

BC Caridea Shrimp

Key to Families

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Acknowledgements

Special recognition must be given to the fine work of T.H. Butler (1980) on the shrimps of the Pacific Coast of Canada. The materials in that publication played a large role in the preparation of this on-line key.

Family Acanthephyridae

<i>Acanthephyra chacei</i> Krygier & Forss, 1981	
<i>Acanthephyra curtirostris</i> Wood-Mason & Alcock, 1891	Peaked Shrimp
<i>Hymenodora acanthitelsonis</i> Wasmer, 1972	Ambereye Shrimp
<i>Hymenodora frontalis</i> Rathbun, 1902	Pacific Ambereye
<i>Hymenodora glacialis</i> (Buchholz, 1874)	Northern Ambereye
<i>Hymenodora gracilis</i> Smith, 1886	Gracile Ambereye
<i>Notostomus japonicus</i> Spence Bate, 1888	Japanese Spinyridge

Family Alpheidae

<i>Betaeus harrimani</i> Rathbun, 1904	Northern Hooded Shrimp
<i>Betaeus setosus</i> J.F.L Hart, 1964	Fuzzy Hooded Shrimp

Family Crangonidae

<i>Argis alaskensis</i> (Kingsley, 1882)	Alaskan Argid
<i>Argis crassa</i> (Rathbun, 1899)	Rough Argid
<i>Argis dentata</i> (Rathbun, 1902)	Arctic Argid
<i>Argis lar</i> (Owen, 1839)	Kuro Shrimp
<i>Argis levior</i> (Rathbun, 1902)	Nelson's Argid
<i>Argis ovifer</i> (Rathbun, 1902)	Spliteye Argid
<i>Crangon alaskensis</i> Lockington, 1877	Alaskan Bay Shrimp
<i>Crangon alba</i> Holmes, 1900	Stout Crangon
<i>Crangon dalli</i> Rathbun, 1902	Ridged Crangon
<i>Crangon franciscorum angustimana</i> Rathbun, 1902	California Bay Shrimp
<i>Crangon franciscorum franciscorum</i> Stimpson, 1856	California Bay Shrimp
<i>Crangon handi</i> Curtis and Carlton, 1977	Bay Shrimp
<i>Crangon nigricauda</i> Stimpson, 1856	Black Tailed Bay Shrimp
<i>Lissocrangon stylirostris</i> (Holmes, 1900)	Smooth Bay Shrimp
<i>Mesocrangon intermedia</i> (Stimpson, 1860)	Northern Spinyhead
<i>Mesocrangon munitella</i> (Walker, 1898)	Miniature Spinyhead
<i>Metacrangon acclivis</i> (Rathbun, 1902)	Forked Spinyhead
<i>Metacrangon munita</i> (Dana, 1852)	Coastal Spinyhead
<i>Metacrangon spinosissima</i> (Rathbun, 1902)	Southern Spinyhead
<i>Metacrangon variabilis variabilis</i> (Rathbun, 1902)	Deepsea Spinyhead
<i>Neocrangon abyssorum</i> (Rathbun, 1902)	Abyssal crangon
<i>Neocrangon communis</i> (Rathbun, 1899)	Gray Shrimp
<i>Neocrangon resima</i> (Rathbun, 1902)	Crangonid Shrimp
<i>Paracrangon echinata</i> Dana, 1852	Horned Shrimp
<i>Rhynocrangon alata</i> (Rathbun, 1902)	Saddleback Shrimp
<i>Sclerocrangon boreas</i> (Phipps, 1774)	Sculptured Shrimp

Family Hippolytidae

Eualus avinus (Rathbun, 1899)
Eualus barbatus (Rathbun, 1899)
Eualus berkeleyorum Butler, 1971
Eualus biunguis (Rathbun, 1902)
Eualus butleri Jensen, 2004
Eualus fabricii (Krøyer, 1841)
Eualus lineatus Wicksten and Butler, 1983
Eualus macrophthalmus (Rathbun, 1902)
Eualus pusiulus (Krøyer, 1841)
Eualus subtilis Carvacho and Olsen, 1984
Eualus suckleyi (Stimpson, 1864)
Eualus townsendi (Rathbun, 1902)
Heptacarpus brevirostris (Dana, 1852)
Heptacarpus camtschaticus (Stimpson, 1860)
Heptacarpus carinatus Holmes 1900
Heptacarpus decorus (Rathbun, 1902)
Heptacarpus flexus (Rathbun, 1902)
Heptacarpus herdmani (Walker, 1898)
Heptacarpus kincaidi (Rathbun, 1902)
Heptacarpus moseri (Rathbun, 1902)
Heptacarpus paludicola Holmes, 1900
Heptacarpus pugettensis Jensen, 1983
Heptacarpus sitchensis (Brandt, 1851)
Heptacarpus stimpsoni Holthuis, 1947
Heptacarpus stylus (Stimpson, 1864)
Heptacarpus taylori (Stimpson, 1857)
Heptacarpus tenuissimus Holmes, 1900
Heptacarpus tridens (Rathbun, 1902)
Hippolyte clarki Chace, 1951
Lebbeus acudactylus Jensen, 2006
Lebbeus catalepsis Jensen, 1987
Lebbeus eludus Jensen, 2006
Lebbeus grandimanus (Brazhnikov, 1907)
Lebbeus groenlandicus (Fabricius, 1775)
Lebbeus mundus Jensen, 2006
Lebbeus polaris (Sabine, 1824)
Lebbeus unalaskensis (Rathbun, 1902)
Lebbeus washingtonianus (Rathbun, 1902)
Spirontocaris arcuata Rathbun, 1902
Spirontocaris dalli Rathbun, 1902
Spirontocaris holmesi Holthuis, 1947
Spirontocaris lamellicornis (Dana, 1852)
Spirontocaris ochotensis (Brandt, 1851)
Spirontocaris prionota (Stimpson, 1864)
Spirontocaris sica Rathbun, 1902
Spirontocaris snyderi Rathbun, 1902
Spirontocaris truncata Rathbun, 1902

Beaked Eualid
Barbed Eualid
Berkeley's Eualid
Deepsea Eualid
Sponge Eualid
Arctic Eualid
Eualid Shrimp
Bigeye Eualid
Doll Eualid
Pygmy Eualid
Shortscale Eualid
Townsend's Eualid
Stout Coastal Shrimp
Northern Coastal Shrimp
Smalleye Coastal Shrimp
Elegant Coastal Shrimp
Slenderbeak Coastal Shrimp
Striped Eualid
Kincaid's Coastal Shrimp
Alaskan Coastal Shrimp
Californian Coastal Shrimp
Puget Coastal Shrimp
Sitka Coastal Shrimp
Stimpson's Coastal Shrimp
Stiletto Coastal Shrimp
Taylor Coastal Shrimp
Slender Coastal Shrimp
Threespine Coastal Shrimp
Kelp Humpback Shrimp
Lebbeid Shrimp
Cataleptic Lebbeid
Elusive Lebbeid
Candy-striped Shrimp
Spiny Lebbeid
Cleaner Lebbeid
Polar Lebbeid
Lebbeid Shrimp
Slope Lebbeid
Rathbun's Bladed Shrimp
Dall Blade Shrimp
Slender Bladed Shrimp
Dana's Bladed Shrimp
Oval Bladed Shrimp
Deep Bladed Shrimp
Dagger Bladed Shrimp
Snyder's Bladed Shrimp
Blunt Bladed Shrimp

Family Oplophoridae

Systellaspis braueri (Balss, 1914)
Systellaspis cristata (Faxon, 1893)

Quayle Spinytail
Krygier's Spinytail

Family Pandalidae

Pandalopsis ampla Spence Bate, 1888,
Pandalopsis dispar Rathbun, 1902
Pandalopsis lucidirimicola Jensen, 1998
Pandalus danae Stimpson, 1857
Pandalus eous Makarov, 1935
Pandalus goniurus Stimpson, 1860
Pandalus hypsinotus Brandt, 1851
Pandalus jordani Rathbun, 1902
Pandalus platyceros Brandt, 1851
Pandalus stenolepis Rathbun, 1902
Pandalus tridens Rathbun, 1902

Deepwater Big Eye
Sidestripe Shrimp
Sparkling Shrimp
Dock Shrimp
Pacific Northern shrimp
Humpty Shrimp
Coonstriped Shrimp
Ocean Shrimp
Spot Shrimp
Roughpatch Shrimp
Yellowleg Pandalid

Family Pasiphaeidae

Parapasiphae sulcatifrons Smith, 1884
Pasiphaea pacifica Rathbun, 1902
Pasiphaea tarda Krøyer, 1845

Grooveback Shrimp
Pacific Glass Shrimp
Crimson Pasiphaeid

Background

Globally there are at least 2000 species of Caridea (Brusca and Brusca 1990). The members of this group have a shrimp-like body plan and appear at first glance very similar to the Dendrobranchiata (prawns). The Caridea are distinguished from the Dendrobranchiata by several physical characteristics and by their method of reproduction (Brusca and Brusca 1990; Jensen 1995).

Two interesting species in this group, *Betaeus harrimani* and *Betaeus setosus* (family Alpheidae) superficially resemble a very small (5-35mm) lobster or crayfish. *Betaeus* have fairly large chelae, with the dactyls positioned on the lower or outer side of the claw. The dactyl is the movable portion of a claw. In contrast, lobsters and crayfish have dactyls that are positioned on the inside of their claws (Jensen 1995).



Betaeus(right chela)

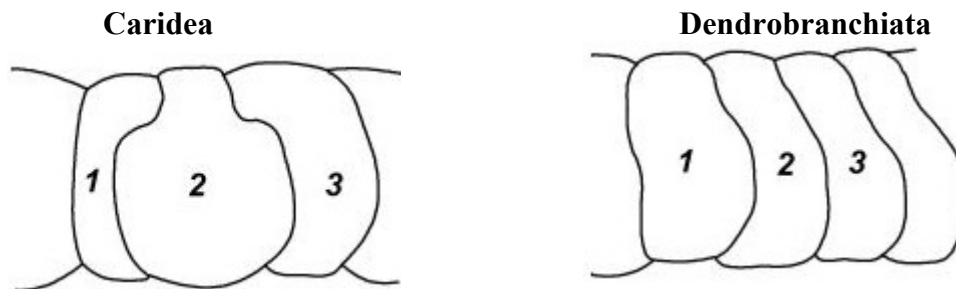


Lobster(right chela)

The Caridea are found in marine habitats from the intertidal down into the deep sea. They can be found in rocky-bottomed to mud-bottomed habitats (Butler 1980).

The Caridea have an overall shrimp-shaped body. They have five pairs of legs originating from the carapace and an abdomen that terminates in a well developed tail fan (uropods and telson). The first pair of legs terminate in very small chelae (claws). These are used primarily to gather and manipulate food. The third pair of legs is not chelate, unlike the Dendrobranchiata (Brusca and Brusca 1990; Kozloff 1996). In most of the Caridea the abdomen has a sharp bend or hump. The hump is absent in the Dendrobranchiata (Butler 1980; Brusca and Brusca 1990).

The morphology of the second abdominal pleuron is the easiest way to distinguish between the Caridea and Dendrobranchiata. The second pleuron of a caridean shrimp overlaps the pleurons on both the first and third abdominal segments. In contrast, in the Dendrobranchiata the second pleuron only overlaps the third pleuron (Butler 1980; Jensen 1995).



The sexes are separate in the Caridea and reproduction occurs via copulation. These shrimp, like most other decapods, carry their eggs/embryos on the underside of the abdomen. If there are eggs attached to the underside of the abdomen then you can be sure that your shrimp belongs to the Caridea. However, the absence of eggs cannot be used as absolute proof that a specimen is a member of the Dendrobranchiata, as the specimen might be a male caridean shrimp or a female caridean shrimp that is not currently reproducing (Butler 1980; Brusca and Brusca 1990; Jensen 1995).

At least 90 species of Caridea are known to occur in the waters of British Columbia (Baldwin 2010). The present key includes 95 species due to the addition of more recent collection data, the addition of a few new species, and the inclusion of a few species which are present in the Alaskan/Arctic zone to the north and Washington/Oregon/California zone to the south and which may be found in the British Columbia area in with future collection. Of these only seven are commercially harvested. These are: *Pandalus platyceros*, *P. hypsinotus*, *P. danae*, *P. jordani*, *P. borealis*, *P. goniurus*, and *Pandalopsis dispar*. Of these seven species *P. platyceros* is the primary target, with limited efforts directed at the remaining six species (Fisheries and Oceans Canada 2010).

The Key

The key represented here, for the most part, is not a typical dichotomous key. The initial section is limited to the determination of the proper shrimp family. If you already know which family your unknown shrimp belongs to, then you may still want to confirm this by proceeding through this first section. Otherwise, proceed to the desired family in the key of the website. The designation to genus and species in these family keys is based entirely on a single distinctive and determining anatomical feature of that species. If you are unable to arrive at a satisfactory determination, we highly recommend the use of more detailed and definitive dichotomous keys such as those found in Butler (1980), Wicksten (1990, Hippolytids), Wicksten (2011), Jensen (2004, Eualids), and Kozloff (1987).

Caridea Anatomy

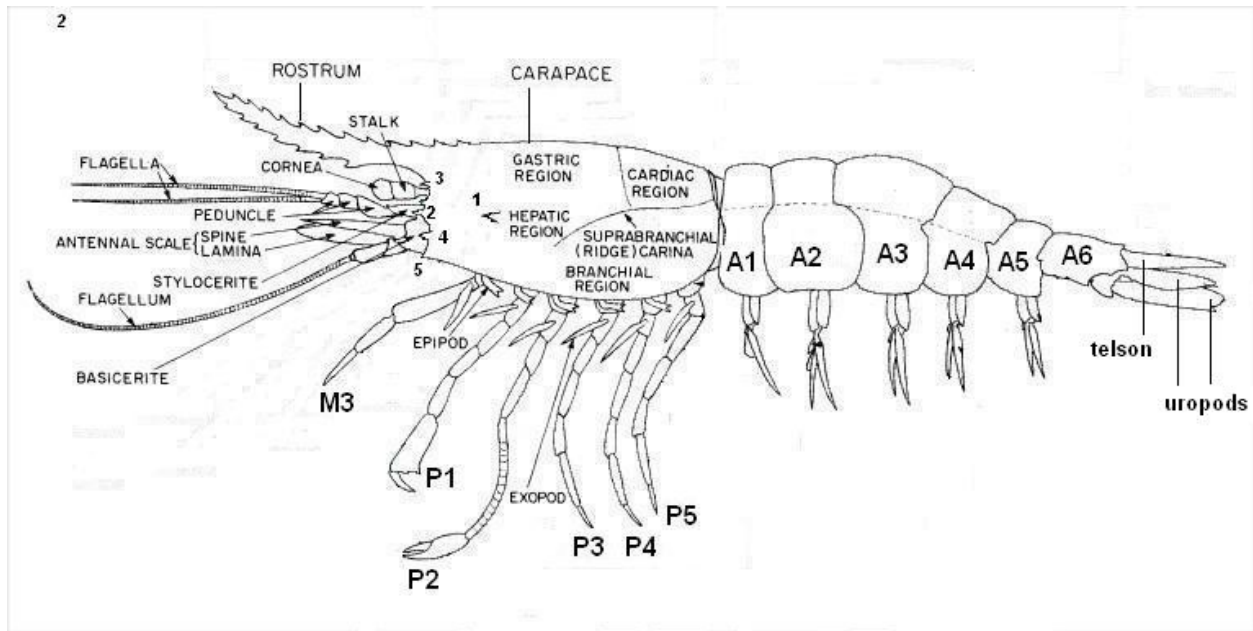


Figure 1: Basic shrimp anatomy (adapted from Butler, 1980)

A1-6 abdominal segments; P 1-5 pereopods; 1-hepatic spine, 2-antennal spine, 3-supraorbital spine, 4-branchiostegal spine, 5-pterygostomian spine.

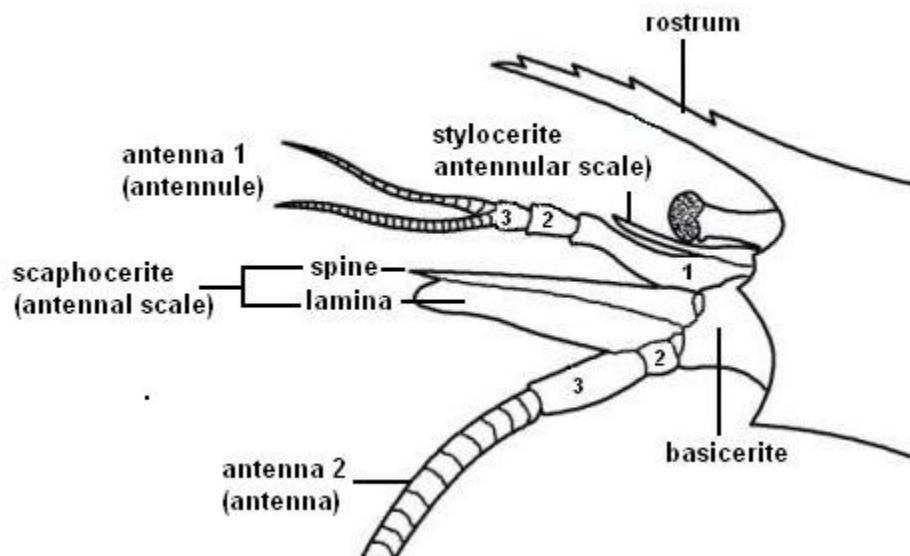


Figure 2: Head Region

BODY SEGMENT	BODY REGION	REGIONAL SEGMENT #	APPENDAGES	ABBREVIATION
0	Cephalon	0	eyes	
1	Cephalon	1	1 st antennae(antennules)	An1
2	"	2	2 nd antennae(antennae)	An2
3	"	3	mandibles	
4	"	4	1 st maxillae(maxillules)	
5	"	5	2 nd maxillae(maxillae)	
6	Thorax	1	1 st maxillipeds	M1
7	"	2	2 nd maxillipeds	M2
8	"	3	3 rd maxillipeds	M3
9	"	4	1 st pereopods	P1
10	"	5	2 nd pereopods	P2
11	"	6	3 rd pereopods	P3
12	"	7	4 th pereopods	P4
13	"	8	5 th pereopods	P5
14-18	Abdomen	1-5	1 st -5 th pleopods	A1-5
19	"	6	uropods	A6
20	"	7	telson	T

Table 1: Caridean Body Segmentation (adapted from Bauer, 2004)

Glossary of terms

Abdomen: The tail, consisting of six body segments and the telson/uropods.

Acute: Sharply pointed

Antenna (Antennae): Crustaceans have two pair of antennae, the first of which are called antennules and the second of which are called the antennae or second antennae

Antennal Carina: The ridge extending posteriorly along dorsal extremity of antennal region, often continuous with antennal spine.

Antennal Flagellum (Antennal Flagella): (Fig.1,2) Multiarticulate, whip-like terminal part of the antenna.

Antennal Peduncle: Three basal segments of the antenna, from which the flagellum arises.

Antennal scale: a flattened, leaflike extension formed by the [exopodite](#) of [antenna](#) 2. Also called a scaphocerite.

Antennal Spine: Spine situated on the anterior margin of the carapace just ventral to the orbital margin.

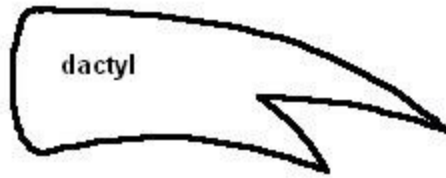
Antennule: The first [antenna](#) of crustaceans.

Anterolateral Carina: Longitudinal ridge extending along the anterior part of the carapace, ventral to the gastro-orbital carina.

Article: In a crustacean appendage, a segment of the appendage which articulates with other segments. Also, some segments of appendages such as legs or the [flagellum](#) of antennae may be subdivided by circular constrictions along with thinning of the exoskeleton so that the segment is composed of a string of beadlike subsections called articles.

Basicerite: 2nd segment of protopodite of antenna, to which scale and peduncle are attached

Bifid: Divided into two parts or branches, often at the apex.



Branchia (Branchiae): Respiratory organ (gill) associated with an appendage or with the body wall.

Branchial Region: Area of the carapace overlying the branchial cavity and gills.

Branchiocardiac Carina. Ridge extending along the posterodorsal limit of the branchiostegite.

Branchiocardiac Sulcus: Groove extending along the dorsal limit of the branchiostegite, running parallel to the branchiocardiac carina.

Branchiostegal Carina: Longitudinal ridge extending along the anteroventral part of the carapace, usually continuous with the branchiostegal spine.

Branchiostegal-Hepatic Carina: Longitudinal ridge consisting of the fusion of the branchiostegal and hepatic carinae.

Branchiostegal Spine: Short spine on or near the anterior margin of the carapace ventral to the antennal spine and dorsal to the anteroventral angle of the carapace.

Branchiostegal Sulcus: Groove often accompanying the branchiostegal carina, located on the anteroventral part of the carapace.

Branchiostegite: In crustaceans such as shrimp, the lateral or dorsolateral carapace region overlying the gills.

Carapace: a continuous covering (often hardened to at least some extent)over the head and thorax.

Cardiac notch: dorso-medial indentation at posterior carapace margin

Carina (Carinae): A ridge or keel of the exoskeleton.

Cephalothorax: Anterior part of the body consisting of the fused cephalon (head) and thorax, bearing all the appendages except the pleopods and uropods.

Cervical Carina: Transverse ridge starting at the top of the carapace and extending down and toward the front of the carapace.

Cervical Sulcus: Transverse groove starting at the top of the carapace and extending down and toward the front of the carapace.

Chela (Chelae): a pincer in which the dactyl serves as the movable claw and the propodus serves as the stationary claw

Chelate: Appendage ending in a chela (claw).

Cheliped: Any chela (claw)-bearing thoracic appendage; typically refers to first pair(s) of pereopods.

Cornea: In crustaceans, the portion of the compound eye which actually has ommatidia and is directly involved with vision, as opposed to the eyestalk. The cornea is usually pigmented, often black.

Coxa (Coxae): First or proximal podomere of a typically seven-segmented appendage.

Coxal Spine: Spine projecting from the coxa of a thoracic appendage.

Dactyl: Terminal portion of a typically seven-segmented appendage.

Dorsolateral Carina: Longitudinal ridge on the dorsolateral region of the carapace running dorsal to the orbital region.

Dorsomedian Carina: Ridge extending along the middorsal line of the abdominal somites.

Endopod: Inner branch of [biramous](#) appendage. In crustacean walking leg it consists of the last 5 segments and branches from the [basis](#).

Epipod: In certain Crustacea, a lateral extension of the [coxa](#) of a leg (pereopod), usually functioning as a gill

Epigastric spine: a median-dorsal spine on the gastric carapace, posterior to rostrum; sometimes has the appearance of a rostrum(Pasiphaeidae)

Exopod: Lateral ramus of a biramous appendage, usually arising from the basis

Eyescale: In decapod crustaceans, a flattened projection near the base of the eyestalk.

Eyestalk: Peduncle or unfaçeted part of the eye supporting the cornea.

Flagellum (Flagella): Multiarticulate, usually whip-like terminal part of the antennule or antenna.

Frontal Region: Anterior area of the carapace lying between the orbits and bounded posteriorly by the gastric region.

Gastric Region: Principal median area of the carapace bounded anteriorly by the frontal and orbital regions, and posteriorly by the cardiac region, and laterally by the branchial and hepatic regions.

Hepatic Carina: Longitudinally or obliquely disposed ridge of variable length lying ventral to the hepatic region, sometimes extending almost to the anterior margin of the carapace.

Hepatic Region: Paired anterolateral areas of the carapace bounded anteriorly by the antennal region, posteriorly by the branchial region, and mesially by the gastric region.

Hepatic Spine: In shrimplike crustaceans, an anteriorly-directed, lateral spine on the hepatic region of the [carapace](#), which is toward the front of the [carapace](#) and near the midline in the anteroventral direction.

Hepatic Sulcus: Groove ventral to the hepatic region extending posteriorly, sometimes from near the anterior margin of the carapace.

Keel: A strongly developed ridge, such as those on the [carapace](#) of some shrimp

Maxilla (Maxillae): In crustaceans, one of the pairs of leglike mouthparts posterior to the mandibles and anterior to the maxillipeds. They are usually smaller than maxillipeds and are used for manipulating food. They are appendages from the head

Maxillipeds: One of three pairs of mouthparts posterior to [maxillae](#) on underside of head.

These appendages are actually derived from the [thorax](#) which is fused to the head, rather than from the head itself. That is, they are a type of leg that comes from the thorax but are used for feeding rather than for walking. The maxillipeds usually fold forward and lie flat against the [maxillae](#) and mouth on the underside of the [cephalothorax](#).

Median Sulcus: Dorsomedian groove on the carapace.

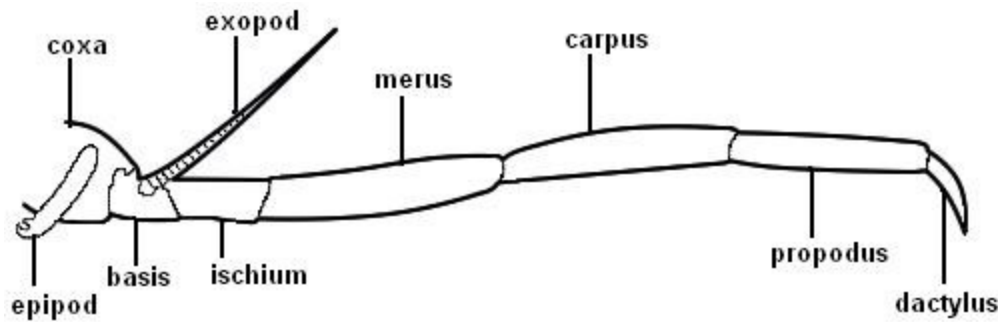
Orbit: On the anterior margin of a shrimp or crab carapace, a circular opening enclosing the eyestalk.

Orbital Margin: Anterior border of the carapace, often contiguous to the eye.

Orbital Region: Paired areas on the carapace just posterior to the eyes.

Orbital Spine: Spine projecting from the ventral extremity of the orbital margin.

Pereopod: One of the five posterior paired appendages or legs of the cephalothorax. These limbs have the typical coxal and basal segments of a biramous crustacean limb and a sticklike endopod of five segments: ischium, merus, carpus, propodus and dactylus (dactyl). The first two pairs of caridean pereopods are equipped with chelae (claws). The chelae are used for food searching and handling, aggression and defense and grooming. In many caridean species one of the two pairs is stout and robust while the other pair is slender and delicate with the chelae carrying tufts of setae which can be used for grooming. The posterior (or last) three pairs of pereopods are the walking legs, allowing the shrimp to step in all directions as well as supporting the body when at rest. There is considerable variation in the length and thickness of the walking legs amongst the species and usually correlate with the general body robustness and exoskeleton thickness.



Pleon: In crustaceans, the posterior division of the body ([cephalon](#), [pereon](#), pleon) consisting basically of six segments ([pleonites](#)). Also called the abdomen. Appendages from the pleon are [pleopods](#) (or [uropods](#)).

Pleopod: One of two appendages of each abdominal somite; typically consists of base ([protopod](#)) and two branches ([endopod](#), [exopod](#)). Serves in swimming or variously modified as copulatory structures in male and egg brooding structures in female.

Pleurite : The lateral part of the integument (exoskeleton) of a body segment. May form prominent lateral or ventral extensions or plates. One of the lateral flaps on each of the anterior five abdominal segments.

Podobranch: In some crustaceans such as shrimp, a type of gill attached to the first segment ([coxa](#)) or to an [epipod](#) of [thoracopods](#) 2-7

Postantennal Spine: Spine located on the anterolateral area of the carapace (on the posterior part of the antennal region).

Postcervical Spine: Spine located immediately posterior to the cervical carina.

Postcervical Sulcus: Subvertical carapace groove located posterior to the cervical sulcus.

Produced: extended or lengthened

Protopodite: fused proximal segments(coxa and basis) of an appendage

Rostrum (Rostra): An unpaired anterior extension of the [carapace](#) which projects between the eyestalks and represents an extension of the frontal region of the carapace. Often appears as a hornlike extension between the eyes of shrimp

Rostral spine: dorso-median spine resembling a rostrum, adjacent to the frontal carapace margin found on shrimps of the Genus *Argis*.

Scaphocerite: Laterally rigid lamellate exopod of the antenna; the antennal scale.

Stylocerite: Pointed spine arising from the lateral base of the first segment of the antennular peduncle.

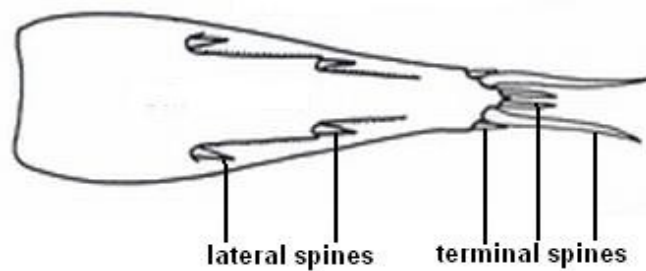
Subchelate: In shrimp, the condition of [pereopod](#) in which the [dactyl](#) folds back against the palm of the [propodus](#) to form a pincer or [chela](#) (differing from [chelate](#) in that the [propodus](#) does not have a distal prolongation or "finger" against which the [dactyl](#) closes). A subchelate chela is a claw in which the axis of closure is at nearly a right angle with the long axis of the leg

Sulcus (Sulci): Groove.

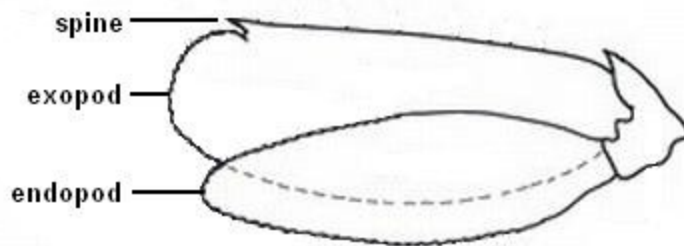
Suborbital spine: In crustaceans such as shrimp, an [anteriorly](#) directed, spine-like projection on the orbital region of the [carapace](#); located at the [anterior](#) edge, below the [orbit](#)

Supraorbital spine: In crustaceans such as shrimp, an [anteriorly](#) directed, spine-like projection on the orbital region of the [carapace](#); located at the [anterior](#) edge, above and behind the [orbit](#).

Telson: Most posterior segment of the body of a crustacean. May form tailfan ([caudal fan](#)) together with [uropods](#).



Uropod: One of two appendages of last (sixth) abdominal segment of a crustacean. Typically flattened and consisting of basal [protopod](#) and two branches ([endopod](#), [exopod](#).) May form tailfan ([caudal fan](#)) together with [telson](#)



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