ing experimentally the equality of the angles opposite to them. I strongly advise you to go through each theorem you have to learn and verifying it experimentally in the way just described. (The method of verifying equality by dissection and superposition was here illustrated by diagrams.)

It has not been usual for students, at any rate in schools, to approach the study of geometry in this experimental way, though there have probably always been individual teachers who have used it to varying extents. Of late years, however—in fact, since more attention has been given to the theory and practice of education—it has been strongly advocated. My own experience confirms me day by day in the opinion that it is the best method for the majority of students, though a few may be able to dispense with it.

It has these two advantages :—

(1.) It leads to clear conceptions of the truths to be established.

(2.) It may be used to introduce the student naturally to a different method of establishing such truths—the *deductive* method.

Let us suppose a student to have become convinced by a large number of experimental diagrams of the truth of the two following theorems:—

(1.) Parallelograms on equal bases and between the same parallels are equal.

(2.) A diagonal of a parallelogram divides it into two equal parts.

The reflection might naturally occur that we may take another theorem for granted without any experimental investigation—*triangles on equal bases and between the same parallels are equal*. (Illustrate with diagram.) This, perhaps, at once leads to the reflection, Could any other of the theorems which I have laboriously established by experiment have been *deduced* from the others?

On examination, it is not difficult to ascertain that there are groups of theorems such that any one of the group, having been verified experimentally, the rest might be established by deduction—in other words, we are led quite naturally to a system of "Deductive Geometry"; and, though I gather from your syllabus and some of the questions that have been set, that your examiner would often be satisfied with an experimental proof by dissection and superposition, I would strongly advise all of you to go through a course of Deducutive Geometry after the experimental one.

And I have to mention a name which up to this point I have carefully avoided—that of the famous Alexandrian geometer, Euclid. The book styled in full the "Elements of Euclid"—is a treatise in which a large number of the most important truths of Elementary Geometry are deduced from a few fundamental ones which are taken for granted,l and which the student may regard as having been established previously by experiment, or as being obvious in themselves.

You are not to suppose that this illustrious geometer discovered all the truths demonstrated in his renowned treatise. It is probable that most of them were well-known to preceding investigators and teaehers, and that also their interdependence had been in many cases recognised, and that what Euclid did was to arrange them in a systematic treatise where each should follow as a deductive consequence of a few truths admitted by everyone able to understand them. You are not to suppose either that his is the only possible treatise of the sort, or that there is any one necessary set of preliminary assumptioms from which a writer on geometry must set out, or any one necessary order in which he must arrange the links of his deduc