

SUMMARY. These two pages give some information about people who were involved in the discovery of the integral theorems.

AMPÈRE. André Marie Ampère (1775-1836) made contributions to the theory of electricity and magnetism. Stokes theorem was found by Ampère in 1825.



Gossip:

- While still only 13 years old Ampère submitted his first paper to the Académie de Lyon. Ampère's father died during the French Revolution. He went to the guillotine writing to Ampère's mother from his cell: "I desire my death to be the seal of a general reconciliation between all our brothers; I pardon those who rejoice in it, those who provoked it, and those who ordered it...."
- Ampère had a difficult time with his daughter. She married one of Napoleon's lieutenants who was an alcoholic. The marriage soon was in trouble. Ampère's daughter fled to her father's house and Ampère allowed later her husband to live with him also. This proved a difficult situation, led to police intervention and much unhappiness for Ampère.

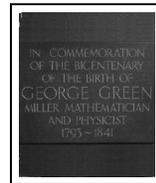
GAUSS. Carl Friedrich Gauss (1777-1855) worked in a wide variety of fields both in mathematics and physics like number theory, analysis, differential geometry, geodesy, magnetism, astronomy and optics. Gauss theorem was discovered 1764 by Joseph Louis Lagrange.



Gossip:

- At the age of seven, while starting elementary school his potential was noticed almost immediately. His teacher, Büttner, and his assistant, Martin Bartels, were amazed when Gauss summed up the integers from 1 to 100 instantly by spotting that the sum was 50 pairs of numbers each pair summing to 101.
- Gauss married twice. Both wives died, the first from the birth of a child, the second after a long illness.

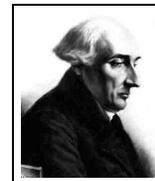
GREEN. George Green (1793-1841) discovered Green's theorem in 1827. Green also rediscovers the divergence theorem in 1825 not knowing of the work of Gauss and Lagrange. Unfortunately, we don't have a picture of Green.



Gossip:

- Green studied mathematics on the top floor of his father's mill, entirely on his own. The years between 1823 and 1828 were not easy for Green: As well as having a full time job in the mill, two daughters were born, the one in 1824 mentioned above, and a second in 1827. Between these two events his mother had died in 1825 and his father was to die in 1829. Yet despite the difficult circumstances and despite his flimsy mathematical background, Green published one of the most important mathematical works of all time in 1828.
- Green was the son of a baker: from a short obituary in the Nottingham Review which showed they knew little of his life and less of the importance of his work. "... Through Thomson, Maxwell, and others, the general mathematical theory of potential developed by an obscure, self-taught miller's son would lead to the mathematical theories of electricity underlying twentieth-century industry.

LAGRANGE. Joseph-Louis Lagrange (1736-1813) worked in all fields of analysis and number theory and analytical and celestial mechanics. Gauss theorem was discovered in 1764 by Joseph Louis Lagrange.



Gossip:

- Lagrange is usually considered a French mathematician. But some refer to him as an Italian mathematician because Lagrange was born in Turin. Only the intervention of Lavoisier saved Lagrange during the French revolution from the guillotine because a law was established arresting all foreign born people. Lavoisier himself was guillotined shortly after.
- Lagrange first wife was his cousin. They had no children. In fact, Lagrange had told d'Alembert in this letter that he did not wish to have children. His first wife died after years of illness.
- Napoleon named Lagrange to the Legion of Honor and Count of the Empire in 1808. On April 3, 1813 Lagrange was named "grand croix of the Ordre Impérial de la Réunion". He died a week later.

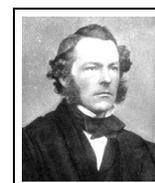
OSTROGRADSKI. Mikhail Vasilevich Ostrogradski (1801-1862) worked on integral calculus, mathematical physics like hydrodynamics and partial differential equations. He worked also in algebra and differential equations, theoretical mechanics and wrote several textbooks.



Gossip:

- Ostrogradski wanted actually to pursue a military carrier. Financial considerations however led him to a career in the civil service which needed a university education. He studied physics and mathematics. He successfully finished his exams but the minister of religious affairs and national education refused to confirm the decision. Ostrogradski therefore never got a degree.
- He left Russia to study in Paris, between 1822 and 1827 Ostrogradski attended lectures by Laplace, Fourier, Legendre, Poisson and Cauchy.

STOKES. George Gabriel Stokes (1819-1903) established the science of hydrodynamics with his law of viscosity describing the velocity of a small sphere through a viscous fluid. Stokes discovery of Stokes theorem (around 1840) was probably inspired by work of Green.



Gossip:

- In 1857 Stokes had to give up his fellowship at Pembroke College because fellows at Cambridge had then to be unmarried. Later, after a change in the rules in 1862 Stokes was able to take up the fellowship at Pembroke again.
- While Stokes became engaged, he used to express his feelings to his bride Mary Susanna Robinson in rather mathematical terms: "I too feel that I have been thinking too much of late, but in a different way, my head running on divergent series, the discontinuity of arbitrary constants ... ". Such words did not reveal the love that Mary hoped to find in them and when Stokes wrote her a 55 page (!) letter about the duty he felt towards her, she came close to calling off the wedding.

SOURCES. The sources include E.T. Whittaker's, *A History of the Theories of Ether and Electricity* and the MacTutor History of Mathematics <http://turnbull.dcs.st-and.ac.uk/history/>.