

Lithostratigraphic subdivision: Divided into neritic and pelagic Rauchkofel Limestone (compare Fig. 10 in SCHÖNLAUB, 1985a); the neritic unit at Mount Seewarte was subdivided into “Einheit 0a-0g” by BANDEL (1969).

Underlying unit(s): Megaerella Limestone (conformable contact), Nölbling Formation (conformable contact).

Overlying unit(s): Gamskofel Limestone (conformable contact), Hohe Warte Limestone (conformable contact), Kellerwand Limestone (conformable contact), Boden Limestone (conformable contact).

Lateral unit(s): Boden Limestone, Nölbling Formation.

Geographic distribution: Carnic Alps, Karavanke Mountains.

Remarks: -

Complementary references: PALLA (1965, 1966, 1967), (PÖLSLER, 1967), KODSI (1971), SCHÖNLAUB (1971-1973, 1984b, 1991, 1992), PRIEWALDER (1987, 1997, 2000), KREUTZER (1990, 1992a), FENNINGER & HUBMANN (1994), HUBMANN (1994), KREUTZER et al. (1997, 2000), SCHÖNLAUB & KREUTZER (1997), VAI (1998), FERRETTI et al. (1999), SCHÖNLAUB & HISTON (2000), HUBMANN et al. (2003), SCHÖNLAUB et al. (2004), SUTTNER (2005), CARULLI (2006), VENTURINI (2006), HUBMANN & SUTTNER (2007), BRIME et al. (2008), CORRIGA & CORRADINI (2009), SUTTNER & KIDO (2011).

Mittlere und Obere Bischofalm-Schiefer / Middle and Upper Bischofalm Shales

THOMAS J. SUTTNER, ERIKA KIDO

Validity: Invalid; the graptolite bearing section at the Obere Bischofalm was discovered by STACHE (1872); the section was studied in detail by JAEGER (in FLÜGEL et al., 1977) and later by SCHÖNLAUB (1985a); an important biostratigraphic study has been performed by JAEGER & SCHÖNLAUB (1980).

Type area: ÖK50-UTM, map sheets 3108 Sillian, 3109 Oberdrauburg, 3110 Kötschach-Mauthen, 3111 Spital an der Drau, 3116 Sonnenalpe Naßfeld, 3117 Nötsch im Gailtal (ÖK50-BMN, map sheets 196 Obertilliach, 197 Kötschach, 198 Weißbriach, 199 Hermagor).

Type section: -

Reference section(s): Area around Lake Zollner (SCHÖNLAUB, 1981), N 46°36'21" / E 13°04'17"; Obere Bischofalm (Graptolithengraben), Gundersheim Alm road (Oberbuchach section), Collendiaul, Dellach Alm, Nölblinggraben (SCHÖNLAUB, 1985a).

Derivation of name: After the Bischofalmgraben (SCHÖNLAUB, 1985a: Fig. 14, p. 40, 72).

Synonyms: Graptoliten-Schiefer (STACHE, 1872); Grey-green eß-shales (FLÜGEL et al., 1977: syn. Middle Bischofalm Shale); Upper Graptolitic Shales (FLÜGEL et al., 1977).

Lithology: Black alau shale and lydites, greyish green shale.

Fossils: Graptolites.

Origin, facies: Marine, pelagic unit (Distal Siliciclastic Facies).

Chronostratigraphic age: Ludlow to Pridoli (M. B. Shale); Pridoli to Lochkovian (U. B. Shale).

Biostratigraphy: M. B. Shale: *bohemicus-transgrediens* graptolite zones (FLÜGEL et al., 1977; JAEGER & SCHÖNLAUB, 1980); U. B. Shale: *transgrediens, uniformis, praehercynicus* and *hercynicus* graptolite zones (FLÜGEL et al., 1977; JAEGER & SCHÖNLAUB, 1980).

Thickness: 4–5 m (Middle Bischofalm Shale) and 10 m (Upper Bischofalm Shale).

Lithostratigraphically higher rank unit: -

Lithostratigraphic subdivision: -

Underlying unit(s): Lower Bischofalm Shale (conformable contact).

Overlying unit(s): Findenig Limestone (conformable contact), Zollner Formation (conformable contact).

Lateral unit(s): Nölbling Formation.

Geographic distribution: Carnic Alps.

Remarks: -

Complementary references: HABERFELNER (1931), FLÜGEL (1953b), SCHÖNLAUB (1969a, 1971a, 1985a, 1991, 1998), JAEGER & SCHÖNLAUB (1994), VAI (1998), SCHÖNLAUB & HISTON (1999, 2000), SCHÖNLAUB et al. (2004), VENTURINI (2006), HISTON et al. (2007).

Gamskofel-Kalk / Gamskofel Limestone (note the typological error “Gamskogel-Kalk” in the ASC 2004)

THOMAS J. SUTTNER, ERIKA KIDO

Validity: Invalid; some of the sections at Mount Gamskofel were already measured by BANDEL (1972); facies of the Gamskofel Limestone was observed by SCHÖNLAUB (1985a: p. 43); well described by KREUTZER (1990, 1992a); later included within the summary of the Variscan carbonate sequences in the Carnic Alps (KREUTZER, 1992b: p. 26–27).

Type area: ÖK50-UTM, map sheets 3109 Oberdrauburg, 3110 Kötschach-Mauthen, 3116 Sonnenalpe Naßfeld (ÖK50-BMN, map sheet 197 Kötschach).

Type section: -

Reference section(s): Section on the northern side of the Gamskofel at the Bösen Gangele between Raimunda Törl and Wodner Törl (KREUTZER, 1992b: p. 27), N 46°38'01" / E 12°54'06".

Derivation of name: After Mount Gamskofel (KREUTZER, 1992a).

Synonyms: -

Lithology: Algal laminite with *Amphipora* limestone and loferite layers.

Fossils: Calcareous algae, brachiopods, corals, foraminifers, ostracods.

Origin, facies: Marine limestone, intertidal (KREUTZER, 1990: p. 306), neritic unit; Southern Shallow-water Facies (KREUTZER, 1992a).

Chronostratigraphic age: Pragian–Givetian(?).

Biostratigraphy: -

Thickness: Approx. 800 m.

Lithostratigraphically higher rank unit: -

Lithostratigraphic subdivision: -

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 / Dufuflian	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	365	PERMIAN	UPPER DEVONIAN				
		FRASNIAN	370						
		375							
		380							
		385							
		390							
		395							
		400							
		405							
		410							
PERMIAN	LOWER DEVONIAN	EMSIAN	385	PERMIAN	LOWER DEVONIAN				
		EIFELIAN	390						
		GIVETIAN	395						
		395							
		400							
		405							
		410							
		415							
		420							
		425							
PERMIAN	MIDDLE DEVONIAN	LOCHKOVIAN	410	PERMIAN	MIDDLE DEVONIAN				
		PRAGIAN	415						
		Zlichovian	420						
		425							
		430							
		435							
		440							
		443.7							
		445							
		445							
PERMIAN	UPPER ORDOVICIAN	HIRNANTIAN	440	PERMIAN	UPPER ORDOVICIAN				
		445							
		450							
		455							
		460							
		465							
		470							
		475							
		480							
		485							
PERMIAN	MIDDLE ORDOVICIAN	TREMA-DOCIAN	480	PERMIAN	MIDDLE ORDOVICIAN				
		485							
		490							
		495							
		500							
		505							
		510							
		515							
		520							
		525							
PERMIAN	LOWER ORDOVICIAN	PAIBIAN	500	PERMIAN	LOWER ORDOVICIAN				
		505							
		510							
		515							
		520							
		525							
		530							
		535							
		540							
		542							
CAMBRIAN	UPPER CAMBRIAN	MIDDLE CAMBRIAN	LOWER CAMBRIAN	CAMBRIAN	UPPER CAMBRIAN				
						545			
						550			
						555			
						560			
						565			
						570			
						575			
						580			
						585			
590									
595									
600									
605									
610									
615									
620									
625									
630									
635									
640									
645									
650									
655									
660									
665									
670									
675									
680									
685									
690									
695									
700									
705									
710									
715									
720									
725									
730									
735									
740									
745									
750									
755									
760									
765									
770									
775									
780									
785									
790									
795									
800									
805									
810									
815									
820									
825									
830									
835									
840									
845									
850									
855									
860									
865									
870									
875									
880									
885									
890									
895									
900									
905									
910									
915									
920									
925									
930									
935									
940									
945									
950									
955									
960									
965									
970									
975									
980									
985									
990									
995									
1000									



- 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

Landesmuseum Joanneum, OAW, Geologische Bundesanstalt, UNI GRAZ, OGG, Universität Wien, Naturhistorisches Museum Wien