are sometimes arranged in zones parallel to the outward surface of the pebble, the altering action having operated with different intensities at different depths; a singular fissured appearance may sometimes be observed in such pebbles.

The interior of the flinty nodules, often contains drusy cavities lined with tubercular chalcedony or quartz crystals; these generally appear to have formed the nidus of some organic remain, which has permitted only the finer particles of the siliceous matter to percolate, and thus favored their assuming a more delicate texture, or even a crystallised arrangement. The presence of a sponge or alcyonium seems to have been particularly favorable to the formation of chalcedony; almost whenever it occurs in flint, a careful examination will detect the traces of these zoophytes: very beautiful appearances often result from their radiated ramifications through the chalcedony, which should be dipped in water to bring them perfectly out, being partially hydrophanous.

(*b*) *Mineral contents.* The beds of flint, so numerous in the upper chalk, have already been mentioned; and these, together with the occasional beds of hard and soft chalk marle, occurring near Dover, and of Fullers' earth in the north of England, at Claxby in Lincolnshire, and still more lately discovered in the same situation in Bepton hill near Midhurst* in Sussex, are interstratified with the beds of chalk in parallel layers: these substances may therefore be considered as of contemporaneous formation with the chalk itself, and therefore not strictly as mineral contents, under which head however they seem to require this notice. The chalcedonised flints are often found in cabinets. The only mineral substance common to the chalk is iron pyrites, which is found in most if not all the beds, in masses varying from the size of a pea to several inches in diameter: they are mostly crystalline, and generally exhibit, on being broken, a fibrous and diverging structure, arising from the position of the crystals of which they are composed, and of which the summits commonly appear on the surface of the

* The following account of the existence of beds of Fuller's earth in the chalk of Sussex was presented to me by Frederick Sargent, Esq.: they were first noticed by the Rev. C. P. N. Wilton. The Fullers' earth is found in two beds situated in the upper chalk, and so near the summit of the South Downs, near the village of Bepton, that only one foot of chalk lies above the upper bed; the beds are nearly horizontal, and are from three to four inches thick, and the substance itself bears every characteristic of Fullers' earth; it does not effervesce with acids, is unctuous to the touch, somewhat translucent on the edges, and falls to pieces when thrown into water. Below these beds, and near the middle of the chalk escarpment, lies a bed of soft chalk marle three or four inches thick. (P.)