A Short Account of the History of Mathematics

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French Physicists Contemporary of Lagrange and Laplace

Bézout, Trembley, Arbogast

Étienne Bézout, born at Nemours on March 31, 1730, and died on September 27, 1783, besides numerous minor works, wrote a Théorie générale des équations algébriques, published at Paris in 1779, which in particular contained much new and valuable matter on the theory of elimination and symmetrical functions of the roots of an equation: he used determinants in a paper in the Histoire de l'académie royale, 1764, but did not treat of the general theory. Jean Trembley, born at Geneva in 1749, and died on September 18, 1811, contributed to the development of differential equations, finite differences, and the calculus of probabilities. Louis François Antoine Arbogast, born in Alsace on October 4, 1759, and died at Strassburg, where he was professor, on April 8, 1803, wrote on series and the derivatives known by his name: he was the first writer to separate the symbols of operation from those of quantity.

Carnot

Lazare Nicholas Marguerite Carnot, born at Nolay on May 13, 1753, and died at Magdeburg on Aug. 22, 1823, was educated at Burgundy, and obtained a commission in the engineer corps of Condé. Although in the army, he continued his mathematical studies in which he felt great interest. His first work, published in 1784, was on machines; it contains a statement which foreshadows the principle of energy as applied to a falling weight, and the earliest proof of the fact that kinetic energy is lost in the collision of imperfectly elastic bodies. On the outbreak of the revolution in 1789 he threw himself into politics. In 1793 he was elected on the committee of public safety, and the victories of the French army were largely due to his powers of organization and enforcing discipline. He continued to occupy a prominent place in every successive form of government till 1796 when, having opposed Napoleon's coup d'état, he had to fly from France. He took refuge in Geneva, and there in 1797 issued his La métaphysique du calcul infinitésimal. In 1802 he assisted Napoleon, but his sincere republican convictions were inconsistent with the retention of office. In

1803 he produced his Géométrie de position. This work deals with projective rather than descriptive geometry, it also contains an elaborate discussion of the geometrical meaning of negative roots of an algebraical equation. In 1814 he offered his services to fight for France, though not for the empire; and on the restoration he was exiled.

Poncelet

Jean Victor Poncelet, born at Metz on July 1, 1788, and died at Paris on Dec. 1867, held a commission in the French engineers. Having been made a prisoner in the French retreat from Moscow in 1812 he occupied his enforced leisure by writing the Traité des propriétés projectives des figures, published in 1822, which was long one of the best known text-books on modern geometry. By means of projection, reciprocation, and homologous figures, he established all the chief properties of conics and quadrics. He also treated the theory of polygons. His treatise on practical mechanics in 1826, his memoir on water-mills in 1826, and his report on the English machinery and tools exhibited at the International Exhibition held in London in 1851 deserve mention. He contributed numerous articles to Crelle's journal; the most valuable of these deal with the explanation, by the aid of the doctrine of continuity, of imaginary solutions in geometrical problems.