CRYSTALLOGRAPHY.

CHAPTER I.

Prelude to the Epoch of De Lisle and Haüy.

OF all the physical properties of bodies, there is none so fixed, and in every way so remarkable, as this;—that the same chemical compound always assumes, with the utmost precision, the same geometrical form. This identity, however, is not immediately obvious; it is often obscured by various mixtures and imperfections in the substance; and even when it is complete, it is not immediately recognized by a common eye, since it consists, not in the equality of the sides or faces of the figures, but in the equality of their angles. Hence it is not surprising that the constancy of form was not detected by the early observers. Pliny says,[1] "Why crystal is generated in a hexagonal form, it is difficult to assign a reason; and the more so, since, while its faces are smoother than any art can make them, the pyramidal points are *not all of the same kind*." The quartz crystals of the Alps, to which he refers, are, in some specimens, very regular, while in others, one side of the pyramid becomes much the largest; yet the angles remain constantly the same. But when the whole shape varied so much, the angles also seemed to vary. Thus Conrad Gessner, a very learned naturalist, who, in 1564, published at Zurich his work, *De rerum Fossilium, Lapidum et Gemmarum maxime, Figuris*, says,[2] "One crystal differs from another in its angles, and consequently in its figure." And Cæsalpinus, who, as we shall find, did so much in establishing fixed characters in botany, was led by some of his general views to disbelieve the fixity of the form of crystals. In his work *De Metallicis*, published at Nuremberg in 1602, he says,[3] "To ascribe to inanimate bodies a definite form, does not appear consentaneous to reason; for it is the office of organization to produce a definite form;"

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[1] *Nat. Hist.* xxvii. 2. [2] p. 25. [3] p. 97.