FOUR NEW RECORDS OF CARIDEAN SHRIMPS (DECAPODA: PALAEMONIDAE, ALPHEIDAE) IN MEXICAN PACIFIC WATERS

BY

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ABSTRACT

New records are provided for four species of caridean shrimp (Alpheidae and Palaemonidae) from Sonora, Sinaloa, and Oaxaca, along the west coast of Mexico. Alpheus tenuis Kim & Abele, 1988 extends its northern range to Puerto Peñasco, Sonora. Alpheus martini Kim & Abele, 1988 is recorded for the first time outside of Panama (Alcatraz Island, Sonora). Pontonia simplex Holthuis, 1951 is recorded from Teacapan, Sinaloa, in the pen shell Atrina maura (Sowerby, 1835), which constitutes a new host record; additionally, its live colour pattern is described. The range of Pontonia margarita Smith, 1869 is extended along the Mexican coast south to Oaxaca.

INTRODUCTION AND MATERIAL

Wicksten & Hendrickx (2003) presented an updated list of the species of shrimp (Dendrobranchiata, Caridea, and Stenopodidea) known to occur in the eastern tropical Pacific, including Mexico. In recent years, only a few new species of Caridea have been reported from the Pacific coast of Mexico: Synalpheus lani

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Hermoso-Salazar & Álvarez, 2005, from Punta de Mita, Nayarit; *Synalpheus wickstenae* Hermoso-Salazar & Hendrickx, 2006, and *Synalpheus stylopleuron* Hermoso-Salazar & Hendrickx, 2006 from off Altata and Lobos Island, Sinaloa, all from shallow water; the deep-water *Glyphocrangon taludensis* Hendrickx, 2010, from off Sinaloa; and the pelagic pasiphaeid *Psathyrocaris fragilis* Wood-Mason, 1893, for Pacific Mexico (Hendrickx & Wicksten, 2011). Additionally, new records or range extensions for several species have appeared. Hermoso-Salazar & Hendrickx (2005a, b) extended the northern distribution limit of *Synalpheus peruvianus* Rathbun, 1910 to Altata and Teacapán, Sinaloa, and slightly extended the range of *Alpheus bellimanus* Lockington, 1877, and *A. cristulifrons* Rathbun, 1900, within the Gulf of California. Hendrickx & Wicksten (2004) increased the northernmost distribution limit of *Acanthephyra brevicarinata* Hanamura, 1984, to the Guaymas Basin, Gulf of California, and reported the presence of *Glyphus marsupialis* (Fihol, 1884), off western Mexico. Hendrickx (2008) increased the northernmost distribution limits within the Gulf of California of both *Palaemonetes hiltoni* Schmitt, 1921, and *Alpheus hyeyoungae* Kim & Abele, 1988. Hendrickx & Wicksten (2011) increased the northernmost distribution limit of *Periclimenes infraspinis* (Rathbun, 1902), *Alpheus cristulifrons* Rathbun, 1900, *Automate rugosa* Coutière, 1900, and *Plesionika trispinus* Squires & Barragán, 1976, and the southernmost distribution limit of *Typton hephaestus* Holthuis, 1951, and *Lysmata californica* (Stimpson, 1866) along the Pacific coast of Mexico.

Recent collections along the Pacific coast of Mexico in 2007 and 2010 provide some new data related to the distribution of four species of Caridea collected in intertidal and shallow waters. Except when indicated otherwise, the material examined was collected by the authors.

Abbreviations used: BCS, Baja California Sur; CL, carapace length in mm; GC, Gulf of California; ETP, eastern tropical Pacific; Coll., collectors; FA, Felipe Amezcua; OHAP, Omar Hernando Avila Poveda; SAO, Sabino Aguario Orduño. The specimens have been deposited in the Regional Collection of Marine Invertebrates (EMU) of the Instituto de Ciencias del Mar y Limnología, UNAM, in Mazatlán, Mexico.

**SYSTEMATIC ACCOUNT**

**Family Palaemonidae** Rafinesque, 1815

**Pontonia margarita** Smith, 1869

Material examined. — Three ♂♂ (CL = 4.5-8.5 mm) and 4 ♀♀ (CL = 9.0-11.0 mm) from La Tijera Beach, Oaxaca, 12/Nov/2010, in four specimens of *Pinctada mazatlanica* (Hanley, 1856) (coll.: OHAP, SAO) (EMU-8922).
Distribution. — ETPT: GC, BCS (Agua Verde Bay, San José Island, Espíritu Santo Island); Sonora (Guaymas); Sinaloa (Mazatlán); Nayarit (Tres Marías Islands); Jalisco (Barra de Navidad); Costa Rica (Puerto Parker, Playa Blanca, Puerto Culebra); Panama (Panama Bay, Secas Islands, Jicarita Island, Honda Bay, Piñas Bay); Colombia (Gorgona Island, Octavia Bay, Cupica Bay, Puerto Utría); Galapagos (Darwin Bay, Genovesa Island) (Hendrickx, 1988; Fransen, 2002).

Habitat. — Rocky bottoms; commensal in the bivalves *Pteria sterna* (Gould, 1851) and *P. mazatlanica*; depth: 0-10 m (Fransen, 2002).

Remarks. — One to three specimens of *P. margarita* were found in each host. Male to female rate: 0 : 1, 0 : 1, 1 : 1 and 2 : 1. *P. margarita* has been reported as heterosexual pairs in their hosts (Wicksten & Hernández, 2000; Baeza, 2008), and the presence of one or three specimens in the same host is rather surprising. Specimens of *Pinctada mazatlanica* examined were kept separately after sampling, thus avoiding possible migration of shrimp from one shell to another. Also, shells were opened separately; soft parts were removed and transferred into individual containers and examined carefully for shrimps. We therefore believe that no individuals could have escaped our search. The usual sexual size-dimorphism was observed, with a mean CL for males and females of 6.6 mm and 10.2 mm, respectively. The position inside the host was lateral, in the mantle cavity, facing directly towards the aperture of the valves. This position is probably related to the feeding habits of the shrimps, as *P. margarita* is known to feed on the dead tissue or secretions of *Pinctada mazatlanica* (cf. Bauer, 2004), whilst a related species feeds on micro-algae retained in the gills of their host (Aucoin & Himmelman, 2010).

The males examined have the third segment of the antennular peduncle slightly longer than the penultimate segment, and the appendix masculina overreaches the appendix interna by 1.1-1.3 of its length. The new record extends the southern range limit in Mexico by approximately 1000 km.

**Pontonia simplex** Holthuis, 1951

Material examined. — Three ♂♂ (CL 14-15 mm) and 2 ♀♀ (CL 13-15 mm), Teacapán, Sinaloa, April/2007, in *Atrina maura* (Sowerby, 1835), salinity 30.6 ppt, temperature 27.6°C, depth 20 m (coll. FA) (EMU-8923).

Distribution. — ETPT: GC, BCS (Puerto Escondido); Jalisco (Puercos Island, Barra de Navidad), Colima (Tenacatita Bay); Costa Rica (Culebra Bay); Panama (canal zone) (Fransen, 2002; Wicksten & Hendrickx, 2003).

Habitat. — Commensal with bivalves (*Pinna*) (Fransen, 2002).

Remarks. — The material examined was collected from a previously unrecorded host, *Atrina maura*. The colour pattern of live specimens was previously unknown (Fransen, 2002), but the present observations record it as follows: body and legs
white translucent, with oblique, sinuous, bright yellow lines; a yellow, dorsal, discontinuous line running from rostrum to sixth abdominal somite; chelae of second pereiopods with shiny orange spots. Ovigerous females with olive-green mass of eggs.

Family ALPHEIDAE Rafinesque, 1815

**Alpheus martini** Kim & Abele, 1988

Material examined. — One σ (CL 10.5 mm) from Alcatraz Island (28°48′56″N 111°57′51″W), Sonora, 08/Mar/2007, depth 0.5 m, temperature 18°C (EMU-8924).


Habitat. — Previously recorded from sandy and rocky bottoms; depth: 0-1 m (Kim & Abele, 1988).

Remarks. — *Alpheus martini* was previously known only from Panama. The present record not only increases its distribution by approximately 4000 km to the north, but represents only the third record ever.

**Alpheus tenuis** Kim & Abele, 1988

Material examined. — One σ (CL 7.5 mm), Puerto Peñasco (31°17′20″N 113°29′49″W), Sonora, 05/Mar/2007, pool in low intertidal with sandy-rocky bottom (EMU-8925).

Distribution. — ETP: GC, Sonora (Tiburón Island); Panama (Farfán Point, Whorehouse Reef, Venado Beach) (Wicksten & Hendrickx, 2003).

Habitat. — Associated to oozy, sandy, and rocky bottoms; depth: 0-1 m (Kim & Abele, 1988).

Remarks. — The material examined extends the northernmost range of *A. tenuis* to Puerto Peñasco, Sonora, by approximately 275 km within the Gulf of California.

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