

objection to it is that it is impossible to employ it in the case of very small crystals, whilst the reflecting goniometer may be used to measure accurately the angles of crystals only $\frac{1}{16}$ th of an inch in size.

Romé Delisle, as the result of his researches, came to the conclusion that the primitive forms of all known substances were only six in number, namely :—

1. The cube.
2. The regular octahedron.
3. The regular tetrahedron.
4. The rhombohedron.
5. The octahedron with a rhombic base.
6. The double six-sided pyramid.

These were announced in his treatise on Crystallography published in 1783, in which he figures no less than 500 distinct forms of crystals.

The weak point of his theory was the fact that the whole series of forms of any one substance could be derived not only from the *primitive form*, but from almost any of the series, thus rendering it impossible to lay down an exact rule as to which of these was to be regarded as the true primitive form. He was guided in his choice by the largeness of development and frequency of occurrence of particular faces and the simplicity of the figure they formed. Thus he chose both cube and regular octahedron, although, as we now know, these forms really belong to one and the same series and may be derived the one from the other. Many of his contemporaries doubted not only his choice of primitive forms but the very existence of the series, and Buffon's objections, as set forth in his "Natural History of Minerals" published ten years later (1783), bore testimony to the difficulty of the important step taken by Romé Delisle. It was far from being obvious that all the crystalline forms of a mineral belong to one series.

As early as 1773, Bergman, a celebrated Swedish chemist, shewed in his writings that he recognized the importance of cleavage, and by it he tried to explain the relationship of the various forms assumed by the same mineral, which had so interested and puzzled Delisle, who, however, assigned little or no importance to cleavage, speaking, as he does in the preface to his treatise mentioned above, most contempt-