ÉMILIE DU CHATELET (December 17, 1706 – September 10, 1749)

by HEINZ KLAUS STRICK, Germany

© Smithonian Libraries Portrait of Gabrielle-Émilie Le Tonnelier de Breteuil, marquise du Chatelet. Engraving by R. D'Elvaux. After M. A. Loir. Edited by the author

For the age in which she lived, ÉMILIE DU CHÂTELET was an unusually emancipated woman.

Born as GABRIELLE ÉMILIE LE TONNELIER DE BRETEUIL, the only daughter of an aristocrat who was responsible for official contact with ambassadors of other countries at the court of LOUIS XIV, she died as MARQUISE DU CHÂTELET. She was the long-time lover and equal partner of the philosopher VOLTAIRE and translator of NEWTON's *Principia* into French.

ÉMILIE's father had ensured that she received a comprehensive classical education as well as his four sons. Thanks to her thirst for knowledge and her exceptional perception, ÉMILIE had no difficulty in learning several foreign languages (Latin, Greek, English, Italian) and an acquaintance of the family also aroused her interest in philosophy, mathematics and physics.

At the age of 18 she was married to the Marquis FLORENT-CLAUDE DU CHASTELET-LOMONT, governor of Semur-en-Auxois (Burgundy). After the "obligatory" birth of three children, she again took the time to deepen her knowledge of mathematics. She chose the mathematician PIERRE LOUIS MOREAU DE MAUPERTUIS, a long-time member of the *Académie des Sciences*, as her teacher.

During this time a violent dispute arose among the members of the *Académie* about the shape of the earth (tapering of the spherical shape towards the poles or flattening). One of the meeting places for the scientists was the Gradot café, but women were not allowed to enter it. When ÉMILIE DU CHÂTELET was denied access, she ignored the discriminatory convention and had men's clothes made so that she could enter the café unhindered. The fact that she was having a (short) affair with her mathematics teacher was not considered offensive in her circles. In 1736 MAUPERTUIS was commissioned by the *Académie* to lead the famous Lapland expedition, which was supposed to measure the distance between two parallels along a line of longitude.

In 1734 ÉMILIE DU CHÂTELET met the philosopher VOLTAIRE (whose real name was FRANÇOIS-MARIE AROUET) at the wedding of the DUC DE RICHELIEU (a great-nephew of Cardinal RICHELIEU), with whom she was also having an affair. Because of his polemical political texts, VOLTAIRE was once again in trouble and was urgently looking for a place of retreat for a few months until the situation had calmed down again. The Marquise offered to hide him in one of her husband's properties in Cirey. The Marquis had no objection, as the chateau could now be repaired using VOLTAIRE's fortune.

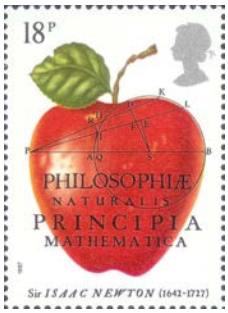
Incidently, VOLTAIRE owed this fortune to a miscalculation by the French deputy finance minister, MICHEL ROBERT LE PELLETIER-DESFORTS, who in 1728 had the idea of increasing interest in government bonds by offering every new subscriber of such bonds the chance to buy a lottery ticket cheaply. A friend of VOLTAIRE, the mathematician CHARLES MARIE DE LA CONDAMINE had calculated that by buying many small bonds one could get many lottery tickets, which – if the plan worked – would increase the chances of winning. The eloquent VOLTAIRE organised the systematic purchase of the bonds, and the fortunes of the two grew until VOLTAIRE himself put an end to the action by publicly mocking the minister. VOLTAIRE won the case brought by the minister because he had done nothing illegal. In 1736 DE LA CONDAMINE was entrusted with leading the *Meridien* expedition to South America.

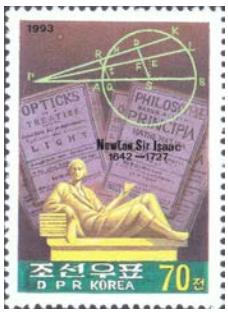
For the next 15 years, VOLTAIRE and ÉMILIE DU CHÂTELET lived together at *Cirey Castle*, happy and carefree. Together they discussed philosophical topics and carried out experiments in physics. In 1737 both took part in the annual *Paris Académie* competition with their own papers on the subject of *La nature et la propagation du feu* (The nature of fire and its spread). LEONHARD EULER won the competition (he won the annual competition twelve times), but the *Académie* also had ÉMILIE DU CHÂTELET's contribution printed and published.

In 1738 VOLTAIRE's book *Eléments de la philosophie de NEWTON* was published. In the foreword he wrote that this work, written for the general public, would not have been possible without the help of ÉMILIE DU CHÂTELET. In 1740 her work *Institutions de physique* appeared, a philosophical examination of the ideas of DESCARTES, NEWTON and LEIBNIZ on topics such as free will and the importance of God's omnipotence as well as space and matter.

After publication, she was wrongly accused of plagiarism by SAMUEL KÖNIG, a German mathematician living in Paris. KÖNIG justified his accusation by the fact that he had given her lessons on LEIBNIZ's philosophy for a few months.

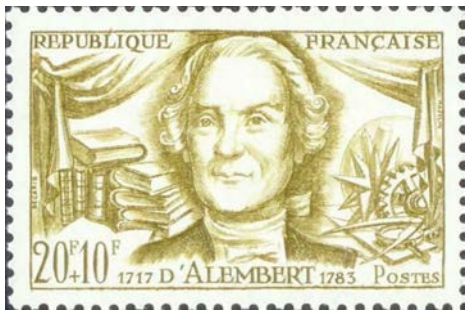
In 1745 DU CHÂTELET began working on her main work, the translation of NEWTON's *Philosophiae naturalis principia mathematica* from Latin into French (*Principes mathématiques de la philosophie naturelle*).

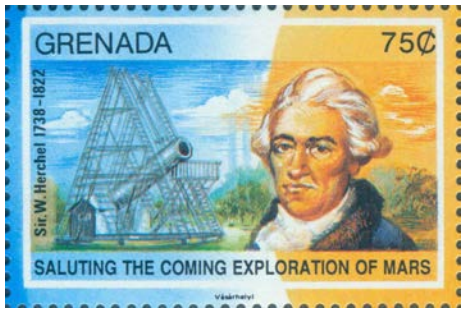




ÉMILIE DU CHÂTELET did not limit herself to the mere translation of the 1726 third edition of the work, but also added to the passages where, in her opinion, NEWTON was too brief. Its particular merit lay in the fact that it replaced the notation used by NEWTON with that of GOTTFRIED WILHELM LEIBNIZ which was better known on the continent.

During the editing, DU CHÂTELET took advice from ALEXIS CLAUDE CLAIRAUT, one of France's leading mathematicians and astronomers. He had already been accepted as a member of the *Académie* at the age of 18, and he had also taken part in the Lapland expedition. As an astronomer, he was in competition with JEAN LE ROND D'ALEMBERT and LEONHARD EULER for the solution of the so-called three-body problem. In 1759 CLAIRAUT predicted the correct time of the return of HALLEY's comet and deduced from the deviations the existence of another planet (Uranus, discovered by WILHELM HERSCHEL in 1781).





At the age of 42, ÉMILIE DU CHÂTELET became pregnant again – after an affair with the poet JEAN-FRANÇOIS DE SAINT-LAMBERT. Her husband suspected that he was not the father of the child, but VOLTAIRE was able to talk him out of this idea. Sensing that this late pregnancy could be life-threatening for her, she worked tirelessly to complete her commentaries on NEWTON's work. In fact, she died six days after the birth of her daughter in Lunéville (Lorraine) and the newborn only survived a few months.

Seven years after her death, CLAIRAUT published her work, supplemented by some comments that were still missing and with a foreword by VOLTAIRE, in which VOLTAIRE expressed his deep admiration for the unique woman.

Only after the death of his (former) lover did VOLTAIRE accept an invitation from the Prussian King FREDERICK II (THE GREAT) to come to the court at *Sanssouci Palace* as a well-paid "chamberlain". ÉMILIE DU CHÂTELET's translation of NEWTON's work with commentary contributed to the epoch-making importance of the *Principia*'s being recognised on the continent as well.

As for her role in the history of science, for a long time she was viewed only as a woman who had some influence on VOLTAIRE. From the following it becomes clear that she felt recognised as an equal partner:

> *I am convinced that many women are either ignorant of their talents because of the flaw in their upbringing or that they bury them because of a lack of intellectual courage due to prejudice. My own experience confirms this. Chance introduced me to scholars who shook hands with me in friendship ... then I began to believe that I was a being with a mind ...*

Elsewhere she demanded:

> *As far as I'm concerned, I confess that if I were king I* (*would*) *let women participate in all rights of humanity, and especially those of the spirit ... This new educational system that I suggest would be beneficial to the human species in all respects. The women would be more valuable beings, the men would thereby receive a new model to imitate, and our social exchange, which in the past too often weakened and narrowed the minds of women, would now only serve to expand their knowledge.*

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https://www.spektrum.de/wissen/emile-du-chatelet/1789421

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Here an important hint for philatelists who also like individual (not officially issued) stamps. Enquiries at europablocks@web.de with the note: "Mathstamps".