

Origin, facies: The rocks of the Silbersberg Formation are considered as terrestrial deposits at the margin of a depositional basin.

Chronostratigraphic age: Although originally considered as Ordovician or older (CORNELIUS, 1952b), the composition and macroscopic appearance remember that of the Permian Alpine Verrucano as already stated by NIEVOLL (1984). This was confirmed by $^{40}\text{Ar}/^{39}\text{Ar}$ dating of concentrates of detrital white mica which yield an age of 359.6 ± 1.1 Ma implying a depositional age younger than the approximate Devonian/Carboniferous boundary (HANDLER et al., 1997).

Biostratigraphy: -

Thickness: Unknown.

Lithostratigraphically higher rank unit: -

Lithostratigraphic subdivision: -

Underlying unit(s): In nearly all cases a tectonic boundary including a sheared boundary to underlying Paleozoic quartzphyllite.

Overlying unit(s): Tectonic boundary.

Lateral unit(s): -

Geographic distribution: Lower Austria and eastern Styria.

Remarks: -

Complementary references: -

Graschnitz-Formation / Graschnitz Formation

FRANZ NEUBAUER

Validity: Invalid and informal unit; the term Graschnitz Formation was introduced on the ÖK50-UTM, map sheet 4217 Kindberg (ÖK50-BMN, map sheet 134 Passail) (FLÜGEL et al., 1990; erroneously named "Graschitz-Formation" in the map's legend). Unfortunately, neither a description of the succession was ever published, nor explanatory notes for the map sheet.

Type area: ÖK50-UTM, map sheet 4217 Kindberg (ÖK50-BMN, map sheet 134 Passail).

Type section: No type section defined. A sort of type section is exposed along a long road cut north of Frauenberg village.

Reference section(s): -

Derivation of name: After the small village Graschnitz near St. Marein im Mürtal.

Remarks: The correct name of the small village in the Mürtal Valley SW of St. Marein is Graschnitz and not Graschitz as misprinted in the legend of the map.

Synonyms: -

Lithology: Grey phyllites and other grey metaclastics of the Veitsch Group (not shown on ASC 2004) are overlain by reddish-grey metapsammitic and metapelitic rocks intercalated by quartz-rich metabreccias and acidic metatuffites. All rocks are metamorphosed in lower greenschist facies metamorphic conditions. In general, sand- and gravel-sized clasts display a reddish color. The lower boundary of the Graschnitz Formation is defined by a color change from grey phyllites to grey-reddish metaclastic rocks, which allows an easy separation from the underlying unit.

Fossils: -

Origin, facies: The Graschnitz Formation could be considered as a terrestrial deposit at the margin of a depositional basin.

Chronostratigraphic age: In Central Europe, the color change is commonly assigned to the approximate Carboniferous/Permian boundary, and the red colour is believed typical for Permian successions. A further argument for a possible Early Permian depositional age is the presence of several decimeter- to meter-thick layers of acidic metatuffites near the base of the Graschnitz Fm., which contain abundant volcanic quartz and K-feldspar phenocrysts. These layers are correlated with the Lower Permian Bozen Quartzporphyry.

Biostratigraphy: -

Thickness: Unknown.

Lithostratigraphically higher rank unit: -

Lithostratigraphic subdivision: -

Underlying unit(s): Greyish, upper Carboniferous phyllites of a hitherto unnamed part of the Veitsch Group (not shown in the ASC 2004).

Overlying unit(s): Tectonic boundary.

Lateral unit(s): -

Geographic distribution: Veitsch Nappe of the Greywacke Zone in eastern Styria south of the Mürtal Valley (ÖK50-BMN, map sheet 134 Passail).

Remarks: -

Complementary references: -

Haselgebirge / Haselgebirge

KARL KRAINER

Validity: Invalid; informal term for multiphase deformed and weakly metamorphosed Permo-Triassic evaporites of the Northern Calcareous Alps (see MEDWENITSCH, 1951; KÜHN, 1962; TOLLMANN, 1976; SPÖTL, 1989).

Type area: Hallstätter Salzburg (Upper Austria), N $47^{\circ}33'55''$ / E $13^{\circ}37'54''$, ÖK50-UTM, map sheet 3217 Hallstatt (ÖK50-BMN, map sheets 95 Sankt Wolfgang im Salzkammergut, 96 Bad Ischl).

Type section: No type section defined.

Reference section(s): Poorly exposed on the surface, most studies are based on outcrops in saltmines of Hallstatt (Upper Austria), Hallein (Salzburg) and Hall (Tyrol).

Derivation of name: Old mining term (historical review in SCHAUBERGER, 1986).

Synonyms: Alpines Haselgebirge, Alpine Haselgebirge Formation.

Lithology: The Haselgebirge is a chaotic mélange of shale, siltstone, sandstone, anhydrite, carbonate and rare magmatic rocks embedded in a matrix of clayey halite. The mélange formed during severe tectonization caused by different tectonic processes during Alpine deformation (SPÖTL, 1989). Within undeformed Late Permian successions exposed in saltmines of Hallstatt (Upper Austria), Hallein (Salzburg) and Hall (Tyrol) SPÖTL (1988a, b, 1989) distinguished three lithofacies: (1) red beds and anhydrite, (2) nodular and stratified anhydrites, and (3) bedded halite.

Fossils: Pollen and spores, rare bivalves (KLAUS, 1953, 1963, 1965, 1972; SPÖTL, 1987).

Origin, facies: SPÖTL (1989) recognized three facies: (1) siliciclastic fan deltas and intercalated horizons of nodular and massive anhydrite, (2) small-scale shoaling upward anhydrite cycles which were probably overlain by primary sedimentary halite, and (3) intensively deformed halite. These sediments were deposited in a continental rift setting of the northwestern Tethys. Halite precipitated in a central salt pan, shoaling upward gypsum cycles developed in marginal sabkha-like flats surrounded by alluvial fans and mudflats (SPÖTL, 1988a, b, 1989).

Chronostratigraphic age: Late Permian according to S-isotopes (PAK & SCHAUBERGER, 1981; SPÖTL, 1987, 1988a, b) and sporomorphs (KLAUS, 1953, 1955, 1963). Early Triassic ("Scythian") age not proved.

Biostratigraphy: -

Thickness: 500–?1,000 m (SPÖTL, 1989).

Lithostratigraphically higher rank unit: -

Lithostratigraphic subdivision: -

Underlying unit(s): Prächichl Formation, Mitterberg Formation (not shown in the ASC 2004).

Overlying unit(s): Werfen Formation.

Lateral unit(s): Interfingers laterally with the Prächichl Formation and Mitterberg Formation (SPÖTL, 1988a, b, 1989).

Geographic distribution: Northern Calcareous Alps (Hallstatt, Bad Ischl, Hallein, Berchtesgaden, Halltal north of Hall in Tyrol).

Remarks: -

Complementary references: -

Jungpaläozoikum von Zöbing / Lower Paleozoic of Zöbing

The Bohemian Massif achieved its paleogeographic position at the southern edge of the European craton during Variscan orogenic phases. During post-Variscan extensional tectonic processes sediments were deposited in NE–SW orientated basins. Most of these molasse-type sediments are known from subsurface occurrences; the only known 'post-Variscan transgressional deposit' outside the Alps in Austria is located at Heiligenstein – Geißberg area of the Waldviertel in Lower Austria (VASICEK & STEININGER, 1996, 1999).

Zöbing-Formation / Zöbing Formation

HANS P. SCHÖNLAUB

Validity: Valid; the term was introduced by STEININGER & ROETZEL (2008: p. 50).

Type area: ÖK50-UTM, map sheet 4318 Langenlois (ÖK50-BMN, map sheet 38 Krems). Graben infill between the villages Zöbing am Kamp and Kammern including the mountain Heiligenstein and extending over some 6 km to Diendorf am Walde, Lower Austria.

Type section: To date no type section has been established.

Reference section(s): Several sections east of the river Kamp (see VASICEK, 1983, 1991; VASICEK & STEININGER, 1996).

Derivation of name: After the village Zöbing am Kamp in Lower Austria.

Synonyms: Jungpaläozoikum von Zöbing (VASICEK, 1991; VASICEK & STEININGER, 1999; STEININGER & ROETZEL, 2008).

Lithology: According to VASICEK (1977, 1991) the clastic sequence is divided into three members. The lowermost 300 m thick member comprises darkgrey laminated silt- and sandstones with coal-seams and limestone lenses and contains a rich flora known already in the 19th century and other fossils.

The middle member attains a thickness of some 500 m and consists of arkoses interbedded with thick conglomerate beds. The main components are granulites with pebble sizes of up to 1 meter, other clasts consist of quartz, marble, Gföhl gneiss and different volcanics.

The uppermost 300 m thick member consists of interbedded reddish siltstones and arkoses and ends with reddish, greyish and greenish mudstones with lenticular intercalations of sandstones and arkoses. Neither in the middle, nor in the upper member any fossils have been yet found and thus the exact age of these members is not known.

Fossils: Rich plant flora, gastropods, fish teeth and ostracods.

Origin, facies: The fossils reflect a lacustrine environment.

Chronostratigraphic age: Upper Carboniferous ("Stephanian") to Lower and Upper (?) Permian.

Biostratigraphy: Among others, rich occurrences of *Al-ethopteris zeilleri*, *Callipteris conferta*, *Ernestiodendron (Walchia) filiciformis* and *Reticulopteris germari* in the lower member.

Thickness: > 1,000 m.

Lithostratigraphically higher rank unit: -

Lithostratigraphic subdivision: -

Underlying unit(s): Crystalline Complex (granulites) of Bohemian Massif.

Overlying unit(s): No younger sediments are known.

Lateral unit(s): -

Geographic distribution: Extending some 6 km in southwest-northeast direction between the villages Zöbing am Kamp and Diendorf am Walde, Lower Austria. The graben-like structure has its maximum width of 2 km at the southern margin.

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				
PALEOZOIC	PERMIAN	CHANGHSINGIAN / Dorashanian	251	PERMIAN	MID PERMIAN / GUADALUPIAN / LOPINGIAN				
		WUCHIAPINGIAN / Dufallian	255						
		CAPITANIAN	260						
		WORDIAN	265						
		ROADIAN	270						
		PERMIAN	LOWER PERMIAN / CISURALIAN			KUNGURIAN	275		
						ARTINSKIAN	280		
						SAKMARIAN	285		
						ASSELIAN	290		
		PERMIAN	TRIAS			GZHELIAN	295	TRIAS	U. CARBONIFEROUS / PENNSYLVANIAN
KASIMOVIAN	300								
MOSKOVIAN	305								
BASHKIRIAN	310								
PERMIAN	LOWER CARBONIFEROUS / MISSISSIPPIAN			SERPUKHOVIAN	315				
				VISEAN	320				
				TOURNAISIAN	325				
PERMIAN	DEVONIAN			FAMENNIAN	330	DEVONIAN	UPPER DEVONIAN		
				FRASNIAN	335				
				GIVETIAN	340				
		EIFELIAN	345						
		DEVONIAN	LOWER DEVONIAN	EMSIAN	350				
				LOCHKOVIAN	355				
		PERMIAN	DEVONIAN	LUDFORDIAN / GORSTIAN	359.2			DEVONIAN	MIDDLE DEVONIAN
				HOMERIAN / SHEINWOOD	365				
				TELYCHIAN	370				
				AERONIAN	375				
RHUDDANIAN	380								
PERMIAN	UPPER SILURIAN			HIRNANTIAN	385				
				LLANDOVERY	390				
PERMIAN	DEVONIAN			WEN-LOCK / LOW	395	DEVONIAN	LOWER DEVONIAN		
				PRAGIAN	400				
				LOCHKOVIAN	405				
		Zlichovian	410						
		PERMIAN	UPPER SILURIAN	LUDFORDIAN / GORSTIAN	416				
				HOMERIAN / SHEINWOOD	420				
		PERMIAN	DEVONIAN	TELYCHIAN	425			DEVONIAN	MIDDLE DEVONIAN
				AERONIAN	430				
				RHUDDANIAN	435				
				HIRNANTIAN	440				
PERMIAN	UPPER SILURIAN			LLANDOVERY	443.7				
				HIRNANTIAN	445				
PERMIAN	DEVONIAN			UPPER ORDOVICIAN	450	DEVONIAN	LOWER DEVONIAN		
				MIDDLE ORDOVICIAN	455				
				DARRIWILIAN	460				
				TREMADOCIAN	465				
		PERMIAN	UPPER SILURIAN	UPPER ORDOVICIAN	470				
				MIDDLE ORDOVICIAN	475				
		PERMIAN	DEVONIAN	UPPER ORDOVICIAN	480			DEVONIAN	LOWER DEVONIAN
				MIDDLE ORDOVICIAN	485				
				DARRIWILIAN	490				
				TREMADOCIAN	495				
PERMIAN	UPPER SILURIAN			UPPER ORDOVICIAN	500				
				MIDDLE ORDOVICIAN	505				
PERMIAN	DEVONIAN			UPPER ORDOVICIAN	510	DEVONIAN	LOWER DEVONIAN		
				MIDDLE ORDOVICIAN	515				
				DARRIWILIAN	520				
				TREMADOCIAN	525				
		PERMIAN	UPPER SILURIAN	UPPER ORDOVICIAN	530				
				MIDDLE ORDOVICIAN	535				
		PERMIAN	DEVONIAN	UPPER ORDOVICIAN	540			DEVONIAN	LOWER DEVONIAN
				MIDDLE ORDOVICIAN	545				
				DARRIWILIAN	550				
				TREMADOCIAN	555				
PERMIAN	UPPER SILURIAN			UPPER ORDOVICIAN	560				
				MIDDLE ORDOVICIAN	565				
PERMIAN	DEVONIAN			UPPER ORDOVICIAN	570	DEVONIAN	LOWER DEVONIAN		
				MIDDLE ORDOVICIAN	575				
				DARRIWILIAN	580				
				TREMADOCIAN	585				
		PERMIAN	UPPER SILURIAN	UPPER ORDOVICIAN	590				
				MIDDLE ORDOVICIAN	595				
		PERMIAN	DEVONIAN	UPPER ORDOVICIAN	600			DEVONIAN	LOWER DEVONIAN
				MIDDLE ORDOVICIAN	605				
				DARRIWILIAN	610				
				TREMADOCIAN	615				
PERMIAN	UPPER SILURIAN			UPPER ORDOVICIAN	620				
				MIDDLE ORDOVICIAN	625				
PERMIAN	DEVONIAN			UPPER ORDOVICIAN	630	DEVONIAN	LOWER DEVONIAN		
				MIDDLE ORDOVICIAN	635				
				DARRIWILIAN	640				
				TREMADOCIAN	645				
		PERMIAN	UPPER SILURIAN	UPPER ORDOVICIAN	650				
				MIDDLE ORDOVICIAN	655				
		PERMIAN	DEVONIAN	UPPER ORDOVICIAN	660			DEVONIAN	LOWER DEVONIAN
				MIDDLE ORDOVICIAN	665				
				DARRIWILIAN	670				
				TREMADOCIAN	675				
PERMIAN	UPPER SILURIAN			UPPER ORDOVICIAN	680				
				MIDDLE ORDOVICIAN	685				
PERMIAN	DEVONIAN			UPPER ORDOVICIAN	690	DEVONIAN	LOWER DEVONIAN		
				MIDDLE ORDOVICIAN	695				
				DARRIWILIAN	700				
				TREMADOCIAN	705				
		PERMIAN	UPPER SILURIAN	UPPER ORDOVICIAN	710				
				MIDDLE ORDOVICIAN	715				
		PERMIAN	DEVONIAN	UPPER ORDOVICIAN	720			DEVONIAN	LOWER DEVONIAN
				MIDDLE ORDOVICIAN	725				
				DARRIWILIAN	730				
				TREMADOCIAN	735				
PERMIAN	UPPER SILURIAN			UPPER ORDOVICIAN	740				
				MIDDLE ORDOVICIAN	745				
PERMIAN	DEVONIAN			UPPER ORDOVICIAN	750	DEVONIAN	LOWER DEVONIAN		
				MIDDLE ORDOVICIAN	755				
				DARRIWILIAN	760				
				TREMADOCIAN	765				
		PERMIAN	UPPER SILURIAN	UPPER ORDOVICIAN	770				
				MIDDLE ORDOVICIAN	775				
		PERMIAN	DEVONIAN	UPPER ORDOVICIAN	780			DEVONIAN	LOWER DEVONIAN
				MIDDLE ORDOVICIAN	785				
				DARRIWILIAN	790				
				TREMADOCIAN	795				
PERMIAN	UPPER SILURIAN			UPPER ORDOVICIAN	800				
				MIDDLE ORDOVICIAN	805				
PERMIAN	DEVONIAN			UPPER ORDOVICIAN	810	DEVONIAN	LOWER DEVONIAN		
				MIDDLE ORDOVICIAN	815				
				DARRIWILIAN	820				
				TREMADOCIAN	825				
		PERMIAN	UPPER SILURIAN	UPPER ORDOVICIAN	830				
				MIDDLE ORDOVICIAN	835				
		PERMIAN	DEVONIAN	UPPER ORDOVICIAN	840			DEVONIAN	LOWER DEVONIAN
				MIDDLE ORDOVICIAN	845				
				DARRIWILIAN	850				
				TREMADOCIAN	855				
PERMIAN	UPPER SILURIAN			UPPER ORDOVICIAN	860				
				MIDDLE ORDOVICIAN	865				
PERMIAN	DEVONIAN			UPPER ORDOVICIAN	870	DEVONIAN	LOWER DEVONIAN		
				MIDDLE ORDOVICIAN	875				
				DARRIWILIAN	880				
				TREMADOCIAN	885				
		PERMIAN	UPPER SILURIAN	UPPER ORDOVICIAN	890				
				MIDDLE ORDOVICIAN	895				
		PERMIAN	DEVONIAN	UPPER ORDOVICIAN	900			DEVONIAN	LOWER DEVONIAN
				MIDDLE ORDOVICIAN	905				
				DARRIWILIAN	910				
				TREMADOCIAN	915				
PERMIAN	UPPER SILURIAN			UPPER ORDOVICIAN	920				
				MIDDLE ORDOVICIAN	925				
PERMIAN	DEVONIAN			UPPER ORDOVICIAN	930	DEVONIAN	LOWER DEVONIAN		
				MIDDLE ORDOVICIAN	935				
				DARRIWILIAN	940				
				TREMADOCIAN	945				
		PERMIAN	UPPER SILURIAN	UPPER ORDOVICIAN	950				
				MIDDLE ORDOVICIAN	955				
		PERMIAN	DEVONIAN	UPPER ORDOVICIAN	960			DEVONIAN	LOWER DEVONIAN
				MIDDLE ORDOVICIAN	965				
				DARRIWILIAN	970				
				TREMADOCIAN	975				
PERMIAN	UPPER SILURIAN			UPPER ORDOVICIAN	980				
				MIDDLE ORDOVICIAN	985				
PERMIAN	DEVONIAN			UPPER ORDOVICIAN	990	DEVONIAN	LOWER DEVONIAN		
				MIDDLE ORDOVICIAN	995				
				DARRIWILIAN	1000				
				TREMADOCIAN	1005				
		PERMIAN	UPPER SILURIAN	UPPER ORDOVICIAN	1010				
				MIDDLE ORDOVICIAN	1015				
		PERMIAN	DEVONIAN	UPPER ORDOVICIAN	1020			DEVONIAN	LOWER DEVONIAN
				MIDDLE ORDOVICIAN	1025				
				DARRIWILIAN	1030				
				TREMADOCIAN	1035				
PERMIAN	UPPER SILURIAN			UPPER ORDOVICIAN	1040				
				MIDDLE ORDOVICIAN	1045				
PERMIAN	DEVONIAN			UPPER ORDOVICIAN	1050	DEVONIAN	LOWER DEVONIAN		
				MIDDLE ORDOVICIAN	1055				
				DARRIWILIAN	1060				
				TREMADOCIAN	1065				
		PERMIAN	UPPER SILURIAN	UPPER ORDOVICIAN	1070				
				MIDDLE ORDOVICIAN	1075				
		PERMIAN	DEVONIAN	UPPER ORDOVICIAN	1080			DEVONIAN	LOWER DEVONIAN
				MIDDLE ORDOVICIAN	1085				
				DARRIWILIAN	1090				
				TREMADOCIAN	1095				
PERMIAN	UPPER SILURIAN			UPPER ORDOVICIAN	1100				
				MIDDLE ORDOVICIAN	1105				
PERMIAN	DEVONIAN			UPPER ORDOVICIAN	1110	DEVONIAN	LOWER DEVONIAN		
				MIDDLE ORDOVICIAN	1115				
				DARRIWILIAN	1120				
				TREMADOCIAN	1125				
		PERMIAN	UPPER SILURIAN	UPPER ORDOVICIAN	1130				
				MIDDLE ORDOVICIAN	1135				
		PERMIAN	DEVONIAN	UPPER ORDOVICIAN	1140			DEVONIAN	LOWER DEVONIAN
				MIDDLE ORDOVICIAN	1145				
				DARRIWILIAN	1150				
				TREMADOCIAN	1155				
PERMIAN	UPPER SILURIAN			UPPER ORDOVICIAN	1160				
				MIDDLE ORDOVICIAN	1165				
PERMIAN	DEVONIAN			UPPER ORDOVICIAN	1170	DEVONIAN	LOWER DEVONIAN		
				MIDDLE ORDOVICIAN	1175				
				DARRIWILIAN	1180				
				TREMADOCIAN	1185				
		PERMIAN	UPPER SILURIAN	UPPER ORDOVICIAN	1190				
				MIDDLE ORDOVICIAN	1195				
		PERMIAN	DEVONIAN	UPPER ORDOVICIAN	1200			DEVONIAN	LOWER DEVONIAN
				MIDDLE ORDOVICIAN	1205				
				DARRIWILIAN	1210				
				TREMADOCIAN	1215				
PERMIAN	UPPER SILURIAN			UPPER ORDOVICIAN	1220				
				MIDDLE ORDOVICIAN	1225				
PERMIAN	DEVONIAN			UPPER ORDOVICIAN	1230	DEVONIAN	LOWER DEVONIAN		
				MIDDLE ORDOVICIAN	1235				
				DARRIWILIAN	1240				
				TREMADOCIAN	1245				
		PERMIAN	UPPER SILURIAN	UPPER ORDOVICIAN	1250				
				MIDDLE ORDOVICIAN	1255				
		PERMIAN	DEVONIAN	UPPER ORDOVICIAN	1260			DEVONIAN	LOWER DEVONIAN
				MIDDLE ORDOVICIAN	1265				
				DARRIWILIAN	1270				
				TREMADOCIAN	1275				
PERMIAN	UPPER SILURIAN			UPPER ORDOVICIAN	1280				
				MIDDLE ORDOVICIAN	1285				
PERMIAN	DEVONIAN			UPPER ORDOVICIAN	1290	DEVONIAN	LOWER DEVONIAN		
				MIDDLE ORDOVICIAN	1295				
				DARRIWILIAN	1300				
				TREMADOCIAN	1305				
		PERMIAN	UPPER SILURIAN	UPPER ORDOVICIAN	1310				
				MIDDLE ORDOVICIAN	1315				
		PERMIAN	DEVONIAN	UPPER ORDOVICIAN	1320			DEVONIAN	LOWER DEVONIAN
				MIDDLE ORDOVICIAN	1325				
				DARRIWILIAN	1330				
				TREMADOCIAN	1335				
PERMIAN	UPPER SILURIAN			UPPER ORDOVICIAN	1340				
				MIDDLE ORDOVICIAN	1345				
PERMIAN	DEVONIAN			UPPER ORDOVICIAN	1350	DEVONIAN	LOWER DEVONIAN		
				MIDDLE ORDOVICIAN	1355				
				DARRIWILIAN	1360				
				TREMADOCIAN	1365				
		PERMIAN	UPPER SILURIAN	UPPER ORDOVICIAN	1370				
				MIDDLE ORDOVICIAN	1375				
		PERMIAN	DEVONIAN	UPPER ORDOVICIAN	1380			DEVONIAN	LOWER DEVONIAN
				MIDDLE ORDOVICIAN	1385				
				DARRIWILIAN	1390				
				TREMADOCIAN	1395				
PERMIAN	UPPER SILURIAN			UPPER ORDOVICIAN	1400				
				MIDDLE ORDOVICIAN	1405				
PERMIAN	DEVONIAN			UPPER ORDOVICIAN	1410	DEVONIAN	LOWER DEVONIAN		
				MIDDLE ORDOVICIAN	1415				
				DARRIWILIAN	1420				
				TREMADOCIAN	1425				
		PERMIAN	UPPER SILURIAN	UPPER ORDOVICIAN	1430				
				MIDDLE ORDOVICIAN	1435				
		PERMIAN	DEVONIAN	UPPER ORDOVICIAN	1440			DEVONIAN	LOWER DEVONIAN
				MIDDLE ORDOVICIAN	1445				
				DARRIWILIAN	1450				
				TREMADOCIAN	1455				
PERMIAN	UPPER SILURIAN			UPPER ORDOVICIAN	1460				
				MIDDLE ORDOVICIAN	1465				
PERMIAN	DEVONIAN			UPPER ORDOVICIAN	1470	DEVONIAN	LOWER DEVONIAN		
				MIDDLE ORDOVICIAN	1475				
				DARRIWILIAN	1480				
				TREMADOCIAN	1485				
		PERMIAN	UPPER SILURIAN	UPPER ORDOVICIAN	1490				
				MIDDLE ORDOVICIAN	1495				
		PERMIAN	DEVONIAN	UPPER ORDOVICIAN	1500			DEVONIAN	LOWER DEVONIAN
				MIDDLE ORDOVICIAN	1505				
				DARRIWILIAN	1510				
				TREMADOCIAN	1515				
PERMIAN	UPPER SILURIAN			UPPER ORDOVICIAN	1520				
				MIDDLE ORDOVICIAN	1525				
PERMIAN	DEVONIAN			UPPER ORDOVICIAN	1530	DEVONIAN	LOWER DEVONIAN		
				MIDDLE ORDOVICIAN	1535				
				DARRIWILIAN	1540				
				TREMADOCIAN	1545				
		PERMIAN	UPPER SILURIAN	UPPER ORDOVICIAN	1550				
				MIDDLE ORDOVICIAN	1555				
		PERMIAN	DEVONIAN	UPPER ORDOVICIAN	1560			DEVONIAN	LOWER DEVONIAN
				MIDDLE ORDOVICIAN	1565				
				DARRIWILIAN	1570				
				TREMADOCIAN	1575				
PERMIAN	UPPER SILURIAN			UPPER ORDOVICIAN	1580				
				MIDDLE ORDOVICIAN	1585				
PERMIAN	DEVONIAN			UPPER ORDOVICIAN	1590	DEVONIAN	LOWER DEVONIAN		
				MIDDLE ORDOVICIAN	1595				
				DARRIWILIAN	1600				
				TREMADOCIAN	1605				
		PERMIAN	UPPER SILURIAN	UPPER ORDOVICIAN	1610				
				MIDDLE ORDOVICIAN	1615				
		PERMIAN	DEVONIAN	UPPER ORDOVICIAN	1620			DEVONIAN	LOWER DEVONIAN
				MIDDLE ORDOVICIAN	1625				
				DARRIWILIAN	1630				
				TREMADOCIAN	1635				
PERMIAN	UPPER SILURIAN			UPPER ORDOVICIAN	1640				
				MIDDLE ORDOVICIAN	1645				
PERMIAN	DEVONIAN			UPPER ORDOVICIAN	1650	DEVONIAN	LOWER DEVONIAN		
				MIDDLE ORDOVICIAN	1655				
				DARRIWILIAN	1660				
				TREMADOCIAN	1665				
		PERMIAN	UPPER SILURIAN	UPPER ORDOVICIAN	1670				
				MIDDLE ORDOVICIAN	1675				
		PERMIAN	DEVONIAN	UPPER ORDOVICIAN	1680			DEVONIAN	LOWER DEVONIAN
				MIDDLE ORDOVICIAN	1685				
				DARRIWILIAN	1690				
				TREMADOCIAN	1695				
PERMIAN	UPPER SILURIAN			UPPER ORDOVICIAN	1700				
				MIDDLE ORDOVICIAN	1705				
PERMIAN	DEVONIAN			UPPER ORDOVICIAN	1710	DEVONIAN	LOWER DEVONIAN		
				MIDDLE ORDOVICIAN	1715				
				DARRIWILIAN	1720				
				TREMADOCIAN	1725				