

La Vie d'Évariste Galois

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Of Galois little is known. He died very young and still undiscovered and unacknowledged through some unfortunate omissions criminal in retrospect. But he was not obscure, his father was a mayor (be it in a small town), who, being the victim of a vicious campaign headed by the local clergy, ended up committing suicide and whose funeral turned out to be a riotous event written up in the newspapers. Although refused entrance to *École Polytechnique*, he nevertheless was a student of *Ecole Préparatoire*, later to revert to the old name of *École Normale*, and when he was expelled it was a matter for the Royal Council, and his interment was the subject of a newspaper note (overshadowed by the concurrent funeral of some general). And Galois appears, if fleetingly, in the memoirs of Alexandre Dumas.

The book under consideration was written at the end of the 19th century, when still some of Galois contemporaries were alive and could be interviewed. The author has tried to dig up everything he can find out about the life of Galois, going through the archives, reading old letters, and also through interviews with descendants of the family who were able to convey some family lore. No other attempts of the same order has been undertaken, there are only so many documents in the archives which bear on his case, hence the account has become the definite one, on which all future biographers need to draw and can at most add footnotes and more or less well-founded speculations; in particular Bell's presentation of him in his 'Men of Mathematics' is nothing but a retelling of Dupuy, interleaved with the authors opinions and sarcastic comments.

Geniuses do not do well at school. This is a widespread myth which actually has little if any basis in reality at least when it comes to the so called hard sciences. Mathematicians tend to do well in other subjects as well, and the only case that seems to bear out the myth is actually that of Galois. Galois hated the petty school-work, especially as it pertained to rhetoric and the classics (although he had a solid grounding in the latter supposedly conveyed by his mother) and of course school could not satisfy him when it got to mathematics, where he more or less taught himself by reading the masters. In fact we do know very little about his intellectual development, save that he mastered the books written by Legendre and Lagrange (the latter must have given him lots of hints for what later would be known as Galois theory) and must also have been quite versed in Gauss number theoretical work, but when it comes to particulars we are reduced to speculations. He did publish, if only fragments, and he did twice send reports on his work, once to busy Cauchy who forgot about it and promptly mislaid it, and once to a competition for a prize, where it once again was lost. Two real misfortunes which for a young man such as Galois were catastrophic. He also had Poisson read his work, and he who must not have been very interested, dismissed it as incomprehensible. Galois did have problems making himself clear and understood, no doubt because of his habit of doing mathematics in his head and not having much practice in formulating his thoughts and ideas, no doubt because

he never had any reason to do so, there being no one to discuss with. As a consequence he failed twice to enter *École Polytechnique*. He had furthermore a reputation for being brilliant but bizarre and he tended to, especially when pressured, to act in a haughty and sarcastic manner. Had we known more about him then we do, he surely might have been burdened with a lot of psychiatric diagnoses and combinations of letters.

Having been thwarted in his mathematical career he turned to politics, or rather its romantic revolutionary variant, being a radical republican. The times was right for it being the first revolution after the great one, namely that of 1830, destined to light the fervor of impressionable youths. It is as a revolutionary he was known to his contemporaries, but his achievements as such would never had reached the eyes of posterity had it not been for his subsequent mathematical fame. As a revolutionary he was brought to court for allegedly have threatened the king Philip-Louise at a party where he had given a toast to the king while holding a knife next to the glass. His defense lawyer was able to get him out of the scrape, in spite of Galois noncooperation, the jury acquitting him of the charges no doubt being impressed by his youth and innocence, but nevertheless the damage was done. So soon thereafter he was arrested again on the slightest pretext as a dangerous revolutionary and sent to six months imprisonment on trumped up charges. In jail he was ridiculed by his fellow prisoners, more interested in cards, drinking and women, but on the whole the sojourn was rather mild and he was able to do mathematics (what else could he occupy himself with?).

Shortly after his release he got embroiled in some rather sordid business,, the exact nature of which will never be known. There is talk about a love story with some tart, and Galois mentions in his letters some coquette of the lowest kind, whose honor he felt obliged to defend. He had worked himself into a bind out of which he seems to have been unable to extricate himself. He realized where he was heading and spent the night before trying in vain to scribble down his mathematical will, realizing the futility of the quest as so little time was left to him.

The next day he was shot in the stomach from a distance of twenty-five steps, left to die on the ground, discovered by a peasant who brought him to the hospital where he lingered on for the night until he died from his wounds. His younger brother was with him crying, and Galois asked him to stop as he needed all the courage he could muster to die at twenty.

It all makes for a wonderful story, and cursed are those who not only live in interesting times, as the Chinese note, but who actually live interesting lives. What is exciting to read about seldom is exciting to experience first hand.

Galois eventually got vindicated, lost manuscripts discovered, his importance recognized, among others by Liouville, and the rest is history as they say. For us that is, but not for Galois. His mother survived him with forty years dying in complete command of her faculties at 84, but no one seems to have interviewed her on a first hand basis.

The book is completed with some appendices, quoting letters and official documents, and we learn that Galois was 1.67 cm tall and had brown eyes, and something was the matter with his skull as revealed by the autopsy.