Jean-Victor Poncelet (1788-1867)

Though Girard Desargues (1591-1661), a military engineer, proved the first theorem on projective geometry, he went without honour in his day largely because his time coincided with the times of Rene Descartes (1596-1650) and Pierre de Fermat (1601-1665). The success of the new *analytic geometry* of Descartes in the hands of Descartes himself and Fermat had caught the fancy of mathematicians of the time; the unconventional and bizarre terminology used by Desargues in his works didn't help his cause either. The glory of being called the 'father of projective geometry' belongs to Jean-Victor Poncelet, also a military engineer.

Jean-Victor Poncelet was born on 1st July 1788 to Claude Poncelet, a rich land owner and advocate, and Anne-Marie Perrein in Metz, France. He entered the Ecole Polytechnique, Paris, in 1807 but lost a year because of poor health. Among his teachers was Gaspard Monge (1746-1818) who is credited with the invention of *descriptive geometry.*

Poncelet joined the Corps of military engineers in 1810 and was called upon to join Napoleon's disastrous campaign to Russia in 1812. While Napoleon's exhausted army was retreating from Moscow, it was overwhelmed by the Russians at Krasnoi on 18th November. Poncelet was taken a prisoner and was forced to march for five months across the frozen plains to arrive at Saratov on the banks of Volga in March 1813 where he was held till June 1814. It was in this prison that Poncelet created projective geometry; the notes he composed, 'Cahiers de Saratov', was published in 1862. On his return to France in 1814 he was appointed captain in the engineering corps where he remained till 1824 when he became a professor at the Ecole d'Application de l'Artillery at Metz. He moved to Paris in 1834 with his election to the mechanics section of the Academie des Sciences. He married Louise Polmyre Gaudin in 1842.

Poncelet and Brianchon discovered the *nine-point circle* in 1820-21; (but this theorem is now attributed to Feuerbach who independently discovered it in 1822 and who also showed that the nine-point circle touches the incircle and the three excircles). He wrote two memoirs in 1824, *On the centres of harmonic means* and *On the theory of reciprocal polars.* The first memoir was published immediately but the publication of the second was delayed till 1829 thanks to Cauchy's delayed referee report. This delay got Poncelet involved in a priority dispute over the *principle of duality* with Gergonne and Plucker which greatly distressed Poncelet.

Poncelet applied his knowledge of geometry with a lot of success to applied mechanics. He was instrumental in re-structuring and updating the curriculum in mechanical engineering and was a successful teacher.

He died in Paris on 22nd December 1867.

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