

Blatt 74 Hohenberg

Bericht 1993 über geologische Aufnahmen in den Nördlichen Kalkalpen auf Blatt 74 Hohenberg

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The area west and southwest of Schwarzau im Gebirge covered by the map 1 : 10.000 is contained between Schwarzatal in the east, Naßbach and the mountain ridge Kuhmauer – Hubmerkogel – Mitterberg in the south, Weidental in the west, and Hirschbach valley and Schwarzau i.G. in the north. This is a direct westward prolongation of the map to the same scale (E of Schwarzau i.G.) prepared by the author in 1992 (BIRKENMAJER, 1993a, b). In the area adjacent from the west to the Schwarzatal (east of meridian 33° 22' 20"), the area was covered by the geological map 1:25.000 prepared by CORNELIUS (1951).

The map area represents the zone of thrust of the Schneeberg Nappe (higher Juvavicum) over the Baumeckkogel Schuppe, the latter belonging to the southernmost part of the Gölser Nappe (Ötscher Nappe group, highest Tirolicum). The Mürzalpen Nappe (lower Juvavicum, with Hallstatt-type development in the Triassic), which should separate the Gölser Nappe (Baumeckkogel Schuppe) from the Schneeberg Nappe, is not represented at the contact of these units. It appears south of the mapped area, at Oberhof (Naßbach valley), in a tectonic window from below the Schneeberg Nappe.

The Schneeberg Nappe of the mapped area begins with the Werfen Formation, followed by the Steinalm Limestone. Thin transitory beds separate the latter from the Reifling-type limestones and siliceous limestones, with chert intercalations. They are well developed in the lower course of Naßbach, where they totally replace the Gutenstein Limestone in the west, and wedge out toward the east and northeast where they are replaced in turn by the Gutenstein Limestone. The Gutenstein Dolostone occurs as a subordinate thin element at the base of the Gutenstein Limestone, at the northern margin of the Schneeberg Nappe. There follows the Wetterstein Limestone, the thickest and the youngest stratigraphic unit of the Schneeberg Nappe. In some areas, it contains near to its base large lenses of the Wetterstein Dolostone.

The Baumeckkogel Schuppe consists of three Upper Triassic lithostratigraphic units overlain with a stratigraphic break by a condensed Jurassic sequence. The oldest unit exposed is the Hauptdolomit, passing upward into thick and well exposed Dachstein Limestone. Thin, often fossiliferous, bituminous limestones of the Kössen Formation are well exposed at numerous sites in the western part of the mapped area; they often are strongly

brecciated and mylonitised, representing a glide-medium for the overthrust Schneeberg Nappe.

The Jurassic sequence starts with red, haematitic, often crinoidal limestone (Hierlatz Limestone), followed by: thin dark-grey to black spotty limestones (Allgäu Formation); green and red radiolarites; red, slightly nodular limestone (Klaus Limestone); finally, thin grey to white, poorly bedded, often siliceous, usually subcrystalline limestone (Plassen Limestone). The whole Jurassic succession spans the Lower Liassic through Upper Jurassic (and ?lowest Cretaceous) time; its total thickness does not exceed 75 m.

The mapped area offers good opportunities to study the overthrust contact of the Schneeberg Nappe and the Baumeckkogel Schuppe, particularly in the Preinbach valley. At this contact, the basal Triassic units of the Schneeberg Nappe (mainly Gutenstein Limestone and Gutenstein Dolostone), and the top Triassic unit of the Baumeckkogel Schuppe (Kössen Formation), are strongly brecciated, often mylonitised, in a zone 20–30 m thick. Thin Jurassic rocks seldom occur at the overthrust surface, being mainly preserved in shallow tectonic grabens developed at the surface of the Dachstein Limestone.

The Jurassic succession is tectonically dismembered, its particular lithostratigraphic units behaving as separate tectonic elements which were rolled over plastic Kössen Formation between the overriding massive carbonate complex (Gutenstein through Wetterstein Formations) of the Schneeberg Nappe, and the underlying massive carbonates (Dachstein Formation) of the Baumeckkogel Schuppe. The Mürzalpen Nappe was left behind the overriding carbonate mass of the Schneeberg Nappe; it crops out in a diapiric-type tectonic window of Oberhof (Naßwald – Naßbach), from under the lowest Triassic units (Werfen and Steinalm formations) of the Schneeberg Nappe.

The contact of the major thrust units, the Schneeberg Nappe and the Baumeckkogel Schuppe, is obliquely cut and displaced by numerous, NE–SW-trending faults of post-Gosau (Tertiary) age (BIRKENMAJER, 1993a, b). Two major faults, the Weidental fault and the Gmoaleiten fault, have been distinguished, displacing this contact by 1.1 and 1.5 km, respectively. Short valleys are developed along these faults. Dense, NE–SW-trending faults of this system, are responsible for the blocky character of particular Triassic and Jurassic rock units. They likewise control the morphology and hydrography of the area, including subsurface (karstic) drainage. A system of NW–SE-trending faults, complementary to the other one, is poorly marked in the mapped area. It is recognizable mainly in the distribution of the Kössen Formation and the Jurassic rocks on the surface of the Dachstein Limestone, in front of the Schneeberg Nappe thrust.

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