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NINETY-FIFTH SESSION.

Monday, 7th January 1878.

The Right Rev. BISHOP COTTERILL, Vice-President,
in the Chair.

The following Communications were read :—

1. On Gladstone's Theory of Colour-Sense in Homer. By
Professor Blackie.

2. Note on a Geometrical Theorem. By Prof. Tait.

In "Trans. R.S.E." (1864-5) Fox Talbot proved very simply, by means of a species of co-ordinates depending on confocal conics, the following theorem, at the same time asking for a simple geometrical proof.

If two sets of three concentric circles, with the same common difference of radii, intersect one another—the chords of the arcs intercepted on the mean circle of each series by the extremes of the other are equal.

A properly geometrical proof may possibly be obtained by showing that the *middle points* of these arcs are equidistant from the line joining the centres. It is, of course, quite easy to build up a quasi-geometrical proof, but Talbot's would be much better.

The following investigation shows the nature of the theorem, and gives some elegant constructions.

Let d be the common difference, b and c the mean radii, and a the distance between the centres. Then the square of one of the chords is easily seen to be

$$p^2 = 2c^2 (1 - \cos (\theta' \pm \theta)),$$

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