

A brief outline of the Aptian–Campanian sedimentary system of Hungary

From the Early Aptian until the Maastrichtian, the sedimentation is determined by the closure of oceanic ridges and compressive tectonics (HAAS 1984). There are three, basically similar sedimentation megacycles can be outlined during this period — the Albian–Cenomanian, the Turonian–Coniacian and the Santonian–Maastrichtian megacycles (Text-Figure 1).

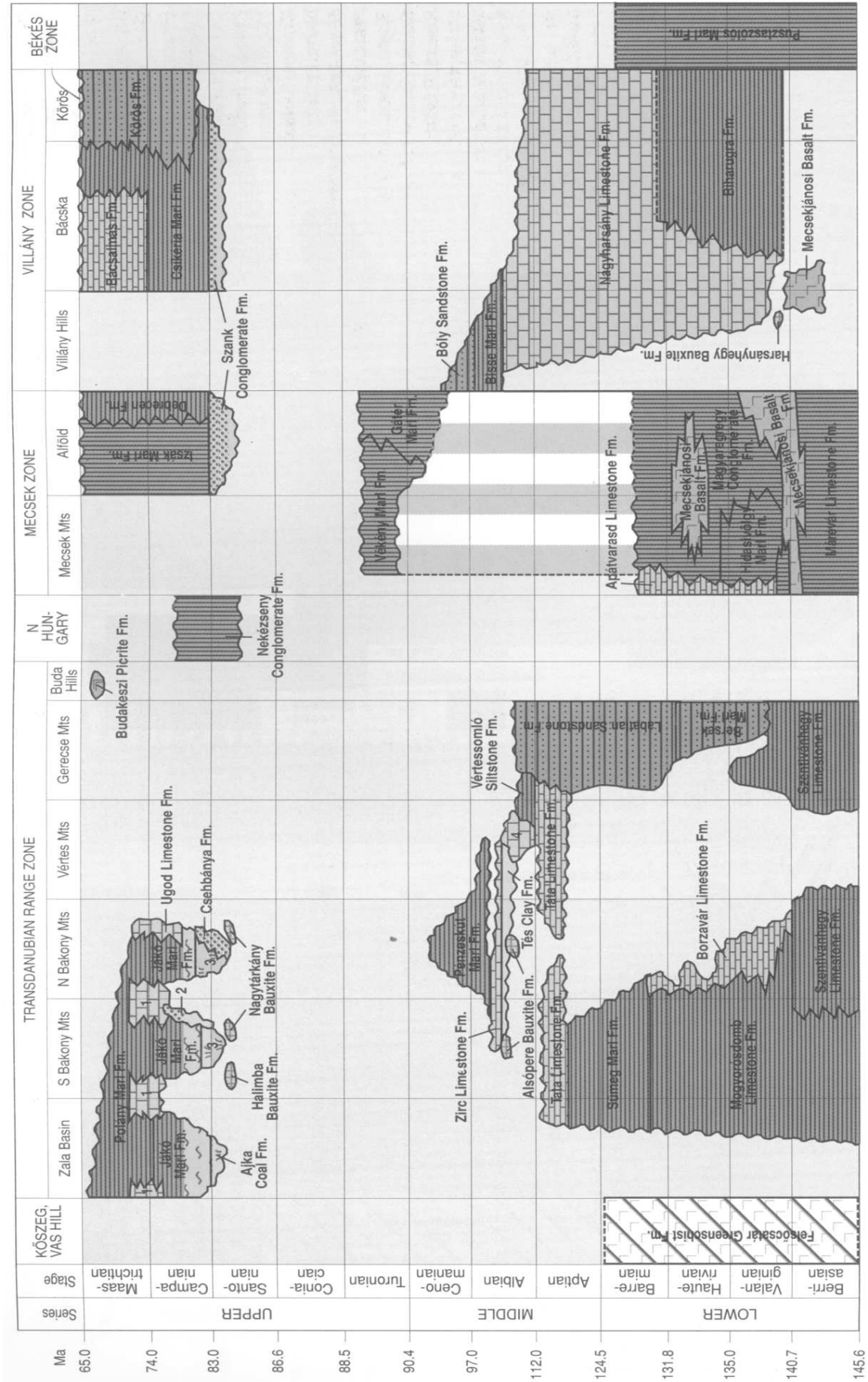
During the Late Aptian, shallow marine crinoidal sediment, the Tata Limestone Formation deposited discordantly onto the subaerial/submarine erosional hardground surface of Tithonian–Berriasian. In the Early Albian orogenic movements originated a transgression and the crinoidal sediment changed into deeper water basin sediment — the Vértessomló Aleurolite Formation. Both sedimentary units contain ammonites, which are documented here from Tata and the Tatabánya Ta–1462 borehole. As the transgression continued, pelagic, deep water sediment, the Pénteskút Marl Formation deposited in the basins with a marvellous ammonite assemblage.

From the Cenomanian to Santonian subaerial circumstances dominated the region of the present Transdanubian Range. The Upper Cretaceous formations of Hungary compose a relatively complex sedimentary cycle begins with terrestrial bauxites, the dinosaur-bearing Csehbánya Formation or brackish water coal sediments, and ends with the deep water Jákó and Polány Marl Formations or the urgonian Ugod Limestone on the heights. HAAS (1999b) writes “as a combined effect of tectonics and subaerial erosion, an articulated basin came into being by the Santonian with elongated heights and depressions between them, roughly parallel by the structural strike of the Transdanubian Range.” The depressions filled with fluvial–lacustrine–limnic sediments covered with marls. The most recent and accurate works on the Santonian sediment cycle is by HAAS (1983, 1999a, 1999b).

The only record of Santonian ammonites in Hungary (PARTÉNYI 1986) is a single specimen from a borehole (Csabrendek Cr–2). In the Late Santonian – Early Campanian freshwater, brackish and normal marine sediments indicates the new wave of the transgression. In between rudist platforms, a deeper water, pale coloured basin sediment, the Polány Marl Formation deposited which presented poor ammonite data. The upper part of this marly sediment changes into aleurolite and contains sandstone intercalations which suggest the slow orogenic rise of the denudation area. Eocene sediments deposited with huge hiatus onto the Campanian – Early Maastrichtian rock surface.

For more detailed studies see CSÁSZÁR & HAAS (1984); HAAS & CSÁSZÁR (1987); HAAS (1994); CSÁSZÁR & ÁRGYELÁN (1994) and CSONTOS & VÖRÖS (2004).

For better understanding of the Early Cretaceous basin evolution and sedimentation cycles of Hungary — which determined the ammonite distribution, the monograph continues with an outline of the Cretaceous sedimentary system and geodynamics of Hungary by L. Csontos.



1. Ugod Limestone Fm., 2. Kozmatag Fm., 3. Ajka Coal Fm., 4. Környe Limestone Fm.

Text-Figure 1. Lithostratigraphic units of Cretaceous deposits of Hungary. From CSÁSZÁR et al. 1996