

Kok-Formation / Kok Formation

THOMAS J. SUTTNER, HANS P. SCHÖNLAUB

Validity: Valid (KREUTZER, 1992b sensu WALLISER, 1964); name first used by SCHÖNLAUB (1985a: p. 38).

Type area: ÖK50-UTM, map sheets 3109 Oberdrauburg, 3110 Kötschach-Mauthen, 3111 Spittal an der Drau, 3112 Villach, 3116 Sonnenalpe Naßfeld, 3117 Nötsch im Gailtal, 3118 Arnoldstein (ÖK50-BMN, map sheets 197 Kötschach, 199 Hermagor, 200 Arnoldstein).

Type section: Cellon avalanche gully, beds 9–20 (WALLISER, 1964), N 46°36'32" / E 12°56'24".

Reference section(s): Rauchkofelboden, Kokberg, Valentintörl section.

Derivation of name: Kokberg [= Monte Cocco].

Synonyms: Untersilurische Schichten [partim] (STACHE, 1874); Rotheisenstein (SEELAND, 1878); Unterer Eisenkalk (FRECH, 1887); Grauer Netzkalk (GEYER, 1894); Thonschiefer (GEYER, 1894); Bunte Flaser- oder Bänderkalke und Kalkphyllite des Obersilur [partim] (GEYER, 1899); Unteres Orthocerenkalkniveau (GEYER, 1903); Calcare ad Orthoceras (VINASSA DE REGNY & GORTANI, 1905); Calcari reticolati con facies a Cefalopodi (GORTANI & VINASSA DE REGNY, 1909); Kokkalke (HERITSCH, 1929); Kokkalk (GAERTNER, 1931); Trilobitenschiefer (GAERTNER, 1931); Aulacopleura-schicht (GAERTNER, 1931; SCHÖNLAUB, 1985a); Krinoidenkalk ("helle Bank") [partim] (HABERFELNER & HERITSCH 1932b); Kok Limestone (SCHÖNLAUB, 1980b); Calcare ad Aulacopleura (SPALLETTA et al., 1982); Calcare del Cocco (SPALLETTA et al., 1982); Marne a trilobite (SPALLETTA et al., 1982); Crinoiden-Brachiopoden-Kalke (SCHÖNLAUB, 1985a); Aulacopleura Limestone (SPALLETTA & VENTURINI, 1989); Orthoceras Limestone (FERRETTI et al., 1999).

Lithology: Well bedded ferruginous grey and red limestone with blackish marly shale.

Fossils: Acritarchs (PRIEWALDER, 1987), bivalves (KRIZ, 1979, 1999), brachiopods (PŁODOWSKI, 1971, 1973), cephalopods (RISTEDT, 1968; BOGOLEPOVA, 1998; HISTON, 1999), chitinozoans (PRIEWALDER, 1997), conodonts (WALLISER, 1964; SCHÖNLAUB, 1979), foraminifers (LANGER, 1969), gastropods, graptolites (JAEGER, 1975), trace fossils (HISTON & SCHÖNLAUB, 1999), trilobites (HAAS, 1969; SANTEL, 1999).

Origin, facies: Marine limestone, neritic and pelagic units are discriminated (Plöcken Facies).

Chronostratigraphic age: Llandovery–Ludlow.

Biostratigraphy: *celloni*, *amorphognathoides*, *patula*, *sagitta*, *bohemica* and *ploeckensis* conodont zones (WALLISER, 1964); *potens* orthoceric zone (HISTON et al., 1999).

Thickness: Approx. 15 m (neritic unit), 4 m (pelagic unit).

Lithostratigraphically higher rank unit: Plöcken Facies (informal).

Lithostratigraphic subdivision: -

Underlying unit(s): Wolayer Limestone (unconformable contact); Plöcken Formation (unconformable contact).

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

Lateral unit(s): Nölbling Formation.

Geographic distribution: Carnic Alps.

Remarks: -

Complementary references: FRECH (1887), SPITZ (1909), HERITSCH (1932, 1943), FLÜGEL (1965), PÖLSLER (1967), MANARA & VAI (1970), SCHÖNLAUB (1970, 1982c, 1991, 1997), TIETZ (1976), KREUTZER (1994), SCHÖNLAUB et al. (1997, 2004), WENZEL (1997), VAI (1998, 1999), PASAVA & SCHÖNLAUB (1999), FERRETTI et al. (1999), PRIEWALDER (2000), SCHÖNLAUB & HISTON (2000), CORRADINI et al. (2003), HUBMANN et al. (2003), LOYDELL (2003), FERRETTI (2005), BRIME et al. (2008), BRETT et al. (2009).

Nölbling-Formation / Nölbling Formation

THOMAS J. SUTTNER, HANS P. SCHÖNLAUB

Validity: Valid (JAEGER & SCHÖNLAUB, 1977); first described by GEYER (1895).

Type area: ÖK50-UTM, map sheets 3108 Sillian, 3109 Oberdrauburg, 3110 Kötschach-Mauthen, 3111 Spittal an der Drau, 3116 Sonnenalpe Naßfeld (ÖK50-BMN, map sheets 197 Kötschach, 198 Weißbriach, 199 Hermagor).

Type section: Nölblinggraben (JAEGER & SCHÖNLAUB, 1977: p. 351), N 46°38'14" / E 13°05'04".

Reference section(s): Gundersheimer Alm road (Oberbuchach section), Collendiaul, Dellacher Alm (JAEGER & SCHÖNLAUB, 1980; BRETT et al., 2009).

Derivation of name: After the Nölblinggraben near the village of Nölbling (JAEGER & SCHÖNLAUB, 1977).

Synonyms: Complex von Thonschiefer, Grauwacke und Kieselschiefer (GEYER, 1895); Kieselschieferkomplex (PÖLSLER, 1969a, b); Löchriger Kalk (PÖLSLER, 1969a).

Lithology: Blackish marly shale alternating with alau shale and dark platy limestone, siliceous shale and lydites are exposed in the lower part.

Fossils: Bivalves, cephalopods, conodonts, crinoids, gastropods, graptolites, trilobites, radiolarians.

Origin, facies: Marine limestone, pelagic unit (Pelagic Carbonate Facies).

Chronostratigraphic age: Llandovery–Lochkovian (?).

Biostratigraphy: *triangulatus-bohemicus* graptolite zone (JAEGER & SCHÖNLAUB, 1977, 1980).

Thickness: 40–50 m.

Lithostratigraphically higher rank unit: Rauchkofel Nappe (or in terms of facial development: Findenig Facies, compare SCHÖNLAUB & HISTON, 1999) (all informal units).

Lithostratigraphic subdivision: -

Underlying unit(s): Plöcken Formation (unconformable contact).

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

Lateral unit(s): Kok Formation; Cardiola Formation; Alticola Limestone; Megaerella Limestone; Rauchkofel Limestone; Lower Bischofalm Shale; Middle and Upper Bischofalm Shale.

Geographic distribution: Carnic Alps.

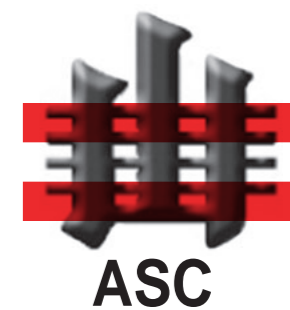
Remarks: -

Complementary references: GORTANI (1925), SCHÖNLAUB (1970, 1985a, 1991, 1998), SCHÖNLAUB & DAURER (1977), RANTITSCH (1991, 1992a), SCHÖNLAUB & KREUTZER (1994a), WENZEL (1997), VAI (1998), PASAVA & SCHÖNLAUB

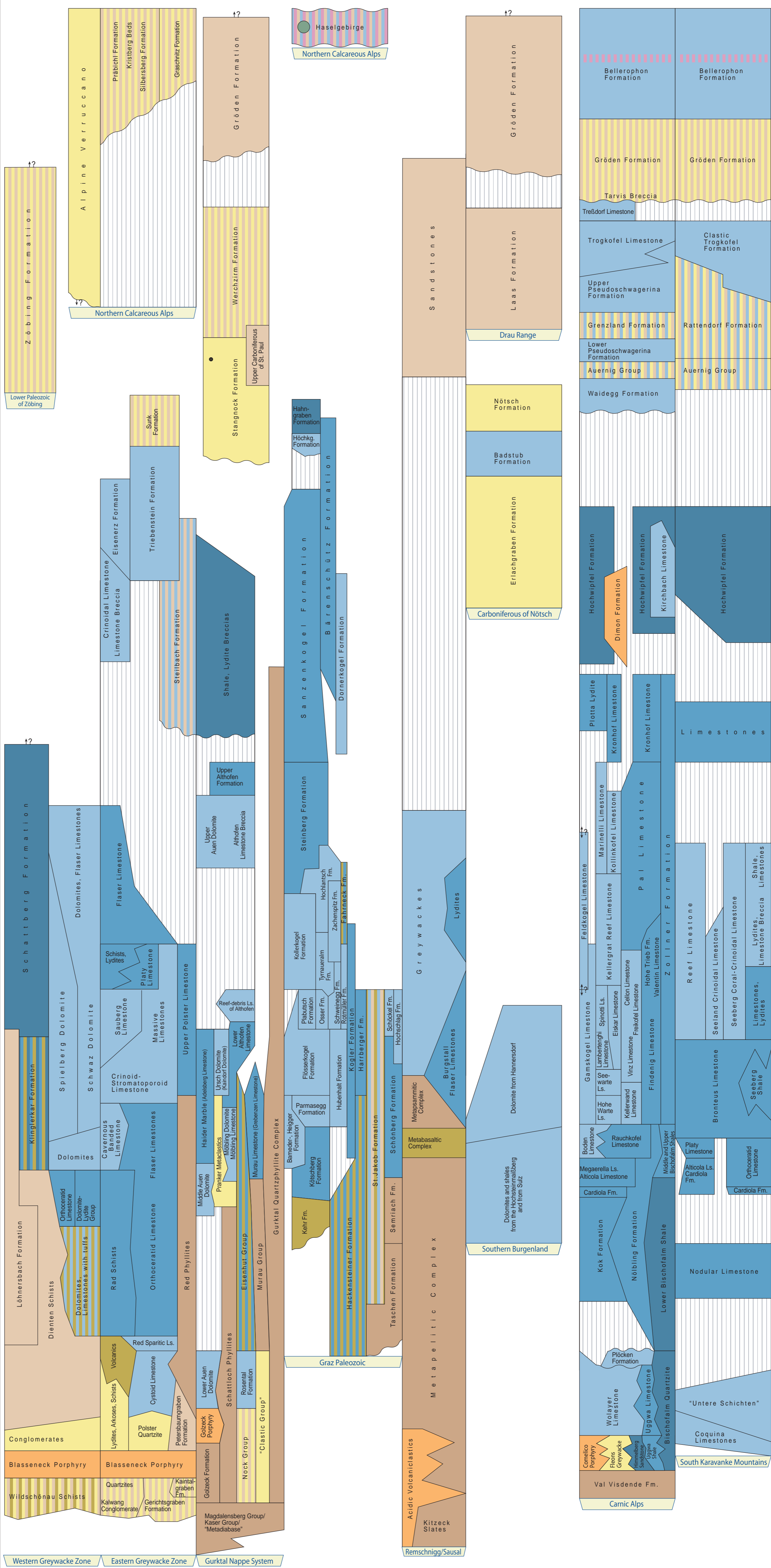
Austrian Stratigraphic Chart 2004 - Paleozoic

(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																
		WUCHIAPINGIAN / Dufallian	255																		
		CAPITANIAN	260																		
		WORDIAN	265																		
		ROADIAN	270																		
		PERMIAN	LOWER PERMIAN / CISURALIAN			KUNGURIAN	275														
						ARTINSKIAN	280														
						SAKMARIAN	285														
						ASSELIAN	290														
		PERMIAN	UPPER PERMIAN / CARBONIFEROUS			GZHELIAN	295	PERMIAN	LOWER PERMIAN / CISURALIAN												
KASIMOVIAN	300																				
MOSKOVIAN	305																				
BASHKIRIAN	310																				
PERMIAN	UPPER PERMIAN / CARBONIFEROUS			SERPUKHOVIAN	315																
				VISEAN	320																
				TOURNAISIAN	325																
PERMIAN	UPPER PERMIAN / CARBONIFEROUS			FAMENNIAN	330	PERMIAN	UPPER PERMIAN / CARBONIFEROUS														
				FRASNIAN	335																
				GIVETIAN	340																
		EIFELIAN	345																		
		PERMIAN	UPPER PERMIAN / CARBONIFEROUS	EMSIA	350																
				LOCHKOVIAN	355																
		PERMIAN	UPPER PERMIAN / CARBONIFEROUS	LUDFORDIAN / GORSTIAN	359.2			PERMIAN	UPPER PERMIAN / CARBONIFEROUS												
				HOMERIAN / SHEINWOOD	365																
				TELYCHIAN	370																
				AERONIAN	375																
RHUDDANIAN	380																				
PERMIAN	UPPER PERMIAN / CARBONIFEROUS			HIRNANTIAN	385																
				ORDOVICIAN	390																
PERMIAN	UPPER PERMIAN / CARBONIFEROUS			TREMACIAN	395	PERMIAN	UPPER PERMIAN / CARBONIFEROUS														
				PAIBIAN	400																
				PERMIAN	UPPER PERMIAN / CARBONIFEROUS					PAIBIAN	405	PERMIAN	UPPER PERMIAN / CARBONIFEROUS								
		PAIBIAN	410																		
		PERMIAN	UPPER PERMIAN / CARBONIFEROUS					PAIBIAN	415	PERMIAN	UPPER PERMIAN / CARBONIFEROUS										
								PAIBIAN	420												
								PERMIAN	UPPER PERMIAN / CARBONIFEROUS					PAIBIAN	425	PERMIAN	UPPER PERMIAN / CARBONIFEROUS				
														PAIBIAN	430						
														PERMIAN	UPPER PERMIAN / CARBONIFEROUS			PAIBIAN	435	PERMIAN	UPPER PERMIAN / CARBONIFEROUS
																		PAIBIAN	440		
PERMIAN	UPPER PERMIAN / CARBONIFEROUS					PAIBIAN	443.7											PERMIAN	UPPER PERMIAN / CARBONIFEROUS		
						PAIBIAN	445														
				PERMIAN	UPPER PERMIAN / CARBONIFEROUS	PAIBIAN	450					PERMIAN	UPPER PERMIAN / CARBONIFEROUS								
						PAIBIAN	455														
		PERMIAN	UPPER PERMIAN / CARBONIFEROUS			PAIBIAN	460			PERMIAN	UPPER PERMIAN / CARBONIFEROUS										
						PAIBIAN	465														
						PERMIAN	UPPER PERMIAN / CARBONIFEROUS	PAIBIAN	470							PERMIAN	UPPER PERMIAN / CARBONIFEROUS				
								PAIBIAN	475												
								PERMIAN	UPPER PERMIAN / CARBONIFEROUS					PAIBIAN	480					PERMIAN	UPPER PERMIAN / CARBONIFEROUS
														PAIBIAN	485						
PERMIAN	UPPER PERMIAN / CARBONIFEROUS													PAIBIAN	488.3			PERMIAN	UPPER PERMIAN / CARBONIFEROUS		
														PAIBIAN	490						
				PERMIAN	UPPER PERMIAN / CARBONIFEROUS							PAIBIAN	495	PERMIAN	UPPER PERMIAN / CARBONIFEROUS						
												PAIBIAN	500								
		PERMIAN	UPPER PERMIAN / CARBONIFEROUS							PAIBIAN	505	PERMIAN	UPPER PERMIAN / CARBONIFEROUS								
										PAIBIAN	510										
						PERMIAN	UPPER PERMIAN / CARBONIFEROUS			PAIBIAN	515					PERMIAN	UPPER PERMIAN / CARBONIFEROUS				
										PAIBIAN	520										
								PERMIAN	UPPER PERMIAN / CARBONIFEROUS	PAIBIAN	525									PERMIAN	UPPER PERMIAN / CARBONIFEROUS
										PAIBIAN	530										
PERMIAN	UPPER PERMIAN / CARBONIFEROUS									PAIBIAN	535							PERMIAN	UPPER PERMIAN / CARBONIFEROUS		
										PAIBIAN	540										
				PERMIAN	UPPER PERMIAN / CARBONIFEROUS					PAIBIAN	542			PERMIAN	UPPER PERMIAN / CARBONIFEROUS						
										PAIBIAN	545										



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

© Commission for the Paleontological and Stratigraphical Research of Austria (CPSA) of the Austrian Academy of Sciences and Austrian Stratigraphic Commission

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

The Austrian Stratigraphic Chart 2004 - Paleozoic is a supplement of:
 Hubmann, B., Ebner, F., Ferretti, A., Kido, E., Krainer, K., Neubauer, F., Schönlaub, H.-P. & Suttner, T.J. (2014): The Paleozoic Era (them), 2nd edition. - In: Pillner, W.E. (Ed.): The lithostratigraphic units of the Austrian Stratigraphic Chart 2004 (sedimentary successions) - Vol. 1 - Abhandlungen der Geologischen Bundesanstalt, 66, 9-133, Wien.

Printing: Grasl Druck & Neue Medien GmbH, Bad Vöslau 2014