

**First record of *Axiopsis serratifrons* (A. Milne Edwards, 1873) (Crustacea: Decapoda: Thalassinidea) in western Mexico**  
**Primer registro de *Axiopsis serratifrons* (A. Milne Edwards, 1873) (Crustacea: Decapoda: Thalassinidea) en México occidental**

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**Abstract.** The thalassinid *Axiopsis serratifrons* (A. Milne Edwards, 1873) has been discovered in subtropical waters of the Gulf of California, Mexico, in the eastern Pacific. The large male specimen of this species, collected by scuba diving on rocky substrate, represents the first record north of Colombia along the coast of the eastern Pacific. The material was compared to specimens from the Indo-Pacific and the morphology of its 4th and 5th thoracic sternites closely matches recent description by other authors.

**Keywords:** *Axiopsis serratifrons*, Axiidae, new record, Mexican Pacific.

**Resumen.** El talasinideo *Axiopsis serratifrons* (A. Milne Edwards, 1873) fue encontrado en las aguas subtropicales del golfo de California, México, en el Pacífico este. El espécimen, un macho de gran talla, fue recolectado por medio del buceo libre en fondos rocosos; se trata del primer registro de esta especie al norte del Pacífico colombiano. El material disponible fue comparado con especímenes del Indo-Pacífico y la morfología de las placas esternales 4 y 5 concuerda con su reciente descripción por otros autores.

**Palabras clave:** *Axiopsis serratifrons*, Axiidae, nuevo registro, Pacífico este.

*Axiopsis serratifrons* (A. Milne Edwards, 1873) was described from Hawaii and has since been reported for many localities in the Indo-Pacific (Sakai and de Saint Laurent, 1989). In 1980 it was also reported from several localities in the West Atlantic (Belize, Florida and Bermuda) (Kensley, 1980), where the species occurs abundantly in coral patches and under dead coral. This American material (including a large male of 62.0 mm TL and a large ovigerous female of 59.0 mm TL) was compared to a series of specimens from the Indo-Pacific kept in the United States National Museum (including a male of 35 mm TL and a female of 29.2 mm TL) and the species was redescribed.

In 1992, *Axiopsis serratifrons* was later reported from Gorgona Island, Pacific Colombia by Lemaître and Ramos (1992), who also presented a rather complete illustration of this species and some remarks on its morphology, and from Ascension Island, Central Atlantic (Manning and Chace, 1990).

Since the discovery of *A. serratifrons* in the western Atlantic, the family Axiidae has been reviewed (Sakai and de Saint Laurent,

1989). An illustration and a description of the 4th and 5th thoracic sternites in *A. serratifrons* were provided, and were used as an important diagnostic characteristic at generic level.

The examination of a specimen of Axiidae received on loan from the Allan Hancock Foundation and its comparison with material from the Indo-Pacific previously cited in literature (Sakai and de Saint Laurent, 1989), and with the redescription of this species (Kensley, 1980; Lemaître and Ramos, 1992) indicates that *A. serratifrons* is also present in the Mexican Pacific.

Abbreviations used are: TL, total length; CL, carapace length; LACMNH, Los Angeles County Museum of Natural History; MNHP, Museum national d'Histoire naturelle, Paris.

*Axiopsis serratifrons* (A. Milne Edwards, 1873) Figs. 1, 2

**Material examined.**- El Bajo Sea Mount (25 nm NE of La Paz), Baja California, Mexico, 15/08/86, 1 male (TL 51.7 mm; CL 19.6 mm), 21 m, scuba diving, rocky substrate, *A. Kerstitch* (LACMNH C.R. 1986-705.1).

Aldabra, Seychelles Islands, 16/05/61, 1 female (TL 26 mm; CL 8 mm), 20 m, "Calypto"; *id. M. de Saint Laurent* (MNHN Th 690).

Japan, 1977, 1 male (TL 36.9 mm; CL 11.2 mm), no depth recorded, *Sakai; id. M. de Saint Laurent* (MNHN Th 864).

**Comments.**- The specimen collected in the Gulf of California (El Bajo Sea Mount) is similar in size to the largest specimens reported from the eastern Atlantic by Kensley (1980) and slightly larger than the male reported from Ascension Island, Central Atlantic by Manning and Chace (1990). The colour of the freshly collected specimen was "dark maroon and white markings" (notes by A. Kerstitch), similar to the "chestnut-brown" colour of carapace with "pale blotches and pale areas" reported for the male specimens collected in Belize and Bermuda (Kensley, 1980).

The eastern Pacific material reported here, share diagnostic characteristics with *A. serratifrons*, including: the typical dorsal armature of anterior carapace (carapace carinae spination, from left to right: 15, 13, 16, 15, 18) (Fig. 1B); the small ventrolateral marginal spine on pleura 3-6 (Fig. 1A); the shape and spination of the third

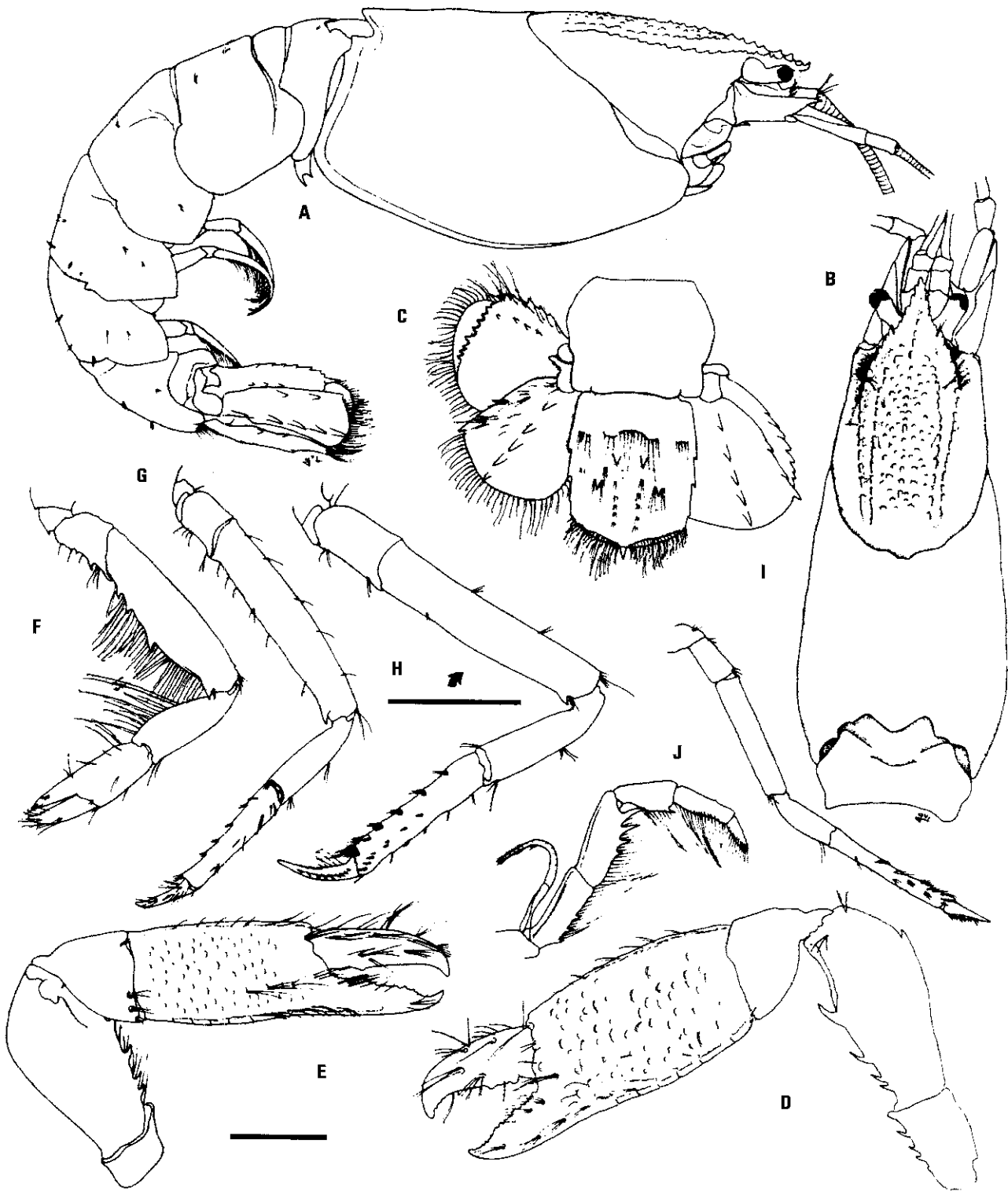


Figure 1. *Axiopsis serratifrons* (A. Milne Edwards), Gulf of California, Mexico (LACMNH C.R. 19867051).- A. Lateral view of carapace and abdomen.- B. Dorsal view of cephalothoracic shield.- C. Dorsal view of telson and uropods. D. Major (left) first pereiopod.- E. Minor (right) first pereiopod.- F. Second (left) pereiopod.- G. Third (left) pereiopod.- H. Fourth (left) pereiopod.- I. Fifth (left) pereiopod.- J. Third maxilliped, ventral view. Scale bar: 5 mm.

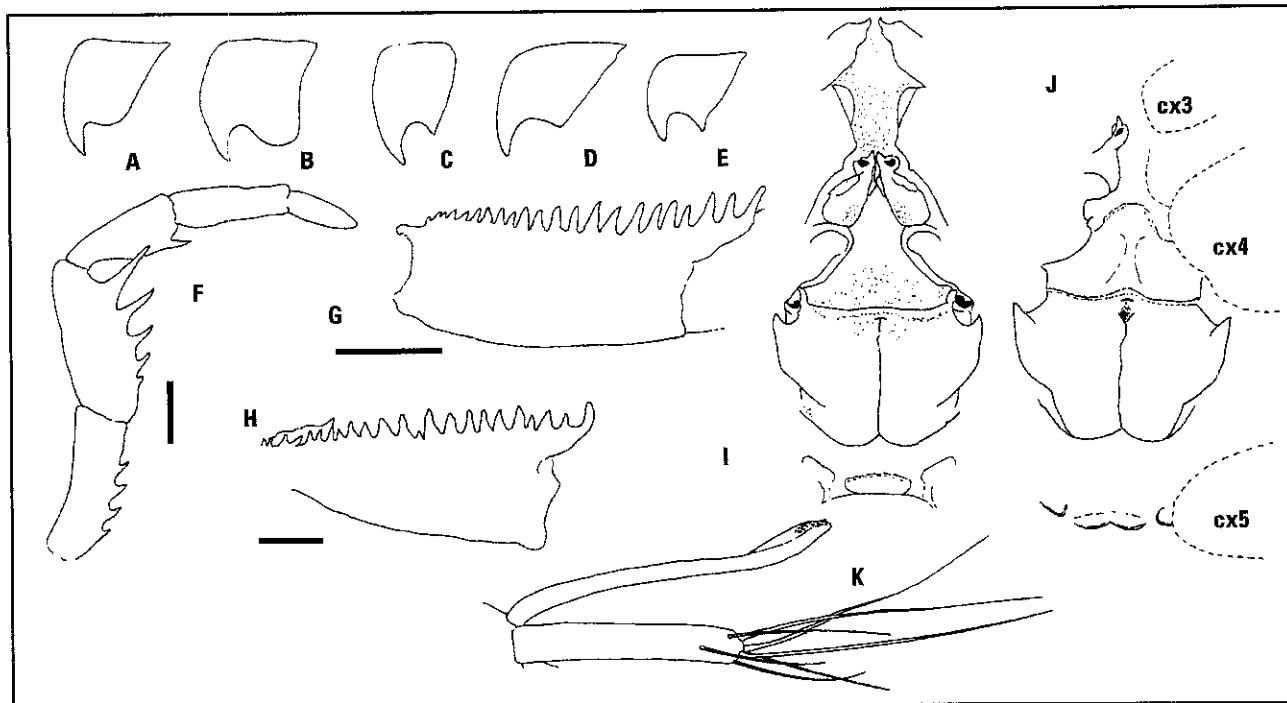


Figure 2. *Axiopsis serratifrons* (A. Milne Edwards).- A-E. Coxal plate of fifth pereiopod in specimens (from A to E) from Gilbert I., Japan, Gulf of California, Bermuda and Belize.- F. Third maxilliped of specimen from Japan (MNHN Th 864).- G. Same, inner view of ischium.- H. Inner view of ischium of third maxilliped, Gulf of California specimen (LACMNH C.R. 19867051).- I. Thoracic shield (sternites 3-5), specimen from New Caledonia (MP 691).- J. Thoracic shield (partly damaged), specimen from Gulf of California (LACMNH C.R. 19867051).- K. Appendices interna and masculina (same specimen) (Figs. A,D,E reproduced from Kensley, 1980; Fig. I reproduced from Sakai and de Saint Laurent, 1989). Scale bar: 1 mm. cx, coxae.

maxilliped, including the presence of a row of about 20-23 spines on the inner surface of the ischium (Figs. 1J, 2H); the ventral spination on the merus and ischium of first and second pereiopods and the shape of the chelae (Fig. 1E, D); the spines pattern on the telson (Fig. 1C). All these characteristics, including the spination on the 3rd maxilliped (Fig. 2F, G) were observed on the specimen from Japan (MNHN Th 864) and are also reported for the western Atlantic specimens (Kensley, 1980), although variations in the number of dorsal spines on carapace were observed among the Atlantic material. The structure of the grooming apparatus of pereiopod 5 also seems to be quite variable in *A. serratifrons* (Kensley, 1980); our specimens present a grooming structure similar to the Florida and Belize specimens previously reported (Kensley, 1980) and features 11 small spines.

Perhaps the most striking feature of *A. serratifrons* is the structure of the 4th and 5th thoracic sternites, illustrated in 1989 and considered diagnostic (Sakai and de Saint Laurent, 1989) and which is closely matched in the Gulf of California specimen (Fig. 2I), except for the fact that the latter material presents a median notch on the 5th sternite (Fig. 2J).

The shape of the coxal plate of the 5th pereiopod seems to vary following a west-east gradient; specimens from Gilbert Island (Fig. 2A) and from Japan (Fig. 2B) feature a ventral spine and a lobe, while the American material features two ventral spines (Fig. 2C-E),

except for the male specimen reported by Manning and Chace (1990: fig. 17, c) from Ascension Island which also seems to present a sharp spine and a lobe on the ventral side of this coxal plate (although the illustration does not allow a very accurate comparison).

The proportions of the appendix masculina and the appendix interna of specimens from Belize and Florida (Kensley, 1980) and from the Gulf of California (0.7) (Fig. 2K) differ significantly from those of the Gilbert Island specimen (0.9), but the Bermuda specimen features a 0.6 ratio (Kensley, 1980) and the Ascension specimen a 0.85 ratio (Manning and Chace, 1990). Number of distal setae of the appendix masculina seems to vary considerably, from 6 to 10 (Kensley, 1980). The Gulf of California specimen features 7 setae (Fig. 2K).

While the large first chela of the Gulf of California specimen is only slightly longer (length/width 2.2) than western Atlantic specimens (length/width 1.6 to 2.1) (Kensley, 1980) the small chela is proportionally much longer (length/width 3.35 vs. 1.9 to 2.7). The proportion of the Central Atlantic male reported by Manning and Chace (1990: fig. 17) is strikingly different: large chela length/width 4.2; small chela length/width 4.8. But this might be due to regeneration (Manning and Chace, 1990).

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## REFERENCES

- KENSLEY, B., 1980. Notes on *Axiopsis (Axiopsis) serratifrons* (A. Milne Edwards, (Crustacea: Decapoda: Thalassinidea). *Proceedings of the Biological Society of Washington* 93 (4): 1253-1263.
- LEMAITRE, R. & G. E. RAMOS, 1992. A collection of Thalassinidea (Crustacea: Decapoda) from the Pacific Coast of Colombia, with description of a new species and a checklist of Eastern Pacific species. *Proceedings of the Biological Society of Washington* 105 (2): 343-358.
- MANNING, R. B. & F. A. CHACE, JR., 1990. Decapod and stomatopod crustacea from Ascension Island, South Atlantic Ocean. *Smithsonian Contributions to Zoology* 503: 1-82.
- SAKAI, K. & M. DE SAINT LAURENT, 1989. A checklist of Axiidae (Decapoda, Crustacea, Thalassinidea, Anomura), with remarks and in addition descriptions of one new subfamily, eleven new genera and two new species. *Naturalists* 3: 1-104.
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## A benthic mollusks checklist from laguna Cuyutlán, Colima, Mexico

### Listado de moluscos bénticos de la laguna de Cuyutlán, Colima, México

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**Abstract.** A malacological list of Laguna Cuyutlán in the state of Colima, Mexico and its surrounding area is provided. The list includes all species collected during the spring and fall of 1986. Inside the lagoon 54 species that belong to 38 genera, 26 families, and two classes were identified. In the sea surrounding the lagoon, 70 species were found that belong to 52 genera, 32 families, and 3 classes. The maximum number of species was found in the adjacent marine zone. In the surrounding sea, were found Gastropoda, Pelecypoda, and Scaphopoda classes. Inside the lagoon only Gastropoda and Pelecypoda classes were found.

**Key words:** Benthic mollusks, Laguna Cuyutlán Colima, Marine Ecology.

**Resumen.** En este trabajo se proporciona la lista malacológica de la Laguna de Cuyutlán, Colima, México y zona marina adyacente. La lista incluye las especies recolectadas durante las estaciones de primavera y otoño de 1986. En la laguna se identificaron 54 especies, pertenecientes a 2 Clases, 26 familias y 38 géneros. En el mar se encontraron 70 especies, pertenecientes a 3 Clases, 32 familias y 52 géneros. El mayor número de especies se presentó en la zona marina adyacente. En donde fueron encontradas las clases Gastropoda, Pelecypoda, y Scaphopoda. Dentro de la Laguna, solamente las clases Gastropoda y Pelecypoda, fueron halladas.

**Palabras clave:** Moluscos bénticos, laguna Cuyutlán, Colima, ecología marina.

It is well known that coastal lagoon contain considerable fishery resources (Hildebrand, 1946; Günther, 1969; Stuardo and Villarroel, 1976). For this reason, benthic resources, such as mollusks, are one of the most important groups to be surveyed prior to any proposal for a rational management inside lagoons (Yañez-Arancibia and Nugent, 1975).

The sessile characteristics of the benthic communities and its resilience cause such communities to be good ecological indicators of potential modifications by external influences. Benthic organisms are usually selected for this kind of studies because of their abundance, diversity, and trophic importance (Cobo, 1978).

Taxonomic lists are an important perspective on the biodiversity composition of a specific area. Taxonomic lists show a primary element for environmental assessments, as well as the basis for studies addressing the requirement of establishing rules for the rational use of natural resources (Cruz-Agüero, *et al.*, 1994).

There are very few studies on Laguna Cuyutlán (Cobo, 1978; Treviño and González, 1984; Ascencio, 1985). There is no study dealing with the Cuyutlán benthic communities, and there is not any taxonomic list of mollusks. For this reason, the Universidad Nacional Autónoma de México developed an environmental impact assessment study in the Laguna Cuyutlán in 1986.