

**Fossil Asterozoa (Echinodermata) of Argentina**Sergio Martínez<sup>1</sup> & Claudia del Río<sup>2</sup>

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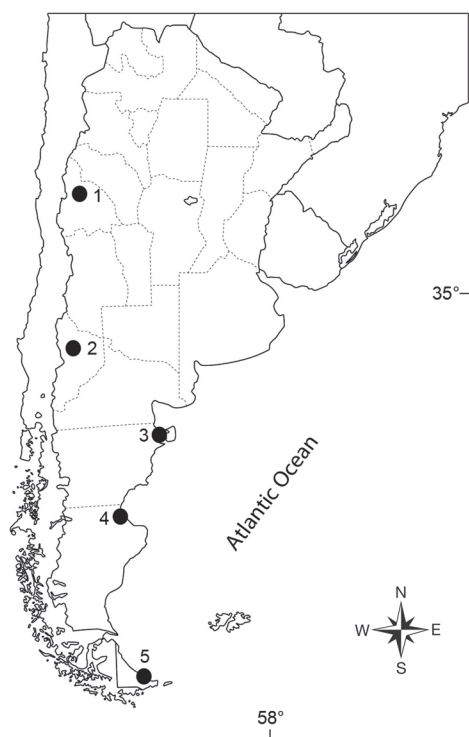
**Abstract:** The fossil Asterozoa of Argentina have received scant attention. Marine rocks of Early Devonian-Late Miocene age yield ten species of Asterozoa (four Asteroidea and six Ophiuroidea), including the new Neogene record of *Astropecten* sp. presently introduced. Due to homonymy, *Marginix* nomen novum is proposed as a substitution of *Marginura* (Ophiuroidea, Encrinasteridae). Rev. Biol. Trop. 63 (Suppl. 2): 1-6. Epub 2015 June 01.

**Key words:** Asterozoa, Ophiuroidea, Asteroidea, Devonian, Cretaceous, Tertiary, Argentina.

Although uncommon in South America, fossil Asterozoa of Argentina are fairly well documented but have received scant attention. This is a brief reference to these findings (Fig. 1), also incorporating to the list a new record of the genus *Astropecten* for the Neogene of Patagonia. It was recorded a total of 10 species: four from the Devonian (three ophiuroids and one asteroid), one from the Cretaceous (asteroid), one from the Maastrichtian-Danian (asteroid), one from the Eocene (ophiuroid), and three from the Miocene (two ophiuroids and one asteroid). It must be pointed out that those merely mentions of high taxonomic ranks (e.g. Bertels, 1965; Pérez et al., 2011), and any reference without factual basis (e.g. de Sáez, 1928) have been excluded from the present summary.

Abbreviations used in this paper:

CNP-PIIc. Centro Nacional Patagónico, Paleontological Collection, Argentina  
 CORD PZ. Museo de Paleontología, Universidad Nacional de Córdoba, Argentina.  
 CPBA. Cátedra de Paleontología de la Universidad de Buenos Aires, Argentina.



**Fig. 1.** Localities mentioned in the text. 1. Jachal. 2. Pampa Tril. 3. Península Valdés. 4. Punta Maqueda. 5. Punta Torcida.

IMGP. Göttinger Geologisch-Paläontologischen Instituts.

MACN- Pi. Colección de Paleontología Invertebrados, Museo Argentino de Ciencias Naturales “Bernardino Rivadavia”, Argentina.

MLP. Museo de La Plata, Argentina.

NYSM. New York State Museum, USA.

## TAXONOMY

Class Asteroidea Blainville, 1830

Order Paxillosida Perrier, 1884

Family Astropectinidae Gray, 1840

Genus *Pentasteria* Valette, 1929

*Pentasteria (Archastropecten) wilckensis*  
(de Loriol, 1905)

Fig. 2 A

1905. *Astropecten Wilckensis* de Loriol, p. 25 pl. III. Figs. 8 - 9.

1905. *Astropecten Wilckensis*: Wilckens, p. 55.

1929. *Astropecten Wilckensis*: Valette, p. 416.

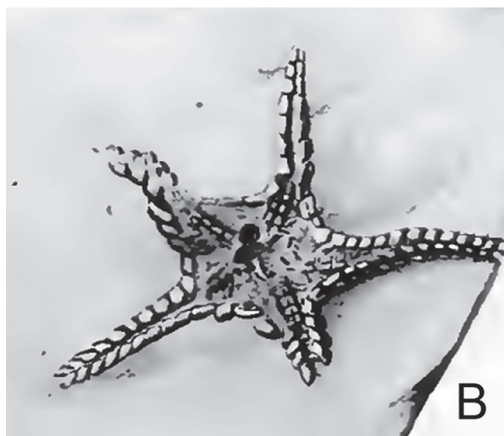
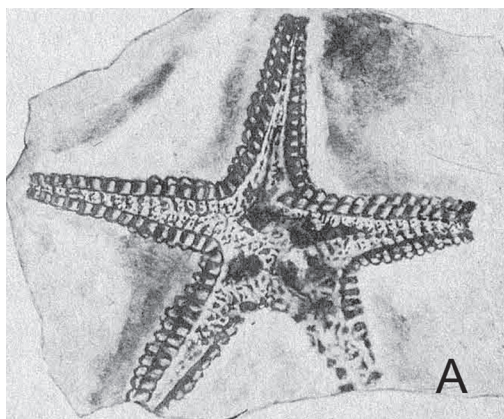
1944. *Astropecten Wilckensis*, Hérengruer, p. 45.

1955. *Archastropecten wilckensis*: Hess, p. 45.

**Type material:** Presumably lost. Hess (1955:46) proposed as Holotype the specimen illustrated in Plate 3, Figure 8 from de Loriol (1905), here reproduced in Fig. 2 A.

**Geographic and stratigraphic distribution:** “Cerro Cazador, Patagonie méridionale. Crétacé” (de Loriol, 1905); Wilckens (1905) precises the location in Sierra Dorotea, “h” and “i” beds of Cerro Cazador strata; today included in the Maastrichtian-Danian Río Chico Formation, Argentina (Malumián & Panza, 2000).

**Comments:** According to Hess (1960) and Spencer & Wright (1966), *Archastropecten* Hess, 1955 is a subgenus of *Pentasteria* Valette, 1929.



**Fig. 2.** A. *Pentasteria (Archastropecten) wilckensis* (de Loriol, 1905) (from de Loriol, 1905: pl. 3, Fig. 8). B. *Argentinaster bodenbenderi* Ruedemann, 1916 (Holotype, from Ruedemann, 1916: pl. 18, Fig. 6).

*Astropecten* sp.

Fig. 3 A

**Type material:** MACN- Pi 5414.

**Geographic and stratigraphic distribution:** Two km south from Punta Maqueda, Santa Cruz Province, Argentina. Chenque Formation, Early Miocene.

**Comments:** The present comprises the first mention of this genus for the Neogene strata of Argentina. The preservation of the available material prevent us to identify it at species level.

Genus *Tethyaster* Sladen, 1889  
*Tethyaster antares*  
Fernández, Pérez, Luci & Carrizo

2014. *Tethyaster antares* Fernández, Pérez,  
Luci & Carrizo, p. 214, Figs. 4 - 5.

**Type material:** Holotype CPBA 16991  
(Fernández *et al.* 2014).

**Geographic and stratigraphic distribu-  
tion:** Lowermost beds of the Mulichinco  
Formation at the Pampa Tril locality (37° 15' S  
- 69° 47' W), Neuquén Basin, Argentina. Early  
Cretaceous (Fernández *et al.*, 2014).

Order Valvatida Perrier, 1884  
Family Promopalaeasteridae Schuchert, 1914  
Genus *Promopalaeaster* Schuchert 1914  
*Promopalaeaster ? quadriserialis*  
Haude, 1995

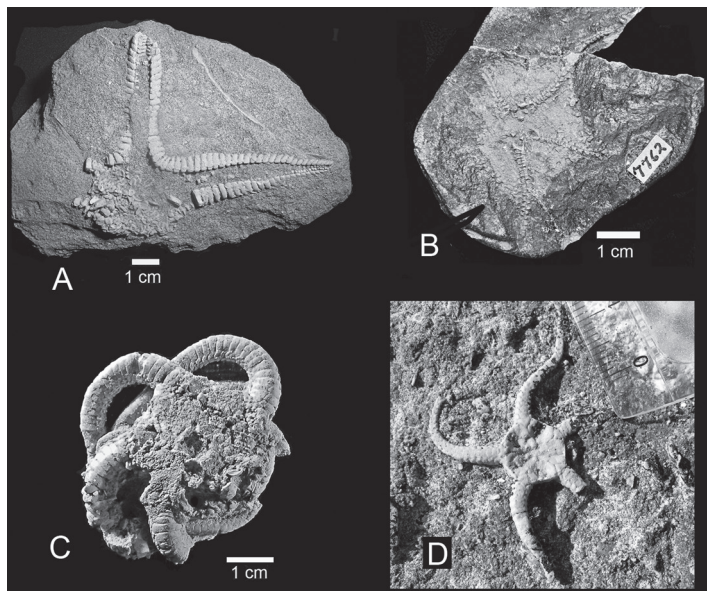
1897. Seesterne: Kayser, p. 303. (*partim*)  
1995. *Promopalaeaster ? quadriserialis* Haude,  
p. 58, Figs. 8 - 9.  
2010. Ofiuroides. Benedetto, Fig. 5.32.4.

**Type material:** Holotype Fig. 9A of Haude  
(1995) (latex pull of IMGP Gö 494-(VII)-  
86. Paratypes IMGP Gö-494-(VI)-84, -(VII)-  
87, -(IX)-97a, b, -(IX)-101a, b, -(IX)-101Sa,  
b, -(VII)-115, -(V)-118; CORD PZ-151.4(?)  
(Haude, 1995).

**Geographic and stratigraphic distribu-  
tion:** Surroundings of Jachal, San Juan Pro-  
vince. Talacasto Formation, Early Devonian  
(Haude 1995, 2010).

Class Ophiuroidea Gray, 1840  
Order Oegophiurida Matsumoto, 1915  
Family Encrinasteridae Schuchert 1914  
Genus *Marginix* nomen novum

**Comments:** Haude (1995) erected the  
genus *Marginaster*, but the name was occu-  
pied by *Marginaster* Perrier, 1881 (Asteroidea,  
Poraniidae). In consequence, Haude (1999)  
proposed the new name *Marginura* as a substi-  
tute. But *Marginura* Sellnick, 1926 (p. 38)  
(Arthropoda, Arachnida, Acari) also occupies  
this name; therefore we propose *Marginix*  
nomen novum as a replacement of *Marginura*



**Fig. 3.** A. *Astropecten* sp. (photo from the authors). B. *Marginix yachalensis* (Ruedemann, 1916), rubber pull from the Holotype (see also comment in Haude 1999) (photo from Ed Landing, NYSM). C. *Ophioderma bonaudoae* Martínez & del Río, 2008, Holotype (photo from the authors). D. *Ophiocrossota kollebergerorum* Caviglia, Martínez & del Río, 2007, specimen w/n in the field (photo from the authors).

Haude (non *Marginura* Sellnick) The new name retains the stem “margin”, adding the latin suffix - ix.

*Marginix yachalensis*  
(Ruedemann, 1916)  
Fig. 3.B

1897. “Bruchstück eines Seesternes”: Kayser, p. 303. pl. 12., Fig. 2.  
1916. *Encrinaster yachalensis* Ruedemann, p.117, pl 18, Figs. 1 - 5.  
1966. *Encrinaster jachalensis*: Castellaro, p. 46.  
1995. *Marginaster yachalensis*: Haude, p. 64, Figs. 10 - 11.  
1999. *Marginura yachalensis*: Haude, p. 292.  
2013. *Marginura yachalensis*: Martin-Medrano & García-Barrera, p. 505.

**Type material:** Holotype NYSM 7762.

**Other material:** Haude (1995): IMGP Gö 494(II)-69a, IMGP Gö 494(II)-69b, -(V)-119; CORD PZ 151.1

**Geographic and stratigraphic distribution:** Surroundings of Jachal, San Juan Province. Talacasto Formation, Early Devonian (Haude 1995, 2010).

Family Furcasteridae Stürtz, 1886  
Genus *Furcaster* Stürtz, 1886  
*Furcaster separatus* Haude 1995

**Type material:** Holotype: an individual from IMGP Gö 494-(VII) J88, there is a cast named as Abb. 12A, B; Paratype I: -tGP Gö 494-(XI)-1 H (Haude, 1995).

**Geographic and stratigraphic distribution:** Surroundings of Jachal, San Juan Province. Talacasto Formation, Early Devonian (Haude 1995, 2010).

Order Ophiurida Müller & Troschel, 1840  
Family Ophiodermatidae Ljungman, 1867  
Genus *Ophioderma* Müller & Troschel, 1842  
*Ophioderma bonaudoae*  
Martínez & del Río, 2008  
Fig. 3.C

2005. Ophiurida: Martínez et al., p.63.  
2008. *Ophioderma bonaudoae* Martínez & del Río, p. 47, plate 1, Figs. A - G.

**Type material:** Holotype CNP-PIIc 00233, Paratype CNP-PIIc 00234 (Martínez & del Río, 2008)

**Geographic and stratigraphic distribution:** Estancia San Lorenzo, 18 km west to Punta Norte, Península Valdés, Chubut Province, Argentina. Puerto Madryn Formation, Late Miocene (Martínez & del Río 2008).

Family Ophiuridae Gregory, 1897  
Genus *Argentinaster* Ruedemann, 1916  
*Argentinaster bodenbenderi*  
Ruedemann, 1916  
Fig. 2. B

1897. “Stelleriden und Ophiuriden”: Kayser, p. 303.  
1916. *Argentinaster bodenbenderi* Ruedemann, 1916, p.118, pl.18, Figs. 6-7. Figs. 38 - 39.  
1966. *Argentinaster bodenbenderi*: Castellaro, p.47  
1966. *Argentinaster bodenbenderi*: Spencer & Wright, p. U93.  
1989. *Argentinaster*: Waisfeld, p. 276.  
1995. *Argentinaster bodenbenderi*: Haude, p. 72, Figs. 13 - 14.

**Type material:** Holotype NYSM 7760 (number not provided in the original paper).

**Other Material:** IMGP Gö 494-(III)-73a, b. -(III)-74a, b, -(VI)-80, -(XII)-107, -(XII)-108; CORD PZ 131-2 (Haude 1995).

**Geographic and stratigraphic distribution:** Surroundings of Jachal, San Juan Province. Talacasto Formation, Early Devonian (Haude 1995, 2010).

Family Ophiuridae Müller & Troschel, 1840  
Genus *Ophiura* Lamarck 1801  
“*Ophiura*” *elegantoides*  
Furque & Camacho, 1949

1949. *Ophiura elegantoides* Furque & Camacho, p. 277, pl.1, Fig. 1.



2005. *Ophiura elegantoides*: Malumián & Olivero, p. 350.

**Type material:** Not stated in the original paper. Presumably lost.

**Geographic and stratigraphic distribution:** Punta Torcida, Isla Grande de Tierra del Fuego. According to Furque and Camacho (1949), the specimen was recorded in the “Estratos de Leticia”, of Late Cretaceous age, today placed in the Punta Torcida Formation (Lower Eocene) (Olivero & Malumián, 1999). More recently, Malumián and Olivero (2005) mention to have recorded numerous fragments of this species in the “coastal exposures” of the Leticia Formation (Upper-Middle Eocene).

Genus *Ophiocrossota* Clark, 1928  
*Ophiocrossota kollemborgorum*  
Caviglia, Martínez & del Río 2007  
Fig. 3. D

2007. *Ophiocrossota kollemborgorum* Caviglia, Martínez & del Río, p. 150, Figs. 2 - 3.

**Type material:** Holotype MLP 12465, Paratype: MLP 12466 (Caviglia et al., 2007).

**Geographic and stratigraphic distribution:** Two km south from Punta Maqueda, Santa Cruz Province, Argentina. Chenque Formation, Early Miocene (Caviglia et al., 2007).

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#### RESUMEN

**Fósiles de Asterozoa (Echinodermata) de Argentina.** Se registran 10 especies de Asterozoa fósiles de Argentina (cuatro Asteroidea y seis Ophiuroidea), desde el Devónico Temprano hasta el Mioceno Tardío, incluyendo un nuevo registro de *Astropecten* sp. Por homonimia,

*Marginix* nomen novum es propuesto para sustituir a *Marginura* (Ophiuroidea, Encrinasteridae).

**Palabras claves:** Asterozoa, Ophiuroidea, Asteroidea, Devónico, Cretácico, Terciario, Argentina.

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