

About the stratigraphical und geographical distribution of *Pradocrinus* DE VERNEUIL, 1850 (Crinoidea, Camerata) in the Lower Devonian of northern Spain (Asturias und Léon)

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with 5 pages, 11 figures and 1 plate; (pre-published via Internet 05. July 2012)

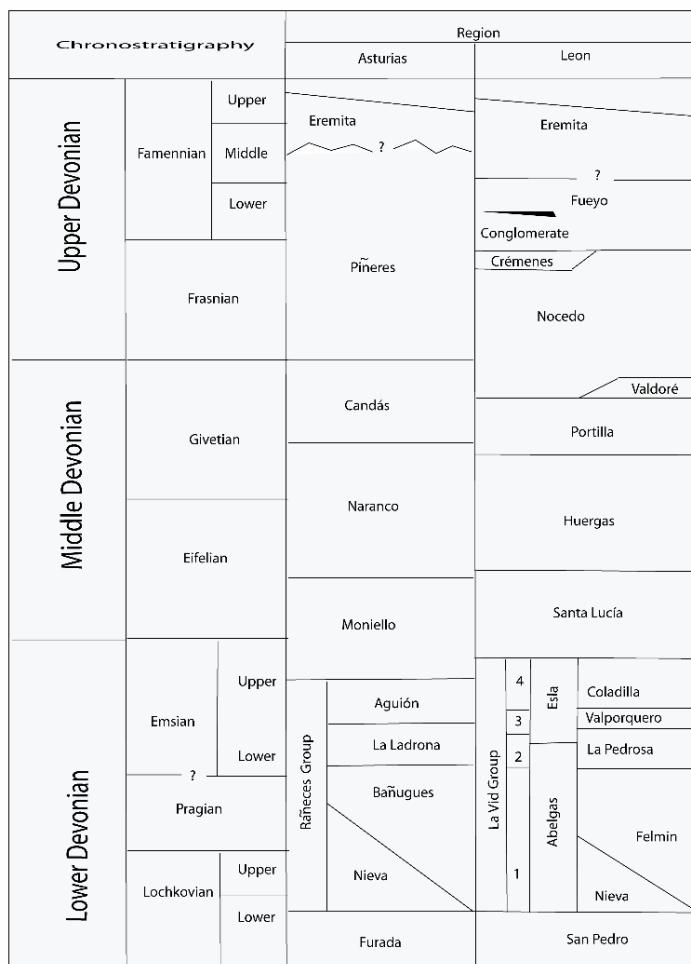
1 Introduction and general remarks

Since the description of *Pradocrinus baylii* by DE VERNEUIL, 1850 it has become very quiet around this taxon. Only BREIMER, 1962:27-28 takes up the discussion to the status of this crinoid in his usually exact approach again. He described *Pradocrinus baylii* in a supplement diagnosis given by DE VERNEUIL and outlines on the basis of material stored in several institutes also the ontogeny of this taxon. Indeed, a mistake seems to be contained in his planches: pl. 3, fig. 2-4 illustrated cups belong to *Stamnocrinus* and not to *Pradocrinus*.

Seit der Beschreibung von *Pradocrinus baylii* durch DE VERNEUIL, 1850 ist es sehr ruhig um dieses Taxon geworden. Erst BREIMER, 1962:27-28 greift in seiner gewohnt exakten und sauberen Arbeitsweise die Diskussion zum Status dieser Crinoide wieder auf. Er beschreibt *Pradocrinus baylii* in Ergänzung zu der von DE VERNEUIL gegebenen Diagnose detailliert und skizziert anhand von umfangreichen Belegmaterial auch die Entwicklungslinie dieses Taxons. Allerdings scheint in seinem Tafelwerk eine Unschärfe enthalten zu sein: bei den auf Tafel 3, Figur 2-4 abgebildeten Kelchen handelt es sich dem Augenschein nach um Vertreter der Stamnocriniden und nicht um *Pradocrinus*.

Neben den in der Literatur genannten Fundorten (BREIMER, 1962:27) liegt *Pradocrinus* von folgenden Lokalitäten vor:

Santa Lucía	La Vid Group, ?Coladilla Formation, Lower Devonian
?Grandoso	Santa Lucia Formation, Upper Emsian, Lower Devonian
Quejo	La Vid Group, ?Coladilla Formation, Lower Devonian
Arnao	Aguión Formation (lower part), Middle Emsian, Lower Devonian
Xivares	Aguión Formation (lower part), Middle Emsian, Lower Devonian
Cabornera	La Vid Group, ?Coladilla Formation, Lower Devonian



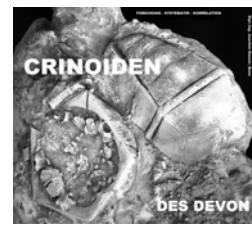
It is remarkable that the calyces found in the red coloured limestone-marl-changing members of the Aguión formation show in form and size the dorsal-cups illustrated by BREIMER 1962 on pl. 3, fig. 5-7.

Betrachtet man die bisher bekannten Funde so fällt auf, daß die in der meist leicht kenntlichen rot gefärbten Kalk-Mergel-Wechselfolge der Aguión Formation gefundenen Kelche durchweg die Form und Größe der von BREIMER, 1962 auf Tafel 3, Figuren 5-7 beschriebenen Dorsalkapseln aufweisen.



↑ text-figure 1-3: *Pradocrinus baylii* figured by BREIMER, 1962, pl. 3, fig. 5-7 presumably from a red detrital limestone band at the top of the La Vid Formation of the type locality of Colle

↑ text-figure 4: Chronostratigraphy of the Spanish Devonian (Asturias and León) by 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

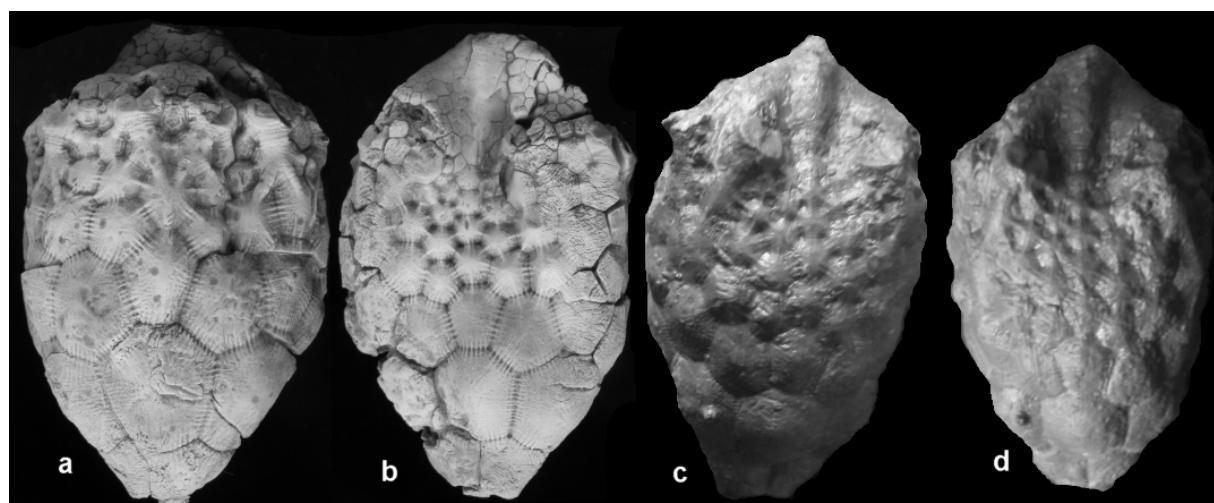


This concerns *Pradocrinus* found in Asturias (e.g. Arnao, Xivares) as well as calyces from the Cantabrian Mountains (e.g. Quejo). The cups with the impressive dimensions (height of the calyx up to 9 cm) come from the brown coloured shaly marls at the upper part of the La Vid formation which is more or less ident. with the Aguion Formation.

However, it is sure that all described specimens belong to the same taxon.

Dies betrifft sowohl die Stücke von der asturischen Küste (Arnao, Xivares) als auch aus dem Kantabrischen Gebirge (Quejo). Die Kelche mit den beeindruckenden Maßen von Kelchhöhen bis zu 9 cm stammen nach bisherigem Kenntnisstand aus den bräunlich-siltigen Mergeln des oberen Teils der La Vid Formation, die stratigraphisch ein Äquivalent zur Aguion darstellt.

Sicher ist aber, daß es sich trotz der ganz erheblichen Unterschiede in der Größe der Kelche um die gleiche Art handelt.



↑ text-figure 5-8: *Pradocrinus baylili* (calyx figured a-b stored in the collection of Ferndo Gómez LANDETA, Oviedo from Santa Lucía; calyx figured c-d stored in the collection of Felix COLLANTES, Palencia from a outcrop near Carbornera); the specimens found in the brown marly La Vid Shale of the Cantabrian Mountains

Kurzfassung: Neue Aspekte zur geographischen und stratigraphischen Verbreitung von *Pradocrinus baylili* DE VERNEUIL, 1850 werden diskutiert. *Pradocrinus baylili* ist ein endemisches Taxon, das bisher ausschließlich im nordspanischen Unterdevon nachgewiesen ist. *Pradocrinus baylili* liegt sowohl von der asturischen Küste als auch dem Kantabrischen Gebirge vor.

Schlüsselwörter: *Pradocrinus*, Stratigraphie, Geographie, Verbreitung, Morphologie, Systematik, Nordspanien, Unterdevon

Key-Words: *Pradocrinus*, stratigraphy, geography, distribution, morphology, systematics, northern Spain, Lower Devonian

Abstract: New aspects for the geographical and stratigraphical distribution of *Pradocrinus baylili* DE VERNEUIL, 1850 are discussed. *Pradocrinus baylili* is an endemic taxon which is described up to now only in the spanish Lower Devonian. Calyces of *Pradocrinus baylili* are found in Asturias as well as in the Cantabrian Mountains.

Resumen: Se discuten algunos aspectos de la distribución geográfica y estratigráfica del taxón *Pradocrinus baylili* DE VERNEUIL, 1850. *Pradocrinus* es un género endémico de España, sus calices aparecen en el Devónico inferior de la Cordillera Cantábrica, en las provincias de Asturias y León.

2 Systematics

Classe Crinoidea J. S. MILLER, 1821

Sub-Classe Camerata WACHSMUTH & SPRINGER, 1885

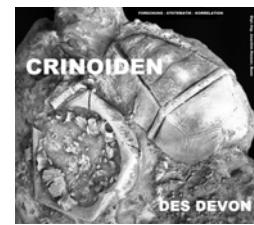
Order Monobathrida MOORE & LAUDON, 1943

Sub-Order Compsocrinina UBAGHS, 1978

Super-Family Periechocrinacea BRONN, 1849

Family Periechocrinidae BRONN, 1849

Genus *Pradocrinus* DE VERNEUIL, 1850



Stratigraphical Range:

Lower to Upper Emsian, Lower Devonian

Type specimen *Pradocrinus baylii* DE VERNEUIL, 1850

Pradocrinus baylii DE VERNEUIL, 1850

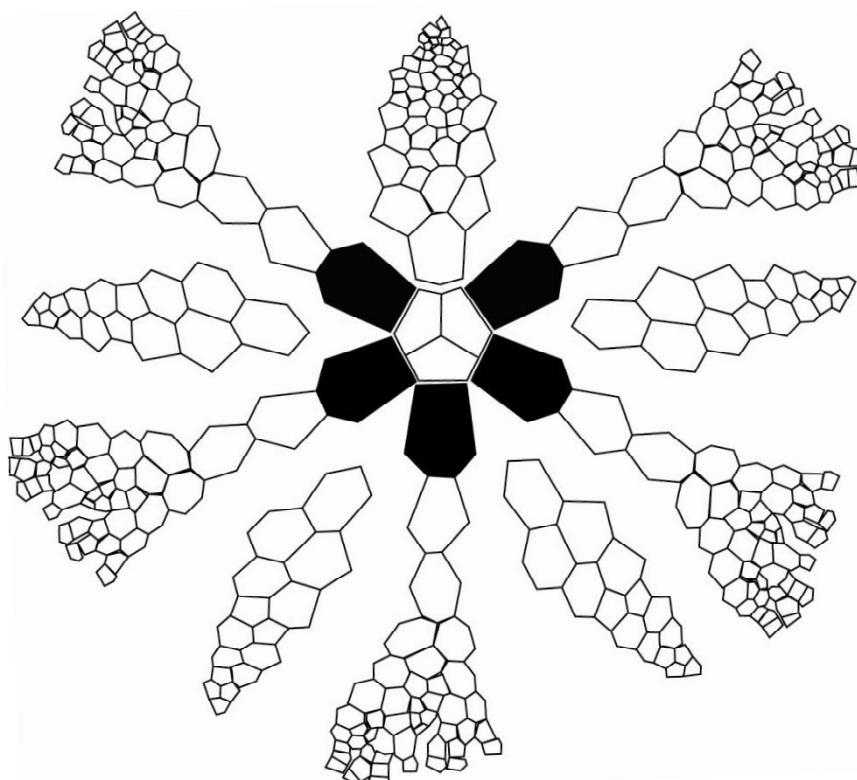
Textfigur 9-10 & pl. 1

← Textfigur 9-10: Holotyp of *Pradocrinus baylii* DE VERNEUIL, 1850: pl. 4, fig. 11a-11b

Holotype: BREIMER, 1962:27 classifies the specimen figured by DE VERNEUIL, 1850: pl. 4, fig. 11a-11b as the holotype of *Pradocrinus baylii*. The specimen is stored in the VERNEUIL collection of the Ecole National supérieure des Mines at Paris.

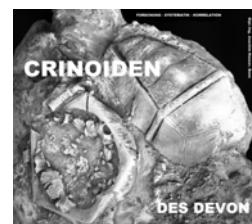
Locus typicus: The holotype of *Pradocrinus baylii* was found at the northern slope of the hill on which the church of the small village Colle is built.

Stratum typicum: BREIMER, 1962:27 supposes the red detrital limestone band at the top of the La Vid Formations. From experience by the authors it is more probably that the holotype comes from brown marly La Vid Shale.



↑ text-figure 11: Plate diagram of *Pradocrinus*

Material, diagnosis and description: See BREIMER, 1962: 26-29.



Supplement fossils: The biodiversity in the La Vid Shale is impressive. The frequent compounds of this formation are brachiopods, crinoids (e.g. *Bactrocrinites*, *Vasocrinus*, *Trybliocrinus*, *Storthingocrinus*, *Pyxidocrinus*) and also blastoids (Colle!).

Geographical distribution: *Pradocrinus baylii* seems to be an endemic crinoid only found in the Emsian of the north-spanish Lower Devonian. Other questions concern the evolution of *Pradocrinus*. Perhaps this taxon is a special lineage of *Pithocrinus* which is very common in some members of the spanish Emsian.

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Description of plate 1

Figure 1-1a: *Pradocrinus baylii* DE VERNEUIL, 1850; Fig. 1a = CD-section; dimensions: height 7,8 cm, diameter: 5 cm; collection Fernando Gómez LANDETA, Oviedo; brown-marl Coladilla Formation, La Vid Group, Upper Emsian; Santa Lucía, Cantabrian Mountains

Figure 2 & 6: *Pradocrinus baylii* DE VERNEUIL, 1850; dimensions: fig. 2: height 4,5 cm, diameter 2,8 cm; fig. 6: height 3 cm, diameter 2,2 cm; small (fig. 6) and medium (fig. 2) calyces from the red detrital marl and limestone bands of the Aguión Formation, Upper Emsian, Cantabrian Mountains; Quejo, Cantabrian Mountains

Figure 3: *Pradocrinus baylii* DE VERNEUIL, 1850; calyce in matrix; dimensions: height 7,5 cm, diameter: 4,5 cm; exchange Fernando Gómez LANDETA, Oviedo; brown-marl Coladilla Formation, La Vid Group, Upper Emsian; Santa Lucía, Cantabrian Mountains

Figure 4: *Pradocrinus baylii* DE VERNEUIL, 1850; fragment of a caylce in red matrix (exchange Felix COLLANTES, Palencia); dimensions: height 5,5 cm, diameter 3,5 cm; maybe from Grandoso, ? Santa Lucia Formation, Cantabrian Mountains

Figure 5: *Pradocrinus baylii* DE VERNEUIL, 1850; fragment from the top of the La Vid Shale (exchange Félix COLLANTES, Palencia); dimensions: height 4,5 cm, diameter 4 cm; Colle, Cantabrian Mountains

Figure 7: *Pradocrinus baylii* DE VERNEUIL, 1850; depressed calyce in red matrix; dimension: 4,4 cm, diameter 3 cm; Aguión Formation, Upper Emsian; Arnao, Asturias

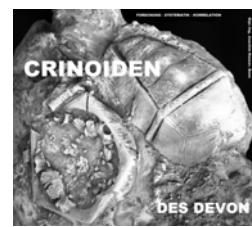


Plate 1

