Daubrée has shown that zeolites are even in process of formation in the Roman bricks and concretes of the springs at Plombières, and around the edges of other thermal wells.[1] But, as far as we know, they have never before been found in an isolated condition—as simple or twinned crystals, or free radiated aggregates—as we find them in the deposits of the Pacific and Indian Oceans. The deposits containing these zeolitic crystals present in these regions a totality of phenomena that appears never to have been realised on the same scale in the sedimentary formations of any geological period, unless, indeed, it be admitted that all traces of them have been effaced by posterior changes.

Physical Characters.—On examining the deposits, from the regions in which these zeolitic crystals occur, under the higher powers of the microscope, there is seen, in the midst of mineral and argillaceous matters and volcanic debris, an infinity of small prisms of sharply cut form generally covered with a yellowish deposit. These microliths appear to be as numerous in the clay as the little crystals of rutile in certain slates, for example. They are generally simple and isolated, though in some cases they form aggregates or are twinned; there are also spherolithic groups in which several of these zeolitic crystals are entangled together so as to form crystalline globules of sufficient size to be distinguished by the naked eye, giving a certain grain to the deposit. We will describe first the isolated crystals of minute dimensions, which are carried away along with the argillaceous matters of the deposit in the process of decantation. These microliths are coated with a thin layer of hydrates of iron and manganese, which gives them, and in fact the whole deposit, a brown or fawn colour. Their form is better observed after treating them with very weak acid, which frees them more or less perfectly from the accidental coating substances. Thus cleaned the smallest crystals are seen to be colourless or slightly milky; a large number of micrometric measurements gives them a mean diameter of 0·027 mm. in length, and 0·005 mm. in breadth. They have a pronounced prismatic, very simple, form; the elongated faces, which may be taken for the faces of the prismatic zone, form between them a right angle. They are terminated at the two extremities by two faces resembling a dome, inclined the one to the other at an angle approaching 120°. It is rather difficult to see other faces clearly; those just indicated are observed with certainty, but it may be that the smallest crystals of phillipsite, or at least certain of them, are terminated by four faces instead of two at each extremity. At the two ends of the crystals traces of two other faces which appear as dwarfed may be seen, but they are too ill-defined to allow of their existence being definitely made out. As a matter of fact, however, these four faces do exist in larger individuals, as will be presently pointed out. Their form indicates that they are single individuals of the monoclinic system presenting the faces $0P(c)$, $\infty\breve{P}\infty\,(b)$, $\infty P(m)$, elongated following the edge c/b (see Pl. XXII. fig. 1), an elongation which determines the prismatic form of the crystals. The faces having the appearance of forming a dome are those of the prism (m); the angle formed by the two

[1] A. Daubrée, Études synthétiques de Géologie expérimentale, pp. 180 *et seq.*, Paris, 1879.