

AACHEN-LIEGE UNIVERSITIES EXCHANGE DAYS IN AACHEN NOVEMBER 27th, 1987

Organized by R. WALTER, RWTH Aachen,
E. POTY & M. STREEL, Paleontology, University of Liège
in cooperation with the Société géologique de Belgique, Liège
and the Natural History Museum, Maastricht

Thema : ASSESSMENT OF PALEOGEOGRAPHIC DISTANCES : IMPLICATIONS FOR APPLIED GEOLOGY

THE LATE CRETACEOUS BETWEEN ANTWERP AND AACHEN : DIFFERENTIATION IN SEDIMENTARY FACIES AS A RESPONSE TO TECTONIC ACTIVITY

Martin J.M. BLESS¹

¹ Natuurhistorisch Museum Maastricht.

Reappraisal of biostratigraphy data on the Upper Cretaceous deposits between Aachen (FRG) and Antwerp (Belgium) learns that these do not represent an uninterrupted, continuous succession of sediments. On the contrary, there is evidence for frequent and even considerable hiatuses which are interpreted as a response to local differential warping of the intensely block-faulted basement. Moreover, in contrast to former opinions, there are good biostratigraphic tools (belemnites, ammonites, foraminifera, ostracodes, bioclast assemblages) demonstrating the strongly diachronic character of sedimentary facies. For instance, the lower half of the white chalk (Zeven Wegen Chalk) of the Upper Campanian at Halembaye (CPL Quarry of Haccourt) and Maastricht (Kastanjelaan and Heugem boreholes) is absent in the intermediate area of Lixhe and 's-Gravenvoeren and passes into a glauconitic, sandy marl to the north (Bunde borehole; cf. Hergreen *et al.*, 1986), north east (De Dael outcrop near Heerlen) and east (Hombourg borehole and Zeven Wegen outcrop; cf. Jagt *et al.*, 1987). These lateral changes in lithofacies are so «dramatic» and take place over so extremely short distances that, until recently, nobody accepted that these might be coeval. These differences are now explained by syndepositional tectonics, long-shore currents and other sedimentary models (Bless *et al.*, 1987).

This example shows that contrasting lithologies or fossil assemblages do not yield a clue for identifying their original distance or nearness.

BLESS, M.J.M., FELDER, P.J. & MEESSEN, J.P.M.Th., 1987. Late Cretaceous sea level rise and inversion : their influence on the depositional environment between Aachen and Antwerp. *Ann. Soc. géol. Belg.*, 109 : 333-355.

HERNGREEN, G.F.W., FELDER, W.M., KEDVES, M. & MEESSEN, J.P.M.Th., 1986. Micropaleontology of the Maastrichtian in borehole Bunde, the Netherlands. *Rev. Palaeobot. Palynol.*, 48 : 1-70.

JAGT, J.W.M., FELDER, P.J. & MEESSEN, J.P.M.Th., 1987. Het Boven-Campanien in Zuid-Limburg (Nederland) en Noordoost België. *Natuurhist. Maandblad Limburg*, 76 (4) : 94-110.

THE ORDOVICIAN OF BRITANNY AND PORTUGAL, SIMILAR SEDIMENTARY SEQUENCES DEPOSITED SEVERAL HUNDREDS OF KILOMETERS APART

Martin J.M. BLESS¹

¹ Natuurhistorisch Museum Maastricht.

The Ordovician deposits of Brittany and Portugal show a remarkable similarity in the succession of lithologies and their thickness (tab. 1).

Table 1.- Comparison between the Ordovician rocks of the Presqu'île de Crozon (Britanny) and The Serra de Buçaco (Portugal), after Henri *et al.*, 1974.

AGE	CROZON (BRITANNY)	BUÇACO (PORTUGAL)
Ashgill	Rosan Formation (tufts and lavas)	Porto do Santa-Anna Fm. (tufts and lavas)
	Kermeur Formation (alternating micaceous siltstones and quartzitic sandstones) thickness : max. 300 m	Louredo Formation (alternating micaceous siltstones and quartzitic sandstones) thickness : max. 250 m
Llandeilo	Postolonnec Formation (micaceous siltstones intercalated by quartzitic sandstones; fine-grained siltstones in lower quarter)	Cacemes Formation (micaceous siltstones intercalated by quartzitic sandstones; fine-grained siltstones in lower third)
Llanvirn	thickness : 300-350 m	thickness : 300 m
Arenig	Grès Armoricain (thick-bedded quartzitic sandstones with in upper portion micaceous sandstones thickness : 100-1000 m	Grès Armoricain (thick-bedded quartzitic sandstones with in upper portion micaceous sandstones) thickness : 400-700 m

Also the fossil assemblages (notably those of the Postolonnec and Cacemes Formations) are very similar as far as chitinozoans, ostracodes and trilobites are concerned. This