

**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, Nöblinggraben (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:** -

**Underlying unit(s):** Rauchkofel Limestone (conformable contact).

**Overlying unit(s):** Feldkogel Formation (conformable contact), Plotta Lydite (unconformable contact).

**Lateral unit(s):** Hohe Warte Limestone, Seewarte Limestone, Lambertenghi Limestone, Spinotti Limestone, Kellergrat Reef Limestone.

**Geographic distribution:** Carnic Alps.

**Remarks:** -

**Complementary references:** SCHÖNLAUB & HISTON (2000), SCHÖNLAUB et al. (2004).

### Hohe Warte-Kalk / Hohe Warte Limestone

THOMAS J. SUTTNER, ERIKA KIDO

**Validity:** Invalid; lithologically well described by BANDEL (1969); additional stratigraphy and facies analysis by VAI (1973), SCHÖNLAUB & FLAJS (1975), SCHÖNLAUB (1980b) and POHLER (1982); summary on this unit is provided by KREUTZER (1990, 1992b: p. 27); detailed biostratigraphy is given by SUTTNER (2007b), who used the name Hohe Warte Formation for this unit.

**Type area:** ÖK50-UTM, map sheets 3108 Sillian, 3109 Oberdrauburg, 3110 Kötschach-Mauthen, 3116 Sonnenalpe Naßfeld (ÖK50-BMN, map sheets 196 Obertilliach, 197 Kötschach).

**Type section:** -

**Reference section(s):** Section along the lower part of the Koban-Prunner route at the northern wall of Mount Hohe Warte [= Monte Coglians] (SCHÖNLAUB & FLAJS, 1975; KREUTZER, 1990: p. 296), N 46°36'29" / E 12°53'17"; Seewarte (N 46°36'35" / E 12°52'15"), southern continuation of Seekopf, Biegengebirge (BANDEL, 1969; SCHÖNLAUB et al., 2004).

**Derivation of name:** After Mount Hohe Warte (KREUTZER, 1992a: p. 270).

**Synonyms:** Riffkalk-Facies der Stockwerke H-G-H [partim] (STACHE, 1884, p. 339); Korallenriffkalk am Wolayer- u. Seekopf-Thörl [partim] (FRECH, 1887: p. 700); unterdevonischer Riffkalk [partim] (FRECH, 1894b: p. 229); Riffkalk mit *Karpinskya conjugula* (GAERTNER, 1931); Schichten mit *K. conjugula* (PÖLSLER, 1967); Helle Crinoiden-Kalke (BANDEL, 1969); bioclastic Ist. (SCHÖNLAUB, 1980b: Fig. 3); Heller Crinoidenschuttalk mit *Karpinskia conjugula* (SCHÖNLAUB, 1985a); Riffkalke des Prag (SCHÖNLAUB, 1985a); Heller Crinoidenschuttalk (KREUTZER, 1990: Fig. 19); Riffkalk (KREUTZER, 1990: Fig. 19); Hohe Warte Formation (SUTTNER, 2007b; not formalized).

**Lithology:** Massive, light grey limestone.

**Fossils:** Calcareous algae brachiopods, conodonts, corals, crinoids, cyanobacteria, gastropods, stromatoporoids, trilobites.

**Origin, facies:** Marine limestone, neritic unit with patch reefs; Southern Shallow-water Facies (KREUTZER, 1992a).

**Chronostratigraphic age:** Pragian.

**Biostratigraphy:** ?*serratus-celtibericus* conodont zones (SUTTNER, 2007b).

**Thickness:** 350 m.

**Lithostratigraphically higher rank unit:** -

**Lithostratigraphic subdivision:** According to its microfacies a reefal and a crinoidal limestone unit are described (VAI, 1967; BANDEL, 1969); within the paper of BANDEL (1969) this unit was divided into "Schicht 1-20".

**Underlying unit(s):** Rauchkofel Limestone (conformable contact).

**Overlying unit(s):** Seewarte Limestone (conformable contact).

**Lateral unit(s):** Gamskofel Limestone, Kellerwand Limestone.

**Geographic distribution:** Carnic Alps.

**Remarks:** -

**Complementary references:** GORTANI (1912), PICHL (1929), VAI (1968, 1998), KODSI (1971), SCHÖNLAUB (1971–1973, 1984b, 1991), ELLERMANN (1992), LATZ (1992), KREUTZER et al. (1997, 2000), SCHÖNLAUB & KREUTZER (1997), SCHÖNLAUB & HISTON (2000), HUBMANN et al. (2003), MAY et al. (2004), SUTTNER (2005), CARULLI (2006), VENTURINI (2006), HUBMANN & SUTTNER (2007).

### Kellerwand-Kalk / Kellerwand Limestone

THOMAS J. SUTTNER, ERIKA KIDO

**Validity:** Invalid; description is given by SCHÖNLAUB (1985a: p. 43); facies of this limestone at Mount Cellon is observed by KREUTZER (1990: p. 280) and SCHÖNLAUB et al. (2004: p. 22); summary of unit is given by KREUTZER (1992b).

**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):** Lower part of the Kellerwand – located between Obere Valentinalm and Eiskarkopf (N 46°36'54" / E 12°54'39"), Cellon avalanche gully, Kleiner Pal (KREUTZER, 1990: p. 282, 1992b).

**Derivation of name:** After the lower Kellerwand below the Eiskar glacier (KREUTZER, 1989).

**Synonyms:** Calcari stratificati giallastrati [partim] (SPALLETTA et al., 1982); yellow bedded limestone [partim] (SPALLETTA & VENTURINI, 1989); Gelbe Plattenkalke der Kellerwand (KREUTZER, 1990).

**Lithology:** Yellow tentaculite limestone with bioclastic layers.

**Fossils:** Bivalves, brachiopods, conodonts, corals, echinoderms, ostracods, nautiloids, tentaculites (dacryoconarids; KREUTZER, 1992b: p. 28), trilobites.

**Origin, facies:** Marine limestone; following KREUTZER (1992a) the depositional environment corresponds with the Transitional Facies.

**Chronostratigraphic age:** Pragian–lower Emsian.

**Biostratigraphy:** *serotinus* and *patulus* conodont zones (KREUTZER, 1990).

**Thickness:** 145 m.

**Lithostratigraphically higher rank unit:** -

**Lithostratigraphic subdivision:** -

**Underlying unit(s):** Rauchkofel Limestone (conformable contact).

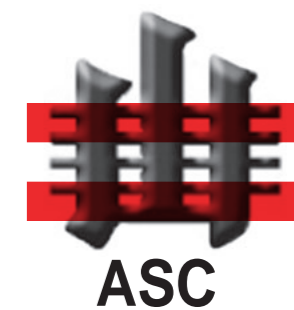
**Overlying unit(s):** Vinz Limestone (conformable contact).



# 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 / ZEPHYRIAN			GZHELIAN	295	PERMIAN	LOWER PERMIAN / CISURALIAN
KASIMOVIAN	300								
MOSKOVIAN	305								
BASHKIRIAN	310								
PERMIAN	LOWER PERMIAN / CISURALIAN			SERPUKHOVIAN	315				
				VISEAN	320				
				TOURNAISIAN	325				
PERMIAN	UPPER PERMIAN			FAMENNIAN	330	PERMIAN	UPPER PERMIAN		
				FRASNIAN	335				
				GIVETIAN	340				
		EIFELIAN	345						
		PERMIAN	LOWER PERMIAN	EMSIAN	350				
				LOCHKOVIAN	355				
		PERMIAN	UPPER PERMIAN	LUDFORDIAN / GORSTIAN	359.2			PERMIAN	UPPER PERMIAN
				HOMERIAN / SHEINWOOD	365				
				TELYCHIAN	370				
				AERONIAN	375				
RHUDDANIAN	380								
PERMIAN	UPPER PERMIAN			HIRNANTIAN	385				
				WEN-LUD-LOCKHOLM	390				
PERMIAN	UPPER PERMIAN			PRAGIAN	395	PERMIAN	UPPER PERMIAN		
				LOCHKOVIAN	400				
				LUDFORDIAN / GORSTIAN	405				
		HOMERIAN / SHEINWOOD	410						
		TELYCHIAN	415						
		AERONIAN	420						
		RHUDDANIAN	425						
		PERMIAN	UPPER PERMIAN	HIRNANTIAN	430				
				WEN-LUD-LOCKHOLM	435				
		PERMIAN	UPPER PERMIAN	PRAGIAN	440			PERMIAN	UPPER PERMIAN
LOCHKOVIAN	443.7								
LUDFORDIAN / GORSTIAN	445								
HOMERIAN / SHEINWOOD	450								
TELYCHIAN	455								
AERONIAN	460								
RHUDDANIAN	465								
PERMIAN	UPPER PERMIAN			HIRNANTIAN	470				
				WEN-LUD-LOCKHOLM	475				
PERMIAN	UPPER PERMIAN			PRAGIAN	480	PERMIAN	UPPER PERMIAN		
		LOCHKOVIAN	484.6						
		LUDFORDIAN / GORSTIAN	490						
		HOMERIAN / SHEINWOOD	495						
		TELYCHIAN	500						
		AERONIAN	505						
		RHUDDANIAN	510						
		PERMIAN	UPPER PERMIAN	HIRNANTIAN	515				
				WEN-LUD-LOCKHOLM	520				
		PERMIAN	UPPER PERMIAN	PRAGIAN	525			PERMIAN	UPPER PERMIAN
LOCHKOVIAN	530								
LUDFORDIAN / GORSTIAN	535								
HOMERIAN / SHEINWOOD	540								
TELYCHIAN	545								
AERONIAN	550								
RHUDDANIAN	555								
PERMIAN	UPPER PERMIAN			HIRNANTIAN	560				
				WEN-LUD-LOCKHOLM	568				
PERMIAN	UPPER PERMIAN			PRAGIAN	570	PERMIAN	UPPER PERMIAN		
		LOCHKOVIAN	575						
		LUDFORDIAN / GORSTIAN	580						
		HOMERIAN / SHEINWOOD	585						
		TELYCHIAN	590						
		AERONIAN	595						
		RHUDDANIAN	600						
		PERMIAN	UPPER PERMIAN	HIRNANTIAN	602				
				WEN-LUD-LOCKHOLM	609				
		PERMIAN	UPPER PERMIAN	PRAGIAN	615			PERMIAN	UPPER PERMIAN
LOCHKOVIAN	620								
LUDFORDIAN / GORSTIAN	625								
HOMERIAN / SHEINWOOD	630								
TELYCHIAN	635								
AERONIAN	640								
RHUDDANIAN	645								
PERMIAN	UPPER PERMIAN			HIRNANTIAN	648.3				
				WEN-LUD-LOCKHOLM	655				
PERMIAN	UPPER PERMIAN			PRAGIAN	660	PERMIAN	UPPER PERMIAN		
		LOCHKOVIAN	665						
		LUDFORDIAN / GORSTIAN	670						
		HOMERIAN / SHEINWOOD	675						
		TELYCHIAN	680						
		AERONIAN	685						
		RHUDDANIAN	690						
		PERMIAN	UPPER PERMIAN	HIRNANTIAN	693				
				WEN-LUD-LOCKHOLM	700				
		PERMIAN	UPPER PERMIAN	PRAGIAN	705			PERMIAN	UPPER PERMIAN
LOCHKOVIAN	710								
LUDFORDIAN / GORSTIAN	715								
HOMERIAN / SHEINWOOD	720								
TELYCHIAN	725								
AERONIAN	730								
RHUDDANIAN	735								
PERMIAN	UPPER PERMIAN			HIRNANTIAN	740				
				WEN-LUD-LOCKHOLM	747				
PERMIAN	UPPER PERMIAN			PRAGIAN	750	PERMIAN	UPPER PERMIAN		
		LOCHKOVIAN	755						
		LUDFORDIAN / GORSTIAN	760						
		HOMERIAN / SHEINWOOD	765						
		TELYCHIAN	770						
		AERONIAN	775						
		RHUDDANIAN	780						
		PERMIAN	UPPER PERMIAN	HIRNANTIAN	783				
				WEN-LUD-LOCKHOLM	790				
		PERMIAN	UPPER PERMIAN	PRAGIAN	795			PERMIAN	UPPER PERMIAN
LOCHKOVIAN	800								
LUDFORDIAN / GORSTIAN	805								
HOMERIAN / SHEINWOOD	810								
TELYCHIAN	815								
AERONIAN	820								
RHUDDANIAN	825								
PERMIAN	UPPER PERMIAN			HIRNANTIAN	828.3				
				WEN-LUD-LOCKHOLM	835				
PERMIAN	UPPER PERMIAN			PRAGIAN	840	PERMIAN	UPPER PERMIAN		
		LOCHKOVIAN	845						
		LUDFORDIAN / GORSTIAN	850						
		HOMERIAN / SHEINWOOD	855						
		TELYCHIAN	860						
		AERONIAN	865						
		RHUDDANIAN	870						
		PERMIAN	UPPER PERMIAN	HIRNANTIAN	873				
				WEN-LUD-LOCKHOLM	880				
		PERMIAN	UPPER PERMIAN	PRAGIAN	885			PERMIAN	UPPER PERMIAN
LOCHKOVIAN	890								
LUDFORDIAN / GORSTIAN	895								
HOMERIAN / SHEINWOOD	900								
TELYCHIAN	905								
AERONIAN	910								
RHUDDANIAN	915								
PERMIAN	UPPER PERMIAN			HIRNANTIAN	918.3				
				WEN-LUD-LOCKHOLM	925				
PERMIAN	UPPER PERMIAN			PRAGIAN	930	PERMIAN	UPPER PERMIAN		
		LOCHKOVIAN	935						
		LUDFORDIAN / GORSTIAN	940						
		HOMERIAN / SHEINWOOD	945						
		TELYCHIAN	950						
		AERONIAN	955						
		RHUDDANIAN	960						
		PERMIAN	UPPER PERMIAN	HIRNANTIAN	963				
				WEN-LUD-LOCKHOLM	970				
		PERMIAN	UPPER PERMIAN	PRAGIAN	975			PERMIAN	UPPER PERMIAN
LOCHKOVIAN	980								
LUDFORDIAN / GORSTIAN	985								
HOMERIAN / SHEINWOOD	990								
TELYCHIAN	995								
AERONIAN	1000								
RHUDDANIAN	1005								
PERMIAN	UPPER PERMIAN			HIRNANTIAN	1008.3				
				WEN-LUD-LOCKHOLM	1015				
PERMIAN	UPPER PERMIAN			PRAGIAN	1020	PERMIAN	UPPER PERMIAN		
		LOCHKOVIAN	1025						
		LUDFORDIAN / GORSTIAN	1030						
		HOMERIAN / SHEINWOOD	1035						
		TELYCHIAN	1040						
		AERONIAN	1045						
		RHUDDANIAN	1050						
		PERMIAN	UPPER PERMIAN	HIRNANTIAN	1053				
				WEN-LUD-LOCKHOLM	1060				
		PERMIAN	UPPER PERMIAN	PRAGIAN	1065			PERMIAN	UPPER PERMIAN
LOCHKOVIAN	1070								
LUDFORDIAN / GORSTIAN	1075								
HOMERIAN / SHEINWOOD	1080								
TELYCHIAN	1085								
AERONIAN	1090								
RHUDDANIAN	1095								
PERMIAN	UPPER PERMIAN			HIRNANTIAN	1098.3				
				WEN-LUD-LOCKHOLM	1105				
PERMIAN	UPPER PERMIAN			PRAGIAN	1110	PERMIAN	UPPER PERMIAN		
		LOCHKOVIAN	1115						
		LUDFORDIAN / GORSTIAN	1120						
		HOMERIAN / SHEINWOOD	1125						
		TELYCHIAN	1130						
		AERONIAN	1135						
		RHUDDANIAN	1140						
		PERMIAN	UPPER PERMIAN	HIRNANTIAN	1143				
				WEN-LUD-LOCKHOLM	1150				
		PERMIAN	UPPER PERMIAN	PRAGIAN	1155			PERMIAN	UPPER PERMIAN
LOCHKOVIAN	1160								
LUDFORDIAN / GORSTIAN	1165								
HOMERIAN / SHEINWOOD	1170								
TELYCHIAN	1175								
AERONIAN	1180								
RHUDDANIAN	1185								
PERMIAN	UPPER PERMIAN			HIRNANTIAN	1188.3				
				WEN-LUD-LOCKHOLM	1195				
PERMIAN	UPPER PERMIAN			PRAGIAN	1200	PERMIAN	UPPER PERMIAN		
		LOCHKOVIAN	1205						
		LUDFORDIAN / GORSTIAN	1210						
		HOMERIAN / SHEINWOOD	1215						
		TELYCHIAN	1220						
		AERONIAN	1225						
		RHUDDANIAN	1230						
		PERMIAN	UPPER PERMIAN	HIRNANTIAN	1233				
				WEN-LUD-LOCKHOLM	1240				
		PERMIAN	UPPER PERMIAN	PRAGIAN	1245			PERMIAN	UPPER PERMIAN
LOCHKOVIAN	1250								
LUDFORDIAN / GORSTIAN	1255								
HOMERIAN / SHEINWOOD	1260								
TELYCHIAN	1265								
AERONIAN	1270								
RHUDDANIAN	1275								
PERMIAN	UPPER PERMIAN			HIRNANTIAN	1278.3				
				WEN-LUD-LOCKHOLM	1285				
PERMIAN	UPPER PERMIAN			PRAGIAN	1290	PERMIAN	UPPER PERMIAN		
		LOCHKOVIAN	1295						
		LUDFORDIAN / GORSTIAN	1300						
		HOMERIAN / SHEINWOOD	1305						
		TELYCHIAN	1310						
		AERONIAN	1315						
		RHUDDANIAN	1320						
		PERMIAN	UPPER PERMIAN	HIRNANTIAN	1323				
				WEN-LUD-LOCKHOLM	1330				
		PERMIAN	UPPER PERMIAN	PRAGIAN	1335			PERMIAN	UPPER PERMIAN
LOCHKOVIAN	1340								
LUDFORDIAN / GORSTIAN	1345								
HOMERIAN / SHEINWOOD	1350								
TELYCHIAN	1355								
AERONIAN	1360								
RHUDDANIAN	1365								
PERMIAN	UPPER PERMIAN			HIRNANTIAN	1368.3				
				WEN-LUD-LOCKHOLM	1375				
PERMIAN	UPPER PERMIAN			PRAGIAN	1380	PERMIAN	UPPER PERMIAN		
		LOCHKOVIAN	1385						
		LUDFORDIAN / GORSTIAN	1390						
		HOMERIAN / SHEINWOOD	1395						
		TELYCHIAN	1400						
		AERONIAN	1405						
		RHUDDANIAN	1410						
		PERMIAN	UPPER PERMIAN	HIRNANTIAN	1413				
				WEN-LUD-LOCKHOLM	1420				
		PERMIAN	UPPER PERMIAN	PRAGIAN	1425			PERMIAN	UPPER PERMIAN
LOCHKOVIAN	1430								
LUDFORDIAN / GORSTIAN	1435								
HOMERIAN / SHEINWOOD	1440								
TELYCHIAN	1445								
AERONIAN	1450								
RHUDDANIAN	1455								
PERMIAN	UPPER PERMIAN			HIRNANTIAN	1458.3				
				WEN-LUD-LOCKHOLM	1465				
PERMIAN	UPPER PERMIAN			PRAGIAN	1470	PERMIAN	UPPER PERMIAN		
		LOCHKOVIAN	1475						
		LUDFORDIAN / GORSTIAN	1480						
		HOMERIAN / SHEINWOOD	1485						
		TELYCHIAN	1490						
		AERONIAN	1495						
		RHUDDANIAN	1500						
		PERMIAN	UPPER PERMIAN	HIRNANTIAN	1503				
				WEN-LUD-LOCKHOLM	1510				
		PERMIAN	UPPER PERMIAN	PRAGIAN	1515			PERMIAN	UPPER PERMIAN
LOCHKOVIAN	1520								
LUDFORDIAN / GORSTIAN	1525								
HOMERIAN / SHEINWOOD	1530								
TELYCHIAN	1535								
AERONIAN	1540								
RHUDDANIAN	1545								
PERMIAN	UPPER PERMIAN			HIRNANTIAN	1548.3				
				WEN-LUD-LOCKHOLM	1555				
PERMIAN	UPPER PERMIAN			PRAGIAN	1560	PERMIAN	UPPER PERMIAN		
		LOCHKOVIAN	1565						
		LUDFORDIAN / GORSTIAN	1570						
		HOMERIAN / SHEINWOOD	1575						
		TELYCHIAN	1580						
		AERONIAN	1585						
		RHUDDANIAN	1590						
		PERMIAN	UPPER PERMIAN	HIRNANTIAN	1593				
				WEN-LUD-LOCKHOLM	1600				
		PERMIAN	UPPER PERMIAN	PRAGIAN	1605			PERMIAN	UPPER PERMIAN
LOCHKOVIAN	1610								
LUDFORDIAN / GORSTIAN	1615								
HOMERIAN / SHEINWOOD	1620								
TELYCHIAN	1625								
AERONIAN	1630								
RHUDDANIAN	1635								
PERMIAN	UPPER PERMIAN			HIRNANTIAN	1638.3				
				WEN-LUD-LOCKHOLM	1645				
PERMIAN	UPPER PERMIAN			PRAGIAN	1650	PERMIAN	UPPER PERMIAN		
		LOCHKOVIAN	1655						
		LUDFORDIAN / GORSTIAN	1660						
		HOMERIAN / SHEINWOOD	1665						
		TELYCHIAN	1670						
		AERONIAN	1675						
		RHUDDANIAN	1680						
		PERMIAN	UPPER PERMIAN	HIRNANTIAN	1683				
				WEN-LUD-LOCKHOLM	1690				
		PERMIAN	UPPER PERMIAN	PRAGIAN	1695			PERMIAN	UPPER PERMIAN
LOCHKOVIAN	1700								
LUDFORDIAN / GORSTIAN	1705								
HOMERIAN / SHEINWOOD	1710								
TELYCHIAN	1715								
AERONIAN	1720								
RHUDDANIAN	1725								
PERMIAN	UPPER PERMIAN			HIRNANTIAN	1728.3				
				WEN-LUD-LOCKHOLM	1735				
PERMIAN	UPPER PERMIAN			PRAGIAN	1740	PERMIAN	UPPER PERMIAN		
		LOCHKOVIAN	1745						
		LUDFORDIAN / GORSTIAN	1750						
		HOMERIAN / SHEINWOOD	1755						
		TELYCHIAN	1760						
		AERONIAN	1765						
		RHUDDANIAN	1770						
		PERMIAN	UPPER PERMIAN	HIRNANTIAN	1773				
				WEN-LUD-LOCKHOLM	1780				
		PERMIAN	UPPER PERMIAN	PRAGIAN	1785			PERMIAN	UPPER PERMIAN
LOCHKOVIAN	1790								
LUDFORDIAN / GORSTIAN	1795								
HOMERIAN / SHEINWOOD	1800								
TELYCHIAN	1805								
AERONIAN	1810								
RHUDDANIAN	1815								
PERMIAN	UPPER PERMIAN			HIRNANTIAN	1818.3				
				WEN-LUD-LOCKHOLM	1825				
PERMIAN	UPPER PERMIAN			PRAGIAN	1830	PERMIAN	UPPER PERMIAN		
		LOCHKOVIAN	1835						
		LUDFORDIAN / GORSTIAN	1840						
		HOMERIAN / SHEINWOOD	1845						
		TELYCHIAN	1850						
		AERONIAN	1855						
		RHUDDANIAN	1860						