

## Paleotopographic reconstitutions of the Armorican Massif (France) across Tertiary and Quaternary

The geodynamical evolution of the Armorican Massif through Tertiary and Quaternary comes within the context of convergence between Africa and Europe (Gros & Limasset, 1984; Bergerat, 1987; Ziegler, 1990). Wyns (1991) and Thomas (1999) have shown that this evolution is characterized by a succession of high wavelength deformations. The paleotopographic reconstitutions realized by Thomas (1999) are in accordance with that suggested by Wyns (1991) for the eastern part of the Armorican Massif, and by Quesnel (1997), for the western part of the Paris Basin.

The new data obtained on the weathering state of rocks, all the sedimentary and tectonic arguments (Brault, 2002), and the eustatic chart published by Hardenbol *et al.* (1998), allow (1) to specify the geodynamical history of the Armorican Massif across Tertiary and Quaternary and (2) to propose a new scheme of paleotopographic evolution adapted from that of Thomas (1999) for the Central Brittany, and from that of Wyns (1991), for the eastern part of the studied domain.

So, the geodynamical history of the Armorican Massif from the Lower Tertiary can be divided in four stages:

- Terminal Cretaceous/Lutetian: the evolution of the Armorican Massif was controlled by a lithospheric antiformal and, at the K/T limit, its altitude is, at the minimum, of 340 m. The uplift caused by this antiformal continued until Upper Lutetian. After that time, the tendency seems to reverse. During this period, warmer and wetter environments favoured the development of lateritic profiles that appeared on emerged surfaces with low relief;

- Bartonian/Rupelian: the Armorican Massif subsided. The beginning of the turnaround is characterized by the development of silicifications on the parts still emerged. During Rupelian times, the Armorican Massif was partly flooded by the sea;

- Chattian/Mio-Pliocene: successive marine transgressions flood the lower parts of the Armorican Massif with

the deposit of the "faluns" at the Middle Miocene. At the Pliocene, it reached its lower altitude during the Tertiary. The sea finally flooded fluvial systems covering the emerged lands during two periods of maximum flooding;

- Pleistocene: the Armorican Massif rise again. Fluvial networks, independent of the mio-pliocene systems, appeared and the actual rivers developed under periglacial climates.

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