

***Etude géologique du Mittaghorn dans la vallée de Saas (Valais, Suisse)**

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The meta-sediments of the Mittaghorn (Saas valley, Wallis , Switzerland) are lying between the ophiolites and the meta-sediments of the Zermatt Saas Fee zone (at the top) and the continental basement rocks of the Portjengrat nappe (at the base). So far, they were considered as being part of the Cimes Blanches nappe. However, our detailed field study points towards the following tectonic units that are outcropping at the Mittaghorn area:

1.- The *Zermatt-Saas Fee zone* , including the ophiolites on the one hand side, and the meta- sedimentary cover on the other hand side.

2.- The *Portjengrat zone* , which is composed of a gneissic basement and a meta-sedimentary cover. Based on the Si content of phengites of the meta-sedimentary cover, it can be concluded that the Portjengrat zone was submitted to an alpine metamorphic high pressure event (eclogite-facies), followed by a retrograde greenschist-facies overprint.

3.- The *Gornergrat nappe* , which consists of meta-sediments, cutted by meta-basalts in the east-south-east side of the Mittaghorn. The Si content in phengites of a meta-basalt boudin and the mineralogical assemblage of these meta-basalts indicate that the Gornergrat nappe was subjected to an alpine metamorphic high pressure event (eclogite-facies), followed by a retrograde greenschist-facies overprint.

4.- The *Mittaghorn zone* , which is composed of garnet and muscovite bearing schists, quartzites and calcareous and dolomitic marbles. This zone is surrounded by the meta-sediments of the Zermatt-Saas Fee zone. Several interpretations are possible: first, the meta-sediments of this zone are part of the meta-sediments of the Zermatt-Saas Fee zone, which makes the Mittaghorn zone a part of the Zermatt-Saas Fee zone. Second, the meta-sediments of the Mittaghorn zone are part of a fold of the Gornergrat nappe into the bundnerschiefer of the Zermatt-Saas Fee zone. Third, the Mittaghorn zone is a distinct tectonic zone.