with sapropelic shales; adjacent fault-block mountains shed coarse detritus into the basins so that reservoir rocks are interbedded with petroleum source rocks. Faulting and folding contemporaneous with deposition may result in early-formed, time-persistent structures, High heat flow may cause petroleum generation at relatively shallow depths.

Using this hypothesis as an exploration tool, regions that warrant further prospecting include the head of the Gulf of California, Magdalena Bay in Baja California Sur, and southern Chile.

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UPPER TRIASSIC CARBONATE DEPOSITIONAL ENVIRONMENTS IN NORTHERN LIMESTONE ALPS

The model of facies and facies transitions of the Late Triassic in the Northern Limestone Alps shows extended shallow-water platforms separated by small basins. The basin rocks consist of thin-bedded limestones and marls with a reduced thickness of 200 m compared with the more than 1,000-m thick platform carbonates. The most characteristic lithofacies consists of red nodular limestones with a fauna of pelagic origin. These rocks are widespread in all basin sequences of the Tethys.

Toward the platform, the basin sediments interfinger with the forereef breccias of the marginal reef complexes. Tension fractures at the forereef slope were filled by basin sediments forming neptunian dikes. The central reef area consists of small patch reefs (10%) surrounded by well-bedded reef debris (90%). Reef growth is controlled by: (1) growth of a rigid organic framework; (2) production of debris by predominantly biogenic or mechanical destruction; (3) syngenetic cementation and multiple reworking; (4) a balance between constructive and destructive factors and epeirogenic movements. The reef limestone is up to 1,200 m thick.

In the backreef is the Dachstein Limestone consisting of 1,200 m of washed coralgal sands near the reef and cyclic sequences of subtidal to supratidal carbonates far behind the reef. A cycle is 2–5 m thick and starts on top of a disconformity with an argillaceous residual sediment followed by an intratidal to supratidal member with laminated dolomites ("loferite"). The dolomite is overlain by a subtidal member consisting of calcilutites and calcarenites with many colonies of the pelecypod *Megalodon*. About 300 "lofer cycles" are present. The cycles originate from complex processes of subsidence, eustatic sea level fluctuations, and sediment accumalation and transportation.

Toward the center of the platform, completely dolomitized tidal flats with algal mats predominate. The most characteristic member is a laminated fine-grained dolomite with shrinkage and desiccation structures. Local intercalations of bituminous shales indicate small stagnant basins.

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CALCITE RIMS, LITTLE FALLS FORMATION, UPPER CAMBRIAN, NEW YORK: A DEDOLOMITIZATION FABRIC?

Calcite rims on dolomite crystals have been observed in the Little Falls Formation of east-central New York. Most rims are even, syntaxial, and 5 to 25μ thick. Some, however, are irregular, apparently resembling the "calcite envelopes" of Goldman. Electron probe microanalysis verifies the dolomitic center and the calcitic border, the latter commonly being very slightly ferroan. Dolomite preceded development of quartz overgrowths, as determined by spatial relations (*e.g.*, enfacial junctions). The rims seem to be along crystal faces of dolomite rather than along compromise boundaries or against detrital quartz cores. Calcite beyond the rims exists as poikilotopic, centimicron-sized, void-filling spar, some of which is optically continuous with adjacent rims and dolomite crystals. Common enfacial junctions of calcite crystals against secondary quartz faces suggest a later development of the calcite. The rims are the same age as the remainder of the calcite.

Such syntaxial rims could result either from marginal dedolomitization (calcitization) or from passive precipitation on a nucleus of dolomite. Optical continuity of the rim and nucleus and the presumed post-secondary quartz age of the calcite strongly suggest dedolomitization. Solutions with high Ca^{++}/Mg^{++} ratios provided by meteoric water passing through overlying Ordovician limestones may have been the dedolomitizing agent. This unusual fabric may constitute another piece of evidence for dedolomitization.