

**Type area:** ÖK50-UTM, map sheet 4215 Eisenerz (ÖK 50-BMN, map sheets 101 Eisenerz and 131 Kalwang).

**Type section:** Not indicated in the literature.

**Reference section(s):** -

**Derivation of name:** After the lithology and the mass occurrence of crinoids.

**Synonyms:** Partim “Crinoiden führende Bänderflaserkalke” (SCHÖNLAUB, 1982a).

**Lithology:** Grey and pink crinoid bearing flaser limestone (SCHÖNLAUB, 1976, 1979, 1982a).

**Fossils:** Crinoids, conodonts.

**Origin, facies:** Shelf deposits (?).

**Chronostratigraphic age:** Llandovery/Wenlock.

**Biostratigraphy:** *amorphognathoides* conodont zone.

**Thickness:** 15 m.

**Lithostratigraphically higher rank unit:** -

**Lithostratigraphic subdivision:** -

**Underlying unit(s):** Volcanics; Polster Quartzites (SCHÖNLAUB, 1992; not illustrated in Text-Fig. 2).

**Overlying unit(s):** Black Lydites, Alaun Schists.

**Lateral unit(s):** Red Sparitic Limestone.

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

**Remarks:** -

**Complementary references:** -

#### Rote Sparitkalke / Red Sparitic Limestone

Fritz Ebner

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

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

**Type section:** Ca. 45 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:** According to the predominant lithological character.

**Synonyms:** Partim “Silur Transgressionsbildungen” (SCHÖNLAUB, 1977b).

**Lithology:** Pinkish-grey, massive sparry limestone with mm-thick irregular greenish flaser textures in the lower parts and metasomatically mineralized by iron-carbonate (“Rohwand”) in the hanging parts (FLAJS & SCHÖNLAUB, 1976).

**Fossils:** Conodonts.

**Origin, facies:** Transgression deposits.

**Chronostratigraphic age:** Llandovery (SCHÖNLAUB, 1997b).

**Biostratigraphy:** *Icriodina cf. irregularis* and *Distomodus staurogathoides* indicate Aeronian stage (FLAJS & SCHÖNLAUB, 1976).

**Thickness:** 3 m.

**Lithostratigraphically higher rank unit:** -

**Lithostratigraphic subdivision:** -

**Underlying unit(s):** Cystoid Limestone.

**Overlying unit(s):** Orthoceratid Limestone.

**Lateral unit(s):** -

**Geographic distribution:** E-GWZ; Styria: Polsterkar in the Eisenerzer Alpen.

**Remarks:** The lower part of the Red Sparitic Limestone is composed of 60 cm sandy shales (FLAJS & SCHÖNLAUB, 1976: Fig. 3).

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

#### Orthocerenkalk / Orthoceratid Limestone

Fritz Ebner

**Validity:** Invalid; working term used as local (lithostratigraphic) unit (SCHÖNLAUB, 1982a).

**Type area:** Eisenerzer Alpen, ÖK50-UTM, map sheet 4215 Eisenerz, ÖK50-BMN, map sheet 101 Eisenerz.

**Type section:** Not defined.

**Reference section(s):** -

**Derivation of name:** After the occurrence of orthoceratid nautiloids.

**Synonyms:** Orthocerenkalke der Rotschütt (FLAJS et al., 1963), “Kalke der Handlalm” (FLAJS, 1964, 1967).

**Lithology:** Thick bedded grey – dark grey and rarely pinkish sparry limestones, sometimes with nautiloids.

**Fossils:** Nautiloids, conodonts, crinoids, trilobites, filaments.

**Origin, facies:** Pelagic environment.

**Chronostratigraphic age:** Silurian, (?) Wenlock–Ludlow.

**Biostratigraphy:** *plœckensis* Zone to *siluricus* Zone (FLAJS et al., 1963; FLAJS, 1964, 1967; FLAJS & SCHÖNLAUB, 1976).

**Thickness:** 24 m.

**Lithostratigraphically higher rank unit:** -

**Lithostratigraphic subdivision:** -

**Underlying unit(s):** Red Sparitic Limestone (FLAJS & SCHÖNLAUB, 1976).

**Overlying unit(s):** Lower Polster Limestone.

**Lateral unit(s):** Black Lydites, Alaun Schists and the “Mischfazies”, an intermediate facies between the Orthoceratid Limestone and the Black Lydites, Alaun Schists (SCHÖNLAUB, 1982a).

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

**Remarks:** -

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

#### Schwarzer Kieselschiefer, Alaunschiefer / Black Lydites, Alaun Schists

Fritz Ebner

**Validity:** Invalid; working term used as local (lithostratigraphic) unit (SCHÖNLAUB, 1982a).

**Type area:** ÖK50-UTM, map sheet 4215 Eisenerz (ÖK50-BMN, map sheets 101 Eisenerz, 131 Kalwang and 132 Trofaiach).

**Type section:** Not defined; typical outcrops are mentioned from the Sauerbrunn- and Weiritzgraben area (HERITSCH, 1931b; HABERFELNER & HERITSCH, 1932a).

**Reference section(s):** -

**Derivation of name:** Derived from the color and lithology.

**Synonyms:** -

**Lithology:** Black siliceous schists, alaun schists, lydites and rare intercalations of black limestones.

**Fossils:** Conodonts in limestone intercalations (FLAJS, 1964, 1967).

**Origin, facies:** Sapropelitic basinal sediments (SCHÖNLAUB, 1982a).

**Chronostratigraphic age:** Silurian (Llandovery–Ludlow).

**Biostratigraphy:** *amorphognathoides*, *sagitta* and *ploeckensis* conodont zones.

**Thickness:** 50–80 m (SCHÖNLAUB, 1982a).

**Lithostratigraphically higher rank unit:** -

**Lithostratigraphic subdivision:** -

**Underlying unit(s):** Crinoidal Limestone, Lydites, Arkoses, Schists (SCHÖNLAUB, 1982a).

**Overlying unit(s):** Cavernous Banded Limestone.

**Lateral unit(s):** Intercalations of Black Lydites, Alaun Schists with the Orthoceratid Limestone are named “Mischfazies” (SCHÖNLAUB, 1992).

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

**Remarks:** The graptolites described by HERITSCH (1931 b) and HABERFELNER & HERITSCH (1932a) from the Black Lydites, Alaun Schists were recognized as anorganic remains (GRÄF, 1966).

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

#### „Löchrige Bänderkalke“ / Cavernous Banded Limestone

FRITZ EBNER

**Validity:** Invalid; not formalized working term (SCHÖNLAUB, 1977b, 1982a).

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

**Type section:** Not defined.

**Reference section(s):** -

**Derivation of name:** According to holes at the surface of the limestones due the weathering of pyrite.

**Synonyms:** Partim “Bunter Kalk” (SCHÖNLAUB, 1982a).

**Lithology:** Well bedded and platy, grey sometimes reddish, spotted limestone with characteristic, cm-sized holes at the surface.

**Fossils:** Conodonts, rare orthoceratids.

**Origin, facies:** Pelagic facies.

**Chronostratigraphic age:** Upper Silurian (Pridoli).

**Biostratigraphy:** -

**Thickness:** ~ 20 m.

**Lithostratigraphically higher rank unit:** -

**Lithostratigraphic subdivision:** -

**Underlying unit(s):** Black Lydites, Alaun Schists.

**Overlying unit(s):** Flaser Limestone.

**Lateral unit(s):** Lower Polster Limestones.

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

**Remarks:** The lithology resembles the upper Silurian “Alticola/Megaerella Limestones” of the Carnic Alps (SCHÖNLAUB, 1977b, 1982a). However, the Cavernous Banded Limestone was also compared with upper Devonian flaser limestones of the Carnic Alps (HABERFELNER, 1935).

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

#### Flaserkalk / Flaser Limestones

FRITZ EBNER

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

**Type area:** ÖK50-UTM, map sheet 4215 Eisenerz (ÖK50-BMN, map sheets 101 Eisenerz and 131 Kalwang).

**Type section:** -

**Reference section(s):** -

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

**Synonyms:** “Erzführender Kalk” (CZERMAK, 1931); “Bunter Flaser-Bänderkalk und geschieferter Kalk” (SCHÖNLAUB, 1982a).

**Lithology:** a) in basal parts subordinate thin platy black limestones; b) variegated flaser- and banded limestones and reddish calcareous schists; c) within (b) occasionally layers of grey organodetritic limestones; d) stocks of meta-somatic siderite-ankerite mineralization.

**Fossils:** Conodonts, *dacryoconarides* (in b); c) crinoids and stromatoporoids.

**Origin, facies:** Pelagic environment; c) allodapic deposits.

**Chronostratigraphic age:** Lower Devonian: a) Lochkovian; b) Pragian–upper Emsian (middle Dalejeum).

**Biostratigraphy:** Based on conodonts.

**Thickness:** a) ~ 30 m; b) 200–250 m; c) 40 m.

**Lithostratigraphically higher rank unit:** -

**Lithostratigraphic subdivision:** -

**Underlying unit(s):** Cavernous Banded Limestone, Orthoceratid Limestone.

**Overlying unit(s):** -

**Lateral unit(s):** Lower and Upper Polster Limestone, Sauerberg Limestone, ? Massive Limestone.

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

**Remarks:** -

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

#### Untere Polsterkalke / Lower Polster Limestone

FRITZ EBNER

**Validity:** Invalid; informal working term (FLAJS & SCHÖNLAUB, 1976).

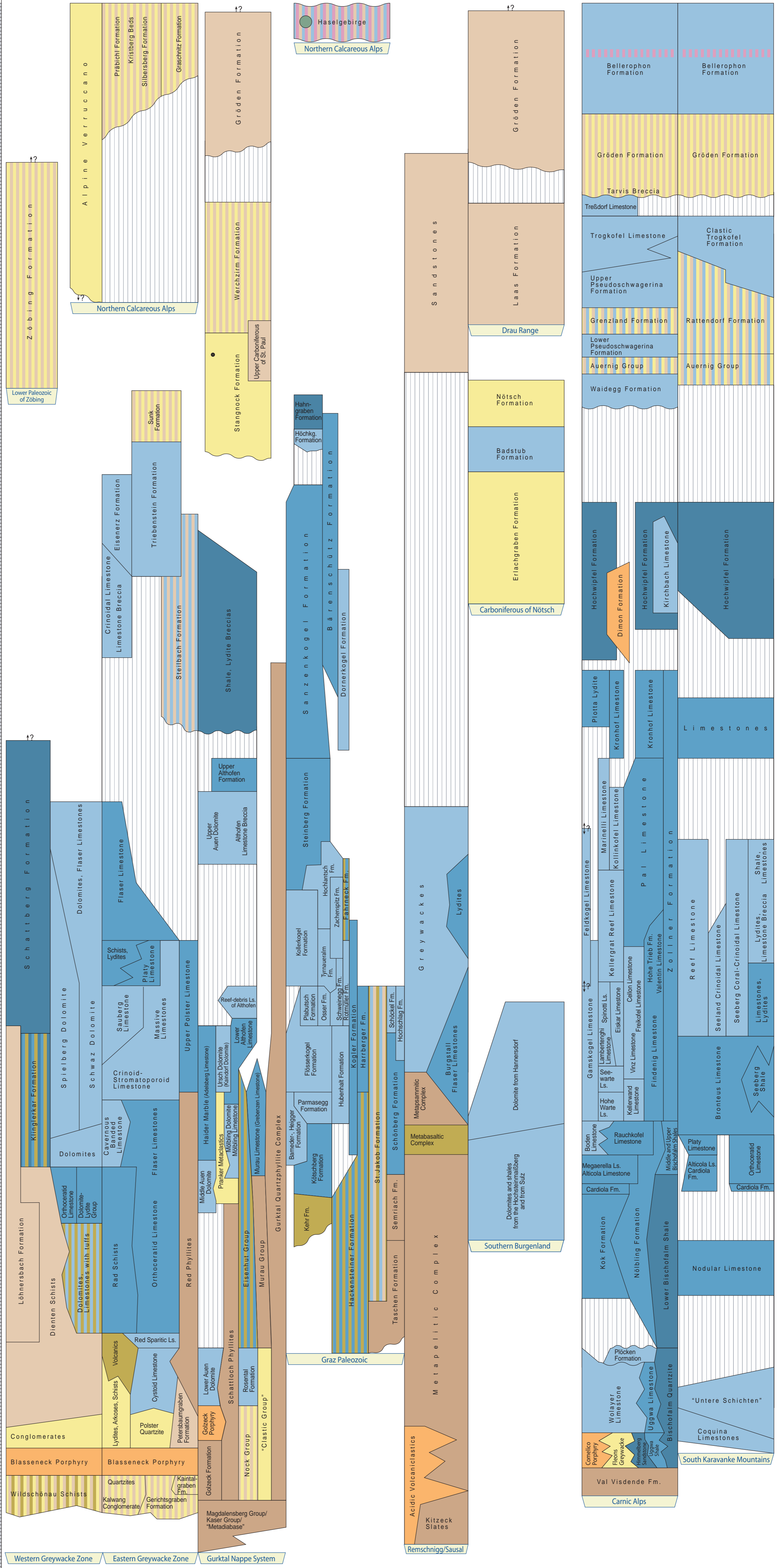
# Austrian Stratigraphic Chart 2004 - Paleozoic

(sedimentary successions)

Austrian Stratigraphic Commission



ERA	SYSTEM / PERIOD	SERIES / EPOCH	Global Classification		
			STAGE / AGE	DURATION Ma	
PERMIAN	MID. PERMIAN U. GUADALUPIAN	PERMIAN LOPINGIAN	CHANGHSINGIAN	251	
			WUCHIAPINGIAN	255	
			CAPITANIAN	260	
			WORDIAN	265	
			ROADIAN	270	
			LOWER PERMIAN CISURALIAN	KUNGURIAN	275
				ARTINSKIAN	280
				SAKMARIAN	285
				ASSELIAN	290
				GZHELIAN	295
			CARBONIFEROUS PENNSYLVANIAN	LOWER CARBONIFEROUS MISSISSIPPIAN	KASIMOVIAN
MOSKOVIAN	310				
BASHKIRIAN	315				
SERPUKHOVIAN	320				
TOURNAISIAN	350				
359.2					
DEVONIAN	UPPER DEVONIAN	FAMENNIAN	365		
		FRASNIAN	375		
		GIVETIAN	385		
		EIFELIAN	395		
		EMSIA	405		
		PRAGIAN	410		
		LOCHKOVIAN	415		
		WEN-LUD-LOCKLOW	420		
		HOMERIAN	425		
		GORSTIAN	430		
SILURIAN	UPPER ORDOVICIAN	LLANDOVERY	435		
		AERONIAN	440		
		RHUDDANIAN	445		
		HIRNANTIAN	447		
		448.3			
		ORDOVICIAN	MIDDLE ORDOVICIAN	DARRIWILIAN	465
				470	
				475	
				480	
				485	
LOWER ORDOVICIAN	TREMADOCIAN	490			
		495			
		500			
		505			
		510			
CAMBRIAN	LOWER CAMBRIAN	515			
		520			
		525			
UPPER CAMBRIAN	PAIBIAN	530			
		535			
		540			



- ### 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

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), 2<sup>nd</sup> 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