

# Rosanes, Jakob | Encyclopedia.com

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(*b.* Brody, Austria-Hungary [now Ukrainian S.S.R.], 16 August 1842; *d.* Breslau, Germany [now Wrocław, Poland], 6 January 1922)

*mathematics.*

Rosanes was the son of Leo Rosanes, a merchant. From 1860 until 1865 he studied at the universities of Berlin and Breslau; having taken the Ph.D. at the latter in 1865, he remained there for the rest of his career. In 1870 he became *Privatdozent*, in 1873 professor extraordinarius, and in 1876 ordinary professor; he also served the university as its rector during the academic year 1903–1904.

Rosanes' mathematical papers concerned the various questions of [algebraic geometry](#) and invariant theory that were current in the nineteenth century. One of his first papers, written with Moritz Pasch, discussed a problem on conics in closure-position. In 1870 he provided a demonstration that each plane Cremona transformation can be factored as a product of quadratic transformations, a theorem that M. Noether also proved independently at about the same time. Both demonstrations were, however, incomplete and were put into final form by G. Castelnuovo some thirty years later.

Rosanes' contributions to the theory of invariants were made in the 1870's and 1880's. He gave conditions for a form to be expressed as a power-sum of other forms, then, in a series of papers, treated linearly dependent point systems in a plane and in space. In later years his scientific productivity declined, but his rector's lecture of 1903, on the characteristic features of nineteenth-century mathematics, is noteworthy. Like a number of other mathematicians, Rosanes was also interested in chess and published a book on *Theorie und Praxis des Schachspiels*. He retired from the university in 1911 and spent the rest of his life in Breslau. In 1876 he married Emilie Rawitscher.

## BIBLIOGRAPHY

Rosanes' works, cited in the text, are "Über das einem Kegelschnitt umbeschriebene und einem anderen einbeschriebene Polygon," in *Journal für die reine und angewandte Mathematik*, **64** (1865), 126–166, written with M. Pasch; "Über diejenigen rationalen Substitutionen, welche eine rationale Umkehrung zulassen," *ibid.*, **73** (1871), 97–111; "Über linear abhängige Punktsysteme," *ibid.*, **88** (1880), 241–273; and "Charakteristische Züge in der Entwicklung der Mathematik des 19. Jahrhunderts," in *Jahresbericht der Deutschen Mathematische-Vereinigung*, **13** (1904), 17–30.

Werner Burau