

MAJOR GUIDE TAXA FOR CORRELATION OF THE MOSCOW AND DONETS BASINS DINANTIAN SUCCESSIONS WITH THE TYPE AREA (BELGIUM)

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Proposed correlation of the Moscow and Donets Basins is summarized in the Table 1.

The basal unit of the Moscow Basin Dinantian succession (lower Kupavna) is defined by miospores indicating the lowermost part of the VI Miospore Zone (= lower *sulcata* Zone) [Byvsheva, 1997]. Foraminiferal association of the upper Kupavna – Malevka and most of the Upa is represented by unilocular taxa. Occurrences of *Spinoendothyra spinosa* and *Tournayella discoidea* in the lower Chernyshino [Makhlina et al., 1993] indicate the 8 Mamet Zone and the Cf2 Zone [Hecker, 2002a]. *Chernyshinella glomiformis* and *Palaespiroplectamina tchernyshinensis* marking this interval show later occurrences than in the Dinant Basin, where both species define the lower limit of the MFZ3 Zone [Poty et al., 2006]. Rugose associations of the Malevka – Upa and Chernyshino [Soshkina, 1960] indicate lower – middle Hastarian and lower Ivorian, respectively. Records of *Siphonophyllia* ex gr. *cylindrica* in the Malevka suggest correlation with the RC1 β Subzone. *Sychnoelasma konincki* and *Cyathoclisia* reported from the lower Chernyshino define the RC3 Zone in Belgium [Poty et al., 2006], whereas *Caninophyllum* commonly entering at the same level is recorded in the Moscow Basin in the Upa. The hiatus near the Tournaisian – Viséan limit in the southern part of the basin lies within the Glubokovskoe formation and separates its lower and upper members. It corresponds to the PC miospore zone established in the middle Radaevka of the Volga-Urals; the lower limit of the latter being correlated with the lower limit of the Pu Miospore Zone on the common occurrence of *Lycospora pusilla* [Byvsheva, 1997]. Records of *Siphonodendron junceum* and *Lithostotion maccoyanum* in the upper middle Tula suggest correlation with the RC7 β Subzone (upper Asbian), and miospore, foraminiferal and rugose occurrences in the Aleksin include diagnostic upper Warnantian (Brigantian) taxa [Hecker, 2002a, 2002b]. The base of the Aleksin is marked by *Tripartites vetustus* which defines the lower limit of the Brigantian [Clayton et al., 1990]. Lower Brigantian guide taxa *Loeblichia ukrainica*, *Lonsdaleia floriformis* and *Orionastraea* [Mitchell, 1989; Conil et al., 1990; Poty et al., 2006] define the lower Aleksin. *Janishewskina* reported from the upper Aleksin [Makhlina et al., 1993] marks the lower limit of the upper Cf6 δ [Conil et al., 1990]. Presence of *Asteroarchaediscus bashkiricus* in the Venev agrees with the entry of this species in the upper 16 sup. Mamet Zone [Mamet, 1974]. *Gnathodus bilineatus* makes its first occurrence high in the succession, near the base of the upper Tula. The Viséan – Serpukhovian boundary cannot be defined either based on conodonts, ammonoids or foraminifers [Hecker, 2002a; Hecker and Osipova, 2007].

The basal unit of the Donets Dinantian succession (lower Bazaliev) yields association of unilocular foraminifers [Poletaev et al., 1990] indicating the MFZ1 Zone. *Conilophyllum* sp. restricted to the middle Bazaliev suggests correlation with the Cf1 α' (lower MFZ2) [Hecker, 2002a]. *Prochernyshinella disputabilis*, which defines the lower limit of the Cf1 β Subzone (MFZ3) in Belgium [Conil et al., 1990; Poty et al., 2006], enters in the Donets Basin at a lower level and is characteristic of the middle – upper Bazaliev (approximately Cf1 α' – α'' , MFZ2). Common occurrence of *Chernyshinella glomiformis* and *Laxoendothyra parakosvensis* in the Karakuba and records of *Tuberendothyra tuberculata* in the Volnovakha [Poletaev et al., 1990] indicate the MFZ3 and MFZ4 Zones, respectively. Records of *Cyathoclisia modavensis* in the Volnovakha suggest correlation with the *Caninophyllum patulum* zone in the sense of Mitchell [1981] and the RC3 Zone. *Palaespiroplectamina tchernyshinensis* marks the lower limit of the Volnovakha and shows later occurrence than in the Dinant Basin. Characteristic Upper Tournaisian *Carbonella*, *Planoendothyra*, *Spinoendothyra*, *Inflatoendothyra* and *Dainella* enter in the Karpovka and indicate the 9 Mamet Zone and the upper part of the Cf3 Zone (MFZ6). *Sychnoelasma* commonly defines the lower limit of the Upper Tournaisian [Mitchell, 1981; Hecker, 2002a; Poty et al., 2006], but shows late occurrence in the Donets Basin and enters in the

Table 1

**Correlation of the Dinantian of the Moscow and Donets Basins
with the type area (Belgium)**

		BELGIUM			MOSCOW BASIN	DONETS BASIN		
		Conil et al. [1990]	Poty et al. [2006]	Conil et al. [1990]	Poty et al. [2006]	Subdivisions after Makhlina et al. [1993]	Subdivisions after Poletaev et al. [1989]	
TOURNAISIAN	← Hastarian	Hastarian	Cf1	α	MFZ 1	Malevka	Bazaliev	
				α' - α''	MFZ 2	Upa	Tb	
	Ivorian	Ivorian	Cf2	β	MFZ 3	Cherepet	Karakuba	
				γ	MFZ 4	Chernyshino	Volnovakha	
	Moliniacian	Ivorian	Cf3	α ₁	MFZ 7	Cherepet	Ageevo	
				α ₂	MFZ 8	Cherepet	Ageevo	
				β	MFZ 10	Glubokovskoe	Glubokaya	
				γ-δ	MFZ 11	Glubokovskoe	Vb	
	Liv.	Liv.	Cf5	α ₁	MFZ 12	Bobriki	Sukhaya	
					MFZ 13	Bobriki	Vd	
	VISEAN	Warrantian	Warrantian	Cf6	α-β	MFZ 13	Tula	Styla
					γ ₁	MFZ 14	Tula	Ve
Warrantian		Warrantian	Cf7 ₁	δ	MFZ 15	Tula	Donets	
					MFZ 16 ₁	Tarus	Vf	
Liv.		Liv.	Cf5	α ₁	MFZ 12	hiatus	hiatus	
					MFZ 13	hiatus	hiatus	
Warrantian	Warrantian	Cf6	δ	MFZ 15	hiatus	hiatus		
				MFZ 16 ₁	hiatus	hiatus		
Warrantian	Warrantian	Cf6	γ ₂	MFZ 14	hiatus	hiatus		
				MFZ 15	hiatus	hiatus		
Warrantian	Warrantian	Cf6	γ ₁	MFZ 14	hiatus	hiatus		
				MFZ 15	hiatus	hiatus		
Warrantian	Warrantian	Cf6	α-β	MFZ 13	hiatus	hiatus		
				MFZ 14	hiatus	hiatus		

upper Karpovka. The base of the Dokuchaevsk is defined by the common occurrence of *Eoparastaffella* and *Levitusia humerosa* [Aizenverg et al., 1975; Poletaev et al., 1990]. These taxa indicate the “Avins event” [Poty et al., 2006] and suggest correlation with the MFZ8 Zone. Records of *Siphonophyllia* ex gr. *caninoides* [Vassilyuk, 1960] in the Dokuchaevsk allow correlation with the upper Cf4 α_1 Subzone. The base of the Glubokaya coincides with the GSPP for the base of the Viséan defined by the appearance of *Eoparastaffella simplex* [Vdovenko, 1964]. Occurrences of *Eoendothyranopsis donica* in the Vb–Vc zones and of *Globoendothyra numerabilis* in the Vd $_1$ subzone [Poletaev et al., 1990] indicate the upper MFZ9 Zone and the 13 Mamet Zone, respectively. *Haplolasma subibicinum* reported from the Vb zone [Vasilyuk, 1960] marks the lower limit of the Viséan [Conil et al., 1990; Poty et al., 2006]. Records of *Uralodiscus rotundus* and *Paraarchaediscus* in the Sukhaya [Poletaev et al., 1990] indicate the MFZ11 Zone. The base of the Styla approximates to the lower limit of the Upper Viséan [Hecker, 2002a]; basal Styla yields *Bollandites donetsensis*, *B. mediocris*, *Bollandoceras stylensis* and *Dimorphoceras* sp. [Kuzina, Poletaev, 1991] indicating the upper *Bollandites* – *Bollandoceras* zone in the sense of Riley [1990]. *Vissariotaxis*, double-wall *Palaeotextularia*, primitive *Howchinia* and *Globoendothyra globulus* characteristic of the upper Styla – lower Donets [Poletaev et al., 1990] indicate the lower Warnantian (Cf6 α – γ Subzones, 15 Mamet Zone). The base of the middle Donets (vf $_2$ zone) correlates with the lower limit of the uppermost Viséan on the occurrence of miospores *Tripartites vetustus* [Clayton et al., 1990]. Occurrences of *Goniatites aisenbergi*, *Loeblichia ukrainica* and *Janishewskina* in the middle Donets, and occurrences of *Asteroarchaediscus bashkiricus* in the upper Mezha [Poletaev et al., 1990] indicate the Cf6 δ Subzone (MFZ 15) and the upper 16 sup. Mamet Zone, respectively. *Aulophyllum fungites*, *Siphonodendron junceum* and *Palaeostraea regia* reported from the Donets, and *Corwenia rugosa* and *Orionastraea* aff. *prerete* reported from the Mezha [Vassilyuk, 1960; Poletaev et al., 1990] indicate the upper Asbian – lower Brigantian and higher intervals of the Brigantian (coral faunas I–J), respectively [Hecker, 2002a, b]. *Gnathodus bilineatus* enters high in the succession, near the base of the middle Donets [Poletaev et al., 1990]. The Viséan – Serpukhovian boundary cannot be defined either based on conodonts, ammonoids or foraminifers.

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