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# *Lissocrangon stylirostris*

Common shrimp

Phylum: Arthropoda, Crustacea  
Class: Malacostraca  
Order: Decapoda  
Section: Caridea  
Family: Crangonidae

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**Taxonomy:** Schmitt (1921) described many shrimp in the genus *Crago* (e.g. *Crago alaskensis* and *C. franciscorum*) and reserved the genus *Crangon* for the snapping shrimp (now in the genus *Alpheus*). In 1955–56, the International Commission on Zoological Nomenclature formally reserved the genus *Crangon* for the sand shrimps only. Kuris and Carlton (1977) designated the new, and currently monotypic, genus *Lissocrangon* based on a lack of gastric carapace spines. Known synonyms for *L. stylirostris* include *Crago stylirostris* and *Crangon stylirostris* (Wicksten 2011).

## Description

**Size:** Type specimen 55 mm in body length (Ricketts and Calvin 1971) with average length 30–61 mm (male average 43 mm and female 61 mm, Wicksten 2011; size range 20–70 mm for females, 15–49 mm for males, Marin Jarrin and Shanks 2008). This specimen (from Coos Bay) is 55 mm in length.

**Color:** White with black and brown chromatophores, giving gray appearance (see Fig. 23.11, Chace and Abbott 1980).

**General Morphology:** The body of decapod crustaceans can be divided into the **cephalothorax** (fused head and thorax) and **abdomen**. They have a large plate-like carapace dorsally, beneath which are five pairs of thoracic appendages (see **chelipeds** and **pereopods**) and three pairs of maxillipeds (see **mouthparts**). The body is laterally compressed and shrimp-like in the Caridea. The abdomen and associated appendages are outstretched and the abdomen usually has a sharp bend, which is less prominent in *L. stylirostris* (Kuris et al. 2007).

## Cephalothorax:

**Eyes:** Small, pigmented and not covered by carapace.

**Antennae:** Antennal scale (scaphocerite) short, just a little over half the length of the carapace, blade with oblique inner margin; spine longer than blade (Fig. 2). Stylocerite (basal, lateral spine on antennule) longer than first antennular peduncle segment and blade-like (Wicksten 2011).

**Mouthparts:** The mouth of decapod crustaceans comprises six pairs of appendages including one pair of mandibles (on either side of the mouth), two pairs of maxillae and three pairs of maxillipeds. The maxillae and maxillipeds attach posterior to the mouth and extend to cover the mandibles (Ruppert et al. 2004). Third maxilliped stout (particularly first segment, which is broadly dilated) and with exopod (Kuris and Carlton 1977; Wicksten 2011).

**Carapace:** Thin and smooth, without medial spine (*Lissocrangon*, Kuris and Carlton 1977). A pair of hepatic (lateral) spines with carinae or ridges (Fig 1). Also branchiostegal spines (Wicksten 2011).

**Rostrum:** Short, narrow with pointed tip that is sharply recurved and grooved (Wicksten 2011), length reaches end of eyes.

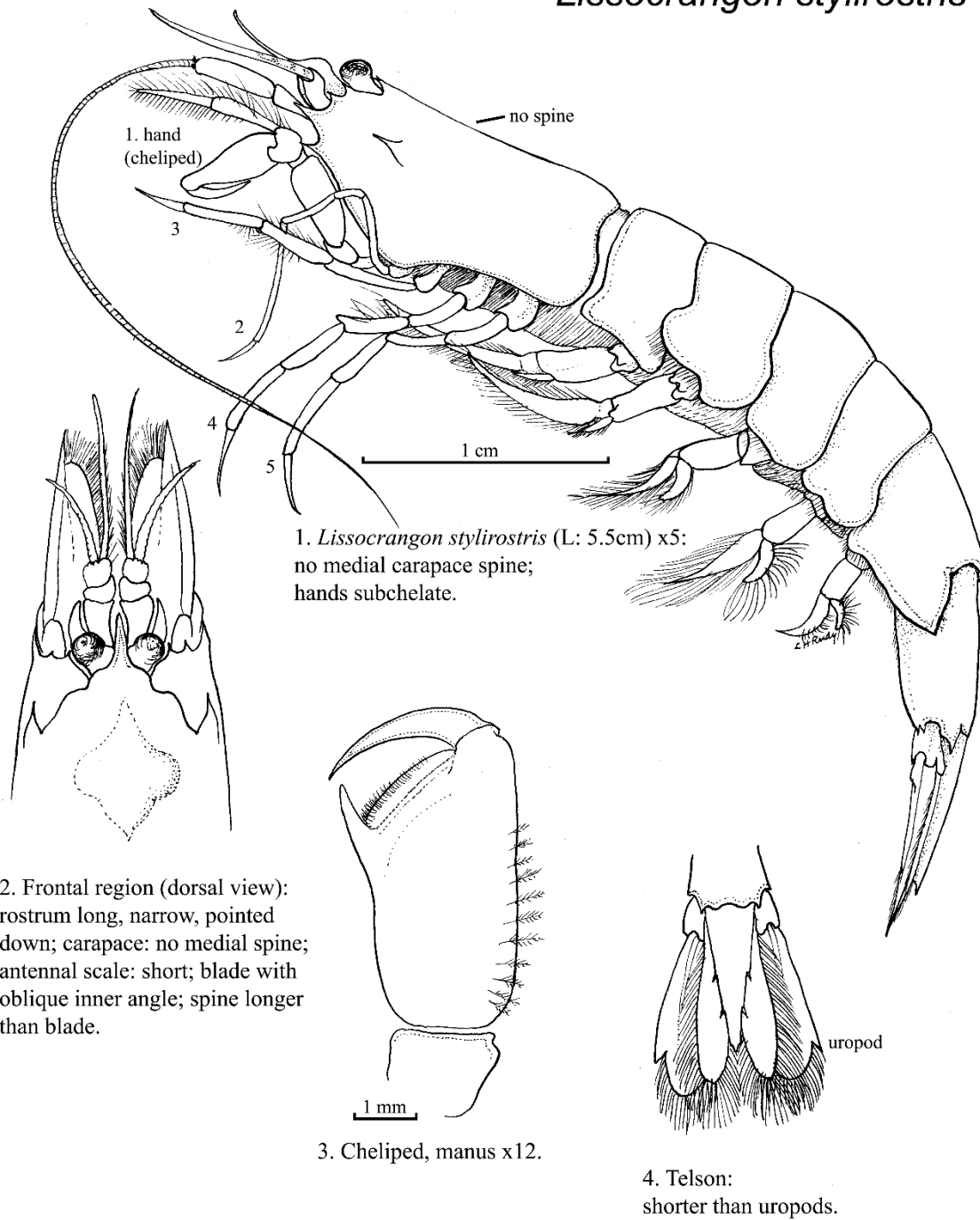
## Teeth:

**Pereopods:** First pereopod stout and bearing spines on merus (one) and carpus (two), propodus widening distally and dactyl obliquely transverse when flexed. Second to fifth pereopod morphology as follows: second pereopod slender and chelate; third slender and with simple dactyl; fourth and fifth larger than third and with flattened dactyls (Wicksten 2011).

**Chelipeds:** Hands (manus) subchelate, slightly widened distally and about twice as long as wide (Fig. 3).

**Abdomen (Pleon):** Shrimp-like (Fig. 1). Male abdomen narrow (see **Sexual Dimorphism**). Morphology of the sixth abdominal segment is taxonomically

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significant and in *L. stylirostris* it bears a postero-ventral spine, no ventral groove and no carinae (Ricketts and Calvin 1971; Wicksten 2011).

**Telson & Uropods:** Telson distinctly shorter than uropods and with four lateral spines (two pair) (Fig. 4) (Wicksten 2011).

**Sexual Dimorphism:** Females often have broader and larger bodies than males, which have compressed and squat bodies (Hoeman 1982; Marin Jarrin and Shanks 2008; Wicksten 2011). The size disparity between males and females could be the result of protandry (see **Reproduction**) (Marin Jarrin and Shanks 2008).

### Possible Misidentifications

The family Crangonidae is characterized by first pereopods that are subchelate and second pereopods (if present) that are slender and equal in size, each with unsegmented carpus. Other characters include chela dactyls that close horizontally across the end of the propodus (“like the blade of a pocket knife” Wicksten 2011), a rostrum that is small and without spines and a body that is squat and somewhat depressed (although it can be broad in ovigerous females) (Wicksten 2011).

Three crangonid genera we revised in 1977 by Kuris and Carlton: *Lissocrangon*, *Crangon* and *Neocrangon*. Members of the two former genera are found locally. These genera can be differentiated by carapace spination: *Lissocrangon* lacks gastric spines, *Crangon* has one median gastric spine and *Neocrangon* (*Mesocrangon*, *M. munitella*, locally) has two gastric spines.

*Crangon* species have a straight and upturned rostrum and a telson that is of equal length or longer than uropods. The genus is divided into groups (i.e. subgenera, Kuris and Carlton 1977) based on characters of the sixth abdominal segment. In the first group, the sixth abdominal segment is smooth and lacks dorsal carinae (instead of two distal carinae). This group is further split based on a sulcate or convex sixth abdominal segment ventrum. The so-called “smooth, sulcate species group” (Kuris and Carlton 1977) includes all local *Crangon* species, *C. alaskensis*, *C. franciscorum*, *C. handi*, *C. nigricauda* and *C. nigromaculata*.

Besides lacking gastric spines, *Lissocrangon* species have a long narrow and sharply recurved rostrum, a telson that is shorter than the uropods and a sixth abdominal segment without a pair of dorsal carinae (keel-like ridges). This genus is monotypic, the only known member is *L. stylirostris* (Kuris and Carlton 1977; Kuris et al. 2007).

### Ecological Information

**Range:** Type locality is Trinidad, California. Known range includes Chirikof Island, Alaska to Todos Santos Bay, Baja California (Wicksten 2011).

**Local Distribution:** Coos Bay sites include Pt. Adams beach, at the mouth of South Slough.

**Habitat:** Often along high-energy sandy beaches, surf zone or semi-protected beaches (Kuris and Carlton 1977; Wicksten 2011). *Lissocrangon stylirostris* is a bottom-dweller that prefers hard sand (Ricketts and Calvin 1971) and occurs in the low tide, swash zone of Oregon beaches (see Figs. 1–3, McLauchlan 1990).

**Salinity:** Collected at 30 with range reported from salinities of 17 to 33 (Chace and Abbott 1980).

**Temperature:** 8.7–16°C (Chace and Abbott 1980).

**Tidal Level:** Intertidal to 80 m.

**Associates:** Can be infested with bopyrid isopod *Argeia pugettensis* (Butler 1980). This isopod is found next to the branchial chamber in many crangonids and forms a conspicuous bulge in the carapace (see Plate 19, Kozloff 1993; Wicksten 2011). In 2008, 61.7% of *L. stylirostris* were infected with the parasite and their reproductive output was negatively affected (Bastendorff Beach, Charleston, OR, Marin Jarrin and Shanks 2008). The crangonid shrimps *L. stylirostris* and *Crangon franciscorum* may also be infected with the microsporidium parasite *Pleistophora crangoni*, which occurs within their skeletal musculature (Breed and Olson 1977).

**Abundance:** Common in surf zone of semi-protected sandy beaches (Schmitt 1921). Densities ranged from 17–472 individuals per 100 m<sup>2</sup> at Bastendorff Beach, Charleston, OR, with highest density observed at night (Marin Jarrin and Shanks 2011).

## Life-History Information

**Reproduction:** Many crangonid shrimp species are considered gonochoristic, but evidence suggests that some species exhibit protandry (Bauer 2004). Identifying ovigerous females is easy because female crangonid shrimp carry eggs which are attached with between the joints and rami of the inner pleopods, under the abdomen (Siegfried 1989). Females ovigerous year-round (Grays Harbor, Washington, Hoeman 1982). Little is known about the reproduction and development in *L. stylirostris*.

**Larva:** In caridean shrimp species development proceeds through several zoea larval stages (Guerao and Cuesta 2014). Crangonid zoea are characterized by a wide rostrum, hemispherical eyestalks, antennule bases that touch, unsegmented antennule scales with inner flagellum having a setose spine, an exopod present on pereopod one (not 3–5), which is subchelate and a telson that widens posteriorly (see Fig. 48.1, Guerao and Cuesta 2014; Puls 2001).

**Juvenile:**

**Longevity:**

**Growth Rate:** Growth occurs in conjunction with molting. In pre-molting periods the epidermis separates from the old cuticle and a dramatic increase in epidermal cell growth occurs. Post-molt individuals will have soft shells until a thin membranous layer is deposited and the cuticle gradually hardens. During a molt decapods have the ability to regenerate limbs that were previously autotomized (Kuris et al. 2007).

**Food:** Feeds on small invertebrates and moves into the surf zone at night when its preferred prey, *Archaeomysis grebnitzkii* is most abundant (Marin Jarrin and Shanks 2011).

**Predators:** Commercially harvested in San Francisco Bay, California for bait with *C. franciscorum*, *C. nigricauda* and *C. nigromaculata*. Annual catches ranged from 320,000–1,360,000 kg (1940–1957) to 2,300–25,000 kg (1980s) per year (Chace and Abbott 1980).

**Behavior:**

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