

disconnected, but in a vertical section they are seen to rest upon one another, and sometimes to be very closely packed, as in Fig. 3, in which translucent fragments of crinoids are seen to be

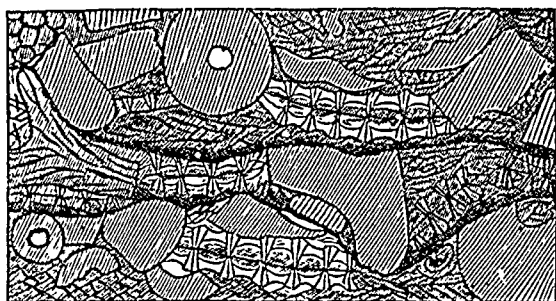


Fig. 3.—*Trenton Limestone, Montreal, vertical section, (10 drams.)*

packed in broken corals, chiefly *Ptilodictya*, and the irregularity of the planes of deposition is marked by two slender bands of fine black earthy and organic slime.

The beds of this remarkable organic limestone are usually very uneven on the surface—the smaller beds very much so; and on these surfaces there often appear quantities of *Monticulipora* and *Ptilodictya* in a perfect state, as well as occasionally *Brachiopoda*, *Orthoceratites* and *Trilobites*. Between the beds occurs a black snaly material consisting principally of clay and fine sand, darkened by carbonaceous matter, and containing more or less of fragments of shells and corals. The beds of organic fragments now constituting the gray limestone, must have been drifted over the bottom by strong and apparently somewhat irregular currents, in which in every favorable spot corals fixed themselves and grew. The black shale appears to have settled in the form of fine mud, which often coats over, as with a varnish, the surfaces of the limestone and the fossils lying on them; and which has usually only partially filled up the depressions of the surface, previous to the deposition of a new bed of the gray limestone. In the upper part of the Trenton formation at Montreal, the earthy matter so far prevails that the limestone becomes black and compact, and is interstratified with much shale, but it still contains numerous organic fragments, which in some beds become predominant.

The Trenton and its associated limestones are widely distributed rocks. Their outcrop runs from Quebec along the north shore of the St. Lawrence to Montreal—then southward through the valley of Lake Champlain into New York, where it skirts the Azoic region of the Adirondack, and returning northward along the