

&c.: he however explains it on an absurd principle, which must have prevented his applying it to any general purpose.

As we approach the middle of the eighteenth century, we find the scattered rays of information, which alone can be discerned previously, converging into a more condensed and steady light; the disjoined atoms falling, as it were, into a regular system. The splendid genius of Buffon, though on this subject it wasted its strength in the unprofitable pursuit of theoretical speculations, and added little or nothing to the solid and accumulating mass of inductive observations, yet undoubtedly by the very brilliancy of those speculations, and perhaps by their extravagance also, strongly tended to kindle a more general attention to this branch of philosophical enquiry. Guettard, in 1746, first carried into execution the idea proposed by Lister years before, of geological maps: he divided the surface of the earth into three grand zones; the schistose, which nearly coincided with the primitive and transition districts of later geologists; that of marles, which included generally the secondary limestones; and that of sand, which in like manner comprised what have been since termed tertiary formations: the localities of individual minerals were expressed by signs, analogous to those employed in chemistry. He appears to have endeavoured to extend these principles to the structure, not only of a considerable part of Europe, but of Canada also, and Asia Minor. Such extensive generalisations at that period of the science could not be otherwise than extremely hasty and incorrect; and accordingly the attempt to accomplish too much, appears to have brought his method into much discredit: indeed in his later publication, the *Atlas Mineralogique de France*, conducted in conjunction with Mounet, he nearly confines himself to indicating the localities of individual minerals.

Lehman, in a work published in 1756, was the first to introduce generally, and to establish firmly, the great distinction between primitive and secondary rocks. It had however previously been obscurely indicated in the writings of the Tuscan Steno, and more clearly by his successor at Florence, Targioni; Desmarest, in the *Encyclopedie Methodique*, also claims in favour of his countryman Rouelle, in a course of lectures delivered about the same period, the honour of having established a still more complete division into primitive, intermediate, and secondary rocks, and of having distinctly announced that the organic remains contained in the two latter classes, were distributed in regular assemblages (termed by him *amas*), each containing peculiar genera and species; but these lectures appear never to have been printed, nor to have exer-