L'huillier (or Lhuilier), Simon-Antoine-Jean | Encyclopedia.com

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(*b*. Geneva, Switzerland, 24 April 1750; *d*. Geneva, 28 March 1840),

mathematics.

L'Huillier, the fourth child of Laurent L'Huillier and his second wife, Suzanne-Constance Matte, came from a family of jewelers and goldsmiths originally from Mâcon. In 1691 they became citizens of Geneva, where they had found refuge at the time of the revocation of the Edict of Nantes. Attracted to mathematics at an early age, L'Huillier refused a relative's offer to bequeath him a part of his fortune if the young man consented to follow an ecclesiastical career. After brilliant secondary studies he attended the mathematics courses given at the Calvin Academy by Louis Bertrand, a former student of Leonhard Euler. He also followed the physics courses of Georges-Louis Le Sage, his famous relative, who gave him much advice and encouragement. Through Le Sage he obtained a position as tutor in the Rilliet-Plantamour family, with whom he stayed for two years. At Le Sage's prompting, in 1773 he sent to the *Journal encyclopédique* a "Lettre en réponse aux objections élevées contre la gravitation newtonienne."

Le Sage had had as a student and then as a collaborator Christoph Friedrich Pfleiderer, who later taught mathematics at Tübingen. In 1766, on the recommendation of Le Sage, Pfleiderer was named professor of mathematics and physics at the military academy in Warsaw recently founded by King Stanislaus II. He was subsequently appointed to the commission in charge of preparing textbooks for use in Polish schools. In 1775 he sent the commission's plans for a textbook contest to Le Sage, who tried to persuade L'Huillier to submit a proposal for a physics text, but the latter preferred to compete in mathematics. He rapidly drew up an outline, sent it to Warsaw, and won the prize. The king sent his congratulations to the young author, and Prince Adam Czartoryski offered him a post as tutor to his son, also named Adam, at their residence in Pulawy.

L'Huillier accepted and spent the best years of his life in Poland, from 1777 to 1788. His pedagogical duties did not prevent him from writing his mathematics course, which he put in finished form with the aid of Pfleiderer, and which was translated into Polish by the Abbé Andrzej Gawroński, the king's reader. L'Huillier had an unusually gifted pupil and proved to be an excellent teacher. He had numerous social obligations arising from his situation (including hunting parties), but he still found time to compose several memoirs and to compete in 1786 in the Berlin Academy's contest on the theory of mathematical infinity. The jury, headed by Lagrange, awarded him the prize.

L'Huillier returned home in 1789 and found his native country in a state of considerable agitation. Fearing revolutionary disturbances, he decided to stay with his friend Pfleiderer in Tübingen, where he remained until 1794, Although offered a professorship of mathematics at the University of Leiden in 1795, L'Huillier entered the competition for the post left vacant in Geneva by his former teacher Louis Bertrand, In 1795 he was appointed to the Geneva Academy (of which he soon became rector) and held the chair of mathematics without interruption until his retirement in 1823. Also in 1795 he married Marie Cartier, by whom he had one daughter and one son.

Whereas the Poles found L'Huillier distinctly puritanical, his fellow citizens of Geneva reproached him for his lack of austerity and his whimsicality, although the latter quality never went beyond putting geometric theorems into verse and writing ballads on the number three and on the square root of minus one. Toward the end of his career Charles-François Sturm was among his students.

L'Huillier was also involved in the political life of Geneva, He was a member of the Legislative Council, over which he presided in 1796, and a member of the Representative Council from its creation. His scientific achievements earned him membership in the Polish Educational Society, corresponding memberships in the academies of Berlin, Göittingen, and St. Petersburg, and in the Royal Society, and an honorary professorship at the University of Leiden.

L'Huillier's extensive and varied scientific work bore the stamp of an original intellect even in its most elementary components; and while it did not possess the subtlety of Sturm's writings, it surpassed those of Bertrand in its vigor. L'Huillier's excellent textbooks on algebra and geometry were used for many years in Polish schools. His treatise in Latin on problems of maxima and minima greatly impressed the geometer Jacob Steiner half a century later. L'Huillier also considered the problem, widely discussed at the time, of the minimum amount of wax contained in honeycomb cells. While in Poland he

sent articles to the Berlin Academy, as well as the prize-winning memoir of 1786: *Exposition élémentaire des principes des calculs supérieurs*. Printed at the Academy's expense, the memoir was later discussed at length by Montucla in his revised *Histoire des mathématiques* and was examined in 1966 by E. S. Shatunova. In this work, which L'Huillier sent to Berlin with the motto "Infinity is the abyss in which our thoughts vanish," e presented a pertinent critique of Fontenelle's conceptions and even of Euler's, and provided new insights into the notion of limit, its interpretation, and its use. Baron J. F. T. Maurice recognized the exemplary rigor of L'Huillier's argumentation, although he regretted, not unjustifiably, that it "was accompanied by long-winded passages that could have been avoided."

In 1796 L'Huillier sent to the Berlin Academy the algebraic solution of the generalized Pappus problem. Euler, Fuss, and Lexell had found a geometric solution in 1780, and Lagrange had discovered an algebraic solution for the case of the triangle in 1776. L'Huillier based his contribution on the method used by Lagrange, More remarkable, however, were the four articles on probabilities, written with Pierre Prévost, that L'Huillier published in the *Mémoires de Académie de Berlin* of 1796 and 1797. Commencing with the problem of an urn containing black and white balls that are withdrawn and not replaced, the authors sought to determine the composition of the contents of the urn from the balls drawn. In this type of question concerning the probabilities of causes, they turned to the works of Jakob Bernoulli, De Moivre, Bayes and Laplace, their goal being clearly to find a demonstration of the principle that Laplace stated as follows and that L'Huillier termed the etiological principle: "If an event can be produced by a number *n* of different causes, the probabilities of the existence of these causes taken from the event are among themselves as the probabilities of the event taken from these causes." The four articles are of considerable interest, and Isaac Todhunter mentions them in his *History of the Mathematical Theory of Probability*.

The two-volume *Éléments raisonnés d'algèbre* that L'Hiullier wrote for his Geneva students in 1804 was really a sequel to his texts for Polish schools. The first volume, composed of eight chapters, was concerned solely with first- and second-degree equations. One chapter was devoted to an account of Diophamine analysis. Volume II (chapters 9-22) treated progressions, logarithms, and combinations and went as far as fourth-degree equations. A chapter on continued fractions was based on the works of Lagrange and of Legend re; another concerned the method of indeterminate coefficients. Questions of calculus were discussed in an appendix. The main value of these two volumes lay in the author's clear exposition and judicious selection of exercises, for some of which he furnished solutions.

L'Huillier's last major work appeared in 1809 in Paris and Geneva. Dedicated to his former pupil Adam Czartoryski, who was then minister of public education in Russia, it dealt with geometric loci in the plane (straight line and circle) and in space (sphere). Between 1810 and 1813 L'Huillier was an editor of the *Annales de mathématiques pures et appliquées* and wrote seven articles on plane and spherical geometry and the construction of polyhedrons.

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