

NOTES

RECORDS OF CARIDEAN SHRIMPS (CRUSTACEA: DECAPODA)
FROM THE COASTS OF THE MEXICAN PACIFIC OCEAN, GULF
OF MEXICO AND MEXICAN CARIBBEAN

*Gabino A. Rodríguez-Almaraz, Antonio Leija-Tristán
and Roberto Mendoza*

Caridean shrimps are present in virtually every habitat in marine or brackish waters and are most diverse in shallow tropical waters (Wicksten and Hendrickx, 1992). Knowledge of the caridean shrimp fauna from Mexico has been restricted mainly to the Gulf of California (e.g., Ríos and Carvacho, 1982; Wicksten, 1983; Ríos, 1992; Wicksten and Hendrickx, 1992; Hendrickx, 1993a,b), coasts from Veracruz (e.g., White, 1982; Hermoso-Salazar and Martínez-Guzmán, 1991), coasts from Yucatán (e.g., Martínez-Guzmán et al., 1989; Martínez-Guzmán and Hernández-Aguilera, 1993) and the Caribbean coast of Quintana Roo (e.g., Chace, 1972; Markham et al., 1990). Collections from estuarine and marine environments of the Pacific coast of Mexico, Gulf of Mexico and Mexican Caribbean have produced significant information relative to the distribution and ecology of 18 species of caridean shrimp belonging to three families: Palaemonidae (7), Alpheidae (6) and Hippolytidae (5). The examined material was obtained during the last 20 yrs by numerous expeditions along of the above coasts mentioned. Table 1 lists the localities and gives latitude and longitude for each. All material is deposited in the Collection of Crustaceans, Universidad Autónoma de Nuevo León, Facultad de Ciencias Biológicas (UANL-FCB). Previously known distribution and remarks are given for each species.

Family Palaemonidae Rafinesque

Leander tenuicornis (Say, 1818)

Previously Known Distribution.—Tropical and subtropical waters worldwide except for the west coast of America; occasionally in the mouth of the Bay of Fundy and New England (Wigley, 1970; Williams and Wigley, 1977) to Falkland Islands in western Atlantic; Texas, Gulf of Mexico (Holthuis, 1952; Chace, 1972; Wood, 1974; Williams, 1984; Abele and Kim, 1986). Bermuda (Markham and McDermott, 1981). In Mexico, (26°53'33"N; 94°53'09"W) Tamaulipas and (19°12'56"N; 96°07'31"W) (19°06'05"N; 95°56'22"W) Veracruz (Hernández-Aguilera et al., 1996); Arrecife de Enmedio, Veracruz (White, 1982; Hermoso-Salazar and Martínez-Guzmán, 1991), Laguna de Términos, Campeche (Zarur, 1962; Román-Contreras, 1988), (22°22'39"N; 89°39'39"W) (22°22'20"N; 89°39'30"W) Yucatán (Hernández-Aguilera et al., 1996), Arrecife Alacrán, Yucatán (Hermoso-Salazar and Martínez-Guzmán, 1991; Martínez-Guzmán et al., 1989; Martínez-Guzmán and Hernández-Aguilera, 1993) and Quintana Roo (Chace, 1972; Markham et al., 1990).

Material Examined.—Boca de Catán, Punta de Piedra, Laguna Madre, Tamaulipas, clumps of *Sargassum filipendula*, 3 males, 1 female and 3 ovigerous females (UANL-

Table 1. Collection localities by state where specimens were obtained during this study.

State and locality	Latitude, longitude
<u>Gulf of Mexico</u>	
Tamaulipas	
Playa Lauro Villar, Matamoros	(25°49'N, 97°09'W)
Playa Washington, Matamoros	(25°49'N, 97°08'W)
Laguna Conchillal, Matamoros	(25°51'N, 97°08'W)
Mezquite, Matamoros	(25°14'N, 97°25'W)
La Carbonera, Laguna Madre	(24°37'N, 97°43'W)
Boca de Catán, Punta Piedra	
Laguna Madre	(24°29'N, 97°44'W)
La Pesca, Soto La Marina	(23°45'N, 97°43'W)
Río Panuco, Tampico	(22°12'N, 97°05'W)
Veracruz	
Congregación Anahuac	(22°12'N, 97°50'W)
Naranjos	(21°20'N, 97°41'W)
Alto del Tigre, Naranjos	(21°38'N, 97°25'W)
Laguna de Tamiahua	(21°15'N, 97°25'W)
Isla Lobos, off Laguna de Tamiahua	(21°13'N, 97°13'W)
Tuxpan	(20°57'N, 97°25'W)
Sontecomapan	(18°31'N, 97°01'W)
Tabasco	
Paraíso, Puente Arroyo Verde	(18°24'N, 93°12'W)
Campeche	
Sabancuy, Ciudad del Carmen	(18°37'N, 91°50'W)
Campeche	(19°51'N, 90°32'W)
Quintana Roo	
Playa del Carmen	(20°36'N, 87°04'W)
<u>Mexican Pacific</u>	
Sonora	
Bahía Choya, Puerto Peñasco	(31°21'N, 113°36'W)
Sinaloa	
Rosario	(22°59'N, 105°50'W)
Nayarit	
Chacala	(21°09'N, 105°13'W)
Guerrero	
Ixtapa, Playa Linda	(17°39'N, 101°37'W)
Oaxaca	
Puerto Escondido	(15°50'N, 97°04'W)
Chiapas	
Puerto Madero, Gulf of Tehuantepec	(14°42'N, 92°25'W)

FCB-C17-01132). Isla Lobos, off Laguna de Tamiahua, Veracruz, 1 ovigerous female (UANL-FCB-C17-00258).

Palaemon gracilis (Smith, 1871)

Previously Known Distribution.—Laguna Caimanero, Sinaloa, Mexico (Wicksten, 1983; Rodríguez de la Cruz, 1987; Wicksten 1989) to Lara River, Panama (Holthuis, 1952; Wicksten and Hendrickx, 1992).

Material Examined.—Rosario, Sinaloa, 1 male (UANL-FCB-C17-00281).

Palaemonetes intermedius Holthuis, 1949

Previously Known Distribution.—Atlantic coast of the United States from Vineyard Sound, Massachusetts to Texas (Holthuis, 1952; Wood, 1974; Williams, 1984). In Mexico, from Laguna Madre, Tamaulipas (Hildebrand, 1958), Laguna de Términos, Campeche (Zarur, 1962; Escobar, 1984; Román-Contreras, 1988) to Puerto Progreso, Yucatán (Rodríguez de la Cruz, 1965) and Bahía Ascensión, Quintana Roo (Chace, 1972).

Material Examined.—Playa Washington, Matamoros, Tamaulipas, 617 spec. (UANL-FCB-C17-00228). La Pesca, Soto la Marina, Tamaulipas, 31 ovigerous females and 167 juveniles (UANL-FCB-C17-00257), 46 spec. (UANL-FCB-C17-000247). Playa Lauro Villar, Matamoros, 9 spec. (UANL-FCB-C17-000253), 16 spec. (UANL-FCB-C17-000252). El Mezquite, Matamoros, 2 males (UANL-FCB-C17-00515). Laguna Conchillal, Matamoros, 11 ovigerous females and 15 juveniles (UANL-FCB-C17-00250).

Remarks.—Our material of *P. intermedius* is from several localities in Matamoros, Tamaulipas (see table 1) and La Pesca, Soto la Marina, Tamaulipas, correspond to additional records from Tamaulipas. Specimens were all collected in brackish and estuarine environments.

Palaemonetes kadiakensis Rathbun, 1902

Previously Known Distribution.—Widespread in freshwater habitats of Central USA, including shores of lakes Ontario, Erie, and Michigan, the Mississippi Basin, and the basin of several rivers east and west of the Mississippi River which flow to the Gulf of Mexico (Holthuis, 1952). Nuevo León and Tamaulipas, Mexico (Creaser, 1932; Strenth, 1976; Villalobos et al., 1993; Rodríguez-Almaraz and Campos, 1996).

Material Examined.—El Mezquite, Matamoros, Tamaulipas, 5 ovigerous females (UANL-FCB-C17-00516), 2 ovigerous females and 1 male (UANL-FCB-C17-00192), 3 males (UANL-FCB-C17-00517), 2 females and 1 male (UANL-FCB-C17-00249), 3 ovigerous females, 1 female and 1 male (UANL-FCB-C17-00246), 20 spec. (UANL-FCB-C17-00256). Río Panuco, Tampico, Tamaulipas, 4 males (UANL-FCB-C17-00221). Congregacion Anahuac, Veracruz, 5 females and 42 juveniles (UANL-FCB-C17-00225). Naranjos, Veracruz, 17 spec. (UANL-FCB-C17-00243).

Remarks.—*P. kadiakensis* is widespread in freshwater ecosystems from Nuevo León and Tamaulipas (Rodríguez-Almaraz and Campos, 1996). Our material is from brackish habitats near the coast line. Record from Veracruz represents the southernmost distribution limit of this species.

Palaemonetes pugio Holthuis, 1949

Previously Known Distribution.—From Verte, Quebec, Nova Scotia, Newcastle, Massachusetts, East Brunswick and Maine, southward to Texas (Holthuis, 1952; Wood, 1974; Williams, 1984). In Mexico, from Laguna Madre, Tamaulipas (Hildebrand, 1958; 1969), Laguna de Términos and Laguna de Pom, Campeche to Puerto Progreso, Yucatán (Zarur, 1962; Rodríguez de la Cruz, 1965; Román-Contreras, 1988).

Material Examined.—Laguna Conchillal, Matamoros, Tamaulipas, 18 ovigerous females and 24 juveniles (UANL-FCB-C17-00223). Playa Lauro Villar, Matamoros, 20 spec. (UANL-FCB-C17-00251). La Carbonera, Laguna Madre, Tamaulipas, 1 ovigerous female (UANL-FCB-C17-00519), 1 ovigerous female (UANL-FCB-C17-00511). La Pesca, Soto la Marina, Tamaulipas, 8 spec. (UANL-FCB-C17-00241), 9 females and 8 ovigerous females (UANL-FCB-C17-00248), 4 ovigerous females and 59 spec. (UANL-FCB-C17-00508), 5 ovigerous females (UANL-FCB-C17-00514), 1 female and 2 ovigerous females (UANL-FCB-C17-00518). Alto del Tigre, Naranjos, Veracruz, 16 spec. (UANL-FCB-C17-00254). Sontecomoapan, Veracruz, 3 females (UANL-FCB-C17-00226). Paraiso, Puente Arroyo Verde, Tabasco, 4 males, 6 females and 1 ovigerous female (UANL-FCB-C17-00512). Campeche, 1 ovigerous female (UANL-FCB-C17-00510).

Remarks.—All the specimens were obtained in beds of aquatic vegetation in brackish environments. Some specimens from Tabasco and Laguna Conchillal hosted specimens of *Probopyrus pandalicola* epicaridean isopod previously known to infect this species (Pearse, 1952).

Palaemon ritteri Holmes, 1895

Previously Known Distribution.—From San Diego, California to Paita, Peru and the Cocos and Galápagos Islands (Holthuis, 1952; Wicksten, 1989; Wicksten and Hendrickx, 1992; Hendrickx, 1993a). In Mexico, San Bartolome Bay, Baja California Sur; Gulf of California, from San Felipe to La Paz and Puerto Peñasco to southern Sinaloa, Isla Carmen, Isla Angel de la Guarda and Isla Tiburón, and southern Sinaloa; western Baja California from Punta Banda, Ensenada to Bahía Magdalena (Holthuis, 1952; Wicksten, 1983; Hendrickx, 1993b; Rodríguez de la Cruz, 1987; Hendrickx, 1996), also for Nayarit (Hernández-Aguilera and Martínez-Guzmán, 1992; Camacho, 1996).

Material Examined.—Bahía Choya, Puerto Peñasco, Sonora, rocky intertidal, 39 spec. (UANL-FCB-C17-00493), rocky intertidal, 2 females, 2 ovigerous female and 1 juvenile (FCB-UANL-C17-00499). Puerto Escondido, Oaxaca, rocky intertidal, 3 males and 10 females (UANL-FCB-C17-00500). Ixtapa, Playa Linda, Guerrero, rocky intertidal, 1 female (UANL-FCB-C17-00494). Chacala, Compostela, Nayarit, rocky intertidal, 1 male (UANL-FCB-C17-00280).

Remarks.—Our records of *P. ritteri* from Guerrero and Oaxaca represent the southernmost distribution. One specimen from Bahía Choya, Puerto Peñasco was infested by the epicarid isopod *Probopyrus pacificiensis* (Román-Contreras, 1993).

Palaemonetes schmitti Holthuis, 1950

Previously Known Distribution.—Venado Beach and Miraflores Locks to Panama City, Panama (Holthuis, 1952; Wicksten and Hendrickx, 1992).

Material Examined.—Puerto Madero, Gulf of Tehuantepec, Chiapas, 2 males, 1 female and 1 ovigerous female (UANL-FCB-C17-01213).

Remarks.—This is the first record of *P. schmitti* in the Mexican Pacific.

Family Alpheidae Rafinesque

Alpheus angulatus McClure, 1995

Previously Known Distribution.—Throughout the northern Gulf of Mexico and northwestern Atlantic as far north as Beaufort, North Carolina, and as far south as Bahía Ascensión, Quintana Roo, Mexico, and Haiti (McClure, 1995).

Material Examined.—La Pesca, Soto la Marina, 1 female (UANL-FCB-C19-01204). Boca de Catán, Punta Piedra, Laguna Madre, Tamaulipas, 1 ovigerous female (UANL-FCB-C19-01135), 1 ovigerous female (UANL-FCB-C19-01137).

Remarks.—The finding of *Alpheus angulatus* in Tamaulipas corresponds to the second record from Mexico. Material from Punta de Piedra also included specimens of *A. heterochaelis*.

Alpheus armatus Rathbun, 1901

Previously Known Distribution.—Throughout the West Indies region from the Bahamas and southern Florida to Tobago, and westward to the Yucatán Peninsula; sublittoral (Chace, 1972; Abele and Kim, 1986). From Mexico off limestone bluffs near San Miguel, Isla Cozumel, Quintana Roo (Markham et al., 1990).

Material Examined.—Playa del Carmen, Quintana Roo, 1 female and 1 ovigerous female (UANL-FCB-C19-01202).

Alpheus heterochaelis Say, 1818

Previously Known Distribution.—North Carolina, Florida, Texas, Bermuda, Cuba, Surinam, Curaçao to the State of Paraíba, Brazil (Chace, 1972; Markham and McDermott, 1981; Christoffersen, 1984; Williams, 1984; Abele and Kim, 1986; McClure, 1995). Reported in Mexico from Veracruz (Hermoso-Salazar and Martínez-Guzmán, 1991; Hernández-Aguilera et al., 1996), Laguna de Términos, Campeche (Román-Contreras, 1988; Hernández-Aguilera et al., 1996), (22°22'50"N; 89°41'10"W) (22°22'55"N; 89°40'56"W) Yucatán (Hernández-Aguilera et al., 1996) and in shallow waters from Quintana Roo (Markham et al., 1990).

Material Examined.—La Pesca, Soto la Marina, Tamaulipas, 1 male (UANL-FCB-C19-01198). Boca de Catán, Punta de Piedra, Laguna Madre, Tamaulipas, 1 female (UANL-FCB-C19-01139), 1 female, and 1 ovigerous female (FCB-UANL-C19-01136), 1 ovigerous female (UANL-FCB-C19-01138). Tuxpan, Veracruz, 1 male and 1 female, rocky intertidal (UANL-FCB-C17-00521).

Remarks.—This species is recorded for the first time in Tamaulipas.

Alpheus lottini Guérin-Méneville, 1829

Previously Known Distribution.—Red Sea, South Africa, Indian Ocean, tropical western Pacific to Hawaii; eastern Pacific from southern Gulf of California through Colombia, Clipperton and Galápagos Islands (Kim and Abele, 1988). In Mexico, this species is recorded from coasts of Nayarit (Hernández-Aguilera and Martínez-Guzmán, 1992; Camacho, 1996) and the southern Gulf of California (Wicksten, 1983; Wicksten and Hendrickx, 1992; Hendrickx, 1993a).

Material Examined.—Chacala, Compostela, Nayarit, under rocks, 3 males and 2 ovigerous females (UANL-FCB-C19-1207).

Remarks.—This species has been considered an obligate commensal of *Pocillopora* coral (Wicksten, 1983; Kim and Abele, 1988); our specimens, however, were collected under rocks in the intertidal zone.

Alpheus nuttingi (Schmitt, 1924)

Previously Known Distribution.—Florida Keys, Barbados to State of Alagoas, Brazil, and westward to Providencia Island and Panama; sublittoral (Chace, 1972; Abele and Kim, 1986) and Bermuda (Markham and McDermott, 1981). In Mexico, this species is reported in (19°12'56"N; 96°07'31"W) (19°11'40"N; 96°07'22"W) Veracruz (Hermoso-Salazar and Martínez-Guzmán, 1991; Hernández-Aguilera et al., 1996) and (20°12'12"N; 91°57'38"W) (22°06'51"N; 91°23'58"W) Campeche (Hernández-Aguilera et al., 1996).

Material Examined.—La Pesca, Soto la Marina, 2 ovigerous females in seaweed beds, rocky intertidal (UANL-FCB-C19-01203).

Remarks.—This is the northernmost record of this species for Mexico.

Alpheus websteri Kingsley, 1880

Previously Known Distribution.—Bermuda (Markham and Dermott, 1981), Bahamas to Fernando de Noronha, Brazil, Florida and westward to the Yucatán Peninsula (Chace, 1972; Abele and Kim, 1986; Markham et al., 1990); southern Gulf of California, Socorro Island, Costa Rica, Panama, Colombia and Galápagos Islands (Wicksten and Hendrickx, 1985; Kim and Abele, 1988).

Material Examined.—Playa Lauro Villar, Matamoros, shallow waters, 1 ovigerous female (UANL-FCB-C19-01199).

Remarks.—This is the second and northernmost record of this species from Mexico.

Family Hippolytidae Dana

Hippolyte obliquimanus Dana, 1852

Previously Known Distribution.—North Carolina (Chace, 1972; Williams, 1984), Florida (Abele and Kim, 1986), West Indies from Cuba to Curaçao (Chace, 1972; Schmitt, 1924), Venezuela (Rodríguez, 1980), Brazil (Dana, 1852; d'Udekem d'Acoz, 1997). In Mexico, Arrecife de Enmedio, Veracruz (White, 1982), islands from Veracruz (Hermoso-Salazar and Martínez-Guzmán, 1991; Hernández-Aguilera et al., 1996), Laguna de Términos, Campeche, (Escobar, 1984; Román-Contreras, 1988) and Arrecife Alacrán, Yucatán (Martínez-Guzmán et al., 1989; Hermoso-Salazar and Martínez-Guzmán, 1991; Martínez-Guzmán and Hernández-Aguilar, 1993; Hernández-Aguilera et al., 1996).

Material Examined.—Sabancuy, Ciudad del Carmen, Campeche, 2 males and 1 female (UANL-FCB-C20-01206). Laguna de Tamiahua, Veracruz, algae beds, 4 males, 2 females and 3 ovigerous females (UANL-FCB-C20-01217).

Remarks.—*H. curacaoensis* (Western Atlantic and Gulf of Mexico) is now considered a junior synonym of *H. obliquimanus* (d'Udekem d'Acoz, 1997).

Latreutes antiborealis Holthuis, 1952

Previously Known Distribution.—Puerto Peñasco, Sonora, off Bahia Santa Maria, Baja California, off Rocky Point, Sonora, Ensenada de San Francisco, Sonora, Mazatlán Bay, Sinaloa, Mexico, to Chile (Wicksten, 1983, 1990; Wicksten and Hendrickx, 1992; Hendrickx, 1993a) Galápagos Islands (Wicksten, 1991).

Material Examined.—Puerto Madero, Gulf of Tehuantepec, Chiapas, 9 females and 9 ovigerous females (UANL-FCB-C20-0121).

Remarks.—This is the first record of *L. antiborealis* for the Gulf of Tehuantepec and the southernmost distribution limit for Mexico.

Latreutes fucorum (Fabricius, 1798)

Previously Known Distribution.—Western North Atlantic between 10° and 50° N; Azores and Cape Verde Islands (Chace, 1972; Williams, 1984), Bermuda (Markham and McDermott, 1981). Along of the Gulf of Mexico and western Atlantic (Wicksten, pers. comm.). In Mexico, (26°53'33"N; 94°53'09"W) Tamaulipas, (21°28'05"N; 97°13'34"W) Veracruz and (22°22'58"N; 89°40'56"W) (22°23'03"N; 89°40'52"W) Yucatán (Hernández-Aguilera et al., 1996). Arrecife de Enmedio, Veracruz (White, 1982). Laguna de Términos, Campeche (Escobar, 1984; Román-Contreras, 1988). Arrecife Alacrán, Yucatán (Martínez-Guzmán et al., 1989; Hermoso-Salazar and Martínez-Guzmán, 1991; Martínez-Guzmán and Hernández-Aguilera, 1993). Isla Cozumel, Cayo Culebras, Punta Hualalpich, Puerto Morelos and Bahía Ascensión, Quintana Roo (Chace, 1972; Markham et al., 1990).

Material Examined.—Boca de Catán, Punta de Piedra, Laguna Madre, Tamaulipas, floating masses of *Sargassum filipendula*, 83 spec. (FCB-UANL.C20-01134).

Remarks.—Three females were infested with the bopyrid isopod *Probopyrinella latreuticola* (Gissler, 1882) in the branchial chamber.

Latreutes parvulus (Stimpson, 1866)

Previously Known Distribution.—Beaufort, North Carolina, to Rio de Janeiro, Brazil, West Africa, Espiritu Santo Bay and Old Pier, Quintana Roo (Chace, 1972; Williams, 1984; Markham et al., 1990). Along of the Gulf of Mexico (Wicksten, pers. comm.). (21°28'05"N; 97°51'34"W) Veracruz (Hernández-Aguilera et al., 1996) and Laguna de Términos, Campeche, Mexico (Escobar, 1984; Román-Contreras, 1988).

Material Examined.—Boca de Catán, Punta de Piedra, Laguna Madre, Tamaulipas, floating masses of *S. filipendula*, 1 ovigerous female (UANL-FCB-C20-01133).

Remarks.—This is the first record of *L. parvulus* in Boca de Catán and the northernmost distribution limit for Mexico. Associated with *L. fucorum* (Fabricius, 1798) and *Leander tenuicornis* (Say, 1818).

Tozeuma carolinense Kingsley, 1878

Previously Known Distribution.—Vineyard Sound, Massachusetts, throughout the Gulf of Mexico to Yucatán and southward to Colón, Panama; West Indies to Curaçao, Pernambuco to Bahía, Brazil (Chace, 1972; Coelho and Ramos, 1972; Williams, 1984), Bermuda (Markham and McDermott, 1981). In Mexico, Arrecife de Enmedio, Veracruz (White, 1982; Hermoso-Salazar and Martínez-Guzmán, 1991), numerous localities from Veracruz (Hernández-Aguilera et al., 1996). Laguna de Términos, Campeche (Zarur, 1962; Escobar, 1984; Román-Contreras, 1988). Arrecife Alacrán, Yucatán (Martínez-Guzmán et al., 1989; Hermoso-Salazar and Martínez-Guzmán, 1991; Martínez-Guzmán and Hernández-Aguilera, 1993).

Material Examined.—La Carbonera, Laguna Madre, Tamaulipas, beds of green algae beds on a rocky bottom, 2 ovigerous females (UANL-FCB-C20-01200).

Remarks.—This is the northernmost record of this species for Mexico.

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ADDRESS: *Facultad de Ciencias Biológicas, Universidad Autónoma de Nuevo León, A.P. 105-F, Cd. Universitaria, 66450 San Nicolás de los Garza, Nuevo León, México.* CORRESPONDING AUTHOR: (G.A.R.-A.) *Laboratorio de Artrópodos, Facultad de Ciencias Biológicas, Universidad Autónoma de Nuevo León, AP 105-F, Cd. Universitaria, 66450 San Nicolás de los Garza, Nuevo León, México. E-mail: <grodrigu@ccr.dsi.uanl.mx>.*

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