Frasnian reefs of the Carnic Alps were in decline earlier than in most of the reef localities throughout the Middle–Upper Devonian world (PAS et al., 2014). This appears to be related to the extensional or transtensional tectonic episode supposed by SPALLETTA et al. (1980, 1982) and SPALLETTA & VAI (1984). The progressive sea-level rise is marked by deposition of red nodular limestone overlying the thick sequence of reef and fore-reef ''transitional'' facies of the Devonian Carnic Alps carbonate platform (PAS et al., 2014).

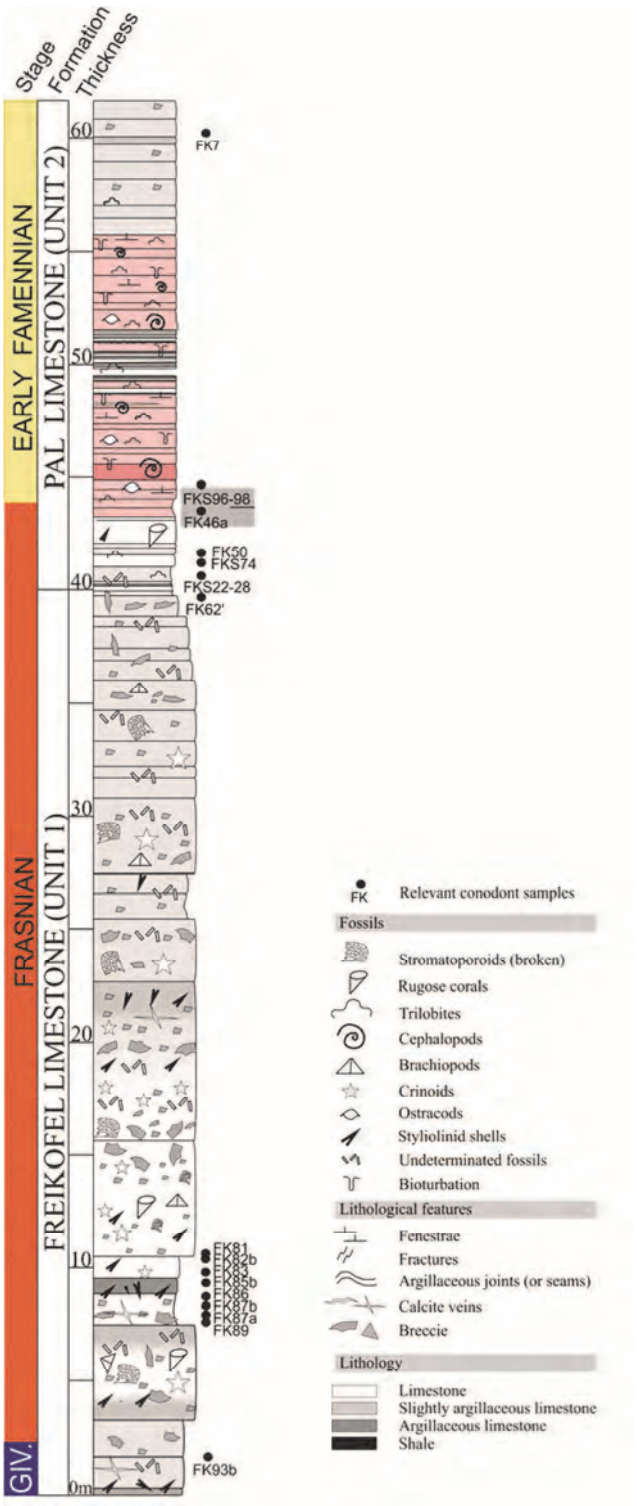

Fig. 19. Stratigraphic log of the Freikofel-Pal Grande Fms. transitions, (after PAS et al., 2014).

3.3. Lake Wolayer area (Days 3–4)

In the last two days of the field trip a hike to Lake Wolayer area is planned (Fig. 20). We will start at Untere Valentin Alm (1220 m) and walk through the Valentin Valley up to Valentintörl (2138 m). Then we will continue to Lake Wolayer (1951 m). Several sections will be shown along the trail, and geological overviews will be given, too. An overnight stay is scheduled at Rifugio Lambertenghi-Romanin.

On the next morning we will visit the Costone Lambertenghi/Seekopf Sockel section, and will walk along the Geotrail Lake Wolayer until the famous Rauchkofel Boden section. After that, we will walk back to Untere Valentin Alm, where the field trip will end.

3.3.1. Stop 8 – Geological overview along the Valentin Valley

The Valentin Valley formed in correspondence of a large strike-slip fault that represents the most recent deformational structure of this area. In the northern part of the Valley, following the Variscan and Alpine compressional and strike-slip phases, the Middle Devonian shallow water units of Mt. Mooskofel are thrusted by the Middle Devonian lagoonal units of the Mt. Gamskofel; both are referred to the Polinik Fm. A large NW-SE trending fault separates these units from the Mt. Rauckhofel where several tectonic repetitions from Upper Ordovician to Upper Devonian strata occur. The Devonian units here belong to the transitional facies.

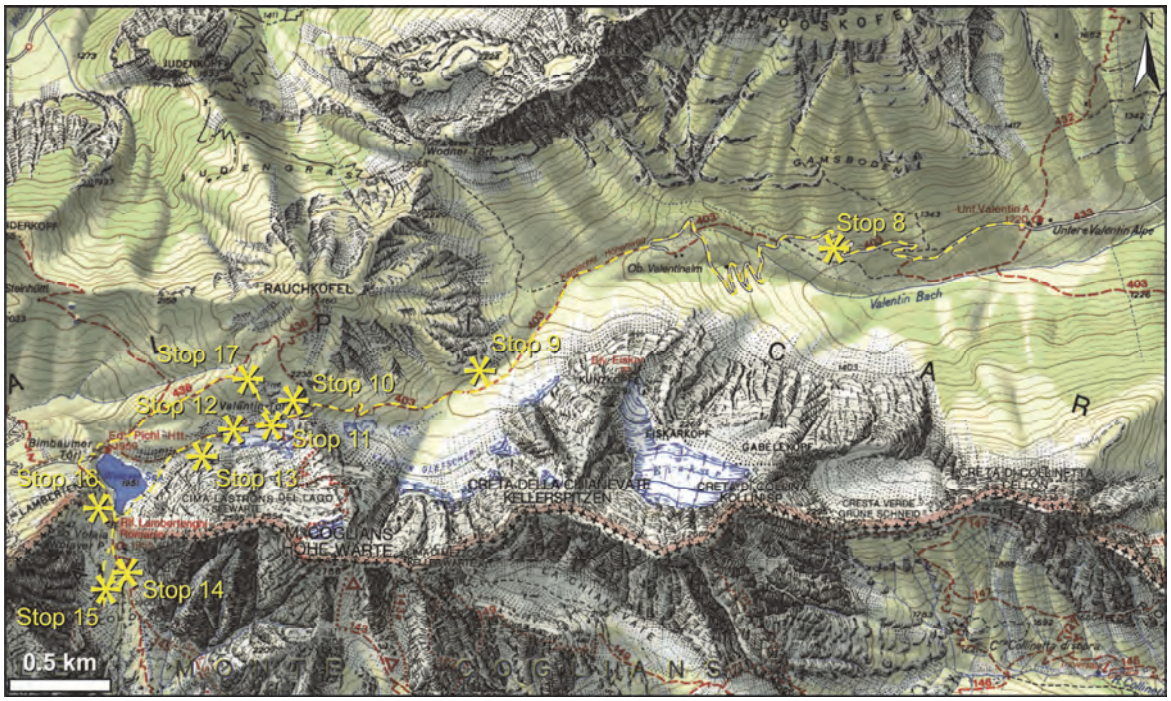

Fig. 20. Topographic map with indication of the itinerary of Days 3–4 and location of the stops.

The southern spectacular side of the valley, named the Kellerwand cliff, shows sub-horizontal layers of mostly Silurian to Upper Devonian age (Fig. 21). In particular, the Rauchkofel Fm. and the Devonian transitional units (Kellerwand-Vinz-Cellon-Freikofel Fms) are exposed.

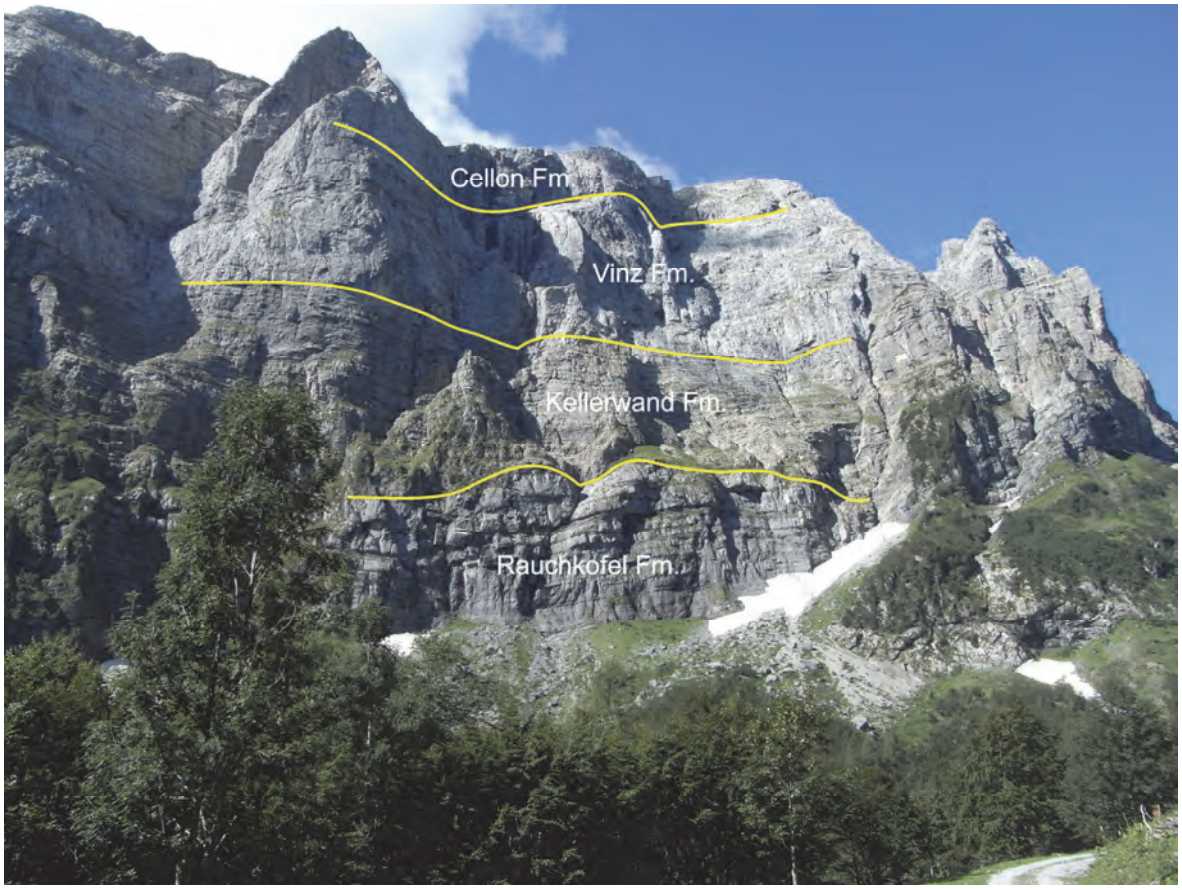

Fig. 21. Panoramic view of the northern wall of Mt. Kellerwand, with indication of the lithostratigraphic units.

Close to the Valentintörl the transition from the Devonian slope deposits characterising the Cellon section to the Devonian shallow water facies, with the Seekopf Fm. passing into the Hohe Warte and Seewarte Fms can be observed.

3.3.2. Stop 9 – Geological overview at the Rauchkofel South section

The Rauchkofel South section (Fig. 22) crops out in the northern side of the Valentin valley at an altitude of about 1990 m., at coordinates N 46°36'58.5", E 12°53'23.0". The section exposes rocks from Upper Ordovician to Lower Devonian, belonging to the following 7 formations: Valbertad Formation, Uqua Formation, Plöcken Formation, Kok Formation, Alticola Formation, Rauchkofel Formation and Kellerwand Formation.

Fig. 22. The Rauchkofel South section.

The Rauchkofel South section is the type section of the Rauchkofel Formation (CORRADINI et al., 2015c), that is here about 120 m thick.

References: SCHÖNLAUB (1970).

3.3.3. Stop 10 – Valentintörl section

The Valentintörl section (Fig. 23) has been measured in the prominent calcareous cliff, which separates the north and the south Valentin passes, at coordinates N 46°36'49.5", E 12°52'51.5", and altitude 2138 m. The area is tectonically complicated by faults and thrusts. Therefore, also in the Valentintörl section large parts of the sequence are missing or extremely condensed.

The sections starts with a few metres of the light grey encrinitic limestone of the Wolayer Fm. The Kok Fm. lies above, with an irregular basal contact. The Llandovery and Wenlock are missing, and the older Silurian bed belongs to the *K. crassa* Zone. The thickness of the Kok Fm. is here reduced to 4.3 m.

The Cardiola Fm. is not present and the section continues with the Alticola Fm., and the Lower Devonian units (Rauchkofel Fm., La Valute Fm. and Findenig Fm.), not yet studied in detail in this section.

References: SCHÖNLAUB (1971, 1980), HISTON et al. (1999b), BRETT et al. (2009).

3.3.4. Stop 11 – Base of Sewarte section

The Base of Seewarte section (Fig. 24) is exposed a few metres west of the southern pass of Valentintörl, at altitude 2100 m. Rocks from Upper Ordovician to Silurian in a transitional facies between the Plöcken and the Wolayer facies are here exposed.

The section starts with a few metres of badly exposed Valbertad Fm. grading into reddish carbonaceous sandstones and the greyish Katian Wolayer Fm.

The oldest Silurian beds belong to the *Pt. celloni* Superzone and are represented by dark grey shales, followed by grey to reddish siliceous mudstones and iron and manganese rich