The macromammalian fauna (Ungulata) of Rickenbach (Solothurn), Late Chattian, Swiss Molasse : biostratigraphy, paleoecology and paleoclimate

Emery, E.[1], Becker, D.[2] & Berger, J.-P.[3]

[1]Dept. Biology, University Neuchâtel, CH-2000 Neuchâtel. eloemery@hotmail.com; [2]Section de paléontologie du Jura, Hotel des Halles, CH-2900 Porrentruy. contact@palaeojura.ch; [3]Dept. Geosciences-Geologie, University Fribourg, CH- 1700 Fribourg. jean-pierre.berger@unifr.ch

The Rickenbach quarry is located in the canton of Solothurn close to Wangen (Swiss coordinates: 632200 / 242300). It belongs to the Lower Freshwater Molasse (USM) and more precisely to the "Molasse alsacienne". The site is dated by micromammals and has been chosen to be the reference locality for the MP29 international mammal zone (Late Chattian).

The first excavations going up in 1905 were carried out by Dr Stehlin, Dr Martin and J. Stuber (see Martin 1906 and Cadastre des mammifères fossiles, Basel). The collections are stored mainly in the Museum of Basel, Solothurn and Olten.

The goal of this work is to revise the material of the macromammals in order to reconstitute various ecological parameters such as the weight, the size and the diet to propose hypothesis concerning the paleoecology and the paleoclimate.

The small mammal fauna (more than 15 taxa) have been already described in several publications and synthesized in Engesser & Moedden 1997.

The (re)discovery of the very rich collection (more than 2000 pieces) stored the Museum Olten allowed a revision of the ungulate list of Rickenbach. (according to the studies of Brunet 1979, Michel 1983, Guérin 1980 and Becker 2003). The ungulate fauna can be preliminary assigned now to the following taxa : *Ronzotherium romani*, *Microbunodon (?minus)*, *Cephalogale* sp.1, *Cephalogale* sp.2, *Anthracotherium* sp (cf. *magnum*?), *Propalaeochoerus* sp., *Caenotherium* sp.1, *Caenotherium* sp.2, *Amphitragulus* sp.

In a second phase, the detailed study of the Ronzothere of Rickenbach confirms its attribution to *Ronzotherium romani* and informs us about his ecology. The size of the species can be evaluated thanks to the astragale. The weight is estimated according to the method of Legendre (1989) according to the surface of the m1. The slenderness ratio is interpreted with the index of slenderness ratio on McIII.

We can deduce from the methods described above that *Ronzotherium romani* presents an anatomical type very close to *Ronzotherium filholi* to which it succeeds. Even if he was probably a browser, he presents however more grazing affinities and could show a better adaptation to drier environments. He compensates his light loss of mobility by a weak increase of his mass. He would be, just like *Ronzotherium filholi*, an inhabitant of the savannas raised without predatory to his measurement.

This study confirms the general results of Becker (2003) assuming open woodland in a semi-arid climate for this time period.

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