D'Arcy, Patrick [*known as* Chevalier Patrice D'Arci], Count D'Arcy in the French nobility

(1725–1779)

- Anita McConnell

D'Arcy, Patrick [*known as* Chevalier Patrice D'Arci], Count D'Arcy in the French nobility (1725–1779), soldier and mathematician, was born in Galway on 17 February 1725, the third son of John D'Arcy (*d*. 1743) and his wife, Jane, daughter of Sir Robert Lynch, fourth baronet, of co. Mayo. His father's family, eminent locally, was of French origin and had settled in Ireland during the reign of Queen Elizabeth. Living under protestant domination, D'Arcy's parents, as Catholics and Jacobites, preferred their son to be educated in France. He was sent in 1739 to an uncle in Paris and there taught by the mathematician Jean Baptiste Clairaut, alongside his son Alexis Clairaut (1713–1765), who was to become the pioneer in France of Newtonian mathematics, with a reputation surpassing that of his father. In this environment D'Arcy soon showed a precocious competence in mathematics, applying his knowledge to mechanics and physics. When only seventeen he presented two memoirs on dynamics to the Académie Royale des Sciences.

Influenced by the young military officers whom Clairaut was also tutoring, D'Arcy entered the army, and adopted the name Chevalier Patrice D'Arci, which he henceforth used in his publications. As captain to the duke of Condé's regiment, he campaigned twice in Germany and once in Flanders. In 1746 he sailed as aide-de-camp to Count Fitzjames in command of a French force dispatched to assist Prince Charles Edward in Scotland. The fleet was seized by Admiral Knowles: D'Arcy, as an Irishman bearing arms against his own government, could have been condemned, but he was repatriated with the other French officers.

After peace was declared, D'Arcy was elected *adjoint mécanicien* at the Académie Royale des Sciences, and rose to higher status as vacancies occurred. He returned to the army as a colonel in 1752 and served for the rest of his life; he attained the rank of field marshal in 1770. He was granted French nationality in February 1756: the pedigree that he submitted showed his connection to most of the crowned heads of Europe, and his title of Count D'Arcy, dating from 1746, was confirmed. In the campaign of 1757 he was under Fitzjames at the battle of Rossbach, where the French were driven back. Promoted to brigadier, D'Arcy was employed for his knowledge of the Irish coast under Count d'Hérouville, who was preparing an invasion of Great Britain, but nothing came of this project.

D'Arcy continued to work on applied mathematics and mechanics as the theme linking science and military matters. He published extensively in the *Mémoires de l'Académie Royale des Sciences* between 1747 and 1765. He took an interest in electricity, and in 1749 collaborated with Jean Baptiste Le Roy in an unsuccessful attempt to develop a floating electrometer. He embarked on a debate with Maupertuis on the principle of least action, published between 1749 and 1753. His memoir of 1751 on the physics and chemistry of gunpowder mixtures, the dimensions of cannon, and the placement of the charge was extended as *Essai d'une théorie d'artillerie*, published in Paris in 1760 and in Dresden in 1766. In measuring the recoil and power of cannon he invented a momentum pendulum that was adopted by the Régie des poudres. D'Arcy's sight had been damaged in an accident and this encouraged him to investigate the persistence of vision where a point light source, moved at speed, is seen as a continuous line. His experiments on this well-known phenomenon, not hitherto measured, were published in 1765.

With an income derived from a Galway estate yielding £2000, an inheritance from his uncle, his military pay, and investments in mines, D'Arcy was able to assist other refugees from Ireland; in 1767 he refused a fortune offered by another uncle to settle there. He maintained good relations with the English scientific community, reserving his hatred for the English king. In 1777 he married his niece Jane D'Arcy, whose education he had supervised; they had no children. Two years later, in Paris, he died from cholera, on 18 October 1779.

Sources

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