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Geology of the «Cornettes de Bise» area (Chablais Prealps, France and Switzerland).

The stratigraphic column of this part of the «Préalpes médianes» nappe (of North Alpine Tethys margin origin) ranges from Late Triassic to Middle Eocene. During the Lias, a main synsedimentary fault induces important variations in sediment thickness and local synsedimentary breccias. Angular unconformities and sedimentary gaps (intense erosion) between the Toarcian and the Oxfordian are related to transpressive events which affected that part of the Briançonnais realm.

The Tithonian limestones are directly overlaid by the late Cretaceous to Eocene «Couches Rouges» pelagic sediments. A detailed stratigraphy of the «Couches Rouges» was carried out in order to make a refined structural analysis of the Cornettes de Bise syncline.

X-Ray analysis showed clay mineral parageneses which indicate thermal conditions of diagenesis. In addition the neoformed illite/smectite mixed-layered minerals reveal a paleotemperature of 120 to 150 C. These thermal conditions are probably due to overloading following the nappe emplacement of the «Préalpes supérieures».

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