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## CELEBRATING WOMEN IN MATHEMATICS

### ALICIA BOOLE STOTT

1860-1940, Ireland - Alicia Boole was the third daughter of the mathematician George Boole, born in Cork, Ireland. She is best known for coining the term “polytope” to refer to a convex solid in four dimensions, and having an impressive grasp of four-dimensional geometry from a very early age.



She found that there were exactly six regular polytopes on four dimensions and that they are bounded by 5, 16 or 600 tetrahedra, 8 cubes, 24 octahedra or 120 dodecahedra. She then produced three-dimensional central cross-sections of all the six regular polytopes by purely Euclidean constructions and synthetic methods for the simple reason that she had never learned any analytic geometry.

She met and married Walter Stott in 1890. Stott learned of Pieter Schoute's work on central sections of the regular polytopes in 1895 and Alicia Stott sent him photographs of her cardboard models. Schoute came to England and worked with Alicia Stott, persuading her to publish her results which she did in two papers published in Amsterdam in 1900 and 1910.

The University of Groningen honoured her by inviting her to attend the tercentenary celebrations of the university and awarding her an honorary doctorate in 1914.

In 1930 she was introduced to H.S.M. Coxeter and they worked together on various problems. Alicia Stott made two further important discoveries concerning constructions of polyhedra related to the golden section. Coxeter described his time doing joint work with her saying:

“The strength and simplicity of her character combined with the diversity of her interests to make her an inspiring friend.”

*Biography courtesy of The MacTutor History of Mathematics archive*