

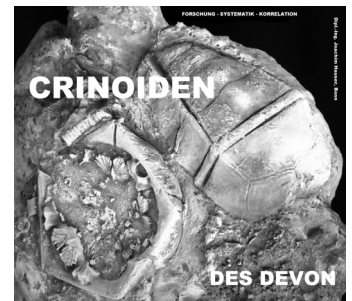
***Landetaecrinites conicus* n.gen. et n.sp. (Crinoidea, Camerata),
a new Periechocrinidae-genus from the Santa Lucía Formation of the Cantabrian
Mountains (Province León, northern Spain)**

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with 8 pages and 8 text-figures

(pre-published via Internet 25 May 2021)

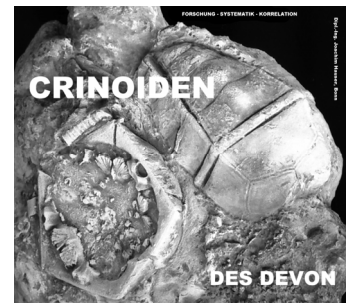


1 Introduction

HAUSER & LANDETA described in 2013 a new genus *Alejecrinus doyagueae* HAUSER & LANDETA, 2013 and in further publications a new Periechocrinidae *Pithocrinus abbreviatus* HAUSER, 2014 from a typical Santa Lucía outcrop near the hamlet of Aleje. Investigations during an excursion in the Elsa region in October 2019 provided several new crinoids and brachiopods. One of this specimen is a small but interesting crinoid without the tegmen found in a marly layer of the typical Santa Lucía outcrop expose near the base of a agriculturally track.

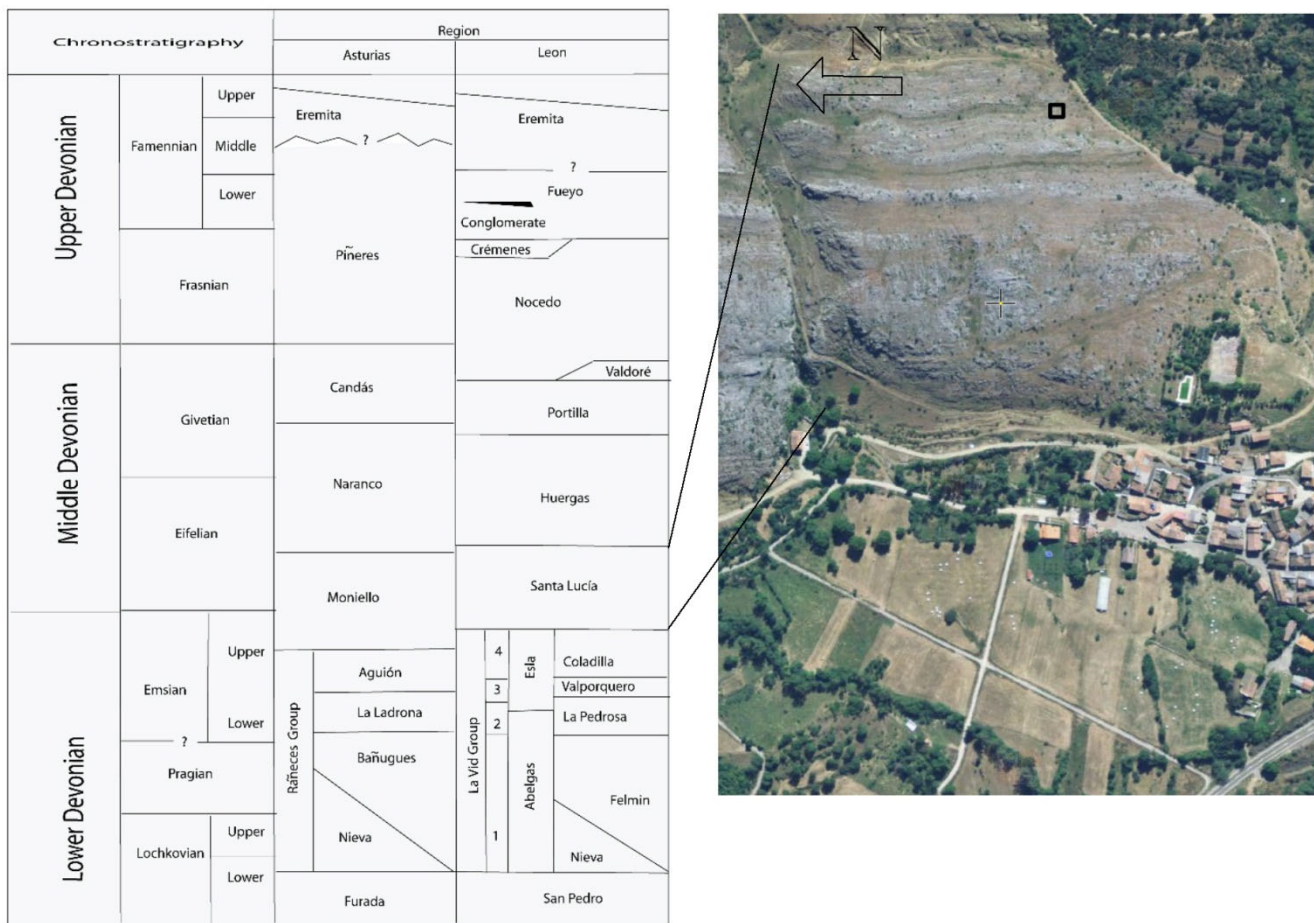


↑Text-Figure 1 shown one of the marly parts (outcrop of *Landetaecrinites conicus* n.sp. in the top of the Santa Lucía Formation near the hamlet of Aleje, Cantabrian Mountains, northern Spain, were the crinoids are found)



2 Geology and Age (by Fernando Gómez LANDETA)

The new taxon was found at more or less forty meters of the top of Santa Lucía Formation. Along with it there were collected: several specimens of the blastoid *Cordyloblastus* aff. *C. alejensis* more than 20 species of *Storthingocrinus* aff. *Storthingocrinus haugi*, some specimens of the brachiopod *Uncinulus Uncinulus orbignanus*, *Athyris* sp. aff. *A. campomanesi* (VERNEUIL & ARCHIAC, 1845), and *Schizophoria hipponix*, as well unidentified fragments and stems of crinoids, corals and bryozoans. This fauna is typical of upper member of Santa Lucía, levels 16-17 of GARCIA-ALCALDE, 1996, in the transition of Lower-Middle Devonian and must also roughly correspond with level Crinoid-3 of BREIMER, 1962: 175, text-fig. 40 although none of the crinoids of this level were found. The exact transition was determined by the magneto-stratigraphic technique by ELLWOOD et al., 1996, in the El Puerto creek section, 45 km. to the W of Aleje outcrop, as lying at sixty meters under the top of the formation. Given that in the two sections Santa Lucía Formation have roughly the same thickness, (240-250 m.), and the total identity of facies between both sections, the new taxon, at forty meters of the top as stated, must correspond in age to the base of Eifelian.

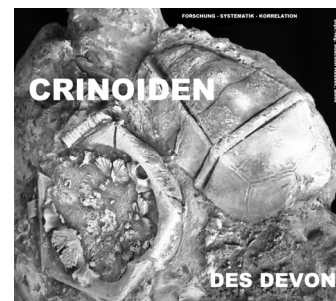


↑ **Text-Figure 2:** Chronostratigraphy of the north-spanish Devonian (Asturias und León) after GARCIA-ALCALDE, J.L., CARLS, P., ALONSO, M.U.P., LÓPEZ, J.S., SOTO, F., TRUOLS-MASSONI, M. & VALENZUELA-RIOS, J.I. (2002): p. 69, fig. 6.2.; right photo shown the locus typicus of *Landetaecrinites conicus* n.sp. near the small hamlet of Aleje (Cantabrian Mountains, northern Spain) (the □ show the exact outcrop in the profile)

Kurzfassung: Ein neuer Vertreter der Periechocrinidae *Landetaecrinites conicus* n. gen und n. sp. wird aus dem oberen Teil der Santa Lucía Formation von Aleje (Kantabrisches Gebirge, Esla Region, Provinz León, Nordspanien) beschrieben.

Abstract: A new representative of the taxon (*Landetaecrinites conicus* n.sp.) is described from the top of the Santa Lucía Formation of Aleje, Cantabrian Mountains (Province León, Esla region, northern Spain).

Resumen: Se describe un nuevo taxón del género *Landetaecrinites conicus*, procedente de la Formación Santa Lucía en Aleje (León, Norte de España).



Schlüsselwörter: *Landetaecrinites conicus*, Crinoidea, Camerata, Systematik, Kantabrisches Gebirge, Nordspanien, Aleje, Esla Region, Santa Lucía Formation, Emsium, Unterdevon

Key-Words: *Landetaecrinites conicus*, Crinoidea, Camerata, Systematics, Cantabrian Mountains, northern Spain, Aleje, Esla region, Santa Lucía Formation, Emsian, Lower Devonian

3 Systematics (by Joachim HAUSER)

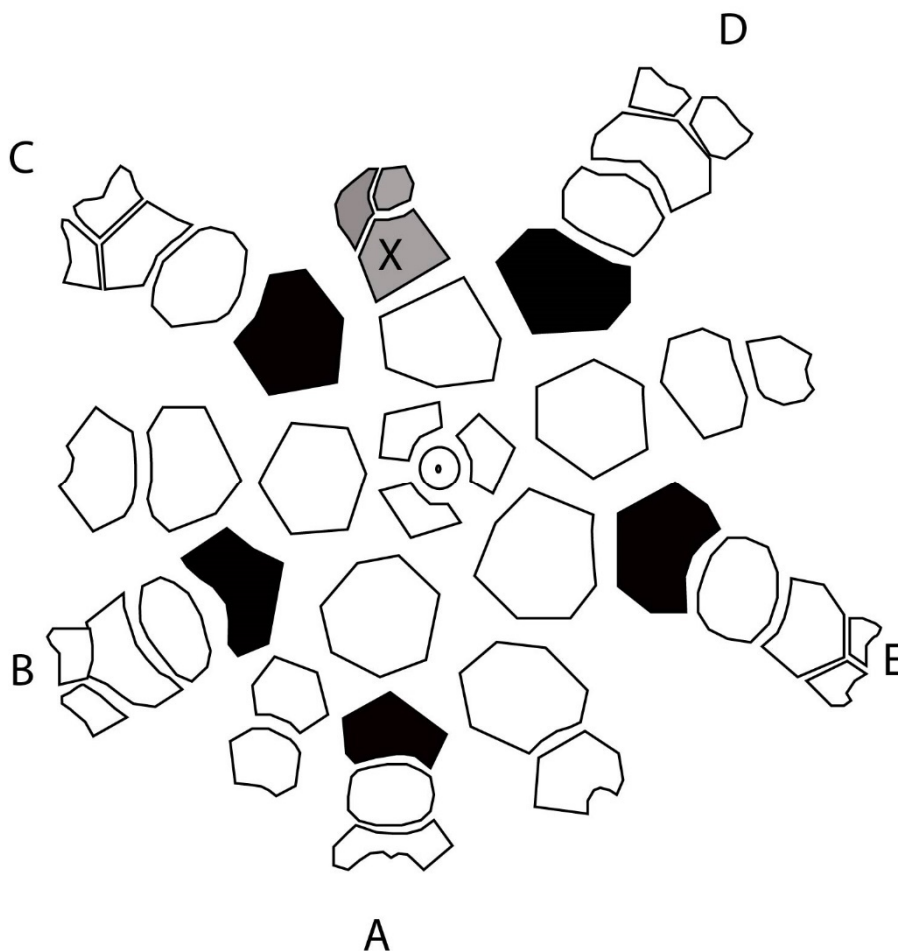
Classe Crinoidea J. S. MILLER, 1821
Sub-class Camerata WACHSMUTH & SPRINGER, 1885
Order Monobathrida MOORE & LAUDON, 1943
Sub-order Compsocrinina UBAGHS, 1978
Family Periechocrinacea BRONN, 1849
Sub-Family Periechocrinidae BRONN, 1849
Genus *Landetaecrinites* n. gen.

Stratigraphical range: Top of the Santa Lucía Formation, Lower Eifelian, Middle Devonian

Geographical distribution: The new taxon is known only from the top of the Santa Lucía Formation of the Elsa Region (Cantabrian Mountains, Northern Spain)

Type species: *Landetaecrinites conicus* n. sp.

Derivatio nominis: The genus is named after my very good friend, Fernando Gomez LANDETA, Oviedo. He shown me all important Devonian and Carboniferous crinoid-outcrops in Northern Spain. The new species is named after the typical short conical form of the new taxon.



Holotyp: The specimen in text-figure 4a-d.

Locus typicus: Outcrop 300 m. to the E of the village of Aleje, Province León, Cantabrian Mountains, northern Spain.

←Text-Figur 3: Plate-diagram of *Landetaecrinites conicus* n.sp.; black = radialia

Stratum typicum: Top of the Santa Lucía Formation, Lower Eifelian, Middle Devonian.

Material: One complete specimen in good condition but without the tegmen from the Locus typicus near the hamlet of Aleje, Esla-region, Cantabrian Mountains, (Prov. León).

Diagnosis of the new genus and taxon:

A dicyclic, conical-shaped calyx with nearly smooth plates and unobtrusive plate-boarders. The plate construction is very easy in contrast to the other member of the Periechocrinidae like *Pradocrinus* or *Pithocrinus*. Stem round, with a small central-five-sided axial-canal. Infrabasal: three five-sided plates, visible in side-view. Five six- and

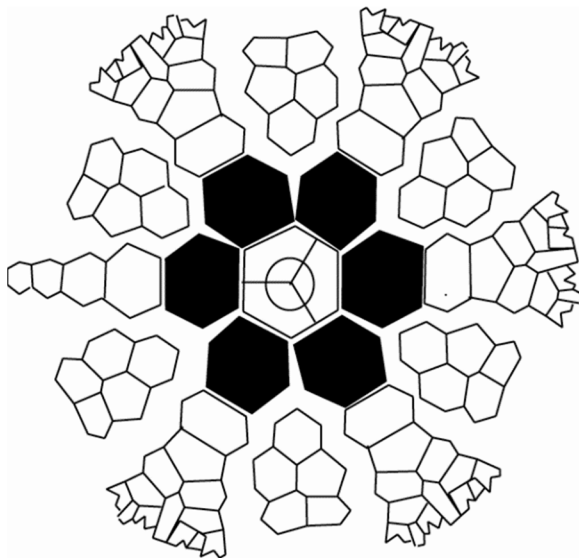
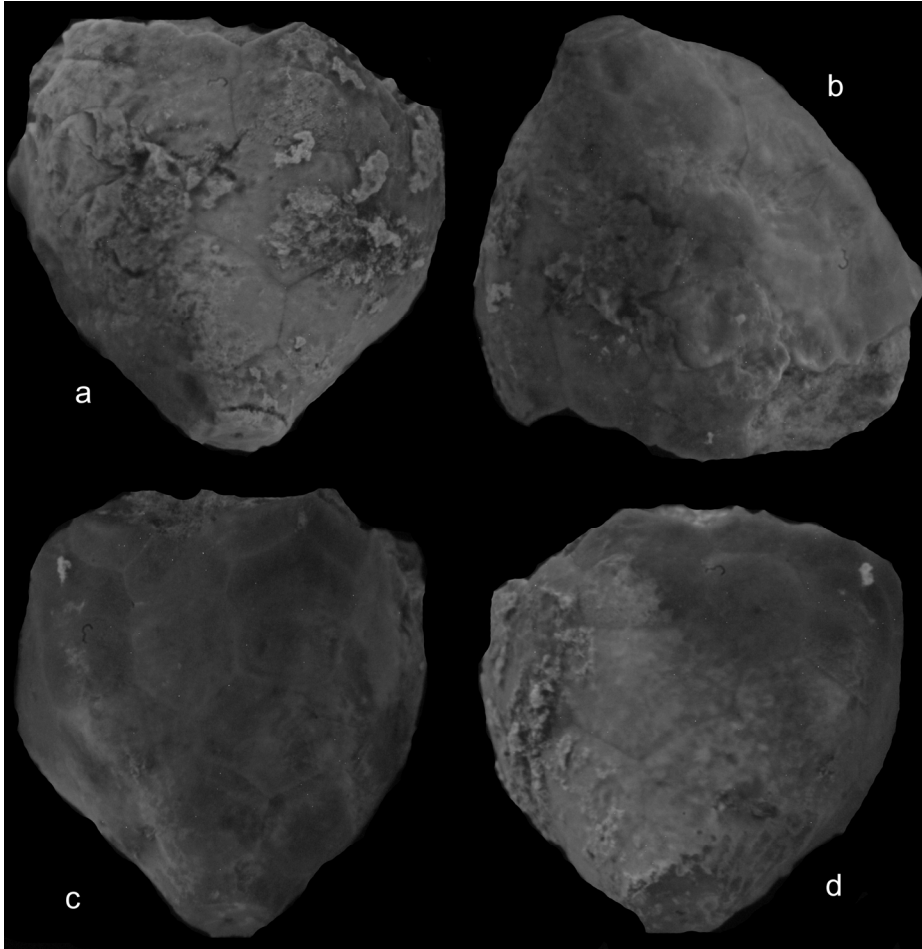
seven-sided basalia in touch with five six-sided radialia. Fixed arms started with more or less oval plate followed by a small five-sided Ax₁. The first splitting of the brachia: isotom. The organisation of plates of the fixed IB: one five-sided IB₁ in touch with a

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small six-sided plate show distal a horse-shoe-shaped indentation. The CD-Interray-section show one
irregular six-sided anal X₁ plate and distal in touch with two small anal-plates X₂₋₃.

Dimensions: Hight = 1,2 cm, diameter = 1,5 cm.

↓Text-Figures 4a-d: Holotyp of *Landetaerinites conicus* n. sp. from Aleje

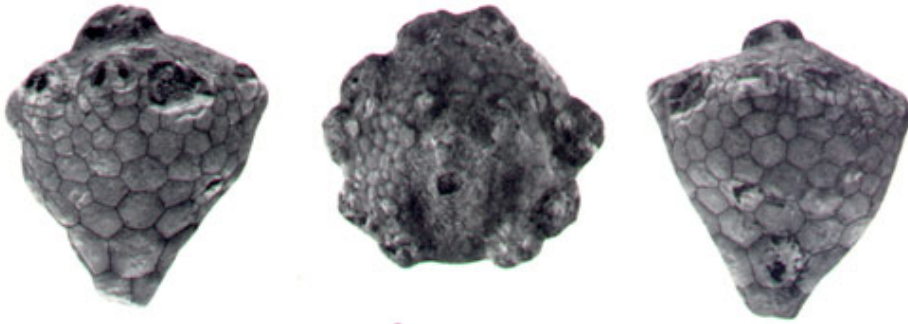


Relations: The following plate-diagrams show the systematic position of the new genus within the known representative of the Periechocrinidae known from Devonian of Northern Spain. The most related taxon seems to be *Pyxidocrinus* known also from other devonian fields of Europe like Germany. This taxon differs to the new genus in following points: 6 basalia, anal-plates in „regular organisation“ and more plates in the IBrBr-sections. The new genus is a further progress-linie within the Periechocrinidae specially in the Devonian of Northern Spain.

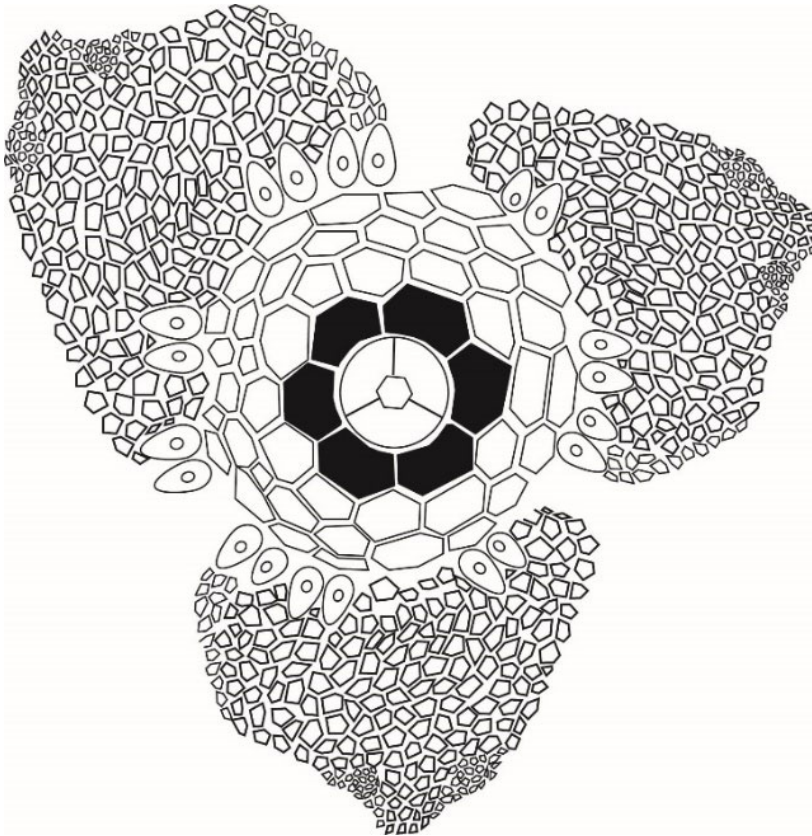
It is easy to determine, that all taxa of the known species of the Periechocrinidae do have a complete other plate systematics. *Pyxidocrinus* (*Pyxidocrinus collensis*) show the typical conical calyce, with more or less small plates.

← Text-Figur 5a: Plate diagram of *Pyxidocrinus* modified after SCHULTZE, 1866: 59 [171], Fig. 11; 5b: *Pyxidocrinus collensis* BREIMER, 1962, after BREIMER, 1962: pl. 7, figs. 1-3

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Text-Figur 6a: Plate-diagram of *Pithocrinus* after HAUSER, 2014; black = radialia; 6b: *Pithocrinus ovatus* BREIMER, 1962 after BREIMER, 1962, pl. 5, figs. 7-11

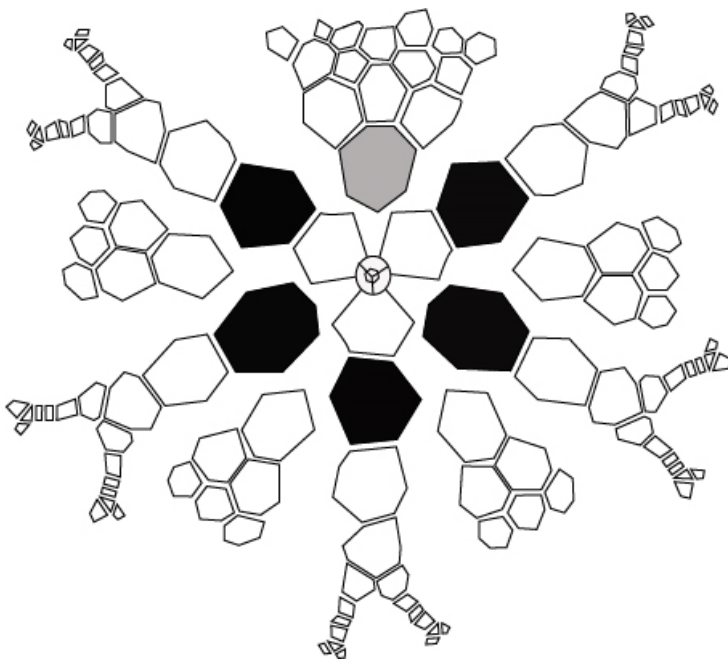
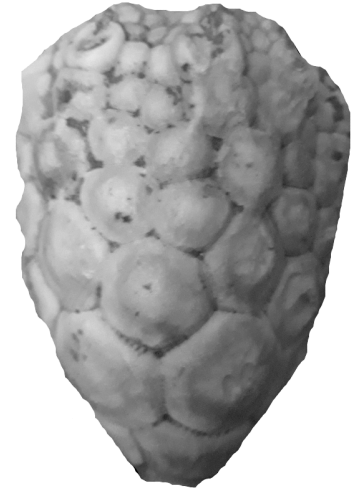
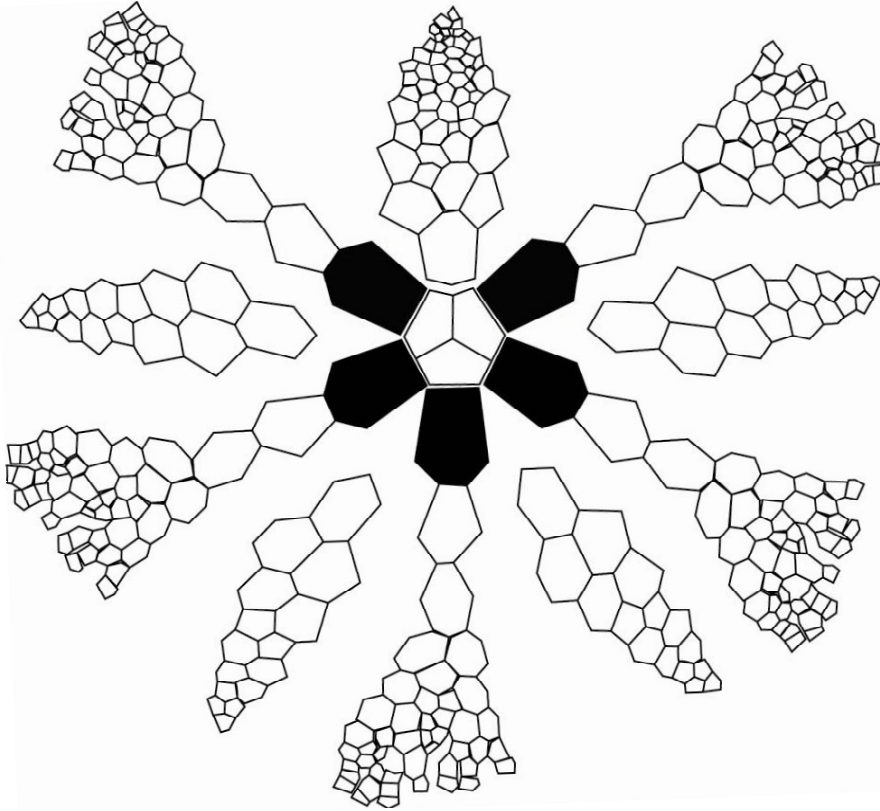
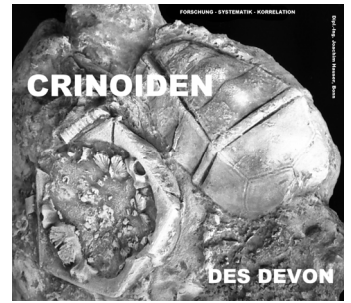


Pithocrinus (*Pithocrinus ovatus* BREIMER, 1962) show the typical globose calyx with more or less convex plates or plates with ornamentation / small spines.

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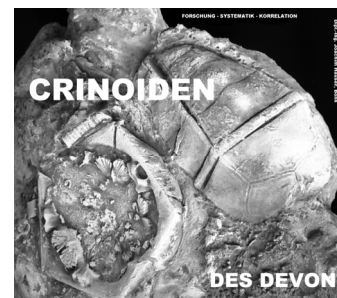
The calyce of *Pradocrinus* (*Pradocrinus asturianus* HAUSER & LANDETA, 2019) show the typical stretched form, plate-to-plate-borders and the typical “small connection strips”.

Text-Figure 7a: Plate diagram of *Pradocrinus* after HAUSER, 2012:25, fig. 11; black = Radialia; 7b: *Pradocrinus asturianus* HAUSER & LANDETA, 2019



←Text-Figur 8a: Plate-diagram of *Corocrinus* modified after GOLDRING, 1923:203, Textfig. 74; black = Radialia, grey = anal X₁; 8b: *Corocrinus grandosensis* BREIMER, 1962 after BREIMER, 1962: pl. 7, figs. 11-12; Fig.

Corocrinus is a specially evolutionary line of the Taxon *Pithocrinus* and differs to the new taxon in the structure of CD-section and the IBrBr sections.



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