In the course of his researches Davy tried breathing nitrous oxide and discovered its anesthetic properties. Samuel Mitchill, an American, had suggested that this gas was the principle of contagion, which must prove instantly fatal to anyone who respired it. Davy was not convinced by Mitchill's arguments and therefore made the experiment. The accurate and painstaking analysis of Berzelius would not have been possible to one with Davy's temperament; in addition, he lacked formal training and, more important, he always wanted to be original and creative. These researches were interrupted in 1801, when Davy was appointed as a lecturer at the Royal Institution. He was a great lecturer, and very good-looking, so that people flocked to hear his chemistry lectures.

In 1815, Davy was asked to turn his attention to the explosions in coal mines, which had recently been the cause of a number of disasters.

He found that if pieces of more electropositive metals were fixed to the copper plates, the seawater did not attack the copper, but the discovery was never taken up. The affair provided more ammunition for Davy's enemies, who considered him arrogant and high-handed. A sad business was Davy's opposition to Faraday's election as a fellow of the Royal Society in 1824, for he had been generous to Faraday and really liked him. The affair reveals Davy's isolation and unhappiness. In 1826 he delivered his last Bakerian Lecture. The nearest he came to a definite theory of matter was in a dialogue unfinished at his death, in which he adopted a quasi-Boscovichean atomism.

Soon afterward Davy suffered his first stroke, and thereafter his life consisted of lonely journeys around Europe in search of health, fishing, and shooting. He died in Geneva, Switzerland.