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(b. Cornwell, England, 1804; d. Long Stratton, Norfolk, England, 23 November 1863)

*mathematics.*

George Jerrard was the son of Major General Joseph Jerrard. Although he entered Trinity College, Dublin, where he was a pupil of T. P. Huddart, on 4 December 1821, he did not take his B. A. until the spring of 1827. Jerrard's name is remembered for an important theorem in the theory of equations, relating to the reduction of algebraic equations to normal forms. In 1824 Abel had shown that the roots of the general quintic equation cannot be expressed in terms of its coefficients by means of radicals. E. W. Tschirnhausen had previously generalized the technique of Viéte, Cardano, and others of removing terms from a given equation by a rational substitution. Then, in 1786, E. S. Bring reduced the quintic to a trinomial form

$$x^5 + px + q = 0$$

by a Tschirnhausen-type transformation with coefficients expressible by one cube root and three square roots (that is, the coefficients defined by equations of degree three or less). Jerrard also obtained this result, independently, and in a more general form, reducing any equation of degree  $n$  to an equation in which the coefficients of  $x^{n-1}$ ,  $x^{n-2}$  and  $x^{n-3}$  are all zero.

When Hermite found a solution for quintic equations in terms elliptic modular functions, he cited only Jerrard. Unaware that Bring had found the result for the case  $n=5$ , Hermite stated taken Jerrard' theorem was the most important step taken in the albebracic theory of equations of the fifth degree since Abel. Bring's partial priority, later brought to light by C. J. D. Hill in 1861, did not entirely detract from the importance of Jerrard's research.

## BIBLIOGRAPHY

Apart from his *Mathematical Researches*, 3 vols.(Bristol-London, 1832-1835), in which his theorem was first given, Jerrard wrote *An Essay on the Resolution of Equations*, 2vols. (London, 1858). On his earlier work, see W. R. Hamilton, "Inquiring Into the Validity of a Method Recently Proposed by George B. Jerrard. . .," in *British Association Report*, 5 (1837), 295-348. On the question of Bring's priority, see [Felix Klein](#), *Vorlesungen üil die Ikosaeder* (Leipzig, 1884), pt. 2, ch. 1, sec. 2, Eng. trans. (London, 1913), pp. 156-159, English repr. ([New York](#), 1956).

Jerrard wrote extensively in the *Philosophical Magazine*; references to these articles are in Klein, op. cit.; and the [Royal Society](#), *Catalogue of Scientific Papers*, 1800-1863, 3 (1869), 547-'548. For a useful bibliography on the theory of equations and its history, see G. Loria, *Bibliotheca mathematica*, 5 (1891), 107-112. A short obituary is in *Gentleman's Magazine*, 1 (1864), 130; sparse personal details are in the registers of Trinity College, Dublin.

J. D. North