Introduction

Prior to the publication of any Literary or Scientific Work, it is customary for the author to give an outline of his subject in the form of a preface.

In the present instance, the Trisection of any rectilineal angle was first observed by the author several years ago, when reading the following (see page 105 of the Elements of Geometry, in reference to the subdivision of the circumference of a circle, and which work is hereinafter more amply identified in the opening page hereof), viz : "It is obvious that any regular polygon whatever might be inscribed "in a circle, provided that its circumference could be divided into "any proposed number of equal parts ; but such division of the cir-"cumference like the trisection of an angle, which indeed depends on "it, is a problem which has not yet been effected."

A possible solution of the problem was suggested by the reading of the following : "If the side of any triangle be produced, the ex-"terior angle is equal to the two interior and opposite angles. (See Euclid 32-1).

It did not require much reflection to discover that, if a line could be drawn so that the interior and opposite angles would be to each other in the ratio of two to one, the problem could be solved, but a method by which a line could be so placed did not seem possible. Further consideration soon revealed the condition that the same result could be attained if a construction could be made by which, as in the following Analysis, the straight line A P would intersect the circumference of the semi-circle in the point V so that V P = A B the problem could be solved. However, a construction to comply with that condition, did not seem feasible. During the interval, much time has been periodically devoted by the author to the study of this problem, and with the final result as disclosed by the demonstration expounded in this treatise.

Subsequently to or about the year 1882, Mr. Andrew Doyle published several solutions of the Trisection problem. Some time in or about the year 1895, he published and proved that, if a straight line be drawn (which as before mentioned, is described in the following treatise), so that the portion of it situate between a perpendicular such as B F′ and the circumference of the semi-circle would be equal to the radius, and that to place a line in such position would be equivalent to the solution. Mr. Doyle did not make such a construction to give effect to his theory, and consequently failed to solve the problem.

In justice to Mr. Doyle, it is considered proper for this note of recognition to appear in this publication.

Ottawa, August, 1910 GEO. GOODWIN.