REPORT

Carboniferous stratigraphy

Perhaps "Farewell to the Dinantian" would have been a better title, but this report relates to changes that are going to creep into the lives of all British geologists.

Following five years of deliberation by the Subcommission on Carboniferous Stratigraphy, and ratification by the International Commission on Stratigraphy and the International Union of Geological Sciences, a new official subdivision of the Carboniferous System has been adopted. This is summarised in the table below. Further details on the palaeontological definitions of the standard stage boundaries, and on some of the type localities, is at - www.stratigraphy.org/gssp.htm. Some of the new nomenclature brings notable changes for those involved with geology in the East Midlands and Pennines.

The name of the Carboniferous System is retained, but it is now divided into two subsystems, Mississippian and Pennsylvanian, with names that are taken from American stratigraphy. These do not exactly equate with the relegated divisions of Lower Carboniferous (Dinantian) and Upper Carboniferous (Silesian) used in western European.

Standard Divisions			Regional Divisions (Western Europe)		obsolete
SS	Se	Stage	Stage	Substage	
PENNSYLVANIAN	U	Gzhelian	Autunian (part)	Kuzel	SILESIAN
			Stephanian	Stephanian C	
		Kasimovian		Stephanian B	
				A Barruelian	
				Cantabrian	
	M	Moscovian	Westphalian	D Asturian	
				C Bolsovian	
	L	Bashkirian		B Duckmantian	
				A Langsettian	
			Namurian	Yeadonian	
				Marsdenian	
				Kinderscoutian	
				Alportian	
				Chokierian	
MISSISSIPPIAN	U	Serpukhovian		Arnsbergian	
				Pendleian	
	M	Visean	Visean	Brigantian	DINANTIAN
				Asbian	
				Holkerian	
				Arundian	
				Chadian	
	L	Tournaisian	Tournaisian	Courceyan: Ivorian	
				Courceyan: Hastarian	

SS = Sub-System; Se = Series

A largely new sequence of stage names borrows much from Russian localities, though the Visean and Tournaisian do survive from the Belgian Ardennes. Other European terms are now relegated to mere regional status, and it is accepted that these will remain in local use for some time. However, the name Dinantian, so well known for its limestones in both the Derbyshire Peak and the Yorkshire Dales, has been dispatched to obsolescence.

Though not all boundaries and correlations have yet been completely fixed, these stage names should now be used in any descriptions, and will soon become more widely recognised. In practice, the British and European terms will continue in use, largely because they are so well understood. The British and European stratigraphies do have some real advantages over the international terms, notably related to the Mississippian-Pennsylvanian boundary which lies badly within the development of the Namurian delta in northern Europe; it is totally lost within our Millstone Grit Series. Proper geological descriptions should now include correlation with the international stratigraphical sequence.

The above comments all refer to the chronostratigraphical units, which are defined by time boundaries and can therefore be correlated worldwide. A second set of names constitute the lithostratigraphic sequence, which applies to recognisable and mappable rock units referred to as Formations and Groups. These can only have local significance, as the lateral extents of individual rocks were limited by contemporary environments. A full review of Carboniferous lithostratigraphy is currently in the publication pipeline at the British Geological Survey [Waters, C N, Browne M A E, Dean M T and Powell J H: Lithostratigraphical framework for Carboniferous successions of Great Britain (onshore): *BGS Research Report* RR/05/06]; it is eagerly awaited, and will be reviewed in the next *Mercian Geologist*.

This short report has been compiled by the Editor of Mercian Geologist, with generous assistance from Stewart Molyneux (who also provided the table) and David Lowe, both at BGS at Keyworth.

Mississippian limestone at Dinant, Belgium