(Schönlaub, 1991: p. 119); Consuelo-Laminit (Kreutzer, 1992a: p. 270).

Lithology: Well bedded laminated limestone, birdseye limestone, crinoidal debris limestone.

Fossils: Calcareous algae, bivalves, brachiopods (e.g., *Karpinskia consuelo*), corals, echinoderms, foraminifers, gastropods, ostracods, stromatoporoids (Kreutzer, 1992b: p. 29).

Origin, facies: Marine limestone, neritic unit belonging to the Southern Shallow-water Facies (Kreutzer, 1990).

Chronostratigraphic age: Emsian (Kreutzer, 1992a: p. 270; Schönlaub et al., 2004: p. 19).

Biostratigraphy: -

Thickness: 130 m.

Lithostratigraphically higher rank unit: -

Lithostratigraphic subdivision: -

Underlying unit(s): Seewarte Limestone (conformable contact).

Overlying unit(s): Spinotti Limestone (conformable contact).

Lateral unit(s): Gamskofel Limestone, Eiskar Limestone.

Geographic distribution: Carnic Alps.

Remarks: -

Complementary references: Bandel (1972), Schönlaub (1984b), Vai (1998), Schönlaub & Histon (2000), Hubmann et al. (2003), Schönlaub et al. (2004), Suttner & Kido (2011).

Spinotti-Kalk / Spinotti Limestone

Thomas J. Suttner, Erika Kido

Validity: Invalid; first observed by Stache (1884) and later by Gaertner (1931); facies described by Pohler (1982) and Kreutzer (1990, 1992a); name of this unit first mentioned by Kreutzer (1992b: p. 30).

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

Type section: -

Reference section(s): Trail along Sentiero Spinotti between Rifugio Lambertenghi e Romanin and Rifugio Giovanni e Olinto Marinelle (N 46°36'06" / E 12°52'26"), Hohe Warte (Kreutzer, 1992a).

Derivation of name: After Sentiero Spinotti.

Synonyms: Riffkalk-Facies der Stockwerke H-G-H [partim] (Stache, 1884: p. 339); Pentamerenkalke (Gaertner, 1931: p. 148); Riffkalk mit *Pentamerus* aff. *pseudobaschkiricus* (Gaertner, 1931: p. 147); La serie calcarea di M. Zermula [partim] (Ferrari & Vai, 1966); Stromatoporen-Korallen-Crinoidenkalk (Schönlaub, 1971–1973); Gebankter Birdseye-Amphiporen-Brachiopodenkalk (Schönlaub, 1971–1973); Pentamerus Lst. (Schönlaub, 1980: Fig. 3); Amphipora Lst. (Schönlaub, 1980b: Fig. 3); Korallen/Crinoiden-K. (Schönlaub, 1985a: Fig. 10); Amphipora-Kalk (Schönlaub, 1985a: Fig. 10); Stromatoporen-Korallen-Crinoidenschuttkalk (Schönlaub, 1985a: p. 42); Gebankter Birdseye-Amphiporen-Brachiopoden-Kalk (Schönlaub, 1985a: p. 42); Crinoiden-Kalk and Birdseye-Kalk (Kreutzer, 1990); Korallen-Crinoidenkalk (Schönlaub, 1991: p. 105); Amphiporenkalk (Schönlaub, 1991: p. 105); Fossilschuttkalke (Schönlaub, 1991: p. 119); "Birdseye"-Kalke (Schönlaub, 1991: p. 119); Geschichtete "Birdseye"-kalke (Schönlaub, 1991: p. 119).

Lithology: Massive limestone, layers of crinoidal debris and *Amphipora* limestone, birdseye limestone.

Fossils: Calcareous algae, bivalves, brachiopods, corals (rugose and tabulate), echinoderms, gastropods, stromatoporoids.

Origin, facies: Marine limestone, neritic unit (Southern Shallow-water Facies).

Chronostratigraphic age: Eifelian–lower Givetian (Vai, 1963; Bandel, 1972; Schönlaub et al., 2004: p. 15–16).

Biostratigraphy: -

Thickness: 220 m.

Lithostratigraphically higher rank unit: -

Lithostratigraphic subdivision: Spinotti A–D and Amphipora Limestone; see remarks.

Underlying unit(s): Lambertenghi Limestone (conformable contact).

Overlying unit(s): Kellergrat Reef Limestone (conformable contact); Kronhof Limestone (unconformable contact; Schönlaub & Kreutzer, 1993: Fig. 5).

Lateral unit(s): Gamskofel Limestone, Eiskar Limestone.

Geographic distribution: Carnic Alps.

Remarks: According to the lithostratigraphic subdivision, the Spinotti Limestone is composed of crinoidal and bioclastic limestones (subdivided into four units based on its facies characters: Spinotti A-D) and "birdseye limestone" with *Amphipora* (Schönlaub et al., 2004: p. 13–16).

Complementary references: Vai (1967, 1998), Schönlaub (1984b), Hubmann & Fenninger (1993), Schönlaub & Histon (2000), Hubmann et al. (2003), Venturini (2006).

Eiskar-Kalk / Eiskar Limestone

Thomas J. Suttner, Erika Kido

Validity: Invalid; the name of this limestone was first used on the map of Kreutzer & Schönlaub (1984); well described by Schönlaub (1985a: Fig. 10, p. 43) and revised by Kreutzer (1990: p. 306, 1992a); included within the summary of the Variscan carbonate sequences in the Carnic Alps (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): Between Kellerwarte and Plöckenpass (Kreutzer & Schönlaub, 1984).

Derivation of name: After the Eiskar at the Kellerspitzen in the area of the upper Kellerwand cliff (Schönlaub, 1991: p. 118).

Synonyms: Emsium-Kalk; Eifelium-Kalk; Givetium-Kalk der Kellerspitzen (cf. Kreutzer 1990: p. 306).

Lithology: Bioclastic limestone, birdseye limestone.

Fossils: Calcareous algae, bivalves, corals, echinoderms, gastropods (Kreutzer, 1992b: p. 29).

Origin, facies: Marine limestone, neritic unit of the Southern Shallow-water Facies (Kreutzer, 1990).

Chronostratigraphic age: Emsian–lower Givetian (SCHÖNLAUB et al., 2004: p. 16).

Biostratigraphy: -

Thickness: 330 m.

Lithostratigraphically higher rank unit: -

Lithostratigraphic subdivision: -

Underlying unit(s): Seewarte Limestone (conformable contact).

Overlying unit(s): Kellergrat Reef Limestone (conformable contact).

Lateral unit(s): Lambertenghi Limestone, Spinotti Limestone, Vinz Limestone, Cellon Limestone.

Geographic distribution: Carnic Alps.

Remarks: -

Complementary references: SCHÖNLAUB (1985c), SCHÖNLAUB & HISTON (2000).

Freikofel-Kalk / Freikofel Limestone

THOMAS J. SUTTNER, ERIKA KIDO

Validity: Invalid; mentioned by BANDEL (1972) and SCHÖNLAUB (1985a: p. 43); included within the summary of the Variscan carbonate sequences in the Carnic Alps (KREUTZER, 1992b: p. 30); lithology and facies described by SCHÖNLAUB et al. (2004).

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): Mount Freikofel [= Cuelat] (SCHÖNLAUB et al., 2004), N 46°36'03" / E 12°58'39"; Pal Grande, Pal Piccolo, Creta di Timau (PERRI & SPALLETTA, 1998a).

Derivation of name: After Mount Freikofel (SCHÖNLAUB, 1985a: p. 43).

Synonyms: 'Lithoklastkalk' (BANDEL, 1974: p. 101).

Lithology: Light red to greyish pelagic limestone (KREUTZER, 1992b).

Fossils: Cephalopods, conodonts, corals, crinoids, trilobites.

Origin, facies: Marine limestone, gravity flow deposits belonging to the Pelagic Carbonate Facies (KREUTZER, 1992a: p. 272; SCHÖNLAUB et al., 2004: p. 45).

Chronostratigraphic age: Eifelian–Givetian.

Biostratigraphy: *costatus* conodont zone (PERRI & SPALLETTA, 1998a).

Thickness: > 100 m.

Lithostratigraphically higher rank unit: -

Lithostratigraphic subdivision: -

Underlying unit(s): Vinz Limestone (conformable contact).

Overlying unit(s): Pal Limestone (conformable contact).

Lateral unit(s): Cellon Limestone, Findenig Limestone, Hohe Trieb Formation.

Geographic distribution: Carnic Alps.

Remarks: -

Complementary references: SCHÖNLAUB & HISTON (2000), BRIME et al. (2008).

Cellon-Kalk / Cellon Limestone

THOMAS J. SUTTNER, ERIKA KIDO

Validity: Invalid; first detailed profiles by BANDEL (1972, 1974); mapped by KREUTZER & SCHÖNLAUB (1984); lithology and facies described by SCHÖNLAUB (1985a) and KREUTZER (1992a); included within the summary of the Variscan carbonate sequences in the Carnic Alps (KREUTZER, 1992b: p. 30).

Type area: ÖK50-UTM, map sheets 3109 Oberdrauburg, 3110 Kötschach-Mauthen, 3111 Spittal an der Drau, 3112 Villach, 3116 Sonnenalpe Naßfeld, 3117 Nötsch im Gailtal, 3118 Arnoldstein (ÖK50-BMN, map sheets 197 Kötschach, 198 Weißbriach, 199 Hermagor, 200 Arnoldstein).

Type section: Upper part of Cellon avalanche gully (KREUTZER, 1992a), N 46°36'31" / E 12°56'08".

Reference section(s): Lower Kellerwand cliff (Obere Valentinalm to Eiskarkopf), Kleiner Pal (KREUTZER & SCHÖNLAUB, 1984; KREUTZER, 1990).

Derivation of name: After Mount Cellon.

Synonyms: 'Lithoklastkalk' (BANDEL, 1974: p. 101); Kunzkopf-Kalk (KREUTZER, 1990).

Lithology: Massive grey limestone with pelagic biogenes with debris layers (KREUTZER, 1992b).

Fossils: Bivalves, cephalopods, corals, conodonts, echinoderms, foraminifers, gastropods, stromatoporoids, trilobites.

Origin, facies: Marine limestone, pelagic unit (Transitional Facies).

Chronostratigraphic age: Eifelian–Givetian.

Biostratigraphy: *partitus*, *costatus* and *varcus* conodont zones (KREUTZER, 1990).

Thickness: 210 m.

Lithostratigraphically higher rank unit: -

Lithostratigraphic subdivision: -

Underlying unit(s): Vinz Limestone (conformable contact).

Overlying unit(s): Pal Limestone (conformable contact).

Lateral unit(s): Eiskar Limestone, Kellergrat Reef Limestone, Freikofel Limestone.

Geographic distribution: Carnic Alps.

Remarks: -

Complementary references: KREUTZER et al. (1997, 2000), VAI (1998), SCHÖNLAUB & HISTON (2000), SCHÖNLAUB et al. (2004).

Hohe Trieb-Formation / Hohe Trieb Formation

THOMAS J. SUTTNER, ERIKA KIDO

Validity: Valid; well described by PÖLSLER (1969a) and SCHÖNLAUB (1969a); mapped by SCHÖNLAUB (1981); named by SCHÖNLAUB (1985a: p. 43); unit formalized by KREUTZER (1992b).

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

Type section: Hoher Trieb (SCHÖNLAUB, 1969a), N 46°35'46" / E 13°03'31".

Austrian Stratigraphic Chart 2004 - Paleozoic

(sedimentary successions)

Austrian Stratigraphic Commission

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