and a little hooked forward. The outer face of the hand is deeply concave; the surface is granulated; both margins are spinous, the spines evenly placed. The fingers are slender, with even, thin, prehensile edges.

The ambulatory legs on the right side reach but little beyond the large hand. Merus joints much compressed; those of the anterior pair armed with spines below. Upper margin of carpal and propodal joints armed with spines. Smaller spines exist on the carpal joints of the second pair, but not upon the propodal. The dactyls are curved and a little twisted, fringed with hair as in *tanneri*.

The two species are readily separated by the inner side of the raised triangle of the large hand. In this species it cuts off the inner depression of the upper surface from the proximal margin of the palm, while in *tanneri* this depression is allowed to reach the margin by a curvature of the ridge.

Alaska.

Eupagurus cornutus.

Anterior portion of carapace a little wider than long. Front tridentate; median tooth larger and a little more produced than the lateral. The eyes are stout and in length equal about one-half the width of the anterior portion of the carapace. Acicles slender, subcylindrical, extending one-half their length beyond the eyes; external spine produced; its apex slender; the inner margin armed with three or four slender teeth.

The right cheliped is long and stout. The distal end of the merus is armed with short spines above and below; its upper surface is sparsely granulated posteriorly; anteriorly it is set with short transverse rugæ, from which lines of hair reach forward along the surface. The upper surface of the carpus is subrectangular; its linear margins sharply defined by rows of conical spines, those of the inner margin being much the larger; a third row of irregularly placed spines runs parallel to the inner margin. The hand swells out at its articulation until it is a little wider than the carpus, when the margins of the hand are nearly parallel to a point a little beyond the gape of the fingers. From this point to the tip of the immovable finger the outer margin is nearly straight, the dactyl gently curving to the tip. The outer margin is armed with a single row of spines and is fringed with fine hair. The margin of the dactyl is the same in character, but the spines are much smaller. A strong, rounded, granulated ridge begins near the wrist on the inner side

of the hand and runs diagonally to the end of the pollex; just behind the gape of the fingers it is elevated to a horn or tubercle. In all specimens the anterior outline of the horn is perpendicular to the hand. In small specimens the posterior outline is straight from the apex of the horn to the beginning of the ridge near the wrist. In large specimens the horn is much more elevated than the straight lines of the ridge. An auxiliary, spiny ridge, running from the outer middle of the wrist to the horn, cuts off an elevated subtriangular area on the posterior part of the hand. This area is somewhat spiny. The outer portion of the hand is deeply concave and its surface roughened by spiny granules. The inner side of the hand is deeply excavated, the cavity running in under the ridge and horn. The fingers are thin, granulate, the prehensile edges set with blunt teeth.

The left cheliped is much smaller than the right, reaching beyond the articulation of the dactyl of the large hand. The merus is compressed above, flattened beneath; margin spiny. Carpus compressed, flattened above, bicristate. The outer face of the hand is subtriangular, deeply concave or excavate; surface granulate; margins spiny.

The ambulatory legs of the right side reach but little beyond the cheliped. Merus joints of first pair much compressed, armed with small spines below; carpal joints armed with larger spines above. The second pair are without spines. Dactyls flattened, curved, twisted, channeled on each side near the articulation of the propodus; inner surface with a line of hair near each margin.

Alaska.

Eupagurus townsendi.

Rostriform tooth sharp, produced slightly beyond the base of the eye scales. Lateral projections of the front but little produced. Eye peduncle constricted at the base, dilated at the cornea. Scales small. Acicles of antennæ slender, extending beyond the eyes for nearly half their length.

The chelipeds are long, the merus joints extending beyond the eyes by about one-half their length; spiny below. The carpus of the right cheliped is five-eighths as wide as long, its inner margin with a row of spines about one-third larger than those scattered about the surface and about double the size of the spines of the outer margin. The upper and lower surfaces are convex; outer and inner surfaces flat or slightly concave. The hand is more than twice as long as wide, thinly spinous. The spines of the outer margin are about the same size as those of the surface, and very much larger than those of the inner margin. There are two rows of spiny granules on the dactyl, with a flat surface between. The hand is evenly convex above and below. The fingers are slightly bent downward.

The left cheliped reaches the base of the dactyl of the large hand; it is compressed. The carpus has a flat upper surface, with a row of small spines on each margin. The hand has a subtriangular and slightly

concave outer face. The upper margin is armed with a row of slender spines.

Ambulatory legs slender; dactyls long, slender, much bent, twisted. Those of the right side reach beyond the cheliped by about one-fourth their length. Merus joints of first pair with six or seven spines below; carpal joints spiny above. Carpal joints of the second pair spiny above, but the spines are very small.

Chelipeds and ambulatory legs sparsely hairy; hairs fine and short, not conspicuous. On the hand the hair arises in little bunches scattered among the spines.

Color in alcohol, orange-buff.

Alaska.

Eupagurus rathbuni.

Median projection of the front acute, produced much beyond the lateral projections. Eye peduncles stout, very little constricted, dilated at the cornea. Scales rather broad, rounded. The acicles reach to the end of the eyes.

Chelipeds long. The merus joints overreach the eyes by about one-half their length. The carpus of the large cheliped is seven-tenths as wide as long, convex on three sides, concave on the inner side, spinose; the spines small. Spines of the inner margin but little if any larger than elsewhere. The distal inner angle of the upper surface is occupied by a small circular patch of very fine hair. The hand is about three-sevenths as wide as long, evenly rounding at the palm, spiny above, with a scarcely distinguishable marginal row of spines. The merus and carpus have a few short spines below. The upper part of the carpus of the left cheliped is flat, with marginal row of very small spines. The hand is small; fingers slender and strongly bent downward.

The ambulatory legs of the right side overreach the cheliped but little; those of the left side, by about one-half the length of the dactyl. The anterior pair have the lower edges of the merus joints set with spiny granules. The carpal joints have a row of very small spines on the upper margin. The dactyls are wide, bent, and twisted. The margins of the inner surface are hairy.

The distal upper margin of the meral and carpal joints is a light red. There is also a streak of red on the large hand at the base of the dactyl. The ambulatory legs are tinged with the same color near the joints and on the upper distal third of the meral joints. The general color is pale.

This species is readily distinguished from any other north Pacific form by the patch of hair on the carpus of the large cheliped.

Alaska.

Eupagurus minutus.

Anterior portion of carapace broadly rounded at the sides, much constricted behind. Front nearly straight, faintly three-lobed. Eye-stalks

long, stout. Scales short, rounded, with a slender subterminal spine. Acicle of antenna shorter than the eye. Peduncle scarcely if any longer than the eye.

Merus of right cheliped short, compressed. Upper surface of carpus triangular; inner margin armed with slender spines; a few scattered spines on the surface. The hand is much longer than wide. The inner margin of the manus is set with long slender spines, as also the outer edge of the dactyl. Spines of the outer margin much smaller. Two rows of slender spines beginning at the carpus run together at the base of the pollex.

Carpus of left cheliped single-crested with slender spines. The oblique subtriangular face of the hand is bordered by very sharp spines. The upper surface is about equal to the oblique surface in extent.

The specimen is hairy.

Gulf of California.

Eupagurus purpuratus.

The median projection of the front is rendered sharp by a rostral point which originates on the upper surface and extends beyond the margin. The triangular lateral projections are not armed with a spine. The eye stalks are stout and long. The eye scales are acute, concave, and have a prominent, slender, subterminal spine. The lateral projection of the second article of the antennal peduncle is long and is conspicuously armed with spines on its inner margin. The peduncle is but little if any longer than the eye. The acicle is setose and much shorter than the eye. The peduncle of the antennula is much longer than the eye.

The carpus of the large hand widens out evenly from the merus, making the outline straight; outer margin unmarked by special line of granules or spines; inner margin defined by a row of five or six spines which are very sharp and point forward; upper surface coarsely granulated. The hand has a symmetrical outline and is fringed from the tips of the fingers to the wrist with blunt spines. Those on the outer margin originate on the lower surface and project above the upper surface. A strong ridge beginning at the tip of the dactyl runs backward and is continued on the manus and ends at the wrist. The whole upper surface of the hand is paved with large flattened compound granules. These granules seem to be hemispherical and a little elevated above the true surface, often showing irregular shaped fissures between them. The tubercles or spines on the inner margin of the hand are not so thickly set as on the outer.

The carpus of the small cheliped has a single crest armed with three or four strong spines. The hand has a curved oblique face and also a horizontal face equally prominent. This hand is also paved with compound granules. The lower margin of the oblique face is sparsely set with tubercles,

The ambulatory legs are slender. The dactyls are curved and spinose. The propodus and dactyl of the second pair on the left side are very thickly fringed with hair above and below. These articles are also seen to be wider and much more prominently grooved than the similar members of the other legs. As I have never seen this character before, I conclude that it may be accidental.

Color in alcohol, dark purple.

Described from a single specimen from the Galapagos islands.

Eupagurus hemphilli.

Anterior portion of carapace very much longer than broad. Median projection of front sharp. From the projection the margin curves back, making a lobe between the eye and antenna, but no sharp angle. A sharp spine arms the lower margin at this point, making the front sharply tridentate in appearance. Between the spine and the outer angle is another concave space behind the antenna. The eye stalks are long and slender, a little constricted in the middle. The eye scales are small and sharp, with well developed subterminal spines. The peduncle of the antenna overreaches the eye a little. The acicle is much shorter than the eye-stalk. The antennula extends but little beyond the eye.

The right cheliped is long. The merus is much compressed, twice as long as broad. Its outer surface is quadrilateral, smooth, almost glabrous, with a few fine hairs in very small bunches. There is a very small tubercle at its lower posterior angle. The carpus is more than twice as long as broad; deep; upper surface convex; inner and outer surfaces flattened. The hand is fully twice as long as its greatest breadth. It is not so wide as the carpus at its articulation, but widens out uniformly and is widest at the base of the dactyl. Both fingers are much shorter than the palm. The carpus and hand are densely and evenly granulate. The granules are white.

The small cheliped is much compressed and reaches but little beyond the carpus of the large cheliped. The carpus has a crest of about nine sharp spines and no trace of a rudimentary and second line. The hand is very much compressed, being no wider than the carpus. Its broad outer face is parallel with its inner. On the upper margin behind the gape is a deep suture extending from the carpus nearly to the base of the finger. The sides of this groove are armed with spiny granules. Both carpus and manus are very granular.

The ambulatory legs are slender and much compressed. The carpus and propodus of the first one on the right side are armed on the upper border with small spines. The feet of the second pair are of almost even length and reach the middle of the large cheliped. The dactyls are short, curved, and spinulose.

The color in alcohol is a bright red. There is a well marked light spot on the sides of the dactyls near the end.

This species is in appearance much like *granosimanus*, but is altogether distinct. It is readily separated by the front, by the much greater proportionate length of the outer portion of the carapace and by the very different left hand, and numerous other points. The young can be distinguished best by the length of the carapace.

California.

Eupagurus beringanus.

Anterior portion of carapace longer than wide. Median projection of the front very obtuse; lateral projections merely indicated. Eye-stalks very slender. Eye scales small, triangular; subterminal spine slender. A line of hair runs along the eye-stalk from the scale to the cornea. The last article of the antennula overreaches the eye by about one-half its length. The acicle is small and much curved; hairy along the inner margin; reaching nearly to the base of the cornea.

The right cheliped is stout. The upper margin of the merus is angular, with a patch of small and very sharp spines near the anterior border, which is also spinose. There are two prominent tubercles underneath. The carpus is convex on the upper surface, and flattened and comparatively smooth on the sides. The granules of the upper surface are large and not at all crowded. There are two rows of tubercular granules, one on the inner margin and one nearly parallel with it higher up on the surface. The hand is the same width as the carpus. Its granules are of widely different sizes and are not crowded. A row of tubercular granules defines the outer margin. The outer margin of the dactyl has a similar border. Fingers with very slight horny tips.

The small cheliped reaches a little way beyond the carpus of the large one. Its carpus is compressed; upper margin short, armed with from ten to twelve slender sharp spines. The oblique triangular face of the hand is convex and granular; a deep notch or groove occupies the posterior portion of the upper margin.

The ambulatory legs extend but a trifle beyond the large cheliped. The upper margin of the carpal and propodal joints of the first pair and of the carpal joints of the second pair are armed with short sharp spines. The dactyls are flattened. The legs are hairy. The hair of the upper margin is long and arises in tufts or fascicles.

The distal ends of the joints of the legs are a bright red. Both proximal and distal ends of the dactyls are red. The light portions of the legs are spotted with red.

This and the following species from British Columbia are much alike in color. The young are difficult to separate. Our specimens come from Bristol Bay and north of the Aleutian Islands.

Eupagurus newcombei.

Anterior portion of carapace longer than wide. Median projection of front very short, obtuse. Lateral projections barely indicated. The

eye-stalks are comparatively shorter and stouter than in *beringanus*. The scales are triangular; subterminal spines very large. The acicles reach nearly to the tip of the eye.

The right cheliped is large, shaped as in the last species, but differently armed. On the lower anterior portion of the merus there are two prominent tubercles, one of which is spiny as in the large cheliped. The carpus is bordered on its inner margin by a prominent row of short spines; near this is a parallel row of spines; the remainder of the surface is sparsely covered with spiny granules. The hand is irregularly set with spines about the same size as those of the carpus. The fingers are horny tipped.

The carpus of the small cheliped has a single crest of spines. A few much smaller spines are scattered about the outer surface. The outer surface of the hand is convex and set with spines.

British Columbia.

Eupagurus undosus.

Front tridentate; middle tooth but little produced. All are small and are not widely separated. Eye-stalks slender, but little dilated at the cornea. Scales pointed, subtriangular. The acicles of the antennæ are as long or a little longer than the eyes.

The right cheliped is much larger than the left; in proportion to the body it is large and strong. Outer surface of the merus smooth and glabrous, sprinkled with minute granules; lower margin armed with short conical spines tipped with red. Carpus four-sided; upper surface subrectilinear, thickly set with short spines tipped with red; lateral surfaces slightly concave. The outer margin of the hand from its posterior third rounds forward to the end of the pollex. The upper surface is thickly set with spiny granules, those on the outer margin being a little larger. The triangular oblique surface of the small hand is covered with tubercles as in the large hand. Both hands are characterized by peculiar depressions. The one on the inner upper surface of the large hand has straight sides and runs back to the carpus. The depression on the outer upper surface is variable. In the small hand the depressions are irregular and extend along each margin, while the central portion is occupied by a raised ridge.

The ambulatory legs of the right side are of equal length and reach to the end of the cheliped. The legs of the left side overreach the small cheliped by about one-half the length of the dactyl. The carpal joints of the first pair are armed on the upper margin; those of the second pair are smooth. The dactyls of all are short, stout, and spinulose.

In the chelipeds the color is a reddish orange. The extremities of the joints of the ambulatory legs are red, and the intermedial parts very light. The specimens are all more or less hairy.

Bering Sea.

Eupagurus kennerlyi Stimpson.*

Anterior portion of carapace a little longer than broad. Median projection of the front short, triangular. The lateral projections are rounded, but have a sharp appearance from the submarginal spine. The eye-stalks are straight, slender. The scales are acute, with large subterminal spines. The acicle of the antenna is slender, hairy, and does not reach to the end of the eye-stalk.

The merus of the large cheliped is nearly trihedral; outer surface smooth, without ornamentation of any kind; lower margin spiny. The carpus is set on the inner margin with seven or eight slender curved spines. The hand is a little wider than the carpus, and is traversed by seven rows, including the marginal rows, of slender light-colored spines. The prehensile edges of the fingers are armed with stout tubercles; tips horny.

Merus of left cheliped compressed; lower margins spiny. The carpus is a little compressed, bicristate. The hand reaches a little beyond the base of the dactyl of the large hand; it has an outer trigonal surface well set with large spines. Fingers horny-tipped. Ambulatory legs stout. Color in alcohol reddish.

Alaska.

Eupagurus setosus.

The carapace is very convex, little longer than broad. Median projection of front rounded, a little in advance of the lateral projections. The eye-stalks are much stouter and shorter than in *kennerlyi*. The scales are very small and acute, with large subterminal spines. The acicles of the antennæ reach beyond the eye one-fourth of their length.

The chelipeds have very much the same form as in *kennerlyi*, but the spines throughout are much shorter. The fingers are armed on the prehensile edges with large tubercles; points horny. The merus of the small cheliped is compressed. The carpus is thick, bicristate; sides compressed. The hands of both chelipeds are thickly set with stiff bristles, which character will separate the species at sight from *kennerlyi*. Color in alcohol light yellow.

Alaska.

Subgenus **ELASSOCHIRUS**.*Eupagurus munitus*.

Anterior portion of carapace very smooth, with an occasional tuft of hair and a few pits or small, shallow depressions on the lateral regions. Front tridentate; teeth of nearly equal prominence. Eye scales long, sides subparallel, edges upturned, making the surface deeply concave; the ends round; subterminal spine not showing from above. The first article of the antenna is armed with a very small spine which points forward and outward. The inner angle of the second article is armed

* This description is inserted to mark the relationship of *setosus*.

with a sharp, conical spine; the outer angle is produced to the proximal end of the last article; the apex is ordinarily double pointed. Acicle rounded, hairy on the inner margin, reaching to the tip of the eye.

Chelipeds very unequal. In medium and small specimens the merus of the right cheliped does not reach beyond the eye, while in large ones it reaches beyond by one-half its length. It is three-sided; upper side convex; lower side flat; outer distal angle, with one or two short spines; upper ridge armed with a few spiny tubercles. The length of the carpus is only four-fifths of its width. Both sides are thinned out in wing-like expansions which turn down in such a way as to make the under side deeply concave. The distal angles of the expansion extend forward beyond the articulation of the manus, the anterior and lateral margins forming rectangles. The outer margin is smooth, regularly curved; the inner margin is serrate; the margin at the articulation of the manus is spiny, the spines short, sharp, and conical. The middle portion of the carpus is elevated, rather more angular than rounded. The proximal two-thirds of the ridge is set with spiny tubercles. In small specimens these tubercles are perceptible near the articulation of the merus; in large specimens they are larger and much more extended. The hand is much narrower than the carpus, being more than twice as long as its greatest width. It is comparatively thin; its outer margin concave; inner margin arcuate; upper surface rendered uneven by reticulate lines of small granules. Both fingers are concave above and convex below; prehensile edges armed with large white tubercles; tips not horny.

The carpus of the left cheliped is flattened, inner edge spiny. The hand is very much flattened; viewed from above it is boat-shaped. The edges are upturned, making it evenly concave. The proximal margin overlaps the distal margin of the carpus, the reverse being the case in most species of the genus. The fingers are slightly bent downward.

The ambulatory legs are slender, shorter than the cheliped, equal in length on both sides. The carpal joints are spiny above, and the propodal joints nearly smooth. The dactyls are short, flat, not twisted, spinulose on the margins of the inner surface. Hair almost entirely wanting.

Color in alcohol: The meral and carpal joints of the chelipeds are a light purple. Hands yellow. Ambulatory legs dark reddish orange, with small circular light spots.

Alaska.

Eupagurus gilli.

This species is very closely related to the preceding. The eye-stalk is much more slender. The acicle is shorter and does not reach the extremity of the eye. The chelipeds have about the same proportion. While in the last species the carpus of the large cheliped is somewhat angular and tubercular, in this it is rounding and smooth. The inner margin is slightly roughened; the outer margin is smooth; the anterior

margin is set with small tubercles. The outline of the large hand and the prehensile edges of the fingers are as in the preceding species. The ambulatory legs are relatively stouter. The dactyls are very much wider, and the inner surfaces are concave and spinulose.

Color of alcoholic specimens light ochre.

Alaska.

Eupagurus curaçaensis.

Anterior portion of carapace a little longer than wide. Median projection produced, sharp; lateral projections rounded. Eye-stalks stout, flattened, dilated at the corneæ. Acicles much longer than the eyes. External spine of antennæ reaching the base of the cornea. Flagella very slender, reaching the end of the large cheliped.

Merus of large cheliped trigonal, very convex; upper and outer face squamose; lower external angle spinulose. Upper surface of carpus subtriangular, granular; inner portion with a few scattered minute spines; middle and outer portions with scattered tubercles in bunches of two or three arranged transversely; the outer margin is slightly raised and inconspicuously tuberculose; the inner margin is thin and serrate. The hand is thin and wide, evenly and minutely granulate; the edges are thin and slightly upturned and crenulate. The upper surface of the dactyl is divided by a ridge running from the tip to the articulating condyle.

Left cheliped much smaller than the right. Carpus flattened on top; margins spiny. Hand with a thin elevated ridge running from the end of the pollex to the wrist, making a deeply concave subtriangular outer face.

Ambulatory legs compressed. Upper margins of carpal and propodal joints sharp and spiny. Dactyls very thin, wide, bent and twisted.

Color of ambulatory legs in alcohol. Meral, carpal and propodal joints light red with wide band of light in the center of each. Distal half of the dactyl reddish; proximal half, light.

This species is closely related to *E. carneus* Pocock (Ann. and Mag. of Nat. Hist., vol. iv, No. 24, 1889).

Eupagurus californiensis.

Anterior portion of carapace about as broad as long. Median projection of the front sharp, in advance of the short angular lateral projections. Eye-stalks moderately long and slender. Scales long, pointed, concave. The acicles of the antennæ reach the ends of the eye-stalks.

Merus of large cheliped trihedral, smooth. Surface of the carpus subtriangular; inner margin set with two or three spines on its distal portion; behind these are one or two tubercles; outer margin slightly raised and a little uneven. The hand is much broader than the carpus. The palm is slightly granulose under the lens. The pollex is roughened by a few large granules. The outer margin of the dactyl is armed with comparatively large, blunt teeth. Part way between this border and

the prehensile edge is a row of granules. Between this row of granules and the margin the surface is deeply concave.

Ambulatory legs moderately stout. From the upper distal margin of the carpal joints there is a small spine extending forward over the propodus. The dactyls are long and thin, but little curved.

Color in alcohol white.

California.

Eupagurus mexicanus.

Anterior portion of carapace much longer than broad. Median projection of the front sharp and but little in advance of the lateral, which are angular and each armed with a very small spine below the margin. The eye-stalks are long and nearly straight. The cornea is a little dilated. The eye scales are long, pointed, and deeply concave. The aciele does not reach the end of the eye.

The large cheliped is as long or longer than the ambulatory legs; longer in small specimens, and about the same length in large. The merus is compressed and glabrous; a small spine occupies the lower anterior outer angle. The carpus is sparsely granulose, otherwise glabrous. The inner border is raised, thin, and uneven. There is no ridge or marking of any kind separating the upper from the outer surface. The lateral surfaces are connected below by a straight ridge. The hand is thick and but little wider than the carpus. The proximal inner angle of the upper surface is minutely granulous. The granules become gradually larger diagonally across the palm to the pollex. The lateral margins of the palm are not thinned out as in related species, but are marked by a row of oblong granules. Two rows of coarse granules with a sulcus between mark the outer surface of the dactyl.

The left cheliped is very weak and small, just reaching the margin of the large hand, and no stouter than the ambulatory legs. The carpus is much compressed and has a double crest. The hand is semi-cylindrical; its vertical face is not equal to its horizontal.

The ambulatory legs are slender. The dactyls are thin, straight, but curve near the nail, and are spinulose below. The large cheliped is red in alcoholic specimens, becoming lighter or white towards the tips of the fingers. The ambulatory legs are a little lighter shade than the chelipeds, becoming lighter at the joints, and with a band of light color about the middle of the dactyl.

Gulf of California.

Eupagurus roseus.

Anterior portion of carapace a trifle longer than broad. Median projection of front, an obtuse angle produced but little beyond the lateral projections, which are also angular. The eye-stalks are moderately stout, constricted in the middle. The eye scales, like others of the group, are long, narrow, and pointed, with a groove on the upper surface. The peduncles of both antennula and antenna are longer than the eye, while the aciele is a trifle shorter.

The merus of the right cheliped is trihedral. The upper surface of the carpus is triangular and granulose; outer margin slightly upturned; inner margin armed with six or seven long slender spines, curved and projecting forward. The hand looks solid and smooth to the eye, but with a lens the surface is seen to be finely and beautifully granulated. The crest is not spiny, but is composed of oblong flattened tubercles, even in height and regular. The lower margin is finely bordered by granules. The dactyl is short and stout; surface evenly rounded at the margin, which is hardly apparent, but yet marked by an inconspicuous line of small granules. The lower surface is about as the upper.

The ambulatory legs are moderately stout. The dactyls are straight and armed with spinules.

There is a wide band of orange near the base of the eye-stalk and on the antennal peduncle at the base of the acicle. The hand is a light pink, while the carpus is a much darker shade of the same color. The ambulatory legs are banded with orange.

The single alcoholic specimen from which the description was made was taken in the Gulf of California by the steamer *Albatross*. The left hand was lost.

Eupagurus corallinus.

Median projection of the front rounded, much produced beyond the lateral. Lateral projections rounded, unarmed. Eye-stalks largest on the distal end; corneæ dilated. The eye scales are sharp-pointed, with prominent subterminal spines. The antennular and antennal peduncles are much longer than the eye, and the acicle is a trifle shorter.

The merus of the large cheliped is compressed, its lateral aspect quadrilateral. The carpus is a little longer than the palm; its upper surface is thickly set with very sharp spiny granules; the margins are defined by rows of spiny granules. The hand is fringed with spines alternately large and small, the spines becoming longer towards the apices of the fingers. The entire upper surface is thickly set with very small, slender, sharp spines. The spines along the fingers are very much enlarged in the center and constricted at the base.

The merus of the left cheliped is much compressed. The carpus is compressed and surmounted by a double row of spines; in the outer row, large; in the inner, small. The hand is wide and thin; fingers gaping at the base; entire surface covered with very small sharp granules. The carpal joints of all and the propodal joints of the anterior pair of ambulatory legs are crested with spines, a little large in proportion to the size of the animal. The dactyls are wide, thin, curved, and spinulose.

Color.—The meral and carpal joints of the large cheliped are blotched with red and white, while the small cheliped and the ambulatory legs are banded with the same colors.

Off Key West, Florida.

Eupagurus coronatus.

Anterior portion of the carapace very convex. Median projection of the front very sharp, and produced beyond the line of the lateral projections. Lateral projections rounded and armed below the margin with a sharp spine. Eye-stalks long, stout at the base, tapering forward to near the cornea, where it is slightly enlarged. Eye scales short, rounded, with sharp subterminal spines. Peduncles of antenna and antenna longer than the eye. Flagellum of antenna hairy; hairs long and fine. Acicle much shorter than the eye.

Merus of the large cheliped compressed, short, with a thin subseriate crest on its upper margin. The carpus is also short, stout, and with a similar crest. There are two prominent spines near the inner angle, also one or more hooked spines on the inner surface. The hand is very short, suboval. It is bordered all around with sharp teeth, separated by rounded sinuses. In the larger specimens these teeth number about thirty. The surface of the hand is minutely granulose.

The left cheliped is very small, almost rudimentary. The hand does not widen out, nor are the fingers gaping as in the other species. The dactyls of the ambulatory legs are short, flattened, spinose.

This species is widely separated from the preceding species of the same group by the very short and crested merus and carpus of the large cheliped, and by the eyes and other characters.

Gulf of California.

Eupagurus varians.

Median projection of the front pointed, produced much beyond the line of the lateral projections. Lateral projections angular. The eye-stalks are stout, constricted in the middle. Cornea much dilated, flattened. The eye scales are broad at the base, rapidly becoming narrower, and then drawn out to a fine point. The surface is much hollowed out in the distal half of its length. The subterminal spine is comparatively very long and stout, and is situated just inside of the point of the scale. The long terminal article of the antennula extends beyond the eye its entire length. The peduncle of the antenna is also much longer than the eye. The acicle is about the same length, or a little shorter. The flagellum of the antenna is hairy. The hair is long and scattered.

The merus of the right cheliped is compressed, slightly crested, and is produced down to an angle or tubercle. The carpus is long, narrow at the proximal end, widening slightly toward the manus; sides and lower surface rounded; upper surface not well defined, covered with short conical spines. The hand is fringed all around with spines varying greatly in size. The upper surface is covered with sharp, pointed granules, which are much constricted at the base and readily detached. In many specimens the hand is suboval, but in large specimens the fingers are lengthened and crossed at the tips.

The left cheliped has its merus and carpus compressed, the latter bicristate. The hand is thin and wide. Fingers gaping at the base.

The ambulatory legs are long, much compressed. Carpal and propodal joints crested with slender spines. The dactyls are thin, wide and spinulose.

Gulf of California.

Eupagurus cervicornis.

The anterior portion of the carapace is very convex, glabrous. The three projections of the front are angular, the median in advance of the lateral. Eye-stalk moderately long and stout. The scales are sharp pointed, broad at the base, and concave. The subterminal spine is prominent. The ultimate joint of the antennula is long and hairy. The peduncle of the antenna is long. The flagellum is sparsely set with long hair. The acicle is rounded, slender, and reaches a little beyond the tips of the eyes.

The right cheliped is large in proportion to the size of the body. The merus is much compressed; its depth is about equal to its length; the lower margin is rounded. The carpus is very narrow at its proximal end and widens out to the manus. The inner margin is marked by a row of conical spines. Some of these spines are red, others white. The points are sharp, and hook forward. The surface is thickly set with spines of the same shape and color but smaller. The outer margin is marked by a row of still smaller spines of the same character. The carpus is deep, running down to a point or tubercle. The tip of this tubercle in the specimen in hand is a red spine, surrounded by a circle of six or seven white spines. Outside of this circle are numerous granules. The upper surface of the hand is suboval, and is entirely fringed with spines. Those of the outer side are to some extent alternately large and small, while those on the inner border are more uniform. The upper surface is set with sharp granules, interspersed with small spines. The lower surface is evenly granular. Two protuberances on the lower surface of the hand hold the carpus firmly when the hand is drawn down. The prehensile edge of the dactyl is armed with numerous small sharp triangular teeth.

The left cheliped is very small and weak. The merus is much compressed. The carpus is compressed and surmounted by a double crest of spines. The hand is thin and oval.

Ambulatory legs compressed. Carpal joints crested with small spines. Dactyls wide, thin, and spinulose. Color pink in alcohol.

This species is found in a coral which has grown up around the original shell, and usually has a number of branches not unlike a horn of a deer. When the animal is withdrawn, only the oval face of the large hand can be seen.

Gulf of California.

Subgenus **LIBIDOCHIRUS**.**Eupagurus parvus**.

Anterior portion of carapace a little longer than wide. Front with three lobes nearly equally advanced. Eye-stalks long and straight. Scales short, rounded. Subterminal spine long, slender. Acicle of the antenna shorter than the eye, much curved, hairy. Peduncle of antenna reaching but little beyond the eye. Flagellum short, reaching but little beyond the carpus of the right cheliped.

Merus of the right cheliped slightly compressed, rugose, hairy. Carpus long and slender; inner border spiny; upper surface rugose and hairy. Hand long, much swollen from the carpus to the base of the fingers, reminding one somewhat of the hand of *splendescens*. Including the marginal rows there are six rows of short spines. Spines of the intermediate rows thinly set. Long silky hairs arise from their bases.

Left cheliped much smaller than the right. Carpus slightly bicristate. The hand is much like the large hand. Fingers gaping.

Ambulatory legs slender, hairy, unarmed. Dactyls thin, curved. Gulf of California.

Subgenus **EUPAGURUS**.**Eupagurus hispidus**. *

Median projection of the front pointed and slightly produced. Eye-stalks long and stout. Scales large, triangular. Acicles of antennæ much shorter than the eye-stalks. Large hand semicircular; the inner margin of manus and dactyl straight. Behind the gape of the fingers is a very large and much elevated tubercle. Behind the tubercle are two deep depressions or pits. Outside of the tubercle are three or four tubercles of smaller size, giving the hand a deeply eroded appearance. The left hand is small. A deep depression occupies a part of the space behind the gape. The outer margin is tuberculate. The upper surface of both hands is coarsely granulate; granules elevated and much crowded.

Off Havana, Cuba.

* This species did not come to hand in time for proper arrangement.