The Open Court

A MONTHLY MAGAZINE

Devoted to the Science of Religion, the Religion of Science, and the Extension of the Religious Parliament Idea

Founded by EDWARD C. HEGELER

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ANDRÉ MARIE AMPÈRE

Frontispiece to The Open Court.

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THE SESQUICENTENNIAL OF AMPERE

BY MAYNARD SHIPLEY

NINETEEN hundred twenty-five marks the hundred and fiftieth year since the birth of André Marie Ampère, one of the great names in the history of physics. The man who established the identity between electricity and magnetism, and in whose honor the unit of electrical current is named, was born near Lyons, France, in 1775, and died at Marseilles in 1836. Less narrowly specialized in his interests than most scientists, he did distinguished work in mathematics, read widely in history, general literature and philosophy, and brought his life-work to a culmination by his *Essay on the Philosophy of Science.*

As a small child unacquainted with numbers, Ampère showed his mathematical bent by trying to re-invent arithmetic and geometry by arrangements of pebbles and biscuit crumbs on the ground. His father, observing this, stopped teaching him Latin and began his instruction in mathematics instead. But the little André, discovering that he must know Latin to read such masters as Euler and Bernouilli, taught himself the language unaided.

The French Revolution cost the elder Ampère's life on the guillotine, and plunged his son into an apathy of despair from which he was aroused, a year later, only by the accidental acquaintance with some botanical letters. From the study of botany and the other natural sciences he was swerved by an absorption in the classic writers. Being twenty-one, and ripe for both experiences, he then announced himself a poet and fell in love with Julie Carron, whom he married three years later. In 1804, after five years of happiness, she died, leaving Ampère with a four-year-old son who grew up to be a distinguished philologist and the introducer of the German and Scandinavian folk-epics into France.

Ampère never fully recovered from his wife's death, though he outlived her by thirty-two years. He persevered in his studies, however, and in the very year of her loss he was appointed to a lowly position on the teaching staff of the Paris Polytechnic school, through the recommendation of Delambre, who had been attracted by a little work of the young man's, published two years previously, proving the mathematical chances against the habitual gambler.

In 1820, when he was in the midst of his physical researches and had been professor of mathematics at the Polytechnic School for eleven years, and a member of the Institute for six, Ampère heard of Oersted's discovery that a magnetic needle is acted upon by a voltaic current. A week later he presented a paper to the Academy giving a full exposition of this and similar effects. He was the first to show that two parallel conductors traveling in the same direction attract each other. He was also the inventor of the astatic needle, which made possible the modern astatic galvanometer. In 1824 he became professor of experimental physics at the College of France, and developed his work in electromagnetism, which he called electrodynamics.

Ampère's character was singularly naive and childlike, and many stories—some apocryphal—are told of his simplicity and absent-mindedness. On one occasion he started to work out a sum on the side of an omnibus which was standing near the sidewalk, when suddenly the bus began to move and Ampère had to run after it to copy his figures. Another time he picked up a pebble to examine it and at the same time pulled his watch out of his pocket to see the time; after looking at both, he threw away the watch and put the pebble in his pocket!

Modern physics owes a great deal to this child-hearted, simple, emotional man, and has well named one of her standard measurements in recognition of his services to her.