KEY TO BC BRACHYURAN CRAB FAMILIES

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Acknowledgements:

I would like to acknowledge the work of Josephine Hart(1982) and Mary K. Wicksten(2012) on which much of this online key is based. The cooperation of Dave Cowles(Walla Walla Marine Lab) and Aaron Baldwin(Univ. of Alaska) in providing numerous photographs is also appreciated.

Common Names: true crabs

Taxonomy:

Brachyuran crabs are one of the most diverse animal groups at the infra-order level. They exhibit an outstanding diversity in the numbers of extant and extinct taxa at all categorical levels. Recently, especially during the past several decades, judging from the number of publications and new taxa described, the knowledge of their systematics has increased rapidly. However, the data are very dispersed, written in various languages, and in publications that are often difficult to obtain. The rapid influx of knowledge concerning brachyuran taxa may be attributed to the increasing interest of scientists in the group. New expeditions, improved methods of sampling, a better knowledge of systematic characters and systematic theories have also aided in this endeavour. The attention of specialists has been focused mostly on species and genera (alpha taxonomy). At the same time the higher-level systematics of the group, the suprageneric taxa (tribes, subfamilies, families and superfamilies) have been neglected by the majority of carcinologists, so much so that higher taxa have often remained vaguely delimited, imperfectly described and inappropriately arranged. only partially revised or have never been revised at all. The historical development of brachyuran systematics has been very unbalanced, with prolific discoveries of new species and genera and incompletely described suprageneric taxa. The result of this unbalanced research program is an imperfect brachyuran classification. Systematic study of the crabs as a whole also remains incomplete and imperfect and therefore revision on all levels awaits a better time. Consequently, the general critical re-examination of all brachyuran taxa is indeed urgently needed. (Stevcis, 2005)
Taxonomic classification used in this key is according to that existing in WoRMS (World Register of Marine Species)

Class Malacostraca
Order Decapoda
Infraorder Brachyura

Family **Calappidae**

Platymera gaudichaudi Milne-Edwards, 1837 Two-spine Crab

Cancridae

Cancer productus	Randall, 1839,	Red Rock Crab
Cancer magister	Dana, 1852,	Dungeness crab
Cancer oregonensis	(Dana, 1852),	Pygmy Rock Crab
Cancer gracilis	Dana, 1852,	Graceful Rock Crab
Cancer antennarius	Stimpson, 1856,	Spot-bellied Rock Crab
Cancer branneri	Rathbun, 1926,	Furrowed Rock Crab

Cheiragonidae

Telmessus cheiragonus	(Tilesius, 1815),	Helmet Crab

Epialtidae

Chorilia longipes	Dana, 1851,	Longhorn Decorator Crab
Mimulus foliatus	Stimpson, 1860,	Foliate Kelp Crab
Pugettia gracilis	Dana, 1851,	Graceful Kelp Crab
Pugettia producta	(Randall, 1839),	Northern Kelp Crab
Pugettia richii	Dana, 1851,	Cryptic Kelp Crab
Scyra acutifrons	Dana, 1851,	Sharp Nose Crab

Grapsidae

Planes cyaneus	Dana, 1852,	Flotsam Crab
Planes marinus	Rathbun, 1914,	Drifter Crab

Oregoniidae

Chionoecetes angulatus	Rathbun, 1924,	Angled Tanner Crab
Chionoecetes bairdi	Rathbun, 1924,	Tanner Crab
Chionoecetes tanneri	Rathbun, 1893,	Grooved Tanner Crab
Hyas lyratus	Dana, 1851,	Pacific Lyre Crab
Macroregonia macrochira	Sakai, 1978,	Deep Sea Giant Spider Crab
Oregonia bifurca	Rathbun, 1902	Splitnose Crab
Oregonia gracilis	Dana, 1851,	Graceful Decorator Crab

Panopeidae

Lophopanopeus bellus bellus	(Stimpson, 1860),	Black Clawed Crab

Pinnotheridae

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

Portunidae

Carcinus maenas	(Linnaeus, 1758),	European Green Crab
Portunus xantusi	(Stimson, 1860)	Xantus swimming Crab
Scylla serrata	(Forscal, 1775)	giant mud crab

Varunidae

Hemigrapsus nudus	(Dana, 1851),	Purple Shore Crab
Hemigrapsus oregonensis	(Dana, 1851),	Green Shore Crab

Background:

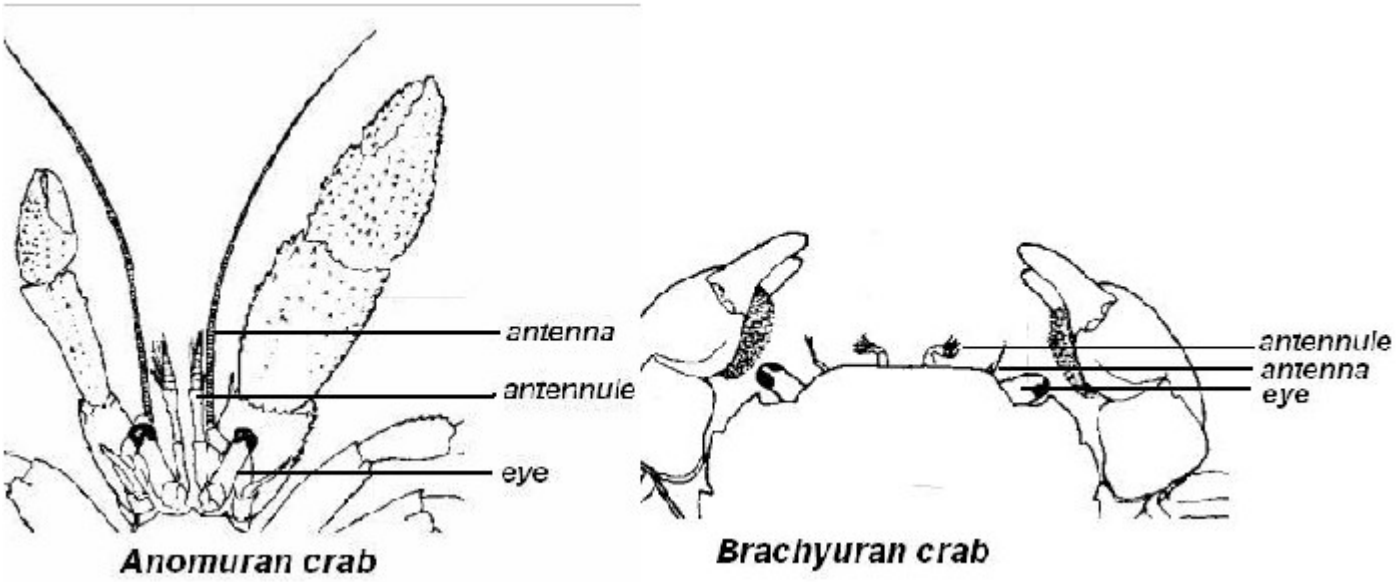
The Brachyuran crabs are globally distributed and are found in all of BC's marine waters
The Brachyura encompass the so-called short-tailed crabs or true crabs. This group includes the familiar shore crabs and commercially important species such as Dungeness and Red Rock Crabs. The brachyurans inhabit a variety of feeding niches. The shore crabs are omnivores that feed on algae, small bivalves (clams and mussels) and other small animals. The kelp crabs feed on kelp during the summer months. When the kelp dies off they switch to a diet of barnacles and the odd jellyfish. The Dungeness Crab, and other members of the genus *Cancer*, are thought of as scavengers, but many are actually predatory. These species can dig up bivalves before breaking into the shell with their large claws (Hart 1982; Jensen 1995).

Habitat:

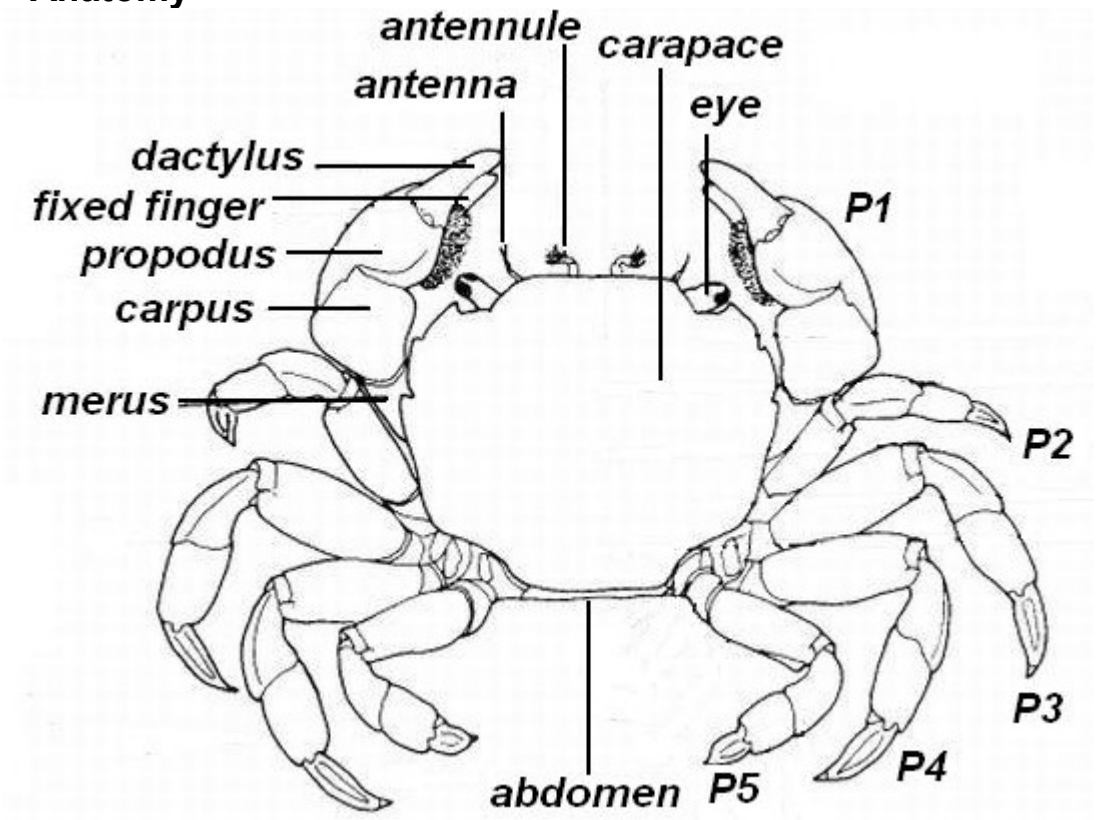
In BC the brachyurans can be found from the intertidal through the sub-tidal zones to a few deep-water species, on rocky to soft substrates, and some are commensal with other types of marine organisms(sponges, molluscs, tunicates, worms) (Hart 1982; Jensen 1985). They are only found in marine habitats in BC, but freshwater and semi-terrestrial species do occur in the tropics (Brusca and Brusca 1990).

Diagnostic Description:

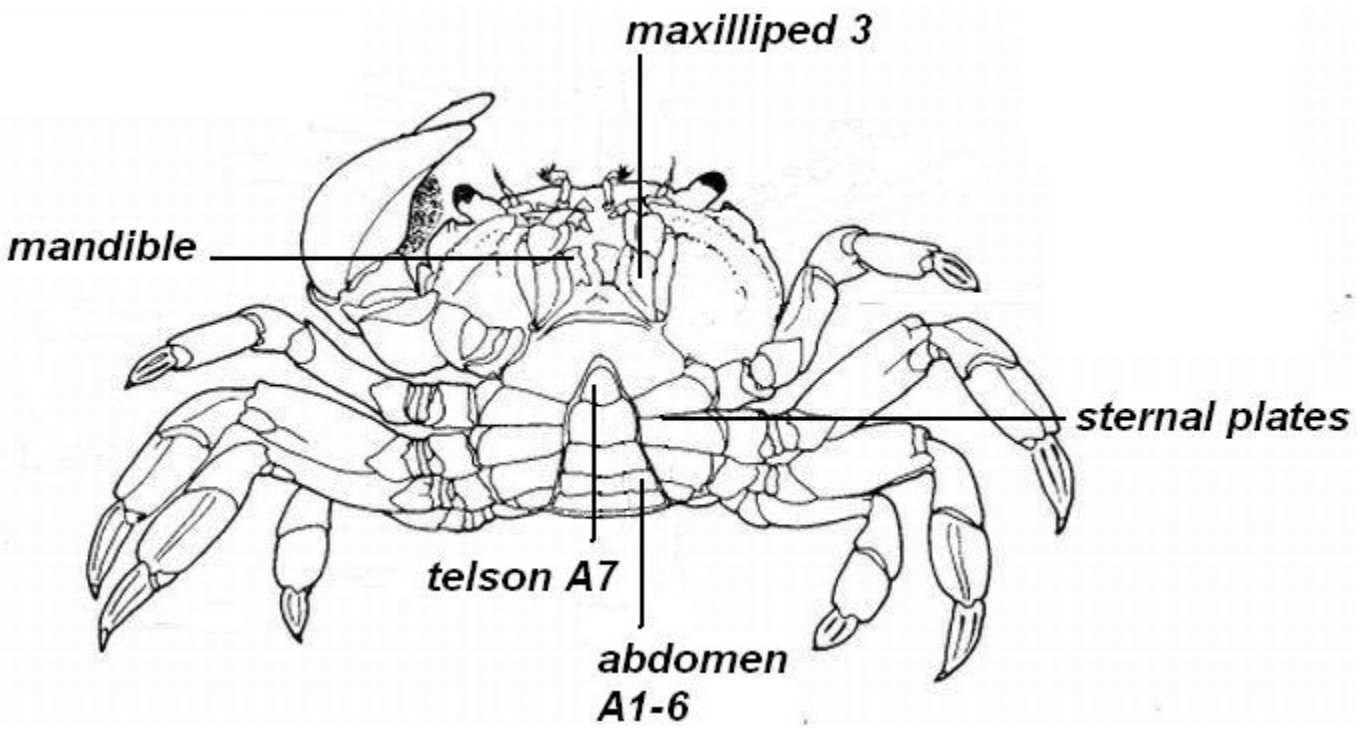
The brachyurans have an overall crab-shaped body having a large **carapace**. The **abdomen** is reduced and folded under the carapace (Kuris et al. 2007). Members of this group are characterized by having five visible walking legs **(pereopods)**, the first pair usually having claws (chelae) (Hart 1982; Jensen 1995). Another feature that distinguishes this group from the anomurans is the placement of the two pairs of **antenna**. In anomurans one pair of antenna are located between the eyes and one pair to the outside of the eyes. In contrast, in the brachyurans both pairs of antenna are located between the eyes (Jensen 1995).



Anatomy



Dorsal View



Ventral View

Reproduction:

The brachyuran crabs are not hermaphroditic and may or may not be sexually dimorphic. Fertilization is usually internal and takes place immediately after the female moults. In some species the female will copulate several times, either with the same male or several males. The sperm is stored by the female until it is required. In many species the male will hold on to or carry a female until she moults. This helps to insure that the male will have access to the female when she is ready to mate (Brusca and Brusca 1990; Jensen 1995; Urbani et al. 1998).

Like in most decapods, the brachyurans carry their eggs under their abdomen until they hatch. During this period of time the female will remove foreign objects from the egg mass and aerate the eggs with her pleopods. The eggs may be carried, depending on the species, by the female for up to a year before they hatch. At this point the hatchlings enter a planktonic larval stage of development that generally bears little resemblance to the adult form (Brusca and Brusca 1990; Jensen 1995).

Brachyurans of British Columbia:

Approximately 40 species of brachyuran crab occur in BC waters (Baldwin 2010). Two commercially important species are Dungeness (*Cancer magister*) and Red Rock (*Cancer productus*) crabs. One species, *Carcinus maenas*, the European Green Crab, is an aggressive invasive species native to the western Atlantic (Jensen et al. 2002).

Glossary of Terms

Abdomen: posterior part of body.
Antenna (antennae): anterior jointed sensory appendage, with one flagellum
Antennule: anterior jointed sensory appendage, with two flagella**.**
Article: a segment of an appendage.
Bifid, bifurcate: divided by a deep cleft into two equal parts.
Bristle: stiff seta or hair.
Buccal cavity: cavity on ventral surface of body in which mouth parts are situated; bounded anteriorly by epistome, laterally by free edges of carapace. Within this "frame" lie the mouth parts, which in most Brachyura are covered by operculiform third maxillipeds
Calcareous or calcified: limy, containing carbonate of lime.
Cardiac: relatively large, unpaired median region in posterior half of carapace
Carpus (carpi): 5th article or segment of appendage.
Chela (chelae) and chelate: pincer, prehensile claw, “hand”; composed of propodus and dacty.
Cheliped: whole appendage with chela or pincer**.**
Corneous: horn-like
Coxa (coxae): first segment of appendage attached to body.
Deflexed: bent aside
Eyestalk: peduncle bearing cornea
Endopod: main branch of an appendage issuing from the basis.
Endostome: part of epistome forming palate in brachyurans and usually separated from epistome proper by transverse ridge.
Epibranchial: anterior part of branchial region of decapod (brachyuran) carapace
Epistome: a broad strongly calcified plate in front of, and above, the mouth. It represents the fused sternites of the third and fourth segments
Finger: the movable finger of hand is the dactyl; the immovable or fixed finger, a projection of the propodus.
Flagellum (flagella): whip-like multiarticulate appendage
Gonopod: pleopod of male modified for copulation and sperm transfer
Gonopore or genital pore: small opening in integument through which eggs or sperm are released.
Hand(chela): propodus and dactylus of cheliped
Hepatic: paired cephalolateral regions of the carapace between the orbit and cervical groove
Hiatus: a gap
Intercalary: a spine on the dorsal margin of the orbit lying between the postorbital spine and the supraorbital eave
Keel: elevated ridge or carina
Ischium(ischia): 3rd article or segment from attachment of pereopod
Maxillipeds: outer, or 3rd pair of maxillipeds are appendages anterior to pereopods and usually cover mouth parts.
Merus (meri): 4th article, or segment, from body of appendage**.**
Palm: propodus or hand without fingers
Peduncle: a stalk-like structure
Pereopods: paired thoracic appendages used for seizing food and/or locomotion
Prehensile: used for grasping or seizing

Prostomial: anterior to the mouth
Pterygostome: anteroventral region of carapace (of Brachyura)
Pubescent: having a soft velvet-like mass of setae
Quadrate: square or rectangular
Rhomboidal: parallogram with oblique angles
Rostral horns: rostrum divided into two elongated lobes
Rostrum: “a beak”; a forward projection of carapace, between the eyes in Crustacea
Rugose: wrinkled or corrugated
Serrate: having a saw-like edge
Seta (setae) setose: hair-like or needle-like structure on exoskeleton
Somite: segment of body
Sternite(sternum): ventral plates of body segments.
Stria and striation: linear marks on surface; may be slight ridges or furrows.
Styliform: in the shape of a spear or needle
Sub: as a prefix- near; subequal, almost equal
Subchelate: resembling a chela, but with thumb missing or short.
Sulcus: a groove or channel
Suture: seamlike articulation of two parts; junction
Telson: terminal segment of abdomen(A7)
Vulva: term occasionally applied to opening of oviduct into brood chamber
Walking legs: pereopods A2-5.

THE KEY

This online key is based primarily on the existing keys of Hart 1982 and Wicksten 2012. The Key to Families is artificial, based entirely on readily visible morphological features of BC specimens.

Recent comparative genetic and biochemical studies of brachyurans have led to different interpretations of the higher classification of brachyurans into sections, tribes or superfamilies. Stevcic (2005) and Ng et al. (2008) summarized new evidence for the Brachyura as a monophyletic group and provided an extensive new reorganization of the group. They also provided morphological and genetic evidence for the current arrangement of families into superfamilies. These major works deal withsome of the recent revisions regarding classification of Brachyuran crabs.

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FAMILY CALAPPIDAE

Taxon Authority de Haan, 1833

Common Names box crabs

Description

Shape: subcircular subovate to transversely ovate, rounded anteriorly, widest posteriorly, strongly convex in both directions. Front narrow, bilobed, bidentate or tridentate, not very prominent. Posterolateral margin in some genera, concealing, entirely or partially, ambulatory legs. **Antennulae** folding nearly longitudinally to obliquely. **Antennae** almost small, basal antennal segment distally lamellate to narrow, separating orbital from antennular fossae, peduncle and flagellum short.

Supraorbital margin trifissured (2 dorsal, 1 ventral). Exorbital angle indistinct. Epistome more or less reduced to absent, proepistome small. Buccal cavern triangular, elongate, approaching front, not anteriorly covered by third maxillipeds, leaving exposed anterior calcified prolongation of endopod of first **maxillipeds**. Merus of third maxilliped triangular, palp exposed. Endopod of first maxilliped lamellate, sclerotized, closing ventrally anterior portion of exhalent channel on endostome.

Medium septum separating exhalent channels present. **Chelipeds** large, compressed, tightly coapted against anterior on ventral side of cephalothorax, subequal, heterodont. Sternum narrow to moderately wide. Sternal sutures 4/5 - 5/6 interrupted. First **gonopod** conical, stout, distally gradually tapering to pointed tip

Second gonopod long, with long flagellum, often very long and curved, longer than first one, sometimes shorter than first gonopod. **Abdomen** narrow, segments 3-5 fused in male, 7 segmented in female. Type genus: *Calappa* Weber, 1795.

References

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

FAMILY CANCRIDAE

Taxon Authority Latreille, 1802

Common Names rock crabs

Description

Transversely ovate, widely hexagonal to subovate. Regions more or less defined.
Front narrow, lobate to dentate. Antennal sinus present. Anterolateral margin strongly convex, dentate or lobate, posterolateral margin short, entire, diverging. Antennulae folding longitudinally. Basal antennal segment large, longer than wide, fixed, longitudinal, distally in contact with preorbital lobe, antennal flagella short, setose. Orbits completely closed. Epistome narrow, often sunken, usually concealed by third maxillipeds. **Chelipeds** massive, subequal, palm and fingers usually with keels, spines or granules. **Sternal** sutures 4/5-7/8 entire, almost equidistant, subparallel. First **gonopod** stout, straight, long, distally tapering. Second gonopod of similar length.
Type genus: *Cancer* Linnaeus, 1758.

References

basis of record: Türkay, M. (2001). Decapoda, ***in***: Costello, M.J. *et al.* (Ed.) (2001). *European register of marine species: a check-list of the marine species in Europe and a bibliography of guides to their identification. Collection Patrimoines Naturels,* 50: pp. 284-292

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FAMILY CHEIRAGONIDAE

Taxon Authority Ortmann, 1893

Common Names helmet crabs

Description

Subpentagonal to suboblong. Front 4-lobed. Supraorbital margin trilobed. Eyes not protected either dorsally or ventrally. Antennulae lengthwise. Basal antennal segment wide and flattened, its lateral wing-like projection filling orbital hiatus, separating from front; peduncle large, flagella setose. Prostomial chamber present. Sternal sutures 6/7-7/8 entire. Abdomen short, segments 3-5 fused in male; female abdomen not covering vulvae. Gonopods long.
Type genus: *Telmessus*

References

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

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

FAMILY EPIALTIDAE

Taxon Authority MacLeay, 1838

Common Names kelp crabs

Description

Lateral margin often lamellate. Pseudorostrum double to single. **Orbits** very sunken, reduced, never entirely concealing cornea, postorbital spine sometimes present, intercalated spine absent. **Eyestalks** short, feebly movable to immovable, either concealed by preorbital and/or postorbital spine or sunken in sides of large beak-like pseudorostrum. **Basal antennal segment** trapezoidal. Merus of **third maxilliped** as wide as ischium, sometimes auriculate. First pair of ambulatory legs longer than other three pairs. Dactyli of ambulatory legs prehensile or subchelate. First **gonopod** usually slender, weakly curved, aperture usually terminal, apex simple or expanded into lobes. **Abdominal** segments from freely articulating to variously fused.
Type genus: Epialtus H. Milne Edwards, 1834.

References

basis of record: 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

FAMILY GRAPSIDAE

Taxon Authority MacLeay, 1838

Common Names drifter crabs, flotsam crabs

Description

Cephalothorax quadrangular to subcircular, almost depressed. Dorsal surface rough, rugose or setose. Postfrontal lobes distinct. Front wide, strongly deflexed, lamellate, overhanging antennulae and antennae. Secondary frontal margin usually straight. Lateral striae present. Infraorbital margin running downwards toward buccal cavity. Scattered setae on pterygostome present. Lateral **carapace** margin very sharply defined, overhanging sidewalls. Hepatic tooth sometimes present. Pterygostomian suture anteriorly grooved. Submarginal row of setae lacking. Proepistome anteriorly wide. Infraorbital margin entire, extending to anterolateral angle of buccal cavity. Infraorbital facet present. Antennulae and antennae lying obliquely, nearly transversely. Antennal peduncle bent, flagellum very short. **Third maxillipeds** slender, ischium and merus constricted at point of their articulation, leaving rhomboidal gap, mandibles often exposed throughout, palp articulated at anterior margin of merus. Exognath narrow, exposed, with flagellum. Dorsointerior margin of merus of **cheliped** with prominent shelf-like expansion. Meri of legs wide, distally with spine, dactyli spinose. Sternal sutures 1/2-2/3 distinct. Male sexual opening located on lateral margin of sternite 8 near coxa of last pair of legs and almost far from suture 7/8. **Abdomen** in male covering whole space between last pair of legs,
press-button apparatus present. Type genus: Grapsus Lamarck, 1801.

References

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

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

FAMILY OREGONIIDAE

Taxon Authority Garth, 1958

Common Names Spider Crabs

Description

Subtriangular to subpyriform. Pseudorostral spine long, slender. Preorbital spine absent. **Postorbital spine** large, remote from eye. Basal antennal segment narrow. Ambulatory legs of moderate size. First gonopod with bulbous base, distally lanceolate, longitudinally grooved with rows of filamentous setae on either side of groove. **Abdominal segments** free-articulated in both sexes. Male abdomen terminally widened, **telson** deeply inserted into segment 6. Type genus: *Oregonia* Dana, 1851.

References

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

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

FAMILY PANOPEIDAE

Taxon Authority Ortmann, 1893

Common Name Black clawed crab

Description

Cephalothorax hexagonal (xanthoid-shaped), wider than long. **Eyes** and orbits short. Posterolateral margins diverging. Posterior margin usually narrow. Thoracic sternum relatively narrow, not very enlarged behind sternite 4. Male sexual opening coxal. Penial groove never closed. First **gonopod** typically panopeid. Proximal **abdominal** segments usually completely covering space between coxae of last pairof legs, sometimes small portion of sternite 8 uncovered. **Type genus:** Panopeus H. Milne Edwards, 1834.

References

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

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

FAMILY PINNOTHERIDAE

Taxon Authority de Haan, 1833

Common Names Pea Crabs

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

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

FAMILY PORTUNIDAE

Taxon Authority Rafinesque, 1815

Common Names swimming crabs

Description

Cephalothorax subhexagonal, transversely oval, subovate or subquadrangular, usually wider than long, mostly depressed, flat, widest at posterior anterolateral teeth, almost depressed to slightly convex. Integument usually thin. Dorsal surface with transversal ridges, epibranchial ridge often present, regions not well defined. Front horizontal, usually wide, cut into even number of lobules or teeth, antennular and antennal sinuses usually distinct. Inner infraorbital spine often distinct.
Epistome often sunken. Endostomial ridge often distinct. Prostomial chamber often present. **Chelipeds** well developed, usually variously spinose, internal carpal spine present, palm and fingers often longitudinally sulcate or crested with longitudinal carinae, fingers usually sharply pointed, rarely spoon-like. Propodi and dactyli of last pair of legs mostly flatly expanded, margins strongly fringed with setae, natatorial, dactyli rarely styliform. Thoracic sternum wide, sutures 4/5-7/8 interrupted (6/7 often indistinct). Sometimes small portion of sternite 8 uncovered. Penis lying in wide penial groove usually on sternite 8 in several forms penial groove supplemented by rudimentary sternal lobe. **First gonopod** long, basally stout, distally tapering to pointed tip, second usually short. **Abdominal** segments 3-5 fused in male, sutures rarely distinct.
Type genus: *Portunus* Weber, 1795.

References

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

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FAMILY VARUNIDAE

Taxon Authority H. Milne Edwards, 1853

Common Names shore crabs

Description

Subquadrate to nearly subcircular, slightly wider than long, depressed. Dorsal surface moderately convex to nearly flat, anteriorly feebly sloping, usually smooth, no lateral striae. Secondary frontal margin mostly entire, slightly to moderately deflexed, sometimes sublaminar, subfrontal triangle distinct. Anterolateral margin with two or more epibranchial lobes more or less crested, sometimes with submarginal row of setae. Cervical roove ventrally rarely distinct. Infraorbital facet rarely perceivable. Pterygostomian ridge smooth. Supraorbital fissures absent, rarely one small fissure present. Infraorbital margin eclipsed by infraorbital ridge. Epistome triangular. Interantennular septum wide. **Antennulae** folding obliquely. Antennae well developed, diverging. **Antennal flagellum** relatively long. Infraorbital crest, often paralleled posteriorly by groove. Buccal cavern square-shaped. **Third maxillipeds** covering nearly completely buccal cavern, slightly gaping, mandible invisible, merus auriculate, palp articulating with middle of anterior margin or near antero-external angle of merus.
Ischium and merus with longitudinal sulci, exognath narrow to very wide, with long flagellum. **Dactyli** of ambulatory legs lacking spines. Male sexual opening on inner part of sternite 8 far as from coxae as suture 7/8. Transversal groove between male sexual opening and lateral margin of sternum on sternite 8 present. Locking mechanism of abdomen often lost. Type genus: Varuna H. Milne Edwards 1830.

References

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

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