„De onbemindheid der wiskunde“ --- Different ways towards geometrical education

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In this talk the focus will be on two quite different approaches towards geometry and its education more than 100 years ago. In both cases there is a connection to the Rijksuniversiteit in Groningen in the Netherlands.

In 1926 the rectoral speech is given by Johan Antony Barrau (1873-1953). Its title is „De onbemindheid der wiskunde“ in which he explained that many parts of mathematics is not liked by the broad public whereas his part of „geometry“ which is closely related to combinatorics, finite geometry, and socalled recreational mathematics is very popular and best suited for „onderwijs“.

In 1914 already the same university gave an honorary doctoral degree to Alicia Boole Stott (1860-1940) for her work in geometry, in particular for her studies in traditional Euclidean geometry, but in more than 3 dimensions. She tried to „visualize“ these higher dimensional „polytopes“ by projections into 3 dimensions and the construction of geometrical models in order to teach this geometrical subdiscipline.

Alicia Boole Stott was a daughter of Mary Everest Boole (1832-1916) who had worked in mathematical education as a „mathematical psychologist“ and of George Boole (1815-1864) who is „well investigated“ in the history of mathematics. Alicia had no formal education in mathematics. After having played and worked with 4-dimensional geometrical bodies she got into contact with the geometer Pieter Schoute in Groningen. In close cooperation with Schoute she published her results till 1914. Only in her last years she got back to research with the English student H.S.M. Coxeter who later became one of the leading geometers of the 20th century.

Johan Antony Barrau first belonged to the Koninklijke Nederlandse Marine from 1891 until 1898, later was a mathematics teacher in Dordrecht and Amsterdam, studied in Amsterdam and wrote his „proefschrift“ on „Bijdragen tot de theorie der configuraties“ in 1907, a very well written thesis on the state of the art on configurations at that time. In 1909 he became a professor, first in Delft, later in Groningen where he was the university rector in 1925/1926 and as such gave the speech mentioned above. In 1928 Barrau got the chair of geometry in Utrecht which he held until 1943/1946. By the way, his successor in Utrecht was Hans Freudenthal.

In this paper two quite different approaches towards geometry and its teaching at the turn of the 20th century are discussed. Starting with the quite different biographies (family background, education, home country etc.) and very different attitudes towards traditional geometry (fourdimensional vs. „finite“) it will be investigated how intimately the geometrical objects and the teaching thereof are interrelated.

References:

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