

# **PALAEOBIOGEOGRAPHY OF THE EARLY CRETACEOUS (PRE-ALBIAN) CEPHALOPOD-BEARING FORMATIONS OF THE WESTERN CARPATHIANS (CZECH AND SLOVAK REPUBLICS) AND THE NORTHERN CALCAREOUS ALPS (AUSTRIA)**

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During the last ten years I have had an opportunity to participate in field collections in the Lower Cretaceous deposits of the Alpine-Carpathian System, in whose sedimentary basins ammonite facies are developed, and to concern myself with the taxonomic processing of collected cephalopods. If we omit the existing course of the Carpathian Arc formed only in the Tertiary, the following sedimentation units have been studied (in the direction from north to south):

1. Outer (Flysch) Carpathians: a) Silesian Unit (uppermost Berriasian - early Aptian). Dark grey, clayey-marly deposits (mainly the Tešín-Hradiště Formation). b) Pieniny Klippen Belt - PKB (late Valanginian - late Barremian). In the extremely tectonically complicate unit light marly-calcareous deposits prevail. Locally they are interbedded with layers of dark grey claystones.
2. Central Carpathians: a) Maľín Unit (upper part of the early Valanginian - lower part of the late Barremian). b) Kríľná Nappe (late Valanginian - late Barremian). In both the units (Vašíček, 1997) light marly-calcareous deposits dominate (Mrázňica Formation).
3. Northern Calcareous Alps (NCA) - Bajuvarian Nappe Complex: a) Ternberg Nappe (late Valanginian - late Barremian; results of Lukeneder, 1998). b) Lunz Nappe (late Berriasian - early Valanginian). In both the units the deposits of the Schrambach Formation with occasional intercalations of distal turbidites occur. c) Reichraming Nappe (late Valanginian - uppermost Hauterivian). In the Ebenforst Syncline the Rossfeld Formation, in the Schneeberg Syncline the Schrambach Formation are developed (Vašíček, 1998).

On the basis of ammonite associations, the following palaeobiogeographic connections can be distinguished:

- a) In the whole system of nappes, the late Berriasian is documented richly by ammonites only in deposits of the Lunz Nappe. It contains merely mediterranean ammonites. b) The occurrence of ammonites of the genus *Platylenticeras* in the lower part of the early Valanginian in the Silesian Unit evidences a temporary communication with the subboreal Lower Saxony Basin (LSB) via the Danish-Polish Furrow. c) In the lower part of the late Valanginian, a repeated communication between the Silesian Unit and the subboreal area is documented by the occurrence of boreal genus *Prodichotomites* and the occurrence of mediterranean elements known both from the Silesian Unit and the LSB (*Saynoceras verrucosum*, *Valanginites wilfridi*). In the PKB *Criohimantoceras gigas*, *Varlheidites peregrinus*, *Bochianites neocomiensis* and *Valanginites cf. nucleus* occur equally to the LSB. By contrast, ammonites from the Central Carpathians as well as the NCA are represented only by mediterranean ammonites. d) The Barremian of the Silesian Unit, the Central Carpathians and the Ternberg Nappe (NCA) is famous, among other matters, for the occurrence of leptoceratoids and other purely mediterranean ammonites. e) In the early Aptian of the Silesian Unit representatives of the genus *Procheloniceras* occur. They indicate the intercommunication between the northern rims of the Tethyan area and the subboreal area by a newly formed way through Northern France and Southern England.

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