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## JOÃO JACINTO DE MAGALHÃES

The saga of a celebrated Portuguese scientific correspondent in  
London in the XVIII th century

by Manuel Villas Boas

João Jacinto de Magalhães left Portugal in 1758, when he was already in his late thirties, and few would have guessed the extraordinary career he would carve for himself in European science, in the second half of the XVIIIth century. He belonged to the Magalhães (or Magellan in its anglicised form) family, an ancient Portuguese aristocratic family, which had settled in Northern Portugal in the XIIIth century, and could count as his close relatives, the XVIth century navigator Ferdinand Magellan and the Jesuit Gabriel de Magalhães, famed for his missionary work in China in the XVIIth century.

From the age of eleven, Magalhães himself, was educated at the Augustinian monastery of Santa Cruz, in the Portuguese University town of Coimbra, which included in its curriculum the works of major scientific and philosophical minds of the time. A chance encounter with the French scientist Gabriel de Bory, who had travelled to Coimbra on an astronomical mission, led him to change the course of his life and to undertake a *tour philosophique* in Europe and, eventually, to settle in Paris in 1763.

In the French capital he was influenced by another Portuguese exile, Dr. Ribeiro Sanches, who had been a disciple of Boerhaave, and court doctor in St. Petersburg. His career as a scientific correspondent started when Gabriel Trudaine, who headed the French trade department, suggested he should move to London, initially as an unpaid scientific correspondent. The following year, Magalhães was already in London, where he initiated a very active career in various fields: on the one hand he gathered scientific information available in Britain, but largely unknown in France, mostly for language problems, on the other, he became involved in

the manufacture, trade and commissioning of scientific instruments of all kinds.

His evident talent to make friends and to establish himself as a credible entrepreneur in science, contributed to make him known in London's circles of instrument makers and scientists. Magalhães' constant correspondence with his contacts in Paris covered an enormous variety of subjects and, from the moment he met Joseph Priestley, much of it related to *fixed air*.

Trudaine de Montigny, who had succeeded his father at the trade department and who was acutely aware of French insufficiencies in the study of gases, urged Lavoisier to translate Priestley's works, which Magalhães had sent from London. Magalhães, who, meanwhile, had become a member of the French Academy of Sciences in 1771, and of the Royal Society in 1774 (proposed by Priestley, Franklin and Joseph Banks), became involved in Priestley's trip to Paris in 1774, when he demonstrated his new *deflogisticated air* to Lavoisier. Later, in 1780, Magalhães produced a study on heat which included the experiments of Crawford, Black and Wilcke on this subject. The combination of his information on Priestley's pneumatic chemistry and the theories on heat, was greatly instrumental in Lavoisier's own research on combustion, which led to the demise of the phlogiston theory and the great chemical revolution, based on oxygen. This was a fascinating example of the combination of British experimental research with French flair for theoretical development, in this case, brought together by the communication skills of a Coimbra educated aristocratic monk.

Through Priestley, Magalhães met Benjamin Franklin then living in London as agent for Pennsylvania. Franklin's politics influenced Magalhães, who had a well known aversion for despotic regimes and their relationship extended for many years, leading eventually, to Magalhães' establishing the first scientific prize in America, at the American Philosophical Society, where he became a member in 1785.

As his reputation grew, Magalhães became a correspondent and member of other European scientific academies, in Berlin, Brussels, Harlem, Lisbon, Madrid, St. Petersburg and possibly Stockholm, as well as honorary member of the *Lunar Society* and the *Manchester Literary and Philosophical Society*. Together with Richard Kirwan he formed the *Chapter Coffee House Society* in London, which became an additional *forum* where scientists met and exchanged information. His relationships, both personal and literary, were wide ranged and included Count Volta at the university of Pavia, van Marum at the Harlem academy, the instrument makers George Adams in London, Tobern Bergman in Sweden, Jean-Jacques Rousseau in France, Watt and Boulton in Birmingham and the Princess Dashkova in St. Petersburg, amongst others.

Magalhães did not seek material wealth and refused a salary, which, he thought, would enslave him to the influence of others. His income derived mostly from pensions he obtained from Portugal and Russia and, possibly, his trade in instruments. He mentioned in his letters that he was quite happy to sit in his rooms, corresponding with his friends, amusing himself with his instruments and eating beef. His curiosity in scientific matters was boundless and his need to communicate them, irrepressible.

He was at his best when informing his correspondents on some new development, asking their views on local trends in science and making introductions to far away friends in the scientific world. His distaste for those who sought to hide the results of their research was evident, as was his disdain for frivolous and trendy tendencies in science, such as mesmerism. He never mastered the new chemistry, which he had helped to develop, and died in early 1790, when Lavoisier's theories were becoming generally accepted. Up to the end, he sought to comprehend the mysteries of anti-phlogistic thinking, and in one of his last letters to van Marum, he urged him to discuss this matter with colleagues in Holland and to report to him, "as I cherish nothing but the truth and am happy only when I can face it"

On his death, London's *Gentleman's Magazine* referred to him as a large and amiable man, "whom all the literati of Europe knew of and the most prominent wished to meet"

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**Manuel Villas Boas has lived and worked in London for twenty years. He has published a book in Portugal on the Magalhães family and his book on the above subject, was written at the request of the University of Aveiro.**