

Cardiola-Formation / Cardiola Formation
(description see Carnic Alps)

Alticola-Kalk / Alticola Limestone
(description see Carnic Alps)

Platten-Kalk / Platy Limestone
THOMAS J. SUTTNER

Validity: Invalid; known since TELLER (1886a); lithology and biostratigraphy by SCHULZE (1968), TESSENHORN (1974b) and MOSHAMMER (1989, 1990).

Type area: ÖK50-UTM, map sheet 4114 Bad Eisenkappel (ÖK50-BMN, map sheets 212 Vellach, 213 Bad Eisenkappel).

Type section: -

Reference section(s): Christophorus-Fels (SCHÖNENBERG, 1965: Fig. 2, p. 32), N 46°26'14" / E 14°33'28"; Kleiner Pasterk-Pasterkhube (N 46°26'12" / E 14°32'50"), Paulitsch Wand (N 46°25'05" / E 14°34'48"), Plasnik (N 46°26'02" / E 14°35'02"), Sadonig Höhe (N 46°26'09" / E 14°35'26"), south of Storschitz (N 46°25'29" / E 14°31'41") published by TESSENHORN (1974b); Trögen Klamm section-group B (N 46°28'00" / E 14°30'24"), E (N 46°28'00" / E 14°30'30"), F2 (N 46°28'01" / E 14°30'18") and the detailed section of Malowerschnig (N 46°28'01" / E 14°30'09") published by MOSHAMMER (1989, 1990).

Derivation of name: After facies characters.

Synonyms: Dunkel-rauchgraue dolomitische Plattenkalke (TELLER, 1886a); dunkle Plattenkalke des obersten Silur (ey) (SCHÖNENBERG, 1965: Fig. 2, p. 31); ey-Kalke (SCHULZE, 1968); gebankte, hellgrau-schwarze fossilarme Kalke (MOSHAMMER, 1989).

Lithology: Well bedded micritic limestones, upper part of the unit consists of tentaculite-bearing flaser limestone.

Fossils: Brachiopods, conodonts, crinoids, orthocerids, ostracods, tentaculites, trilobites.

Origin, facies: Marine limestone, pelagic unit.

Chronostratigraphic age: Pridoli-Lochkovian.

Biostratigraphy: *eosteinhornensis*, *woschmidti*, *delta* and *pesavis* conodont zones (SCHULZE, 1968; TESSENHORN, 1974b; MOSHAMMER, 1989).

Thickness: Approx. 40 m.

Lithostratigraphically higher rank unit: -

Lithostratigraphic subdivision: -

Underlying unit(s): Alticola Limestone (conformable contact).

Overlying unit(s): Bronteus Limestone (conformable contact).

Lateral unit(s): Orthoceratid Limestone.

Geographic distribution: Karavanke Mountains (Eisenkappel and Seeberg area).

Remarks: -

Complementary references: SCHULZE (1964), SCHÖNENBERG (1967), KUPSCH et al. (1971), TESSENHORN (1974a), SCHÖNLAUB (1979), MOSHAMMER (1987), RANTITSCH (1990, 1992b), RAMOVŠ (1999), SCHÖNLAUB & HISTON (1999, 2000).

Orthoceras-Kalk / Orthoceratid Limestone
THOMAS J. SUTTNER

Validity: Invalid; first mentioned by TELLER (1886b); later described by ROLSER (1968); lithological and biostratigraphical analysis by MOSHAMMER (1989).

Type area: ÖK50-UTM, map sheet 4114 Bad Eisenkappel (ÖK50-BMN, map sheets 212 Vellach, 213 Bad Eisenkappel).

Type section: -

Reference section(s): Trögen Klamm section-group F1 (N 46°28'02" / E 14°30'12") and the detailed section of Malowerschnig (N 46°28'01" / E 14°30'09") published by MOSHAMMER (1989); Jezersko (Ober-Seeland) (RAMOVŠ, 1971).

Derivation of name: After facies characters.

Synonyms: Orthocerenkalke (ROLSER, 1968).

Lithology: Light grey to reddish bedded limestone with nodular bedding planes (ROLSER, 1968: p. 54).

Fossils: Brachiopods, conodonts, crinoids, orthocerids, ostracods.

Origin, facies: Marine limestone, pelagic unit.

Chronostratigraphic age: Wenlock to Pridoli.

Biostratigraphy: *bohémica* conodont zone (equivalent of *crassa* Zone in MOSHAMMER 1989: Fig. 10, p. 625).

Thickness: 30–40 m.

Lithostratigraphically higher rank unit: -

Lithostratigraphic subdivision: -

Underlying unit(s): Cardiola Formation (conformable contact).

Overlying unit(s): Bronteus Limestone (conformable contact).

Lateral unit(s): Alticola Limestone, Platy Limestone.

Geographic distribution: Karavanke Mountains (Eisenkappel and Seeberg area).

Remarks: -

Complementary references: TELLER (1887), KUPSCH et al. (1971), SCHÖNLAUB (1979), MOSHAMMER (1987, 1990), SCHÖNLAUB & HISTON (1999, 2000).

Bronteus-Kalk / Bronteus Limestone
THOMAS J. SUTTNER

Validity: Invalid; mapped by LIPOLD (1856b) and TELLER (1886a); lithological logs and biostratigraphy by SCHULZE (1968), TESSENHORN (1974a) and MOSHAMMER (1989, 1990); name already mentioned by STACHE (1884) when comparing units of the Karavanke Mountains with the Graz Paleozoic; the term was first applied for this unit (in the Karavanke Mountains) by SCHÖNLAUB (1979).

Type area: ÖK50-UTM, map sheet 4114 Bad Eisenkappel (ÖK50-BMN, map sheets 212 Vellach, 213 Bad Eisenkappel).

Type section: -

Reference section(s): Christophorus-Fels (SCHÖNENBERG, 1965: Fig. 2, p. 32), N 46°26'15" / E 14°33'30"; Kleiner Pasterk-Pasterkhube (N 46°26'12" / E 14°32'49"), Plasnik (N 46°26'03" / E 14°35'00"), Sadonig Höhe (N 46°26'10" / E 14°35'42"), Storschitz (N 46°25'44" / E 14°31'37") pub-

lished by SCHULZE (1968); Trögen Klamm section-group B (N 46°28'00" / E 14°30'24"), D (N 46°28'03" / E 14°30'33"), F1 (N 46°28'02" / E 14°30'12") published by MOSHAMMER (1989, 1990).

Derivation of name: After the generic name of the trilobite *Bronteus transversus* (BARRANDE) (Suess, 1858).

Synonyms: Gailthaler Kalk (LIPOLD, 1856b: p. 350); rötlich-graue bis fleischrote Oolith-Marmore (TELLER, 1886a); fleischrote Kalke des unt. Unterdevon (F 2) (SCHÖNENBERG, 1965: Fig. 2, p. 31); rotgeflammt Kalk (SCHULZE, 1968); fleischroter Kalk (SCHULZE, 1968); Rote Flaserkalke ("F2") (TESSENSOHN, 1974a); Bunter Bronteus-Kalk (SCHÖNLAUB, 1979); "dehiscens"-Kalk (MOSHAMMER, 1989).

Lithology: Red flaser limestone with interbedded crinoidal limestones.

Fossils: Bivalves, brachiopods, cephalopods, corals (rare), conodonts, crinoids, gastropods, ostracods, tentaculites, trilobites.

Origin, facies: Marine limestone, pelagic unit.

Chronostratigraphic age: Pragian–Emsian.

Biostratigraphy: *kitabicus* and *gronbergi* conodont zones (SCHULZE, 1968; MOSHAMMER, 1989).

Thickness: Approx. 30 m.

Lithostratigraphically higher rank unit: -

Lithostratigraphic subdivision: -

Underlying unit(s): Platy Limestone (conformable contact), Orthoceratid Limestone (conformable contact).

Overlying unit(s): Reef Limestone (conformable contact); Seeland Crinoidal Limestone (conformable contact); Seeberg Coral-Crinoidal Limestone (conformable contact); Limestone, Lydites (conformable contact).

Lateral unit(s): Seeberg Shale.

Geographic distribution: Karavanke Mountains (Eisenkappel and Seeberg area).

Remarks: -

Complementary references: TIETZE (1870), TELLER (1886b), PENECKE (1887), SCHULZE (1964), SCHÖNENBERG (1965, 1967), KUPSCH et al. (1971), TESSENSOHN (1974b), SCHÖNLAUB (1979), MOSHAMMER (1987), RANTITSCH (1990, 1992b), RAMOVŠ (1999), SCHÖNLAUB & HISTON (1999, 2000).

Seeberg-Schiefer / Seeberg Shale

THOMAS J. SUTTNER

Validity: Invalid; lithological characters and biostratigraphic implications provided by LOESCHKE & ROLSER (1971); name first mentioned by TESSENSOHN (1974a).

Type area: ÖK50-UTM, map sheet 4114 Bad Eisenkappel (ÖK50-BMN, map sheets 212 Vellach, 213 Bad Eisenkappel).

Type section: -

Reference section(s): About 1 km southwest of Sadonig Höhe (LOESCHKE & ROLSER, 1971: p. 154), N 46°25'57" / E 14°35'10".

Derivation of name: After Seeberg Pass (TESSENSOHN, 1974a: p. 113).

Synonyms: Devonische Vulkanite in Vellach (LOESCHKE & ROLSER, 1971: p. 154).

Lithology: Greywacke, shale with interbeds of siliceous shale and volcanites, bedded limestone.

Fossils: Conodonts.

Origin, facies: Pelagic marine deposits dominated by shales, siliceous shales, tuffs and volcanites; note wrong color code in the ASC 2004.

Chronostratigraphic age: According to LOESCHKE & ROLSER (1971: Fig. 4, p. 154) Emsian–Famennian age is concluded based on conodonts that were obtained from limestone intercalations at the base of the sequence at the village of Vellach.

Biostratigraphy: -

Thickness: Few cm to 20 m (following LOESCHKE & ROLSER, 1971).

Lithostratigraphically higher rank unit: -

Lithostratigraphic subdivision: -

Underlying unit(s): Bronteus Limestone (conformable contact).

Overlying unit(s): Bronteus Limestone (conformable contact).

Lateral unit(s): Bronteus Limestone.

Geographic distribution: Karavanke Mountains (Eisenkappel and Seeberg area).

Remarks: -

Complementary references: ROLSER (1968), KUPSCH et al. (1971), SCHÖNLAUB (1979), TESSENSOHN (1983), SCHÖNLAUB & HISTON (1999, 2000).

Riffkalk / Reef Limestone

THOMAS J. SUTTNER

Validity: Invalid; first observed by TIETZE (1873); general lithological description by KUPSCH et al. (1971); biostratigraphy by SCHULZE (1968); facies and biostratigraphy of an equivalent, but more distally deposited unit within the Trögen Group by MOSHAMMER (1989, 1990).

Type area: ÖK50-UTM, map sheet 4114 Bad Eisenkappel (ÖK50-BMN, map sheets 212 Vellach, 213 Bad Eisenkappel).

Type section: -

Reference section(s): Christophorus-Fels (SCHÖNENBERG, 1965: Fig. 2, p. 32), N 46°26'08" / E 14°33'30"; Grosser Pasterk (N 46°26'25" / E 14°32'29"), Rapold (N 46°26'16" / E 14°33'13") published by SCHULZE (1968); Trögen Klamm section-group B (N 46°28'00" / E 14°30'24"), C (N 46°27'59" / E 14°35'03"), E (N 46°28'00" / E 14°30'30"), F1 (N 46°28'02" / E 14°30'12"), F2 (N 46°28'01" / E 14°30'18") published by MOSHAMMER (1989, 1990).

Derivation of name: After facies characters.

Synonyms: Durch Corallen ausgezeichnete obersilurische Kalke (TIETZE, 1873: p. 183–184); Rapoldriff (SCHULZE, 1968); Devonkalke ungegl. (SCHÖNENBERG, 1965: Fig. 2, p. 31); Riff- und Riffschuttkalk (KUPSCH et al., 1971); massive Riffschuttbrekzie (MOSHAMMER, 1990: Fig. 2).

Lithology: Bioclastic limestone.

Fossils: Brachiopods, calcareous algae, conodonts, corals, ostracods, stromatoporoids.

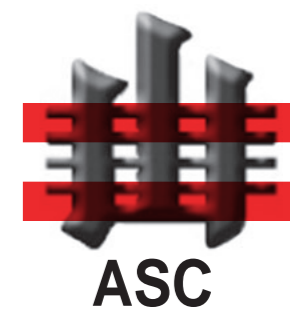
Origin, facies: Marine limestone, neritic unit.

Chronostratigraphic age: Emsian–Famennian.

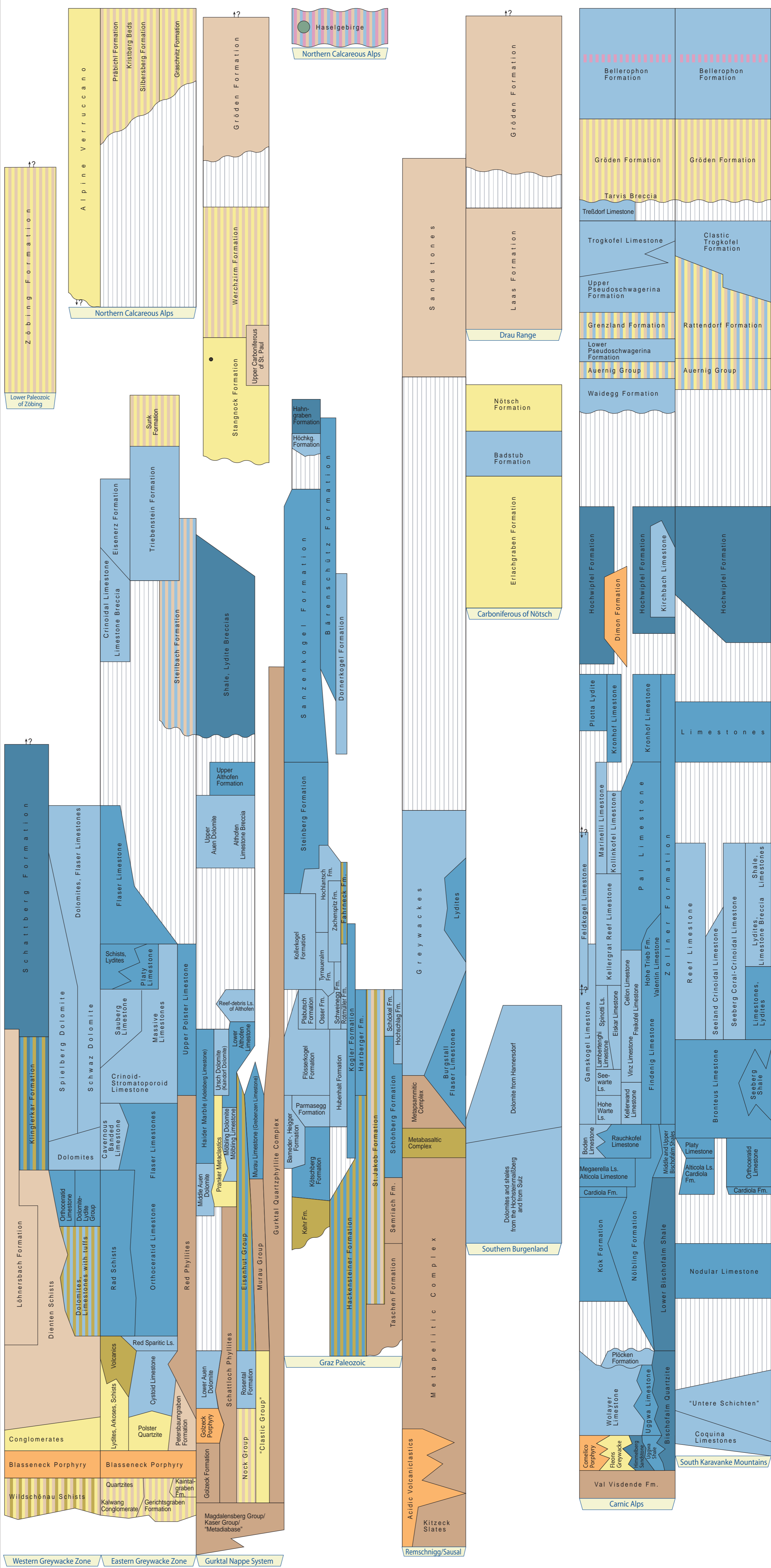
Austrian Stratigraphic Chart 2004 - Paleozoic

(sedimentary successions)

Austrian Stratigraphic Commission



ERA	SYSTEM / PERIOD / SERIES / EPOCH	STAGE / AGE	DURATION Ma	Global Classification					
				ERATHM / ERA	SYSTEM / PERIOD / SERIES / EPOCH				
PALEOZOIC	PERMIAN	CHANGHSINGIAN / Dorashanian	251	PERMIAN	MID PERMIAN / GUADALUPIAN / LOPINGIAN				
		WUCHIAPINGIAN / Dzhulfian	255						
		CAPITANIAN	260						
		WORDIAN	265						
		ROADIAN	270						
		PERMIAN	LOWER PERMIAN / CISURALIAN			KUNGURIAN	275		
						ARTINSKIAN	280		
						SAKMARIAN	285		
						ASSELIAN	290		
		PERMIAN	TRIAS			GZHELIAN	295	TRIAS	U. CARBONIFEROUS / PENNSYLVANIAN
KASIMOVIAN	300								
MOSKOVIAN	305								
BASHKIRIAN	310								
TRIAS	LOWER CARBONIFEROUS / MISSISSIPPIAN			SERPUKHOVIAN	315				
				VISEAN	320				
				TOURNAISIAN	325				
PERMIAN	DEVONIAN			FAMENNIAN	350	DEVONIAN	UPPER DEVONIAN		
				FRASNIAN	355				
				GIVETIAN	360				
		EIFELIAN	365						
		DEVONIAN	MIDDLE DEVONIAN	EMSIAN	370				
				LOCHKOVIAN	375				
				PRAGIAN	380				
		PERMIAN	DEVONIAN	Zlichovian	385			DEVONIAN	LOWER DEVONIAN
				Dalejian	390				
				WEN-LUD-LOCKLOW	395				
HOMERIAN	400								
SHEINWOOD	405								
DEVONIAN	LOWER DEVONIAN			WEN-LUD-LOCKLOW	410				
				TELYCHIAN	415				
				AERONIAN	420				
PERMIAN	DEVONIAN			RHUDDANIAN	425	DEVONIAN	UPPER ORDOVICIAN		
				HIRNANTIAN	430				
		LLANDOVERY	435						
		ORDOVICIAN	440						
		DEVONIAN	UPPER ORDOVICIAN	DARRIWILIAN	443.7				
				TREMA-DOCIAN	445				
				PAIBIAN	447				
		CAMBRIAN	CAMBRIAN	448.3	CAMBRIAN			MIDDLE CAMBRIAN	
				449					
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454									



Legend

- pelagic, offshore, siliciclastic
- pelagic, nearshore, calcareous
- shallow marin, neritic
- terrestrial-continental, coarse clastic
- terrestrial-continental, fine clastic
- evaporite (chloride, sulphate)
- rhyolite, dacite
- (basaltic) andesite, trachyandesite
- basalt
- phyllite
- mixed-facies (in corresponding colors)
- coal (may include several seams)
- ? position/age doubtful/controversial
- | equal units
- \ older unit left \ younger unit right
- hiatus
- unconformity
- GSSP
- Fm. Formation
- Ls. Limestone

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Cutout and English adaptation of the "Die Stratigraphische Tabelle von Österreich 2004": Geological Survey of Austria

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