

certain nearly opaque globules and of some minute transparent infusible acicular crystals or microlites, sometimes grouped in bundles and reacting on polarized light. Reduced to thin slices and examined under the microscope with a magnifying power of 300 diameters, the altered glass presented: 1st, Spherulites, $\frac{1}{8}$ of a millimetre in radius, nearly opaque, yellowish, bristling with points which perhaps belong to a kind of crystallization, and with an internal radiating fibrous structure (these resist the action of concentrated hydrochloric acid, whence they cannot be a zeolite, but may be a substance like chalcedony); 2d, innumerable colorless acicular microlites, with a frequently stellate, more rarely solitary distribution, resisting the action of acid like quartz or an anhydrous silicate; 3d, dark green crystals of pyroxene (diopside). Daubrée satisfied himself that these inclosures did not pre-exist in the glass, but were developed in it during the process of alteration.⁸¹

But besides the effects from increase of temperature and pressure, we have to take into account the fact that water in a natural state is never chemically pure. Rain, falling through the air, absorbs in particular oxygen and carbon-dioxide, and filtering through the soil, abstracts more of this oxide as well as other results of decomposing organic matter. It is thus enabled to effect numerous decompositions of subterranean rocks, even at ordinary temperatures and pressures. But as it continues its underground journey, and obtains increased solvent power, the very solutions it

⁸¹ "Geol. Experim." p. 158 *et seq.* The production of crystals and microlites in the devitrification of glass at comparatively low temperatures by the action of water is of great interest. The first observer who described the phenomenon appears to have been Brewster, who, in the second decade of this century, studied the effect upon polarized light of glass decomposed by ordinary meteoric action. (Phil. Trans. 1814, Trans. Roy. Soc. Edin. xxii. 1860, p. 670. See, on the weathering of rocks, Part II. Sect. ii. § 1, "Weathering.")