

FAMILY PINNOTHERIDAE

Taxon Authority de Haan, 1833

Common Names Pea Crabs

Taxonomy

Decapoda
Brachyura
Pinnotheroidea

Species List

<i>Fabia subquadrata</i>	Dana, 1851	Grooved Mussel Crab
<i>Pinnixa eburna</i>	Wells, 1928	Lugworm Dwelling Pea Crab
<i>Pinnixa faba</i>	(Dana, 1851)	Mantle Pea Crab
<i>Pinnixa littoralis</i>	Holmes, 1894	Gaper Pea Crab
<i>Pinnixa occidentalis</i>	Rathbun, 1893	Western Pea Crab
<i>Pinixa schmitti</i>	Rathbun, 1918	Schmitt's Pea Crab
<i>Pinnixa tubicola</i>	Holmes, 1894	Tube-dwelling Pea Crab
<i>Pinnotheres pugettensis</i>	Holmes, 1900	Smooth Tunicate Crab
<i>Pinnotheres taylori</i>	Rathbun, 1918	Tuberculate Tunicate Crab
<i>Scleroplax granulata</i>	Rathbun, 1893	Burrow Pea Crab

Description

Almost subcircular to transversely ovate. **Integument** usually poorly calcified, membranous, dorsal regions generally indistinct. Front and posterior margin narrow. Lateral margins entire, unrimmed, almost indistinct. Sidewalls steep to vertical. **Antennulae** well developed, obliquely folded. **Antennae** very small, basal segment not touching front, peduncles entering orbital hiatus. **Eyes** small, imbedded in orbits, often reduced, visible to invisible in dorsal view. Orbital margins entire. Interantennular septum very thin to absent. Endostomial ridge sometimes present. Buccal cavern usually very wide, usually semicircular. Ischium of **third maxillipeds** small and usually fused with merus (forming ischio-merus), palp articulated with dactylus subterminally. Exognath small more or less concealed, flagellum often reduced to absent. **Chelipeds** symmetrical, carpal spine absent. Walking legs of variable length. Meri of ambulatory legs triangular in cross-section, dorsal surface rugose to carinate. Male sexual opening coxo-sternal, usually far from coxae of last pair of legs, rather near to suture 7/8. First **gonopod** either long, slender and distally tapering or usually columnar, second gonopod short. Number of gills reduced (up to 3). **Abdomen** in male narrow, elongate, sides nearly subparallel, in female extremely wide, sometimes covering third maxillipeds. Abdominal segments sometimes fused. Type genus: *Pinnotheres* Latreille, 1802.

References

Citation: Davie, P. (2012). Pinnotheridae. Accessed through: World Register of Marine Species at <http://www.marinespecies.org/aphia.php?p=taxdetails&id=254358> on 2013-03-15

additional source: Martin, J.W.; Davis, G.E. (2001). An updated classification of the recent Crustacea. *Science Series*, 39. Natural History Museum of Los Angeles County: Los Angeles, CA (USA). vii, 123 pp.

Stevcic, Z. 2005. The reclassification of Brachyuran crabs (Crustacea, Decapoda, Brachyura) Nat. Croat. Vol.14, Suppl. 1: 1-159. Zagreb

FABIA SUBQUADRATA

Geographic Range

Akutan Pass. Alaska, to San Diego. California; intertidal to 220 m.

Distribution in British Columbia: Common in the mussel *Modiolus modiolus*, intertidally and dredged, but also found in *Mytilus californianus*, *M. edulis*, *Tresus capax*, *Mya arenaria*, *Astarte compacta*, *Cardita ventricosa*, *Crenella columbia* and *Kellia* sp.

Habitat

Commensal or parasitic in bivalve molluscs; only one crab per host. Hard stages also free swimming with plankton.

Morphology

Carapace: smooth, soft or hard, depending on stage of development; immatures are soft, with membranous, unpigmented subquadrate carapace without longitudinal grooves posterior to eye orbits; ovigerous females are similar but do have the longitudinal grooves and a transverse groove between the eyes. Males and females metamorphose to a hard stage very unlike the soft stages. The integument is calcified and the carapace smooth and subpentagonal with anterior margins densely pubescent, covering sulci and front projections.

Pereopods: Chelipeds and walking legs are subcylindrical and sparsely setose; dactyls have curved claws. Chelipeds with patches of dense pubescence and tips of fingers crossed. P2-5 flattened, margins pubescent, with long rows of plumose swimming setae.

Size

Carapace: male 7 X 7.3 mm; female 17 X 22 mm

Coloration

Soft stages: carapace translucent creamy white with frontal area slightly more opaque. In adult females the orange yolks of eggs in the ovaries may be seen through the integument. Chelipeds opaque creamy white with yellow tinged fingers. Walking legs creamy white with yellow setae. Eyestalk translucent white; cornea scarlet with gold flecks.

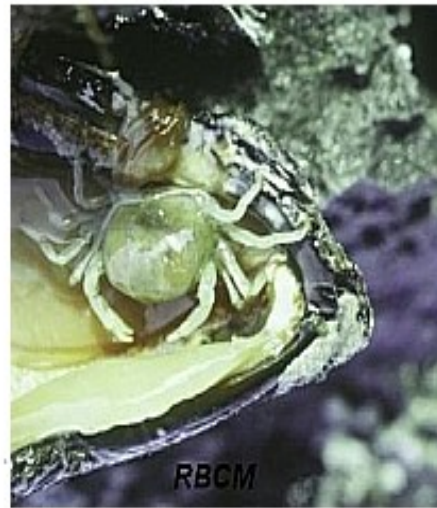
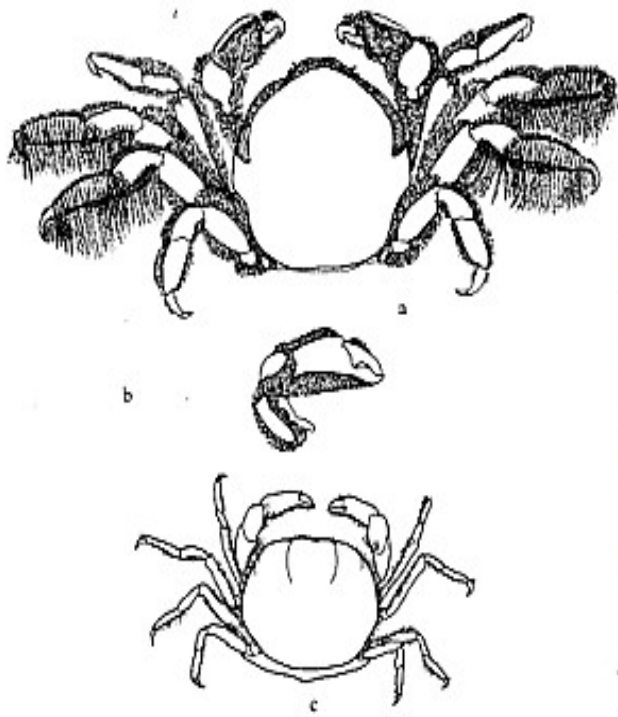
Hard Stage: carapace opaque white with anterior areas mainly tan, and scarlet reticulations on cardiac and branchial areas. Pubescence a light tan. Chelipeds white with yellow and pale orange; carpus and fingers a bright orange with pale grey pubescence. Walking legs yellow with orange; claw brown and setae grey, Antennule, antennae and eyestalk orange; cornea black.

References

Citation: Davie, P. (2012). *Fabia subquadrata* Dana, 1851. Accessed through: World Register of Marine Species at <http://www.marinespecies.org/aphia.php?p=taxdetails&id=445132> on 2013-02-12

Hart, J.F.L. 1982. Crabs and their relatives of British Columbia. British Columbia Provincial Museum Handbook 40. Victoria, British Columbia.

Wicksten, Mary K., 2012. Decapod Crustacea of the Californian and Oregonian Zoogeographic Provinces. 307 pp. Magnolia Press.



PINNIXA EBURNA

PINNIXIA EBURNA

Geographic Range

Masset, Queen Charlotte Islands, British Columbia, to False Bay, San Juan Island, Puget Sound, Washington; intertidal.

Distribution in British Columbia: Probably present where the host occurs but seldom collected unless searched for specifically.

Habitat

Commensal in burrows of lug worms *Abarenicola claparedii vagabunda* and. Difficult to collect because the lug worm burrow is in loose sand or sandy mud and disintegrates easily. The crabs stay close to the worm; therefore, if the sand surrounding the worm is washed through a fine sieve the crabs may be captured.

Morphology

Carapace: Both sexes with a hard smooth oval carapace with setose margins, an inconspicuous antero~lateral ridge which may be slightly granular on lateral margin, and a curved depression between gastric and cardiac areas.

Pereopods: Walking legs and chelipeds margined with plumose setae. Mature males have swollen palms with a short, wide fixed finger; finger curved so that the tip crosses over the fixed finger and leaves a slight gape between. Females and immature males have slightly swollen palms with long fixed finger with Curved tip; finger elongate and curved with a sharp tip which meshes with fixed finger and leaves no gape. The cutting surfaces are margined with a row of small stiff setae. P2-5 slender, flattened; dactyls styliform.

Size

Carapace: male 3.5 X 6.5 mm; female 3.5 X 8 mm.

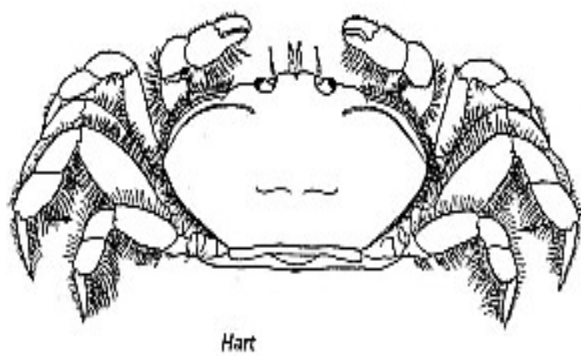
Coloration

Carapace with a symmetrical dappled pattern of dark brown or black, red-brown and greenish-brown on white and ivory or yellow. There is a light border on all margins but the posterior. Chelipeds and walking legs pale yellow with patches of greenishbrown, making legs look banded. Patches are reticulated especially on carpus and propodus. Dorsally and ventrally legs are bordered with a narrow translucent area. Antennule, antenna and eyestalk yellow with black streaks; cornea black with gold flecks. Sternurn and abdomen yellow or ivory with a few black Specks. Considerable variation in depth of colour between individuals.

References

Citation: Davie, P. (2012). *Pinnixia eburna* Wells, 1928. Accessed through: World Register of Marine Species at <http://www.marinespecies.org/aphia.php?p=taxdetails&id=445034> on 2013-02-12

Hart, J.F.L. 1982. Crabs and their relatives of British Columbia. British Columbia Provincial Museum Handbook 40. Victoria, British Columbia



PINNIXA FABA

Geographic Range

Prince of Wales Island. Alaska, to Newport (Beach) Bay, California; intertidal.
Distribution in British Columbia: Widespread.

Habitat

In young stages found within many molluscs but a pair of adults is found only in one of the horse clams, *Tresus (Schizotherus) capax* where the individuals mature. Immature individuals have been recorded in various clams: *Macoma nasuta*, *M. inquinata*, *M. secta*, *Mya arenaria*, *Saxidomus giganteus*, *Clinocardium nutalli*, *Serripes groenlandicus*, *Entodesma saxicola*, *Gari californica*, *Tapes japonica*, *Solen sicarius* and *Siliqua patula*. Very young crabs have also been found in the sea cucumber *Cucumaria piperata* and the limpet *Notoacmea scutum*.

Morphology

Eye: Both sexes with rounded eye orbits

Carapace: male: firm and nearly twice as wide as long; female: soft and oval;

Pereopods: P3 with merus about twice as long as wide; dactyls of all walking legs strongly curved. male: cheliped with gape between fingers and only tips meet; may have a small tooth on finger; female: cheliped with fingers not gaping.

Size

Carapace: male 10 X 18 mm; female 16 X 25 mm

Coloration

Carapace of male bright tan with median and lateral patches of opaque ivory, light tan marbled with dark grey. Chelipeds white, light brown and orange with some fine bright tan spotting; palm white with pale orange and some grey, fingers white. Walking legs bright tan with lighter patches; claws translucent. Eyestalk tan; cornea black with gold or Silver flecks, Female similar but overall colour less intense and ivory rather than white

Synonyms

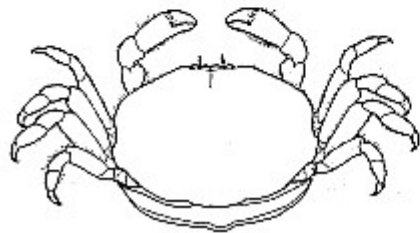
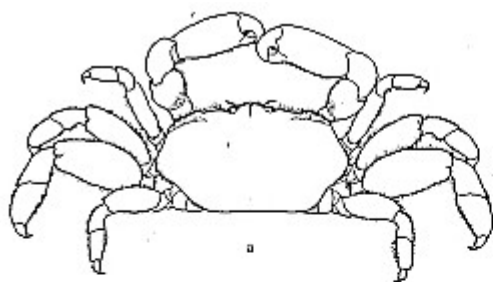
[Pinnotheres faba Dana, 1851](#)

References

Citation: Davie, P. (2012). *Pinnixa faba* (Dana, 1851). Accessed through: World Register of Marine Species at <http://www.marinespecies.org/aphia.php?p=taxdetails&id=445035> on 2013-02-12

Hart, J.F.L. 1982. Crabs and their relatives of British Columbia. British Columbia Provincial Museum Handbook 40. Victoria, British Columbia.

Wicksten, Mary K., 2012. Decapod Crustacea of the Californian and Oregonian Zoogeographic Provinces. 307 pp. Magnolia Press.



PINNIXA LITTORALIS

Geographic Range

Prince William Sound, Alaska, to San Diego. California; intertidal to 91 m.

Distribution in British Columbia: Widespread but less common than [*i*]P. faba[*/i*]

Habitat

Similar to *P. faba*, but young may also be found in *Protothaca staminea*, *Panope generosa*, and *Ostrea lurida*

Morphology

Male: **carapace** firm and about twice as wide as long. **Cheliped** with gaps between fingers.

Female: carapace soft and oval. Cheliped with gaping fingers.

Both sexes with outer margin of **eye** orbits pointed laterally. Merus of 3rd **walking legs** slightly less than twice long as wide; dactyls of all walking legs strongly curved and sharply pointed.

Size

Carapace: male 10 X 18 mm; female 16 X 27 mm

Coloration

Carapace of male opaque white with grey and brown marbled patches. Cheliped white with light grey and brown spots and fingers white. Walking legs white with light grey dots and streaks of tan; dactyl white; claw translucent. Eyestalk white with brown tinge; cornea black with silver flecks. Carapace of female with symmetrical patches of pale grey or marbled with brown. Cheliped white with some fine streaks of tan on palm. Walking legs white with pale grey and orange spots. 3rd walking legs with a yellow brown band on merus. Eyestalk white; cornea dark brown.

Remarks

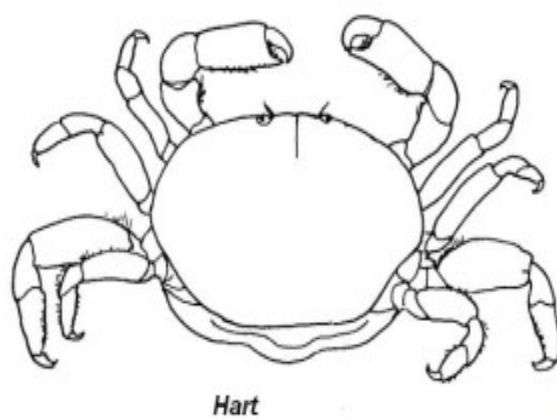
P. littoralis, like *P. faba* matures only in the mantle cavity of *Tresus capax* despite records in the literature to the contrary. This confusion has been caused by misidentification of the host. A pair of adult crabs, plus varying numbers of young and immature crabs are usually present in each clam

References

Citation: Davie, P. (2012). *Pinnixa littoralis* Holmes, 1894. Accessed through: World Register of Marine Species at <http://www.marinespecies.org/aphia.php?p=taxdetails&id=445046> on 2013-02-12

Hart, J.F.L. 1982. Crabs and their relatives of British Columbia. British Columbia Provincial Museum Handbook 40. Victoria, British Columbia.

Wicksten, Mary K., 2012. Decapod Crustacea of the Californian and Oregonian Zoogeographic Provinces. 307 pp. Magnolia Press.



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PINNIXA OCCIDENTALIS

Geographic Range

Iliuliuk Harbor, Unalaska, to Magdalena Bay, Mexico; intertidal to 436 m.

Distribution in British Columbia: Dredged off Vancouver Island and found intertidally where the host occurs in northern British Columbia; collected at Welcome Harbour, Porcher Island and Digby Island.

Habitat

Commensal in tubes of unsegmented coelomate worms, (Phylum Echiura). In the northern localities this is *Echiurus echiurus alaskanus* but they may be found also free in mud.

Morphology

Carapace narrows laterally and, in both sexes, the surface is firm and uneven. There is an acute transverse crest on the cardiac area which curves on the male and is relatively straight on the female. Anterior margins of carapace and the appendages are setose which is denser in small individuals than in large. Antero-lateral and pterygostomian margins granular.

Walking legs stout and elongate with numerous minute granules especially on dorsal and ventral margins. Merus of 3rd walking leg to times as long as wide; dactyls straight with granular ridges.

Cheliped of mature male with palm slightly widened distally with small granules dorsally and ventrally; fixed finger short and deflexed, with one large central tooth and small side teeth, finger curved and usually with a sharp central tooth; gape when closed. Cheliped of female with longer fixed finger than male and finger similar but less curved.

Size

Carapace: male 9.5 X 19.5 mm; female 10.5 X 20.5 mm.

Coloration

Mud and setae mask the colouring. Freshly moulted specimens have the carapace tan with some white areas in a symmetrical pattern. Chelipeds and walking legs white with small patches of tan on either side of junction between merus and carpus. Cornea of eye dark red. Ventral surfaces white.

Remarks

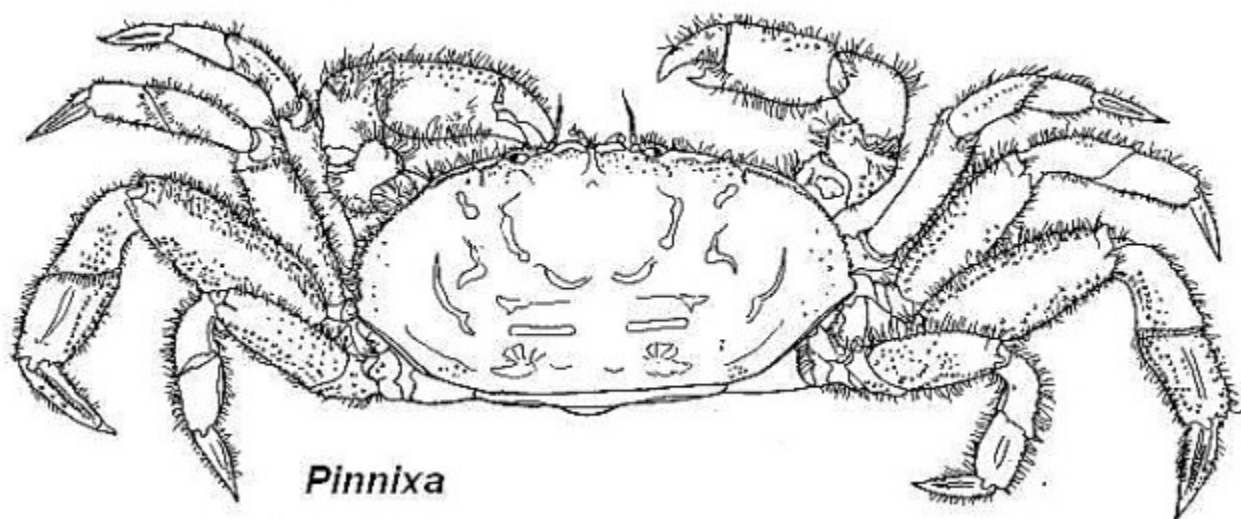
Distribution records of *P. occidentalis* in the literature are suspect because there are other deep-water *Pinnixa* which resemble them but differ in that they mature at a smaller size and are less setose or granular. They are also usually a brighter colour, often scarlet. The body proportions are difficult to compare because of size differences.

References

Citation: Davie, P. (2012). *Pinnixa occidentalis* Rathbun, 1894. Accessed through: World Register of Marine Species at <http://www.marinespecies.org/aphia.php?p=taxdetails&id=445050> on 2013-02-12

Hart, J.F.L. 1982. Crabs and their relatives of British Columbia. British Columbia Provincial Museum Handbook 40. Victoria, British Columbia.

Wicksten, Mary K., 2012. Decapod Crustacea of the Californian and Oregonian Zoogeographic Provinces. 307 pp. Magnolia Press.



Pinnixa



PINNIXA SCHMITTI

Geographic Range

Port Levasheff, Unalaska, to Morro Bay, California; intertidal to 146 m.

Distribution in British Columbia: Ubiquitous; small individuals common but large have been collected only in northern waters.

Habitat

Under rocks in mud or around worm tubes, in burrows of *Callinassa* and *Upogebia*; in sand with *Leptosynapta clarkii* (sea cucumber) and with *Amphiodia unica* (burrowing brittle star).

Morphology

Carapace hard, smooth, about twice as wide as long and with a granular ridge on anterior lateral margins. **Chelipeds** of adult male robust; palm with a few granules; short fingers with small or no teeth. Chelipeds of female and immature male slender; palm granulate; fingers subequal cutting surfaces with small teeth and tips crossed. P3 relatively stout and long, setose with granular margins on merus and propodus. Other walking legs slender and setose; dactyl slightly curved. **Abdomen** of male with a semicircular telson.

Size

Carapace: male 5.5 X 10 mm; female 6.8 X 12.5 mm.

Coloration

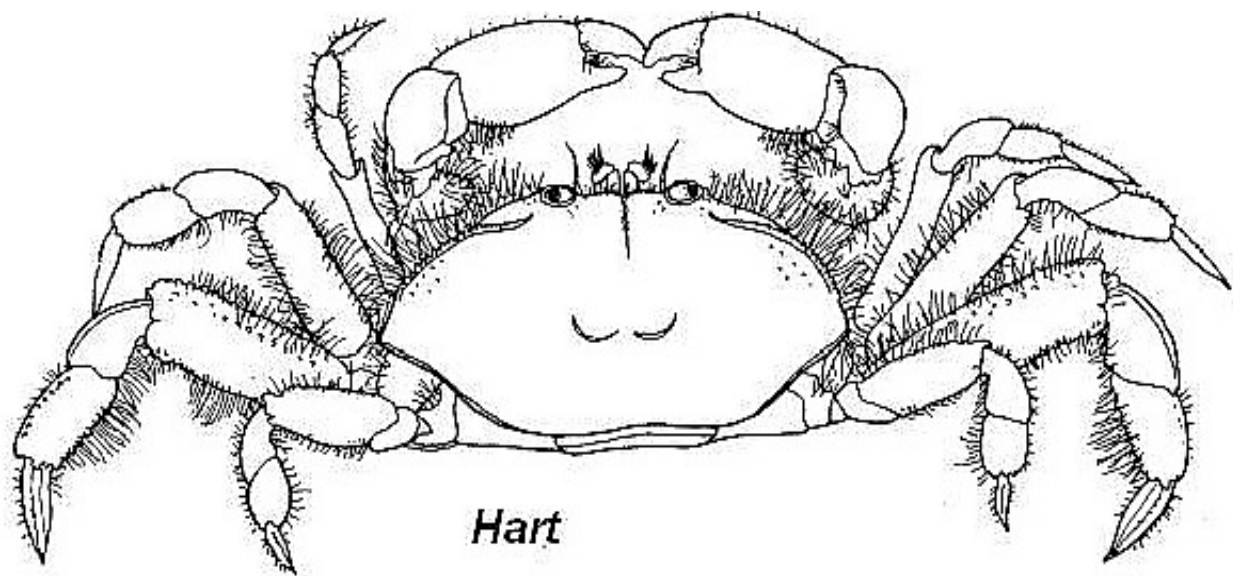
Colour often masked by muddy setae or stained by rust or sulphurous mud. In recently moulted specimens the carapace and dorsal surfaces of walking legs are blue-grey, black and white mottled; the margins are light coloured, especially posteriorly. Chelipeds white with fine black dendritic chromatophores dorsally; the palm, especially in the male, is mostly white, as are the ventral surfaces. Eyestalk brown; cornea black with gold flecks.

References

Citation: Davie, P. (2012). *Pinnixa schmitti* Rathbun, 1918. Accessed through: World Register of Marine Species at <http://www.marinespecies.org/aphia.php?p=taxdetails&id=445062> on 2013-02-12

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Wicksten, Mary K., 2012. Decapod Crustacea of the Californian and Oregonian Zoogeographic Provinces. 307 pp. Magnolia Press.



PINNIXA TUBICOLA

Geographic Range

Prince Rupert, British Columbia, to San Diego, California; intertidal to 57m.

Distribution in British Columbia: Widespread but often missed in general collecting.

Habitat

Commensal in parchment-like tubes of terebellid worms. In British Columbia *Eupolyornia heterobranchia*s often attached to the undersides of rocks intertidally and broken shells and gravel are stuck to the outside of the tube. A pair of these crabs frequently share the worm's tube.

Morphology

Male **carapace** smooth and hard and twice as wide as long. **Abdomen** wide and **telson** wider than long and distally curved. Female carapace smooth and hard and 2 times as wide as long. In both sexes the **chelipeds** are stout, with median teeth on fingers and the tips curved. Walking legs fattened laterally and last three with propodi much wider than dactyls.

Size

Carapace: male 4.5 X 10 mm; female 6 X 15 mm.

Coloration

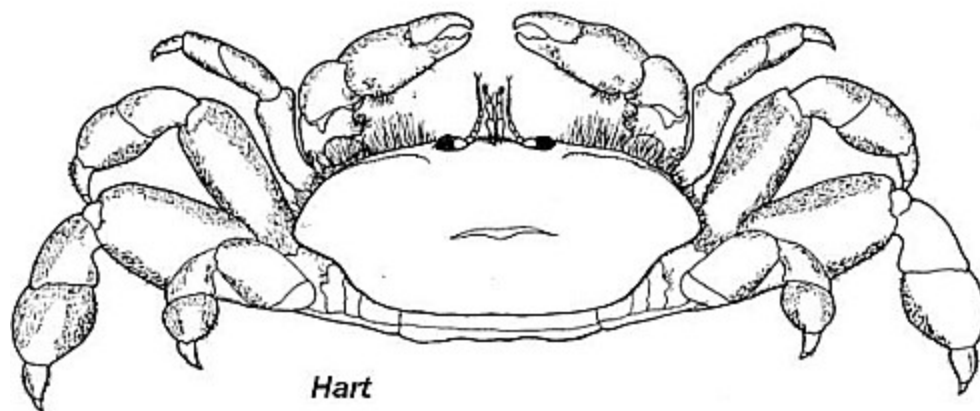
Carapace patterned symmetrically in light and dark brown, grey and opaque white. Chelipeds white with patches of brown, red or orange; fingers and teeth white distally. Walking legs white with dark brown streaks and reticulated areas; margins of joints white banded; claws light coloured. Eyestalk ivory; cornea red with gold flecks.

References

Citation: Davie, P. (2012). *Pinnixa tubicola* Holmes, 1894. Accessed through: World Register of Marine Species at <http://www.marinespecies.org/aphia.php?p=taxdetails&id=445065> on 2013-02-12

Hart, J.F.L. 1982. Crabs and their relatives of British Columbia. British Columbia Provincial Museum Handbook 40. Victoria, British Columbia.

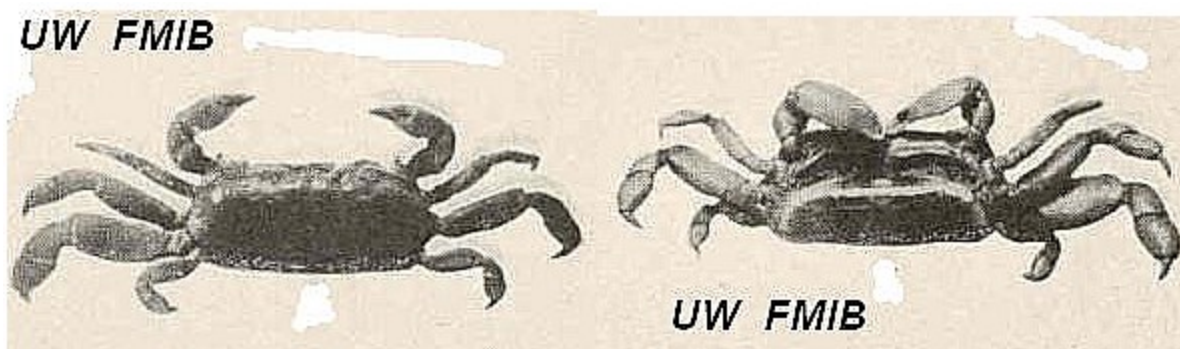
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PINNOTHERES PUGETTENSIS

Geographic Range

Spider Anchorage, British Columbia, to Puget Sound, Washington; from 6 to 64 m.

Distribution in British Columbia: The only records are from the Strait of Georgia and Spider Anchorage.

Habitat

Commensal in ascidians *Halocynthia hilgendorfi igaboja*, *Ascidia paratropa*, *Tethya aurantium* and the purple-hinged scallop, *Hinnites gigameus*.

Morphology

Carapace of female sub-pentagonal. **Walking legs** increase in length posteriorly with fringes of plumose setae on last 3 pairs. Dactyl of last leg much longer than others. The male has yet to be described.

Size

Carapace: female 12.5 X 13 mm.

Coloration

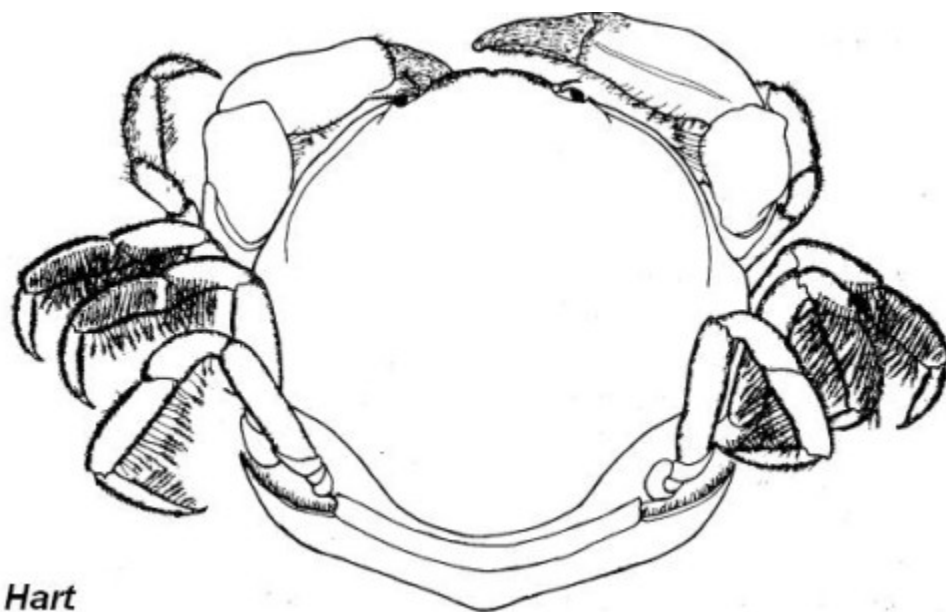
Female carapace pinkish~purple with white overcast and yellowish sides, or light brown with fine dark brown dendritic chromatophores. Chelipeds straw-coloured and opaque white; palm pale yellow and light brown reticulations on outer face; fingers pale brown with white tips and teeth. Walking legs mostly straw coloured but with some brown reticulations on white of last leg. Eyestalk yellowish; cornea red flecked with silver.

References

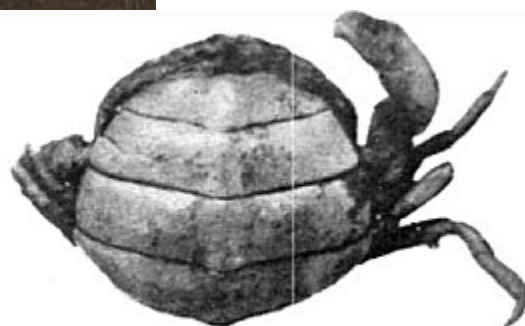
Citation: Davie, P. (2012). *Pinnotheres pugettensis* Holmes, 1900. Accessed through: World Register of Marine Species at <http://www.marinespecies.org/aphia.php?p=taxdetails&id=445218> on 2013-02-12

Hart, J.F.L. 1982. Crabs and their relatives of British Columbia. British Columbia Provincial Museum Handbook 40. Victoria, British Columbia.

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Rathbun

ventral view

PINNOTHERES TAYLORI

Geographic Range

Quatsino Sound, Vancouver Island, British Columbia. to Puget Sound, Washington; from 11 to 64 m. Distribution in British Columbia: Recorded only from the southern part of British Columbia; possibly because it has been overlooked by collectors.

Habitat

Commensal in transparent ascidians *Corella willmeriana*

Morphology

Carapace of both sexes subequal in length and width; there may be a pair of small tubercles on median cardiac area. First and last walking legs subequal and shorter than subequal 2nd and 3rd. Males covered by a short fine pubescence which is particularly dense on anterior margins of carapace and on all margins of appendages. Walking legs also have fringes of plumose swimming setae on the dorsal and ventral margins of carpus, propodus and dactyl.

Size

Carapace: male 4.6 X 4.8 mm; female 7.2 X 7.5 mm

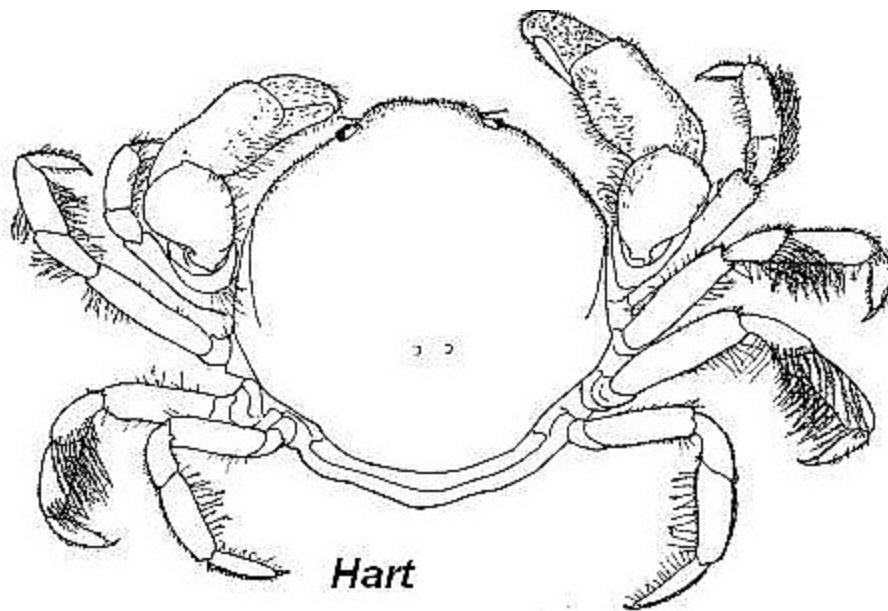
Coloration

Carapace of female yellowbrown integument and setae. Chelipeds of female yellow brown with brown reticulations. Male with red pubescence; fingers orange and tips white. Walking legs yellow with brown reticulatlons; dactyl bright yellow. Eyestalk yellowish; cornea red with a gold centre.

References

Citation: Davie, P. (2012). *Pinnotheres taylori* Rathbun, 1918. Accessed through: World Register of Marine Species at <http://www.marinespecies.org/aphia.php?p=taxdetails&id=445229> on 2013-02-12

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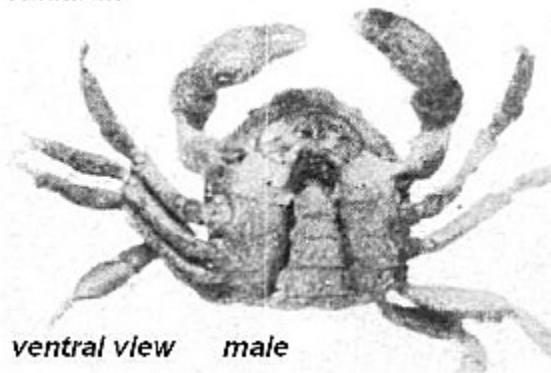


Rathbun



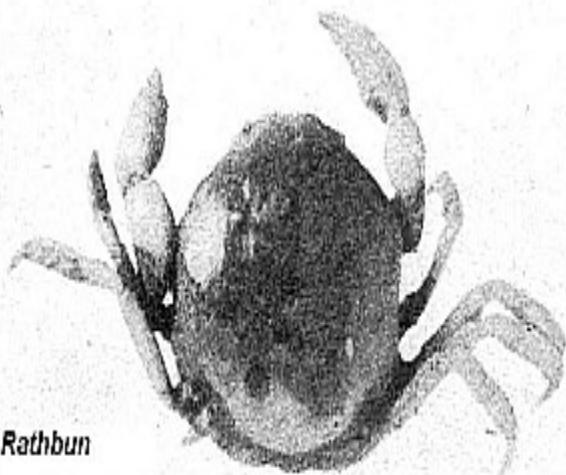
dorsal view male

Rathbun



ventral view male

dorsal view female



Rathbun

ventral view female



Rathbun

SCLEROPLAX GRANULATA

Geographic Range

Welcome Harbour, Porcher Island, British Columbia, to Ensenada, Mexico; intertidal to 55 m. Distribution in British Columbia: Common on Vancouver Island beaches but few northern records, probably because these active crabs are inconspicuous on the sandy or muddy habitat.

Habitat

Commensal in burrows of *Upogebia*, *Callianassa*, *Urechis*.

Morphology

Carapace hard, convex, a little wider than long and smooth or finely granulate; lateral margins a smooth curve and there is a granulate ridge anteriorly. **Chelipeds** of female and immature male short and slender, with subequal fingers, small flattened cutting teeth and sharp tips. Cheliped of adult male stout, with swollen palm and fixed finger short and toothed; curved finger meshes with fixed finger. Walking legs subequal in length and tips of dactyls slightly curved.

Size

Carapace: male 7 X 11.5 mm; female 7.75 X 12.9 mm.

Coloration

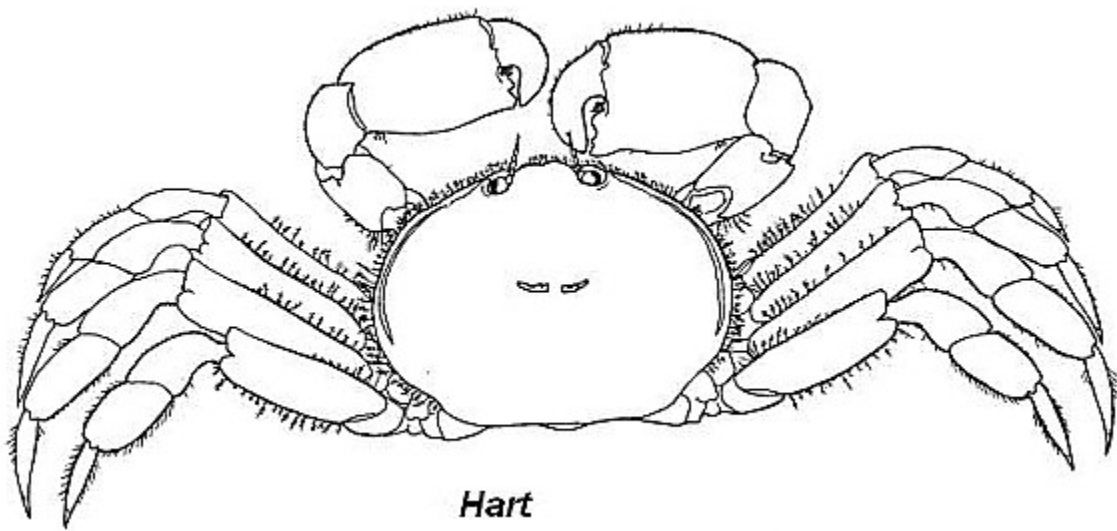
Carapace white with a symmetrical pattern of dove or brownish grey; a narrow white, or light grey, band on all outer margins of carapace. Chelipeds white with grey or brown reticulations; fingers white. Walking legs white with grey and brown reticulations, becoming darker on distal part of merus and propodus; carpus and dactyl white so that appendage appears banded. Most segments have brownish dorsal and ventral margins. Eyestalk grey; cornea red with gold flecks.

References

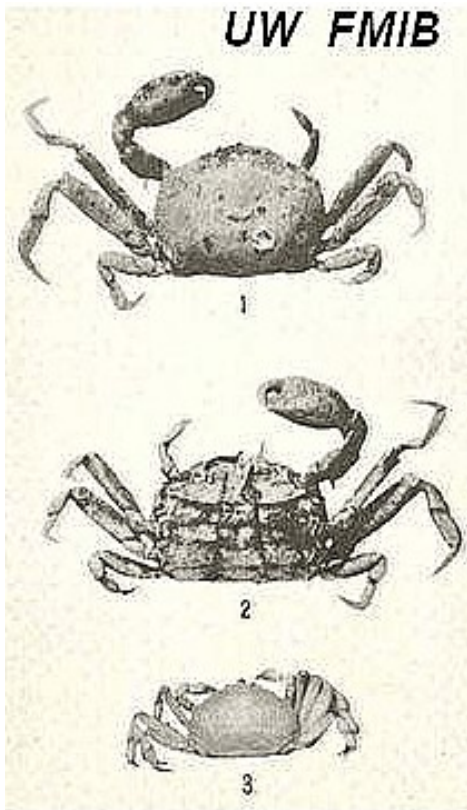
Citation: **Davie, P. (2012).** *Scleroplax granulata* Rathbun, 1894. Accessed through: World Register of Marine Species at <http://www.marinespecies.org/aphia.php?p=taxdetails&id=445239> on 2013-02-12

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