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Les calcaires urgoniens dans la région entourant Genève

par MARC A. CONRAD, Genève

ABSTRACT

The Urgonian Limestones were deposited on an epicontinental shelf during the Barremian and Lower Aptian. They are studied from a lithological and micropaleontological point of view. The reconstitution of the sedimentary infralittoral environments has been given particular attention. The classical lithological subdivisions (Lower and Upper Urgonian Limestone Members, separated by the Orbitolina Marl Member) have been maintained. However, a new lithostratigraphical unit, that is the La Rivière Marly Limestone Member has been introduced in the Jura region to designate sediments which were deposited during the Upper Barremian.

During the Barremian, the deposition of Lower Urgonian Limestones corresponded to a regressive sedimentation during which the environment became more and more isolated and the shelf progressively migrated towards the SE. At the end of the regression, quartz and clay invaded the region and the Orbitolina Marls were deposited. Locally, the existence of fresh water limestones shows the proximity of land oriented towards the NW. During the Lower Aptian, a transgressive movement again pushed the shoreline toward the NW, and the Upper Urgonian Limestones were deposited on a shelf which was again isolated from terrigenous supply.

The Urgonian Limestones were deposited in several infralittoral environments. Some of these environments show striking similarities with the present sedimentary environments of the Bahama banks. Three main categories are described:

- The external infralittoral environments which correspond to the shelf edge, that is to areas which are still subject to the influence of circalittoral environments. The association of algae and bryozoa is characteristic.
- The middle infralittoral environments which are the most frequently represented in the Urgonian Limestones. They are characterized by the association of algae and foraminifera, as well as by the absence of bryozoa.
- The internal infralittoral environments which are characterized by a very low energy and by the significant absence of some groups of organisms. These environments developed during the Upper Barremian in the most sheltered part of the shelf.

Concomitantly, circalittoral, mediolittoral (intertidal), supralittoral and lacustrine environments are described. The work of SCHROEDER, CHAROLLAIS et CONRAD (1968) on the Orbitolinidae has lead to the recognition of five foraminiferal zones within the Urgonian Limestones. The question of biozonation is taken up again and is supplemented by the description of foraminifera which belong to other families and are interesting from a stratigraphical and/or ecological point of view. Some poorly known forms have received temporary designations. The development of some of the foraminifera seems to have been related to well defined environments and the existence of hardened substrates, the turbidity of the water and the rate of sedimentation were important factors which explain the apparently capricious reappearance of some organisms.

RÉSUMÉ

Les calcaires urgoniens se sont déposés sur une plateforme épicontinentale au Barrémien et à l'Aptien inférieur. Ils sont étudiés du point de vue lithologique et micropaléontologique. L'accent a été mis sur la reconstitution des milieux de sédimentation infralittoraux. Les subdivisions litholo-