

Berliner geowiss. Abh.	(A)	134	9 - 55	2 Abb., 7 Taf.	Berlin 1991
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**Gastropods from brackish and fresh water of the Jurassic - Cretaceous transition (a systematic reevaluation)**

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**Abstract:**

From the Purbeckian facies of the Upper Jurassic and Lowermost Cretaceous 23 species of gastropods that have lived in coastal swamps in brackish or fresh water have been studied. Special emphasis was placed on the morphology of their early ontogenetic shell. In many cases the shape and orientation of the first whorls of the shell could be utilized to find a more appropriate place within the system of gastropods than had been suggested before and correlate the fossil species with their modern relatives. The Purbeckian fauna is compared with the modern gastropods living in a similar environment.

**Zusammenfassung:**

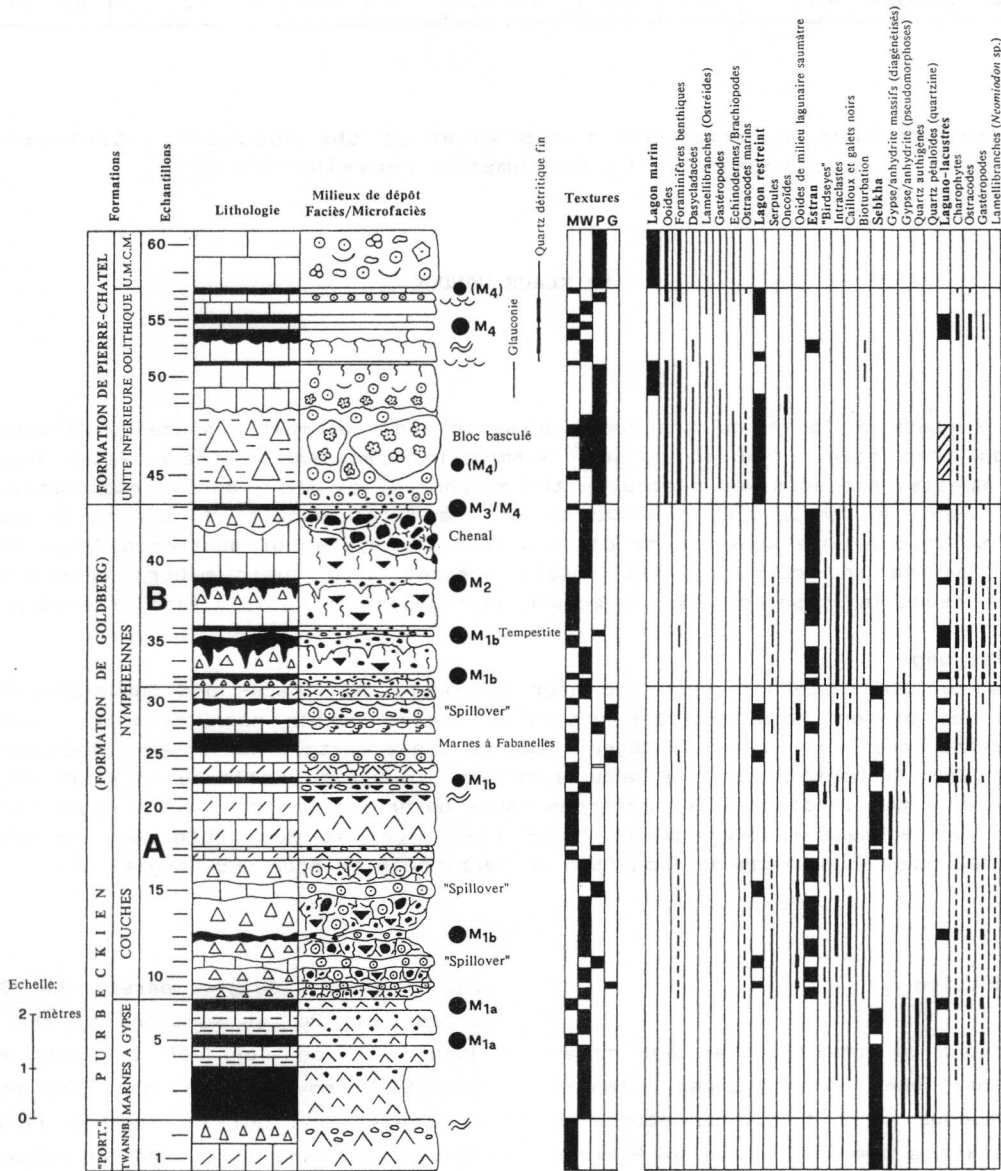
Die Schnecken des Küstenbereiches und hier besonders der Brack- und Süßwasserzonen aus der Zeit des oberen Juras und der untersten Kreide wurden nachuntersucht, wobei neu aufgesammelte Fossilien zu Grunde lagen. Besonders die Gestalt der ersten Windungen wurde ermittelt. Das frühontogenetische Gehäuse erlaubt in vielen Fällen eine klare Zuordnung der fossilen Arten in die aus der modernen Fauna bekannten und definierten systematischen Einheiten der Schnecken. Die Purbeck-Fauna ließ sich mit den heute noch in ähnlicher Umgebung lebenden Schneckengemeinschaften in Verbindung bringen und vergleichen.

**I. Introduction**

A rich fauna of the brackish and fresh water transitional phase between Jurassic and Cretaceous from the Jura mountains near Geneva has been collected by Pierre-Olivier Mojon (Univ. Geneva) during his work for a dissertation on the sedimentology and paleontology of these beds (Mojon 1989, in prep.). This material forms the basic stock of the here presented study. The sections studied by P.-O. Mojon providing most gastropods from St. Claude and Bienne were kindly illustrated by him to be included in this study (Textfig. 1 and

2). Strasser (1987) compared the Salève, Crozet and Poizat sections of the French Jura with sections of Durlston Bay in Dorset in southern England. The sections of Crozet and Col du Banchet have been illustrated and discussed by Deconinck & Strasser (1987). Here a general map of all the fossil localities in the Swiss and French Jura is presented. The localities are also characterized in several papers presented by Mojon (1989). In the Swiss Jura material from the localities Bienne (B), Tüscherz (T) and Juracine (Ju) and in the French Jura from Saint-Claude (SC), Chapeau de Gendarme (CG), Lavans - les -

COUPE DE BIENNE



Textfig. 1:

Coupe de Bienne section as exposed east of the town of Biel/Bienne in the Canton Bern of Switzerland. The section has been drawn by P.-O. Mojon, who kindly provided it to be included in this study to indicate the position of some of the richest occurrences of gastropods. The layers of M1a contain *Provalvata helicoides*, *Provalvata sabaudiensis*, *Proauriculastra dubisiensis* and *Gyraulus loryi*. The layer M1b holds cyclophoroid opercula, *Maillardinus sanctusclaudius*, *Loriolina loryana*, *Hydrobia chopardiana*, *Juramelanatria rugosa*, *Provalvata helicoides*, *Ceritellopsis complacita*, *Proauriculastra dubisiensis*, *Juramarinula durlestonensis*, *Prophysa bristovii*, *Gyraulus loryi*, *Proauricula jaccardi*, *Cheruscioia mojonia*. The layer M2 holds cyclophoroid opercula, *Loriolina loryana*, *Provalvata helicoides*, *Ceritellopsis complacita*, *Ptychostylus harpaeformis*, *Proauriculastra dubisiensis*, *Prophysa bristovii*, *Gyraulus loryi* and *Proauricula jaccardi*. M3 and M4 hold *Hydrobia chopardiana*, cyclophoroid shells and opercula, *Provalvata helicoides*, *Proauriculastra dubisiensis* and *Gyraulus loryi*.