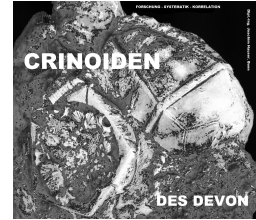


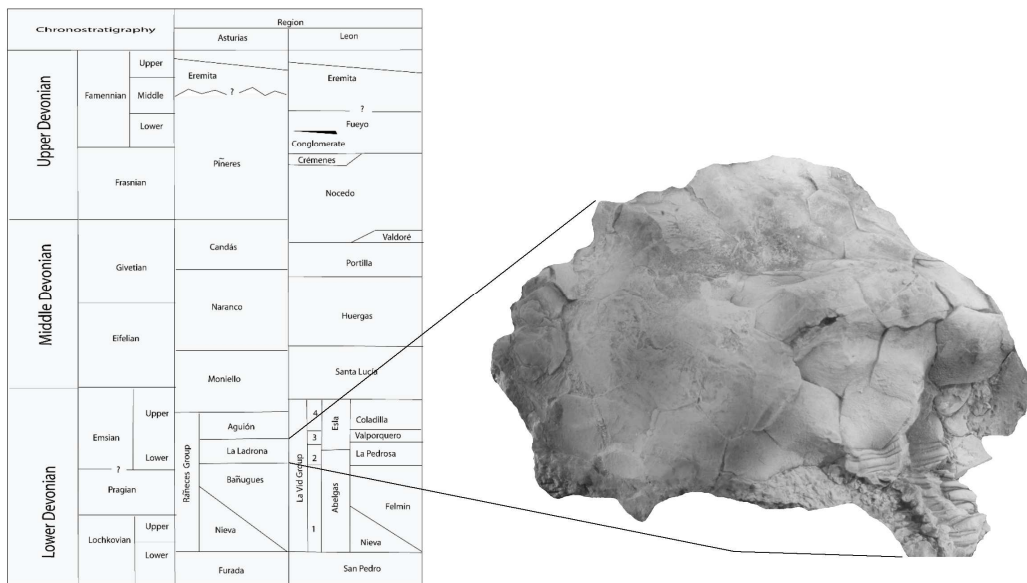
**Paläontological notice about the occurrence
of *Diamenocrinus-Thylacocrinus* lineage (Crinoidea, Camerata) in
the Lower Devonian of Bañugues (Asturias, Northern Spain)**

Dipl.-Ing. Joachim HAUSER, Von-Sandt-Street 95, Germany 53225 Bonn,
E-Mail: crinoiden-aus-dem-devon@arcor.de; Internet: www.devon-crinoiden.de
with 4 pages and 7 text-figures; published via Internet 02. Mai 2013



Introduction (by Fernando Gómez LANDETA & Joachim HAUSER)

The specimen described in this short paper was found by Fernando Gómez LANDETA more than thirty years ago in the beds of folded La Ladrona Formation (Lower-Upper Emsian), in the outcrop between the beach of Bañugues and Aguión Cape, in the East face of Cabo de Peñas (Asturias). Along with this specimen one crinoidal fauna was previously described from this outcrop: *Zenkericrinus* (*Zenkericrinus asturianus*) (HAUSER, 2010a), *Bactrocrinites* (*Bactrocrinites rauffi*) (HAUSER, 2010b) and *Oehlerticrinus* (*Oehlerticrinus anguliferus*) (HAUSER & LANDETA, 2013). The existence of crinoids in this area was previously unnoticed until these descriptions.



†Text-figure 1: Chronostratigraphy of the north-spanish Devonian (Asturias und León) after GARCIA-ALCALDE, J.L., CARLS, P., ALONSO, M.U.P., LÓPEZ, J.S., SOTO, F., TRUOLS-MASSONI, M. & VALENZUELA-RIOS, J.I. (2002): p. 69, fig. 6.2; added (right) with that in this paper described crinoid from the Bañugues-section

Kurzfassung: Erstmals wird eine Crinoide aus der *Diamenocrinus-Thylacocrinus*-Entwicklungslinie aus dem nordspanischen Unter-Devon (Asturien) beschrieben. Die gedrückt überlieferte Crinoide zeigt neue Merkmale in der Struktur und Zusammensetzung des CD-Bereichs (Analtafelserie). Sofern weitere Funde die Konstanz dieser Merkmale bestätigen, wird für derartige Crinoiden ein neues Genus vorgeschlagen: *Bañuguescrinus* n.gen.

Abstract: At the first time a calyce of the *Diamenocrinus-Thylacocrinus*-lineage found in the Bañugues-section (Asturias, northern Spain) is described from the Lower Devonian (La Ladrona Formation). The incomplete cup shows new characters in the CD-section (anal-plate-series). Probably it belongs to a new genus: *Bañuguescrinus* n.gen.

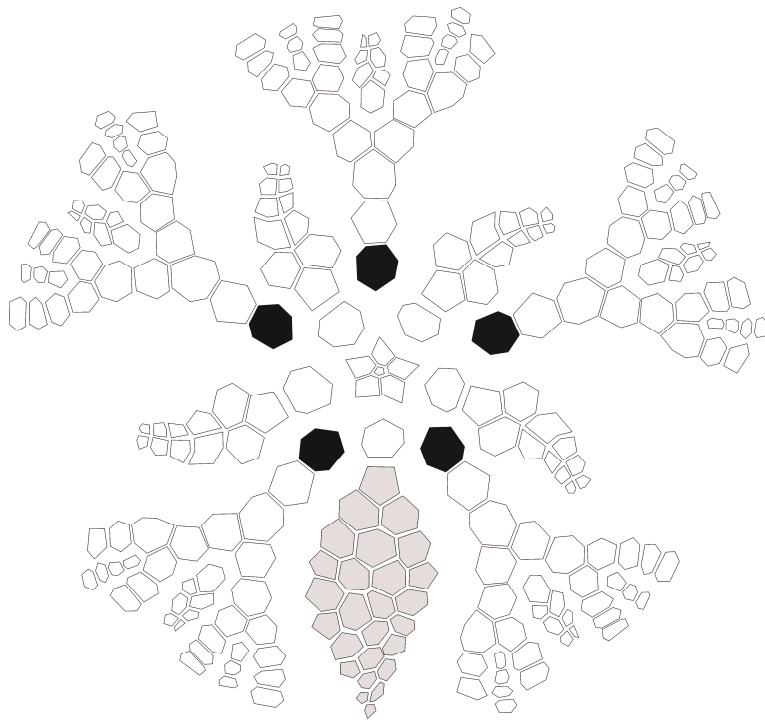
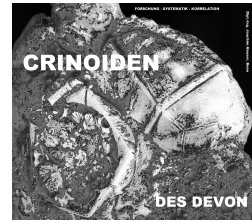
Resumen: Se describe por primera vez un fragmento de caliz y un pedúnculo del linaje *Dyamenocrinus-Thylacocrinus*, procedentes de la Formación Ladrona (Emsiense superior, bajo), en el afloramiento de Bañugues-Aguión, en el Cabo de Peñas. El caliz muestra características en la serie anal que podrían corresponder a un género nuevo.

Schlüsselwörter: Crinoidea, Camerata, *Diamenocrinus-Thylacocrinus*-Entwicklungslinie, Bañugues, Asturien, Nordspanien

Key-Words: Crinoidea, Camerata, *Diamenocrinus-Thylacocrinus*-lineage, Bañugues, Asturias, northern Spain

Systematics (by Joachim HAUSER with contributions of Fernando Gómez LANDETA)

- Classe** Crinoidea J. S. MILLER, 1821
- Subklasse** Camerata WACHSMUTH & SPRINGER, 1885
- Order** Diplobathrida MOORE & LAUDON, 1943
- Suborder** Eudiplobathrina UBAGHS, 1953
- Superfamily** Rhodocrinitacea C.F. ROEMER, 1855
- Family** Archaeocrinidae MOORE & LAUDON, 1943



↑Text-Figure 2: Plate diagram of *Thylacocrinus-Diamenocrinus* lineage combined the diagram of LE MENN, 1974:99, Fig. 1 with the plate-structure of the crinoid in text-fig. 5

Description: A more or less depressed but (up to the tegmen) complete calyce with a part of the stem embedded in it, soft grey-black matrix. The plate-structure (up to the CD-section) shown a typical *Thylacocrinus* with complete smooth plates but the stem-structure is that of a *Diamenocrinus* as shown in LE MENN, 1985, pl. 1, fig. 5 & 10 and in text-figs. 3-4.

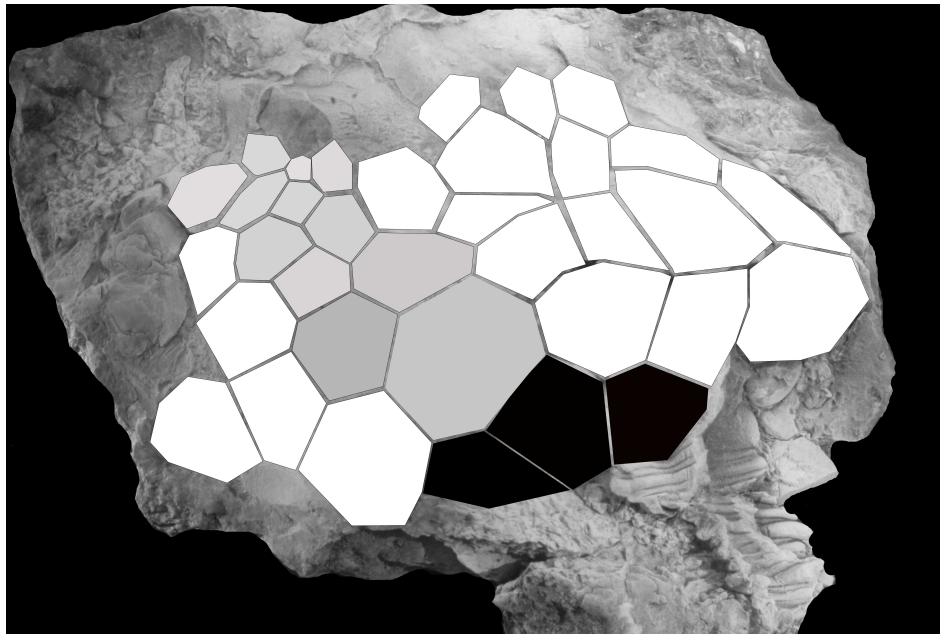


↑Text-Figures 3-4 Stem-Fragments of *Thylacocrinus-Diamenocrinus* lineage from Bañugues

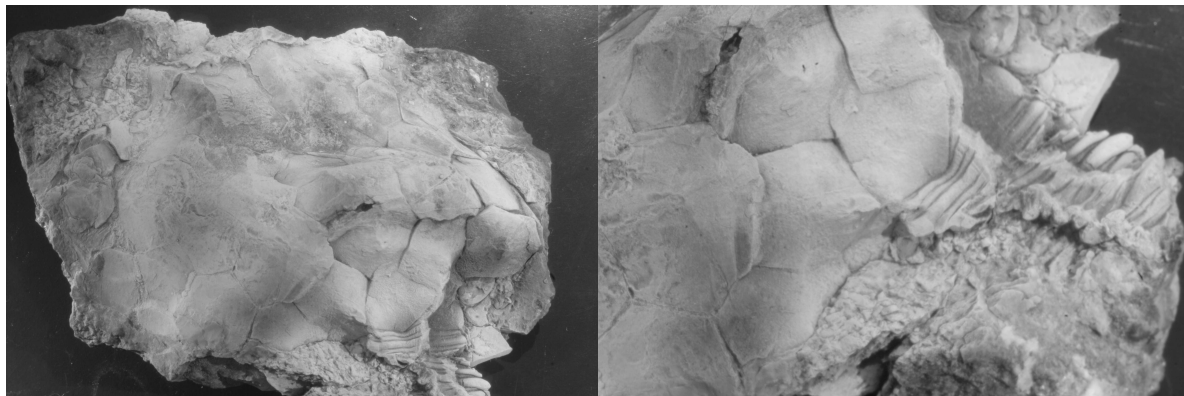
So probably we have a new taxon in the *Thylacocrinus-Diamenocrinus* lineage. If further investigations retender more specimens with this characters (see also the following diagnosis), perhaps we would be in the presence of a new genera that could be named: *Bañuguescrinus* n.gen.

Diagnosis:

- Structure free arms: 1 – 2 – 3 - ?
- Structure CD-section: 1 – 2 – 2 – 3 - ?
- Stem: stellated, tight staggered with rounded spines
- Plates: thin, slightly convex and flat
- Arm-facets: biseriell



†Text-Figure 5 Drawn of the plate-structure of the *Diamenocrinus-Thylacocrinus*-calyce from Bañugues; grey = CD-section with the anal-plate-series; black = radialia



†Text-Figures 6-7: right: Origin of the incomplete calyx whited with Ammonium-Chlorid; left: enlargement of the base and stem

Locus typicus: Sea cliff in the coastal E face of Cabo Peñas (Asturias, Spain) in the section between the SE border of the bay of Bañugues and the Aguión Cape

Stratum typicum: La Ladrona Formation, Lower Emsian, Lower Devonian

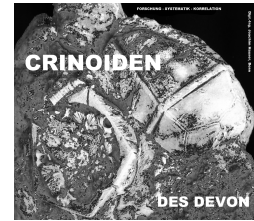
Dimensions: Hight (without the stem): 4 cm, stem: 1,5 cm

Supplement-fauna (by Fernando Gómez LANDETA): In the surface of the strata there exist one abundant complete fauna. Apart abundant fragments of stellate, *Diamenocrinus*-like, stems, there are the coral *Pleurodictium problematicum*, and the brachiopods, *Euryspirifer pellicoi*, *Leptrostophia explanata* and *Uncinulus pila*. As argued in HAUSER & LANDETA, 2013, the level of the crinoid fauna must correspond with brachiopod association, Interval 9, of GARCÍA-ALCALDE, 1996, with a age corresponding to the lower part of Upper Emsian.

Acknowledgements: Our special thanks goes to Dr. Winfried KOENSLER, Bad Honnef, Germany. He had the kindness to read this paper correction. My friend, Fernando Gómez LANDETA, has the kindness to give many helpful comments (stratigraphy, systematics) to this paper. He also allows the author to study the crinoid in Germany !

References:

GARCIA-ALCALDE, J.L. (1996): El Devónico del dominio Astur-Leonés en la zona Cantábrica. - *Revista Española de Paleontología*, N°extraordinario, p. 58-71.



GARCIA-ALCALDE, J.L., CARLS, P., ALONSO, M.U.P., LÓPEZ, J.S., SOTO, F., TRUOLS-MASSONI, M. & VALENZUELA-RIOS, J.I. (2002): 6 Devonian. – S. 67-91, Fig. 6.1-615. - IN: The Geology of Spain (edit. GIBBSON, W. & MORENO, T.); Geolog. Soc. (Bath, UK).

HAUSER, J. (2010a): *Zenkericrinus asturianus* n.sp. (Crinoidea, Camerata) aus dem Pragian (Unterdevon) des asturischen Küstenprofils (Nordspanien). - 4 p., 4 text-figs. - IN: Paläozoische Crinoiden aus Asturien und León (Nordspanien), p 40-43; Bonn

HAUSER, J. (2010b): *Bactrocrinites rauffi* n.sp. aus der La Ladrone Formation (Unteres Emsium) der asturischen Küste (Nordspanien). - 4 p., 4 text-figs. - IN: Paläozoische Crinoiden aus Asturien und León (Nordspanien), p 28-31; Bonn.

HAUSER, J. & LANDETA, F.G. (2013): *Oehlerticrinus seillouensis* LE MENN, 1975, a subjectiv synonym of *Oehlerticrinus anguliferus* (WHIDBORNE, 1897) and first note of *Oehlerticrinus anguliferus* from the La Ladrone Formation (Lower Emsian) of Bañugues (Asturias, northern Spain). - 8 p., 14 text-figs.; Bonn (Internetpublication).

LE MENN, J. (1974): Le genre *Thylacocrinus* OEHLERT, 1878 (Crinoidea, Camerata). - An- Soc. Géol. du Nord, **44**: 97-108, 5 text-figs., pl. 15-18; Lille.

LE MENN, J. (1985): Les crinoïdes du Devonien inférieur et moyen du massif Armoricaïn. - Mém. Soc. Géol. Min. Bretagne, **30**: 268 p., 86 text-figs., 39 pl.; Rennes.

MILLER, J.S. (1821): A natural history of the crinoidea, lily-shaped animals with observation on the genera *Asteria*, *Curyale*, *Comatula* and *Marsupites*. - 150 S., 50 Taf.; Bristol (Bryon & Co).

MOORE, R.C. & LAUDON, L.R. (1943): Evolution and classification of Paleozoic crinoids. - Geol. Soc. America, Spec. Pap., **46**: 1-153, Fig. 1-18, Taf. 1-14; Boulder, Colorado.

ROEMER, C.F. (1855): Lethaea Geognostika. Erste Periode: Kohlegebirge. – 3. edit. (1851-56), **2**: 788 p., (Schweizerbart'sche); Stuttgart.

UBAGHS, G. (1953): Classe des Crinoïdes. IN: PIVETEAU, J. : Traité de Paléontologie, **3**: 658-773, text-figs. 1-166; Paris (Masson & C^{ie}).

WACHSMUTH, C. & SPRINGER, F. (1885): Revision of the Paleocrinoidea, Part III: Discussion and classification of the brachiata crinoids, and conclusion of the generic description. - Proc. Acad. Nat. Scien. Philadelphia, **1885**: 225-364, pl. 1-9; Philadelphia.
