3. *On Models of Three-dimensional Sections of Regular Hypersolids in Space of Four Dimensions.* By Mrs. A. Boole Stott.

After giving an idea of the four different kinds of axes of a regular four-dimensional polytope, and having explained in what manner any of these six polytopes may be intersected by a range of parallel spaces normal to any of these axes, Mrs. Stott exhibited the different kinds of sections that may be obtained by models of cardboard differently coloured, so as to show the position of the different regions of bounding bodies with respect to the central axis. She also exhibited models illustrating the space-filling properties of a three-dimensional section of any set of regular polytopes filling-space of four dimensions. Also

[1] This is a modification of a proof given by Stolz and Gucimer, and is due to my late pupil, Mr. McCleland.

models illustrating the rotation of a four-dimensional body about a plane by the sections of it, with a space containing that plane. Professor Schoute showed some lantern-slides in connection with the subject.

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4. *Models of Three Developable Surfaces.* By Professor Schoute.

The author showed three models of developable surfaces in connection with the equations

$$u^3 + 3u^2x + 3uy + z = 0,$$
$$u^4 + 6u^2x + 4uy + z = 0,$$
$$u^6 - 15u^4 + 15u^2x + 6uy + z = 0.$$

He moreover indicated that, if only the equation

$$u^n + A_1u^{n-1} + A_2u^{n-2} + \ \ldots \ + A_{n-1}u + A_n = 0$$

has all its roots positive, the equation

$$u^{2n} + A_1u^{2n-2} + A_2u^{2n-4} + \ \ldots \ + A_{n-2}u^4 + xu^2 + yu + z = 0$$

may represent all possible cases of $2n$, $2n-2$, . . . 2, 0 real roots, and that by means of the double curve the corresponding developable surface really must, and will, divide space into $n+1$ regions.