

## Cystoideen Kalke / Cystoid Limestone

FRITZ EBNER

**Validity:** Invalid; not formalized working term. First detailed description by FLAJS & SCHÖNLAUB (1976).

**Type area:** ÖK50-UTM, map sheet 4215 Eisenerz (ÖK50-BMN, map sheet 101 Eisenerz).

**Type section:** Ca. 30 m (altitude 1,575 m) above the bend (N 47°31'44" / E 14°58'03") of the Knappensteig (trail from Präbichl Pass to Leobner Hütte) at the ridge separating the Polsterkar and the Polster S-slope (ÖK50-UTM, map sheet 4215 Eisenerz, ÖK50-BMN, map sheet 101 Eisenerz).

**Reference section(s):** -

**Derivation of name:** Due to the occurrence of debris and some theca of cystoidea (FLAJS & SCHÖNLAUB, 1976).

**Synonyms:** -

**Lithology:** Light grey to pinkish spotted, indistinctly bedded, pure sparry limestones with weak flaser texture followed by 5 m calcareous sandstones (FLAJS & SCHÖNLAUB, 1976).

**Fossils:** Recrystallized cystoids (debris and theca), rich conodont fauna (FLAJS & SCHÖNLAUB, 1976).

**Origin, facies:** Marine shallow water environment.

**Chronostratigraphic age:** Upper Ordovician (upper Katian–Hirnantian) (FLAJS & SCHÖNLAUB, 1976).

**Biostratigraphy:** *amorphognathus ordovicicus* conodont zone (FLAJS & SCHÖNLAUB, 1976).

**Thickness:** 13 m.

**Lithostratigraphically higher rank unit:** -

**Lithostratigraphic subdivision:** -

**Underlying unit(s):** Polster Quartzite.

**Overlying unit(s):** "Red Sparitic Limestone" (FLAJS & SCHÖNLAUB, 1976: Fig. 3); ? transgressional contact.

**Lateral unit(s):** "Übergangsporphyroid" at Erzberg (KERN, 1927; SCHÖNLAUB, 1982a; not indicated in Text-Fig. 2): alternation of 6–8 m thick dm-bedded light limestones with greenish grey sandy layers followed by ankeritic material.

**Geographic distribution:** E-GWZ; Styria, Eisenerzer Alpen.

**Remarks:** -

**Complementary references:** TOLLMANN (1977), SCHÖNLAUB (1979, 1980a, 1982a), EBNER et al. (1989), SCHÖNLAUB & HEINISCH (1993).

## Vulkanite / Volcanics

FRITZ EBNER

**Validity:** Invalid; not formalized working term.

**Type area:** ÖK50-UTM, map sheet 4215 Eisenerz (ÖK50-BMN, map sheets 131 Kalwang and 132 Trofaiach).

**Type section:** Not defined. Detailed descriptions derive from the mountain Kragelschinken (1,845 m, N 47°29'21" / E 14°49'26") and along the section in the upper Lange Teichen valley (starting NNE of the foot of Mt. Wildfeld, N 47°28'18" / E 14°48'29") (HIESSLEITNER, 1931; SCHÖNLAUB, 1977a, b, 1982a, b).

**Reference section(s):** -

**Derivation of name:** According to lithology.

**Synonyms:** "Kragelschinken Folge" (EBNER et al., 1989); "Basische Vulkanite" in the geological map 1:25,000 (SCHÖNLAUB, 1982a).

**Lithology:** Alternation of mottled schists ("Fleckenschiefer" = green schists with dark spots of chlorite), diabase schists, sandy-quartzite schists and subordinate layers of massive plagioclase-hornblende rocks (HIESSLEITNER, 1931; DAURER in SCHÖNLAUB, 1982a). Parts of the sequence are characterized as volcanoclastics (lapilli and ash tuffs), basaltic lavas with well preserved pillow structures and concordant swarms of gabbroidic sills (SCHLAEGEL-BLAUT, 1990).

**Fossils:** Conodonts, crinoids from intercalations of Crinoidal Limestone (SCHÖNLAUB, 1977a, b).

**Origin, facies:** Two sections (Finzenkogel, Schleichberg) NW Trofaiach (ÖK50-UTM, map sheet 4215 Eisenerz, ÖK50-BMN, map sheet 132 Trofaiach) were characterized by SCHLAEGEL-BLAUT (1990) in terms of volcanic islands (sensu FISHER, 1984). Section Finzenkogel: submarine proximal pyroclastic flow facies at the flank of a volcanic island at the transition of effusive to explosive eruptions below or above PCL (= pressure compensation level at water depths of ~ 500 m; stadium A and B<sub>1</sub> sensu FISHER, 1984). Section Schleichberg: upper part of a pillow volcano below PCL (stadium A sensu FISHER, 1984).

**Chronostratigraphic age:** Silurian (boundary Llandovery/Wenlock) (SCHÖNLAUB, 1982a).

**Biostratigraphy:** *amorphognathoides* Zone in crinoidal limestone intercalations within tuffitic volcanics as well as limestone intercalations within black schists/lydites below and above the volcanics (SCHÖNLAUB, 1976, 1977a, 1982a).

**Thickness:** 250–300 m at Paarenkogel and Kragelschinken (HIESSLEITNER, 1931). Along the Gößgraben (WSW Trofaiach, ÖK50-UTM, map sheet 4215 Eisenerz, ÖK50-BMN, map sheet 132 Trofaiach) the thickness of the entire volcanogenic sequences is between 180 and 550 m. There, the volcanoclastics include also intercalations of schists and up to 150 m thick lavas (SCHLAEGEL-BLAUT, 1990).

**Lithostratigraphically higher rank unit:** -

**Lithostratigraphic subdivision:** -

**Underlying unit(s):** Lydites, Arkoses, Schists.

**Overlying unit(s):** Crinoidal Limestones (SCHÖNLAUB, 1992) (not shown in ASC 2004).

**Lateral unit(s):** Lydites, Arkoses, Schists.

**Geographic distribution:** E-GWZ; Styria, Eisenerzer Alpen.

**Remarks:** Informal working term for thick basic volcanics (first description HIESSLEITNER, 1931) in the hanging parts of the "Lydites, Arkoses, Schists".

**Complementary references:** TOLLMANN (1977), SCHÖNLAUB (1979, 1980a), SCHÖNLAUB & HEINISCH (1993), LOESCHKE & HEINISCH (1993).

## Crinoidenkalke / Crinoidal Limestone

(not shown in ASC 2004)

FRITZ EBNER

**Validity:** Invalid; working term (SCHÖNLAUB, 1976, 1979, 1982a).

# 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 / Dorashamian	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	MIDDLE DEVONIAN			Dalejian	400		
						EMSIAN	405		
		DEVONIAN	LOWER DEVONIAN			Zlichovian	410		
						PRAGIAN	415		
		PERMIAN	LOWER DEVONIAN			LOCHKOVIAN	420	PERMIAN	LOWER DEVONIAN
						425			
430									
435									
440									
443.7									
445									
450									
455									
460									
PERMIAN	UPPER ORDOVICIAN	LUDFORDIAN / GORSTIAN	465	PERMIAN	UPPER ORDOVICIAN				
		HOMERIAN / SHEINWOOD	470						
		TELYCHIAN	475						
		AERONIAN	480						
		RHUDDANIAN	485						
		HIRNANTIAN	490						
		495							
		498.3							
		500							
		505							
PERMIAN	MIDDLE ORDOVICIAN	PAIBIAN	510	PERMIAN	MIDDLE ORDOVICIAN				
		515							
		520							
		525							
		530							
		535							
		540							
		542							
		CAMBRIAN	LOWER CAMBRIAN			44.6	CAMBRIAN	LOWER CAMBRIAN	
						44.6			
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- 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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