

# J. B. Boussingault and Platinum

**Boussingault** BY F. W. J. McCOSH,

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Most of the distinguished chemists of nineteenth century France have formed the subjects of intensive study and the preparation of biographies but Jean Baptiste Boussingault (1802–1887) has hitherto been neglected in this respect. The major part of his long career (his many papers published in *Comptes Rendus* and *Annales de Chimie et Physique* extend over more than sixty years) was devoted to agricultural chemistry, but for readers of this journal interest attaches more to his work on platinum in his youth.

When only eighteen and a student-demonstrator at the newly formed École des Mines at Saint-Etienne, Boussingault attempted to produce an alloy of platinum and carbon but succeeded only in making a low melting platinum silicide, setting fire to his laboratory in the process. Undeterred, he visited Paris and called upon Gay-Lussac to present him with a copy of the resulting paper which was duly published in 1821 in the *Annales*. Still only twenty years old, he was recruited by Alexander von Humboldt who was organising a group of scientists, at the behest of Simón Bolívar, to investigate the mineral and agricultural potentialities of newly liberated Colombia. First appointed as a professor at the Escuela Nacional de Mineros in Bogotá, Boussingault was given assignments that took him to various parts of the country as mine inspector, prospector and assayer, and it was during one of these missions that he climbed to a nine thousand feet high plateau near Medellín where gold mining was being carried on and discovered rounded grains of native platinum in the ore that was being mined, so establishing the source of the alluvial platinum that had been discovered and extracted for some forty years in the Chocó region. This he reported in a letter to his patron Humboldt who promptly had it published in the *Annales de Chimie et Physique* in 1826.

This discovery of the source of the alluvial platinum coincided with the zenith of Bolívar's career and prompted the Colombian Congress to propose the erection of a large equestrian statue of the Great Liberator in the main square of Bogotá, Boussingault being instructed to superintend its casting and erection. He was well aware, however, that all the mines of Colombia could not possibly yield the necessary quantity of platinum and that in any case it was not then capable of being melted and cast. By diplomatic delaying tactics he was able to wait until the whole idea had been forgotten and in the event he received only two kilograms of platinum which he used to make several pieces of apparatus for himself. His brother-in-law Sylvestre Vaudet, a building contractor in Paris, also suggested that Boussingault should export platinum to Europe, but nothing came of this idea.

Boussingault returned to France in 1832, accepting a number of professional appointments, first at Lyon and later at the Sorbonne and the Conservatoire des Artes et Métiers in Paris, now pursuing his classic studies in soil science and plant nutrition, later being awarded the Copley Medal by the Royal Society "for his long, continued and important researches and discoveries in agricultural chemistry". Later in life he moved into the field of steel metallurgy and was among the first to study the alloying effects of chromium, although he never lost his interest in platinum.

Dr. McCosh, who contributed an article to this journal on Boussingault's activities some seven years ago (*Platinum Metals Rev.*, 1977, 21, (3), 97–100), has delved extensively into the relevant archives and has presented a most interesting and detailed account of the life and work of his subject against the background of the slow development of chemistry, the chemical industry and metallurgy in nineteenth century France.

L. B. H.