ATACAMA TRENCH INTERNATIONAL EXPEDITION (ATIE)

AGOR 60 “VIDAL GORMAZ” (1 – 6 SEPTEMBER 1997)

Second Report. Preliminary Results
CRUSTACEA DECAPODA

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PLANES MARINUS RATHBUN, 1914 (*)

Common names
Crabs of the genus Planes are commonly known as "oceanic crabs" or "Columbus crabs". Less frequently they are called "floating crabs", "ocean-drifting crabs" or "gulf-weed crabs".

Systematics

Order Decapoda
Suborder Pleocyemata
Infraorder Brachyura
Section Brachyrhyncha
Superfamily Grapsidoidea
Family Grapsidae


Pachygrapsus marinus: Chace, 1951: 92, tabs. 1-3, figs. 1c, 2c,f,i,p-r, 3o-t.-- Hart, 1959: C31.-- Edmondson, 1959: 169, fig. 8b.-- Dell, 1963a: 179, fig. 1.-- Crosnier, 1965: 28, figs. 28, 33, 34.

Pachygrapsus spec.: Holthuis & Sivertsen, 1967: 4, fig. 1.

Morphological characteristics
Carapace wider than long (length/width ratio ranging from 1.07 to 1.16), subquadrate at all sizes; surface of branchial regions distinctly striate laterally. Male abdomen broadly triangular, length of 4 distal segments about 1.08 times basal width of fourth segment; telson broadly triangular, about 0.9 times as long as basal width, lateral margins nearly straight. Chelae with fixed finger not noticeably bent downward; outer surface of palm with few inconspicuous granules near lower margin. Walking legs rather short, stout, not noticeably flattened; upper margin of propodi of 3 anterior pairs each with distinct natatory fringe of setae. [Based on Chace (1951: 68, Table 1, as Pachygrapsus marinus; 1966: 646)].

(*) Comments of the Editors:
The specimen was collected on the polypropylene rope during the recovering of the traps.
Geographical distribution

Pacific Ocean: west coast of North America from the Gulf of California and Baja California to British Columbia (Rathbun, 1914, 1918; Chace, 1951; Glassell, 1934; Hart, 1959); off Chile (this report); Hawaii (Edmondson, 1959); Japan (Takeda & Kurata, 1977); New Zealand (Dell, 1963a, 1964, 1968; Wear, 1970); Xisha Island, China (Dai & Yang, 1991).
Indian Ocean: Madagascar (Crosnier, 1965); Amsterdam Island (Arnaud et al., 1972).
Atlantic Ocean: St. Helena Island (Chace, 1966); Mar Chiquita, Argentina (Spivak & Bas, 1999); Tristan da Cunha (Holthuis & Sivertsen, 1967)

Present record

One specimen found on propylene rope while recovering instruments during studies of the Atacama Trench, off northern Chile, at Station A1, 23° 15’S, 71°21’W, 4 September 1997. Bottom depth at this station was 7800 m, but the crab probably clung to the rope at or near surface depth. Although widely distributed in the Pacific, Indian, and Atlantic Oceans, this species has not been previously reported from the southeastern Pacific. One male and a female specimens from off Chile, collected on a buoy off Mehuin, near Valdivia, are deposited in the collections of the National Museum of Natural History, Smithsonian Institution, Washington, D.C., USA (USNM 170719).

Ecology

*Planes marinus* is one of three species of the genus *Planes* Bowdich, 1825, the others being *P. minutus* (Linnaeus, 1758), and *P. cyaneus* Dana, 1851. They are typically found in the open ocean. These crabs have been found living on drifting objects such as *Sargassum*, the siphonophore *Veella*, and cephalopod shells of *Spirula*; inanimate flotsam objects ranging from buoys and drifting wood to pieces of rope, feathers, tarballs and pumice; and on marine organisms such the turtle *Caretta caretta* (Linnaeus). Occasionally, however, they have been found inshore on beaches or under rocks (Chace, 1951, 1966; Davenport, 1992; Dellingar et al., 1997; Spivak & Bas, 1999).

Biology

As pointed out by Spivak & Bas (1999), information on the biology of *Planes marinus* is scarce. There is some information on reproduction and early larval development. Females incubate the eggs for about six weeks, and lay more than one batch of eggs each breeding season, or they may breed in all months of the year; only prezoa and first zoa larva are known (Wear, 1970; Wear & Fielder, 1985). The biology of other species of *Planes* has been studied more. The coloration, ecology, behavior, and larvae of *P. minutus* are better known (Hitchcock, 1941; Butler et al., 1983; Davenport, 1992, 1994; Diaz et al., 1992; Cuesta et al., 1997; Dellingar et al., 1997). Spivak & Bas (1999) found that the population characteristics of *P. marinus* are similar to those of *P. minutus* living on flotsam (Dellingar et al., 1977), consisting on juveniles, and males and females in a 1:1 sex ratio. Spivak & Bas (1999) noted a high incidence of pereopod autotomy in populations of *P. marinus*, measured egg size, and observed a marked sexual dimorphism. They concluded that the life history and behavior of this "pelagic" crab is very similar to its benthic littoral relatives.
SELECTED BIBLIOGRAPHY ON PLANES SPECIES


BOWDICH, T. E., 1825 - Excursions in Madeira and Porto Santo during the autumn of 1823, while on his third voyage to Africa. i-xii, 278 pp, pls. 1-12, London.


GUESS, R. C., 1982 - Occurrence of a Pacific loggerhead turtle, *Caretta caretta gigas* Deraniyagala, in the waters off Santa Cruz Island, California. California Fish and Game, 68(2): 122-123.


TACHIKAWA, H., 1994 - Record of *Planes marinus*, Rathbun (Decapoda: Grapsidae) from Chichijima, the Ogasawara Islands, Japan. Nanki Seibutu 36(1): 60.


URGORRI, V., SOLORZANO, M.R., BESTEIRO, C. & F. RAMIL, 1990 - Crustacea Decapoda Brachyura of Galicia from the collections of the Natural History Museum "Luis Iglesias" (Spain). Boletín de la Real Sociedad Española de Historia Natural (Sección Biología), 85(1-4): 5-16.


