



# Chitons in Mexican waters

Adriana Reyes-Gómez

Laboratorio de Ecología, Departamento de Zoología, Escuela Nacional de Ciencias Biológicas, Instituto Politécnico Nacional, IPN. Apartado postal 11340, Casco de Santo Tomás, México. E-mail: [quironreyes@yahoo.com](mailto:quironreyes@yahoo.com)

## ABSTRACT

Chitons are widely distributed in Mexican waters, with five subfamilies according to recent studies. They are more abundant in the East Pacific, where endemism is common with thirty-eight species reported so far. The Gulf of California has the highest diversity, the main genera being *Lepidozozona*, *Acanthochitona* and *Stenoplax*. This study presents biogeographical data on polyplacophoran fauna in Mexican waters, summarizes available records of insular species and up-dates chiton distribution in the Mexican Caribbean region. *Leptochiton binghami* (Boone, 1928) and *Deshayesiella spicata* (Berry, 1919) are added to the original check-list of living Mexican species. In addition, some Mexican species are illustrated in five plates.

## RIASSUNTO

I polioplacofori sono ben distribuiti lungo le coste messicane, sia pacifiche che atlantiche, anche se le informazioni disponibili in letteratura sono frammentarie. Una revisione bibliografica pubblicata recentemente considera il numero di specie viventi pari a 127; altre due specie sono citate nel presente lavoro, *Leptochiton binghami* (Boone, 1928) e *Deshayesiella spicata* (Berry, 1919). I polioplacofori sono concentrati nell'area del Pacifico orientale (80% delle specie), particolarmente nel Golfo di California, dove sono presenti 38 specie endemiche, elencate in Tabella 1. Nella stessa area sono presenti 240 isole e isolette tra la foce del Rio Colorado e il 23° parallelo, con 39 specie di chitoni segnalate, riportate in Tabella 2. La Tabella 3 elenca le poche specie note per l'Atlantico (Golfo del Messico e Carabi), dove mancano studi accurati su zone molto importanti, come le formazioni coralline presenti lungo le coste e sulle isole di Quintana Roo. In fine sono presenti 5 tavole con l'illustrazione di diverse specie messicane.

**KEY WORDS:** Mollusca, Polyplacophora, biogeography, Mexican chitons.

## INTRODUCTION

Polyplacophorans (chitons) are poorly documented from Mexican waters, and since the nineteenth century have been studied by various foreign authors and institutions (Reyes-Gómez, 1999). The diversity of the chiton fauna in the area provided a wealth of new species when Mexican waters were explored in the last four decades (Ferreira, 1974, 1978, 1979, 1980, 1982a, 1982b, 1983a, 1983b, 1984, 1985; Bullock, 1985, 1988; Kaas, 1993; Watters, 1981, 1990; Clark, 1994, 2000). However, Polyplacophora taxa have undergone many nomenclature changes and redefinitions of taxonomic relationships, and over the years new species have been described and geographic distributions better understood. However, all this information has not summarized except by Skoglund (2001), who contributed a useful compilation of the changes proposed in recent literature with regards to only the species known from the Panamic Province.

Knowledge of the chiton fauna of México is limited, though chiton species have been mentioned in several contributions and in a few malacological inventories (González-Nakagawa & Sánchez-Nava, 1986; Holguin-Quiñonez & González, 1989; Reguero & García-Cubas, 1989; Holguin-Quiñonez, Millé & Pérez-Ch., 1992; González, 1993; Holguin-Quiñonez, 1994; Holguin-Quiñonez & González, 1994; Del Río-Zaragoza & Villarreal-Melo, 2001; Flores-Rodríguez, Flores-Garza, García-Ibáñez & Valdés-González, 2001; Sansores-Lulú, Álvarez-

Hernández, Manzanilla & Chan, 2001).

The number of reported chiton species and their geographic distribution in the region was not completely known. But recently a bibliographic revision provided the first check-list of recent Mexican chiton species (Reyes-Gómez & Salcedo-Vargas, 2002) reporting 127 living species and adding two species to the original check-list of Reyes-Gómez & Salcedo-Vargas (2002), the deep water species *Leptochiton binghami* (Boone, 1928) from the Gulf of México and the Caribbean Sea, and *Deshayesiella spicata* (Berry, 1919), initially reported as a junior synonym of *Oldroydia percrassa* Dall, 1894 (Kaas & Van Belle, 1998), from northern Baja California and Gulf of California, Canal Salispuedes (B. Sirenko and R.N. Clark, *pers. comm.*).

The aim of the present paper is to up-date general information on distribution of chiton species and their occurrence in Mexican waters as recorded in the literature.

## MATERIALS AND METHODS

The following study is mainly based on the literature and review of chiton material in various Mexican collections: Colección de Moluscos del Instituto de Ciencias del Mar y Limnología, Mazatlán (ICMyL-UNAM); Colección Nacional de Moluscos (CNMO) del Instituto de Biología, UNAM; Colección de Moluscos de ECOSUR, Chetumal, Quintana Roo and Colección de Moluscos de la Escuela Nacional de Ciencias Biológicas del Instituto Politécnico

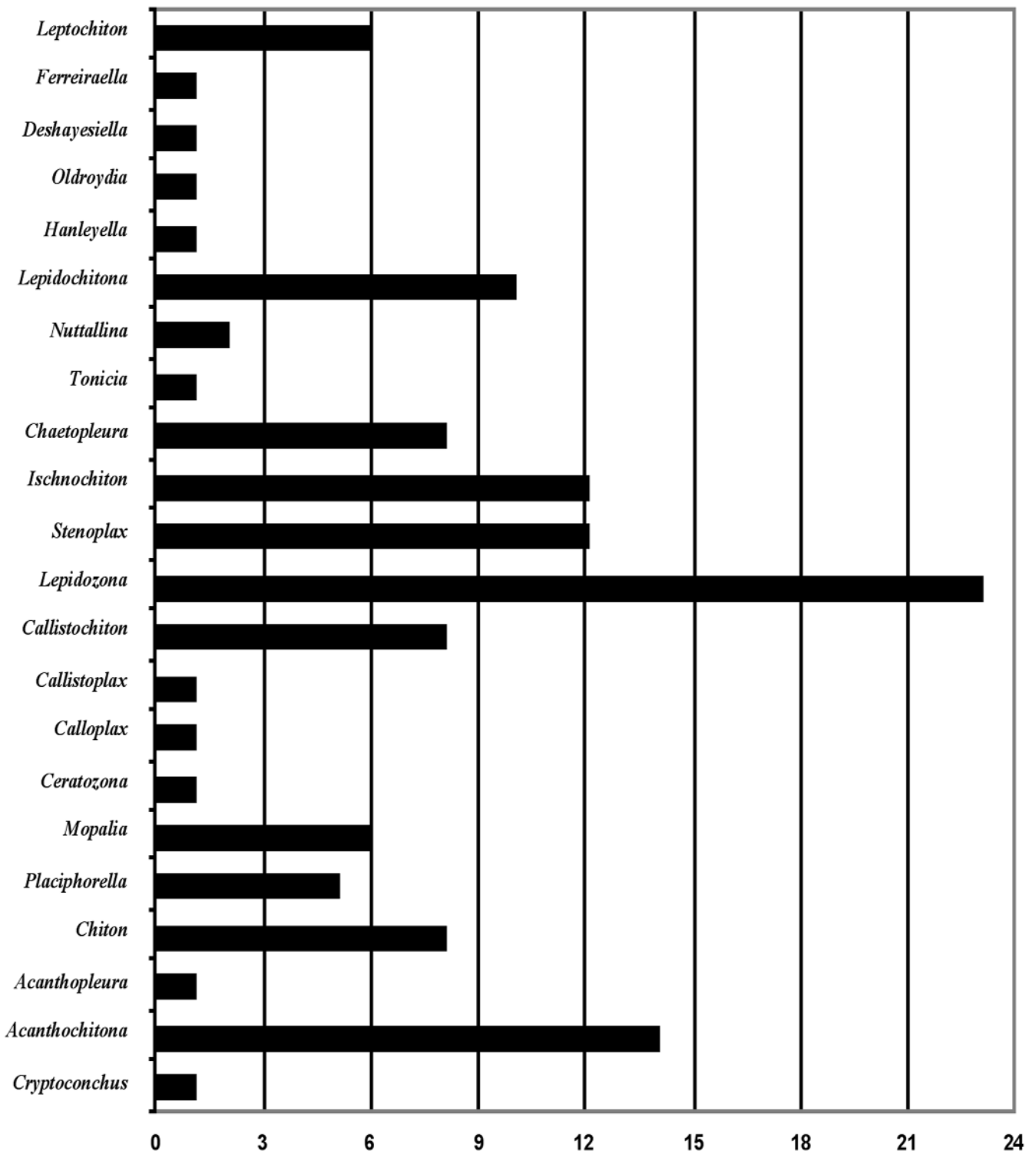


Fig. 1. Account of Mexican species reported for each genus.

Fig. 1. Indicazione del numero di specie messicane riportate per ciascun genere.



Table 1. Distribution of Mexican endemic species  
 Tab. 1. Distribuzione delle specie endemiche messicane.

Species	Distribution
<i>Ferreiraella scrippsianus</i> (Ferreira, 1980)	Only known from the type material Baja California Sur, SW of Cabo San Lucas.
<i>Lepidochitona</i> ( <i>Lepidochitona</i> ) <i>corteziana</i> Clark, 2000	East coast of Baja California Sur, from Punta Chivado to Canal San Lorenzo.
<i>Lepidochitona</i> ( <i>Dendrochiton</i> ) <i>lirulata</i> (Berry, 1963)	San Felipe, Bahía de los Angeles, Baja California and Bahía la Cholla, Guaymas, Sonora.
<i>Nuttallina crossota</i> Berry, 1956	Puerto, Peñasco and Guaymas, Sonora, to Puerto Ballandra, Baja California Sur.
<i>Chaetopleura</i> ( <i>Pallochiton</i> ) <i>lanuginosa mixta</i> (Dall, 1919)	Upper Golfo de California, down to Bahía Concepción on the western side to Bahía Topolobampo, Sinaloa on the western side.
<i>Chaetopleura</i> ( <i>Chaetopleura</i> ) <i>shyana</i> Ferreira, 1983	Isla Pata, Bahía de los Angeles, Baja California; Isla Turner, south of Isla Tiburón and Isla Partida, Golfo de California.
<i>Ischnochiton</i> ( <i>Ischnochiton</i> ) <i>muscarius</i> (Reeve, 1847)	Guaymas, Sonora to Salina Cruz, Oaxaca; Isla Socorro, Islas Revillagigedo.
<i>Ischnochiton</i> ( <i>Ischnochiton</i> ) <i>tridentatus</i> Pilsbry, 1893	Golfo de California to Mazatlán, Sinaloa.
<i>Ischnochiton</i> ( <i>Ischnochiton</i> ) <i>carolianus</i> Ferreira, 1984	San Carlos, 5km South of Punta San Antonio, Sonora and Bahía de los Angeles, Golfo de California.
<i>Ischnochiton</i> ( <i>Ischnochiton</i> ) <i>chaceorum</i> Kaas & Van Belle, 1990	Only known from the type material. Punta Peñasco, Sonora.
<i>Ischnochiton rhodolithophilus</i> Clark, 2000, ex Putman MS	Golfo de California, SE coast of Baja California from Isla el Requesón, Bahía Concepción, Baja California to Canal de San Lorenzo.
<i>Ischnochiton tombalei</i> Clark, 2000	Golfo de California, East coast of Baja California Sur, from Punta Chivado to Canal San Lorenzo, about 40 km N of La Paz, Baja California Sur.
<i>Stenoplax</i> ( <i>Stenoradsia</i> ) <i>magdalenensis</i> (Hinds, 1845).	Western coast of Baja California, from Bahía San Quintin to Cabo San Lucas and in the Golfo de California from Puerto Peñasco, Sonora and Bahía Concepción, Baja California Sur.
<i>Stenoplax</i> ( <i>Stenoplax</i> ) <i>corrugata</i> Pilsbry, 1892, ex Carpenter MS	Bahía Magdalena, Baja California Sur, from Isla Danzante to Pichilique on the western side of the Golfo de California and off Guaymas, Sonora.
<i>Stenoplax</i> ( <i>Stenoplax</i> ) <i>mariposa</i> (Dall, 1919, ex Bartsch MS)	From Punta Bahía Malarrimo, Golfo de California along the Pacific coast to Cabo Corrientes.
<i>Stenoplax</i> ( <i>Stenoradsia</i> ) <i>sonorana</i> (Berry, 1956)	Bahía de San Carlos, Golfo de California on the western side and Guaymas, Sonora on the eastern side.
<i>Stenoplax</i> ( <i>Stenoplax</i> ) <i>circumsenta</i> Berry, 1956	Laguna de Scammom and Bahía Magdalena, Baja California and Golfo de California between La Paz and Monserrate Id. on the western side and near Guaymas, Sonora on the eastern side. Isla Partida to Isla Espíritu Santo and Pichilique, Baja California Sur in the Golfo de California.
<i>Stenoplax</i> sp. Reyes-Gómez, 1999	Only known from the type material Rocas de la casa del Marino, Mazatlán, Sinaloa.
<i>Lepidozona</i> ( <i>Lepidozona</i> ) <i>clathrata</i> (Reeve, 1847)	Golfo de California to Manzanillo, Colima.
<i>Lepidozona</i> ( <i>Lepidozona</i> ) <i>crockeri</i> (Willet in Hertlein & Strong, 1951)	Along the lower half of the eastern coast of Baja California Sur and North to near Isla Monserrate, Golfo de California.
<i>Lepidozona</i> ( <i>Lepidozona</i> ) <i>subtilis</i> Berry, 1956	Species confined to the norther half of the Golfo de California, from Bahía San Francisquito on the Baja California side to Guaymas, Sonora.



## Species

## Distribution

<i>Lepidozona (Lepidozona) formosa</i> Ferreira, 1974	Isla Blanca (3 km south of Puerto escondido, Baja California), Isla San Francisco and Isla Cerralvo, Golfo de California.
<i>Lepidozona (Lepidozona) guadalupensis</i> Ferreira, 1978	Only known from the type material Isla Guadalupe, Baja California.
<i>Lepidozona (Lepidozona) clarionensis</i> Ferreira, 1983	Endemic species of Isla Clarión, Islas Revillagigedo.
<i>Lepidozona (Lepidozona) laurae</i> Ferreira, 1985	Punta San Antonio, north of Guaymas, Sonora and Bahía de los Angeles, Baja California.
<i>Lepidozona (Lepidozona) stobleri</i> Ferreira, 1985	Bahía de los Angeles, Isla Angel de la Guarda, Isla Danzante, Baja California.
<i>Lepidozona (Lepidozona) skoglundii</i> (Ferreira, 1986)	Playa Novillero, Nayarit and off Estero Morua, Puerto Peñasco, Sonora.
<i>Lepidozona (Lepidozona) sirenkoi</i> Kaas & Van Belle, 1990	Only known from the type material Puerto Peñasco, Sonora.
<i>Lepidozona (Lepidozona) tenuicostata</i> Kaas & Van Belle, 1990	Only known from the type material Puerto Peñasco, Sonora.
<i>Callistochiton asthenes</i> (Berry, 1919)	Isla Coronado, Isla Guadalupe and Isla Cedros, Baja California.
<i>Callistochiton leei</i> Ferreira, 1979	Only known from the type material Isla Guadalupe, Baja California.
<i>Placiphorella hanselmani</i> Clark, 1994	Bahía de los Angeles, Baja California; Bahía la Cholla, Puerto Lobos and Puerto Libertad, Sonora.
<i>Chiton (Chiton) albolineatus</i> Broderip & Sowerby, 1829	Mazatlán, Sinaloa to Acapulco, Guerrero.
<i>Chiton (Chiton) articulatus</i> Sowerby in Broderip & Sowerby, 1832	Mazatlán, Sinaloa to Puerto Angel and Salina Cruz, Oaxaca. Isla Socorro, Islas Revillagigedo.
<i>Chiton (Chiton) virgulatus</i> Sowerby, 1840	From Bahía Magdalena, Baja California to Golfo de California, Bahía Kino, Sonora.
<i>Acanthochitona arragonites</i> (Carpenter, 1857)	Golfo de California, Puerto Peñasco to Mazatlán, Sinaloa.
<i>Acanthochitona</i> sp. Reyes-Gómez, 1999	Only known from the type material Isla Espíritu Santo, Golfo de California.
<i>Acanthochitona burghardtae</i> Clark, 2000	Isla San José south to Canal San Lorenzo, Baja California Sur.

Nacional (IPN). Some Mexican species are illustrated in five plates with full data on each species: collection site of the figured specimen, size (in mm) and the collection where the specimen is kept.

## RESULTS

Mexican chitons belong to five families: Leptochitonidae Dall, 1889; Ischnochitonidae Dall, 1889; Mopalidae Dall, 1889; Chitonidae Rafinesque, 1815 and Acanthochitonidae Pilsbry, 1893. Genera in the area are: *Lepidozona* Pilsbry, 1892; *Acanthochitona* Gray, 1821; *Stenoplax* Carpenter MS, Dall, 1879 and *Ischnochiton* Gray, 1849 (Figure 1).

### Eastern Pacific

Eighty percent of known Mexican species occur in this region and 38 of them are endemic. The Gulf of California has the most striking pattern of endemisms, with twenty species reported so far (Table 1). In the eastern Pacific area, some north American species range from Alaska and

Canada, along the American coasts down to the entrance to the west coast of Baja California. This is the case of *Lepidochitona (L.) dentiens* (Gould, 1846) which has a continuous distribution between 60°N (Boswell Bay, Alaska) and 31°N (Puente Santo Tomás, México); *Hanleyella oldroydi* (Bartsch MS, Dall, 1919) recorded from Kosciusko Island, Alaska, down to Cabo San Quintin, Baja California, México and *Stenoplax (S.) fallax* (Carpenter in Pilsbry, 1892) (Fig. 24) distributed from Vancouver, Canada (48°N) to Baja California, México (31°N).

A great number of islands are located in this area, especially in the Gulf of California (about 240 islands and islets between the Río Colorado mouth and the 23rd parallel). Few studies are available from insular areas, all focused on the Islas Revillagigedo Archipelago, such as Ferreira (1983b), González-Nakawaga & Sánchez-Nava (1986) and recently Holguin-Quiñonez *et al.* (1992, 1994, 2002). Chiton species also occur in other insular areas; a total of 39 insular species are recorded from the eastern Pacific (Table 2). They are recorded from 29 islands, eleven



Table 2. Insular species reported from the East Pacific  
 Tab. 2. Specie insulari segnalate per il Pacifico orientale.

Species	Distribution
<i>Oldroydia percrassa</i> (Dall, 1894)	Baja California: Isla San Benito and Rocas Alijos.
<i>Lepidochitona</i> ( <i>Lepidochitona</i> ) <i>keepiana</i> Berry, 1948	Islas Revillagigedo: Isla Socorro.
<i>Lepidochitona</i> ( <i>Lepidochitona</i> ) <i>corteziana</i> Clark, 2000	Golfo de California: Isla San José.
<i>Lepidochitona</i> ( <i>Dendrochiton</i> ) <i>flectens</i> (Carpenter, 1864)	Baja California: Isla San Jerónimo.
<i>Chaetopleura</i> ( <i>Chaetopleura</i> ) <i>lurida</i> (Sowerby, 1832)	Golfo de California: Isla Cerralvo. Islas Revillagigedo: Isla Socorro and Isla Clarión.
<i>Chaetopleura</i> ( <i>Chaetopleura</i> ) <i>sbyana</i> Ferreira, 1983	Baja California: Isla Pata.
<i>Ischnochiton</i> ( <i>Ischnochiton</i> ) <i>muscarius</i> (Reeve, 1847)	Golfo de California: Isla Venado. Islas Revillagigedo: Isla Socorro.
<i>Ischnochiton</i> ( <i>Ischnochiton</i> ) <i>carolianus</i> Ferreira, 1984	Golfo de California: Isla Danzante.
<i>Ischnochiton</i> <i>rhodolithophilus</i> Clark, 2000, ex Putman MS	Golfo de California: Isla San José, Isla San Francisco and Isla El Requesón.
<i>Ischnochiton</i> <i>tombalei</i> Clark, 2000	Golfo de California: Isla San José and Isla Coronado.
<i>Stenoplax</i> ( <i>Stenoplax</i> ) <i>limaciformis</i> (Sowerby, 1832)	Golfo de California: Isla Tiburón and Isla Carmen.
<i>Stenoplax</i> ( <i>Stenoplax</i> ) <i>corrugata</i> Pilsbry, 1892, ex Carpenter MS	Baja California: Isla Guadalupe and Isla San Martín. Islas Revillagigedo: Isla Clarión.
<i>Stenoplax</i> ( <i>Stenoplax</i> ) <i>mariposa</i> (Dall, 1919, ex Bartsch MS)	Islas Revillagigedo: Isla Socorro and Isla Clarión.
<i>Stenoplax</i> ( <i>Stenoplax</i> ) <i>circumsenta</i> Berry, 1956	Baja California: Isla Concha and Isla Monserrate. Golfo de California: Isla Espíritu Santo.
<i>Lepidozona</i> ( <i>Lepidozona</i> ) <i>mertensii</i> (von Middendorff, 1847)	Baja California: Isla Sacramento.
<i>Lepidozona</i> ( <i>Lepidozona</i> ) <i>clathrata</i> (Reeve, 1847)	Golfo de California: Isla Tiburón.
<i>Lepidozona</i> ( <i>Lepidozona</i> ) <i>serrata</i> (Carpenter, 1864)	Golfo de California: Isla Espíritu Santo and Isla Coronado.
<i>Lepidozona</i> ( <i>Lepidozona</i> ) <i>crockeri</i> (Willet in Hertlein & Strong, 1951)	Baja California: Isla Monserrate.
<i>Lepidozona</i> ( <i>Lepidozona</i> ) <i>formosa</i> Ferreira, 1974	Baja California: Isla Blanca. Golfo de California: Isla Cerralvo and Isla San Francisco.
<i>Lepidozona</i> ( <i>Lepidozona</i> ) <i>allynsmithi</i> Ferreira, 1974	Golfo de California: Isla Espíritu Santo, Isla Cerralvo and Isla Las Animas.
<i>Lepidozona</i> ( <i>Lepidozona</i> ) <i>guadalupensis</i> Ferreira, 1978	Baja California: Isla Guadalupe.
<i>Lepidozona</i> ( <i>Lepidozona</i> ) <i>rothi</i> Ferreira, 1983	Golfo de California: Isla San Pedro Nolasco. Islas Revillagigedo: Isla Clarión.
<i>Lepidozona</i> ( <i>Lepidozona</i> ) <i>clarionensis</i> Ferreira, 1983	Islas Revillagigedo: Isla Clarión.
<i>Lepidozona</i> ( <i>Lepidozona</i> ) <i>stobleri</i> Ferreira, 1985	Golfo de California: Isla Angel de la Guarda and Isla Danzante.
<i>Callistochiton</i> <i>elenensis</i> (Sowerby, 1832)	Golfo de California: Isla Espíritu Santo.
<i>Callistochiton</i> <i>crassicosatus</i> Pilsbry, 1893	Baja California: Isla Cedros.
<i>Callistochiton</i> <i>asthenes</i> (Berry, 1919)	Baja California: Isla Guadalupe and Isla Cedros. Golfo de California: Isla Coronado.
<i>Callistochiton</i> <i>leei</i> Ferreira, 1979	Baja California: Isla Guadalupe.
<i>Callistoplax</i> <i>retusa</i> (Sowerby in Broderip & Sowerby, 1832)	Mexican Tropical Pacific: Islas Tres Marias.
<i>Mopalia</i> <i>muscosa</i> (Gould, 1846)	Islas Revillagigedo: Isla Socorro.
<i>Placiphorella</i> <i>mirabilis</i> Clark, 1994	Baja California: Isla Asunción and Isla Cedros.
<i>Placiphorella</i> <i>hanselmani</i> Clark, 1994	Baja California: Isla Pata.
<i>Chiton</i> ( <i>Chiton</i> ) <i>articulatus</i> Sowerby in Broderip & Sowerby, 1832	Islas Revillagigedo: Isla Socorro and Isla Clarión.
<i>Acanthochitona</i> <i>angelica</i> Dall, 1919	Mexican Tropical Pacific: Islas Tres Marias.
<i>Acanthochitona</i> <i>avicula</i> (Carpenter, 1864)	Golfo de California: Isla Coronado.
<i>Acanthochitona</i> <i>exquisita</i> Pilsbry, 1893	Baja California: Isla Partida. Golfo de California: Isla Angel de la Guarda, Isla Tiburón, Isla Carmen, Isla Coronado, Isla San José and Isla San Francisco.
<i>Acanthochitona</i> sp. Reyes-Gómez, 1999	Golfo de California: Isla Espíritu Santo.
<i>Acanthochitona</i> <i>burghardtae</i> Clark, 2000	Golfo de California: Isla San José.



Table 3. Chiton species from the Mexican Caribbean and their up-dated distribution  
 Tab. 3. Poliplacofori dei Caraibi messicani e loro distribuzione aggiornata

Species	Recent Distribution
<i>Leptochiton binghami</i> (Boone, 1928)	Golfo de México; Caribbean sea to Glover Reef, off Honduras.
<i>Ischnochiton (Ischnochiton) erythronotus</i> (C.B. Adams, 1845)	Florida; Bahamas; The Cayman Islands; Jamaica; Puerto Rico; The Virgin Islands; St Eustatius, Guadalupe, Barbados and Quintana Roo, México.
<i>Stenoplax (Stenoplax) bahamensis</i> Kaas and Van Belle, 1987	Bahamas Islands and the offshore reef area of the Florida Key south to Cuba; North of Quintana Roo, México.
<i>Calloplax janeirensis</i> (Gray, 1828)	Florida; Key West; West Indies; Quintana Roo, México and Brazil.
<i>Ceratozona squalida</i> (C.B. Adams, 1845)	Florida; Peanut Island; Jamaica; The West Indies and Quintana Roo, México.
<i>Chiton (Chiton) tuberculatus</i> Linnaeus, 1758.	Puerto Rico; Bahamas Islands; Bermuda and Florida to Trinidad; Republica Dominicana; Yucatán and Quintana Roo, México to Isla Margarita, Venezuela.
<i>Chiton squamosus</i> Linnaeus, 1764	Jamaica; St. Mary Robins Bay, Bahamas; Quintana Roo, México.
<i>Chiton marmoratus</i> Gmelin, 1791	Antillas; Bonaire; West Indies to Trinidad; Bahamas; Yucatán, México to Northern Venezuela.
<i>Chiton viridis</i> Spengler, 1797	Antilles; Bonaire; West Indies ; Florida Keys; Bahamas to Trinidad and Yucatán, México to Venezuela.
<i>Acanthopleura granulata</i> Gmelin, 1791	Antilles; Bonaire; Republica Dominicana; Quintana Roo, México.
<i>Cryptoconchus floridanus</i> (Dall, 1889)	Florida; Indian Keys; Dry Tortugas, Florida to Puerto Rico; Cuba ; Jamaica; Cayman Islands; Aruba Bonaire; Xahuayxal, Quintana Roo, México.
<i>Acanthochitona bemphilli</i> Pilsbry, 1893	Antilles; Aruba; Key West, Florida; West Indies; Quintana Roo and Yucatán, México.
<i>Acanthochitona pygmaea</i> Pilsbry, 1893	Florida; Cedar Keys; Key West; Western Florida to West Indies; Quintana Roo and Yucatán, México.
<i>Acanthochitona andersoni</i> Watters, 1981	West Indies; Bahamas; and South of Quintana Roo, México.
<i>Acanthochitona zebra</i> Lyons, 1988	Grand Bahamas; Tamarind Beach Reef; Florida Keys; Grand Bahamas to Puerto Rico; Punta Nizuc, Quintana Roo, México; Belize; Aruba and Curacao.

species from Islas Revillagigedo, of which the best documented areas are: Isla Socorro and Isla Clarión; in the Gulf of California: Isla Espíritu Santo, Isla Coronado and Isla San José; from the Baja California zone (west side of the Baja California Peninsula) Isla Guadalupe and Isla Cedros (Table 2).

*Chiton (Chiton) articulatus* Sowerby, 1832 (Fig. 51), at the time of its description is the best known insular species, due to its high consumption for food along the Mexican Tropical Pacific. Recent studies of *C. (C.) articulatus* have described the current status of its fisheries and distribu-

tion from the Islas Revillagigedo (Rojas-Herrera, 1988; Holguin-Quiñones & Michel-Morfín, 2002).

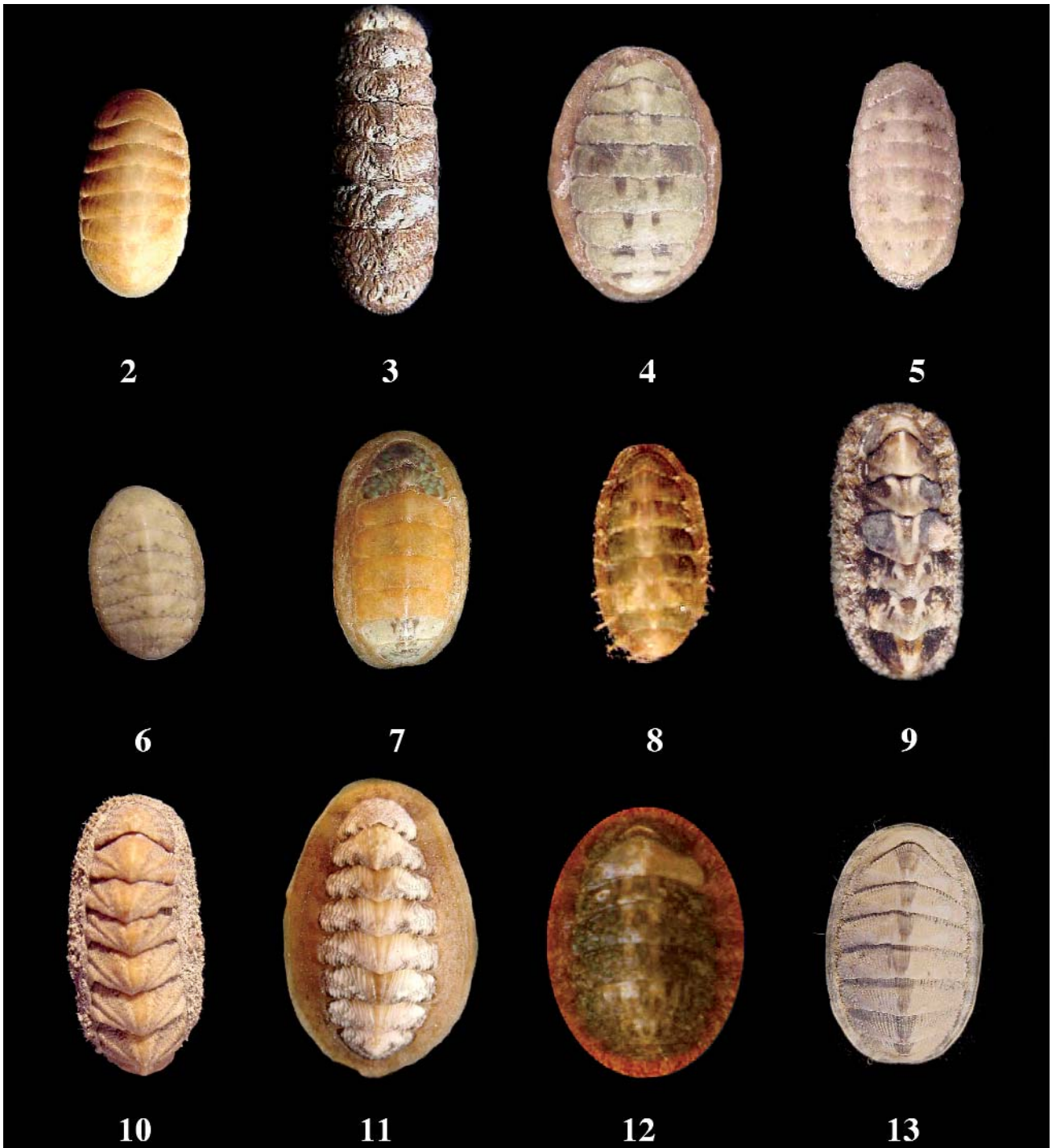
Mexican Pacific coasts also yield peculiar habitats like the unique coral heads occurring throughout the southern Gulf of California, the Pulmo Reef System La Paz. The composed of a rocky island, La Esperanza, has the only living coral reef on the Pacific coasts of North America. This is a likely habitat for polyplacophorans, but no chiton fauna has yet been reported from the area. One example of the great capacity for adaptation of chitons is indicated in the study of Clark (2000), who reported eight species from

All plates show specimens in dorsal view.

Abbreviations: BA, private collection Bruno Anseeuw (Belgium); VB, private collection Richard A. Van Belle (Belgium); ES, private collection Enrico Schwabe (Germany); CNMO, Colección Nacional de Moluscos, Instituto de Biología UNAM, México; ECOSUR, Escuela de la Frontera Sur, ECOSUR, Chetumal, Quintana Roo, México.

Tutti gli esemplari sono illustrati in vista dorsale.

Abbreviazioni: BA, collezione Bruno Anseeuw (Belgio); VB, collezione Richard A. Van Belle (Belgio); ES, collezione Enrico Schwabe (Germania); CNMO, Colección Nacional de Moluscos, Instituto de Biología UNAM, Messico; ECOSUR, Escuela de la Frontera Sur, ECOSUR, Chetumal, Quintana Roo, Messico.



## Plate 1

- Fig. 2. *Leptochiton (Leptochiton) rugatus* (Carpenter in Pilsbry, 1892). 9x5 mm Pt. Loma, San Diego California, United States; Coll. BA.1172.  
 Fig. 3. *Oldroydia percrassa* (Dall, 1894). 24x9 mm Catalina Island, California, United States; Coll. VB.2818b.  
 Fig. 4. *Lepidochitona (Lepidochitona) bartwegii* (Carpenter, 1855). 21x14 mm Devil's Slide, La Jolla, California; United States, Coll. BA.257a.  
 Fig. 5. *Lepidochitona (Lepidochitona) beanii* (Carpenter, 1857). 9x4 mm Puertecitos, Baja California, México; Coll. BA.260.  
 Fig. 6. *Lepidochitona (Lepidochitona) keepiana* Berry, 1948. 7x5 mm Pt. Loma, San Diego, California, United States; Coll. BA.1178.  
 Fig. 7. *Lepidochitona (Dendrochiton) flectens* (Carpenter, 1864). 17x9 mm Coastguard Point, Brookings, Oregon, United States; Coll. BA.267b.  
 Fig. 8. *Lepidochitona (Dendrochiton) thamnopora* (Berry, 1911). 10x5 mm Puerto Santo Tomas, Baja California, México; Coll. BA.265.  
 Fig. 9. *Nuttalina californica* (Reeve, 1847, ex Nuttall MS) 23x10 mm Bird Rock, La Jolla, California, United States; Coll. BA.841d.  
 Fig. 10. *Nuttalina crossota* Berry, 1956. 19x9 mm Baja California, México; Coll. BA.844e.  
 Fig. 11. *Toncia forbesii* Carpenter, 1857. 31x19 mm Cuastecomate Bay, Jalisco, México; Coll. BA.847b.  
 Fig. 12. *Chaetopleura (Chaetopleura) lurida* (Sowerby, 1832). 24.2 mm Playa de Cocos, Costa Rica; Coll. ES.942.  
 Fig. 13. *Chaetopleura (Chaetopleura) apiculata* (Say in Conrad, 1834). 17x11 mm Rhode Island, United States; Coll. BA.691b.



rhodolith beds in the Gulf of California, four of which were new to science and two indicated as endemic species.

### Golfo de México and Mexican Caribbean

Few species of chitons have been reported from the Golfo de México, especially the southern area near where Caribbean waters enter. In this region we also find the most important reef in México, the Sistema Arrecifal Veracruzano. This complex has 23 coral reefs off the Veracruz coasts and is composed of short rocky offshore areas and dead coral formations. The system is a national protected area. Expeditions have been allowed in the coral zone, where chitons have been seen (pers.com.). Unfortunately there is no recorded data of these observations; samples are needed to corroborate the existence of polyplacophora fauna in this fragile habitat.

It is well known that chitons occur in reef ecosystems, for example the chitons of the Quintana Roo coasts and islands which are rich in coral reef formations due to their closeness and contact with Caribbean waters (Salazar-Vallejo & Norma E. Gonzalez, 1993). In this area chitons have not been studied properly, as reflected by the paucity of literature. In spite of this, the distribution of *Cryptochonus floridanus* (Dall, 1889) (Fig. 54) is known to extend from Xochem, Q. Roo, México and *Acanthochitona zebra* Lyons, 1988 (Fig. 57) from Punta Nizuc, Q. Roo, México (Table 3).

### DISCUSSION

Most of the species distributed in Mexican waters are inhabitants of the East Pacific, especially in the Gulf of California with its high number of endemic species. In recent years, many distributional records in this particular area have been added, clarifying the distribution of Mexican chiton species.

However, it is still difficult to get clear the distributional patterns of chitons for several reasons. First, Mexican studies and research projects are focused on species with economic importance such as oysters. And also because chitons are often relatively ignored in compilations of molluscan fauna. Finally, there is much undocumented malacological material in the many Mexican molluscan collections and inventories, and thus these are not available as either catalogues or publications.

On the other hand, the lack of exploration and published studies for several regions with distinctive faunal assemblages, such as for the case of the Gulf of México and Mexican Caribbean. As the same way, reef habitats have obtain little attention by malacological researchers, although its high presence in Mexican waters. I believe that many other chiton species will be documented as occurring in this area when the sampling efforts and strategies are increased.

Mexican waters held rich and varied marine habitats and the diversity of the known chiton fauna in those waters is shown in this paper (see also figs 1-5). Nevertheless, more investigation and explorations are needed to gain a com-

plete and comprehensive knowledge of the recent chiton fauna in Mexican waters. Protection of national coasts and surrounding waters represent a great challenge, but conservation efforts are needed to reduce the pollution impacts, which are likely diminishing polyplacophoran fauna. An example of this, is the over exploitation of subsistence fisheries of *Chiton (Chiton) articulatus*, which has led to an obvious decline of their populations.

### ACKNOWLEDGMENTS

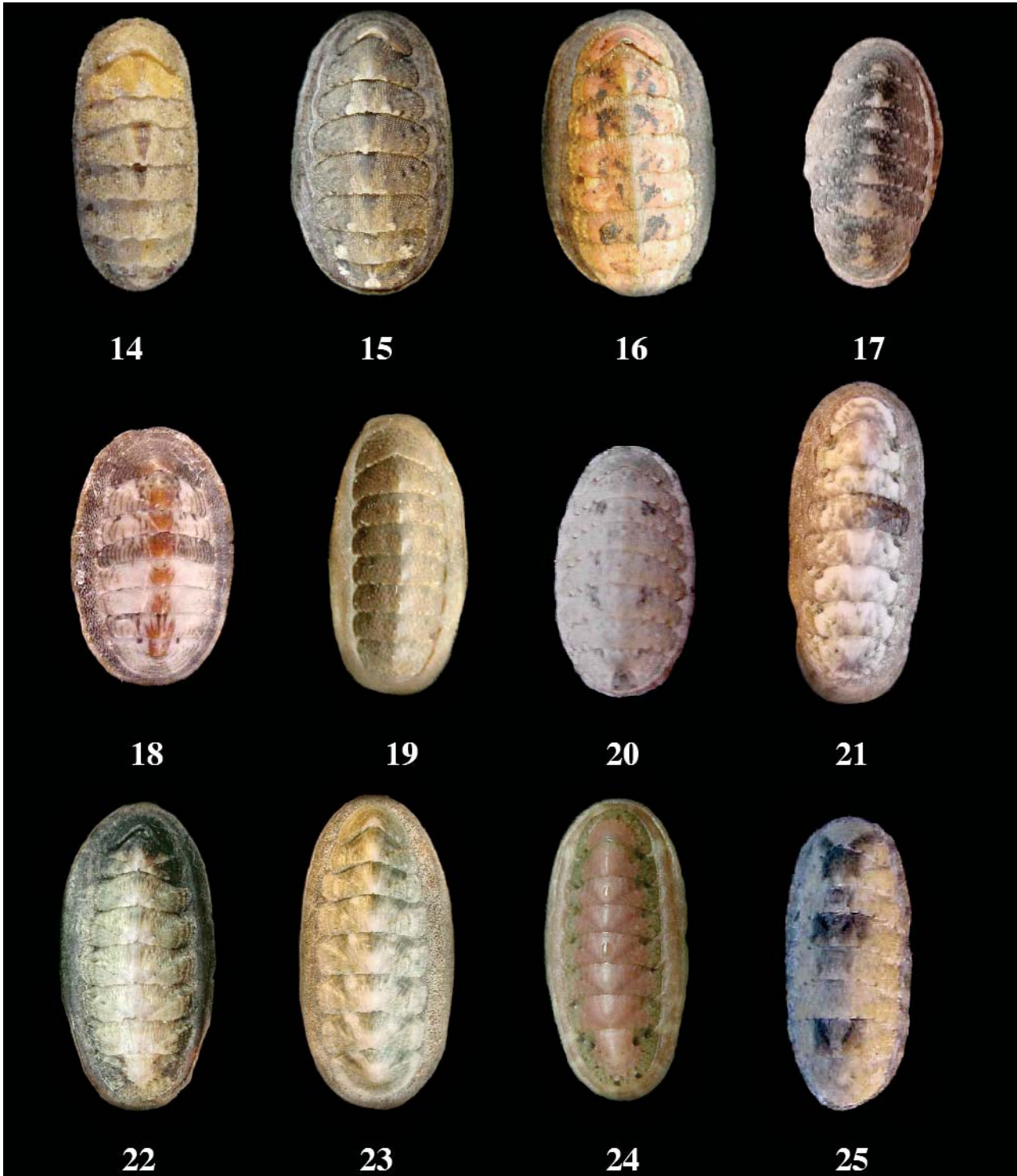
I would like to express my gratitude to the Italian Malacology Society, the Istituzione Culturale Federico II and specially to Mrs. Vanna Rotolo, Mrs. Anna Ebreo, Mr. Nicolo Ravida, Ravida Azienda Agricola and the Cantine Settesoli of Menfi for sponsoring my participation in the 4<sup>th</sup> International Workshop of Malacology, Menfi, Italy 2001.

I also thanks Norma Emilia González (ECOSUR, Quintana Roo) for sharing information and pictures of some Caribbean species, Bruno Anseeuw (Belgium) for offering most of the chiton iconography from his personal collection, and Enrico Schwabe (Zoologische Staatssammlung Munchen, Germany) for generously providing pictures of Mexican chitons.

### REFERENCES

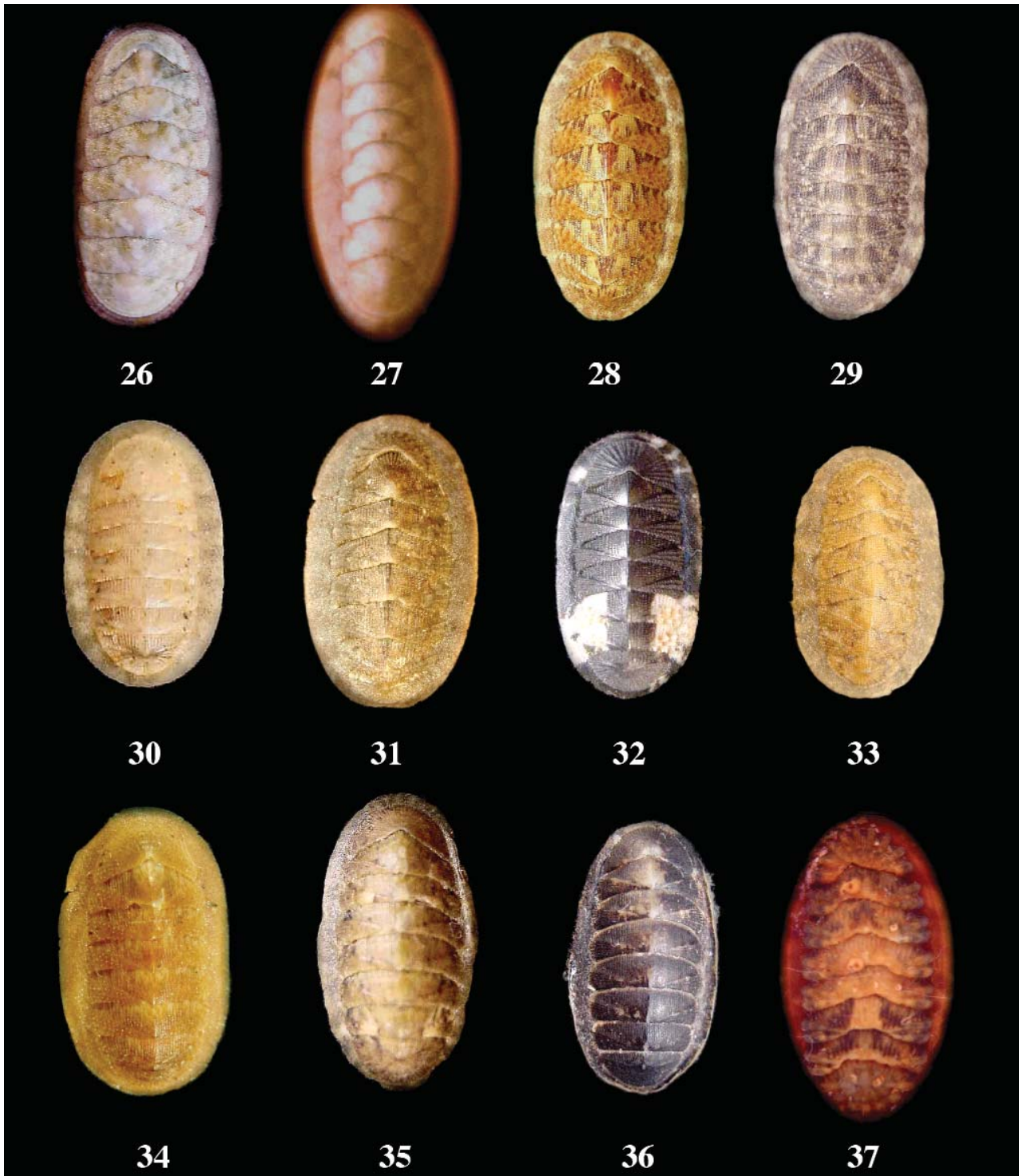
- BULLOCK R.C., 1985. The *Stenoplax limaciformis* (Sowerby, 1832) Species complex in the New World (Mollusca: Polyplacophora: Ischnochitonidae). *The Veliger*, 27(3): 291-307.
- BULLOCK R.C., 1988. The Genus *Chiton* in the New World (Polyplacophora: Chitonidae). *The Veliger*, 31(3/4): 141-191.
- CLARK R.N., 1994. Review of the genus *Placiphorella* Dall, 1879, ex Carpenter MS (Polyplacophora: Mopaliidae) with descriptions of two new species. *The Veliger*, 37(3): 290-311.
- CLARK R.N., 2000. The chiton fauna of the Gulf of California Rhodolith Beds (with descriptions of four new species). *Neumoria*, 43: 1-8.
- DEL RÍO-ZARAGOZA O. & VILLARROEL-MELO M., 2001. Variación estacional de moluscos en las pozas de marea del Faro de Bucerías, Michoacán, México, pp. 26-28. In Correa-Sandoval, Alfonso (ed). 2001. *Resúmenes de la VIII Reunión Nacional de Macología y Conchiliología*, Cd. Victoria, Tamaulipas, México: 76 pp.
- FERREIRA A.J., 1974. The genus *Lepidozona* in the Panamic Province, with the description of two new species. *The Veliger*, 17(2): 162-180.
- FERREIRA A.J., 1978. The Genus *Lepidozona* (Mollusca: Polyplacophora) in the temperate eastern Pacific, Baja California to Alaska, with the description of a new species. *The Veliger*, 20(1): 19-44.
- FERREIRA A.J., 1979. The Family Lepidopleuridae (Mollusca: Polyplacophora), in the eastern Pacific. *The Veliger*, 22(2): 145-165.
- FERREIRA A.J., 1980. A new species of *Lepidopleurus* Risso, 1826 (Mollusca: Polyplacophora) in the deep waters of the eastern Pacific. *The Veliger*, 23(1): 55-61.
- FERREIRA A.J., 1982a. A new species of *Calloplax* in the eastern Pacific. *The Veliger*, Berkeley, 24(4): 321-324.
- FERREIRA A.J., 1982b. The family Lepidochitonidae Iredale, 1914 (Mollusca: Polyplacophora) in the northeastern Pacific. *The Veliger*,





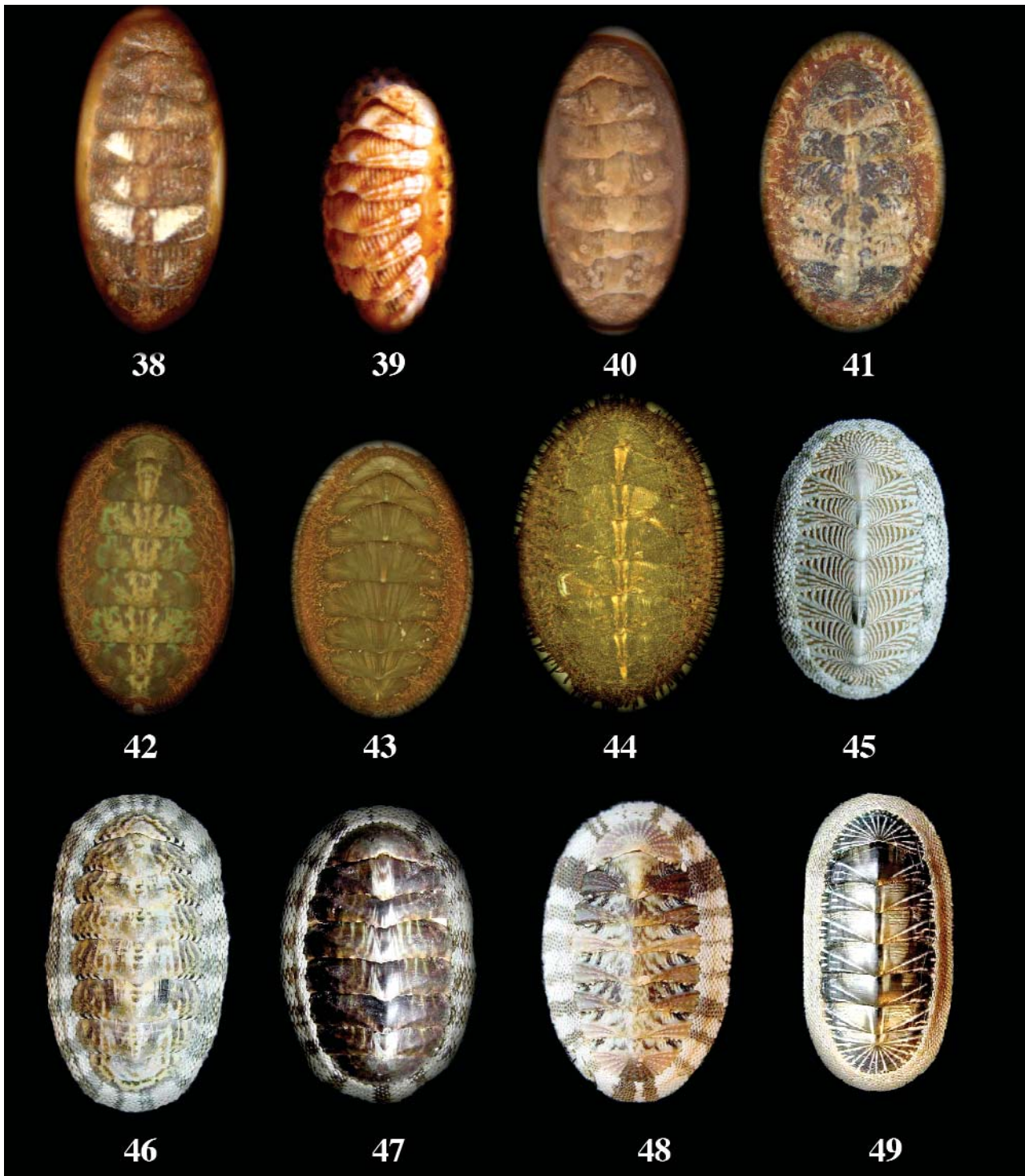
## Plate 2

- Fig. 14. *Chaetopleura (Pallochiton) gemma* Dall, 1879, ex Carpenter MS. 16x7 mm Mission Bay, San Diego County, California, United States; Coll. BA.687.  
 Fig. 15. *Chaetopleura (Pallochiton) lanuginosa* (Dall, 1879, ex Carpenter MS). 34x19 mm Baja California, México; Coll. BA.685.  
 Fig. 16. *Chaetopleura (Pallochiton) lanuginosa mixta* (Dall, 1919). 30x18 mm San Felipe, Baja California, México; Coll. BA.1166.  
 Fig. 17. *Ischnochiton striolatus* (Gray, 1828). 14x8 mm Arasji, Aruba, Antilles; Coll. BA.557a.  
 Fig. 18. *Ischnochiton (Ischnochiton) muscarius* (Reeve, 1847). 13x8 mm Punta Camaron, Mazatlán, Sinaloa, México; Coll. BA.570h.  
 Fig. 19. *Ischnochiton (Ischnochiton) tridentatus* Pilsbry, 1893. 23x11 mm Guaymas, Sonora, México; Coll. BA.893.  
 Fig. 20. *Ischnochiton (Ischnochiton) guatemalensis* Thiele, 1910. 10x6 mm Cholla Bay, Sonora, México; Coll. BA.573.  
 Fig. 21. *Stenoplax (Stenoplax) limaciformis* (Sowerby, 1832). 27x11 mm Punta Paredones, Sonora, Baja California, México; Coll. BA.245b.  
 Fig. 22. *Stenoplax (Stenoradsia) magdalenensis* (Hinds, 1845). 57x28 mm Puertecitos Bay, Baja California, México; Coll. BA.240a.  
 Fig. 23. *Stenoplax (Stenoradsia) conspicua* (Pilsbry, 1892, ex Carpenter MS). 74x37 mm Bird Rock, La Jolla, California, United States; Coll. BA.236n.  
 Fig. 24. *Stenoplax (Stenoplax) fallax* (Carpenter in Pilsbry, 1892). 24x11 mm Asimilar Beach, Monterey County, California, United States; Coll. BA.716.  
 Fig. 25. *Stenoplax (Stenoplax) mariposa* (Dall, 1919, ex Bartsch MS). 11x5 mm Cholla Bay, Sonora, México; Coll. BA.254b.



## Plate 3

- Fig. 26. *Stenoplax (Stenoradsia) beathiana* Berry, 1946. 46x20 mm Pinos Point, Monterey, California, United States; Coll. BA.243a.  
Fig. 27. *Stenoplax* sp. Reyes-Gómez, 1999. 28 mm Rocas de la casa del Marino, Mazatlán, Sinaloa, México; Coll. CNMO.031.  
Fig. 28. *Lepidozonia (Lepidozonia) mertensii* (von Middendorff, 1847). 24 mm Washington, United States; Coll. ES.1574.  
Fig. 29. *Lepidozonia (Lepidozonia) clatbrata* (Reeve, 1847). 28x16 mm San Felipe, Baja California, México; Coll. BA.1164.  
Fig. 30. *Lepidozonia (Lepidozonia) serrata* (Carpenter, 1864). 11x6 mm Red Rock, Sonora; México; Coll. BA.67.  
Fig. 31. *Lepidozonia (Lepidozonia) cooperi* (Dall, 1879, ex Carpenter MS). 30x17 mm Franklin Point, San Mateo County, California, United States; Coll. BA.69.  
Fig. 32. *Lepidozonia (Lepidozonia) sinudentata* (Carpenter in Pilsbry, 1892). 14x8 mm Manta Ray Bay, California, United States; Coll. BA.736.  
Fig. 33. *Lepidozonia (Lepidozonia) pectinulata* (Carpenter in Pilsbry, 1893). 31x19 mm Mission Bay, San Diego, California, United States; Coll. BA.42b.  
Fig. 34. *Lepidozonia (Lepidozonia) willetti* (Berry, 1917). 24x14 mm Montain Point, Revillagigedo Is., Alaska; Coll. BA.544.  
Fig. 35. *Lepidozonia (Lepidozonia) crockeri* (Willett in Hertlein & Strong, 1951). 15x8 mm San Luis Monzaga Bay, Baja California, México; Coll. BA.61.  
Fig. 36. *Lepidozonia (Lepidozonia) subtilis* Berry, 1956. 20x11 mm Miramar, San Felipe, Baja California, México; Coll. BA.64b.  
Fig. 37. *Callistochiton elenensis* (Sowerby, 1832). 17.8 mm Playa Enfermería, near La Paz, México; Coll. ES.77.



## Plate 4

Fig. 38. *Callistochiton crassicostatus* Pilsbry, 1893. 18 mm Mission Bay, San Diego, California, United States; Coll. ES.49.

Fig. 39. *Callistoplax retusa* (Sowerby in Broderip & Sowerby, 1832). 18 mm Isla Ixtapa, Playa Las Gatas, Zihuatanejo, Guerrero, México; Coll. CNMO.019.

Fig. 40. *Calloplax janeirensis* (Gray, 1828). 21.8 mm Florida, Key West, "Destroyer pits"; Coll. ES.61(b).

Fig. 41. *Ceratozona squalida* (C.B. Adams, 1845). 23 mm San Juan, Puerto Rico; Coll. ES.142.

Fig. 42. *Mopalia ciliata* (Sowerby, 1840). 38.8 mm Victoria Harbour, British Columbia United States; Coll. ES.443.

Fig. 43. *Mopalia lignosa* (Gould, 1846). 53.1 mm West of Sekui, Washington, United States; Coll. ES.953.

Fig. 44. *Mopalia muscosa* (Gould, 1846). 55 mm Kitsap County, Washington, United States; Coll. ES.954(a).

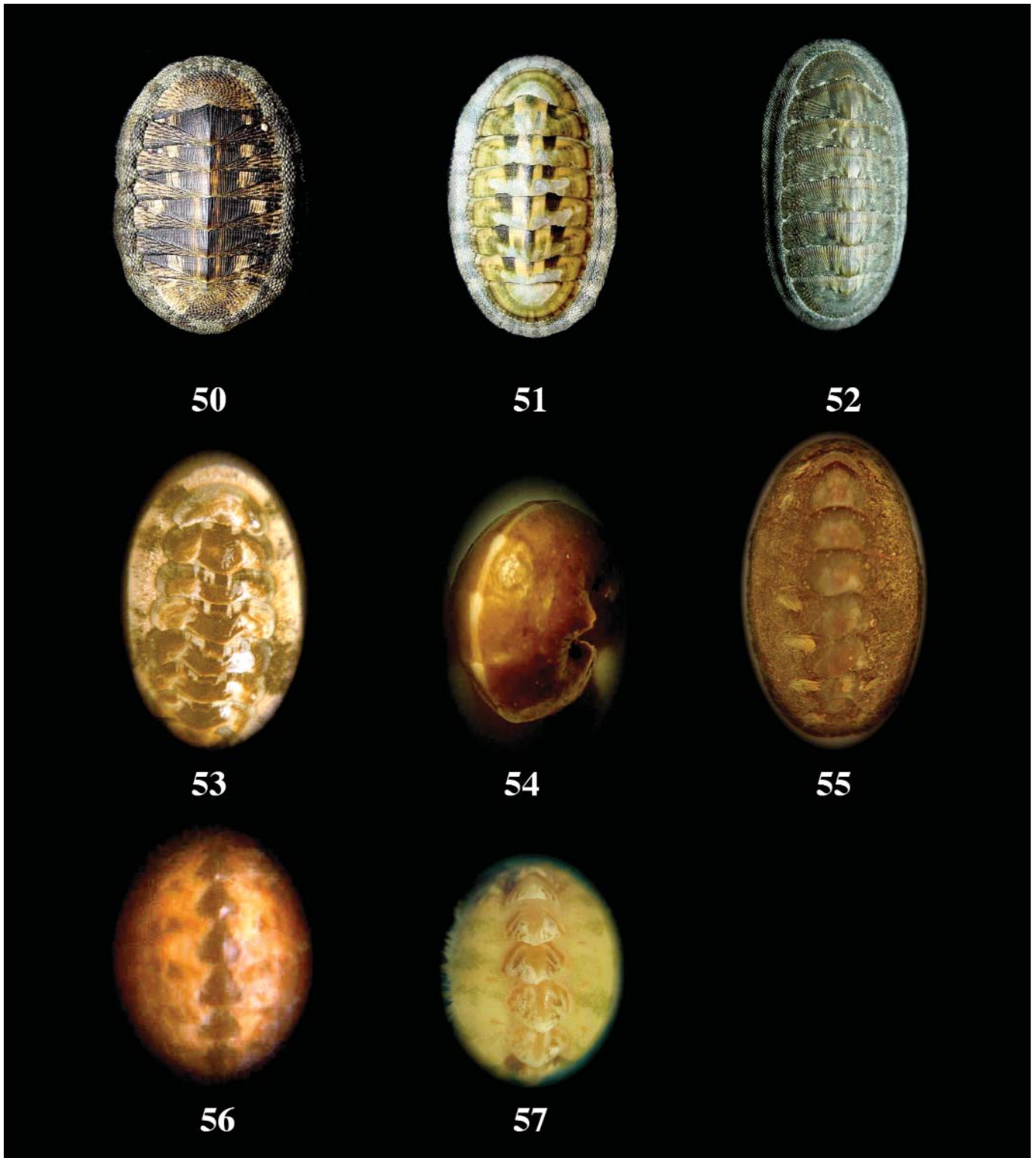
Fig. 45. *Chiton (Chiton) tuberculatus* Linnaeus, 1758. 48x30 mm Eleuthera, Bahamas; Coll. BA.955a.

Fig. 46. *Chiton squamosus* Linnaeus, 1764. 32x21 mm Varedaro, Cuba; Coll. BA.875.

Fig. 47. *Chiton marmoratus* Gmelin, 1791. 32x21 mm Anse à la Barque, West Guadeloupe Is., Antilles; Coll. BA.124a.

Fig. 48. *Chiton viridis* Spengler, 1797. 29x18 mm 8 Mile Rock, Grand Bahama Is., Bahamas; Coll. BA.112.

Fig. 49. *Chiton (Chiton) albolimeatus* Broderip & Sowerby, 1829. 27x14 mm Isla Venados, Mazatlán, Sinaloa, México; Coll. BA.109h.



## Plate 5

- Fig. 50. *Chiton (Chiton) stokesii* Sowerby, 1832. 41x27 mm Las Tunas Beach, El Salvador; Coll. BA.108b.  
Fig. 51. *Chiton (Chiton) articulatus* Sowerby in Broderip & Sowerby, 1832. 56x34 mm Isla Venados, Mazatlán, Sinaloa, México; Coll. BA.106c.  
Fig. 52. *Chiton (Chiton) virgulatus* Sowerby, 1840. 50x26 mm Algodones, Guaymas, Sonora, México; Coll. BA.97b.  
Fig. 53. *Acanthopleura granulata* Gmelin, 1791. 29.5 mm Guardalavaca, Cuba; Coll. ES.1622(d).  
Fig. 54. *Cryptoconchus floridanus* (Dall, 1889). 20x10 mm Xochem, Quintana Roo, México; Coll. ECOSUR-ACAN.001.  
Fig. 55. *Acanthochitona birudiniiformis* (Sowerby, 1832). 26.3 mm Vaco Beach, Costa Rica; Coll. ES.950.  
Fig. 56. *Acanthochitona* sp. Reyes-Gómez, 1999. 13x27 mm Isla Espíritu Santo, Baja California; México, Coll. CNMO.063.  
Fig. 57. *Acanthochitona zebra* Lyons, 1988. 16x13 mm Punta Nizuc (Parque) Cancuac, Quintana Roo, México, Coll. ECOSUR-ACAN.005.



- Berkeley, 25(2): 93-138.
- FERREIRA A.J., 1983a. The genus *Chaetopleura* Shuttleworth, 1853 (Mollusca: Polyplacophora) in the warm temperate and tropical eastern Pacific, southern California to Perú, with the description of two new species. *The Veliger*, 25(3): 203-224.
- FERREIRA A.J., 1983b. The Chiton Fauna of the Revillagigedo Archipelago, México. *The Veliger*, 25(4): 307-322.
- FERREIRA A.J., 1984. A new species of *Ischnochiton* (Mollusca: Polyplacophora) in the Gulf of California. *The Veliger*, 26(3): 179-182.
- FERREIRA A.J., 1985. Three new species of *Lepidozona* (Mollusca: Polyplacophora) from the Gulf of California. *The Veliger*, 27(4): 423-429.
- FISCHER W., KRUPP F., SCHNEIDER W., SOMMER C., CARPENTER K. & NIEM V.H., 1995. Guía FAO para la Identificación de Especies para los fines de la Pesca, Pacífico Centro-Oriental. Volumen I: Plantas e Invertebrados. Roma, FAO, Vol. I: 1-646.
- FLORES-RODRÍGUEZ P., FLORES-GARZA R., GARCÍA-IBÁÑEZ S. & VALDESGONZÁLEZ A., 2001. Malacofauna y estructura trófica del mesolitoral rocoso en la Costa Grande, Guerrero, México, pp. 32. In Correa-Sandoval, Alfonso (ed). 2001. *Resúmenes de la VIII Reunión Nacional de Macología y Conquiliología*, Cd. Victoria, Tamaulipas, México.
- GONZÁLEZ N.O. & SÁNCHEZ-NAVA S., 1986. Nota de Moluscos como fauna de acompañamiento de crustáceos de la Isla Clarión, México. *Dirección General de Oceanografía Naval, Investigaciones Oceanográficas*, Secretaría de Marina, Baja California, México, 3(1):153-182.
- GONZÁLEZ N.E., 1993. Moluscos endémicos del Pacífico de México, pp 223-252. In Salazar-Vallejo and N.E. González, (eds), 1993. *Biodiversidad Marina y Costera de México*. Comisión Nacional para la Biodiversidad y CIQRO, México.
- HENDRICKX M.E. & TOLEDANO GRANADOS A., 1994. Catálogo de Moluscos, Colección de Referencia, Estación Mazatlán, ICMYL, UNAM. Comisión Nacional para el Conocimiento y uso de la Biodiversidad, Instituto de Ciencias del Mar y Limnología, UNAM: 71 pp.
- HOLGUIN Q.O., 1994. Comunidades marinas bentónicas. In Ortega & Castellanos, editors. *La Isla Socorro, Reserva de la Biosfera, Archipiélago de Revillagigedo*, México. Publicación No. 8. CIB-Nor, S. C. México: 225-245.
- HOLGUIN Q.O. & GONZÁLEZ P.A., 1989. Moluscos de la franja costera del Estado de Oaxaca, México. *Atlas CICIMAR*, 7: 221 pp.
- HOLGUIN Q.O. & MICHEL-MORFÍN J.E., 2002. Distribution, density and length-weight of *Chiton articulatus* Sowerby, 1832 (Mollusca: Polyplacophora) on Isla Socorro, Revillagigedo Archipelago, México. *Journal of Shellfish Research*, 21(1): 239-241.
- HOLGUIN Q.O., WRIGHT LÓPEZ H. & FELIX PICO E.F., 2000. Moluscos intermareales y de fondos someros de la Bahía de Loreto, B.C.S. México. *Océánides*, 15(2): 91-115.
- HOLGUIN Q.O., MILLÉ-PAGAZA. & PÉREZ-CHI A., 1992. Resultado de las campañas de muestreo de 1991 para el estudio del bentos marino de la Isla Socorro, Revillagigedo, Colima, México. *Revista Zoológica Informa. Escuela Nacional de Ciencias Biológicas, Instituto Politécnico Nacional*, México, (24): 1-20.
- KAAS P., 1993. *Ischnochiton mexicanus*, a new abyssal chiton from the Gulf of Mexico (Polyplacophora: Ischnochitonidae). *Basteria*, 57: 107-109.
- KAAS P. & VAN BELLE R.A., 1985a. *Monograph of Living Chitons (Mollusca: Polyplacophora)*. Vol. 1. Order Neoloricata: Lepidopleurina. Leiden, E.J.Brill/ W.Backhuys: 240 pp.
- KAAS P. & VAN BELLE R.A., 1985b. *Monograph of Living Chitons (Mollusca: Polyplacophora)*. Vol. 2. Suborder Ischnochitonina. Ischnochitonidae: Schizoplacinae, Callochitoninae & Lepidochitoninae. Leiden, E.J.Brill/ W.Backhuys: 198 pp.
- KAAS P. & VAN BELLE R.A., 1987. *Monograph of Living Chitons (Mollusca: Polyplacophora)*. Vol. 3. Suborder Ischnochitonina: Chaetopleurinae & Ischnochitoninae (pars). Additions to Vols. 1 & 2. Leiden, E.J.Brill/ W.Backhuys: 302 pp.
- KAAS P. & VAN BELLE R.A., 1990. *Monograph of Living Chitons (Mollusca: Polyplacophora)*. Vol. 4. Suborder Ischnochitonina: Ischnochitonidae: Ischnochitoninae (continued). Additions to vols. 1, 2 and 3. Leiden, E.J.Brill: 298 pp.
- KAAS P. & VAN BELLE R.A., 1994. *Monograph of Living Chitons (Mollusca: Polyplacophora)*. Vol. 5. Suborder Ischnochitonina: Ischnochitonidae: Ischnochitoninae (concluded), Callistoplacinae; Mopaliidae. Additions to vols. 1-4. Leiden, E.J.Brill: 402 pp.
- KAAS P. & VAN BELLE R.A., 1998. *Catalogue of Living Chitons (Mollusca: Polyplacophora)*. Second edition. Backhuys Publishers: 204 pp.
- REGUERO M. & GARCÍA-CUBAS A., 1989. Moluscos de la plataforma continental de Nayarit sistemática y ecología (cuatro campanas oceanográficas) *Anales del Instituto de Ciencias del Mar y Limnología. Universidad Nacional Autónoma de México*, 16(1): 33-58.
- REYES-GÓMEZ A., 1999. *Sistemática de los Quitones (Mollusca: Polyplacophora) de la Colección Nacional de Moluscos del Instituto de Biología, UNAM*. Tesis profesional, Facultad de Ciencias, Universidad Nacional Autónoma de México (UNAM): 184 pp.
- REYES-GÓMEZ A., & SALCEDO-VARGAS M.A., 2002. The Recent Mexican Chiton (Mollusca: Polyplacophora) Species. *The Festivus*, 34(2): 17-27.
- ROJAS-HERRERA A., 1988. Análisis Biológico-Pesquero de la cucaracha de mar (*Chiton articulatus* Sowerby, 1832) de Acapulco, Guerrero, México. In: *Memorias IX Congreso Nacional de Zoología, México*. Universidad Autónoma de Juárez, Tabasco & Sociedad Mexicana de Zoología, Villahermosa, Tabasco: 151-156.
- SALAZAR-VALLEJO S. & GONZÁLEZ N.E., 1993. *Biodiversidad Marina y Costera de México*. CONABIO-CIQRO. Quintana Roo, Chetumal, México: 865 pp.
- SANSORES-LULÉ MA. DE A., ÁLVAREZ-HERNÁNDEZ J.H., MANZANILLA D.E., CHAN P.O., 2001. Distribución y abundancia de los moluscos asociados a la laguna arrecifal de Mahahual [época de Nortes] en el sur del estado de Quintana Roo, México, pp 31-32. In Correa-Sandoval, Alfonso (ed). 2001. *Resúmenes de la VIII Reunión Nacional de Macología y Conquiliología*, Cd. Victoria, Tamaulipas, México.
- SKOGLUND C., 2001. Panamic Province, Molluscan Literature, Additions and Changes from 1971 through 2000: I Bivalvia, II Polyplacophora. *The Festivus*, (33), Supplement: 20 pp. [Polyplacophora section].
- SLIEKER F.J.A., 2000. *Chitons of the World, an Illustrated Synopsis of Recent Polyplacophora*. Mostra Mondiale Malacologia, Cupra Marittima, Italy: 154 pp.
- WATTERS G.T., 1981. Two New species of *Acanthochitona* from the New World (Polyplacophora: Cryptoplacidae). *The Nautilus*, 95(4): 171-177.
- WATTERS G.T., 1990. A review of the Recent eastern Pacific Acanthochitoninae (Mollusca: Polyplacophora: Cryptoplacidae) with the description of a new genus *Americhiton*. *The Veliger*, 33(3): 241-



271.