

rizon separates the Semriach Formation from the St. Radegund Crystalline. In the area of St. Kathrein the Hochschlag Formation underlies the Semriach Formation.

**Overlying unit(s):** Schönberg Formation and Schöckel Formation (tectonic contact).

**Lateral unit(s):** Not known because of tectonic boundaries.

**Geographic distribution:** Styria, highland in the surroundings of Graz; ÖK50-BMN, map sheets 134 Passail, 135 Birkfeld, 164 Graz, 165 Weiz.

**Remarks:** -

**Complementary references:** -

### Schönberg-Formation / Schönberg Formation

BERNHARD HUBMANN

**Validity:** Valid; re-nomination of "Arzberg Schichten" (see FLÜGEL, 2000: p. 39), formalized by FLÜGEL (2000: p. 39).

**Type area:** ÖK50-UTM, map sheet 4223 Weiz (ÖK50-BMN, map sheet 134 Passail).

**Type section:** No type section defined, but FLÜGEL (2000) selected a type region at Schönberg, northeast of Arzberg; ÖK50-BMN, map sheet 164 Graz (N 47°15'53" / E 15°31'58").

**Reference section(s):** -

Remarks: Characteristic of the formation is the synsedimentary lead-zinc-silver-barite-mineralization.

**Derivation of name:** After "Schönberg", a municipality and hill northeast of Arzberg, approx. 35 km north of Graz.

**Synonyms:** Partly: Grenzphyllit (CLAR, 1874); untere Schiefer (HERITSCH, 1917c); Graphitphyllitserie (SEEWANN, 1929); Tonschiefer-Fazies (FLÜGEL & MAURIN, 1952); Karbon von Waldstein (FLÜGEL, 1953a); Striatoporen-Kalk (H. FLÜGEL, 1975); dunkle, pigmentreiche Gesteine ("Schwarzschiefer") (WEBER, 1977); höhere karbonat- und kohlenstoffreiche Serie (WEBER, 1977); tiefere, grüngesteinbe-tonte Serie (WEBER, 1977); Arzberg Schichten (EBNER & WEBER, 1978); erzführende Serie (WEBER, 1990).

**Lithology:** Predominantly black shales and darkgrey to black limestones with high amounts of clay.

**Fossils:** Very rare and badly preserved tabulate corals (mostly thamnoporids).

**Origin, facies:** Organic carbon-rich sediments of a euxinic basin.

**Chronostratigraphic age:** Presumably Lochkovian–Emsian/Eifelian.

**Biostratigraphy:** -

**Thickness:** Probably more than 300 m.

**Lithostratigraphically higher rank unit:** Peggau Group (FLÜGEL, 2000).

**Lithostratigraphic subdivision:** FLÜGEL (2000) distinguished four facial types which were considered as members:

Kreuzwirt Member: Particularly dark coloured limestones and dolomites that may be intercalated with black shales; thickness up to 200 m.

Rabenstein Member: Dark grey crinoidal limestones; 30 to 50 m in thickness.

Rauchenberg Member: Carbonatic black shales; probably more than 300 m in thickness.

Weizbauer Member: Black argillaceous shales with intercalated beds of limestones and quartzites; probably between 100 and 200 m in thickness.

Pfaffenkogel Member: White biolaminated dolomites with birdseye-structures, thick bedded dolomites; up to 200 m in thickness.

**Underlying unit(s):** Presumably Semriach Formation and Taschen Formation.

**Overlying unit(s):** Schöckel Formation (tectonic contact).

**Lateral unit(s):** -

**Geographic distribution:** Styria, highland in the surroundings of Graz; ÖK50-BMN, map sheets 133 Leoben, 134 Passail, 135 Birkfeld, 163 Voitsberg, 164 Graz, 165 Weiz.

**Remarks:** -

**Complementary references:** RANTITSCH et al. (1998), EBNER et al. (2000).

### Hochschlag-Formation / Hochschlag Formation

BERNHARD HUBMANN

**Validity:** Valid; first description by E. FLÜGEL (1957: "Hochschlagserie" and "Hochschlagkalke"); formalized by FLÜGEL (2000: p. 43; Hochschlag-Formation).

**Type area:** ÖK50-UTM, map sheet 4223 Weiz (ÖK50-BMN, map sheet 134 Passail).

**Type section:** No type section defined, but FLÜGEL (2000) selected a type region at Hochschlag, northeast of St. Erhard (Breitenau); ÖK50-UTM, map sheet 4223 Weiz (ÖK50-BMN, map sheet 134 Passail) (N 47°24'11" / E 15°30'17").

**Reference section(s):** -

**Derivation of name:** After Hochschlag (1,580 m), a mountain northeast of the Breitenau valley, approx. 55 km north of Graz.

**Synonyms:** Partly: Kalkschieferstufe i. A. (WAAGEN, 1937); Kalkzug der Brandlucke (NEUBAUER, 1982).

**Lithology:** Predominantly platy to slaty limestones with intercalations of black argillaceous shales, calcareous phyl-lites, whitish dolomites and metavolcanites.

**Fossils:** Rare rugose and tabulate corals.

**Origin, facies:** Shallow marine offshore environment.

**Chronostratigraphic age:** Presumably Emsian–Eifelian or Givetian.

**Biostratigraphy:** -

**Thickness:** More than 200 m.

**Lithostratigraphically higher rank unit:** Peggau Group (FLÜGEL, 2000).

**Lithostratigraphic subdivision:** -

**Underlying unit(s):** ?Weizbauer Member of the Schönberg Formation.

**Overlying unit(s):** Dornerkogel Formation (tectonic contact).

**Lateral unit(s):** -

**Geographic distribution:** Styria, highland in the surroundings of Graz; ÖK50-BMN, map sheets 134 Passail, 165 Weiz.

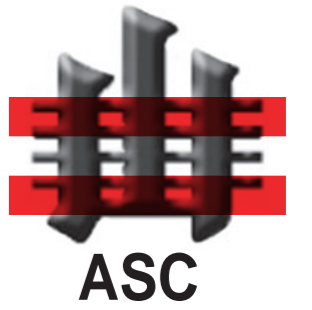
**Remarks:** -

**Complementary references:** -

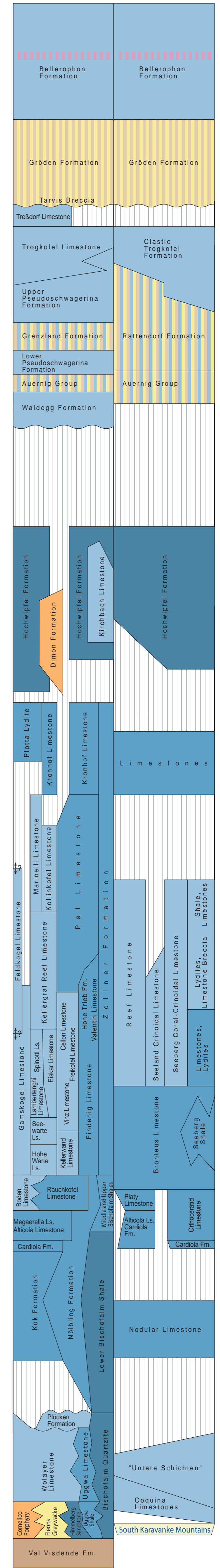
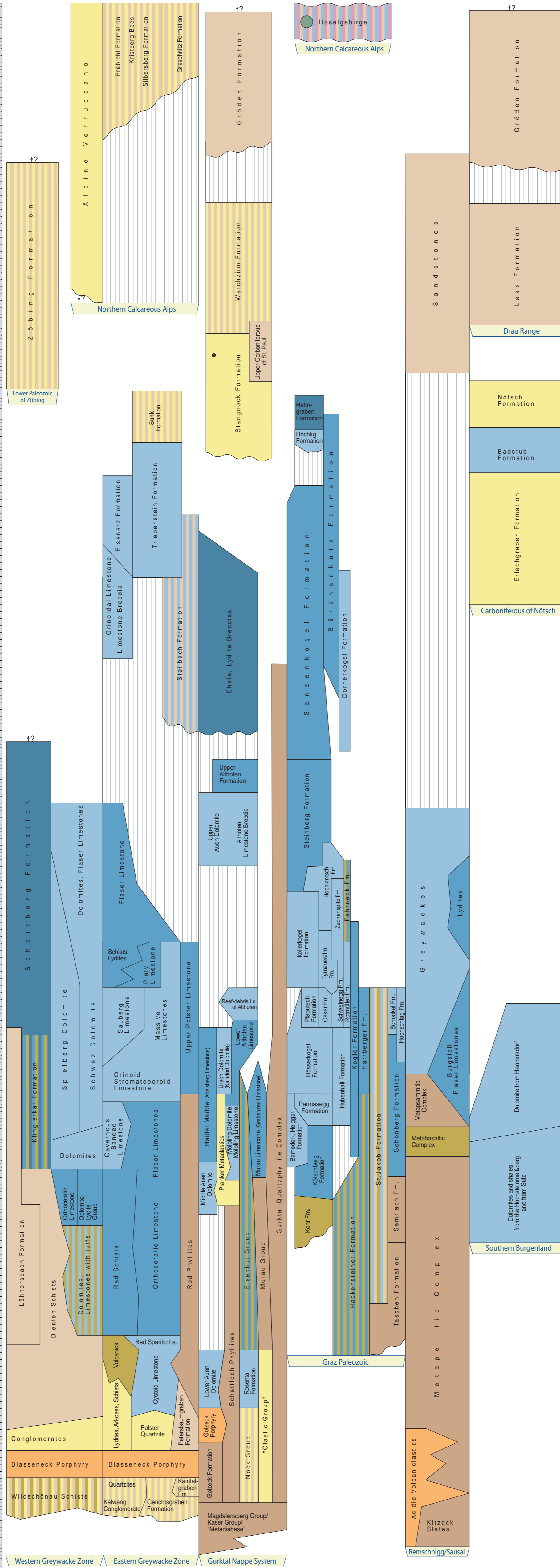
# Austrian Stratigraphic Chart 2004 - Paleozoic

(sedimentary successions)

Austrian Stratigraphic Commission



ERA	SYSTEM / PERIOD / SERIES / EPOCH	STAGE / AGE	DURATION Ma	Global Classification			
				ERATHM / ERA	SYSTEM / PERIOD / SERIES / EPOCH		
CAMBRIAN	MIDDLE CAMBRIAN	PAIBIAN	500	488.3	LOWER PERMIAN / GUADALUPIAN / LOPINGIAN		
		MIDDLE CAMBRIAN	510				
CAMBRIAN	LOWER CAMBRIAN	53.7	535	495	LOWER PERMIAN / GUADALUPIAN / LOPINGIAN		
		520	542				
PALEOZOIC	DEVONIAN	LOWER DEVONIAN	LOCHKOVIAN	410	LOWER PERMIAN / GUADALUPIAN / LOPINGIAN		
			PRAGIAN	420			
		MIDDLE DEVONIAN	EIFELIAN	395	LOWER PERMIAN / GUADALUPIAN / LOPINGIAN		
			GIVETIAN	385			
		UPPER DEVONIAN	FRASNIAN	375	LOWER PERMIAN / GUADALUPIAN / LOPINGIAN		
			FAMENNIAN	365			
		PALEOZOIC	CARBONIFEROUS	LOWER CARBONIFEROUS / MISSISSIPPIAN	TOURNAISIAN	350	LOWER PERMIAN / GUADALUPIAN / LOPINGIAN
					VISEAN	335	
				UPPER CARBONIFEROUS / PENNSYLVANIAN	BASHKIRIAN	315	LOWER PERMIAN / GUADALUPIAN / LOPINGIAN
					MOSKOVIAN	310	
CARBONIFEROUS	GZHELIAN			KASIMOVIAN	305	LOWER PERMIAN / GUADALUPIAN / LOPINGIAN	
				ASSELIAN	295		
PALEOZOIC	PERMIAN			LOWER PERMIAN / GUADALUPIAN / LOPINGIAN	ASSELIAN	295	LOWER PERMIAN / GUADALUPIAN / LOPINGIAN
					KUNGURIAN	275	
				MID PERMIAN / WARTBURGIAN	WORDIAN	270	LOWER PERMIAN / GUADALUPIAN / LOPINGIAN
					ROADIAN	265	
		UPPER PERMIAN / ARTINSKIAN	WUCHIANGIAN	260	LOWER PERMIAN / GUADALUPIAN / LOPINGIAN		
			CHANGHSINGIAN / DORASHAMIAN	251			



## 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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