

Fossil Asterozoa (Echinodermata) of ArgentinaSergio Martínez¹ & Claudia del Río²

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Received 07-VII-2014. Corrected 10-X-2014. Accepted 13-X-2014.

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.

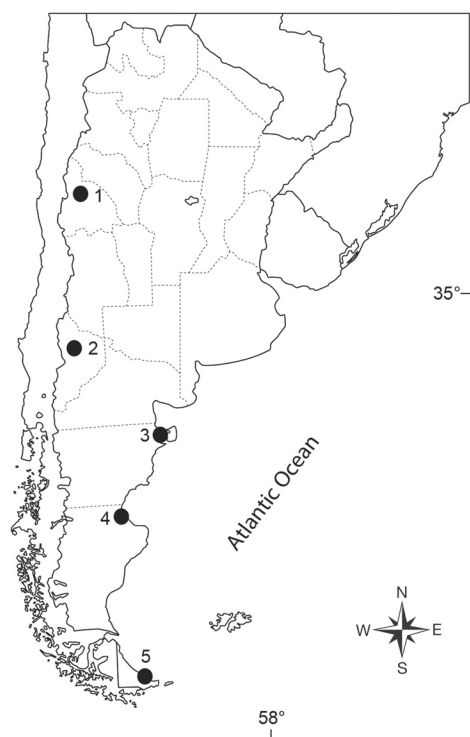


Fig. 1. Localities mentioned in the text. 1. Jachal. 2. Pampa Tril. 3. Península Valdés. 4. Punta Maqueda. 5. Punta Torcida.

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.

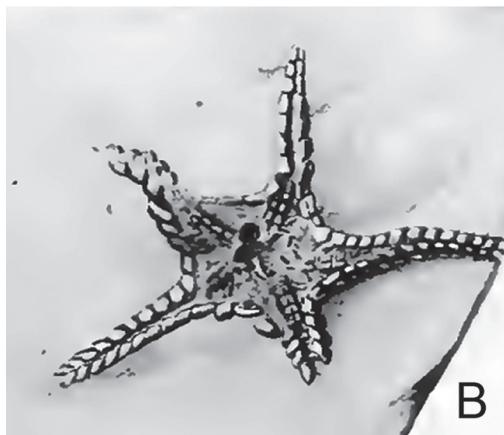
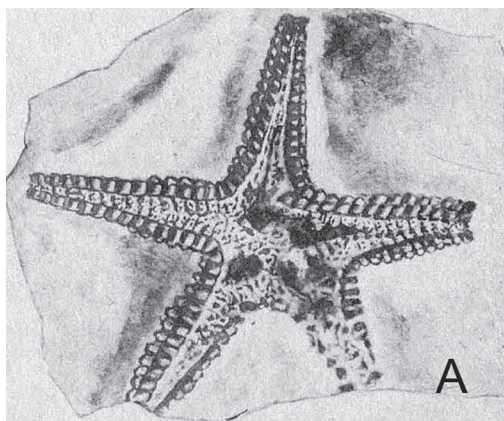


Fig. 2. A. *Pentasteria (Archastropecten) wilckensis* (de Loriol, 1905) (from de Loriol, 1905: pl. 3, Fig. 8). B. *Argentinaster bodembenderi* Ruedemann, 1916 (Holotype, from Ruedemann, 1916: pl. 18, Fig. 6).

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*

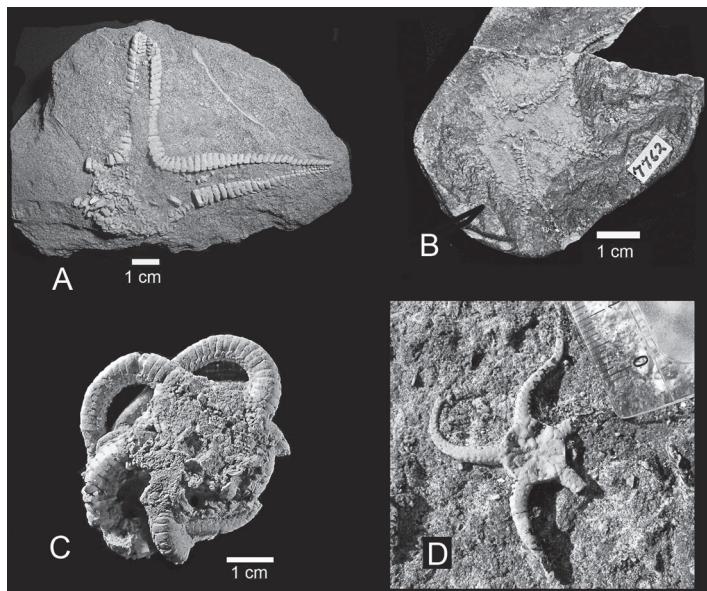


Fig. 3. A. *Astropecten* sp. (photo from the authors). B. *Marginix yachalensis* (Ruedemann, 1916), rubber pull from the Holotype (see also comment in Haude 1999) (photo from Ed Landing, NYSM). C. *Ophioderma bonaudoae* Martínez & del Río, 2008, Holotype (photo from the authors). D. *Ophiocrossota kollebergerorum*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

ACKNOWLEDGMENTS

We are very grateful to Ed Landing for giving information and photos of NYSM specimens, to Lionel Cavin for the search of de Loriol’s type material, and to Rodrigo Salvador, Antonio Carlos Siqueira Fernandes and Luic Villier for providing bibliography.

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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