



Urgonian platform carbonates (Barremian-Early Aptian) of southeastern France: description of a new project and first data

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Urgonian platform carbonates are widespread in southeastern France. They were deposited along the northern Tethyan margin and bordered the Vocontian basin. They are predominantly composed of rudistic wackestone and bioclastic/ooid grainstone.

The Urgonian Formation in southeastern France has been studied by various authors since 1847 (A. Orbigny, A. Arnaud-Vanneau, H. Arnaud, J. Charollais, B. Clavel, W. Kilian, J.P. Masse, R. Schroeder...). The goal of this project is to complement existing observations and produce a synthesis of the development of the Urgonian platform for the whole southeastern sector of France. This will be achieved by a sedimentological, palaeontological and stratigraphical study on 54 sections and dedicated wells, i.e. 2418 thin sections or 10.5 km of sections in total, through the entire Urgonian series, from the transgressive system track of Ba3 (early late Barremian) to the highstand system track of Ap2 (early Aptian). The sections and wells are located in five main sectors of southeastern France: Gard, Ardèche, Vercors, Vaucluse and Provence. A biostratigraphic chart relevant to all five sectors has been realized in order to correlate between the sections. In addition, the geochemistry (carbon and oxygen isotopes, whole-rock and clay mineralogies, and phosphorus contents) of five key sections (one in each main sector) has been analysed to evaluate palaeoenvironmental conditions and corroborate the stratigraphic correlation throughout southeastern France.

An additional study will be performed on the global and regional geotectonic constellation during the late Barremian and the early Aptian, and finally a numerical model will be developed based on the stratigraphic correlation between the sections and consistent with their palaeoenvironmental and palaeoclimatic context.

With this interdisciplinary approach, we hope to be able to reconstruct and understand the development of the Urgonian platform in terms of its palaeoenvironment, palaeo-climate and palaeotectonic constellation and relate those different factors with the evolution of the platform morphology.

REFERENCES

ORBIGNY A. (1847-1849)-Paléontologie française. Terrain crétacés IV. Masson ed. Paris

ARNAUD-VANNEAU A. (1980).- Micropaléontologie, paléoécologie et sédimentologie d'une plate-forme carbonatée de la marge passive de la Téthys : l'Urgonien du Vercors septentrional et de la Chartreuse (Alpes occidentales).- Thèse, Grenoble, Mém. H.S., n° 11, 874 p.

ARNAUD H. (1981).- De la plate-forme urgonienne au bassin vocontien : le Barrémo-Bédoulien des Alpes occidentales entre l'Isère et le Büech.- Thèse, Grenoble, Mém. H.S., n° 12, 3 vol., 804 p.

MASSE J.-P. Les calcaires urgoniens de Provence Valangienien-Aptien inférieur. Thèse. Marseille, Université Aix-Marseille II, 1976, 255.

CHAROLLAIS J., CLAVEL B., SCHROEDER R., BUSNARDO R. & MASSE J.-P. (1998).- La plate-forme urgonienne. Un exemple de plate-forme carbonatée : biostratigraphie, stratigraphie séquentielle, sédimentologie, études régionales.- Université de Genève, (Série "Guide géologique"), n° 8, 181.