Carcavi, Pierre De | Encyclopedia.com

(*b*. Lyons, France, *ca*. 1600; *d*. Paris, France, April 1684),

mathematics.

The son of a banker named Trapezita, he was made a member of the *parlement* of Toulouse on 20 July 1632, and in 1636 left for Paris after having bought the office of member of the *grand conseil* there. In 1645 he entered the renewed dispute over the quadrature of the circle. John Pell was involved in a controversy with the Danish astronomer Longomontanus, who claimed to have effected the quadrature of the circle; Carcavi sent Pell a refutation in which he claimed that this was impossible. About 1648 he was forced to sell his office as member of the *grand conseil*, in order to be able to pay his father's debts, and entered the service of the Duke of Liancourt. A protégé of the duke. Amable de Bourzeis, presented Carcavi to Col-bert, who in 1663 charged him with the classification of his library and made him custodian of the Royal Library (later the site of the meetings of the French Academy of Sciences). At the Academy's first official meeting there, 22 December 1666, Carcavi announced the king's decision to protect the new institution. On 30 May 1668 Colbert charged Huygens, Roberval, Carcavi, Auzout, Picard, and Gallois with research on the method of determining longitude at sea that had been proposed by R. de Neystt. On 6 June 1668 the commission rejected the method. After the death of Colbert in 1683 Carcavi was replaced by Gallois at the Academy and the Royal Library.

Carcavi rendered great services to science. His polite and engaging manner brought him many friends, including Huygens, Fermat, and Pascal. He carried on an extensive correspondence and thus was a medium for the communication of scientific intelligence. His friendship with Fermat dates from his time at Toulouse, when both were members of the *parlement*. He was probably the first to recognize Fermat's extraordinary scientific abilities. After Carcavi went to Paris, Fermat corresponded with him and sent him many treatises; for instance, in the autumn of 1637 Carcavi received the text of Fermat's *Isagoge ad locos planos et solidos*, a short introduction into analytical geometry written in 1636, a year before Descartes published his *Géométrie*.

After the death of Mersenne in 1648, Carcavi offered Mersenne's correspondence to Descartes. In his letter of 11 June 1649 the philosopher thanked Carcavi and asked him about the experiment of Pascal, who had had a barometer carried to the top of the Puy de Dôme. This experiment showed that the greater the altitude, the lower the air pressure. Descartes claimed that he had given Pascal the idea two years before. In his answer of 9 July 1649, Carcavi said that the report of the experiment had been printed some months previously. At the same time he informed Descartes of Roberval's objections to his *Géométrie*. On 17 August 1649 Descartes replied with a refutation of Roberval's assertions. After Carcavi's answer of 24 September 1649, in which he defended Roberval, Descartes broke with him.

In the spring of 1650 Fermat sent Carcavi a treatise entitled *Novus secundarum et ulterioris ordinis radicum in analyticis usus*, in which he corrected the process given by Viète in his *De aequationum recognitione et emendatione* (written 1591) by treating the method of elimination of one or more unknowns in several equations. This is the first known method of elimination. When Fermat began to fear that his discoveries might be lost, he tried to find collaborators and asked Pascal and Carcavi to publish his papers. This attempt failed (letter of 27 October 1654 from Pascal to Fermat), as did the second attempt by Carcavi, who on 22 June 1656 proposed to Huygens that the papers be published by Elsevier in Amsterdam. Carcavi made a new attempt in his letter of 14 August 1659 to Huygens. He informed him that he had a collection of Fermat's papers, corrected by the author himself, ready for publication. He also enclosed a paper by Fermat on his discoveries concerning the theory of numbers. In his answer of 4 September 1659 Huygens promised that he would deal with the publisher. In the years 1659–1662 Carcavi sent Huygens more treatises by Fermat that mentioned Huygens' new results; Huygens was not pleased with them. This may be one reason why the papers were not published. It was not until 1679 that Samuel de Fermat succeeded in publishing the *Varia opera mathematica*, which did not contain all Fermat's discoveries.

Carcavi was also a friend of Pascal, who gave him his calculating machine. When in 1658 Pascal sent all mathematicians a challenge offering prizes for the first two solutions of some problems concerning the cycloid, he lodged the prizes and his own solutions with Carcavi, who, with Roberval, was to act as a judge.

BIBLIOGRAPHY

Carcavi's letters can be found in collections of the correspondence of Galileo, Mersenne, Torricelli, Descartes, Fermat, Pascal, and Huygens.

Some information on Carcavi's life and work is in Charles Henry, "Pierre de Carcavy, intermédiaire de Fermat, de Pascal, et de Huygens," in *Bollettino di bibliografia e storia delle scienze matematiche e fisiche*, **17** (1884), 317–391

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