to evaporate and lose carbonic acid, the excess of carbonate which it can no longer retain is deposited round its edges as a ring (Fig. 108). Drop succeeding drop, the original ring grows into a long pendent tube, which, by subsequent deposit inside, becomes a solid stalk, and on reaching the floor may thicken into a massive pillar. At first the calcareous substance is soft and, when dry, pulverulent, but by prolonged saturation and the internal deposit of calcite it becomes by degrees crystalline. Each stalactite is found to possess an internal radiating fibrous structure, the fibres (prisms) passing across the concentric zones of growth. The stalactite remains saturated with calcareous water, and the divergent prisms are developed and continued as radii from the centre of the stalk. This process may be completed within a short period. At the North Bridge, Edinburgh, for example, which was erected in 1772, stalactites were obtained in 1874, some of which measure an inch and a half in diameter and possess the characteristic radiating structure.[94] It is doubtless by an analogous process that limestones, originally composed of the débris of calcareous organisms and interstratified among perfectly unaltered shales and sandstones, have acquired a crystalline structure (p. 216).[95]

Some calcareous springs deposit abundantly a precipitate of carbonate of lime upon mosses, twigs, leaves, stones, and other objects. The precipitate takes place when from any cause the water parts with carbonic acid. This may arise

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[94] The rate of deposit in the Ingleborough Cave is stated to be ·2946 inch per annum, or about 2½ feet in a century (Boyd Dawkins, Brit. Assoc. 1880, Sects. p. 573). This is probably an exceptionally rapid growth.

[95] Sorby, Address to Geological Society, Q. J. Geol. Soc. 1879, p. 42 *et seq.* The finely fibrous structure seen in chalcedony under the microscope with polarized light passes in a similar way through the bands of growth of pebbles.