Discovery of a juvenile *Diaceratherium lemanense* (Rhinocerotidae) from the Aquitanian Molasse of Switzerland: systematic, biostratigraphical and palaeobiogeographical implications.

Becker, D., *Bürgin, T. & **Oberli, U.

Section d'archéologie et paléontologie, République et Canton du Jura, Office de la culture, Hôtel des Halles, Case postale 64, 2900 Porrentruy 2, Switzerland
* Naturmuseum St. Gallen, Museumstrasse 32, 9000 St. Gallen, Switzerland
** Waldgutstrasse 21, 9010 St. Gallen, Switzerland

A skull of a juvenile rhinocerotid from the Swiss locality of Eschenbach (eastern Swiss Molasse Basin) is reported. Computed tomography revealed the presence of the unerupted adult teeth P4 and M3 and facilitated their three dimensional virtual reconstruction. Typical morphological features of this skull (postglenoid and posttympanic apophyses in contact, deep nasal opening, very slight occipital elevation, molar lingual cingulum absent) and the comparison with other European specimens, thanks to the virtually extracted adult teeth, ascribe the Eschenbach specimen to *Diaceratherium lemanense* (Pomel, 1853).
The genus *Diaceratherium* is restricted to the western European basins, except the occurrence of a *Diaceratherium* cf. *lamilloquense* in the Upper Oligocene lignite deposits of Nong Ya Plong Tertiary Basin in Central Thailand (Marivaux et al. 2004). This specimen could be the first representative of the group, whereas the first occurrence in Europe is *D. lamilloquense* of Lamilloque (France), mammal zone MP29, at the beginning of a Late Oligocene regional climatic crisis (Berger 1990, 1992; Becker 2003). During MN1 (Early Miocene), *Diaceratherium* shows a relatively high diversity, it is represented by three species (*D. lemanense*, *D. asphaltense, D. tomerdingense*) spreading from southwestern France to eastern Switzerland and southern Germany. *D. lemanense* probably ranges from MP30 (latest Oligocene) with *D.* aff. *lemanense* (Thezel, France) to the base of MN2 (*D. lemanense* of Montaigu-le-Blin, France) and appears as the dominant form during MN1. During MN2 *Diaceratherium* is still represented by three species (*D. lemanense*, *D. aginense*, *D.* cf. *aurelianense*). At this time, it shows its widest geographic repartition, spreading also into the Iberian Peninsula and northwestern Germany. Since MN3, only *D. aurelianense* persists, essentially in the Iberian Peninsula and in France, whereas the genus disappears in Germany in MN3 and in Switzerland in MN4. At the end of MN4 (latest Early Miocene), just after the Proboscidean event, *Diaceratherium* definitively disappears to be replaced in MN6 by the first true European *Brachypotherium* (Becker 2003).
Consequently, the reported Eschenbach specimen appears as a new biostratigraphical pinpoint within the "Granitische Molasse Formation", upper part of the Lower Freshwater Molasse (USM) of the eastern Molasse Basin of Switzerland, and clearly indicates an Early Miocene age for this new locality. Moreover, the Eschenbach specimen is the easternmost occurrence of *D. lemanense*, in agreement with the observed eastern paleobiogeographic extension of *Diaceratherium* in MN1 and at the base of MN2.
Finally, the *Diaceratherium* species could shed light to the Oligocene-Miocene large mammal turnovers and climatic events.

REFERENCES

Becker, D. 2003: Paléoécologie et paléoclimats de la Molasse du Jura (Oligo-Miocène): apport des Rhinocerotoidea (Mammalia) et des minéraux argileux. Thèse Univ. Fribourg, GeoFocus 9, 328 pp.

Berger, J.-P. 1990: Floral changes in the Molasse of Western Switzerland (Oligo-Miocene): paleoclimatic implications. Symposium paleofloristic and paleoclimatic changes in the Cretaceous and Tertiary, Prague, abstract volume, 189-194.

Berger, J.-P. 1992: Paléontologie de la Molasse de Suisse occidentale: taxinomie, biostratigraphie, paléoécologie, paléogéographie et paléoclimatologie. Thèse d'agrégation, Univ. Fribourg, 405 pp.

Marivaux, L., Chaimanee, Y., Yamee, C., Srisuk, P. & Jaeger, J.-J. 2004: Discovery of *Fallomus ladakhensis* Nanda & Sahni, 1998 (Mammalia, Rodentia, Diatomyidae) in the lignites of Nong Ya Plong (Phetchaburi Province, Thailand): systematic, biochronological and paleoenvironmental implications. Geodiversitas 26 (3), 493-507.