

CONFIDENCE LEVELS OF CORRELATIONS BETWEEN MIOSPORE BIOHORIZONS AND STANDARD CONODONT ZONES DURING MIDDLE AND LATE DEVONIAN TIME — MAURICE STREEL & STANISLAS LOBOZIAK

Interval zones were introduced for the miospores of the whole Devonian by Strel *et al.* (1987). First or last occurrences of single species (first occurrence Biohorizon or foB., and last occurrence Biohorizon or loB.) are searched for in continuous marine miospore-bearing sequences, preferably in uniform lithologies. The advantage of the Interval Zone concept on the Assemblage Zone concept, the latter most commonly used in palynology, is that it allows unequivocal correlations with Interval Zones based on other fossils. The quality of these correlations depends on the distance between the miospore data and the faunal data (See table 1). The concept is applied here (See fig. 1) for 20 selected Middle and Late Devonian miospore taxa within the limits of a single major phytogeographic province: southern Euramerica.

Reference:

Strel, M., Higgs, K., Loboziak, S., Riegel, W. & Steemans, P. 1987: Spore stratigraphy and correlation with faunas and floras in the type marine Devonian of the Ardenne-Rhenish region; *Review of Palaeobotany and Palynology*, 50: 211-229.

Table 1: Quality Index (QI) in correlation between any reference faunal (here conodont) and miospore zones.

From 1 to 6: best to worst.

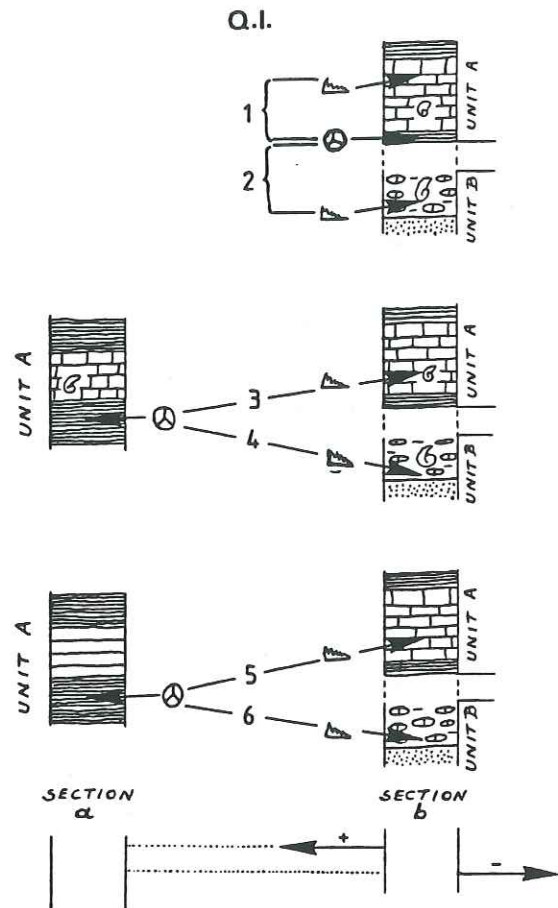
- 1 reference fauna in same section and same lithological unit as reference point of miospore zone.
- 2 reference fauna in same section but other lithological units than reference point of miospore zone.
- 3 reference fauna in another section (3+ at short distance, 3- at long distance), but in same lithological unit containing other faunal or floral data also known in reference section of miospore zone.
- 4 reference fauna in another section (4+ at short distance, 4- at long distance), in other lithological units containing other faunal or floral data also known in reference section of miospore zone.
- 5 reference fauna in another section (5+ at short distance, 5- at long distance), in same lithological unit but without common faunal or floral data with reference section of miospore zone.
- 6 reference fauna in another section (6+ at short distance, 6- at long distance), in other lithological units but without common faunal or floral data with reference section of miospore zone.

QI = Quality Index in correlation; 1-2: miospores and conodonts are of course never extracted from the same lithologies; 2/3+: QI of the highest correlation / QI of the lowest correlation.

ERRATUM:

The figure caption at the bottom of page 15 for the figure accompanying Strel & Loboziak should read as follows:

QI = Quality Index in correlation; 1-2: miospores and conodonts are of course never extracted from the same lithologies; 2/3+: QI of the lowest correlation / QI of the highest correlation.



EPOCH AGE		CONODONTS			MIOSPORES				
CARB.		OLD ZONATION	STANDARD ZONATION		QI				
LATE DEVONIAN	FAMENNIAN	<i>S. sulcata</i>	<i>sulcata</i>		1-2		<i>R. lepidophyta</i> foB.		
		<i>L. Protognathodus</i>	<i>praesulcata</i>	L		21			
		<i>U. costatus</i>		M	1-2	20	<i>H. explanatus</i> foB.		
		<i>M. costatus</i>	<i>expansa</i>	E					
		<i>L. costatus</i>		L	4+/4-	19	<i>R. lepidophyta</i> foB.		
		<i>U. styriacus</i>		M					
		<i>M. styriacus</i>	<i>postera</i>	E					
		<i>L. styriacus</i>		L	2/3+	16,17,18	<i>G. cornuta, R. radiata, R. phillipsii</i>		
		FRASNIAN	<i>U. velifer</i>	<i>trachytera</i>	E				
			<i>M. velifer</i>		L				
	<i>L. velifer</i>		<i>marginifera</i>	E	1-2	15	<i>R. macroreticulata</i>		
	<i>U. marginifera</i>			L*	6+/1	14	<i>G. famenensis</i>		
	<i>L. marginifera</i>		<i>rhomboidea</i>	E					
	<i>U. rhomboidea</i>			L					
	<i>L. rhomboidea</i>		E						
	<i>U. crepida</i>		<i>crepida</i>	L*					
	<i>M. crepida</i>			L					
	<i>L. crepida</i>			M					
	<i>U. triangularis</i>		<i>triangularis</i>	E					
	<i>M. triangularis</i>	L		NY, USA	13	<i>K. dedaleus</i> foB.			
	<i>L. triangularis</i>	M		4-/?					
MIDDLE DEVONIAN	GIVETIAN	<i>U*. gigas</i>	<i>linguiformis</i>	E	6+/4-	12	<i>G. gracilis</i> foB.		
		<i>U. gigas</i>		L	6+/4-	11	<i>R. bricei</i> foB.		
		<i>L. gigas</i>	<i>rhenana</i>	E					
		<i>Ancyrognathus triangularis</i>		L					
		<i>U. asymmetricus</i>	<i>hassi</i>	E					
	<i>M. asymmetricus</i>	L							
	EARLY DEV.	EIFELIAN	<i>L. asymmetricus</i>	<i>punctata</i>	E	1-2	10	<i>V. bulliferus</i> foB.	
			<i>L*. asymmetricus</i>		L				
			<i>disparilis</i>	<i>varcus</i>	E				
			<i>hem. cristat.</i>		L	1-2	9	<i>C. concinna</i> foB.	
<i>varcus</i>			M						
<i>ensensis-bipen.</i>		<i>ensensis-obliqu.</i>	E	1-2	8	<i>S. triangulatus</i> foB.			
<i>kockelianus</i>			L	1-2	7	<i>G. lemurata</i> foB.			
<i>australis</i>		<i>cost. costatus</i>	E	1-2	6	<i>C. timarica</i>			
<i>cost. costatus</i>			L	5	4,5	<i>A. acanthomam., A. macrospinosus.</i>			
<i>cost. paritius</i>		<i>cost. patulus</i>	E	1-2	3	<i>G. velata</i> foB.			
<i>cost. patulus</i>	L		5	1,2	<i>A. apiculatus, G. protea</i>				
<i>serotinus</i>	<i>inversus</i>	E							
<i>inversus</i>		L	Bohemia						

SAUERLAND R.

ARDENNE REGION

BOULONNAIS REGION

EIFEL REGION