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The island, the volcanic chemical phenomena and the regius professor Daubeny

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Summary

In the library of the Gioenian Academy are stored two copies of the book *A Description of active and extinct Volcanoes, of Earthquakes, and of Thermal Springs* (London 1848, II edition), bearing a dedication to the Academy by Dr Charles Daubeny. The author was a prominent chemist, geologist and botanist which made a particular endeavour to write *A kind of Guide-book to the explorers of Districts in which Volcanic phaenomena occur abroad.* Daubeny was elected to the prestigious Aldrichian Chair of Chemistry, University of Oxford (1834), was appointed to the Sherardian Chair of Botany (1834) and to the Sibthorpian Chair of Rural Economy (1840). He undertook interesting travels to Europe and North America (1819-1845), particularly three journeys to the south of Italy (1823-1845). He wrote *Sketch of the Geology of Sicily* (The Edinburgh Philosophical Journal, 1825), a booklet in two parts never translated into Italian. During the visit to the Etna region Daubeny had contact with local scholars such as Mario and Carlo Gemmellaro, Giuseppe Alessi and Carmelo Maravigna which supported his appointment as foreign associate of the Gioenian Society at Catania since 10 June 1824. He was the first of the squad of geologists as early foreign corresponding or honorary members. The relevance of his main book, Sicilian booklet and other works is discussed.

Keywords: *Volcanoes, Gioenian Society, Vesuvius, Etna, Geological map of Sicily.*

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Riassunto

L'isola, i vulcani e il professor Daubeny

Nella biblioteca dell'Accademia Gioenia sono conservate due copie della II edizione del libro *A Description of active and estinte Volcanoes, of Earthquakes, and of Thermal Springs* (London, 1848), recanti una dedica all'Accademia del Dr Charels Daubeny. L'autore era un eminente chimico, geologo e botanico che si impegnò in particolare nello scrivere *Una specie di guida per gli esploratori dei distretti in cui si verificano fenomeni vulcanici all'estero.* Daubeny fu eletto alla prestigiosa cattedra Aldrichiana di Chimica, Università di Oxford (1834), fu nominato alla Cattedra Sherardiana di Botanica (1834) e alla Cattedra Sibthorpiana di Economia rurale (1840). Intraprese interessanti viaggi in Europa e Nord America (1819-1845), in particolare tre nel sud Italia (1823-1845). Scrisse *Sketch of the Geology of Sicily* (The Edinburgh Philosophical Journal, 1825), un lungo articolo in due parti mai tradotto in italiano. Durante la visita nella regione dell'Etna ebbe contatti con studiosi locali quali Mario e Carlo Gemmellaro, Giuseppe Alessi e Carmelo Maravigna che sostennero la sua nomina a socio corrispondente estero dell'Accademia Gioenia a Catania il 10 giugno 1824, primo della squadra di geologi come antesignani membri stranieri corrispondenti od onorari. Viene discussa l'importanza del suo libro principale, del libretto siciliano e di altre pubblicazioni.

Parole chiave: *Vulcani, Accademia Gioenia, Vesuvio, Etna, Mappa geologica della Sicilia.*

1 Introduction

In reconstituting the old library of the Gioenian Academy during this year (2022) I found a copy of Charles Daubeny's book about the description of active and extinct volcanoes of the world, published in London in 1848, bearing a dedication: "To the Gioenian Society of Catania presented by the Author." I was immediately intrigued by the author's name as well as the reason of a dedication. After a quick survey I discovered that Daubeny was an early correspondent member of the Society who had sent two other books, written by him, with the same dedication. Continuing the survey into who that English member was, I discovered that a short and little known publication on his visit to Sicily in 1824 was never translated into Italian. On the contrary, another of his travel writings (Narrative of an excursion to the lake Amsanctus and to the mount Vultur in Apulia, in 1834) has already been translated.

These interesting premises pushed my curiosity forward to the point of dedicating a deeper study. The results are that the academic members should know better one colleague which, in my opinion, did not write professional books in diaristic form, attended large libraries in his own university and made three journeys to the south of Italy, at intervals of nearly ten years apart, proving to be a tireless and organized traveler and myriad mind man.

2 Solitary and committed life as deduced by some biographers

Charles Daubeny (11.02.1795–12.12.1867) was a prominent chemist, geologist and botanist, noted for his work as an advocate of science. He was born in a large family at Stratton near Cirencester in Gloucestershire, the son of the Rev. James Daubeny, rector of Stratton and vicar of Preston (1748-1817), former oxonian student at the Brasenose College. Charles went to the ancient College of the Blessed Mary of Winchester in 1808, and in 1810 was elected to a demyship at Magdalen College, Oxford, under Dr John Kidd. He was awarded a BA in 1814. In the year 1815 gained the chancellor's prize for the Latin essay (*In philosophia, quæ moralis dicitur, tractanda, quænam sit præcipue Aristotelicæ disciplinæ virtus. Dissertatio Latina, Cancellarii præmio dignata. Oxon., 1815*). His youth education in the Latin and Greek humanities will be strongly reflected throughout his works in adulthood. At a very early period of Dr Daubeny's career his attention had been attracted to chemistry and mineralogy by the teaching of John Kidd and by the geology lectures of William Buckland at Oxford. In 1815 Magdalen offered him a lay fellowship, exempting him from taking holy orders. From 1815 to 1818 he studied medicine in London and Edinburgh, where he also attended the geology lectures of Professor Robert Jameson (1774–1854), who greatly influenced Daubeny's later scientific interests. Daubeny graduated a BM of Oxford in 1818, gaining his MD in 1821, and was a fellow of the College of Physicians.

In 1819 he produced a well-received report on the volcanic district of Auvergne based on his travels through France. In 1820 Daubeny was elected as Magdalen's Praelector of Natural Philosophy. He practiced medicine at the Radcliffe Infirmary at this time, but seems to have preferred academia. On 10 October 1822 Kidd secured Daubeny's election to the prestigious Aldrichian Chair of Chemistry (which he maintained until 1855).

He began studying the chemical composition of mineral waters, leading him to further geological research. This culminated in the publication of *A Description of active and extinct Volcanoes* in 1826; this was a detailed discussion of Davy's chemical theory of volcanic action and provides the basis of Daubeny's reputation as a geologist. He was elected a Fellow of the Royal Society in 1827, and was a member of its dining club from 1841 to 1864. He was a founder of the Chemical Society in 1841, and its president in 1853, furthermore he was a member of the Royal Irish Academy. He was also a foreign associate of the Academy of Science of Munich and Gioenian Society at Catania since 10 June 1824. Furthermore he was one of the first members of the British Association, and participated in its inaugural meeting in 1831.

It was in this role that he produced his most notable botanical work. He investigated the reasons why the continuous growth of crops on the same ground brought about a diminution of yield (which necessitated crop rotation) by means of a series of controlled plot experiments, delivering his results at the 1845 Bakerian Lecture. On the 8th of February 1834 Daubeny was appointed to the Sherardian Chair of Botany (held in addition to the Aldrichian chair) which he kept until his death. He also moved to the Physic Garden at Oxford where he lived for

the rest of his life, transforming the garden and opening it to the public. In 1840 Daubeny was appointed to the Sibthorpian Chair of Rural Economy, gaining a stipend of £ 200, which he also held until his death.

Perhaps Daubeny's defining characteristic is his lifelong zeal for reforming the Oxford University curriculum. In 1848 Daubeny, Rev. Robert Walker (reader in Experimental Philosophy) and Henry Acland (physician) pressed for the establishment of an honour school in Natural Sciences, and Daubeny defined the detailed framework of the statute of 1850. By 1860 the University Museum in Parks Road was built, partly due to Daubeny's efforts. A letter of Daubeny's to *The Times* (24 February 1864) helped to bring about a further liberalization of the university regulations regarding Natural Sciences, helping to make it a more credible degree.

After Charles Darwin published his *Origin of Species* in 1859, Daubeny gave Darwin strong support by publishing a paper *In the Sexuality of Plants* read before the British Association in 1860.

He died on December 13th, 1867, at the age of 73, having spent his last years setting his estate in order. He was laid to rest in Magdalen College Chapel according to his own wishes. He never married (Bloxam, 1853–1885; Macray, 1894–1915; Oldroyd and Hutchings, 1979).

Daubeny's personal library is now housed as a discrete collection in the Daubeny building. The catalogue can be searched online. Some items in the collection are known to have been bequeathed by Daubeny: the rest of the papers were most likely acquired by the College upon Daubeny's death.

3 Interesting travels to Europe and North America

a. **1819:** France, Clermont and region of Auvergne. Summer trip for which he received advice from the young Ami Boué, German geologist educated in Edinburgh, at that time residing in Paris and author of Comparison of the Rocks of Auvergne and Scotland (1819).
b. **Spring 1823 – Autumn 1825:** At age of 28 (1823) he embarked on a long journey through Europe, driven by recent and pioneering papers of his friend Boué, author of Geological Essay on Scotland (1820) and Suite du Mémoire géologique sur l'Allemagne (1822). He first touched again the volcanoes of Auvergne for few days and then Hungary, Transylvania, Styria. From Vienna he entered Italy, visiting Venice, Euganean hills, Vicenza and surroundings (1824), Siena, surroundings of Roma, Gaeta, Napoli, Pozzuoli, Solfatara, lake Agnano, lake Averno, Phlegrean fields, Posillipo, Ischia and Procida islands, Sorrento and Caserta, landing thereafter in Stromboli, Lipari and Vulcano to reach finally Sicily. He made an island tour from Messina to Messina following an anticlockwise direction (Messina - Milazzo - Tindari - Patti - Gioiosa - Capo d'Orlando - Cefalù - Termini - Palermo - Alcamo - Trapani - Marsala - Castelvetrano - Sciacca - Macalube - Girgenti - (Terra Pilata) Caltanissetta - Licata - Enna - Calta-

girone - Terranova - Ragusa - Scicli - Pachino - Capo Passero - Siracusa - Palazzolo -Vizzini - Pantalica - Lentini - Palagonia (Lago Naftia) - Catania - Misterbianco - Acireale (pozzo Santa Venera) - Acicastello - Randazzo - Taormina - Messina). Back to Naples (1825) he received the help of Professor Covelli (ordinary member of the Royal Academy of Sciences in Naples) in order to collect the steam emitted by fumaroles because unable to do it in person as he fell ill. He returned to England through France, visiting in summer the Rhenish volcanoes and Eifel Country.
He was not the first foreign geologist and chemists to visit Vesuvius and Sicily, but the last after G. Gioeni (1789), S. Breislak (1798, 1801), C.G. Gismondi (1803), G. Greenough (1803), L. von Buch (1805), J.L. Gay Lussac (1805), A. Humboldt (1805), G.B. Brocchi (1811), W. Maclure (1811), J.B. Biot (1816), E.S. Moricand (1817), J. Schouw (1819), J. Poulett Scope (1819) among others (Monticelli and Covelli, 1825), all scientists well known to him from the geological literature. After his journey, many others will follow the same tour in the southern Italy. He was elected corresponding associate of the Gioenian Society of Natural History at Catania on 10 June 1824.

c. **1834:** October in Florence, visiting Lagune di Volterra, Roma, Mola di Gaeta (today Formia), Napoli in November, Camaldoli, Vesuvio¸ sampling of gas and vapours (gaseous products evolved; hot springs issued from the rocks), Monte Somma, Sessa Aurunca, Rocca Monfina (accomodation at the Inn of Sant'Agata) (Pilla, 1840), Teano, and continuing to Puglia and Mount Vultur, Melfi, lago Ansanto, back to Naples.
d. **1837–1838:** Journey to North America (United States and Canada).
e. **1845:** In Naples (October, Autumn) he visits again Vesuvius, sampling gas with a special apparatus. He was not interested in the chemical analysis of rocks, but in the gas analysis.

4 Works (Daubeny, 1821–1867)

- *Letters on Auvergne addressed to professor Jameson.* The Edinburgh Philosophical Journal, vol. III, 1820 (359-67) (Daubeny, 1820), vol. IV, 1821 (89-97) (Daubeny, 1821a), vol. IV, 1821 (300-315) (Daubeny, 1821b).
  With regard to the real meaning of the visit to Auvergne region, Jean-Baptiste Bouillet (also a correspondent member of the Gioenian Academy) on his *Description historique et scientifique de la haute-Auvergne (Department du Cantal)* (Paris, 1834, pp. 438), on pages 5–6 writes: *"Plusieurs savans géologues, français et étrangers, ont visité cette contrée*[1] *mais aucun d'eux n'y a fait un séjour assez long pour avoir pu en fer une description complete".*
- *Geological Thermometer* (1822).
- *An inaugural lecture on the study of chemistry: read at the Ashmolean Museum,*

[1] In the list is quoted, with ten others, Daubeny's book *A Description of active and extinct volcanoes, etc.* (London, 1826) (Daubeny, 1826).

November 2, 1822 (Oxford University Press, 1823, pp. 57) (Daubeny, 1823).

- *Sketch of the Geology of Sicily.* The Edinburgh Philosophical Journal, vol. XIII, n. 25, July 1825, part 1, pp. 107-118; part 2, pp. 254-269, J. Munday and son, read before public meetings of the Bristol Philosophical and Literary Society annexed to Bristol Institution for Advancement of Science, Literature and the Arts, April 14, 1825, with a colored map on page 106 (foldout) (Daubeny, 1825a,b). Daubeny was honorary member of the Philosophical and Literary Society since 1823 (Neve, 1984). The article was republished on the American Journal of Science and Arts, vol. 10, n. 2, pp. 230-256, February 1826, with a map (foldout): *Geognostical map of Sicily by Dr Daubeny, with addition on the bottom of the Tertiary Formations at Hyde Park near Poughkeepsie N.Y.*

  Daubeny's map is probably derived from a late 18th or early 19th century map of Sicily, written in English or French, adapted and colored (see *e.g. Map of Sicily,* Robert Milne, Laurie & Whittle editors, London, 1801; *Sicily, Schmettau's Map corrected,* Cap. William Henry Smyth, Hydrographical Office, Admiralty, London, 1823). In addition, a watercolor map in printing paper, kept in a folder of Neapolitean origin and stored in the library of the Istituto Superiore per la Protezione e la Ricerca Ambientale (ISPRA, Roma), with title (*Carte geologique de Sicile du Dr. Daubeny,* Edinb. Phil. J. 1825 ...) and captions in French and English, is known. Intriguingly, it looks like a preliminary drawing of the map published in the Scottish journal the same year. The fact remains that Daubeny was the first who had drafted and published a geological map of Sicily. Characteristics of the map are the coarsely colored regions to indicate the predominance of the rock types and the geological properties of the soil, reported and explained in an easily readable legend on the left side.

  A subsequent map (original invention with four overlapping sheets), presented and illustrated at Strasbourg and Stuttgart geological congresses in 1834) and never published because deemed incomplete by the same author, was drawn up by Carlo Gemmellaro (Bulletin de la Société géologique de France, tome VI, 1834-1835, Réunion extraordinaire à Strasbourg, page LIV, page 19; page 364, Dons faits a la Société, *Descrizione di una nuova tavola geologica della Sicilia, etc,* page 8, Catane, 1834. See also: *Descrizione di una carta geologica della Sicilia,* Giornale di Scienze, lettere e arti per la Sicilia, Palermo, 1834, tomo 45, anno XII, fasc. 134, pp. 128-133; tomo 47, pp. 98-99; *Notizie sul Prof. Carlo Gemmellaro,* Giornale del Gabinetto letterario dell'Accademia Gioenia, tomo II, Catania 1834, Appendice, pp. 1-22). A further excellent map (*Geognostifche karte von Sicilien*) was published posthumously by the German geologist F. Hoffmann (1839).

  Daubeny (at that time professor of Chemistry) often mentions fossil sea shells and hints at ichthyolits (fish skeletons embedded in the rocks) found everywhere on the island and collected by himself, findings already reported by A. Scilla, J.P.R. Draparnaud, F. Ferrara, G.B. Brocchi, Gérard-P. Deshayes, Rudolph A. Philippi, G. Alessi, O. Costa, A. Bivona Bernardi, A.

Aradas (see reviews in Gemmellaro, 1835, 1840, 1858).
A scientific trip to Sicily at that time was very popular. For instance, a French young entomologist, Alexander Louis Lefébvre (1798–1867), in the spring of the same year 1824 made a journey to Sicily at the age of 25. He was appointed a member of the Gioenian Academy on 8 April 1825 (see letter of thanks announcing the sending of some of his scientific works, dated February 25 1834 (Historical Archives of the Gioenian Academy, vol. 34). Gifts of other scientific works of Lefebvre are reported in the vol. 12, book II of the Academic Meetings 1836–1853, pp. 11, 24, 60 (1841), 68 (1842).

- *On the thermal springs*, London Review, 1830.
- *On the diluvial theory, and the formation of the Valleys in Auvergne,* Edinburgh New Philosophical Journal. X , 1831, pp. 201-229 (Daubeny, 1831b).
- *An introduction to the atomic theory,* Oxford, 1831, pp. 147 (2nd edition 1850) (Daubeny, 1831a).
- Davy, J., and Daubeny, Ch., *Account of a new volcano in the Mediterranean,* London-Paris, 1831 (Davy and Daubeny, 1831).
- *On the thermal springs and their connection with volcanoes,* Edinburgh New Phil. Journal, 1832 (Daubeny, 1832).
- *Note on a paper by J. Davy entitled: "Notice of the remains of the recent volcano in the Mediterranean",* Phil. Trans. 1833, pp. 545-548 (Daubeny, 1833c).
- *Apology for British Science,* London Literary Gazette, 1833, 769-771, 789-792 (Daubeny, 1833a,b).
- *An inaugural lecture on the study of botany,* Oxford, 1834 (Daubeny, 1834).
- *Some account on the eruption of Vesuvius, which occurred in the month of August 1834, extracted from manuscript notes of chevalier Monticelli, foreign member of the Geological Society, and from other sources; . . . ,* Philosophical Transactions of Royal Society of London, London 1835, vol. 125, pp. 153-159 (Daubeny, 1835c).
- *Narrative of an excursion to the lake Amsanctus and to the mount Vultur in Apulia, in 1834,* Transactions of the Ashmolean Society, vol. I, Oxford 1835, pp. 1-49 (Daubeny, 1835a).
  The journey started in Naples in November 1834 and continued in December towards Puglia; referents were Neapolitan professors Matteo Tondi, Luigi Palmieri, and mainly Teodoro Monticelli (perpetual Secretary of the Royal Academy of Sciences in Naples and honorary member of the Gioenian Academy) whom he has correspondence in French (Monticelli's Correspondence, Naples, National Library). In a carriage on December 10 Daubeny visited Melfi and then climbed mount Vultur, coming back later to Naples.
  The booklet was translated into Italian by Carmela Di Mase, and published in the Bollettino della Biblioteca Provinciale di Matera, n. 23-24, 1994, pp. 171-185 (Settembrino and Strazza, 2004).
- *On the quantity and quality of the gases disengaged from the thermal spring which supplies the King's Bath in the city of Bath,* Richard Taylor, London, 1834. Ex-

cerpt from the Philosophical Transactions of the Royal Society of London, Series B, Biological Sciences, vol. 124.

- *On the Volcanic Strata exposed by a section made on the site of the new thermal spring discovered near the town of Torre dell'Annunziata in the Bay of Naples; with some remarks on the gases evolved by this and other springs connected with the volcanoes of Campania,* The London and Edinburgh Philosophical Magazine and Journal of Science, vol. 7, London 1835, pp. 316-317 (Daubeny, 1835b).
- *On the Action of Light upon Plants, and of Plants upon the Atmosphere,* 1836 (Daubeny, 1836).
- *Report on the present state of our knowledge with respect to Mineral and Thermal waters,* British Association Reports, Reports on the state of science, London 1837, pp. 1-95 (Daubeny, 1837).
- *Sketch of geology of North America being the substrate of a Memoir read before the Ashmolean Society, Nov. 26, 1838,* Oxford University, 1839, pp. 73 (Daubeny, 1839).
- *Lectures on Agriculture,* 1841 (Daubeny, 1841).
- *Journal of a tour through the United States, and in Canada, made during the years 1837-38,* 1843 (Daubeny, 1843).
- *Oratio ex Harveii instituto in ædibus Collegii Regalis Medicorum habita,* Oxford University Press, 1845, pp. 24 (Daubeny, 1845).
- *On the Site of the ancient City of the Aurunci, and on the Volcanic phenomena which it exhibits,* Transactions of the Ashmolean Society, vol. II, Oxford 1846, pp. 1-59 (Daubeny, 1846).
- *A Description of active and extinct Volcanoes, of Earthquakes, and of Thermal Springs,* II edition, London , R. & J.E. Taylor 1848, pp. 743, dedicated to John Kidd and Rev. William Buckland (I edition: London, W. Phillips, 1826, pp. 466, XX, maps) (Daubeny, 1848). This was the last work after 28 years of interest in the area of volcanologic studies.
  In the library of the Gioenian Academy there are two copies of the second edition of the book (1848). I didn't find a written match in letters collected in the Historical Archives or in the records of the academic meetings from 1848 to 1856, probably because several documents may have been lost during the revolutionary period around 1848. Of the gift of the first edition there is the feedback, but the volume at present is to be found: *"Si fa presente il dono dell'opera sopra i vulcani attivi ed estinti del globo del Socio corrispondente prof. Daubeny da Oxford, che l'autore ha graziosamente inviato all'Accademia, accompagnata da una sua circostanziata e obbligante lettera sull'assunto. Ed il Segretario della sezione di Storia naturale fu incaricato de' ringraziamenti dovuti ad un socio così celebre e zelante de' progressi della nostra Accademia"* (Historical Archives of the Gioenian Academy, vol. 11, Libro 1 delle Tornate Accademiche 1824-1836. Report of the Ordinary Sitting, July 26th, 1827).
  At first sight the book is the result of few personal visits into European volcanic regions and largely of a plethora of data taken from geological

and mineralogical literature. In the Preface to the first edition he says: "It is fair therefore to myself to mention, that the subject was first taken up at a time when there appeared a reasonable prospect of my obtaining an appointment, which would have entailed the necessity of a five years' absence from my native country". Unfortunately Daubeny was not awarded the Radcliffe Travelling Fellowship in 1821 (see The biographical sketch of J. A. Wilson, M.D., The Lancet London: A Journal of British and Foreign Medicine . . . , vol. 1, 1852, pag. 127).

Reading the book it clearly appears that Daubeny devoted much more study and attention to Vesuvius (and its area) than to Etna (and its area). On pages 151 and 213 of the first Edition he quotes Gioeni about the Vesuvius and Etna and shows the knowledge of the work of Mario (page 213) and Carlo Gemmellaro ("zealous cultivator of natural history", page 386), two brothers deep and passionate conoisseurs of the Etna area he will have personally met during his stay in Catania and during the excursion to Etna. At pag. 461 he quotes two works of the Gemmellaro brothers: Mario Gemmellaro, *Memoria (con due rami) sull'eruzione dell'Etna dell'anno 1809,* Messina 1809 and reprinted in Catania in (1819); Carlo Gemmellaro, *Sopra alcuni pezzi di granito . . . trovati alla cima dell'Etna: osservazioni fisiche,* reprinted in Catania 1823, Tip. S. Longo, pp. 33. He ignores other publications of the same period about Etna such as: Mario Gemmellaro, *Metereological phenomena of Mount Etna,* extracted in the London Journal of Science, vol. 14, 1813; Mario Gemmellaro, *Giornale dell'eruzione dell'Etna avvenuta alli 27 maggio 1819,* Catania, dalla stamperia dei Regi Studi, 1819.

At that time the main source of information of volcanic events was the "registro delle osservazioni" of Mario Gemmellaro (1773-1839) "constant and diligent observer of Etna, which inhabiting in the second region of the mountain [. . .] he has entrusted us, to make use of it, an exact diary where he has recorded and records what he sees" (Alessi, 1829–1835; De Fiore, 1914). Daubeny will remain in correspondence with Mario for some time (see A letter from Mario Gemmellaro to Daubeny, 13 May 1828. In: *The papers of Charles Daubeny,* Magdalen College, Oxford).

Other relevant publications ignored by Daubeny are: Maravigna C., *Istoria dell'incendio dell'Etna del mese di maggio 1819,* Catania 1819, pp. 102; Schouw I.F., *L'ultima eruzione dell'Etna descritta in una lettera diretta al cav. I.I. Alberto de Schonberg dal dott. I.F. Schouw,* Giornale Enciclopedico di Napoli (1819), a. 13, n. 7, pp. 9-15; Gay-Lussac J.L., Arago F., *Etna & Journal tenu a Catane par M. Mario Gemmellaro (1805-1818),* Annales de Chimie et de Physique, tome XXI, Paris 1822, pp. 399-402.

In the edition II of *Volcanoes,* Daubeny quotes Maravigna's *Materiali per la compilazione della Orittognosia Etnea,* Catania, 1835, and writes disrespectfully *"The Gioenian Society, Transactions of, contain several Memoirs on the Volcanic Phaenomena and Volcanic Mineralogy of Sicily, by Gemmellaro, Maravigna, & c., but forget the relevant Alessi's* Storia critica delle eruzioni dell'Etna" (Alessi, 1829–1835). At page 737, he quotes Wolfgang Sartorius of Göttin-

gen (1809–1876), writing *"On Mount Etna. Atlas now in the course of publication".* The first Sartorius's journey to Sicily was in the period 1835-1-837. In the first (pp. 71-74) and in the II edition (pp. 98-101) Daubeny also mentioned Georg Christian Sartorius, member of the Mineralogical Society of Eisenach (1774–1838), known to him from literature for his studies on the volcanic rocks of the Hessia (Germany), in the outskirts of Eisenach.
In the edition II, the prints (plates 2, 3 and 4) are signed by Teodoro Duclèrc (*Th. Duclèrc delineavit*), a landscape painter born in Naples, perhaps hired by Daubeny as accompanying draftsman during the 1845 journey. Plate 1 is signed as engraved by J. Fisher (*J. Fisher fecit*), probably Joseph Fisher engraver, keeper of the University Galleries, Oxford).

- *Lectures on Roman Husbandry*, London 1857, pp. 328 (Daubeny, 1857). In the library of the Gioenian Academy is present an autographed copy of the book received as a kind donation (no letter nor evidence in academic Reports are found in the Historical Archives of the Gioenian Academy).
- *Can Physical Science obtain a home in an English University? An enquiry suggested by some remarks contained in a late number of the Quarterly Review,* Oxford, 1853 (Daubeny, 1853).
- *On the influence of the lower vegetable organisms in the production of epidemic disease,* Edinburgh, 1855 (Daubeny, 1855).
- *A biographical sketch of Dr. Routh, Oxford,* about 1855.
- *Remarks on the recent eruption of Vesuvius in December 1861,* Charles Daubeny, F.R.S., &c., Professor of Botany, Oxford, The Edinburgh New Philosophical Journal, New Series vol. XVII. no. I. Jan. 1863, pp. 1-14 (Daubeny, 1863b).

> "The eruption to which wish to direct the attention of this section has already been described by several eye-witnesses, two of whom, namely, Professor L. Palmieri and M. Pierre de Tchihatscheff, of London, have communicated to the Geological Society brief reports of the most striking physical phenomena attending it, such as the outburst of springs of acidulous and hot water, and the upheaval of the ground at Torre del Greco, to the height of 1.12 meter above the level of the Mediterranean. M. Claire Deville, also, a French savant who has made the gases evolved from volcanoes his particular study, was summoned from Paris immediately upon the commencement of the eruption, and arrived in time, if not to witness the outbreak, at least to collect and examine the emanations which were its immediate consequences. All, therefore, I shall attempt to do in this brief communication, is to point out to you the facts of the greatest novelty which others have anticipated me in recording, and to consider the bearing which they may have on the general theory of Volcanoes. Vesuvius, within the last few years, has entered apparently upon a new phase of volcanic operations. At former periods Read at a Meeting of the British Association for the Advancement of Sci-

ence, Friday, October 3d, 1862. New Series Vol. XVII. No. I. Jan. 1863".

- *Climate: an inquiry into the causes of its differences and into its influence on Vegetable Life*, 1863 (Daubeny, 1863a).
- *Essay on the Trees and Shrubs of the Ancients, and Catalogue of the Trees and Shrubs indigenous to Greece and Italy*, 1865 (Daubeny, 1865).
- *Miscellanies: being a collection of memoirs and essays on scientific and literary subjects published at various times*, Oxford, 1867, 2 vols. (Daubeny, 1867).

5 A squad of geologists as early foreign corresponding or honorary members of the Gioenian Academy

Several renowned European geologists, who have visited Sicily attracted by the natural geological laboratory named Mount Etna, have been appointed members of the newly founded Gioenian Society (1824) and can be associated to Charles Daubeny's curiosity and studies. The list includes:

Herchel Wilhelm, corresponding member, 23.8.1824
Lyell Charles, corresponding member, 30.10.1828
Scrope Poulett George Julius, corresponding member, 30.10.1828
Leonhard von Karl Ceasar, honorary member, 20.5.1830
Hoffmann Friedrich, honorary member, 27.12.1830
Prévost Constant, honorary member, 23.11.1831
Buch von Leopold, corresponding member, 25.9.1834
De Beaumont Elie, corresponding member, 25.9.1834
D'Halloy Omalius J.B.J., honorary member, 29.1.1835* (no trip to island)
Sartorius W. Waltershausen, corresponding member, 23.2.1837

All of them, with the exception of the Belgian geologist D'Halloy Omalis, paid a scientific tribute to the fascinating active volcano dominating the island, collecting experimental data on the field around the mountain.

6 Conclusions

The role played in the history of geo-volcanic research and knowledge of the Italian peninsula and the major island by Charles Daubeny was mainly emphasized. We have now a good amount of further information that allows us to fully reconstruct his historical figure in relation to his Italian experiences and evaluate his scientific contribution to Italian volcanology. Undoubtedly he has moved through undeniable travel difficulties in lands without roads, poor in inns, populated by people the great majority of which spoke only the local language. Few regions in Europe, like southern Italy, in the early XIX century had such great difficulties in scientific knowledge and exploration by foreigners. Daubeny, like many travelers protagonists in their time (entomologists, archaeologists, botanists, geologists) did not find in Italy a virgin field of study as

perhaps they imagined. In comparison he met many specialists in the Austro-Hungarian North, in Naples and in Sicily where he found himself interacting with local passionate researchers, may be unexpected, true pioneers in geological and volcanological exploration of the Lombard-Venetian, Vesuvius and Etna regions. In the euphoria of the journey, he often forgot that those local scholars were in favorable conditions to search and study finds and geological and volcanological phenomena of their own region, while a foreign visitor, quickly traveling through a district and in a single season, his geo-volcanology could only be formed by a superficial and incomplete idea.

Carlo Gemmellaro expressed doubts about certain statements of the Oxford scholar: *Prof. Daubeny . . . he got rid of a crowd of details allotting a good part of our Island to the formation of blue clay . . . (Daubeny, 1825a,b). The rocks that are found in it . . . are so different in nature . . . that I am inclined to believe that reduction to one system was rather a hasty way to avoid many difficulties of explanation, instead an effect of a thoughtful observation* (Gemmellaro, 1850). Daubeny certainly did not reveal geo-volcanological secrets. He described them by riding and incorporating many well-informed sources.

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