

Lateral unit(s): See above in chapter “Origin, facies”.

Geographic distribution: Carnic Alps, west and northeast of Naßfeld (Zweikofel Massif, Zottachkopf, Rudnig Kar, Rudnigalm, Reppwand, upper Garnitzen gorge).

Remarks: In the ASC 2004 the old lithostratigraphic term “Upper Pseudoschwagerina Formation” was printed by a mistake in place of the term Zweikofel Formation. KRAINER (1995: p. 689) already formalized and renamed the unit in Zweikofel Formation after the mountain Zweikofel (2,059 m) between Rattendorfer and Rudnig Alm.

Complementary references: SCHÖNLAUB & FORKE (2007).

Trogkofelkalk / Trogkofel Limestone

HANS P. SCHÖNLAUB

Validity: Invalid; the term was introduced by GEYER (1898: p. 252) to designate this limestone complex as an equivalent of the Permian Artinskian Stage and not as Triassic as suggested previously by FRECH (1894b).

Type area: ÖK50-UTM, map sheet 3116 Sonnenalpe Naßfeld (ÖK50-BMN, map sheet 198 Weißbriach), Carnic Alps, Carinthia.

Type section: Not defined.

Reference section(s): -

Remarks: The section at the Trogkofel mountain (2,280 m) along the Überlacher trail (N 46°34'10" / E 13°13'05") or at the westernmost edge of the steep cliff may serve as type section in the future. Additional sections are exposed at the Reppwand cliff and in the upper Garnitzen gorge.

Derivation of name: After the mountain Trogkofel (2,280 m) between Rattendorfer and Rudnig Alm.

Synonyms: Trogkofel Schichten (SCHELLWIEN, 1898: p. 279).

Lithology: The Trogkofel Limestone is mainly composed of massive, light-colored, partly reddish carbonates. Large parts correspond to a *Tubiphytes/Archaeolithoporella*-cement boundstone. Dolomitization is common and ranges from isolated euhedral dolomitic rhombs to a complete replacement. Boundstones may occur as clasts and boulders, probably representing syndimentary breccias. Indistinctly bedded, well preserved dasycladacean grainstones with a spotty distribution of fusulinids can be found in the upper part of the Trogkofel Mountain along the Überlacher trail. The bedded, ruditic limestones with shale intercalations represent an exceptional lithofacies in the Zweikofel section.

Fossils: Fusulinids, smaller foraminifers, conodonts, crinoids, bryozoans, corals, sponges, dasycladacean algae, microproblematica (*Tubiphytes*, *Archaeolithoporella*).

Origin, facies: The Trogkofel Limestone includes reefs that differ from those of the previous formations as being interpreted as shelf margin reefs (FLÜGEL, 1981). These types are the thickest reefs of the Upper Paleozoic sequence in the Carnic Alps. They are characterized by the interaction of encrusting organisms (algae, sponges, bryozoans) and syndimentary cementation, supported by microbial and algal activities forming an organic framework. Other lithofacies types within the Trogkofel Limestone point to platform sediments (limestones with dasycladaceans and fusulinids) and upper slope (breccias) deposits. No detailed reconstruction of the stratal patterns in the Trogkofel Lime-

stone has been elaborated so far. However, similar platform – reef – slope geometries are known from carbonate platform systems in northwestern Spain (BAHAMONDE et al., 2000), which may serve as a model for the Trogkofel Limestone.

Chronostratigraphic age: Late Artinskian.

Biostratigraphy: Rare occurrences of *Robustoschwagerina spatiosa* together with a single conodont taxon (*Neostreptognathodus* cf. *pequopensis*) from the ruditic limestones indicate upper Artinskian for the Trogkofel Limestone.

Thickness: Maximum thickness at Trogkofel approx. 400 m, at Reppwand and Garnitzen gorge 200 to 300 m.

Lithostratigraphically higher rank unit: -

Lithostratigraphic subdivision: -

Underlying unit(s): Upper Pseudoschwagerina Formation (Zweikofel Formation).

Overlying unit(s): Trogkofel Conglomerate (not indicated in the ASC 2004), Tarvis Breccia, Gröden Formation.

Lateral unit(s): The locally occurring Tressdorf Limestone in the Naßfeld area (a polymict limestone breccia) and the Goggau Limestone occurring along the old road from Tarvisio to the village Goggau (KAHLER & KAHLER, 1980) and in the western Karavanke mountains of Slovenia (pers. comm. FORKE and NOVAK) may represent lateral equivalents of the Trogkofel Limestone.

Geographic distribution: Carnic Alps (Trogkofel, Zweikofel Massif, Rudnigalm, Reppwand, upper Garnitzen gorge, northeast slope of Col Mezzodi near Forni Avoltri. At the latter locality the boundary between the Zweikofel Formation and the overlying Trogkofel Limestone is not precisely known yet), Karavanke Mountains, Slovenia.

Remarks: -

Complementary references: -

Treßdorfer Kalk / Treßdorf Limestone

HANS P. SCHÖNLAUB

Validity: Invalid; the term was introduced by HOMANN (1969: p. 278) to designate isolated occurrences of polymict limestone breccias in the surroundings of the Treßdorf Alm northeast of Naßfeld.

Type area: ÖK50-UTM, map sheet 3116 Sonnenalpe Naßfeld (ÖK50-BMN, map sheet 198 Weißbriach), Carnic Alps, Carinthia.

Type section: No reference section exists since the main occurrence WNW of Treßdorf Alm is only some meters in thickness (N 46°34'42" / E 13°15'28").

Reference section(s): -

Derivation of name: After Treßdorf Alm located closely to this limestone unit (see SCHÖNLAUB & FORKE, 2007).

Synonyms: -

Lithology: According to HOMANN (1969) and FLÜGEL (1968) the Treßdorf Limestone represents a clast-supported stylonbreccia. The cm-sized angular and subrounded clasts reflect different types of microfacies which are supposedly derived from the Trogkofel Limestone and the underlying Zweikofel Formation. The majority of the clasts are light-greyish *Tubiphytes-Archaeolithoporella*-cement boundstones and thus resemble the typical Trogkofel Limestone

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	UPPER PERMIAN / CARBONIFEROUS / PENNSYLVANIAN			GZHELIAN	295	PERMIAN	LOWER PERMIAN / CISURALIAN
KASIMOVIAN	300								
MOSKOVIAN	305								
BASHKIRIAN	310								
PERMIAN	UPPER PERMIAN / CARBONIFEROUS / PENNSYLVANIAN			SERPUKHOVIAN	315				
				VISEAN	320				
					325				
PERMIAN	LOWER PERMIAN / MISSISSIPPIAN			TOURNAISIAN	330	PERMIAN	LOWER PERMIAN / MISSISSIPPIAN		
				335					
				340					
		345							
		350							
		355							
		359.2							
		365							
		370							
		375							
PERMIAN	UPPER DEVONIAN	FAMENNIAN	380	PERMIAN	UPPER DEVONIAN				
		FRASNIAN	385						
		GIVETIAN	390						
		EIFELIAN	395						
		DEVONIAN	LOWER DEVONIAN			EMSIAN	400		
						405			
		PRAGIAN	410						
		LOCHKOVIAN	415						
		PERMIAN	LOWER DEVONIAN			LUDFORDIAN / GORSTIAN	420	PERMIAN	LOWER DEVONIAN
						HOMERIAN / SHEINWOOD	425		
TELYCHIAN	430								
AERONIAN	435								
RHUDDANIAN	440								
HIRNANTIAN	443.7								
445									
450									
455									
460									
PERMIAN	UPPER ORDOVICIAN	DARRIWILIAN	465	PERMIAN	UPPER ORDOVICIAN				
		470							
		475							
		480							
		485							
		488.3							
		490							
		495							
		500							
		PERMIAN	MIDDLE CAMBRIAN			PAIBIAN	505	PERMIAN	MIDDLE CAMBRIAN
510									
515									
520									
525									
530									
535									
540									
542									
CAMBRIAN	LOWER CAMBRIAN				545	CAMBRIAN	LOWER CAMBRIAN		
			550						
			555						
			560						
			565						
			570						
			575						
			580						
			585						
			590						



- 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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