Sea Anemones (Cnidaria: Actiniaria and Corallimorpharia) from Panama

Anémonas de mar (Cnidaria: Actiniaria y Corallimorpharia) de Panamá

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Resumen.- A partir de la literatura existente se realizó una lista actualizada y revisada de las anémonas de mar de ambas costas de Panamá, que incluyó 26 especies válidas (22 pertenecientes al orden Actiniaria, tres al orden Corallimorpharia y una especie de ubicación sistemática incierta). La especie *Calliactis polypus* es un registro nuevo para esta región. Siete de las especies se conocen solamente en Panamá. La riqueza de especies es predominante en el Golfo de Panamá, debido probablemente a un esfuerzo de muestreo mayor y desproporcionado en relación a otras zonas. El hecho que los registros existentes estén fuertemente sesgados hacia un centro de intenso muestreo, indica la necesidad de muestreos adicionales en otras áreas. Estudios posteriores deberán estar orientados no sólo a la búsqueda de nuevos taxa, sino también a la verificación de las descripciones y el status taxonómico de las especies registradas.

Palabras clave: cnidarios bentónicos, distribución, biodiversidad, América Central

Introduction

The Pacific and Caribbean coasts of the Republic of Panama are 1,700 km and 1,287 km long, respectively, and the islands, islets, and cays that lie over the continental shelf are home to a rich marine biodiversity. The sea anemones (the common name for cnidarians belonging to the orders Actiniaria and Corallimorpharia) from the coasts of Panama have been poorly studied, and most records date from the nineteenth and early twentieth centuries (Fautin 2008). The first records of sea anemones from the Pacific coast were made by Verrill (1869, 1870). He described 11 species of actiniarians, all of them recorded from the Gulf of Panama (mainly in Panama Bay). McMurrich (1893) added a record for *Paractis lineolata* [valid name *Antiparactis lineolatus* (Couthouy in Dana, 1846)] from the Gulf of Panama. Other authors have named other species with distributions along the Pacific coast of Panama [*e.g*. Torrey (1906) for *Anthopleura xanthogrammica* (Brandt, 1835)].

From the Caribbean coast, Verrill (1869) described the sea anemone species *Paractis nobilis*. Then, Smith (1973) registered *Condylactis gigantea* (Weinland, 1860) in symbiosis with a fish in Galeta island while Sebens (1976) is the most recent work referred to sea anemones and there are listed *C. gigantea*, *Bunodosoma granulifera* (Le Sueur, 1817), *Stoichactis helianthus* [now *Stichodactyla helianthus* (Ellis, 1768)], *Lebrunia danae* (Duchassaing & Michelotti, 1860), *Phymanthus crucifer* (Le Sueur, 1817), *Heteractis lucida* [now *Ragactis lucida* (Duchassaing de Fonbressin & Michelotti, 1860)], *Bartholomea annulata* (Le Sueur, 1817), *Paradiscosoma neglecta* [now *Discosoma neglecta* (Duchassaing & Michelotti, 1860)], *Rhodactis sanctithomae* [now *Discosoma sanctithomae* (Duchassaing & Michelotti, 1860)] and *Ricordea florida* (Duchassaing & Michelotti, 1860). All of them found in front of the coast of Colon city (at the Caribbean end of the Panama Canal). Moreover, McCommas (1991) has recorded *B. granulifera* in the coast of Colon while. *S. helianthus* was registered by Dunn (1981). The corallimorpharians *D. neglecta*, *D. sanctithomae*, and *R. florida* were also recorded near Colon by Den Hartog (1980). These are the only corallimorpharians recorded for Panama, although Ritson-Williams & Paul (2007) recently reported one unidentified species of the genus *Actinotryx* from the archipelago of Bocas del Toro, but this genus is not valid (Fautin 2008). At this place, Guzmán & Guevara (1998a, 1998b, 1999, 2001) documented the presence of the actiniarian *C. gigantea*, *Bartholomea lucida* [now *Ragactis lucida* (Duchassaing de Fonbressin & Michelotti, 1860)], *B. annulata* (Le Sueur, 1817),

Epicystis crucifer [now *Phymanthus crucifer* (Le Sueur, 1817)] and *L. danae*, as organisms associated with the coral reefs.

No recent taxonomic studies of the sea anemones of Panama exist. Therefore, the objective of this study was to compile and update the extant information from the literature and to provide an inventory of the sea anemones from both coasts of Panama. We also report a new record for the actiniarian *Calliactis polypus* (Forsskål, 1775) from the Pacific coast of Panama.

Material and methods

Taxonomic records, distribution patterns, and information about type localities were extracted from the extant literature. The current classification of sea anemones and the taxonomic status of some species were cross-checked with the electronic database of Fautin (2008).

The identification of *C. polypus* was made by the first author during his stay at the Smithsonian Tropical Research Institute of Panama (STRI) from October to December 2008. Eight specimens of this species were found on October 29th, 2008 in Achotines Bay (7°25'4.24"N, 80°10'49.79"W), which lies on the southeastern tip of the Azuero Peninsula in the pacific littoral of Panama. They were collected from a hermit crab shell at a depth of 2 m by free diving by the first author during a field trip conducted by the STRI. The specimens were relaxed with $MgCl_2$, then fixed in 5% formaldehyde and subsequently preserved in ethanol. Seven individuals were dissected and observed under a stereoscopic microscope. Cnidocysts from tentacles, column and acontia were identified using a Zeiss microscope with oil immersion at 1000X magnification. The descriptions of collected specimens agree very well with that provided by Fautin *et al.* (2007).

Results

Twenty-six species of sea anemones have been recorded for Panama. Fourteen species all belonging to the Order Actiniaria (sea anemones *sensu stricto*) and grouped into five families (Table 1), occur along the Pacific Coast. On the Caribbean coast, 11 species (seven Actiniaria within five families, three Corallimorpharia within two families and one with uncertain systematic position) have been identified (Table 2). Some of the species recorded for Panama have been listed with a different name in other publications; these previous names are included in both tables (see also Fautin 2008).

Herein, we provide a new record for *Calliactis polypus* (Forsskål, 1775) (Fig. 1). This species has a wide distribution (see Table 1) and recently was found in the Galápagos Islands by Fautin *et al.* (2007).

At present six species have only been found along the Pacific coast of Panama and all of them are actiniarians. Five species belong to family Sagartiidae: *Sagartia panamaensis* Verrill, 1869; *S. carcinophila* Verrill, 1869; *S. crispata* Verrill, 1869); *Actinothoe bradleyi* (Verrill, 1869) and *Phellia inornata* Verrill, 1869; and one species belongs to family Actiniidae: *Actinostella ornata* Verrill, 1869. The other nine species are distributed in the northeastern Pacific [*Actinostella bradleyi* (Verrill, 1869); *Anthopleura dowii* Verrill, 1869; *Bunodosoma grandis* (Verrill, 1869); *Calliactis variegata* Verrill, 1869 and *Telmatactis panamensis* (Verrill, 1869)]. *Anthopleura xanthogrammica* (Brandt, 1835) is present in the northeastern and northwestern Pacific, the east coast of China, and along the Japanese coast. *Antiparactis lineolatus* (Couthouy in Dana, 1846) have been mentioned from the southern tip of Chile. *Phymactis papillosa* (Lesson, 1830) has a wide distribution in the eastern Pacific and has been recorded from Australia and New Zealand. The new record for Panama, *Calliactis polypus*, is the species with the widest distribution of all sea anemones recorded from Panama (Table 1).

On the Caribbean coast of Panama, *Paractis nobilis* Verrill, 1869 is the unique species that so far was only described in Panama; it was recorded from the northeastern reef by Verrill. The remaining species are widely distributed in the Caribbean Sea. *Bunodosoma granulifera* (Le Sueur, 1817) has been recorded for the Caribbean Sea but also for India (Table 2).

Discussion

The most important previous taxonomic studies of Panamanian sea anemones were carried out by Verrill (1869) and Den Hartog (1980) for the Pacific and the Caribbean coast, respectively; however, comprehensive papers that summarized and verified information were not published. Besides the world-wide sea anemone database (Fautin 2008), this paper represents the first effort to compile all extant information concerning the taxonomy and distribution of sea anemones from Panama.

According with present knowledge, most species cited for the Pacific coast are restricted to the Gulf of Panama, and almost nothing is known about the anemones in other places, such as the Gulf of Chiriquí, where the large marine protected area of Panama, The Coiba National Park, is located. We attribute this disparity of information among different places to the fact that Panama City, with its harbor facilities and scientific institutions, has influenced the intensity of sampling and has biased it mainly to the gulf zone. Records of sea anemones from

Table 1

Species recorded from the Pacific coast of Panama and their distributions. In cases where there is no type locality defined for the species is highlighted (in bold) the locality of the original description [(1)] or the locality of a syntype [(2)]

Especies registradas en la costa Pacífico de Panamá y su distribución. En casos donde no hay una localidad tipo definida para la especie se resalta (en negrita) la localidad de la descripción original [(1)] o la localidad de un sintipo [(2)]

Classification	Previous name in Panama	Distribution (Type locality in bold)
ORDER ACTINIARIA SUBORDER NYNANTHEAE TRIBE (informal) THENARIA SUBTRIBE (informal) ENDOMYARIA Family Actiniidae		
Actinostella bradleyi (Verrill, 1869)		**Panama** (Verrill 1869). Outside of Panama: Mexico, Baja California Sur, Gulf of California (McMurrich 1893, Carlgren 1951)
Actinostella ornata (Verrill, 1869)	*Lophactis ornate*	**Panama** (Verrill 1869).
Anthopleura dowii Verrill, 1869		**Panama West Coast**[2] and Panama Channal, Miraflores locks (Verrill 1869). Outside of Panama: Gulf of California, Mexico (Carlgren 1951, Daly 2004); El Salvador: **Acajutla**[2]; **Nicaragua**[2] (Verrill 1869).
Anthopleura xanthogrammica (Brandt, 1835)	*Bunodactis xanthogrammica*	Gulf of Panama, Bay of Panama, Pearl Islands (Torrey 1906). Outside of Panama: USA: Washington (McMurrich 1901, Torrey 1906), California (Fewkes 1889), Central California (Hand 1955), San Diego County (Torrey 1906), Sonoma County (Hand 1996, Geller & Walton 2001), Oregon (Cutress 1949); **Alaska, Sitka Island** (Brandt 1835); Monterrey County (Carlgren 1951, Smith & Potts 1987); Canada: British Columbia (Bigger 1980)El Salvador: Acajutla (Torrey 1906); China: Jiangsu Province (Liu *et al.* 2003); Russia: Kamchatka (Carlgren 1945); Japan: Japanese Coasts, Mutsu Bay, Akkeshi Bay, Onagawa Bay (Uchida 1938, 1940, 1941, Uchida & Muramatsu 1958).
Bunodosoma grandis (Verrill, 1869)	*Cladactis grandis*	**Panama, Bay of Panama, Pearl Islands**[2] (Verrill 1869). Outside of Panama: Perú: Zorritos, **Paita**[2] (Verrill 1869); Nicaragua: Corinto, Río Brito (Verrill 1869, 1870); Gulf of California, Baja California Sur, Mexico (Verrill 1870); Galápagos Islands (Fautin *et al.* 2007); Chile: Lota; Argentina: Patagonia, Port Otway (McMurrich 1893).
Phymactis papillosa (Lesson, 1830)		Panama, Pearl Islands (Verrill 1869). Outside of Panama: Nicaragua (Verrill 1869); Chile: Talcahuano (Verrill 1869), Valparaiso (Dana 1846, 1859, Carlgren 1959, Carter 1965), Bahía de Ancud, Easter Island, Iquique, Tocopilla (Carlgren 1959), Juan Fernández Island (McMurrich 1904, Carlgren 1922), Bahía Concepción (Zamponi & Excoffon 1995), **Coquimbo** (Baeza *et al.* 2002); Perú: Lima (Verrill 1869), Callao, Island of San Lorenzo (Dana 1846), Paita (Verrill 1869, Pax 1912), Tumbes (McMurrich 1904); Mexico: Baja California (Daly *vide* in Häussermann 2004, Carlgren 1951); Galápagos Islands (Fautin *et al.* 2007),New Zealand: Kaikoura, Welligton; Australia: New South Wales (Cutress 1971).

Cont. Table 1

SUBTRIBE (informal) MESOMYARIA		
Family Actinostolidae		
Antiparactis lineolatus (Couthouy *vide* in Dana, 1846)		Panama (McMurrich 1893). Outside of Panama: Chile: **Tierra del Fuego**, near Orange Harbor, Forge Cove, South Chile (Dana 1846), Juan Fernández Island (McMurrich 1904).
SUBTRIBE (informal) ACONTIARIA		
Family Hormathiidae		
Calliactis variegata Verrill, 1869		**Panama, Gulf of Panama**[2] (Verrill 1869). Outside of Panama: Mexico: Baja California, Bahía Concepción (Carlgren 1951).
Calliactis polypus (Forsskål, 1775)		Panama, Bahía de Achotines (this work). Outside of Panama: **Saudi Arabia** (Forsskål 1775), Red Sea (Ehrenberg 1834, Klunzinger 1877); Japan: Honshu (Uchida & Soyama 2001); Tuamotu Archipelago (Dana 1846, 1859), Cape Verde Island (Hertwig 1882); Tanzania (Carlgren 1900); Indian Ocean: Seychelles (Den Hartog 1994); Philippines (Hertwig 1882); USA: Hawaii (Verrill 1928), Louisiana (Dawson 1966); East Africa: Djibouti (Krempf 1905); South Africa (Carlgren 1938); Australia: Great Barrier Reef, (Carlgren 1950a, 1950b), New South Wales (Carlgren 1950a), Queensland (Haddon & Shackleton 1893, Stephenson *et al.* 1931); Aden (England 1971), Christmas Island; Kenya, Maldive Islands; Malay Straits (England 1987); Marshall Islands (Cutress & Arneson 1987); French Polynesia (England 1971); Galápagos Island (Fautin *et al.* 2007).
Family Sagartiidae		
Sagartia panamaensis Verrill, 1869		**Panama, Eastern Reef**[2] (Verrill 1869).
Actinothoe bradleyi (Verrill, 1869)	*Sagartia bradleyi*	**Panama, Southern Reef**[1] (Verrill 1869).
Sagartia carcinophila Verrill, 1869		**Panama, Gulf of Panama, Bay of Panama**[1] (Verrill 1869).
Sagartia crispata Verrill, 1869		**Panama, Gulf of Panama, Bay of Panama**[1] (Verrill 1869 and McMurrich 1893).
Phellia inornata Verrill, 1869		**Panama, Gulf of Panama, Bay of Panama**[1] (Verrill 1869).
Family Isophelliidae		
Telmatactis panamensis (Verrill, 1869)	*Phellia panamensis*	**Panama**[2] (Verrill 1869). Outside of Panama: Chile: **Easter Island**[2] (Carlgren 1922); Mexico: Baja California (Carlgren 1951); Galápagos Islands (Fautin *et al.* 2007).

Table 2

Species recorded from the Caribbean coast of Panama and their distributions. In cases where there is no type locality defined for the species is highlighted (in bold) the locality of the original description [(1)]

Especies registradas en la costa Caribe de Panamá y su distribución. En casos donde no hay una localidad tipo definida para la especie se resalta (en negrita) la localidad de la descripción original [(1)]

Classification	Previous name in Panama	Distribution (type locality in bold)
ORDER ACTINIARIA		
SUBORDER NYNANTHEAE		
TRIBE (informal) THENARIA		
SUBTRIBE (informal) ENDOMYARIA		
Family Actiniidae		
Condylactis gigantea (Weinland, 1860)		Panama: coast of Colon (Smith 1973, Sebens 1976), Bocas del Toro (Guzmán & Guevara 1998a, 1998b, 1999, 2001). Outside of Panama: Caribbean sea: **Bermuda** (Hertwig 1888, McMurrich 1889a, Verrill 1905, 1907, Weill 1934); Cuba (Herrera-Moreno 1981); St. Thomas (Duchassaing de Fonbressin & Michelotti 1864); Bahamas (McMurrich 1889b, Pax 1910); Haití (Pax 1910); Jamaica (Duerden 1898, Pax 1910); Netherlands Antilles (Hanlon *et al.* 1983); Virgin Islands (Hanlon & Kaufman 1976); Colombia, Santa Marta (Barrios- Suárez *et al.* 2002); Costa Rica (Cortés 1997). USA: Florida, south of Miami (Carlgren 1952); Florida, Dade County (Voss *et al.* 1969); Florida, Gulf of Mexico (Pax 1910, Hanlon & Hixon 1986); Brazil: Río do Janeiro (Zamponi *et al.* 1998); Bahia, Abrolhos Islands (Corrêa 1973).
Bunodosoma granulifera (Le Sueur, 1817)		Panama, Buenaventura (McCommas 1991). Outside of Panama: Caribbean sea: **Martinique**[1] (Le Sueur 1817); Antilles (Duchassaing 1850); Netherlands Antilles; Grand Cayman Island (McCommas 1991); Jamaica (Duerden 1898); Puerto Rico: Cabo Rojo (McCommas & Lester 1980), San Juan Harbor, Hucares, Cabo Rojo and Aguadilla (Duerden 1902); India: Maharshtra, Bombay, Cuffe Parade and Breach Candy (Parulekar 1968).
Family Stichodactylidae		
Stichodactyla helianthus (Ellis, 1768)	*Stoichactis helianthus*	Panama: coast of Colon (Sebens 1976), caribbean of Panama (Dunn 1981). Outside of Panama: Caribbean sea: Dominica (Ellis & Solander 1786); Trinidad and Tobago, Trinidad; St. Barthélemy Island; Puerto Rico; Jamaica; Bahamas, New Providence; Honduras (Dunn 1981); U.S. Virgin Islands, St. John, Crux Bay; Barbados (Pax 1910, Dunn 1981); **West Indies** (Ellis 1768); Cuba, Havana (Herrera-Moreno 1981); Haiti, Port au Prince; Loango (Pax 1910); Netherlands Antilles, Aruba (Pax 1924); Costa Rica (Cortés 1997). Brazil: Espirito Santo, Aracruz (Belém & Preslercravo 1973); USA: Florida, Gulf of Mexico, Dry Tortugas Islands, Bird Key (Pax 1910).

Cont. Table 2

Family Aliciidae		
Lebrunia danae (Duchassaing & Michelotti, 1860)		Panama: coast of Colon (Sebens 1976), Bocas del Toro (Guzmán & Guevara 1998a, 1998b, 1999, 2001). Outside of Panama: Caribbean sea: Bermuda (Verrill 1900, 1901, 1905, 1907, Weill 1934); Bahamas: **Abaco** (Wilson 1890), New Providence (McMurrich 1889b, 1896, Carlgren 1945); St. Thomas (Duchassaing de Fonbressin & Michelotti 1860, 1864); Jamaica: Port Royal (Carlgren 1945, Duerden 1898); Cuba, Havana (Herrera-Moreno 1981); Colombia: Santa Marta, Tayrona National Natural Park, Punta Vigía and Isla Aguja (Barrios-Suárez *et al.* 2002); Brazil: Pernambuco, Recife, Ponta da Piedade (Corrêa 1973), Ceará-Sergipe and Bahia, Abrolhos Islands (Zamponi *et al.* 1998); Mexico, Quintana Roo, Puerto Morelos Reef Lagoon (Sánchez-Rodríguez & Cruz-Vazquez 2006); USA: Florida, Gulf of Mexico, Dry Tortugas (Hargitt 1911), Dade County (Voss *et al.* 1969).
Family Phymanthidae		
Phymanthus crucifer (Le Sueur, 1817)	*Epicystis crucifer*	Panama: coast of Colon (Sebens 1976), Bocas del Toro (Guzmán & Guevara, 1998a, 1998b, 1999, 2001). Outside of Panama: Caribbean sea: Jamaica (Duerden 1898, 1900); Bermuda (Verrill 1898, 1900, 1905); Bahamas, New Providence (McMurrich 1889b); Cuba, Playa Jamainitas (Herrera-Moreno 1981); Puerto Rico (Duerden 1902); **Barbados**[1] (Le Sueur 1817), Conset Bay (Lewis 1960); West Indies (Verrill 1905); USA, Florida, south of Miami, Crawl Key (Carlgren 1952).
SUBTRIBE (informal) ACONTIARIA		
Family Aiptasiidae		
Ragactis lucida (Duchassaing de Fonbressin & Michelotti, 1860)	*Heteractis lucida* *Bartholomea lucida*	Panama: coast of Colon (Sebens 1976), Bocas del Toro (Guzmán & Guevara 1998a, 1998b, 1999, 2001). Outside of Panama: **St. Thomas** (Duchassaing de Fonbressin & Michelotti, 1860), Jamaica (Carlgren 1945, Knowlton & Keller 1985); Venezuela, Los Roques, Isla Dos Mosquises (Knowlton & Keller 1985); Colombia, Ensenada de Concha and Santa Marta, Punta de Betín (Manjarrés 1978); Bahamas (McMurrich 1896); Barbados (Watzl 1922); Cuba, Bay of Pigs (Varela *et al.* 2001).
Bartholomea annulata (Le Sueur, 1817)		Panama: coast of Colon (Sebens 1976), Bocas del Toro (Guzmán & Guevara 1998a, 1998b, 1999, 2001). Outside of Panama: Caribbean sea: **Bahamas: Andros** (McMurrich 1889b, Watzl 1922); Barbados (Le Sueur 1817); Bermuda (Verrill 1900, 1905, Weill 1934); Jamaica (Duerden 1898); Puerto Rico, Guanica Bay (Duerden 1902); Cuba, Havana (Herrera-Moreno 1981); West Indies (Verrill 1905); Guadaloupe (Le Sueur 1817); Costa Rica (Cortés 1997); Colombia: Santa Marta, Tayrona National Natural Park, Punta Vigía and Isla Aguja (Barrios-Suárez *et al.* 2002); Venezuela: Morrocoy, Isla Sombrero (Knowlton & Keller 1985). USA: Texas, St. Joseph Island (Carlgren & Hedgpeth 1952); Florida, South of Miami, Crawl Key (Carlgren 1952). Mexico, Puerto Morelos Reef Lagoon (Sánchez-Rodríguez *et al.* 2001).

Cont. Table 2

ORDER CORALLIMORPHARIA		
Family Discosomatidae		
Discosoma neglecta (Duchassaing & Michelotti, 1860)	*Paradiscosoma neglecta*	Panama: coast of Colon (Sebens 1976), Galeta Island (Den Hartog 1980). Outside of Panama: Caribbean sea: **Antilles** (Duchassaing de Fonbressin & Michelotti 1860); Bahamas, Andros; Netherlands Antilles, Curaçao and Jamaica (Den Hartog 1980); Colombia: Santa Marta, Tayrona National Natural Park, Punta Vigía and Isla Aguja (Barrios-Suárez *et al.* 2002).
Discosoma sanctithomae (Duchassaing & Michelotti, 1860)	*Rhodactis sanctithomae*	Panama: coast of Colon (Sebens 1976), Galeta Island (Den Hartog 1980). Outside of Panama: Caribbean sea: **St. Thomas** (Duchassaing de Fonbressin & Michelotti 1860); St. Martin, Great Bay, Point Blanc and Bay of Marigot; St. Eustatius, Gallows Bay; Puerto Rico, La Parguera, off La Parguera: Head of Drunken Horse, Lajas (Parquera) y Cayo Enrique; Netherlands Antilles, Saba: Saba bank and Cove Bay, Curaçao and Bonaire;; Barbados, St. James; Antigua, Freeman's Bay, English Harbour; Bermuda, Hamilton, Coney; Island, east side of Coney Island; Belize, Carrie Bow Cay and Colombia, Santa Marta, Punta de Betín (Den Hartog 1980); Jamaica: Port Royal Cays (Duerden 1900, Den Hartog 1980), Discovery Bay (Miller 1981); Bahamas (McMurrich 1889b); Cuba, Havana (Herrera-Moreno 1981); Bermuda (Verrill 1900, 1905, Weill 1934); Costa Rica (Cortés 1997); Colombia, Santa Marta, Tayrona National Natural Park, Punta Vigía and Isla Aguja (Barrios-Suárez *et al.* 2002). Brazil, Bahia, Abrolhos Islands (Zamponi *et al.* 1998); USA, Florida, Florida Keys, Hawk Channel (Den Hartog 1980).
Actinotryx sp. This is not a valid genus, see Fautin (2008)		**Panama, Bocas del Toro**, North East of Isla San Cristóbal Ritson-William & Paul 2007.
Family Ricordeidae		
Ricordea florida (Duchassaing & Michelotti 1860)		Panama: coast of Colon (Sebens 1976), Galeta Island (Den Hartog 1980). Outside of Panama: Caribbean sea: St. Eustatius, Gallows Bay; Puerto Rico, La Parguera, Cayo Enrique; Netherlands Antilles: Saba, Cove Bay; Curaçao, south coast, Jan Thiel; Bonaire and SW coast, ca. 2 miles north of Kralendijk; Jamaica, Port Royal Cays and Belize, Carrie Bow Cay (Den Hartog 1980); Jamaica, Port Royal Cays (Duerden 1898, 1900); Bermuda (Verrill 1900, Weill 1934); **Bahamas: Andros** (Watzl 1922), New Providence (McMurrich 1889b, 1896); St. Thomas (Duchassaing de Fonbressin & Michelotti 1860); Costa Rica (Cortés 1997); Colombia, Santa Marta, Tayrona National Natural Park, Punta Vigía and Isla Aguja (Barrios-Suárez *et al.* 2002).
Paractis nobilis Verrill, 1869 Although this is a valid sea anemone species, its systematic position is not clear and is not currently assigned to any family or order, see Fautin (2008).		**Panama**[1], Northeastern Reef (Verrill 1869).

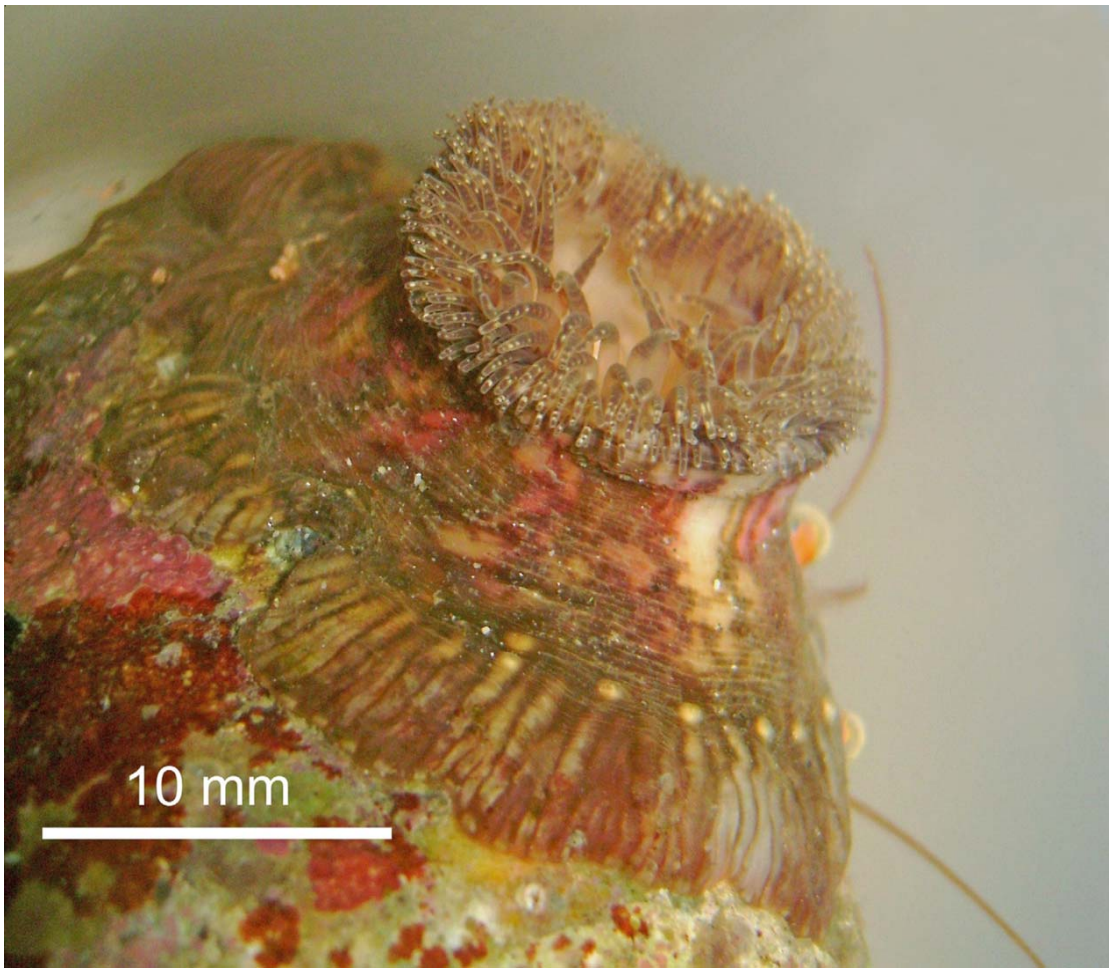

Figure 1

The sea anemone *Calliactis polypus*: A new record for Panama

La anémona de mar *Calliactis polypus*: un registro nuevo para Panamá

the Caribbean coast are concentrated in the region of Bocas del Toro, which is the site of the most recent records (Guzmán & Guevara 1998a, 1998b, 1999, 2001).

Overall, existing records of sea anemones from Panama are strongly biased towards a few centers of high research activity (*i.e.* Gulf of Panama and Bocas del Toro), which indicates a pressing need for additional systematic collection of this group from under-represented areas.

We noted seven cases where the species have been described only from Panama, which represents approximately the 26% of the species. However, the richness of the sea anemone fauna in Panama is high in comparison to that of the neighboring countries Costa Rica and Colombia, probably because a poor knowledge due to a lower research effort in these countries. This shows that in general the actinian fauna of the area have been poorly studied. Further studies should be directed to explore under-represented areas and to search for new taxa or records but also in order to verify the descriptions and taxonomic status of recorded species.

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