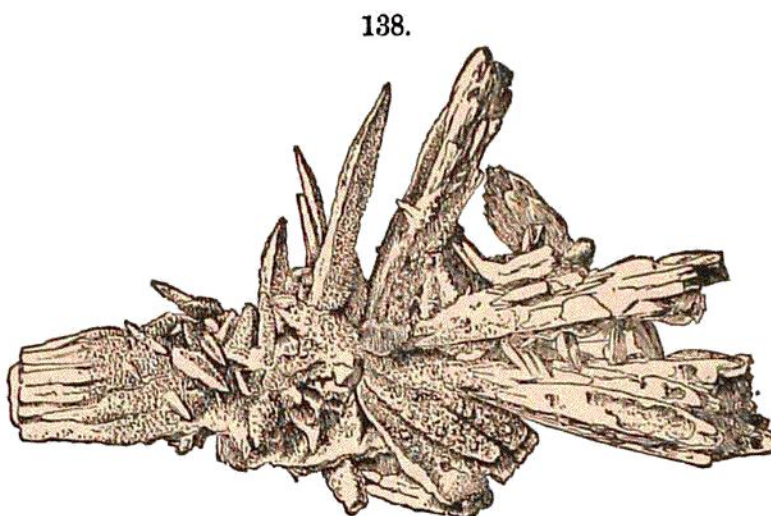


Some of the travertine deposits of Gardiners River and elsewhere are a result of the growth and secretions of Conferva-like plants, as explained by W. H. Weed.

In the Lahontan and Mono basins, as described by King and later by Russell, the material has often a crystalline form, the origin of which is yet unexplained: this variety is the *thinolite* of King. A common form is represented in Fig. 138.



Thinolite: from Lake Mono. I. C. Russell.

The beautiful translucent limestone of Tecali, Mexico, often wrongly called onyx, because banded in colors when polished, is a calcareous deposit failing of the coarse and irregular grain of travertine.

(b) *Consolidation*. — Of still greater geological range is the cementing work done by calcareous waters. Ordinary sea water, especially where shells and corals abound, consolidates sands made from coral and shell into limestone. The beach sands, drifted sands, and sands over the reefs, when drying from exposure to the air, become cemented in this way. Conglomerates are also made of broken corals, shells, and calcareous or other pebbles, and breccias, in this, as in other ages, out of a talus or any accumulation of limestone blocks.

The under-water calcareous sands, as those about coral reefs, also become cemented by the same means, but into a compact limestone like ordinary limestones, showing usually no sand-like grains in the texture.

(c) *Dolomite-making*. — Even dolomite, $(\frac{1}{2}\text{Ca}\frac{1}{2}\text{Mg})\text{O}_3\text{C}$, owes its origin at times — if not always — to the conditions that exist in the history of coral reefs when the magnesia, required to make the calcareous grains magnesian, could have had no source but the ocean. One case of the kind is reported by the author (1849) from the island of Metia, an elevated atoll north of Tahiti (*Corals and Coral Islands*, page 393). The rock is a compact white limestone. An analysis by B. Silliman proved that it contained 38.07 per cent of magnesium carbonate, the rest being calcium carbonate. The very fine texture of the rock indicates that it was made of the finest of calcareous ooze or mud, such as forms through gentle wave-action in shallow lagoons; and in such lagoons, mainly shut off from the sea, and therefore in a "salt-pan" condition (page 120), the concentrated brines contained the magnesium chloride and sulphate in a state that favored the formation of dolomite.