

Book-work in Geometry

T. A. KIRKCONNEL, B.A.

Principal, Collegiate Institute, Lindsay

IN the local Collegiate Institute, students enter their Matriculation or Normal Entrance year with a knowledge of the propositions and deductions of Books I and II. The class then faces the problem of covering the propositions and deductions of Books III, IV and V, together with a review of Books I and II *in one year*.

In schools in which there is a Middle School Class below Matriculation standing which will spend two years on the work just enumerated, there is no serious difficulty to be overcome. On the supposition, however, that there may be other High Schools where the same range of work is undertaken in one year, I give an outline of a method of placing upon the students the main burden of learning the book-work, thus leaving a generous share of the time assigned to geometry for the solution of exercises and deductions.

When the propositions of Book III (say) have been covered (and this is done as rapidly as possible), the teacher shows by drawing the unlettered diagrams and going through the proof orally, that one can think one's way through the propositions of the Book in half-an-hour. After doing this twice, two or three of the best pupils are asked to undertake the same work to demonstrate to the class that they too can meet the test.

Then the class is told that all who produce certificates from a member of the Upper or Middle School certifying that they have drawn the diagrams and provided a correct oral proof of all the propositions of Book III, will be credited with 15 per cent. on their geometry standing, the remaining marks to be determined from brief tests on deductions. The class then settles down during class spaces to the exercises and deductions. It has been found that in this way 25 per cent. of the time is ample for propositions, leaving enough time for deductions to cover all the exercises (except the miscellaneous sets) twice during the year. During the months of January and February the classes are to bring certificates for Books III and IV, thus earning 30 per cent. towards their standing for reports for the two months.

Of course certain safeguards must be employed or the method would degenerate into a farce, *e.g.*, no two pupils shall certify to each other's work; every month a few pupils are asked to repeat to the teacher a few of the most difficult propositions, etc.; the figures of the text-book must not be used, as the frequent drawing of the diagrams is a valuable exercise. The method makes any attempt at memorizing quite impossible.