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Davy, Faraday and Italian Science **

An observer standing on Plymouth Hoe on the evening of 17 October 1813 would have seen a remarkable sight. This was a ship, sailing under a flag of truce, taking England's leading chemist, Sir Humphry Davy,¹ to France for a tour of the Continent. What was remarkable, of course, was that Britain and France had been engaged in a world war almost continuously for twenty years. The French government under the Emperor Napoleon (1769-1821) had provided him with a passport for a party to comprising himself, his wife and two servants to travel to France, to stay and to pass elsewhere in Europe.² Although the *Times* had hoped that Davy would be interned in Verdun,³ the British government had no objection, and indeed facilitated the voyage as the Admiralty minuted to 'Direct Transport Board to permit Sir Humphry & Lady Davy and 2 Servants to proceed in a Cartel to Morlaix'.⁴ What all this suggests is that chemistry was not then seen by governments as playing a major role in the prosecution of war.

Accompanying Davy were his wife Jane,⁵ whom he had married the previous

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** Relazione presentata al IX Convegno Nazionale di «Storia e Fondamenti della Chimica» (Modena, 25-27 ottobre 2001).

¹ Humphry Davy (1778-1829). On Davy as a whole see David Knight's excellent, *Humphry Davy: Science and Power*, Oxford, 1992 and for a detailed account of Davy's early life, particularly his chemical work, June Fullmer, *Young Humphry Davy: The making of an experimental chemist*, Philadelphia, 2000.

² Paulina B. Granville, *Autobiography of A.B. Granville*, 2 volume, London, 1874, 1: 433 states that this was specified in the passport.

³ *Times*, 19 October 1813, p. 3, col. b.

⁴ Admiralty Minute, 9 October 1813, PRO ADM3/180.

⁵ Jane Davy, olim Apreece, née Kerr (1780-1855, DNB).

year, her maid Mrs Meek⁶ and a twenty two year old Michael Faraday⁷ acting as Davy's assistant, amanuensis and reluctant valet. Davy's career had been meteoric. His first major discovery was that of the physiological properties of nitrous oxide (laughing) gas at the Pneumatic Institution in Bristol. In 1801, at the age of twenty three, he was appointed to the newly founded Royal Institution in London where he permanently established its reputation as a location where highly popular scientific lectures were delivered and also as a major centre for scientific research with his isolation of the chemical elements sodium and potassium in 1807 and the working out of a coherent theory of electro-chemical action. Davy's marriage to a wealthy widow meant that he could retire from the Royal Institution at the enviable age of thirty four. Faraday, after serving seven years as an apprentice book binder, had been appointed Chemical Assistant at the Royal Institution in March 1813, a position he held for six months until Davy proposed that he accompany him on his tour of the Continent.

Apart from the period of the Peace of Amiens (1802-3) most of Europe had been inaccessible to visitors from Britain since 1793. Davy, who have never visited the Continent, must have found this bar particularly frustrating as many of his friends, especially the poets and philosophers Samuel Taylor Coleridge (1772-1834) and William Wordsworth (1770-1850), had spent considerable time on the Continent. Davy must have felt himself to be terribly provincial compared with them, so that when the opportunity to visit arose, he took it immediately in spite of all the political and indeed practical problems.

There are two main sources for the tour. These are the letters that Faraday wrote to family and friends in England and his diary which he kept for the whole of the journey. However, what has survived of this is a neat transcription (doubtless following his pattern of taking lecture notes) in a manuscript book the pages of which are watermarked 1815.⁸ However, at some point Faraday ceased transcribing his original notes and so what has survived is a continuous account of the journey until 20 April 1814. This shows that he was a fairly assiduous diarist writing entries

⁶ She is referred to only once in a letter from Faraday to Benjamin Abbott, 25 January 1815, in Frank A.J.L. James, *The Correspondence of Michael Faraday*, 4 volumes and continuing, London, 1991-, 1: letter 46. This will be referred to hereafter as *Faraday, Correspondence*, followed by volume and letter number.

⁷ Michael Faraday (1791-1867). On Faraday see Geoffrey Cantor, David Gooding and Frank A.J.L. James, *Faraday*, London, 1991.

⁸ The manuscript is now in the Archives of the Institution of Electrical Engineers. It is on reel 97583/18 of the microfilms accompanying Frank A.J.L. James, *Guide to the Microfilm edition of the Manuscripts of Michael Faraday (1791-1867) from the collections of the Royal Institution, the Institution of Electrical Engineers, the Guildhall Library and the Royal Society*, Wakefield, 2000/1. The manuscript has been published in its entirety in Brian Bowers and Lenore Symons, '*Curiosity Perfectly Satisfied*': *Faraday's travels in Europe 1813-1815*, London, 1991. This will be cited as *Faraday, Travels*, followed by date and page reference.

for 156 days out the 190 covered (82%). Thereafter we have to rely on what one of Faraday's earliest biographers, Henry Bence Jones (1814-1873), transcribed from Faraday's original notes which have not been found and were probably destroyed.⁹ Bence Jones's transcripts comprise thirty four entries for just over a year (9.2%).

After four months in France, spent mostly in Paris and Montpellier, the party reached Nice on 15 February 1814¹⁰ after journeying along the Mediterranean coast. For reasons that are not clear when the party left Nice two days later they turned inland and headed over the Maritime Alps towards into the Italian speaking lands, a difficult journey that took five days. This included crossing, on 19 February the Col de Tende, a pass which Faraday thought was more than 6000 feet (1800 metres) above sea level. Here there was snow lying on the ground and the passage proved arduous in the extreme. Davy's carriage had to be dismantled and put onto sleighs for the crossing and Faraday walked with a barometer in his hands; one assumes that the Davys travelled in the Sedan chairs provided. At the top they noted that the temperature was 11°F (-11.5°C) and the barometer stood at 25.3 inches (64.3 cms). Faraday stood for a quarter of an hour to admire the grandeur of the scenery before descending and wrote in his diary:

The view from this elevation was very peculiar and if immensity bestows grandeur was very grand. The sea in the distance stretching out apparently to infinity. The enormous snow clad mountains the clouds below the level of the eye and the immense white valley before us were objects which struck the eye more by their singularity than their beauty and would after two or three repetitions raise feelings of regret rather than of pleasure.¹¹

This vignette reminds one of the painting 'The Wanderer above the Sea of Clouds' by Caspar David Friedrich (1774-1840). They reached Limone Piemonte about seven in the evening where they put up for the night. The following day the journey was continued in the same manner until they reached Borgo San Dalmazzo where the carriage was taken off the sleighs and reassembled. They then made their way to Cuneo where they spent the night, reaching Turin the following day where they spent three nights. Faraday was left very much to his own devices there as he explored the city, and it is not known what Davy did.

They left Turin on 24 February and after spending the night in Alexandria, returned to the Mediterranean at Genoa. Davy, for reasons that are again not clear, decided to undertake the next part of his journey by sea but was prevented from doing so quickly because of snow and wind. Although the carriage was put on a boat on 1 March, it was not until ten days after they arrived that the weather was clement enough to sail. In the meantime Davy had been making more experiments

⁹ Henry Bence Jones, *The Life and Letters of Faraday*, 1st edition, 2 volumes, 1870. The entries are also published in Faraday, *Travels* and this source will be used for them.

¹⁰ Faraday, *Travels*, 15 February 1814, p. 54.

¹¹ Faraday, *Travels*, 19 February 1814, p. 60.

on iodine, which he had been studying since his time in Paris, with the Professor of botany at Genoa, Domenico Vivani (1772-1840)¹² who also procured some torpedo fish for him. Davy, observed by Faraday, experimented on the fish, but came to no conclusion about their electrical properties.¹³ It is reasonable to suppose that the study of electrical fishes, which were not available in England, was one of Davy's major objects in visiting the Continent.

The weather cleared on 7 March and they set sail reaching Sistris, about twenty five miles down the coast, by evening. The weather again closed in and they were forced to remain there for nearly a week before they sailed, on 13 March, to Lerici, a further thirty or so miles along the coast. In his diary, Faraday wrote of this voyage: 'After much delay from accident gusts of wind &c and not without some danger we at last reached Lereche tired cold and bruised'.¹⁴ To his mother he commented: 'we proceeded to Genoa which place we left afterwards in an open boat, and proceeded by sea towards Lerici. This place was reached after a very disagreeable passage, and not without apprehensions of being overset by the way'.¹⁵ However, the account of this voyage given by Faraday's good friend Benjamin Abbott (1793-1870), in a recollection written after Faraday's death adds significantly more suggesting that the strains between Faraday and Lady Davy which became so apparent later on,¹⁶ were already present: 'When in a boat in the Gulf of Genoa a sudden storm of wind (not unusual there) placed them for a time in some danger, & she (Lady D[avy]) was so alarmed that she became almost faint & in consequence ceased from talking. This, he told me, was so great a relief to him that he quite enjoyed the quiet & did not at all regret the cause that produced it, though the situation was for some time critical'.¹⁷ The danger they might have been in ought not to be underestimated as it should be remembered that the poet Percy Bysshe Shelley (1792-1822) was drowned in similar circumstances in the same waters eight years later. Although Davy had originally intended to possibly sail further down the coast to Livorno,¹⁸ it is not too surprising after their experiences that they returned to the roads for the remainder of the tour.

They headed towards Florence and on the 15th left the French Empire and at

¹² Humphry Davy, 'Further Experiments and Observations on Iodine', *Philosophical Transactions*, 1814, **104**: 487-507, p. 505.

¹³ Faraday, *Travels*, 4, 5 and 6 March 1814, pp. 67-8. Davy did not publish the observations he made until near the end of his life. See Humphry Davy, 'An account of some experiments on the Torpedo', *Philosophical Transactions*, 1829, **119**: 15-18.

¹⁴ Faraday, *Travels*, 13 March 1814, p. 71.

¹⁵ Faraday to Margaret Faraday, 14 April 1814, Faraday, *Correspondence*, **1**: 32.

¹⁶ See Faraday to Abbott, 25 January 1815 and 23 February 1815, Faraday, *Correspondence*, **1**: 46 and 49.

¹⁷ Quoted in Frank A.J.L. James, 'The Tales of Benjamin Abbott: A Source for the Early Life of Michael Faraday', *British Journal for the History of Science*, 1992, **25**: 229-40, p. 238.

¹⁸ Faraday, *Travels*, 1 March 1814, p. 66.

Lucca ‘the joy and even rapture with which we were received was very pleasant to Englishmen’.¹⁹ Lucca was now in the hands of the Kingdom of Naples and although Napoleon’s brother in law, Joachim Murat (1767-1815), was King he had signed a treaty with Austria. British forces at this point were moving north through Italy towards Genoa, although they had not yet reached Lucca. The following day Davy reached Florence where Faraday noted that ‘in no place since I left England have I been so comfortable and happy’.²⁰ As well as doing the normal tourist things, including seeing the telescope used by Galileo Galilei (1564-1642),²¹ it would appear that Faraday spent a considerable amount of time helping Davy with his experiments on both iodine and in using the burning glass of the Grand Duke of Tuscany to show that diamond was composed of carbon. He also wrote out, in triplicate, Davy’s second paper on iodine for the Royal Society which was dated 23 March.²²

Leaving Florence on 3 April they moved south calling in at Siena, with Davy explaining the geology of the area to Faraday as they went, arriving in Rome on the sixth. There Davy continued his work on the diamond²³ for a paper to the Royal Society which again Faraday wrote out in duplicate.²⁴ He helped Davy with some experiments on charcoal some of which were conducted at the Accademia del Lincei.²⁵ On the 14th of April they heard that Paris had fallen to the Allies two weeks earlier.²⁶ The end of the war and the fact that in any case they were out of the French Empire meant that communications were much freer. That day Faraday wrote a long letter to his mother saying that by ‘high favour’ it would go with Davy’s letters which presumably included his paper on diamond combustion. As with earlier lengthy stops, Faraday spent a lot of his time exploring. He noted at length the great profusion of classical and more recent antiquities, and it was in the middle of one of these descriptions, on 20 April, that the manuscript of his diary ceased.

His entry for the penultimate date, however, possibly came to have a special significance since that morning he

came to the Custom house or Douane de Terre in front of which appear the remains of a temple supposed to be erected to Antoninus Pius. The remains consist of 11 columns of immense size surmounted by a grand entablature. They are

¹⁹ Faraday, *Travels*, 15 March 1814, p. 71.

²⁰ Faraday, *Travels*, 3 April 1814, p. 77.

²¹ Faraday, *Travels*, 21 March 1814, p. 73.

²² Davy, *op.cit.* (12).

²³ Humphry Davy, ‘Some Experiments on the Combustion of the Diamond and other carbonaceous Substances’, *Philosophical Transactions*, 1814, **104**: 557-70, p. 559. Faraday to Abbott, 1 May and 24 July 1814, Faraday, *Correspondence*, **1**: 33.

²⁴ Davy, *op.cit.* (23). Faraday may have done this on 10-14 April when he noted in his diary, ‘Writing all day’ and ‘Still writing’, Faraday, *Travels*, pp. 82, 84.

²⁵ Faraday, *Travels*, 15 April 1814, p. 87.

²⁶ Faraday to Margaret Faraday, 14 April 1814, Faraday, *Correspondence*, **1**: 32.

formed of greek marble and are 39½ feet in height and 4 feet 2 inches in diameter at the base. They are of the corinthian order and fluted but much broken and defaced.²⁷

What is significant about this entry is that just over twenty years later, Faraday, as Superintendent of the House of the Royal Institution, oversaw the construction of the facade of the Royal Institution which was designed by the architect Lewis Vulliamy (1791-1871) and modelled on this Roman temple.²⁸

The freer communications meant that Faraday could now start corresponding regularly with his family and friends in London in a way not possible before. With these letters and with what Bence Jones published, we can discuss, though in less detail, how the tour progressed. At the beginning of May, Davy undertook some experiments with Domenico Lino Morichini (1773-1836) on trying to magnetise a needle using ultra-violet light.²⁹ In this work they were aided by Faraday who later recalled these experiments in his paper describing his discovery of the magneto-optical effect published in 1846.³⁰ The party then moved onto Naples, a dangerous journey and for much of it they were escorted by gendarmes.³¹ At Naples they went up Vesuvius several times where Davy explained what they were seeing. These excursions were not simply Davy and Faraday but quite large parties and dinner was taken:

Cloths were now laid on the smoking lava, and bread, chickens, turkey, cheese, wine, water, and eggs roasted on the mountain, brought forth, and a species of dinner taken at this place. Torches were now lighted, and the whole had a singular appearance; and the surrounding lazzaroni assisted not a little in adding to the picturesque effect of the scene. After having eaten and drunk, Old England was toasted, and 'God save the King' and 'Rule, Britannia' sung; and then two very entertaining Russian songs by a gentleman, a native of that country, the music of which was peculiar and very touching.³²

These citizens of the victorious allies clearly thought this was the appropriate way to celebrate Napoleon's downfall.

At the end of May they spent a week in Rome before touring northern Italy including Rimini where Davy did some more work on Torpedoes.³³ They then trav-

²⁷ Faraday, *Travels*, 19 April 1814, p. 89.

²⁸ H.J.V. Tyrrell, *Guides to the Royal Institution of Great Britain 2: The Site and the Buildings*, London, 2001, p. 14-15. Faraday to Magrath, 1 August 1837, Faraday, *Correspondence*, 2: 1020.

²⁹ Faraday, *Travels*, 5 May 1814, pp. 106-7.

³⁰ Michael Faraday, 'Experimental Researches in Electricity. - Nineteenth Series. On the magnetization of light and the illumination of magnetic lines of force', *Philosophical Transactions*, 1846, 136: 1-20. Note to paragraph, 2221. See also Thomas Martin, *Faraday's Dairy*, 7 volumes and index, London 1932-6, volume 4, entry for 26 September 1845, paragraph 7699.

³¹ Faraday, *Travels*, 7 May 1814, p. 107.

³² Faraday, *Travels*, 14 May 1814, p. 110.

³³ Faraday to Abbott, 1 May and 25 July 1814, Faraday, *Correspondence*, 1: 33.

elled to Bologna, Mantua, Verona and Milan³⁴ where they stayed a week. At Milan they met Alessandro Volta (1745-1827), the inventor of the electric battery, who wore the red ribbon of the (French) Legion of Honour and was 'very free in conversation'.³⁵ Volta gave Faraday a battery he had made and this is now displayed in the Faraday Museum of the Royal Institution.

From there they went through Como, Domo, over the Simplon Pass and to Geneva where they arrived on 25 June.³⁶ They stayed for three months in Geneva before touring through northern Switzerland and southern Germany, returning to Italy via the Brenner Pass at the end of the first week of October. They spent a few days in Venice which Faraday described to his mother as 'certainly unequalled for situation and peculiarity in the world'.³⁷ Continuing south they stopped at Pietro Mala where they collected specimens of gas that bubbled up from the ground and was easily ignitable. Faraday took samples of the gas³⁸ and when they reached Florence they analysed the sample, which Davy concluded was a light hydrocarburet.³⁹

They arrived in Rome at the beginning of November and stayed four months. Davy wrote three papers (all of which Faraday wrote out in duplicate) one on iodine, one on the hyperoxymuriates and one analysing the chemical composition of ancient colours.⁴⁰ His interest in this subject had been aroused in Naples when Queen Caroline (1782-1839) had given him a pot of powdered blue paint that had been excavated at Pompeii;⁴¹ in Milan someone had given him some blue glass from Hadrian's villa⁴² and back in Rome, the sculptor Antonio Canova (1757-1822) had given him pigments from the palace of Titus.⁴³ But Faraday also enjoyed himself in Rome with the Carnival which started on 24 January and lasted until Shrove Tuesday (7 February). He watched horse racing in the Corso⁴⁴ and attended masked balls, staying up until daybreak on one occasion.⁴⁵

³⁴ John Ayrton Paris, *The Life of Sir Humphry Davy*, London, 1831, p. 288.

³⁵ Faraday, *Travels*, 17 June 1814, p. 113.

³⁶ Paris, *op.cit.* (34), p. 288.

³⁷ Faraday to Margaret Faraday, 10 November 1814, Faraday, *Correspondence*, 1: 38.

³⁸ Faraday, *Travels*, 20 October 1814, pp. 126-8; Faraday to Abbott, 26 and 30 November 1814, Faraday, *Correspondence*, 1: 40.

³⁹ Faraday, *Travels*, 27 October 1814, p. 128.

⁴⁰ Humphry Davy, 'Some experiments on a solid compound of iodine and oxygene, and on its chemical agencies', *Phil.Trans.*, 1815, **105**: 203-13; 'On the action of acids on the salts usually called hyperoxymuriates, and on the gases produced from them', *ibid.*, pp. 214-9; 'Some experiments and observations on the colours used in painting by the Ancients', *ibid.*, pp. 97-124.

⁴¹ Faraday to Abbott, 25 January 1815, Faraday, *Correspondence*, 1: 46; Davy, *op.cit.* (40), p. 108.

⁴² Faraday to Abbott, 25 January 1815, Faraday, *Correspondence*, 1: 46; Davy, *op.cit.* (40), p. 109.

⁴³ Davy, *op.cit.* (40), p. 100.

⁴⁴ Faraday, *Travels*, 24 January 1815, pp. 142-3.

⁴⁵ Faraday, *Travels*, 6 February 1815, p. 153.

By the middle of February, Davy was ready to push on eastwards although the route he would take had not been decided. It had been decided that they would go to Naples and then possibly cross by sea to Greece; alternatively they might return up Italy and move down the east coast of the Adriatic. At all events Faraday told his mother that it was ‘a moral certainty that we are to see Constantinople’.⁴⁶ By the 23rd Davy had gone on ahead to Naples to seek accommodation. By this time he had learned that he had found that the party would need to be quarantined before being allowed to enter the Turkish Empire and to this, as Faraday put it, he had ‘an utter aversion’.⁴⁷ At the beginning of March the entire party moved to Naples where Davy worked on iodine and fluorine⁴⁸ and spent more time on Vesuvius.⁴⁹ On the 7th they heard the shattering news that Napoleon had escaped from Elba and Faraday supposed ‘it will have a strong influence on the affairs of Europe’.⁵⁰

Napoleon’s Hundred Days not only had a strong influence on Europe but on Davy. With the imminent renewal of the war, with the quarantine requirement to enter the Turkish Empire and with the strained relations between Faraday and Lady Davy, it must have seemed an ideal time to cut short the tour. Faraday hinted at this in a letter to his mother: ‘We left Naples very hastily, perhaps because of the motion of Neapolitan troops, and perhaps for private reasons’.⁵¹ Leaving Naples on 21 March they returned to Rome where they were forced to spend two nights because of a lack of horses. Italy was in turmoil and their route north was not the shortest, crossing to the Adriatic and then through the Tyrol over the Brenner pass and across the German states – Menningen, Coblenz, Stuttgart, Heidelberg, Coblenz, Cologne, reaching Brussels on 16 April. The urgency they felt can be gauged from Faraday’s detailed diary entry when they were in Mantua where they were delayed by police inspections of their passports for 2½ hours.⁵²

From Brussels, Faraday wrote to his mother saying that he would soon be home. He told her that they would probably leave for Ostend the following day: ‘at Ostend we embark, and at Deal we land on a spot of earth which I will never leave again’⁵³ – as with such spur of the moment statements it was never really meant, although Faraday did not return to the Continent until twenty years later and he never returned to Italy. The party reached London on 23 April 1815 having been away 558 days and spending two periods of five and six months in Italy.

Following his return, Davy quickly became involved in running the Royal

⁴⁶ Faraday to Margaret Faraday, 13 February 1815, Faraday, *Correspondence*, 1: 47.

⁴⁷ Faraday to Abbott, 23 February 1815, Faraday, *Correspondence*, 1: 49.

⁴⁸ Paris, *op.cit.* (34), p. 295.

⁴⁹ Faraday, *Travels*, 16 March 1815, pp. 159-62.

⁵⁰ Faraday, *Travels*, 7 March 1815, p. 159.

⁵¹ Faraday to Margaret Faraday, Faraday, *Correspondence*, 1: 50.

⁵² Faraday, *Travels*, 30 March 1815, pp. 162-3.

⁵³ Faraday to Margaret Faraday, Faraday, *Correspondence*, 1: 50.

Institution and he maintained contact with some of those he had met on the Continent by, in early 1816, proposing that they should be elected Honorary Members of the Royal Institution. From Italy these were Morichini, the Neapolitan chemists Teodoro Monticelli (1759-1845) and Luigi Sementini (1777-1847) as well as the Director of the Museum in Florence, Girolamo Bardi (d.1829).⁵⁴ But Davy also kept in contact by, unlike Faraday, returning to Italy in 1819 and 1820. There he worked on deciphering and conserving the papyri that had been found at Herculanium.⁵⁵ He even invited Faraday to come and join him,⁵⁶ but with the experience of the earlier tour before him, Faraday declined.

However, connections between Faraday and the Italian scientific community did not depend on his visiting Italy, as he maintained close relations with many Italian savants for the rest of his career. Thus, for example, in the early 1830s he sent Giovan Amici (1786-1868) pieces of heavy glass⁵⁷ that he had made in the 1820s and which Amici used in improving his microscopes and it was Faraday who informed him of his election as an Honorary Member of the Royal Institution in 1844.⁵⁸ In 1832 Faraday had to defend his priority as to his discovery of how to produce an electric spark from magnetism against supposed claims by Leopoldo Nobili (1784-1835) and Vincenzo Antinori (1792-1865) which were based on an incorrect date being printed on the *Antologia* where they published their work derived from Faraday's.⁵⁹ He corresponded with Carlo Matteucci (1811-1868) about animal electricity, but perhaps his closest link was with Macedonio Melloni (1798-1854) with whom he corresponded in the 1830s when he lived in Paris in exile from Italy. They discussed the polarisation of heat, on which subject Faraday delivered a lecture at the Royal Institution on Melloni's work⁶⁰ and helped secure for him the Rumford medal of the Royal Society for it.⁶¹ In the 1850s they again had an extensive correspondence on the nature of electro-static induction, but this was closed by the premature death of Melloni from cholera in 1854.⁶²

⁵⁴ See Minutes of the General Meeting of Members of the Royal Institution, 5 February 1816, **2**: 91-2.

⁵⁵ Humphry Davy, 'Some Observations and Experiments on the Papyri found in the ruins of Herculaneum', *Philosophical Transactions*, 1821, **111**: 191-208.

⁵⁶ Davy to Faraday, 16 November 1819, Faraday, *Correspondence*, **1**: 107.

⁵⁷ See Faraday to Amici, 31 January 1831, Faraday, *Correspondence*, **1**: 478.

⁵⁸ Faraday to Amici, 17 April 1845, Faraday, *Correspondence*, **3**: 1712.

⁵⁹ Leopoldo Nobili and Vincenzo Antinori, 'Sopra la Forza Elettromotrice del Magnetismo', *Antologia*, 1831, **44**: 149-61. For a brief discussion of this episode see my introduction to Faraday, *Correspondence*, **2**, pp. xxvii-xxviii.

⁶⁰ Delivered on 23 January 1835, it was entitled 'The latest discoveries made by Signor Melloni in radiant heat' and was reported in the *Literary Gazette*, 31 January 1835, p. 73.

⁶¹ For his recommendation see the Council Minutes of the Royal Society, 6 November 1834, **1**, p. 55.

⁶² Flauti to Faraday, 12 August 1854, Faraday, *Correspondence*, **4**: 2875.

Such personal contacts, as well as his general fame, ensured that Faraday was elected to many scientific academies in Italy. These included the Imperiale e Reale Accademia Economico-Agraria dei Georgofili di Firenze,⁶³ the Academy of Sciences in Palermo,⁶⁴ the Italian Society of Sciences in Modena,⁶⁵ the Accademia Pontificia de' Nuovi Lincei⁶⁶ and the Reale Accademia delle Scienze of Naples.⁶⁷

To conclude with a general historiographical point. Much contemporary historical writing about science concentrates on the local context in which practitioners work. This work has produced enormously valuable insights into the nature of scientific practice, but it has tended to lose sight of the broader picture. It is clear that many scientific figures in the nineteenth century also saw themselves not only in local or national terms, but also in European terms. Faraday is a very good example of a figure whose work and reputation transcended national boundaries. He corresponded with major scientific figures throughout Europe. In addition to the Italians discussed above he corresponded with Christian Friedrich Schoenbein (1799-1868) and Arthur-August De La Rive (1801-1873) in Switzerland, with André-Marie Ampère (1775-1836) and Jean-Baptiste-André Dumas (1800-1884) in France, with Friedrich Wilhelm Heinrich Alexander von Humboldt (1769-1859), Justus Liebig (1803-1873) and Julius Plücker (1801-1868) in Germany, with Hans Christian Oersted (1777-1851) in Denmark, with Moritz Hermann von Jacobi (1801-1874) in Russia and many others; virtually all his papers were translated into German and published in the *Annalen der Physik* forming the equivalent of three volumes of that prestigious journal and he was elected one of the eight associé étrangers of the Académie des Sciences in Paris in 1844, an honour that eluded Davy. What this paper has illustrated is that as well as the local context, the broader European context, of which Italy is a part, was also an integral part of the work of both Davy and Faraday.

⁶³ Ridolfi to Faraday, 16 July 1823, Faraday, *Correspondence*, **1**: 206.

⁶⁴ Cacciatore to Faraday, 12 October 1834, Faraday, *Correspondence*, **2**: 740.

⁶⁵ Lombardi to Faraday, 23 October 1836, Faraday, *Correspondence*, **2**: 945.

⁶⁶ Odescalchi and Volpicelli to Faraday, 20 November 1850, Faraday, *Correspondence*, **4**: 2345.

⁶⁷ Flauti to Faraday, 18 August 1854, Faraday, *Correspondence*, **4**: 2875.