

Swimming Crabs (Crustacea: Brachyura: Portunoidea) of Easter Island¹

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Abstract

The portunoid fauna of Easter Island is reviewed, based on historical records and material collected by the Science Museum of Long Island Easter Island Expedition of 1998–1999. Previously, only two portunoid taxa identified to the species level were recorded from the island. The present work reports on six species of portunoids: *Ovalipes elongatus* Stephenson and Rees, 1968 (new record), *Laleonectes nipponensis* Sakai, 1938 (new record), *Portunus pubescens* Dana, 1852, *Thalamita auauensis* Rathbun, 1906 (new record), *T. bevisi* (Stebbing, 1921) (new record), and *T. seurati*, Nobili, 1906 (new record). Specimens tentatively referred to *Thalamita minuscula* Nobili, 1906 are also discussed, but this taxon may represent the juvenile form of *T. seurati*. The new records from the island all represent large range extensions for each species. Color notes are provided for four species. The first pleopod of the male of *O. elongatus* is illustrated for the first time and the species' potential as an invasive taxon is discussed.

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Introduction

Easter Island, located approximately 3800 km west of South America in the southeast Pacific Ocean (27°10'S, 109°20'W), is one of the most isolated inhabited places on the planet (Boyko, 2003). This volcanic landmass is constantly pounded by strong wave activity and is surrounded by water that has relatively low nutrient levels, which makes colonization difficult for a variety of organisms (DiSalvo and Randall, 1993). The island's many unique characteristics contribute to its current classification as its own biogeographic province (Briggs and Bowen, 2012).

Although the marine community of Easter Island is known to be relatively depauperate, it is nevertheless worth studying to assess the potentially high level of endemism that may be present. The factors that make colonization difficult also make scientific study of the island's marine organisms challenging. Few scientific studies have been carried out on the island, which means much of the marine fauna has not yet been identified or studied. It is important for the marine environment of Easter Island to be studied further so that it can be better understood because, as tourism and levels of human influence on the island increase, the risk to its unique marine ecosystem grows. Conservation efforts to prevent exploitation and overfishing will not be effective unless a more complete record of the island's species is developed (Boyko, 2003).

Rathbun (1907) in the first publication reporting on brachyurans of Easter Island included no portunoids among her taxa. No other brachyurans were recorded from the island until the paper of Garth (1973) in which, among other taxa, a single female specimen of *Portunus pubescens* (Dana, 1852) and an indeterminate number of specimens identified only as "Thalamita species" were included. Báez and Ruiz (1985) recorded *P. pubescens* again from Easter Island and Castilla and Rozbaczylo (1987) listed *P. pubescens* and *Thalamita* sp. based on data from Garth (1973, 1985). DiSalvo et al. (1988) reported a total of seven species of

Portunidae from the island, with only one identified to genus or species: *Ovalipes trimaculatus* (De Haan, 1833). Retamal and Moyano (2010) repeated DiSalvo et al.'s (1988) mention of seven species but did not list *O. trimaculatus* as one of them.

In 1998 and 1999, teams of researchers (including the first author in 1999) were assembled by Dr. John Tanacredi, then of the Gateway National Recreation Area, U.S. National Park Service, to form the Science Museum of Long Island Easter Island Expedition of 1998–1999 in order to survey the near-shore marine environment of Easter Island. Numerous specimens of marine invertebrates, particularly crustaceans, were collected (see Boyko, 2001, Boyko and Williams, 2001, Johnsson et al., 2002, Boyko, 2003, Kensley, 2003, Poupin et al. 2003, Gómez and Boyko, 2006) but none of the brachyurans were identified beyond family-level at the time of collection.

The identities of the species of portunoids identified by Garth and cited in DiSalvo et al. (1988) is a problem (e.g., Poupin, 2003 where only three taxa are listed identified to species). In 2001 the first author and his wife, Maria Spector, undertook a search of the Los Angeles County Museum (LACM) collections and files trying to locate the brachyuran specimens mentioned by DiSalvo et al. (1988) and any information written down by John Garth (then deceased) about their identities. A number of typed and hand written notes (hereafter cited as Garth MS) regarding Easter Island brachyurans were found in a storage closet and these notes contained code numbers that then allowed for some of the specimens to be located on the museum shelves. In all cases, the specimens only contained the code numbers in the jars and were therefore not recognized as Easter Island material by LACM staff. Unfortunately, not all specimens listed by Garth in his notes were located on the shelves of the LACM, and it is presumed that the missing specimens did not survive the transfer from Garth's office at the Allen Hancock Foundation to the LACM. Although some material identified by Garth is in the USNM, none of it is from

Easter Island. Relevant to the present work, Garth's notes listed the following seven species of portunoids (Garth's identifications given first, followed by the current name of the species if subsequently synonymized):

Ovalipes punctatus (De Haan, 1833)

Portunus oahuensis Edmondson, 1954 (also listed on a different page as *Portunus vocans*

A. Milne Edwards, 1878)

Portunus pubescens (Dana, 1852)

Thalamita edwardsi Borradaile, 1900 (= *Thalamita admete* (Herbst, 1803))

Thalamita medipacifica Edmondson, 1954 (= *Thalamita bevisi* (Stebbing, 1921))

Thalamita sp. cf. *minuscula* Nobili, 1906

Thalamita wakensis Edmondson, 1925 (= *Thalamita seurati* Nobili, 1906)

The present specimens collected by the Science Museum of Long Island Easter Island Expedition of 1998–1999 (four species) combined with the surviving specimens identified to family (but not to species) reported in DiSalvo et al. (1988, five species) concur with Garth's notes in reporting a total of seven species of swimming crabs from Easter Island. The present list differs from that in Garth's notes by updating the names of three species to their current usage and correcting misidentifications by Garth of two species: *O. punctatus* and *T. edwardsi*.

Although it is certainly possible that additional swimming crab species occur in shallow waters around Easter Island, the fact that no additional species have been collected since the early 1980s suggests that seven, six if *Thalamita* cf. *minuscula* represents juveniles of another species, might well be the number currently present.

Materials and Methods

Measurements were made to the nearest 0.1 mm using electronic calipers for larger specimens and an ocular micrometer for smaller specimens, except for NIWA specimens which were measured to the nearest mm. Measurements provided are of the carapace width (CW, at the widest point) and length (CL, taken from the medial front teeth to the posterior border of the carapace). Morphological examination was performed using a dissecting microscope. Specimens were collected directly from Easter Island or borrowed from the Los Angeles County Museum of Natural History (LACM) and the Australian Museum (AM). Additional specimen data for *Ovalipes elongatus* were obtained from the Australian Museum and the National Institute of Water and Atmospheric Research (NIWA), New Zealand. Synonymy lists are restricted to first descriptions of species (valid or synonyms), important figures and/or redescriptions, current combination formations, and records from Easter Island. Some of the locality data, particularly from specimens collected by Louis DiSalvo, is limited to “Easter Island” although some of these specimens also have code numbers assigned by DiSalvo. Fortunately, Louis DiSalvo provided a list of the station data to the first author in May 2001 as well as additional specimens, mostly dry, but these included no additional portunoids. Color photographs were all taken on site at Easter Island by the first author.

Specimens examined are deposited in the collections of the AM, LACM (either with LACM or Marine Biodiversity Processing Center [MBPC] prefixes) and the Department of Invertebrate Zoology, Smithsonian Institution, National Museum of Natural History (USNM).

There is some disagreement in the status of portunoid families versus subfamilies between Ng et al. (2008) and Schubart and Reuschel (2009). We do not endorse one scheme over the other but follow the classification of Ng et al. (2008) until the state of portunoid systematics is clearer.

Results

SYSTEMATICS

Superfamily PORTUNOIDEA Rafinesque, 1815

Family POLYBIIDAE Ortmann, 1893

Ovalipes elongatus Stephenson and Rees, 1968

Fig. 1A–D

Ovalipes, Bennett, 1966: 140, pl. 101(A) [photograph of female holotype].

Ovalipes elongatus Stephenson and Rees, 1968: 216 (in key), 232–233, pls. 36B, 39C, 39D, 42E, fig. 1E.

Ovalipes trimaculatus, DiSalvo et al., 1988: 466; Poupin, 2003: 29 [not *O. trimaculatus* (De Haan, 1833)].

MATERIAL EXAMINED: **Easter Island:** USNM **XXXXXX**, 1 female (63.4 x 51.6 mm), Anakena, coll. C.B. Boyko and S. Reanier, 30 August 1999. **Australia:** New South Wales, Lord Howe Island: AM P.15387, 1 female holotype (33 x 31 mm), Blinkenthorpe Beach, coll. I. Bennett, May 1964. AM P.15183, 1 paratype of unknown sex (dry, carapace only) (23 x 20 mm), coll. F. Evans, September 1966. AM P.15182, 1 male paratype (dry, 22 x 22 mm), coll. F. Evans, September 1966. AM P.10936, 1 female paratype (dry, 39 x 32 mm), coll. unknown. AM P.1132, 1 juvenile female paratype (18 x 20 mm), coll. A. R. McCulloch, October 1908. AM P.39117, 1 male (37 x 30 mm), 31°33'S, 159°05'E, coll. unknown, December 1979.

LIVE COLORS (Fig. 1A, B): Carapace is very light blue with small, evenly scattered deep purple spots. Legs and chelipeds are off-white with a light blue tinge, especially at tips. The paddles of the fifth pereopods are blue. Small, deep purple blotches are also present on legs and

chelipeds, but are not as numerous as on the carapace. Specimen agrees well with the photograph in Bennett (1966, pl. 101A).

REMARKS: This specimen agrees with the description by Stephenson and Rees (1968). The color pattern (reticulations and lack of large colored spots on posterolateral corners of the carapace) and the elongate carapace shape ($B/L = 1.23$) are particularly characteristic of *O. elongatus*. The only substantive difference between the specimen examined here and the holotype is in size. This specimen is almost double the size of the holotype (Fig. 1C), which is only 33 mm in carapace width. A relatively small number of specimens of this species have been examined, so the maximum adult size of this species is not known (the largest specimen in AM is a 39 x 32 mm female and in NIWA a 30.1 x 25.7 mm female, see McLay, 2009). Even though this specimen is very large compared to others that have been described in the literature, all morphological characters, including the color pattern, indicate that it is *O. elongatus*.

The first male pleopod has been illustrated for all species of *Ovalipes* except *O. elongatus* (Stephenson and Rees, 1968; Williams, 1976). As the only specimen from Easter Island was a female, we provide an illustration here based on a male from Lord Howe Island (AM P.39117) (Fig. 1D). The first pleopod of *O. elongatus* is slender and elongate, lacking any proximal lateral expansion (character 1.19 of Stephenson and Rees, 1968). In this, it is similar to the first pleopods of *O. punctatus* (De Haan, 1833), *O. trimaculatus* (De Haan, 1833), *O. catharus* (White, 1843), *O. australiensis* Stephenson and Rees, 1968, and *O. georgei* Stephenson and Rees, 1968 (“Group A” of Stephenson and Rees, 1968), but unlike those of *O. iridescens* (Miers, 1886), *O. moelleri* (Ward, 1933), *O. ocellatus* (Herbst, 1799), *O. floridanus* Hay and Shore, 1918 and *O. stephensoni* Williams, 1976 (“Group B”) which have a proximal lateral expansion. The striae present on the hand of the cheliped led Stephenson and Rees (1968) to place *O. elongatus*

in the “*O. punctatus*” “Group A subgroup” along with *O. australiensis*, *O. trimaculatus*, and *O. catharus*. However, *O. elongatus*, in comparison with the illustrations of the first male pleopods by Stephenson and Rees (1968), has a much longer terminal slit (“orifice séminal” of Guinot, 1979) than any other species in the “*O. punctatus*” group and, indeed, than any other species in the genus. Three other male characters of *O. elongatus* were unknown to Stephenson and Rees (1968, using their character numbering scheme): 1.13 dactyl of first walking leg of male triradiate in section (confirmed), 1.18 ultimate segment of male abdomen approximately triangular and only slightly broader than long (confirmed; the shape is most similar to the segment in *O. punctatus*) and 3.26 distal part of merus of first walking leg of male with conspicuous raised collar (confirmed; the collar is asymmetrical with the thickest portion directed anteriorly but no mention was made of collar asymmetry in other species by Stephenson and Rees, 1968). The character patterns in the genus warrant its separation into at least two genera, corresponding to Stephenson and Rees’ (1968) “Group A” (including *O. elongatus* and requiring a new genus) and “Group B” (*Ovalipes sensu stricto*) but such an act is beyond the scope of this study.

Garth (MS) listed *Ovalipes punctatus* (De Haan, 1833) from Anakena in several checklists, but indicated that his identification was based solely on a slide image taken of a specimen (apparently not collected) in 1985. Later, DiSalvo et al. (1988) stated that *O. trimaculatus* was present on Anakena beach, a record apparently overlooked by Retamal and Moyano (2010) who did not list this species from Easter Island. The specimen examined here is clearly not *O. punctatus* or *O. trimaculatus* because its color pattern and proportions do match those described and illustrated by Stephenson and Rees (1968) and illustrated in Retamal and Arana (2000) for either species. *Ovalipes punctatus* is not an intertidal species, further casting doubt on Garth’s earlier identification. The presence of *O. punctatus* and *O. trimaculatus* on

Easter Island is possible, given the known geographical distribution of these species (Stephenson and Rees, 1968; Parker et al., 1998). However, neither has been recorded in Australasia and given the depauperate fauna of Easter Island, it is not likely that more than one species of *Ovalipes* occurs there. This is therefore the first record of *Ovalipes elongatus* from Easter Island under the correct species name.

Ovalipes elongatus was originally described from specimens collected from Lord Howe Island and the Kermadec Islands (Stephenson and Rees, 1968). However, the two locations are quite different in habitat and water temperature with Lord Howe Island belonging to the Indo-Polynesian province of the Tropical Indo-West Pacific (IWP) Region and the Kermadec Islands being a warm-temperate province in the Western Pacific Region (Briggs and Bowen, 2012). Recently, *O. elongatus* has been collected in coastal New Zealand, where it has been classified as non-indigenous (Morrisey et al., 2007; Inglis et al., 2008). The discovery of *O. elongatus* on Easter Island, considered its own province in the Tropical Indo-West Pacific Region (Briggs and Bowen, 2012), coupled with the recent collections in New Zealand, raises questions about the origin of the species. Is it a tropical species expanding into temperate waters or a temperate species that has expanded into tropical ones? The water temperatures at both Lord Howe (18–23°C) and Easter Island (18–24°C) are at the lower end of the temperature range for the IWP and not substantially different from those found in the Kermadecs (14–26°C) (Vernon and Done, 1979; Francis et al., 1987; DiSalvo et al., 1988). However, all these temperatures are considerably warmer than those of the New Zealand locations where *O. elongatus* has been collected, but only as very small specimens (5.5–8.6 x 5.4–7.0 mm).

HABITAT: Sandy beaches, shallow waters (Parker et al., 1998).

DISTRIBUTION: Lord Howe Island, Kermadec Islands (Parker et al., 1998), New Zealand (Morrissey et al., 2007; Inglis et al., 2008), Easter Island.

Family PORTUNIDAE Rafinesque, 1815

Subfamily PORTUNINAE Rafinesque, 1815

Laeonectes nipponensis Sakai, 1938

Fig. 1E, F

Neptunus (Hellenus) nipponensis Sakai, 1938: 301, fig. 1.

Portunus oahuensis Edmondson, 1954: 236 (in key) 243–245, fig. 20.

Portunus (Xiphonectes) nipponensis, Sakai, 1976: 346–347, figs 186a–c, pl. 119, fig. 3.

Laeonectes nipponensis, Manning and Chace, 1990: 50–52; Hoover, 2006: 277, unnumbered top figure; Ng et al., 2008: 158, fig. 117.

Portunus sp. Hoover, 1998: 277, unnumbered top figure.

Portunidae sp., Boyko, 2003: 167, fig. 10B [erroneously as 10C in figure caption].

MATERIAL EXAMINED: **Easter Island**: USNM **XXXXXX**, 1 male (20.0 x 11.8 mm), Ahu Tepeu dock, 15.24 m depth, coll. H. Tonnemacher, 29 August 1999. USNM **XXXXXX**, 1 male (67.8 x 34.0 mm), Hanga Oteo, in cave, 12.19 m depth, coll. H. Tonnemacher, 26 August 1999.

LIVE COLORS (Fig. 1E, F): The larger specimen's carapace (Fig. 1E) is a reddish-orange color with large light pink blotches. The blotches of the anterior half of the carapace form

a three-pronged trident shape in the center. Underneath this shape, on the posterior half of the carapace, the blotches form a distorted H, which has a dark red spot in the center. The legs display a distinct banding pattern that alternates between the reddish-orange and light pink colors. The chelipeds also have bands, but they are much wider than those of the legs. The smaller specimen (Fig. 1F) displays the same patterns, including the banding pattern and a less distinct version of the previously described arrangement of blotches on the carapace. Instead of the reddish-orange color, this specimen is a light orange-brown with cream-colored blotches and bands.

REMARKS: Manning and Chace (1990) established *Laleonectes* for *Portunus nipponensis* and *P. vocans*. Crosnier and Moosa (2002) later redescribed *L. nipponensis* and described *L. stridens* as a new but closely related species. The photographs of the two species look very similar, however the first and second pleopods are different and useful for identification. Both male specimens examined here have first pleopods that are narrow and tapered at the ends, with a narrow fringe of setae on the dorsal margin, which match the illustrations of *L. nipponensis* by Crosnier and Moosa (2002: Fig 5 D). The second pleopods of the larger specimen match the illustrations of Crosnier and Moosa (2002: Fig. 5E) whereas those of the smaller specimen are incompletely developed. Crosnier and Moosa (2002) discussed how *L. oahuensis* was described and illustrated by Edmondson (1954) using only one small male specimen, most likely a juvenile of *L. nipponensis* (see also Castro, 2011).

Even though there is a large difference in size between the two male specimens examined here, they are both *L. nipponensis*. The smaller specimen is likely younger, based on both size and the immature form of the second pleopods, which could also account for the difference in color. The larger specimen (Fig. 1E) shows a very similar color pattern to the specimen figured

by Ng et al. (2008) while the smaller specimen's coloration (Fig. 1F) resembles the colored drawing shown in Sakai (1976) and the live crab figured by Hoover (1998, 2006). This is the first published record of *L. nipponensis* from Easter Island.

Garth (MS) listed both *Portunus oahuensis* (on 5 pages) and *P. vocans* (on 1 page), but never both on the same page, suggesting that he changed his mind about the correct name to apply to the species, of which he had only three specimens (now apparently lost).

HABITAT: Deep waters (15–250 m) with hard/rocky substrate.

DISTRIBUTION: Indonesia, Japan (type locality of *Neptunus (Hellenus) nipponensis*), Hawaii (type locality of *Portunus oahuensis*), French Polynesia, Reunion, Philippines (Crosnier and Moosa, 2002), Easter Island.

Portunus (Portunus) pubescens Dana, 1852

Fig. 2A

Lupa pubescens Dana, 1852: 274.

Neptunus tomentosus Haswell, 1882: 547.

Portunus pubescens, Garth, 1973: 346–347; Báez and Ruiz, 1985: 102–103; Castilla and

Rozbaczylo, 1987: 209 (list); Hoover, 2006: 276, unnumbered top figure; Retemal and Moyano, 2010: 315 [Easter Island records].

MATERIAL EXAMINED: **Easter Island:** LACM CR 19653451, 1 female (44.6 x 28.0 mm), Hanga Roa, coll. I. E. Efford and J. A. Mathias, January 1965.

LIVE COLORS: Live colors of this particular specimen from Easter Island are unknown. This species exhibits an overall orange coloration (see Sakai, 1965; Hoover, 2006).

REMARKS: The specimen that is examined here is the same specimen that was reported by Garth (1973). *Portunus pubescens* is the only portunid from Easter Island that Garth identifies in any published work based on examined material. He indicated that the genus *Thalamita* was present, but did not provide species-level identification for that species (see under *Thalamita* cf. *minuscula*). Garth (MS) lists the species on several pages in various checklists but provides no evidence that any additional specimens of this species were collected from the island. Báez and Ruiz (1985) reported the species from Easter Island for the second time based on additional museum specimens collected in 1960 and 1978.

HABITAT: Shallow waters (20–30 m), soft substrate of mud or sand.

DISTRIBUTION: India, Hawaii (type locality of *Lupa pubescens*, as “Sandwich Islands”), Japan, Philippines, Australia (type locality of *Neptunus tomentosus*), Mozambique Channel, Line Islands (Stephenson, 1972), Easter Island (Garth, 1973).

Subfamily THALAMITINAE Paul'son, 1875

Thalamita auauensis Rathbun, 1906

Fig. 2B

Thalamita auauensis Rathbun, 1906: 874, pl. XII, fig. I; Crosnier, 2002: 424–429, fig. 13 [partial redescription and illustration of two male syntypes]; Komatsu, 2011: 257, fig. 21D [color photograph].

MATERIAL EXAMINED: **Easter Island**: LACM MBPC13473, 1 ovigerous female (12.9 x 7.3 mm), “A5486, VI-86-18” = Motu Iti, 60 m depth, coll. L. H. DiSalvo, February 1986. LACM MBPC13474, 1 female (14.1 x 9.9 mm), 1 juvenile (7.8 x 5.1 mm), “IVb861430” = infaunal in *Pocillopora* head, off Hanga Roa, 30 m depth, coll. L. H. DiSalvo, February 1986. USNM **XXXXXX**, 1 male (18.4 x 11.2 mm), north of Ahu Tepeu in coral head, 32.92 m depth, coll. H. Tonnemacher, August 1999.

LIVE COLORS (Fig. 2B): Carapace is a reddish-orange color with cream-colored spots of varying sizes. The legs exhibit a banding pattern, which alternates between the reddish and cream colors. The tips of the chelipeds are black and white. Specimen colors agree with those shown by the specimen of Komatsu (2011: Fig. 21D).

REMARKS: The specimens agree well with the original and subsequent descriptions and illustrations of *Thalamita auauensis* (Rathbun, 1906; Edmondson, 1954; Stephenson and Rees, 1967; Crosnier, 2002; Komatsu, 2011). Crosnier (2002) discussed how *Thalamita auauensis* is very similar to *T. margaritimana* Crosnier, 2002, *T. difficilis* Crosnier, 2002, and *T. auauensis dytica* Crosnier, 2002. The Easter Island specimens do not agree with Crosnier’s description of *T. difficilis*, which has more prominent and narrow frontal lobes and the specimens of *T. difficilis* are larger than specimens of *T. auauensis* from Hawaii and Easter Island. Crosnier (2002) also stated that he did not agree with the identification by Stephenson (1972: 144), which determined that a specimen from Mombasa, Kenya, was *T. auauensis* and considered this record suspicious because the specimen was collected at a depth of only 1–2 m, whereas all other records of *T. auauensis* are from subtidal depths. Note that Crosnier (2002) gave the catalog number of the

type specimens as USNM 29600 in error; it is 29602. *Thalamita auauensis dytica* was actually considered by Crosnier (2002) to be closest to *T. difficilis* and Ng et al. (2008) raised this taxon to a full species without comment in the Systema but thought the differences cited by Crosnier (2002) were sufficient to treat it as a valid species (Ng, pers. commun.), an action with which we concur.

Garth (MS) identified his specimens, some of which were recovered and reexamined, as *Thalamita edwardsi* Borradaile, 1900 (a subjective synonym of *T. admete* (Herbst, 1803) but they are all *T. auauensis*. A further 11 specimens cited by Garth (MS) could not be located.

HABITAT: Coral, depth of 24–335 m.

DISTRIBUTION: China; Philippines; Marianas; Samoa and Hawaii (type locality); Ogasawara Islands, Japan (Komatsu, 2011); Easter Island.

Thalamita bevisi (Stebbing, 1921)

Fig. 2C, D

Euryplax bevisi Stebbing, 1921: 14, pl. 2.

Thalamita dakini Montgomery, 1931: 432–433, fig. 51–53, pl. 24, fig. 3, pl. 28, fig. 4.

Thalamita medipacifica Edmondson, 1954: 260–262, figs. 34a, b, 35a.

Thalamita bevisi, Ng and Clark, 2010: 577–582, figs. 1–5a–d, h, i, 6.

MATERIAL EXAMINED: **Easter Island**: USNM **XXXXXX**, Anakena, 1 male (15.2 x 10.8 mm), coll. C.B. Boyko and S. Reanier, 30 August 1999. USNM **XXXXXX**, 1 male (12.1 x 8.0 mm), east coast of Poike, 6.1–7.6 m (20–25 ft), coll. H. Tonnemacher, 23 August 1999.

LACM MBPC13475, 1 female (13.0 x 7.4 mm), 1 juv. (5.7 x 3.9 mm), 1 female (15.4 x 10.5 mm)), coll. L. DiSalvo, 1984.

LIVE COLORS (Fig. 2C, D): Carapace is dark brown to greenish with blotches of lighter brown and cream. The legs are also brown with spots of the cream color. Tips of lateral carapace teeth orange.

REMARKS: The specimens match the original and subsequent descriptions and illustrations of *Thalamita dakini* (Montgomery, 1931; Stephenson, 1972; Poupin, 1996; Crosnier, 2002). According to Ng and Clark (2010), the male holotype of *T. dakini* agrees well with the male holotype of *T. bevisi*, therefore the two names are synonymous. Although the holotype of *T. bevisi* has a fourth anterolateral tooth that is more reduced than that of the holotype of *T. dakini*, Ng and Clark (2010) asserted that this difference is attributable to intraspecific variation. *Thalamita medipacifica* is a synonym of *T. dakini* (Ng et al., 2008; Ng and Clark, 2010) and also *T. bevisi*. According to Retamal (1999, 2004), a specimen recorded as “*Thalamita* sp. aff. *dakini*” was found on the island of Salas Y Gómez, a locality very close to Easter Island. It is not possible to discern whether this specimen is *T. bevisi* or not because the photograph and description (of generic characters only) are not sufficient for identification. Garth (MS) listed *T. medipacifica* and one of his three specimens was examined for this study; the other two are apparently lost. This is the first published record of *T. bevisi* (under that name or either of its synonyms) from Easter Island.

HABITAT: Shallow waters.

DISTRIBUTION: Abrolhos Island, Western Australia (type locality of *T. dakini*), Sri Lanka, Oman, South Africa (type locality of *T. bevisi*), Society Island, Gilbert Island, Marianas, Samoa, French Polynesia, Hawaii (type locality of *T. medipacifica*) (Ng and Clark, 2010), Easter Island.

Thalamita seurati Nobili, 1906

Fig. 2E

Thalamita seurati Nobili, 1906: 262; Nobili, 1907: 385, pl. 2, fig. 1.

Thalamita wakensis Edmondson, 1925: 38.

MATERIAL EXAMINED: **Easter Island**: LACM MBPC13476, 1 female (8.2 x 5.6 mm), 1 ovigerous female (14.0 x 9.8 mm), “IF-2” = infaunal in coral, Hanga Roa, 5 m depth, coll. L. H. DiSalvo, February 1983.

LIVE COLORS: Unknown.

REMARKS: The specimens examined here agree well with the descriptions and illustrations of *T. seurati* by Crosnier (2002), who described and illustrated the holotype of *T. wakensis* and listed characters that might differentiate the two species, such as the slightly shorter and stronger anterolateral teeth on *T. wakensis*. However, Crosnier (2002) stated his belief that the two are synonymous, despite the fact that both of the holotypes are females, which makes a decision more difficult. The two names are currently considered synonyms (Ng et al., 2008) and the slight differences that can be seen between Crosnier’s (2002) two illustrations can

be attributed to intraspecific variation. This is first published record of the species from Easter Island, both specimens being females.

Garth (MS) listed *Thalamita wakensis* (a synonym of *T. seurati*, see Ng et al., 2008) on several pages of his manuscript and the specimens examined here were both of those identified as *T. wakensis* by Garth. It appears that two separate lots collected by L. DiSalvo “IF-2” (1 female) and “018” (1 ovigerous female) were later combined, as the present lot “IF-2” has both specimens.

HABITAT: Mud or sand, shallow waters.

DISTRIBUTION: Tuamotu, (type locality of *T. seurati*), Hawaii (type locality of *T. wakensis*), Japan, Taiwan, Madagascar (Crosnier, 2002); Easter Island.

Thalamita cf. minuscula Nobili, 1906

Fig. 2F

?*Thalamita minuscula* Nobili, 1906: 262; Nobili, 1907: 36, pl. 1, fig. 15 [figure of type specimen].

?“*Thalamita minuscula*?”, Serène et al., 1976: 15–16 [questionable record from Ambon].

MATERIAL EXAMINED: **Easter Island**: LACM MBPC13477, 8 juveniles (smallest 3.3 x 2.6 mm; largest 4.5 x 3.2 mm.), coll. L. H. DiSalvo, 1985 or 1986. USNM **XXXXXX**, 1 juvenile (2.9 x 2.8 mm), freshwater pool, stone basin between moai and tide pool, Tongariki, coll. C. B. Boyko, 22 Aug. 1999.

LIVE COLORS: Unknown.

REMARKS: This very small species was first described by Nobili (1906) and illustrated by Nobili (1907, see Fig. 1F herein) but is most likely the juvenile of another species although this is difficult to determine with certainty due to a lack of data on development in *Thalamita* species in the Indo-West Pacific (Poupin, 1996). Poupin (1996) stated that the species has not been reported subsequent to the original description and illustration by Nobili (1906, 1907) although Serène et al. (1976) did tentatively reported it from Ambon. Garth (MS) listed one “young” specimen identified as *Thalamita* sp. cf. *minuscula* from the EIP (1972) collections (originally cited in Garth, 1973 without indication as to number of specimens as “*Thalamita*” or “*Thalamita* species”; specimen now apparently lost) and 8 “young” with the DiSalvo code number “012” and the identification “*Thalamita* species”; these latter specimens were examined by us along with an additional damaged specimen. Based on the morphology of the carapace frontal margin and lateral spines, these eight small specimens look most like *T. minuscula* but do bear some similarity to *T. seurati*. They may represent juveniles of *T. seurati* but without a series of size classes to study possible ontogenetic changes in carapace characters, these specimens are tentatively identified as *Thalamita* cf. *minuscula*. At present, it cannot be said with certainty that *T. minuscula* is a valid species.

HABITAT: Shallow waters, soft substrate of mud or sand.

DISTRIBUTION: Tuamotu (Kaukura and Vahitahi) (type localities, Nobili, 1906), Ambon, Indonesia (tentative), Easter Island (tentative).

Discussion

The brachyuran fauna of Easter Island is not diverse by the standards applied across the Indo-West Pacific Ocean, but knowledge of the diversity of taxa on the island is important in the context of understanding range sizes of IWP species, many of which have broad dispersal capabilities, and determining the extent of endemism on this isolated landmass. In the case of the portunoids, all six, or seven if including *Thalamita cf. minuscula*, species are found widely distributed in the IWP, although not all with identical patterns (e.g., *Laeonectes nipponensis* ranging to the northwest of Easter Island vs. *Ovalipes elongatus* to the southwest). No portunoid species from Easter Island are endemic, suggesting that long-range larval dispersal keeps the island populations connected, albeit perhaps infrequently, to the main portion of the range for each species.

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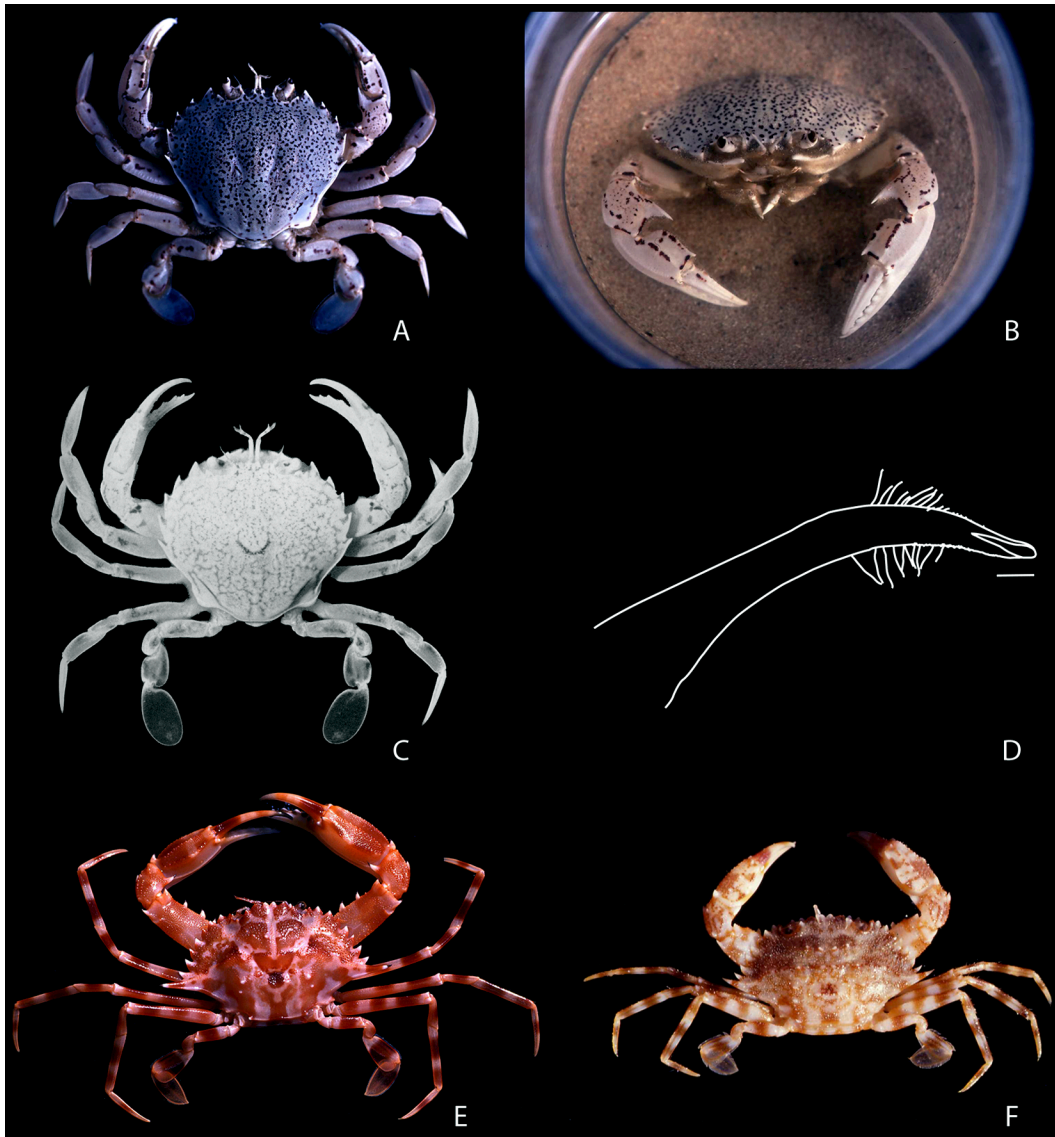


Figure 1. Portunoid crabs from Easter Island. A, B, color photographs of live *Ovalipes elongatus* Stephenson and Rees, 1968, female, 51 x 63 mm (CW x CL) (“EI 116”); C, *O. elongatus* photograph of holotype from Bennett (1966); D., first pleopod of *O. elongatus*, male, 37 x 30 mm (AM P.39117); E, color photograph of live *L. nipponensis*, male, 34 x 68 mm (“EI 115”); F, color photograph of live *Laleonectes nipponensis* (Sakai, 1938), male, 12 x 20 mm (“EI 111”). Scale in C = 0.5 mm.



Figure 2. Portunoid crabs from Easter Island. A, *Portunus pubescens* Dana, 1852, female, 44.6 x 28.0 mm (CW x CL) (LACM CR 19653451); B, color photograph of live *Thalamita auauensis* Rathbun, 1906, male, 11 x 19 mm (“EI 110”); C, color photograph of live *Thalamita bevisi* (Stebbing, 1921), male, 12.1 x 8 mm (“EI 129”); D, color photograph of live *T. bevisi*, male, 15.2 x 10.8 mm (“EI 109”); E, *Thalamita seurati* Nobili, 1906, female, 8.2 x 5.6 mm (“EI 112”), F, *Thalamita minuscula* Nobili, 1906, holotype (after Nobili, 1907).