

nomena of crystallography sufficiently show. This interesting and beautiful department of natural science is of comparatively very modern date. That many natural substances affected certain forms must have been known from the earliest times. Pliny appears to have been acquainted with this fact, at least in some instances, as he describes the forms of quartz and diamond. But till the time of Linnæus no material attention seems to have been bestowed on the subject. He, however, observed, and described with care, the crystalline forms of a variety of substances, and even regarded them as so definite a character of the solids which assumed them, that he supposed every particular form to be generated by a particular salt. Romé de l'Isle pursued the study of the crystalline forms of bodies yet farther. He first ascertained the important fact of the constancy of the angles at which their faces meet; and observing further that many of them appear in several different shapes, first conceived the idea that these shapes might be reducible to one, appropriated in a peculiar manner to each *substance*, and modified by strict geometrical laws. Bergmann, reasoning on a fact imparted to him by his pupil Gahn, made a yet greater step, and showed how at least one species of crystal might be built up of thin laminæ ranged in a certain order, and following certain rules of superposition. He failed, however, in deducing just and general conclusions from this remark, which, correctly viewed, is the foundation of the most important law of crystallography, that which connects the primitive form with other forms capable of being exhibited by the same substance, by a certain fixed relation. An idea may be formed of what is meant by this sort of connection of one form with another, by considering a pointed pyramid built up of cubic stones, disposed in layers, each of which separately is a square plate of the thickness of a single stone. These layers, laid horizontally one on the other, and decreasing regularly in size from the bottom to the top, produce a pyramidal form with a rough or channelled surface; and if the layers are so extremely thin that the channels cease to be visible to the eye, the pyramid will seem smooth and perfect.