alkalies, especially of potash, and mixed with iron and manganese. The waters may deposit the elements thus taken up from the rocks upon the immediate borders of the points from which they have been extracted, or they may be carried further away, according as the liquid is at rest or in more or less rapid motion.

We will now show that phenomena analogous to these take place at the bottom of the Pacific; the differences observed are non-essential, and are explicable when the location and special conditions are taken into account. Remembering the nature of the rocks found to be present on the bottom in the central regions of the great ocean basins, we would expect to observe there the formation of zeolites bearing characters depending upon the medium in which they have been developed; they would be found, not only in the vesicles of the volcanic fragments in the form of definite crystallographic individuals or in aggregates, but also in a free state, and not enclosed. The sea-water acting upon basaltic volcanic material will be charged with elements to be afterwards deposited as zeolites, the residue being transformed into an argillaceous mass, in which manganese and iron are concreted in nodules of hydrated peroxide. In this argillaceous ooze the zeolitic crystals will be deposited, granted that the movement of the water is almost insensible; the solutions could not be carried very far, as is often the case in clays derived from the decomposition of subaerial basalts. These crystals cannot be placed in positions similar to those upon the solid partitions of crystalline rocks, hence their special characteristics; they are terminated on all sides by crystalline faces or form aggregates and spherolithic globules, the surfaces of which bristle with facets. These are, indeed, the peculiar characteristics of crystals formed in muddy matters, viz., the crystals of gypsum and the radiate groups of sulphide of iron formed under conditions fundamentally resembling those under which these microscopic crystals of phillipsite are found. Thus the presence of eruptive materials whose decomposition under the action of water gives origin to zeolites, the co-existence of these with the normal residue of the alteration of basaltic rocks—clay and ferro-manganiferous concretions, the special characters of these zeolitic microliths, indeed the whole range of facts observed on the bed of the Pacific, contribute to the support of the interpretation here proposed, which appears to give an adequate explanation of the origin of these crystals of phillipsite.

Some points upon which we have not insisted may, however, be raised against the view here adopted, and in terminating this discussion we may examine some doubts that naturally enough present themselves. It may be asked, in the first place, whether the substances extracted by sea-water from silicates of volcanic rocks ought not to be spread by diffusion throughout the oceanic mass and be lost in this immense reservoir. To remove this objection, it will be sufficient to recall a fact placed beyond doubt by recent oceanographical researches, viz., that in great depths the water is not subjected in a sensible manner to the influence of superficial movements—waves, tides, and currents—but that there is only a massive movement of extreme slowness, in striking contrast