

Short Note

Records of *Hippa strigillata* (Stimpson, 1860) (Crustacea: Decapoda: Hippidae) in the SE Gulf of California, Mexico

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ABSTRACT - This paper presents details regarding the collections and records of *H. strigillata* in the Bay of Mazatlán, SE Gulf of California, Mexico. Samples of *H. strigillata* were obtained in this bay and surroundings area during different periods and deposited in the collection of UNAM, Mazatlán. Morphometric data, distribution, biological and ecological data were furnished.

Key words: Distribution, Gulf of California, *Hippa*, mole crab

Because they represent a very dynamic environment, often with high energy wave action, sandy beaches are considered low diversity habitats for macro and mega fauna (Tait, 1972). This is particularly true along the west coast of Mexico (Dexter, 1976; Hendrickx, 1996). The intertidal habitat is mostly dominated by species of bivalve mollusks and small (Amphipoda, Isopoda) to medium size (Anomura) crustaceans. Among the Anomura, mole crabs (superfamily Hippoidea) are well adapted to the surf zone and are occasionally very abundant, particularly in the case of the genera *Emerita* Scopili, 1777 and *Hippa* Fabricius, 1787 (Barnes and Wenner, 1968; Brusca 1980; Jaramillo *et al.*, 2000a, 2000b; Ríos-Elósegui, 2013).

The superfamily Hippoidea contains three families: Albuneidae, Blepharipodidae, and Hippidae. The Hippidae consists of three genera: *Emerita*, with 10 species, *Mastigochirus* Miers, 1878, with two species, and *Hippa*, with 15 species (Boyko and McLaughlin, 2010). Two species of *Hippa* occur in the eastern Pacific: *Hippa marmorata* (Hombron & Jacquinot, 1846) (a senior

synonym of *Remipes pacificus* Dana, 1852) (Boyko, 2002, Boyko and McLaughlin, 2010) and *H. strigillata* (Stimpson, 1860) (Hendrickx, 1995; Hendrickx and Harvey, 1999). *Hippa marmorata* occurs from the central Gulf of California to Colombia, including several oceanic islands of the eastern Pacific (Revillagigedo, del Coco, Galapagos, and Clipperton) (Hendrickx, 2005). *Hippa strigillata* was described from specimens collected in Cabo San Lucas, and additional material has been reported since by only a few authors. Efford (1972) described the distribution of the species in the eastern Pacific and reported material from Los Frailes, on the west coast of the Baja California Peninsula, from several localities in western Mexico, and from El Salvador. Ramos and Ríos (1995) collected material in Ensenada de Utría, Colombia, providing a new southernmost record and new size record for the species. Subsequent citations did not report on new material and referred exclusively to previously cited localities. The northernmost distribution limit is currently in Mazatlán, on the east side of the Gulf of California, and in Los

Frailes, on the west coast. The collections data corresponding to Mazatlán, however, were never published. This contribution presents details of these collections and new, recent records of *H. strigillata* in the area of the Bay of Mazatlán, Mexico.

Samples of *H. strigillata* were collected by hand in the Bahía de Mazatlán and surrounding area, along the Pacific coast of Mexico (see Material examined), in the surf zone with a push net (samples of 1982) or in the intertidal with a shovel and a sieve (samples of 2012) of 1.8 mm aperture. Sampling localities were obtained from Google Map (January 2014) and plotted on a map of the area. Carapace width (CW) and length (CL) were measured with a Vernier (precision ± 0.01 mm). All the specimens are kept in the Regional Collection of Marine Invertebrates, at the Instituto de Ciencias del Mar y Limnología, UNAM, Mazatlán, Mexico (EMU).

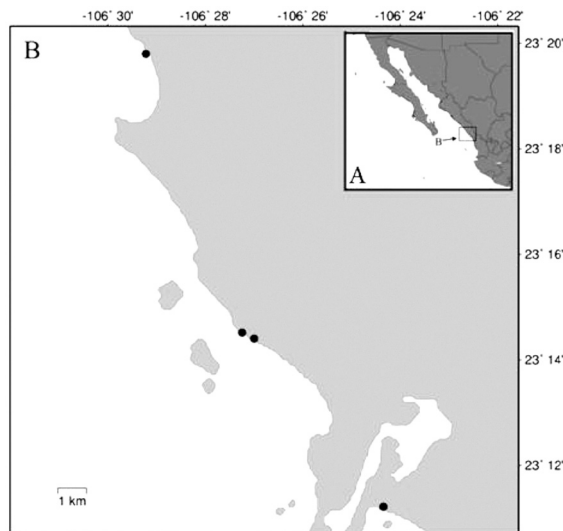


Figure 1. Distribution of *Hippa strigillata* (Stimpson, 1860) in the area of the Bay of Mazatlán, southeastern Gulf of California, Mexico (Map adapted from seaturtle.org/maptool. Mercator projection; January 2014).

Hippa strigillata (Stimpson, 1860)

Remipes strigillatus Stimpson, 1860: 113.

Hippa strigillata.— Efford, 1972: 121; Haig, 1980: 289, textfig. 19.4; Hendrickx, 1993a: 308 (list); 1993b: 7 (list); 1995: 564; 1996: 614 (appendix 1); 2005: 178 (list); Ramos and Ríos, 1995: 102; Hendrickx and Harvey, 1999: 367 (list); Boyko and McLaughlin, 2010: 142 (list).

Material examined: Playa el Delfín (23°19'48"N / 106°29'13"W), north of Mazatlán, 13/Oct/1982, 8 males (CW, 7.07-11.81 mm; CL, 8.28-14.20 mm), push net, surf zone (EMU-1228); Punta Sábalo (23°14'24"N / 106°27'W), Mazatlán, 5/Oct/1982, 1 male (CW, 7.15 mm; CL, 8.60 mm), push net, surf zone (EMU-2788); Playa Las Flores (23°14'31"N / 106°27'15"W), Mazatlán, 2/Feb/2012, 3 males (CW, 5.42-6.83 mm; CL, 7.11-8.96 mm) and 2 females (CW, 5.53-6.43 mm; CL, 7.63-8.34 mm), sieve, surf zone (EMU-9882A). Same locality, 2/Mar/2012, 8 males (CW, 5.45-8.22 mm; CL, 7.07-10.21 mm) and 4 females (CW, 4.89-7.85 mm; CL, 6.49-10.19 mm), sieve, surf zone (EMU-9881A). Same locality, 8/May/2012, 1 male (CW, 5.30 mm; CL, 6.97 mm), and 1 female (CW, 7.91 mm; CL, 10.09 mm), sieve, surf zone (EMU-9881B and 9882B); Isla de la Piedra (23°11'13"N / 106°24'21"W), Mazatlán, 3/Feb/2012, 1 female (CW, 6.59 mm; CL, 8.32 mm), sieve, surf zone (EMU-9882C).

Type locality: San Lucas Cape, Baja California, Mexico (Efford, 1972).

Maximum known size: Up to 25 mm (CL) (Haig, 1980).

Distribution: Mexico: Los Frailes and Cabo San Lucas, southern Baja California; Mazatlán, Sinaloa; Puerto Vallarta, Jalisco; Bahía de Petalco, Zihuatanejo, and Acapulco, Guerrero; La Libertad, El Salvador (Efford, 1972); Ensenada de Utría, Colombia (Ramos and Ríos, 1995).

Remarks: The maximum known size was recorded by Haig (1980: 25 mm CL). Ramos and Ríos (1995) reported maximum sizes (CL) of 10.1 mm for males and 13.7 mm for ovigerous females. In this study, maximum sizes (CL) were 14.20 mm for males and 10.19 mm for females. A total of 29 specimens was collected, of which 27.6% were females and 72.4% males (H:M proportion, 0.38:1).

The specimens collected in 2012 in Bahía de Mazatlán were sampled together with a large series of specimens of *Emerita*

rathbunae Schmitt, 1935 in the intertidal, mostly at low tide. *Emerita rathbunae*, however, was proportionally much more abundant (99.21% of all collected specimens) than *H. strigillata* (0.79%). In Colombia, *H. strigillata* is sympatric with *H. marmorata* (Ramos and Ríos, 1995), while in Bahía de Mazatlán it was found together with *E. rathbunae* and juveniles of *Lepidopa* sp.

It is rather surprising that no specimens of *H. strigillata* have been found north of Mazatlán as long, uninterrupted sandy beaches are found all the way up to the northern Gulf of California area. *Hippa marmorata*, for example, has been observed up to El Sahuaral, Sonora (26°46'57"N / 109°45'37"W). Considering that both species of *Hippa* seem to share a similar habitat (the surf zone in tropical and subtropical areas) there seems to be no clear reason why they cannot be found together in higher latitudes in the Gulf of California.

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