

HUNTIA

A Journal of Botanical History



VOLUME 17 NUMBER 2
2019

Hunt Institute for Botanical Documentation
Carnegie Mellon University

Pittsburgh

The Hunt Institute for Botanical Documentation, a research division of Carnegie Mellon University, specializes in the history of botany and all aspects of plant science and serves the international scientific community through research and documentation. To this end, the Institute acquires and maintains authoritative collections of books, plant images, manuscripts, portraits and data files, and provides publications and other modes of information service. The Institute meets the reference needs of botanists, biologists, historians, conservationists, librarians, bibliographers and the public at large, especially those concerned with any aspect of the North American flora.

Huntia publishes articles on all aspects of the history of botany, including exploration, art, literature, biography, iconography and bibliography. The journal is published irregularly in one or more numbers per volume of approximately 200 pages by the Hunt Institute for Botanical Documentation. External contributions to *Huntia* are welcomed. Page charges have been eliminated. All manuscripts are subject to external peer review. Before submitting manuscripts for consideration, please review the "Guidelines for Contributors" on our Web site. Direct editorial correspondence to the Editor. Beginning with volume 17, the journal is published only online and in color. Beginning with volume 18, the journal no longer accepts books for review or announcement. All back issues are available as PDFs on our Web site.

Hunt Institute for Botanical Documentation
Carnegie Mellon University
5th Floor, Hunt Library
4909 Frew Street
Pittsburgh, PA 15213-3890
Telephone: 412-268-2434
Email: huntinst@andrew.cmu.edu
Web site: <http://www.huntbotanical.org>
Facebook: <http://www.facebook.com/HuntBotanical/>
Online gift shop: <http://www.cafepress.com/huntbotanical>

Editor and layout	Scarlett T. Townsend
Editor, Emeritus	Robert W. Kiger
Book Reviews and	
Announcements Editor	Charlotte A. Tancin
Associate Editors	Donald W. Brown
	T. D. Jacobsen
Photographer	J. Dustin Williams
	Frank A. Reynolds

© 2019 Hunt Institute for Botanical Documentation
All Rights Reserved

ISSN 0073-4071

Contents

Royal Library's copy of Mark Catesby's <i>The Natural History of Carolina, Florida and the Bahama Islands</i> containing original watercolours E. Charles Nelson	57–66
Crystal gazing: How the early-19th-century discovery of lichen secondary metabolites influenced physiological and taxonomic inquiry M. E. Mitchell	67–78
Canary Island date palms (<i>Phoenix canariensis</i>) as ornamental plants: The first thirty years of the horticultural trade Dirk H. R. Spennemann	79–102
F.W. Burbidge (1857–1905): What were his forenames? E. Charles Nelson	103–108
Richard Thomas Lowe (1802–1874): His alleged final manuscript of the unfinished <i>A Manual Flora of Madeira</i> , and its true author, Charles Baron Clarke (1832–1906) R. B. Williams, M. A. Carine and D. Bramwell	109–140
Cambridge University Herbarium Archives: Translocations of its botanical manuscripts among Cambridge libraries (1967–2018), amendments to records and collation of indexes R. B. Williams	141–149
Book Reviews and Announcements	151–160

Richard Thomas Lowe (1802–1874): His alleged final manuscript of the unfinished *A Manual Flora of Madeira*, and its true author, Charles Baron Clarke (1832–1906)

R. B. Williams, M. A. Carine and D. Bramwell

Abstract

The Rev. Richard Thomas Lowe (1802–1874) began publishing *A Manual Flora of Madeira and the Adjacent Islands of Porto Santo and the Desertas* in 1857, issuing six parts up to 1872. However, the work was never finished, because he was drowned, with his wife, in 1874 when the ship conveying them from Liverpool to Madeira foundered. It was at that time assumed that if a manuscript completing his book ever existed, it was lost at sea with its author. Nevertheless, in 1974 a publication appeared in which it was stated that Lowe's final manuscript had been found in England and was to be published. The manuscript in question is shown herein to have been misattributed. It is, in fact, the work of Charles Baron Clarke (1832–1906), who entitled it as a "Cauda" (a "tail" or continuation) to Lowe's Madeiran flora, which he wrote while he was a post-retirement volunteer in the herbarium of the Royal Botanic Gardens, Kew. Unfortunately, Clarke died unexpectedly when on the verge of publishing it. Over the years since 1906, when the manuscript was apparently left in the director's office at Kew, the main text has been transmitted from place to place by botanists of several institutions without official records being kept of any intermediate custodians. It remained in the Kew Director's office in 1917, but by 1967 its current ownership by the Herbarium Archives in the University of Cambridge seems to have been established. However, the title-page and a very brief note remain with Clarke's own annotated copy of *A Manual Flora of Madeira*, still kept in the library at Kew. Relevant documentation being unavailable, it has not

been possible to ascertain how the manuscript came to be translocated from Kew to Cambridge at some time between 1917 and the 1960s, neither how its title-page became separated from the main text in the process, thus causing the long-time confusion surrounding its identity and provenance. No other material by Clarke exists in botanical manuscript collections in Cambridge libraries, although much, mainly about India, remains at Kew.

Introduction

The life of the naturalist Rev. Richard Thomas Lowe (1802–1874, Fig. 1) involved much professional conflict, largely due to his somewhat combative and strongly-opinionated character (Nash 1990). During his incumbency as chaplain of the English Church in Madeira during 1833–1848, and also up to 1852, when he returned to England, he gained notoriety as a vociferous supporter of Tractarianism and for espousing the elaborate form of Christian church-service practised by the Oxford Movement. He was thus primarily responsible for the prolonged and bitter schism within the Established Church in Madeira (Newell 1931). The controversy caused by his High-Church ceremonies involved the highest levels of British society. Lowe did not shrink from arguing his case with eminent bishops; the Foreign Secretary, Lord Palmerston; the leader of the opposition Tories, Benjamin Disraeli; the Queen Dowager Adelaide; and even Queen Victoria herself. However, in 1852 he was finally compelled to return to England where, under the grudging patronage of his wife's cousin, Sir Charles Anderson, he was

Norfolk House, Western Road, Tring,
Hertfordshire, HP23 4BN, United Kingdom.
Email: raybw66@gmail.com [RBW]

Department of Life Sciences, The Natural History Museum, Cromwell Road, London, SW7 5BD, United Kingdom [MAC]

Director Emeritus, Cátedra de la UNESCO,
Jardín Botánico "Viera y Clavijo", Camino del
Palmeral 15, Tafira Alta, 35017 Las Palmas de
Gran Canaria, Spain [DB]

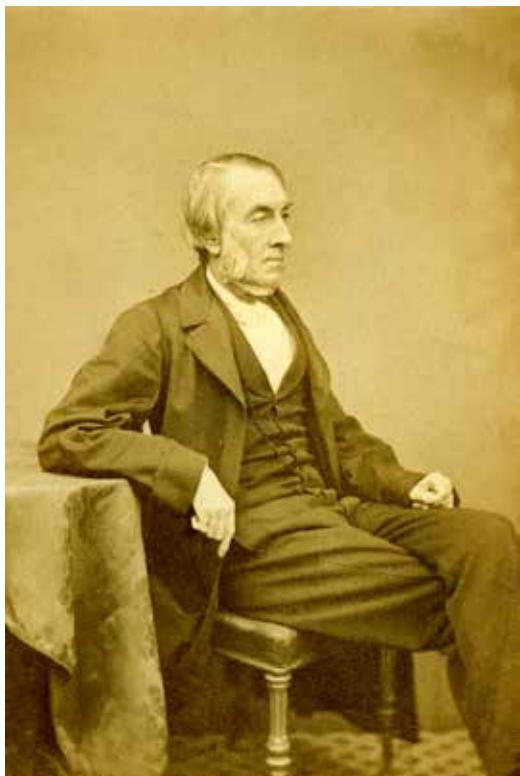


Figure 1. Richard Thomas Lowe (1802–1874). Authenticated photograph confirming his embarkation on the steamship *Liberia*. On the reverse is written, ‘This is the Photograph marked [“A”] referred to in the affidavit of James [Br]uce McAlister sworn before me this 28th day of November 1874’ and ‘This is the Photograph marked “A” referred to in the affidavit of [R]obert Bayman sworn before me this 30th day of November 1874’, both signed by commissioners (The National Archives, Kew, ref. J121/2416). Reproduced by kind permission.

granted the benefice of the parish of Lea, near Gainsborough, in Lincolnshire (Nash 1990).

Remarkably, despite this prolonged professional turmoil, Lowe nevertheless managed to establish himself as the undisputed expert on the botany, terrestrial conchology and marine ichthyology of the Madeiran archipelago. As early as 1826, when he first visited Madeira, returning with his mother in 1828 ostensibly to benefit her

health, he recognized the potential for the fruitful botanical and zoological studies of Macaronesia that he was to pursue throughout the remainder of his life (Nash 1990). On his return to England as the incumbent of Lea, he began writing what is generally regarded as the most important of his publications, *A Manual Flora of Madeira and the Adjacent Islands of Porto Santo and the Desertas* (Lowe 1868 [1857–1872]). Preceded by a preliminary catalogue of previously undescribed Madeiran plants (Lowe 1856), the first volume was published in five parts between 1857 and 1868, and the first part of a second volume was published in 1872 (Williams 2017).

After settling at Lea, Lowe and his wife, Catharine Maria, made repeated visits to Madeira and the Cape Verde and Canary Islands to gather further information for various projected publications on the Macaronesian biota, though the Madeiran flora took priority. Unfortunately, this seminal work (referred to hereinafter as *The Flora*) was never to be completed. On 11 April 1874 came the fateful beginning of the Lowes’ last voyage when they left Liverpool in tempestuous weather on the British and African Steamship Company’s vessel *Liberia*, bound for West Africa via Madeira. Sometime later she apparently foundered somewhere between the Isles of Scilly and the Bay of Biscay; no trace of her was discovered beyond some floating wreckage and cargo, retrieved by her sister-ship the *Volta* when returning to Liverpool from West Africa (Fig. 2).

The unsold stock of the parts of *The Flora* that had been printed up to then was acquired the year after Lowe’s death by the London bookseller Bernard Quaritch (Williams 2018). At this point began the long-time mystery of Lowe’s supposed manuscript of the final part(s) of this work, which apparently was known, or at least assumed, by his peers to have existed; it was not included in the auction-sale of

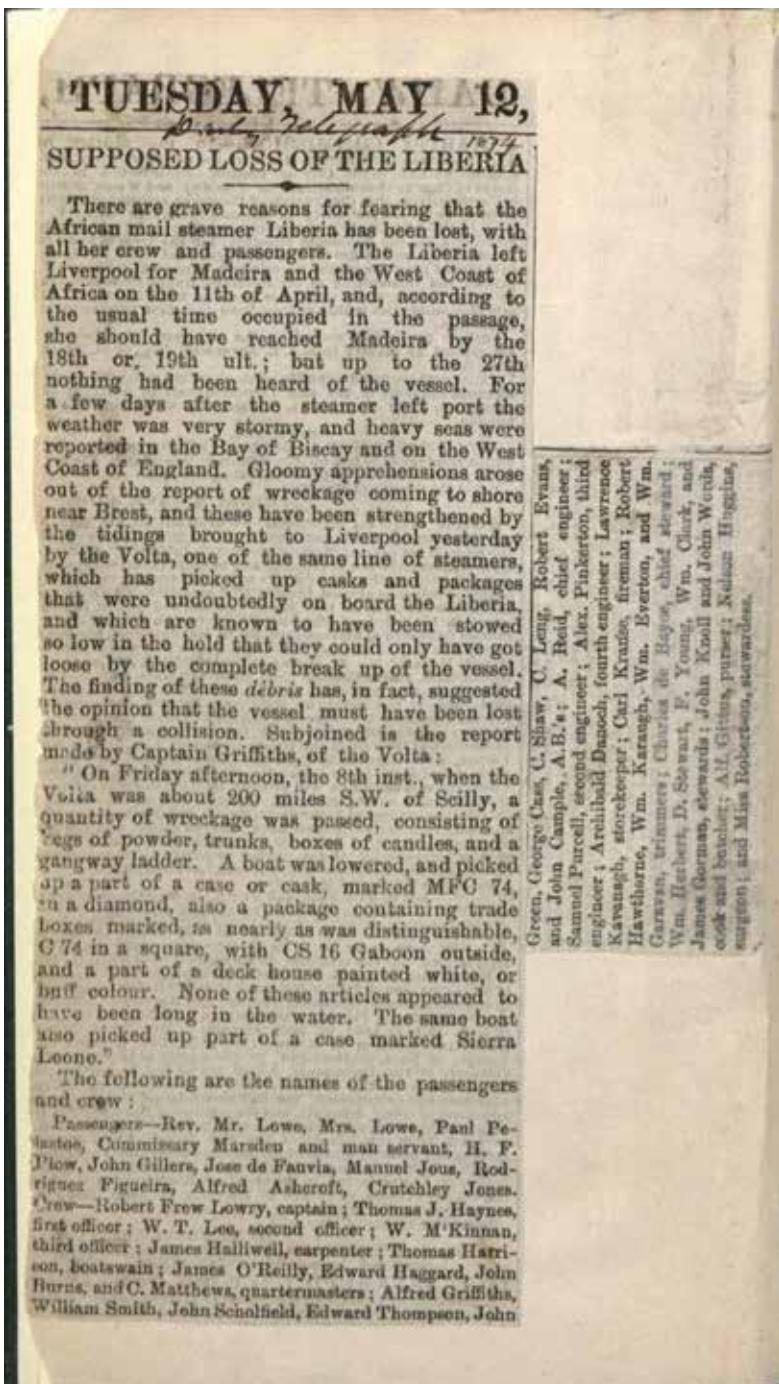


Figure 2. Newspaper cutting from the *Daily Telegraph* of 12 May 1874, describing the fate of the steamship *Liberia*; pasted inside Lowe's *A Manual Flora of Madeira* (original size, 18.8×11.2 cm, Royal Botanic Gardens, Kew, library copy no. 2). Reproduced with kind permission of the Board of Trustees of the Royal Botanic Gardens, Kew.

his remaining stock. We review here the confusing circumstances surrounding its fate and describe our search for it.

It is now confirmed that Lowe's alleged manuscript is in fact no longer extant and what at one time was thought to be this elusive document is actually the work of another botanist, Charles Baron Clarke (1832–1906). The three present authors have independently contributed in various ways to the research on its identification and history as follows:

1. Professor Raymond B. Williams (RBW)—historical, biographical and bibliographical research at the University of Cambridge in the University Library, the Cambridge Philosophical Society, the Department of Plant Sciences (previously the School of Botany), the Cory Library, and the Herbarium Archives (see also Williams 2019); the Royal Botanic Gardens, Kew; the Natural History Museum, London; the Linnean Society of London; Oliver & Boyd's (publishers) archive, the National Library of Scotland; the National Archives, Kew; and the Natural History Museum of Denmark. Examination and transcription of Lowe's will.
2. Dr. Mark A. Carine (MAC)—Principal Curator-in-Charge, Algae, Fungi and Plants Division, Natural History Museum, London, where the Clarke manuscript is currently on long-term loan from the University of Cambridge Herbarium Archives.
3. Professor David Bramwell (DB)—personal reminiscences, beginning in 1973, of the translocation of Clarke's manuscript from the Cambridge School of Botany, via the Jardín Botánico “Viera y Clavijo”, Las Palmas de Gran Canaria, Spain, to the Natural History Museum, London.

Previous references to Lowe's alleged manuscript

There can be no reasonable doubt that at the time of his death Lowe was approaching completion of *The Flora* and that a manuscript of the remaining text, even if still not quite finished, must have existed. Although Lowe bequeathed “the whole of my estate real and personal—my Plate, Furniture, Pictures, Collections in Natural History, Books, MSS and all that I possess” to his wife and executrix, Catharine Maria Lowe, who died with him, there is no specific mention of a manuscript of *The Flora* in his will (RBW). The only surviving executor was his friend Thomas Vernon Wollaston (1822–1878), who was granted administration of the will, proved at the Principal Registry in London (folio 185) on 18 December 1874. Apart from five suggestive information sources, none of which is decisive, we have hitherto been unable to trace any further documented information about Lowe's alleged manuscript to complete *The Flora*. The context and significance of each source is examined below.

Source 1

Following Lowe's death, the first reference to a manuscript appears to be in a letter of 12 February 1875 from Michael Comport Grabham (1840–1935), a physician practising in Madeira (see Johnson 1885, p. xxiv), to Sir Joseph Dalton Hooker (1817–1911), who was then director of the Royal Botanic Gardens, Kew (RBW). Grabham wrote, “The manuscript of the unfinished portion of the Manual Flora of Madeira has I fear been lost at sea with the unfortunate Author, the Rev. R. T. Lowe.” (Royal Botanic Gardens, Kew, Archives, Directors' Correspondence, ref. KADC6267, folio 48).

Source 2

Grabham's apparently reasonable speculation seems to have been accepted for a century until Alfred Hansen (1925–2008) stated, "It is said that the part lacking of Lowe's flora-manuscript, which was known to exist but supposed to have been lost in the shipwreck, was discovered a few years ago in an English university library, and measures have been taken in order to get it printed and published, if possible" (Hansen 1974, p. 34). Although Hansen did not provide the source of this information, his guarded use of the words "it is said" strongly suggests that he had not himself seen the manuscript. Unfortunately, following a major reorganization, after Hansen's death, of the Copenhagen Natural History Museum (now the Natural History Museum of Denmark), it is not possible to establish Hansen's own evidence for his source because his papers there are no longer accessible (pers. comm., Professor Ib Friis, Natural History Museum of Denmark, to RBW, 5 June 2015). However, we have now unequivocally established Hansen's source (DB).

Source 3

Stafleu and Cowan (1976–1988, 3:178, item 5049) uncritically repeated Hansen's (1974) assertion without providing any further information.

Source 4

Bridson et al. (1980, p. 39), in their *Natural History Manuscript Resources in the British Isles*, included an intriguing manuscript given as "69.12 LOWE, Richard T. Flora of Madeira", purportedly then held in the Botany School, University of Cambridge. An initial interpretation was that it might represent one of

Lowe's manuscripts stated to have disappeared from the University of Cambridge Botany School in the 1970s (Nash 1990, p. 183), in which case it could possibly have been the alleged manuscript referred to by Hansen (1974, p. 34). However, it is now certain that it refers to a manuscript by Charles Morgan Lemann (1806–1852) that was transferred from the Botany School to Cambridge University Library in 1977 (Williams 2019).

Source 5

Nash (1990, p. 183) stated that "Lowe's manuscript notes for the remaining parts were believed to have been kept for many years at the library of the Botany School in Cambridge but, tragically, they disappeared without trace about twenty years ago and repeated searches have failed to locate them". This seems to have been an allusion to the early 1970s, perhaps at the time when Bridson et al. (1980) were gathering information for their book on natural history manuscript resources. Nash attributed this information to Marian Short, formerly of the Natural History Museum in London, where she co-authored *The Flora of Madeira* (Press et al. 1994), but there is no evidence that Lowe's manuscript notes ever existed in Cambridge (Williams 2019), so that statement appears to have been somewhat speculative.

Paths of investigation

The foregoing five inconclusive sources raise the obvious question of whether the alleged manuscript was, in fact, taken by Lowe on his last voyage or whether, after all, it had remained in the rectory at Lea, perhaps later having been deposited at Cambridge. Wollaston, Lowe's executor and life-long friend, found the rectory to be "packed with Lowe's collections, and notes and fragments

of scientific manuscripts much of which have since gone missing or been destroyed" (Nash 1990, p. 183). Once more, this information was attributed by Nash to Marian Short.

However, definitive evidence for Wollaston's actions as executor for Lowe has now been discovered in the archives of the Natural History Museum, London (Z MSS LOW). On 29 November 1881 the assistant director of the Royal Botanic Gardens, Kew, William Turner Thiselton Dyer (1843–1928), wrote to his colleague Albert Karl Ludwig Gotthilf Günther (1830–1914), keeper of zoology at the British Museum (Natural History), as follows:

We have now gone through all his [i.e., Lowe's] papers and I send you all that relate to Zoology. This is a job which ought to have been done long ago but nothing is so disagreeable as looking over a dead man's papers. However, it is done now and all his botanical correspondence and memoranda which are worth preserving will be bound in an accessible form. Mr Wollaston in sending all the papers to Kew gave Aug^t. 15. 74 full power to us to do what we liked with them. He shrank from destroying them....

Again according to Nash (1990, p. 172), Lowe had requested his wife, Catharine Maria, to destroy "all my sermons and private papers", and "Wollaston personally supervised the destruction". It is nevertheless now apparent from Dyer's letter that Wollaston must have destroyed only papers of professional and religious relevance, and the significant scientific manuscripts survived. Certainly, given Lowe's commitment to research on the Madeiran flora, it would be surprising if he had intended his precious remaining manuscript to be destroyed. Moreover, if *The Flora* manuscript had been left at the Lea rectory, Wollaston would presumably have ensured that it was included among the papers that he sent to Kew, but clearly it was not.

The fact that it cannot now be found in the most likely places strongly suggests that Lowe

indeed took this vital manuscript with him on his final voyage and left no copy behind in Lea rectory. Nevertheless, Hansen's (1974) allegation could not be ignored, and it seemed that a renewed search for the manuscript should be undertaken to establish, if possible, whether it still existed or not; it is not mentioned in Lowe's will (RBW). The search was therefore concentrated on: (1) Lowe's *alma mater*, the University of Cambridge; (2) the Royal Botanic Gardens, Kew, where most of Lowe's herbarium material was deposited; (3) the British Museum, now the Natural History Museum (London), which received the bulk of Lowe's shell collection and his remaining plants (Nash 1990, p. 183); (4) the Linnean Society of London, in the journals of which Lowe had published some of his work; (5) the National Library of Scotland, where the archive of Oliver & Boyd (successors to Lowe's publisher, John Van Voorst) is held; and (6) the United Kingdom's National Archives at Kew (a different institution from the Royal Botanic Gardens). The results of enquiries and research carried out at these institutions (RBW) are presented hereunder.

Institutional searches

University of Cambridge

In view of Hansen's (1974) mention of Lowe's manuscript in "an English university library" and the stated location of item no. 69.12, purportedly by Lowe, given by Bridson et al. (1980), searches at the University of Cambridge seemed to promise the best hope of finding it, despite Nash's (1990, p. 183) discouraging statement. Renewed enquiries were made at the library of the present Department of Plant Sciences (previously the School of Botany), but no manuscript on the Madeiran flora by Lowe was traceable

(pers. comm., Christine M. Alexander, Department of Plant Sciences, University of Cambridge, to RBW, 5 June 2015). Neither is Lowe's manuscript held in the University of Cambridge Herbarium Archives or in the Cory Library, both of them in the Botanic Gardens (pers. comm., Christine Bartram, The Herbarium, University of Cambridge, to RBW, 8 June 2015); nor in the library of the Cambridge Philosophical Society, now lodged with the Whipple Library, Department of History and Philosophy of Science (pers. comm., Dawn Kingham, Whipple Library, University of Cambridge, to RBW, 10 January 2018). These findings led to the elimination of manuscript no. 69.12 of Bridson et al. (1980) for the following reasons.

The Department of Plant Sciences library possesses a typed "LIST OF CONTENTS OF HERBARIUM ARCHIVES" (Fig. 3), which comprises sixteen numbered and seven unnumbered packages, some of which were dispersed during the late 1970s (pers. comm., Christine M. Alexander, Department of Plant Sciences, University of Cambridge, to RBW, 20 July 2015). This list is signed off "S.M.W. [i.e., Stuart Max Walters], September 1967"; the subsequent translocations of the component items have been documented by Williams (2019).

It may be inferred, comparing this list with the listing by Bridson et al. (1980), that packages 1–7, 9, 11 and 12 were still present in the Botany School when they carried out their survey. However, packages 8, 10 and 13–16 had presumably already been transferred to various departments of Cambridge University Library or elsewhere, in some cases apparently contrary to what is shown on the Herbarium Archives list. Crucially, package 12 was transferred on 5 August 1977 to Cambridge University Library and is now catalogued under Western Manuscripts as MS Add.8183 (pers. comm., Frank Bowles, Cambridge University Library, to RBW, 9 June 2015).

Package 12 is not a single manuscript written by Lowe himself but is a bound collection of items bearing the actual title "Letters from R. T. Lowe & H. C. Watson about the flora of Madeira ex libris H. Gilbert-Carter June 1969" (RBW). One of the included manuscripts is the 20-page list of "Madeira indigenous & naturalized Plants" that is currently catalogued as "in Lowe's hand" (MS Add.8183/3), but comparing it with letters written by Lowe (MS Add.8183/1 and MS Add.8183/2), it was obviously written by another, who proved to be Charles Morgan Lemann (see later).

The description of manuscript no. 69.12 of Bridson et al. (1980) as: "LOWE, Richard T. Flora of Madeira", is very similar to that of package 12 of the aforementioned Herbarium Archives list; they and MS Add.8183 of Cambridge University Library can be shown objectively to be the same entity. Since the Herbarium Archives list was signed by Walters in September 1967 (see Fig. 3), and he had already misattributed a manuscript on the Madeiran flora by C. B. Clarke to Lowe in August 1967 (see later discussion of T. G. Tutin), it may be assumed that manuscript 69.12 is the same item as that identified both as the Herbarium package 12 and MS Add.8183/3. Since that had been transferred to Cambridge University Library in 1977, it is probably one of the several manuscripts alleged by Nash (1990) to have "disappeared" from the Botany School. This item, with three synonymous identifiers, is definitely not, therefore, Lowe's final manuscript of *The Flora*.

Allen (1979) had also examined the Herbarium Archives list but made no mention of any other possibly relevant item in his note about the transfer of the herbarium's archival material to Cambridge University Library. Interestingly, during the present searches, a total of three manuscripts relevant to the Madeira flora, but by authors other than Lowe, were discovered to be, or previously to have been,

LIST OF CONTENTS
OF HERBARIUM ARCHIVES.

1. Correspondence of Mrs Merryfield M.S. List of Australian and North American Algae by Mrs Merryfield.
 2. Lindley's notes on Quercus.
 3. Babington's notes on Rubi.
 4. Babington's Correspondence (Botanical.)
 5. Babington's Herbarium Correspondence.
(D.E. Allen) ^{NR NOT FROM ALLEN - IT IS} *T.K. EAGLE* ^{DE} *Allen*
 6. Letters to the Rev. E.N. Bloomfield. *openly* ^{anewdment}
 7. Letters to W. Borrer.
 8. Herbarium Appeal 1913.
 9. [?] Henslow: Notes for Lectures and Botanical Correspondence.
(Here Syllabus of lectures on botany 24) n/03
 10. Catalogue of the Genevier Herbarium.
 11. Bunbury: Notes and Books on Herbarium.
 12. Lowe: M.S. Flora of Madeira.
 13. Bunhill: Herbarium Notes.
 14. Botanical Letters and Botanical Autographs.
 15. Lecture Syllabus Hebden 1747.
Seward 1922.
 16. Nicholson Correspondence & MS account of visit to Crete September 1967.
- Packages 1,2,3,4,10,11,13,16.
Retained for the Herbarium.
- Packages 8,15. (also names of men who attended Bot. Lectures)
On Perm. Loan to Keeper,
University Archives.
- Packages 5,6,7,9,14,12. (also 2+3 Darwin/Babington letters)
On Perm. Loan to the Keeper,
Western Manuscripts, U.L.
Plus 1 vol. Henslow Letters,
(bound); Adamson Manuscript;
Seward Notes on Fossil Plants;
Letters from Scott to Seward;
Francis Darwin MS Material,
(Package).
- S.M.W,

Figure 3. List of contents of Cambridge University Herbarium Archives in 1967; originally in the Cambridge University Botany School. Reproduced courtesy of the Department of Plant Sciences, University of Cambridge, with kind permission of Martin Walters, trustee of the estate of the late S. Max Walters.

associated with the Cambridge Herbarium Archives (RBW). Further details are provided in Appendix 1 and by Williams (2019).

Royal Botanic Gardens, Kew

No manuscripts in Lowe's hand directly relevant to *The Flora* appear to be held at Kew (pers. comm., Craig Brough, Royal Botanic Gardens, Kew, to RBW, 17 June 2015). Following the discovery of Thiselton Dyer's letter to Albert Günther, a further search was made of Lowe's manuscript materials mentioned by Dyer, but nothing relevant was discovered (pers. comm., Katherine Harrington, Royal Botanic Gardens, Kew, to RBW, 13 March 2018).

Nevertheless, in the archives there are, in the "Plant determination lists", records of a donation of "A quantity of Mogadore plants (Rev. Mr Lowe)" received in 1859 (volume 1, folio 528); and herbarium specimens received in April 1875 (volume 12, folios 71–97, 101), presumably sent by T. V. Wollaston as directed by Lowe's will (RBW). Lowe briefly alluded to his 1859 visit to Mogador in *The Flora* (Lowe 1868 [1857–1872], 1(4):443), but he had already published detailed observations on the Mogador plants soon after he collected them (Lowe 1861a).

Natural History Museum, London

The Natural History Museum possesses a microfilm of MS Add.8183 held by Cambridge University Library (pers. comm., Andrea Hart, The Natural History Museum, to RBW, 10 June 2015). However, no original manuscript by Lowe relevant to *The Flora* is held.

Linnean Society of London

Although Lowe published some papers in journals of the Linnean Society (e.g., Lowe

1833, 1861a, 1861b), he was never elected a fellow (pers. comm., Lynda Brooks, The Linnean Society of London, to RBW, 25 June 2015). The Linnean Society holds no manuscripts by Lowe.

National Library of Scotland

The Flora was published by John Van Voorst, whose firm was succeeded successively by Gurney & Jackson and Oliver & Boyd (Williams 2004). Hence, enquiries were made at the National Library of Scotland, where the archive of Oliver & Boyd is held. Although no record of any manuscript by Lowe was found, copies of letters to the botanist C. B. Clarke, who in 1906 proposed publishing a continuation or "Cauda" of *The Flora*, were discovered (pers. comm., Sally Harrower, National Library of Scotland, to RBW, 4 August 2015). Those letters proved to constitute crucial definitive evidence for the identity of the manuscript by Clarke that is now known to be that referred to by Hansen (1974).

National Archives, Kew

The only relevant documents held in the United Kingdom's National Archives are those associated with the granting of probate for Lowe's will (J121/2416), which mentions nothing relating to *The Flora* (RBW).

The true author of Hansen's "Lowe manuscript"

Besides the three manuscripts on Madeiran plants by authors other than Lowe, all discovered at Cambridge (Appendix 1), a fourth relevant manuscript is currently on loan from the University of Cambridge Herbarium Archives to the Natural History Museum, London. It has, since 1917, been transmitted

among botanists at Kew, Cambridge, Gran Canaria and London. This last manuscript has now been shown beyond doubt to be Hansen's alleged "Lowe manuscript", in fact completed in 1906 by C. B. Clarke (see Appendix 2 for biographical details), with the intention of finalizing Lowe's Madeiran flora. He described it as a "Cauda" (= tail, i.e., a continuation) to *The Flora*. Its provenance and history is extremely complex, the evidence for which has been constructed from the combined individual researches and personal reminiscences of the present authors.

The early history, after 1906–1917, of Clarke's "Cauda" manuscript remains obscure, but its precise more recent history may be traced from August 1967, when it was held apparently by the School of Botany, University of Cambridge. It is important to realize that this manuscript then bore no indication of its author because it had long before become separated from its draft title-page, which still remains at the Royal Botanic Gardens, Kew, inserted in Clarke's own copy of *The Flora*. Only by chance, since 1974, has the association of those elements of the document been recognized. Together with the manuscript is a handwritten note on headed paper of the Cambridge Botany School, which reads, "Lowe: MS. Flora of Madeira returned by Prof. T. G. Tutin from 'extended loan' (!) 8.1967" (Fig. 4). Thomas Gaskell Tutin (1908–1987), then professor of botany at the University of Leicester, was an undergraduate and a pupil of Humphrey Gilbert-Carter (1884–1969) from 1927 to 1930 at the University of Cambridge and had made an expedition to Madeira and the Azores in 1929 (see Bradshaw 1992).

Presumably the misconception that the manuscript is by Lowe originated from this anonymous Botany School note. The handwriting is actually that of Stuart Max Walters (1920–2005; pers. comm., Professor Peter J. Grubb, University of Cambridge, to

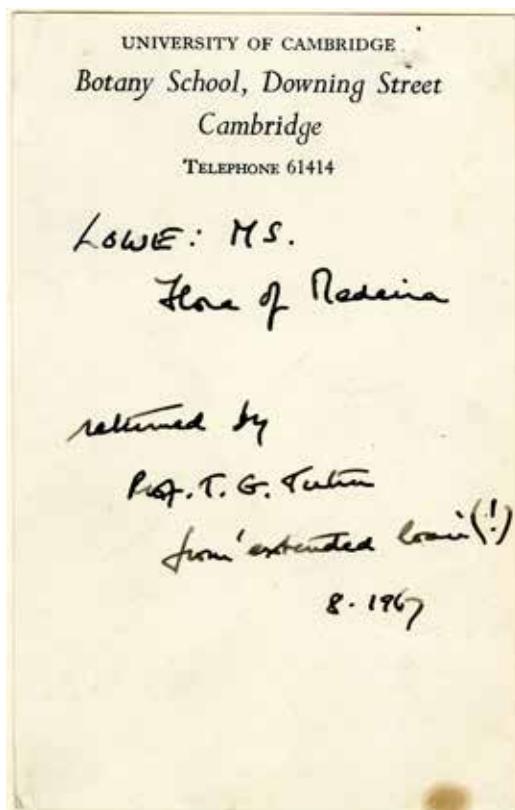


Figure 4. Note (in handwriting of S. M. Walters) associated with C. B. Clarke's "Cauda" manuscript (Cambridge Herbarium Archives, ref. NHM/0112 loan). Reproduced courtesy of the Department of Plant Sciences, University of Cambridge, with kind permission of Martin Walters, trustee of the estate of the late S. Max Walters.

RBW, 15 January 2018). Further confusion arose from the description of this manuscript as "Lowe: MS. Flora of Madeira", associated as previously shown in common with package 12 of the Herbarium Archives list, MS Add.8183 of Cambridge University Library, and manuscript 69.12 of Bridson et al. (1980). It should be noted that Walters dated the Herbarium Archives list the month following his note of Tutin's returning of the manuscript, which, however, is not included in the list (see Fig. 3 and Williams 2019).

The crucial fact to establish is that Clarke's "Cauda" is truly the manuscript believed by Hansen to be Lowe's own completion of *The Flora*. Fortunately, unequivocal contemporary evidence is available, since one of us (DB) is in the unique position of being able to account, from first-hand experience, for its whereabouts at various times since 1967. David Bramwell's personal reminiscences, which now follow, are corroborated by the letters from Oliver & Boyd to Clarke, held by the National Library of Scotland.

At some time in 1973, Tutin informed Bramwell of the existence of Clarke's manuscript, which, when he returned it to the Cambridge Botany School in 1967, he believed to be by Lowe—it did not then have any indication of authorship associated with it. Bramwell in turn informed Walters, then director of the Cambridge Botanic Garden (see Sell 2007), and Walters immediately arranged for the manuscript to be lent to Bramwell and David Moresby Moore (1933–2013) for their work on a proposed Flora of Macaronesia Project (see Bramwell 1972; Bramwell and Moore 1973).

Because in 1973 Tutin, Walters, Bramwell and Moore believed that Lowe's missing manuscript had at last been found, Bramwell informed Hansen of the discovery of the "Cauda" and of an intention to publish it. Very soon afterwards, however, Bramwell compared the handwriting of the "Cauda" with an authenticated letter from Lowe and realized the error in attribution. Unfortunately, Bramwell was not able to update Hansen in time to prevent publication of the misattribution in Hansen (1974), and neither he nor anybody else has since published a correction.

Early in 1974 Tutin, Moore and Bramwell had, after due consideration, jointly decided not to publish Clarke's "Cauda"; the lack of funding for the "Flora of Macaronesia" project (which even now has yet to be realized) and

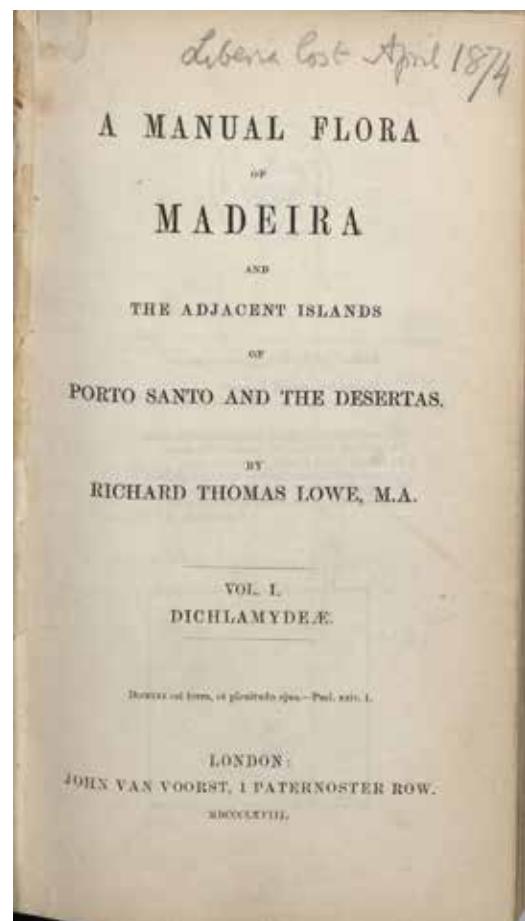


Figure 5. The annotated title-page of Lowe's *A Manual Flora of Madeira* (original size, 18.8 × 11.2 cm, Royal Botanic Gardens, Kew, library copy no. 1). Reproduced with kind permission of the Board of Trustees of the Royal Botanic Gardens, Kew.

other higher priorities strongly influenced their decision. In August 1974 Bramwell was appointed to the post of director of the Jardín Botánico "Viera y Clavijo" in Gran Canaria, but just before he permanently departed the United Kingdom, he discovered Clarke's copy of Lowe's *The Flora* at Kew. This copy (Kew Library's copy no. 1) may be identified by the pencilled annotation, "Liberia lost April 1874", on the title-page (Fig. 5). The book is heavily annotated, and pasted in at

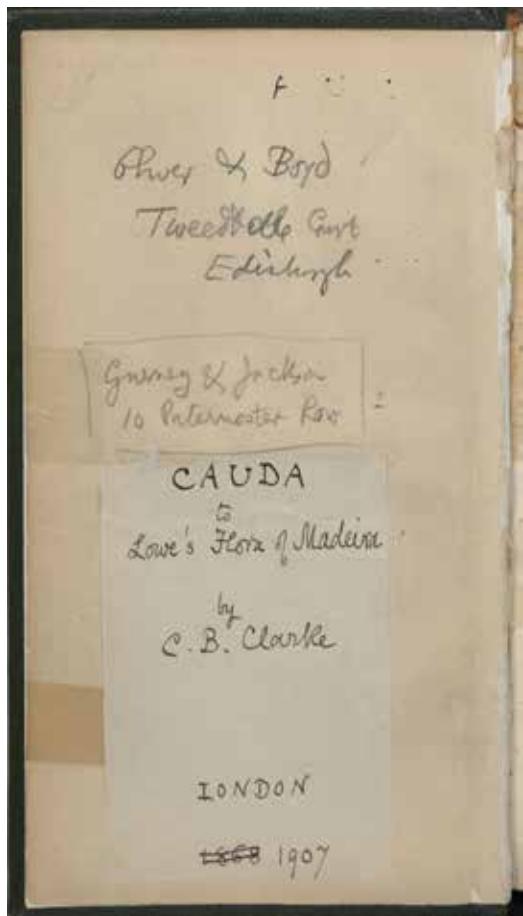


Figure 6. The proposed title-page of C. B. Clarke's "Cauda" manuscript, pasted inside his copy of Lowe's *A Manual Flora of Madeira* (Royal Botanic Gardens, Kew, library copy no. 1). Reproduced with kind permission of the Board of Trustees of the Royal Botanic Gardens, Kew.

the front is a manuscript title-page in ink to Clarke's "Cauda" (Fig. 6). At that time there was also a loose slip of brief notes about the proposed printing and pagination of the "Cauda" inserted at the title-page. Bramwell, recognizing that the annotations in this book are in the same hand as that of the anonymous Cambridge manuscript, had a photocopy made of Clarke's "Cauda" title-page and the note on printing and kept it with the original

manuscript, which he took with him to Gran Canaria. By 2015 the note on printing had been accidentally transferred to Kew Library's copy no. 2 of *The Flora* (RBW), but its original presence in copy no. 1 is proved by its partially masking the title-page annotation about the loss of the *Liberia* on the photocopy made by Bramwell (Fig. 7). An explanation of the annotations in Clarke's copy of *The Flora* is provided in Appendix 3 of this paper.

Following Bramwell's move to Gran Canaria, he encountered Walters at the first Kew Conservation Conference in 1975 and reminded him of the "Cauda". Walters suggested to Bramwell that he "should hold on to it as long as he needed to, as it would only be gathering dust at Cambridge"; the manuscript was then laid aside for some years. Eventually, however, in about 1991, having become aware that John Robert Press (former associate keeper of botany at the Natural History Museum, London) was collecting materials for publication of *The Flora of Madeira* (Press et al. 1994), Bramwell sent him the "Cauda" to help in its preparation, also suggesting that its ownership by the Cambridge Botany School be formally recognized and that a loan be agreed. When Press retired from the Natural History Museum in 2011, M. A. Carine took over responsibility for Clarke's "Cauda". At that time, the manuscript, which was not included in the 1967 "List of contents of Herbarium Archives" (see Fig. 3) and had not been in Cambridge since 1973, had still not been catalogued in the Herbarium Archives of the University of Cambridge Botanic Garden, so the then current curator was apparently still unaware of its existence. Hence, in 2012, Carine informed the curator that the manuscript was then in the care of the Natural History Museum, and consequently a long-term loan was formalized by the University of Cambridge Herbarium Archives (reference NHM/0112). Nevertheless, it still does not

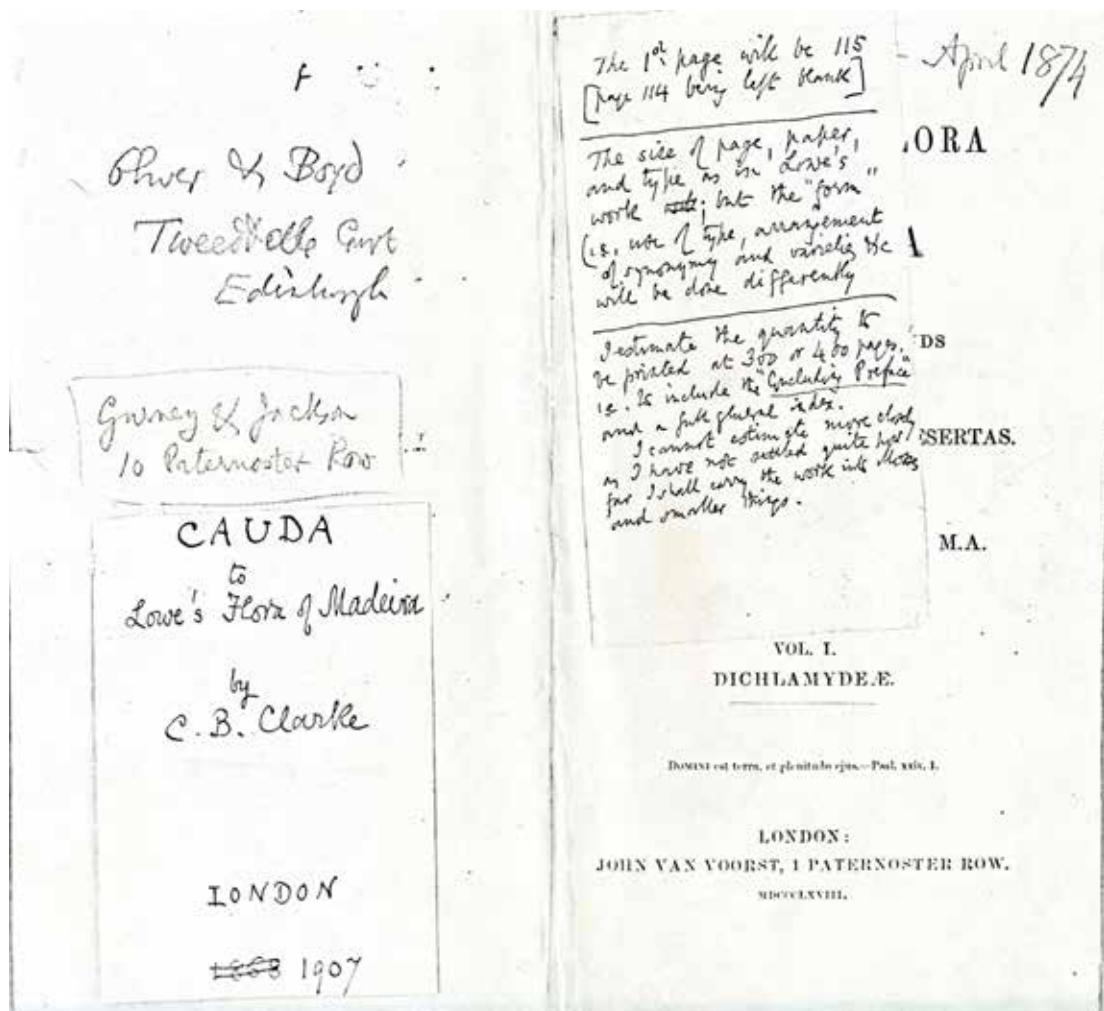


Figure 7. Scan of D. Bramwell's 1974 photocopy of the proposed title-page of C. B. Clarke's "Cauda" manuscript, pasted inside Clarke's copy of Lowe's *A Manual Flora of Madeira* (Royal Botanic Gardens, Kew, library copy no. 1). Also in this volume, when this photocopy was made, was the loose slip of notes on proposed printing, partially masking the title-page annotation shown in Figure 5. Reproduced by kind permission of the Department of Plant Sciences, University of Cambridge.

appear in the unpublished current listing (Bartram's list) of the Cambridge University Herbarium Archives (see Williams 2019).

Provenance of the Clarke manuscript

As explained above, although originally left after Clarke's death in 1906 at the Royal Botanic Gardens, Kew, this manuscript has

somewhat become part of the Herbarium Archives, Botanic Garden, University of Cambridge, and is currently on long-term loan to the Natural History Museum (London). Now associated with it is a photocopy of the manuscript title-page, reading "CAUDA | to | Lowe's Flora of Madeira | by | C. B. Clarke | LONDON | ~~1868~~ 1907" and Clarke's separate note about the proposed printing

and pagination (see Fig. 7). The original manuscript title-page and associated note became separated from the manuscript at some time after 1917; they were discovered in 1974 in the library of the Royal Botanic Gardens, Kew (DB), and independently identified there in 2015 (RBW). The brief title-page is pasted onto the front free end-paper, which also bears pencilled notes on potential publishers, of Kew Library's copy no. 1 of Lowe's *The Flora*. The printing notes are on a separate slip of paper, found in 2015 to be loosely inserted into copy no. 2. They must have been separated from the original manuscript well before 1967, or Tutin and others would have immediately recognized its authorship.

After comparison with authentic letters written by Clarke, held by the Natural History Museum, there is no doubt that the Cambridge manuscript, the draft title-page and printing note in Kew's two copies of Lowe's book, and the annotations in Kew Library's copy no. 1 are all in Clarke's hand (see Appendix 3). All must at some time have been kept together, but it is not known how and when the manuscript text originally came into the possession of the Cambridge Herbarium Archives, nor why the draft title-page and other notes still remain at the Royal Botanic Gardens, Kew. According to Bridson et al. (1980), Clarke's "Cauda" was not then present, or at least not recognized as such, at Kew or in any library of the University of Cambridge.

Clarke's proposed "Cauda"

When Clarke died in 1906, he was on the verge of publishing the "Cauda". According to an obituary by Jackson (1907), "His completion of the Rev. R. T. Lowe's 'Flora of Madeira' is practically ready for the press; at the time of his death he was getting together materials for a life of the author". Those biographical materials have not yet been traced. Copies

of letters to Clarke from Messrs Oliver & Boyd (long since absorbed by the Longman publishing group and then Pearson UK), who took over Messrs Gurney & Jackson, the successors of John Van Voorst (Williams 2004) exist in Oliver & Boyd's archive in the National Library of Scotland. A crucial letter (Acc.5000/151), dated 15 May [1906], is a reply to Clarke regarding his proposal to publish his "Cauda". A *verbatim* extract states:

15th May [1906]
C. B. Clark [*sic*], Esq.,
15 Kew Gardens [Road],
KEW

On referring to the late Mr Van Voorst's Books we find that Lowe's "Flora of Madeira" was sold by him on Commission for the Author. It was commenced in 1857, and published down to 1874, and after the Author's death the stock would appear to have been sold off—we think by auction—a pencil note saying "sold to Sotheby & Wilkinson for the Executors" since that date there is no trace of the Work in Van Voorst's Books.

The sale was very limited, and we should say the publication would result in considerable loss to the Author. If your Work is intended as a continuation of Lowe's and not complete as an independent "Flora of Madeira" for separate sale, we are afraid that the sale would be limited, though doubtless a number of the larger Libraries would readily purchase Copies to complete their Sets.

We note you purpose placing the Printing with Messrs Taylor & Francis—we would say that we are Printers doing a large amount of high class Book Work, and we should be pleased to give you an Estimate for the Printing, which we think you would find to compare favourably.

You do not mention any terms of Publication, but we presume your intention is to produce it at your own expense and risk, and to publish it under the Firm Name of Gurney & Jackson. To this we are agreeable, and we would do all that we could to promote the sale of the Work.

Oliver & Boyd's agreement to publish the "Cauda" quickly followed with their terms of publication (Acc.5000/151):

18th May [1906]
 C. B. Clarke, Esq.,
 15 Kew Gardens [Road],
 KEW

We have your letter of 17th inst., in reference to the Printing etc., of your "Cauda" to Lowe's Flora of Madeira, and note what you say thereon.

We shall be very pleased to publish this under the Firm Name of Gurney & Jackson, London, when ready, on a Commission of 15% out of which we would allow the usual trade discounts, and take all risk of bad debts. Special discounts to Wholesale Export Houses would be debited to you. Sales to be accounted for Annually in June each year.

Unfortunately, Clarke's initial letters to Oliver & Boyd do not survive because there is a lacuna in the collection of incoming correspondence covering 1883–1918 in their archive (pers. comm., Sally Harrower, National Library of Scotland, to RBW, 4 August 2015). Oliver & Boyd's letters, together with Clarke's own notes in Kew's copy no. 1 of *The Flora*, indicate that he wished to reproduce faithfully the general appearance of Lowe's original work by publishing under the imprint of Gurney & Jackson, the successors to John Van Voorst, who was Lowe's original publisher, and even by using the same printers, Taylor & Francis. Clarke was quite probably aware that Gurney & Jackson still styled themselves as "Mr Van Voorst's successors" at least as late as 1904 (see Williams 2004), which is why he would have specifically requested publication under their imprint. He proposed that "The 1st page will be 115 [page 114 being left blank]" and "The size of page, paper, and type as in Lowe's work" (see Fig. 7). The printing would thus have continued directly from the final page of part 1 of volume 2 of *The Flora* (see Williams 2017).

Clarke also noted that "I estimate the quantity to be printed at 300 or 400 pages, i.e. to include the 'Concluding Preface' and a full general index. I cannot estimate

more closely as I have not settled quite how far I shall carry the work into the Mosses and other smaller things". Details of such matters are provided in the appraisal of his manuscript presented in Appendix 4; although Clarke did not provide any descriptions of pteridophytes, he did include them in the tables of geographical distributions of plants. *The Flora*, however, had not been intended to advance beyond phanerogams, as Lowe had proposed that he would subsequently produce a separate manual on the ferns and other cryptogams (Lowe 1868 [1857–1872], 1(1):ii). Clarke was perhaps considering the inclusion of cryptogams because James Yate Johnson (1820–1900), then the most recent author on Madeiran botany, had done so (Johnson 1885, pp. 233–234). Johnson's botanical notes in that book were, however, very superficial, and the earliest comprehensive book to supersede Lowe's seems to have been *Flora do Archipelago da Madeira* by Menezes (1914).

Summary of findings

1. No evidence has been found for the survival of any manuscript by R. T. Lowe completing *The Flora*, contrary to Hansen's (1974) belief that such a document exists "in an English university". Three archival identifiers referring to a single item purported to be by Lowe have been discovered in Cambridge libraries. Two of them, package 12 of the contents-list of the Cambridge Herbarium Archives and MS Add.8183 of Cambridge University Library, are objectively identified as the same physical object (actually a collection of items that includes nothing by Lowe except two letters), which was transferred from the Herbarium to the University Library on 5 August 1977. The third identifier, the entry "69.12 LOWE, Richard T. Flora of Madeira" of Bridson et al. (1980), is

- deduced to be a third synonym for MS Add.8183. It cannot refer to Clarke's manuscript that was returned to the Botany School by T. G. Tutin in 1967 because MS Add.8183 is actually a bound volume of other manuscript material. It is thus clearly demonstrated that, despite the erroneous association of Lowe's name with all three synonymous identifiers, none of them in fact represents the alleged single manuscript written by him to complete *The Flora*.
2. The manuscript entitled "Cauda to Lowe's Flora of Madeira" by C. B. Clarke, currently owned by the Herbarium Archives, Botanic Garden, University of Cambridge, is without any doubt the one about which Hansen had been misinformed (although in good faith) with regard to its authorship. This manuscript is now known, after many years of undocumented transferences among botanists since 1917, to have become separated from its original title-page, which remains in Clarke's own annotated copy of *The Flora*, now in the library of the Royal Botanic Gardens, Kew, where his manuscript must have been retained after he died in 1906. It was kept in the Kew Director's office until at least 1917, but no record of it has been traced between then and 1967 when it had been in the hands of T. G. Tutin, apparently for some considerable time.
 3. Three other manuscripts relevant to the Madeiran flora, but by authors other than Lowe or Clarke, have been discovered in Cambridge, one in the University Library (MS Add.8183/3 by Charles Morgan Lemann), and two in the Herbarium Archives in the Botanic Garden (CGE 13.6 by Francis Martin Norman and CGE 13.12 by Nathaniel Haslope Mason; see Appendix 1 and Williams 2019 for further details).

Concluding remarks

Although our attempts to discover an alleged final manuscript by Lowe of *The Flora* were unsuccessful, we believe that it is valuable to record the detailed findings here to clear up the confusion about its history that has existed in the literature for so long. This confusion is no doubt due to the undocumented transferences since 1917 between different institutions, compounded by its erroneous attribution to Lowe in about 1967. Christine Bartram has aptly commented, "I think we need to bear in mind that some of the Cambridge men under discussion were 'a law unto themselves' often by-passing all administrative procedures in their understandable zeal to communicate with one another, resulting in scant documentation" (pers. comm., Christine Bartram, Cambridge University Herbarium, to RBW, 26 June 2015). Such practices were perhaps not atypical of the time, and Clarke's "Cauda" has never been documented among the various manuscript collections in the University of Cambridge (Williams 2019).

In the finality, it must be concluded that Lowe's manuscript was indeed lost at sea, as Grabham conjectured, and that the true author of the manuscript intended to complete *The Flora* is without doubt C. B. Clarke (see Appendix 2 for biographical details). To complete the evidence for the unequivocal identification of Clarke's "Cauda", an appraisal of the annotations in Clarke's copy of *The Flora* (Royal Botanic Gardens, Kew, library copy no. 1) is presented in Appendix 3, and an analysis of the content and structure of the "Cauda" appears in Appendix 4.

Acknowledgments

We are extremely grateful to the following persons for their assiduous searching and descriptions of library and archive holdings and in some cases for also providing copies and/or permission to publish: Christine Alexander (Librarian, Department of Plant Sciences, University of

Cambridge); Christine Bartram (former Curator, The Herbarium, Botanic Garden, University of Cambridge); Frank Bowles (Superintendent, Manuscripts Reading Room, Cambridge University Library); Lynda Brooks (Librarian, The Linnean Society of London); Craig Brough (Information Services Librarian, Royal Botanic Gardens, Kew); Professor Ib Friis (Natural History Museum of Denmark, Copenhagen); Dr. Lauren Gardiner (Curator, The Herbarium, Botanic Garden, University of Cambridge); Katherine Harrington (Assistant Archivist, Royal Botanic Gardens, Kew); Sally Harrower (Curator, Modern Literary Manuscripts, National Library of Scotland); Andrea Hart (Special Collections Manager, Library & Archives, The Natural History Museum, London); Dawn Kingham (Whipple Library, Department of History and Philosophy of Science, University of Cambridge); Serena K. Marner (Herbarium Manager, Department of Plant Sciences, University of Oxford); and Elisabeth Thurlow (Project Officer, Library Art and Archives, Royal Botanic Gardens, Kew). Professor Peter J. Grubb (Department of Plant Sciences, University of Cambridge) kindly identified S. Max Walters's handwriting; items produced by Walters are reproduced herein with his son Martin Walters's kind permission. Quotations from the letters to C. B. Clarke in the Oliver & Boyd archive are included by courtesy of Pearson UK (Oliver & Boyd's successors).

Appendix 1: Manuscripts relevant to the Madeiran flora in Cambridge libraries

During the research involved in identifying Clarke's "Cauda", three other manuscripts on the Madeiran flora were discovered in libraries in Cambridge, but none was by Lowe.

1) MS Add.8183/3 in Cambridge University Library—Charles Morgan Lemann

MS Add.8183/3 (Fig. 8) is entitled "Madeira indigenous & naturalized Plants" and headed "Dr C. Lemann" (Williams 2019). It is by Charles Morgan Lemann (see Anonymous 1853; Britten and Boulger 1931, p. 186; Desmond 1977, p. 382; Hansen 1980, p. 8). No manuscripts by Lemann are recorded by Bridson et al. (1980). The present one is an undated list of Latin names of plants, grouped by families, and comprises 20 pages. Lowe

(1868 [1857–1872], 1(1):i) referred to such a list in *The Flora*:

... lately one [list] in manuscript, formed by my regretted friend, Dr. Charles Lemann, partly indeed from his own researches, but completed with reference to a great part of the Madeiran and the whole of the Porto-Santan and Dezertan species from my own catalogue lent him for his private use, has been communicated since his death to several botanists.

A letter (in Cambridge University Library, MS Add.8183/5) dated at Kew Green on 29 August 1855 from James Yate Johnson (see Hansen 1980) to Hewett Cottrell Watson (1804–1881; see Britten and Boulger 1931) refers to a list of Madeiran plants made by Lemann, which he was returning from loan (Williams 2019). It seems quite likely that MS Add.8183/3 is that very copy, but whether the same one as that referred to by Lowe is now most probably indeterminable. Johnson wrote, "My list contains a good many names which do not appear in Lemann's List. But as mine is a compound list I am by no means sure that it is accurate". It would be surprising if his borrowing of Lemann's list at this time did not help inform his botanical notes in the second edition of *Madeira, Its Climate and Scenery: A Hand-Book for Invalid and Other Visitors* (White and Johnson 1857, pp. 283–298), yet he made no acknowledgement of this potential source. Johnson's list of Madeiran plants was apparently compiled from several sources, possibly all unpublished.

Thus it was apparently fairly common practice in Victorian times for botanists to exchange species lists for the purpose of building up more complete accounts of local floras. For instance, Joseph Dalton Hooker (1817–1911) wrote in 1856 to ask Charles Robert Darwin (1809–1882) if he still held Lemann's list of Madeira plants that Hooker thought he had lent to him, possibly one deposited with some of Lemann's plants at Kew (see Desmond 1977, p. 382). Darwin suggested

<i>Madeira indigenous & naturalized Plants.</i>	
<i>Ranunculus muricatus L</i>	<i>Ranunculaceae</i>
<i>trilobus Desf.</i>	
<i>staphis L</i>	Add.8183/3
<i>cortusifolius Willd.</i>	
<i>Aquilegia vulgaris L</i>	
<i>Nigella damascena L</i>	
<i>Delphinium gracile DC. (naturalised?)</i>	
<i>Papaver rhoeas L</i>	<i>Papaveraceae</i>
<i>dubium L</i>	
<i>somniferum L (nat'd)</i>	
<i>Chelidonium majus Mill.</i>	
<i>Fumaria media Loisel.</i>	<i>Fumariaceae</i>
<i>Bupleurum protractum Link</i>	<i>Umbelliferae</i>
<i>salicifolium Solander.</i>	
<i>Stomai visnaga Lam</i>	
<i>majus L</i>	
<i>Plantae pectiolatae Lowe</i>	
<i>Lamium piperitum DC</i>	
<i>Petroselinum sativum Hoffm. (nat'd)</i>	
<i>Spinach graveolens L</i>	
<i>Pucciniam ostentans DC</i>	
<i>Melanocelinum decipiens Hoffm.</i>	
<i>Citrullum maritimum</i>	
<i>Scandix pecten veneris L</i>	
<i>Conopodium brevifolium DC</i>	
<i>Zaunia carota L</i>	
<i>neglecta Lowe</i>	
<i>Torilis infesta Hoffm.</i>	
<i>nodosa Gaertn.</i>	
<i>Coriandrum sativum L (nat'd)</i>	
<i>Himbera leptophylla Hoffm.</i>	
<i>Heliosciadium nodiflorum Koch</i>	

CAMBRIDGE
UNIVERSITY
LIBRARY

Figure 8. First page of an undated manuscript, “Madeira indigenous & naturalized Plants”, under name of “Dr. C. Lemann” [Charles Morgan Lemann] (original size, 10.8 × 19.0 cm, Cambridge University Library, ref. MS Add.8183/3). Reproduced by kind permission.

that in fact it was probably the one that Edward Forbes (1815–1854) borrowed from Hooker, and remarked that it had probably never been returned (Darwin Correspondence Project, letter no. 1924, <http://www.darwinproject.ac.uk/letter/DCP-LETT-1924.xml>). Forbes himself described it as a “list collated by Dr. Lemann, kindly communicated by Dr. Joseph Hooker” (Forbes 1846, p. 401); note the suggestive verb “collated”, i.e., not necessarily an original compilation. It seems unlikely that MS Add.8183/3 is actually the same list that Forbes borrowed from Hooker.

Comparison of the handwriting of MS Add.8183/3 with an authenticated letter (Royal Botanic Gardens, Kew, G. Bentham Correspondence, vol. 6, folio 2222) from Lemann to George Bentham (1800–1884) confirms that it was written by Lemann himself (Williams 2019). Bentham catalogued Lemann’s herbarium of some 30,000 species (besides his plants at Kew) that was deposited in the Cambridge University Herbarium (Stevens 2003, p. 198). Incidentally, Lowe (1868 [1857–1872], 1(3):272), when discussing synonyms of *Epilobium lanceolatum*, noted, “My attention was first drawn to this as a Mad. pl. by a pencil note—‘*E. montanum* L. (Curral das Freiras, Dec., Lemann)’—written by the late Dr. Charles Lemann in my MS. Catalogue of Mad. pl. lent to him in August 1848 for the completion of his own list”. A further example of cross-transference of information between lists of flora is provided by Darwin’s list of Azores plants, which had been extracted from a previous list by Watson, then passed back to Watson, who further amended it, marking species found also in Madeira “on faith of a mss list by Dr. C. Lemann” (Darwin Correspondence Project, letter no. 1715, <http://www.darwinproject.ac.uk/letter/DCP-LETT-1715.xml>).

It is easy to understand, therefore, how “compound lists”, such as Johnson’s, developed by successive exchanges between

and annotations by various botanists. As already mentioned, Lemann’s list was once in the Cambridge University Herbarium Archives but was transferred to Cambridge University Library in 1977 (Williams 2019). It was previously documented as package 12 of the contents-list of the Herbarium Archives (see Fig. 3) and is part of the same collection listed as manuscript 69.12 of *Natural History Manuscript Resources in the British Isles* (Bridson et al. 1980). Specimens collected by Lemann may be found in the herbaria at **CGE**, **K** and **OXF**, and his letters are at **K** (Desmond 1977, p. 382; Hansen, 1980, p. 8). Some of his specimens were added to Lowe’s herbarium (see Lowe 1868 [1857–1872], 2(1):88–89).

2) MS CGE 13.6 in Cambridge University Herbarium—Francis Martin Norman

CGE 13.6 (Fig. 9) is “A Catalogue of all known Madeira Plants Indigenous & Naturalized”, written in 1866 by Francis Martin Norman (1833–1918). It is not recorded by Bridson et al. (1980), but an account of it has been provided by Williams (2016). In 1875 Norman lent this manuscript to James Yate Johnson in Madeira (Williams 2016), apparently anticipating that Johnson would compile a comprehensive flora of Madeira to supersede Lowe’s incomplete work (Norman 1889, p. 84). However, Johnson eventually published only a disappointingly perfunctory chapter on botany in the third edition of *Madeira, Its Climate and Scenery* (Johnson 1885, pp. 216–234).

The extent of the use that Johnson (1885) made of Norman’s manuscript is not immediately obvious since no explicit acknowledgement of it as a source was made. Nevertheless, Johnson’s account may well have been supplemented from Norman’s catalogue. For instance, Norman included the ferns and fern allies (which in *The Flora* Lowe did not), noting that Madeira supported “40 species of

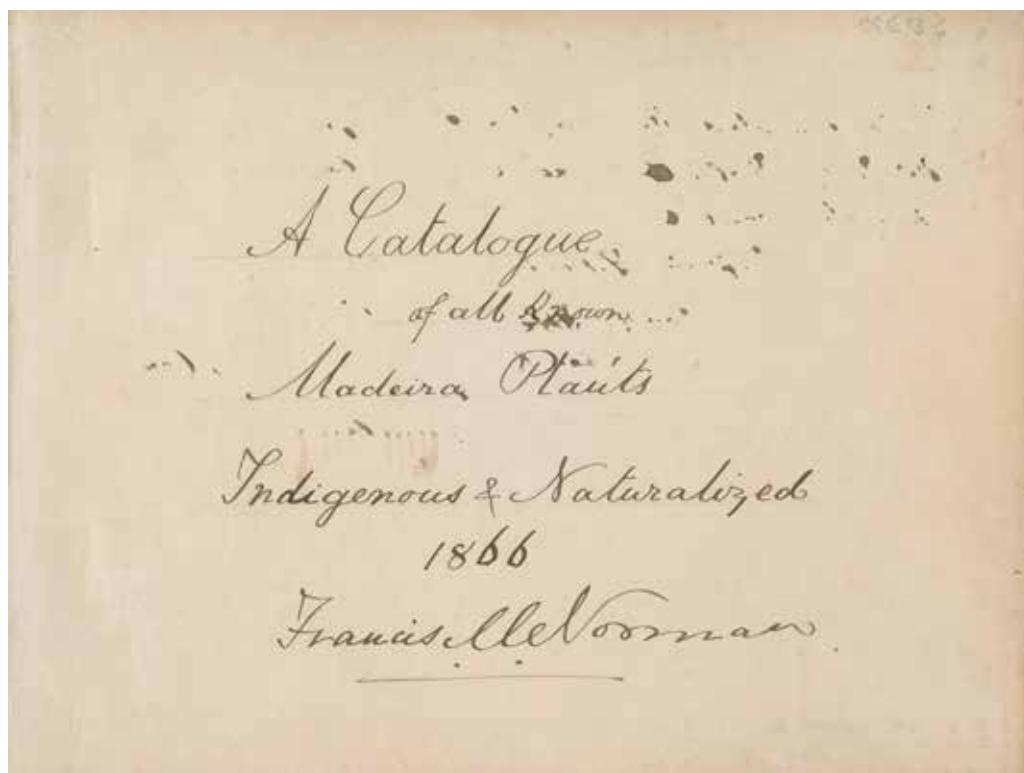


Figure 9. Title page of Francis Martin Norman's 1866 manuscript, "A Catalogue of all known Madeira Plants Indigenous & Naturalized" (original size, 15.6 × 20.1 cm, Cambridge Herbarium Archives, ref. CGE13.6). Reproduced by kind permission of the Department of Plant Sciences, University of Cambridge.

ferns, 3 or 4 club-mosses, and one horse-tail". It would seem to be more than mere coincidence that Johnson's corresponding numbers of species are 41, 4 and one, respectively (Johnson 1885, pp. 233–234), and that his notes on habitats of the lycopods agree exactly with pp. 149–150 of Norman's manuscript catalogue. Specimens collected by Johnson may be found in the herbaria of **MADS** (now incorporated in **MADJ**), **K** and **NY** (Menezes 1914, pp. 225–226; Desmond 1977, p. 346; Hansen 1980, p. 7). According to Hansen (1980, p. 7), Johnson's Madeiran mosses were worked up by William Mitten (1819–1906) and Alphonse Luisier (1872–1957).

Further to the topic of shared manuscript lists of plants, it seems quite likely that Lowe extracted some of his records in *The Flora*

from Norman's catalogue, which were perhaps based on specimens donated by Norman to Lowe's herbarium. Norman's own Madeiran herbarium (collected about 1863–1866) has for a long time been intercalated among the general collection at **CGE**, possibly since about 1928 (Williams 2016). His intact British herbarium (1872–1916), recently recognized to be the old Berwickshire High School Herbarium, has now been deposited as a separate collection at **CGE** (Williams 2016).

3) MS CGE 13.12 in Cambridge University
Herbarium—Nathaniel Haslope Mason

CGE 13.12 (Fig. 10) is headed "Mason's Madeira plants", an undated list of species comprising six foolscap pages; it is not recorded

Mason's Madeira plants. CGE13.12

✓ 1	Rhamnus grandifolia	558 Melilotus officinalis
✓ 2	"	559 Biscutella petiolata
✓ 3	"	560 Scrophularia umbrosa
✓ 4	"	561 Rhus coriaria
✓ 5	Aquilegia vulgaris	562 Berberis heterophylla
✓ 6	Nigella damascena	563 Pittosporum coriaceum
✓ 10	Chelidonium majus	564 Leycesteria formosa
✓ 11	Gentiana lutea	565 Panicum gracile
✓ 12	Baptemia officinalis	566 Molophilus antennatus nodiflorus
✓ 13	"	567 Sisymbrium officinale
✓ 14	Oenanthe fleischmanni	568 Lepidium virginicum
✓ 15	Foeniculum vulgare	569 Ipomoea pes-caprae
✓ 16	Spinus tristis	570 Asperugo officinalis
✓ 17	Petroselinum sativum	571 Smilax aspera
✓ 18A	Melilotus officinalis	572 Senecio coronopus
✓ 19	Cerithium maritimum	573 " Adonis amurensis
✓ 20	Staudigelia secta Venetorum	574
✓ 21	Saururus neglectus	575 Muscari armeniacum
✓ 22	Monilia edulis	576 Reseda luteola
✓ 23	Rosa canina	577 Lythrum salicaria
✓ 24	Tragopogon porrifolius	578 Sterculia annua bambigia
✓ 25	Molinella tormentilla	579 Sianthes prolifera
✓ 26	Apenninum Eupatorium	580 Segaria holochlora
✓ 26A	Polygonum megastachyon	581 Polygalopsis hispidiflora
✓ 27	Ulex europeus	582 Glechoma hederacea
✓ 28	Cytisus scoparius	583 Hernaria florula
✓ 29	Genista sanguinea	584 Ruta graveolens
✓ 30	"	585 Fraxinus ornus
✓ 31	Cephaelis bicapsularis	586 " hispina
✓ 32	Bathyllis demissana	587 Pyrola rotundifolia
✓ 33	Brassica oleracea	588 Saxifraga stellaris
✓ 34	"	589 Lepidium perfoliatum
✓ 35	Artemesia absinthium	590 Eriogonum canescens
✓ 36	Bromus compressus	591 Phagnalon sylvestre
✓ 37	Melilotus parviflora	

Figure 10. First page of an undated foolscap list, “Mason’s Madeira plants” [Nathaniel Haslope Mason] (original size, 32.5 × 18.7 cm, Cambridge Herbarium Archives, ref. CGE13.12). Reproduced by kind permission of the Department of Plant Sciences, University of Cambridge.

by Bridson et al. (1980). It appears to be a trade list of Nathaniel Haslope Mason F.L.S. (fl.1850s) and, comparing it with his letter to George Bentham cited below, is apparently in his handwriting (Williams 2019). Mason's printed advertisement leaf of 1857, addressed "3, Red Lion Square, London, W.C." is inserted at the end of copies of the separate part 1 of *The Flora* (Lowe 1868 [1857–1872]), offering collections from Madeira, Porto Santo and the Dezertas of dried and living plants, wood samples ("strongly recommended by Sir William J. Hooker, Director of the Royal Gardens Kew"), land shells and marine invertebrates (Williams 2017). The brief biographical notes on Mason by Menezes (1914, pp. 227–228) and Desmond (1977, p. 425) were apparently mainly derived from this 1857 advertisement. Lowe (1868 [1857–1872], 1(1):104, 1(2):133) recorded that Mason was in Madeira in May 1857.

Mason solicited commissions for collecting natural-history materials from the Azores, Madeira and the Canary Islands in 1855 with a glowing testimonial from "Dr Lindley" (Mason 1855). His address then was 17 Compton Terrace, Islington, and according to Lindley, he had already spent two years in Madeira. His authenticated collecting-trips in the northern Macaronesian archipelagos can now, therefore, be extended to include 1853–1857. Furthermore, according to his 1857 advertising leaflet, "Mr. Mason intends shortly to proceed to the Cape de Verde Islands"; and a letter from Mason to Bentham, dated 29 January 1858 from 13 Bedford Row, confirmed his imminent departure (Royal Botanic Gardens, Kew, G. Bentham Correspondence, vol. 7, folio 2714). In that letter Mason enquired of Bentham "Will you be good enough to inform me whether it would be in your power to undertake the description of the new species & the naming of the others", in return for which he offered "a good set of my plants". According to Hansen (1980, p. 9), specimens collected

by Mason may be found in the herbaria of **BM, CGE, B, K, MANCH, OXF, B, P** and **MADS** (now incorporated in **MADJ**); his letters are at **K** (Desmond 1977, p. 425).

Appendix 2: Biographical notes on Charles Baron Clarke and his work on Madeiran botany

Biographical information about Clarke (Fig. 11) has been taken from Boulger (1912, 1:366–367), Britten and Boulger (1931, p. 65), Burkhill (1965, pp. 144–146), Desmond (1977, p. 132) and Hansen (1980, p. 4). Clarke entered Trinity College, Cambridge, in 1852 and obtained his B.A. in 1856, bracketed as third wrangler in mathematics. He immediately was elected a fellow of Queens' College, Cambridge, and was appointed as a lecturer in mathematics from 1857 to 1865; in 1858 he also was called to the bar at Lincoln's Inn. During Cambridge vacations, he was a tireless hill-walker in the English Lake District and an expert alpine-climber in Switzerland, combining his expeditions with botanizing. His botanical interest in Madeira, to which he would much later return, was initiated during a visit in 1862. In 1865 he entered the civil service in Bengal, joining the teaching staff of the Presidency College at Calcutta in 1866 and becoming inspector of schools for eastern Bengal, based at Dacca. From this time onwards he assiduously collected Indian plants; his first collection was totally lost in a shipwreck in 1868, but unperturbed he began again, covering, as opportunities arose during his professional postings in 1868–1877, the eastern Sundarbans, Chittagong, Darjeeling, Nepal, British Bhutan and Kashmir. From 1869 to 1871 he was superintendent of the Calcutta Botanical Gardens and of the Cinchona Plantation at Mungpu.

In 1877 Clarke returned to Britain, initially on two years' leave, when he presented his plant collection of some 25,000 specimens to



Figure 11. Charles Baron Clarke (1832–1906). Photograph by Byrne & Co., Richmond (collections of the Linnean Society, ref. PP-C-19r). Reproduced by kind permission of the Linnean Society of London.

the Kew Herbarium. He undertook voluntary botanical work on Sir Joseph Hooker's *Flora of British India*, and on the expiration of his leave in 1879, he was placed on special duty at Kew, describing more than 50 natural orders for Hooker's work between 1879 and 1883. Returning to India in 1883, he was temporarily appointed director of public instruction in Bengal in 1884, and in 1885 went as an inspector to Shillong, Assam, when he studied the flora of the Khasia, Naga, Nilgiri and Manipur hills.

Clarke retired from India in 1887 and settled at Kew to work mainly on the Cyperaceae, publishing on those of the Malay Peninsula in 1893–1894, Mt Kinabalu in 1894, Matto

Grosso in 1895, Madagascar in 1883, India in 1884 and 1898 and China in 1903–1904. He also described those of Chile, the Philippines and Africa; at his death, his monumental monograph of the entire group, although practically completed, remained unpublished. Other botanical works included monographs on the Commelinaceae (1881), and on the Cyrtandraceae (1883) for the continuation of De Candolle's *Prodromus*, and an account of the ferns of British India (1879). He also described the Acanthaceae, Gesneraceae, Scrophulariaceae and Commelinaceae for other works. His diverse writings on other topics included papers or books on ethnology (1874), musico-mathematics (1883), political economy (1886) and geography (1889) and an unpublished history of England to James I. He was elected a Fellow of the Linnean Society in 1867 (becoming president for 1894–1896), of the Geological Society in 1868 and of the Royal Society in 1882 (as a council member for 1888–1890).

It appears that Clarke's early interest in the botany of Madeira began to re-emerge before he finally returned home from India, perhaps envisaged as a retirement occupation. His project to complete Lowe's *The Flora* apparently took some 20 years to mature. On 23 March 1884 he wrote to J. D. Hooker from 4 Tank Square, Calcutta (Royal Botanic Gardens, Kew, Directors' Correspondence 153, folios 178–179):

I never met T. Lowe though I had some correspondence with him when I made my visit to Madeira (and collected many plants). I reckoned him an “unzealous divine”^{1st} because he abandoned his parish to work at natural history^{2nd} because in his Madeira Flora he prints as motto on the title-page “By their fruits ye shall know them”—a parody of the words of Christ which I believe with T. Lowe to express a deep botanic truth but which I should not expect a padre of any religion to perpetuate.

Clarke's implied criticism is distinctly odd, because the quotation on the title-page of *The Flora* is actually “*Domini est terra, et plenitudo ejus*”, conventionally translated as “The Lord's is the earth, and the fullness thereof.” Nevertheless, Clarke eventually decided to complete Lowe's work on Madeira, hence his writing the “Cauda”. He apparently began in the 1900s, having determined a number of Madeira specimens at Kew between 1904 and 1906, although one *Carex* determination is dated 1900 (but was perhaps examined only as a representative of one of his families of general interest; MAC). However, it would thus appear that much of Clarke's work on the “Cauda” was completed between 1904 and 1906; many of his annotations in his copy of *The Flora* are based on a paper by Britten (1904; see Appendix 4).

In order to establish where Clarke researched his “Cauda”, samples of six species of Lamiaceae collected by him and cited in the “Cauda” were checked at Kew and also at Oxford where he had deposited the specimens from his 1862 Madeira expedition (see Hansen 1980, p. 4; Clokie 1964, p. 146). They are now in the Fielding Herbarium (pers. comm., Serena Marner, Department of Plant Sciences, Oxford, to MAC, 10 August 2015). Five of the six species were found at Kew but only one at Oxford (not the one missing from Kew). Furthermore, Clarke did not cite earlier material at the Natural History Museum, London, so it would appear that he was working exclusively on specimens at Kew, rather than any at Oxford or the Natural History Museum (MAC). These findings are consistent with Clarke's writing the “Cauda” at Kew, where logically it should have remained after his death. He died unexpectedly on 25 August 1906, due to “internal inflammation, mainly brought on by excessive bicycling”, when he was on the verge of publishing the “Cauda” (Boulger 1912)—he had dated his proposed title-page 1907 (see Fig. 6).

Appendix 3: C. B. Clarke's annotations in his copy of *The Flora* and notes on his papers at Kew

There are two copies of Lowe's *The Flora* held in the library at Kew (shelf-mark F2.6); both are rebound in library cloth. The annotations in copy no. 1 provide evidence that it once belonged to C. B. Clarke, but there is no library-acquisition record. Copy no. 2 has a bookplate that reads “Ex Dono Johannis Ball FRS 1890”. It is unremarkable except for a press cutting about the loss of the *Liberia* pasted at the beginning (see Fig. 2); there are no manuscript annotations. The library at Kew currently does not appear to hold any manuscripts by Clarke with relevance to the Madeira flora (pers. comm., Elisabeth Thurlow, Royal Botanic Gardens, Kew, to RBW, 11 August 2015). Further notes on Clarke's copy of *The Flora* follow (RBW).

Annotations by Clarke in his copy of Lowe's The Flora

Kew's copy no. 1 comprises all that Lowe published of *The Flora*, consisting of the complete volume 1 and the first part, with its front wrapper, of volume 2 bound together. In part 1 of volume 2, a duplicate gathering D¹² (pages 49–72) occurs in place of gathering C¹² (pages 25–48); hence, Clarke's copy was possibly misbound from original parts (see Williams 2017). On the verso of the front flyleaf, opposite the printed title-page, is pasted a draft manuscript title-page in ink for the “Cauda” (see Fig. 6). Above that, in pencil, are the names and addresses of the publishers Oliver & Boyd and Gurney & Jackson; Clarke submitted his proposal to Oliver & Boyd, requesting publication under the imprint of Gurney & Jackson. The copious annotations throughout the printed text (Fig. 12) are in the same handwriting as that of the “Cauda” (Fig. 13) and that of its draft title-page (cf. Fig. 6). This handwriting is confirmed in

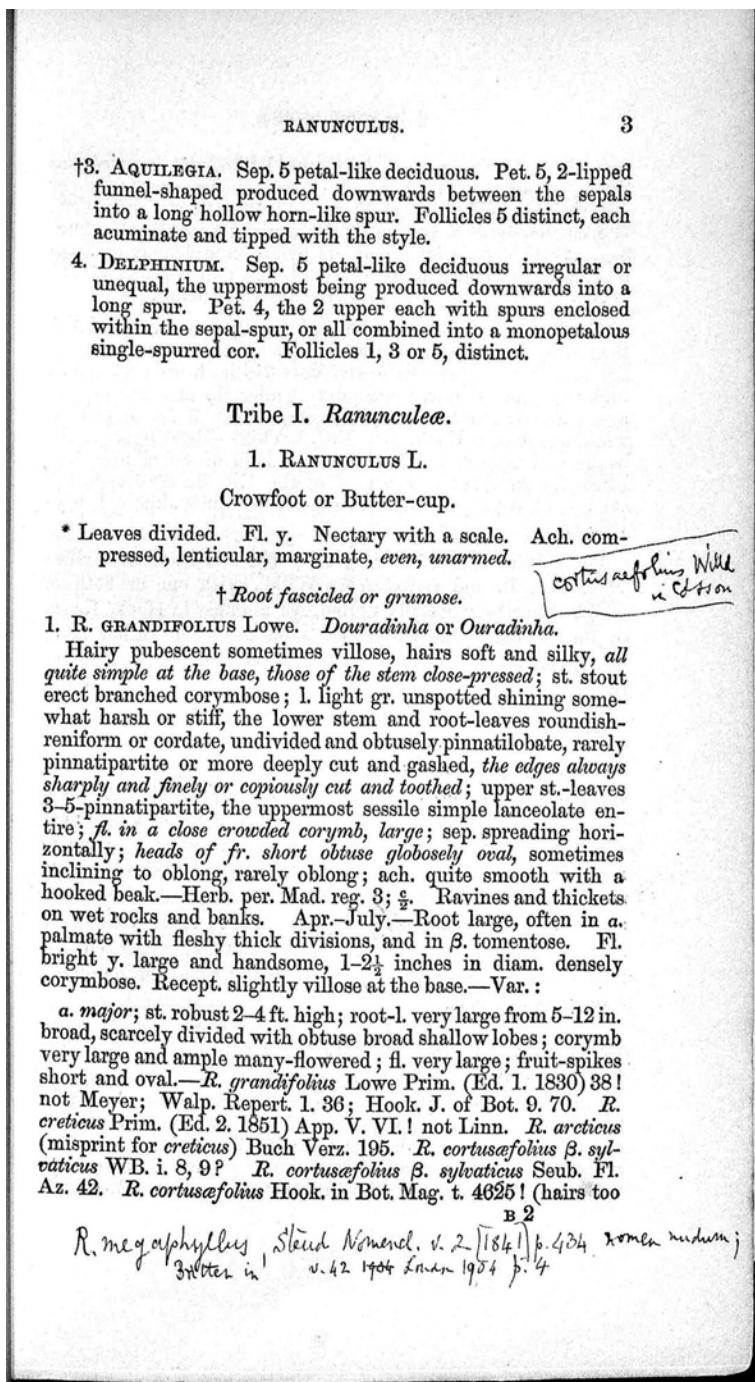


Figure 12. Page 3 of volume 1 of C. B. Clarke's copy of *A Manual Flora of Madeira* (original size, 18.8 × 11.2 cm, Royal Botanic Gardens, Kew, library copy no. 1). Note manuscript reference to "Britten, 1904" at foot of page, and the reference to Cosson, corresponding to references in the "Cauda" (Fig. 13). Reproduced with kind permission of the Board of Trustees of the Royal Botanic Gardens, Kew.

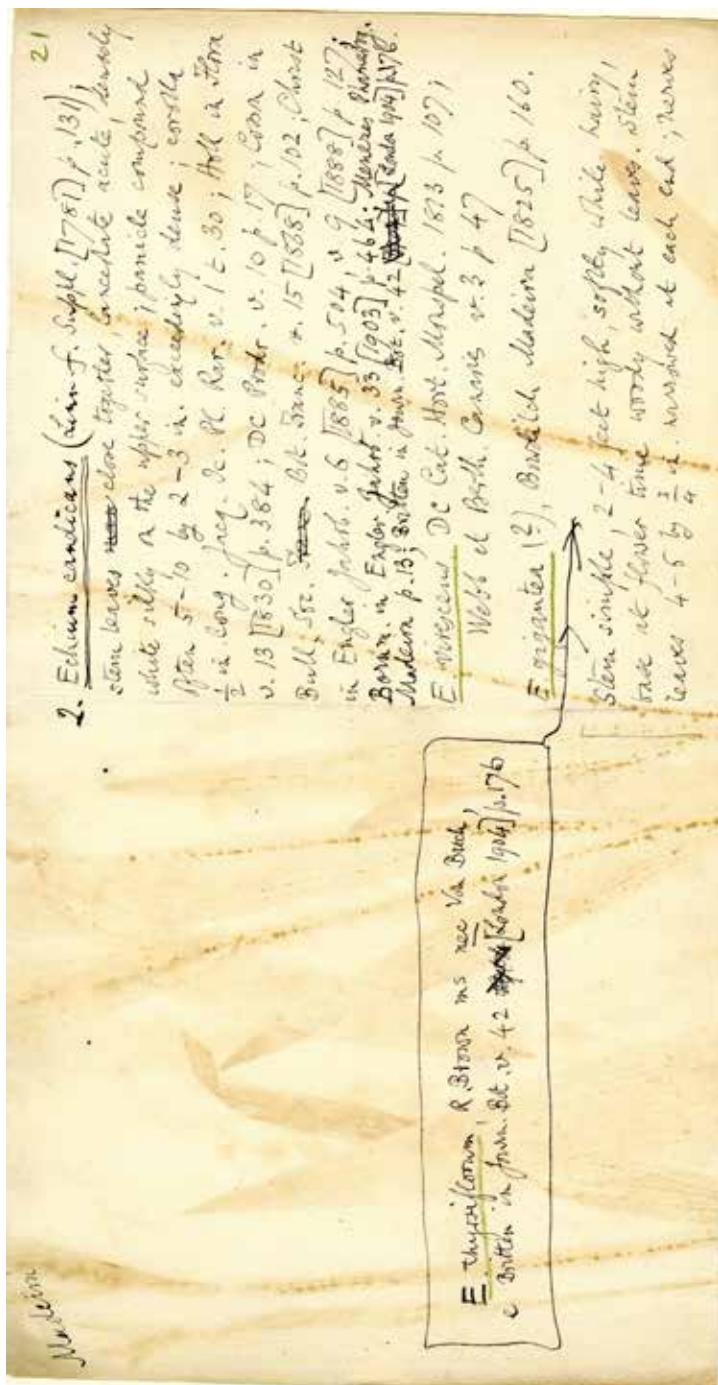


Figure 13. Sample folio (no. 21 of Boraginaceae: *Echium candicans*) from C. B. Clarke's manuscript "Cauda" (original size, 14×24 cm, Cambridge Herbarium Archives, ref. NHM/0112 loan). Stains of old plant material are clearly visible. Note references to Britten (1904) and to Cosson (1868), corresponding to annotations in Clarke's copy of *The Flora* (Fig. 12). Reproduced by kind permission of the Department of Plant Sciences, University of Cambridge.

all cases to be Clarke's by comparison with authenticated specimens held by the Natural History Museum.

Most of the annotations in Clarke's copy of *The Flora* follow a fairly consistent pattern (RBW). Next to many of the Latin species names is to be found the name "Britten" followed by a page number, the name "Cosson" or, more rarely, the names of other authors. Random sampling revealed that inserted "Britten" page numbers 4–8 generally occur on pages 3–154 of volume 1 of *The Flora*, but "Britten" page 6 occurs on page 303; "Britten" pages 39–40 are on pages 156–262; "Britten" pages 40–42 on pages 263–377; and "Britten" pages 42–46 on pages 378–582. In volume 2 of *The Flora*, "Britten" page 7 occurs on pages 12 and 15; and more generally, "Britten" pages 175–177 are on pages 18–111.

The crucial "Britten" reference was initially deduced from Clarke's cryptic note on page 3 of volume 1, "*R. megaphyllus*, Steud Nomencl. v. 2 [1841] p. 434 nomen nudum; Britten in v. 42 1904 London 1904 p. 4" (see Fig. 12). Subsequent examination of the "Cauda" manuscript revealed multiple citations of this same reference (see Fig. 13), demonstrating that Clarke's annotations of Lowe's book formed the basis of his manuscript. The reference proved to be "R. Brown's list of Madeira plants" (Britten 1904), suggesting that Clarke had done much of his work on the "Cauda" after 1904. Careful cross-checking revealed that wherever a manuscript "Britten" page number occurs next to a printed species name in *The Flora*, that name occurs on the stated page number of Britten (1904). The very restricted ranges of "Britten" page numbers compared to the much wider ranges in *The Flora* are due to Britten's paper comprising only an annotated list of species rather than a compilation of detailed species descriptions. Notes mentioning "Cosson" (or other authors) usually have no page numbers, but the relevant key reference is apparently Cosson (1868; see Fig. 13).

Relevant manuscripts by Clarke held at Kew

The manuscripts of Clarke now in the Kew Library were obtained at various times and mostly involve the flora of India. However, series CLA/8 is of some relevance to our present research. The file label, dated 22 August 1917, describes the content as the residue of Clarke's manuscripts removed from the Kew Director's office. However, it also notes that the manuscript of "the appendix to Madeira flora" (presumably Clarke's "Cauda") was left therein. Thus, series CLA/8 clearly arrived in the Kew Library in 1917 without the "Cauda", but there is no certain way of knowing from archival records how or why Clarke's manuscript might have been removed from the Kew Director's office apparently at some time after 1917 (pers. comm., Elisabeth Thurlow, Royal Botanic Gardens, Kew, to RBW, 4 August 2015).

However, Sir David Prain (1857–1944) was the director of Kew from 1905 to 1922, and he may have given or lent the "Cauda" to some Cambridge colleague as indeed could any of the subsequent directors up to Sir George Taylor (1904–1993), who was the incumbent from 1956 to 1971. Prain's contemporaries at Cambridge were Albert Charles Seward (1863–1941; professor of botany, 1906–1936) and Humphrey Gilbert-Carter (Botanic Garden director, 1921–1950). Prain and Gilbert-Carter were certainly known to each other (see Gilbert-Carter 1924, p. 8) as were Prain and Seward (see Brooks and Chipp 1931, p. v). Between the crucial dates of 1917 and 1967, the Imperial and International Botanical Congresses, as well as other scientific meetings at various institutions (particularly the Linnean Society of London), would have seen directors, curators and professors of Kew and Cambridge often interacting, thus affording many opportunities for the informal transfer of the "Cauda" to Cambridge.

Appendix 4: Appraisal of Clarke's "Cauda"

Clarke's "Cauda" comprises a stack of loose, single sheets orientated mostly as oblong folios about 14 cm high by 24 cm wide (MAC). The manuscript is written entirely on reused herbarium paper as is evident from straps still attached to the verso and the stained impressions of plant material evident on some sheets (see Fig. 13). The writing on the rectos is limited, for the most part, to the right-hand half of each sheet; the left-hand half is largely blank and used for amendments to the text, but it is sometimes also used for generic and family descriptions or keys; the versos are blank. Typically, the word "Madeira" appears in the top left corner of each recto. The handwriting is without doubt Clarke's (Fig. 14).

Only rectos are numbered, so the sheets are foliated rather than paginated. The folios are divided into bundles, which may comprise one or more families. For each bundle, a new foliation begins with number "1". Within some bundles there are additional notes, not forming part of the foliation sequence. Each bundle is separated from others by a larger, unnumbered, wraparound sheet bearing a description of its contents. There are twelve such bundles, comprising families numbered LXVI, LXVII, LXVIII–LXXI, LXXII (part 1, folios 1–58), LXXII (part 2, folios 59–95), LXXIII–LXVII, LXVIII–LXXXII, LXXXIII–LXXXVII, LXXXVIII–XCVII, XCVIII, XCIX, 99 and 100. The whole text comprises 572 folios of family descriptions, supplemented by 43 foliated and a few non-foliated sheets of tables. It seems that, as for Lowe's *The Flora*, no illustrations were envisaged.

In *The Flora* Lowe adopted a taxonomic hierarchy of class, subclass, order (=family), tribe, genus. Clarke used tribes in Cyperaceae and Gramineae but not in other large groups, such as Labiatae and Scrophulariaceae. Like Lowe, he referred to families as orders.

Family descriptions are followed by a key (or "conspectus") of genera where necessary. The generic descriptions provided include an overview of the number of species and the global distribution of the group. Keys to species (often referred to as "tables") are sometimes provided and species accounts include details of synonymy and the use of names in previous publications. Descriptions are brief and diagnostic. In contrast to Lowe, Clarke adopted a broad species concept and recognized few infraspecific taxa. There do not appear to be any species enumerated that are new to science.

For each species the distribution within Madeira is provided with citations of specimens for each of the localities given. These include Clarke's own collections from Madeira, although specific herbaria are not identified. A statement is also provided on the global distribution of the species. The families treated in the "Cauda" are those missing from *The Flora*. A complete list, with Clarke's Roman numbering following on from that of Lowe's, is as follows:

- LXVI Boraginaceae (27 ff.).
- LXVII Scrophulariaceae (48 ff.).
- LXVIII Orobanchaceae (5 ff.).
- LXIX Acanthaceae (3 ff.).
- LXX Selaginaceae (4 ff.).
- LXXI Verbenaceae (6 ff.).
- LXXII Labiatae (95 ff.). With additional notes in differing formats.
- LXXIII Plumbaginaceae (6 ff.).
- LXXIV Plantaginaceae (10 ff.).
- LXXV Nyctaginaceae (1 f.).
- LXXVI Amaranthaceae (12 ff.).
- LXXVII Chenopodiaceae (21 ff.).
- LXXVIII Phytolacaceae (3 ff.).
- LXXIX Polygonaceae (22 ff.).
- LXXX Aristolochiae (=Aristolochiaceae; 2 ff.).
- LXXXI Lauraceae (16 ff.).
- LXXXII Euphorbiaceae (18 ff.).
- LXXXIII Urticaceae (8 ff.).

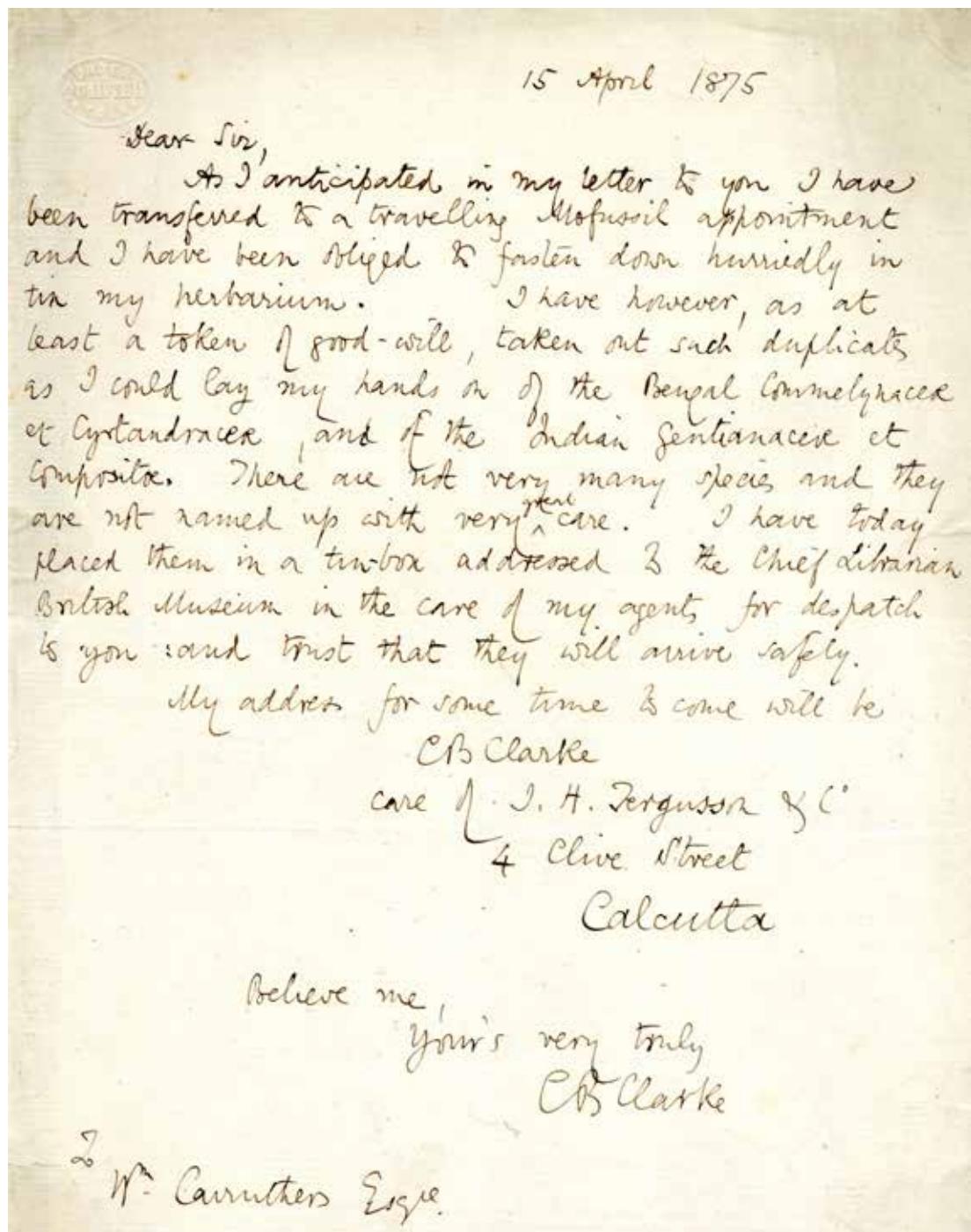


Figure 14. Sample of C. B. Clarke's handwriting (Botanical Autograph Collection, The Natural History Museum, London). Reproduced by kind permission.

- LXXXIV Myricaceae (2 ff.).
 LXXXV Salicaceae (3 ff.).
 LXXXVI Gnetaceae (2 ff.).
 LXXXVII Coniferae (5 ff.). With accounts of *Juniperus* (Cupressaceae) and *Taxus* (Taxaceae).
 LXXXVIII Orchidaceae (10 ff.).
 LXXXIX Iridaceae (8 ff.).
 XC Dioscoreaceae (2 ff.).
 XCI Liliaceae (22 ff.).
 XCII Commelinaceae (2 ff.).
 XCIII Juncaceae (14 ff.).
 XCIV Aroideae (= Araceae; 7 ff.).
 XCV Lemnaceae (4 ff.).
 XCVI Alismaceae (2 ff.).
 XCVII Naiadaceae (5 ff.). With accounts of *Potamogeton* (Potamogetonaceae) and *Ruppia* (Ruppiaceae).
 XCVIII Cyperaceae (34 ff.).
 XCIX Gramineae (133 ff.).

In addition to the taxa listed above, the following are also treated; in Madeira they are represented only by cultivated plants. They are not numbered but are shown in brackets and are intercalated in a taxonomic order:

- Scitamineae* (= Zingiberales; 1 f.). *Musa* (Musaceae) and *Canna* (Cannaceae) are treated.
Amaryllidaceae (1 f.).
Plantanaceae (1 f.). Mentions *Platanus occidentalis* as cultivated and *Juglandaceae* (including *Juglans regia* as planted); follows *Urticaceae*.
Cupuliferae (= Fagaceae; 1 f.). Three cultivated species; follows Myricaceae.
Thymelaeaceae (1 f.). *Gnidia* only (with no family designation or description), plus *Elaeagnaceae* (*Elaeagnus* only, with no family designation or description); follows Lauraceae.
- Two other families also included are: 99 *Primulaceae* (3 ff.) and 100 *Myrsinaceae* (2 ff.). Curiously, the numbering convention for these families is Hindu-Arabic rather than Roman, and their placement at the end of the sequence after Gramineae (XCIX) does not

reflect their taxonomic placement. Clarke's treatment of the Myrsinaceae included a single species that he referred to as *Myrsine heberdenia* Roem. & Schult. (now *Heberdenia excelsa* (Ait.) DC), a Macaronesian endemic. Lowe (1868 [1857–1872], 2(1):31–34) referred to this species as *Ardisia excelsa* Aiton, a name published in 1789; his account of this species provided much more detail than that included by Clarke, who referenced Lowe but used the later name *Myrsine heberdenia* published by Römer and Schulthes in 1819. Clarke enumerated two species of Primulaceae. His account of *Samolus valerandi* L. is consistent with that of Lowe's, and his account of *Anagallis arvensis* L. differs only in that he did not recognize the three Madeiran varieties differentiated by Lowe.

It is not clear why Clarke deemed treatment of these two families necessary. Both families were already included in *The Flora*: Primulaceae as family LVIII (Lowe 1868 [1857–1872], 2(1):34–39) and Myrsinaceae as LVII (Lowe 1868 [1857–1872], 2(1):30–34). Clarke's numbering (as families 99 and 100) not only places them out of sequence but also overlaps his Roman series of LXVI–XCIX. Aside from the nomenclatural difference in the treatment of Myrsinaceae, he provided no new taxonomic or nomenclatural information. In not recognizing infraspecific varieties, Clarke's treatment of *Anagallis arvensis* is consistent with the taxonomic concept he adopted more generally, which was broad and at odds with the much narrower concept of Lowe's, who recognized many infraspecific taxa.

The geographical distributions of species are tabulated in a series of folios numbered 1–39 and then, strangely, in another sequence of 31–34. They are grouped under four headings: the “Canaries”, the “Azores”, the “Mediterranean” (or “West Mediterranean” or “Medit”) and “Endemic in Madeira”. The folios of the first sequence and folio 31 of the second sequence constitute the angiosperms, while

the pteridophytes constitute the remaining three folios of the second sequence. Clarke writes [*verbatim*], “This table is drawn up from Lowe's Manual as far as it that extends i.e. to the end of Solanaceae. From Solanaceae to the end, it is ~~drawn up~~ taken from the Cauda”. However, this must be a *lapsus calami* because Solanaceae is Lowe's “Order LXIV” (Lowe 1868 [1857–1872], 2(1):68–95), whereas *The Flora* actually finishes with Atropaceae, “Order LXV” (Lowe 1868 [1857–1872], 2(1):96–113). Nevertheless, since Clarke did not include Atropaceae in the “Cauda”, and his family LXVI is Boraginaceae, which Lowe did not include in *The Flora*, he must subsequently have realized his error. Despite the inclusion of pteridophytes in this extended table, Clarke's floristic treatment does not deal with the ferns and fern allies, nor with mosses (despite his note in Fig. 7).

Another table, in portrait orientation, occupies two unnumbered folios. It provides, for each family, the number of genera and species in Madeira, the Canaries, the Azores and the Western Mediterranean with a final two columns detailing the number of endemic genera and endemic species in the family. In a separate note, Clarke explained how introduced species (marked † in the table described above) are not “counted in the numerical tallies below”; hence, it would appear that he intended this table to form part of the one just described. A note is attached to the first page explaining the conventions to be used in printing the table.

A final table, in landscape orientation, appears to be a summary of the preceding table and is most likely the concluding part of the overall table. It provides genus and species numbers for the “Dicotyledons”, “Gymnosperms”, “Orchidaceae” and “Monocotyledons” with a total given for the “Phanerogams”; this is followed by totals for “Filices”, “Equisetaceae” and “Lycopodiaceae”, again with a total for the

“Vascular cryptogams”. As in the preceding table, there are five pairs of genera/species columns. They are not otherwise named, but it seems fairly clear that they provide overall counts for these groups of genera/species in Madeira, the Canaries, the Azores and the Western Mediterranean with the final column summarizing the number of endemic genera and species for each group.

Despite the suggestion of Jackson (1907) that “His completion of the Rev. R. T. Lowe's ‘Flora of Madeira’ is practically ready for the press”, the foregoing notes and observations reveal that Clarke in fact still had much to do in order to ready his “Cauda” for printing, which is perhaps why he dated the draft title-page as 1907 (see Fig. 6), a year that, unfortunately, he was never to attain. The manuscript is clearly a rough draft, rather than a fair copy. This fact alone would make the decision in 1974 by Tutin, Moore and Bramwell not to publish the “Cauda” unsurprising, especially considering that the taxonomy would also have had to be updated.

References

- Allen, D. E. 1979. The Cambridge herbarium archive. Newslett. Soc. Bibliogr. Nat. Hist. 3: 8–9.
- Anonymous. 1853. Charles Morgan Lemann, M.D. Proc. Linn. Soc. London 2(52): 234–235.
- Boulger, G. S. 1912. Clarke, Charles Baron, 1832–1906. In: S. Lee. 1912. Dictionary of National Biography, Second Supplement. 3 vols. London: Smith, Elder & Co. Vol. 1. Pp. 366–367.
- Bradshaw, A. D. 1992. Thomas Gaskell Tutin, 21 April 1908–7 October 1987. Biogr. Mem. Fellows Roy. Soc. 38: 359–375.
- Bramwell, D. 1972. Flora of Macaronesia Project. Taxon 21: 730–732.
- Bramwell, D. and D. M. Moore. 1973. Flora of Macaronesia Project: A progress report. Monogr. Biol. Canar. 4: 165–168.
- Bridson, G. D. R., V. C. Phillips and A. P. Harvey. 1980. Natural History Manuscript Resources in the British Isles. London: Mansell.
- Britten, J. 1904. R. Brown's list of Madeira plants. J. Bot. 42: 1–8, 39–46, 175–182, 197–200.

- Britten, J. and G. S. Boulger. 1931. A Biographical Index of Deceased British and Irish Botanists, ed. 2. London: Taylor and Francis.
- Brooks, F. T. and T. F. Chipp. 1931. Fifth International Botanical Congress, Cambridge, 16–23 August, 1930, Report of Proceedings. Cambridge, England: Cambridge University Press.
- Burkill, I. H. 1965. Chapters on the History of Botany in India. Calcutta: Botanical Survey of India.
- Clokie, H. N. 1964. An Account of the Herbaria of the Department of Botany in the University of Oxford. Oxford: Oxford University Press.
- Cosson, E. 1868. Catalogue des plantes recueillies par G. Mandon, en 1865 et 1866, dans les îles de Madère et de Porto-Santo. Bull. Soc. Bot. France 15: 94–103, 181–190.
- Desmond, R. 1977. Dictionary of British and Irish Botanists and Horticulturists. London: Taylor and Francis.
- Forbes, E. 1846. On the connexion between the distribution of the existing fauna and flora of the British Isles, and the geological changes which have affected their area, especially during the epoch of the Northern Drift. Memoirs of the Geological Survey of Great Britain, and of the Museum of Economic Geology in London 1: 336–432.
- Gilbert-Carter, H. 1924. Descriptive Labels for Botanic Gardens. Cambridge, England: Cambridge University Press.
- Hansen, A. 1974. Contributions to the flora of Madeira and Porto Santo. Bocagiana 36: 1–37.
- Hansen, A. 1980. A list of botanical collectors, Madeira archipelago. Bocagiana 51: 1–12.
- Jackson, B. D. 1907. Obituary notices: Charles Baron Clarke. Proc. Linn. Soc. London 119: 38–42.
- Johnson, J. Y. 1885. Madeira, Its Climate and Scenery: A Handbook for Invalid and Other Visitors with Chapters on the Fauna, Flora, Geology and Meteorology, ed. 3. London: Dulau & Co.
- Lowe, R. T. 1833. On *Chamaemeles coriacea* and *Sempervivum glutinosum*. Trans. Linn. Soc. London 16: 393–398.
- Lowe, R. T. 1856. Species plantarum Maderensium quaedam novae, vel hactenus ineditae, breviter descriptae. Hooker's J. Bot. Kew Gard. Misc. 8: 289–302.
- Lowe, R. T. 1861a. A list of plants observed or collected at Mogador and in its immediate environs during a few days' visit to the place in April 1859; with notes and observations. J. Proc. Linn. Soc., Bot. 5: 26–45.
- Lowe, R. T. 1861b. A list of the shells observed or collected at Mogador and in its immediate environs during a few days' visit to the place in April 1859; with notes and observations. J. Proc. Linn. Soc., Zool. 5: 169–204.
- Lowe, R. T. 1868 [1857–1872]. A Manual Flora of Madeira and the Adjacent Islands of Porto Santo and the Desertas. London: John Van Voorst. [Vol. 1, pt. 1(1857), pt. 2(1862), pt. 3(1863), pt. 4(1868), pt. 5(1868) and vol. 2, part 1(1872); all published.]
- Mason, N. H. 1855. Plants of Madeira, etc. Hooker's J. Bot. Kew Gard. Misc. 7: 317–318.
- Menezes, C. A. de. 1914. Flora do Archipelago da Madeira. Funchal: Typ. Bazar do Povo.
- Nash, R. 1990. Scandal in Madeira: The Story of Richard Thomas Lowe. Lewes: The Book Guild Limited.
- Newell, H. A. 1931. The English Church in Madeira. Oxford: Oxford University Press.
- Norman, F. M. 1889. The indigenous flora of Madeira, in special relation to its peculiar plants. Trans. Bot. Soc. Edinburgh 17: 82–89.
- Press, J. R., M. Short and M. J. Turland. 1994. The Flora of Madeira. London: Her Majesty's Stationery Office.
- Sell, P. 2007. Obituary: Stuart Max Walters (1920–2005). Watsonia 26: 215–227.
- Stafleu, F. A. and R. S. Cowan. 1976–1988. Taxonomic Literature, ed. 2. 7 vols. Utrecht: Bohn, Scheltema & Holkema. Vol. 3: Lh–O.
- Stevens, P. F. 2003. George Bentham (1800–1884): The life of a botanist's botanist. Arch. Nat. Hist. 30: 189–202.
- White, R. and J. Y. Johnson. 1857. Madeira, Its Climate and Scenery: A Hand-Book for Invalid and Other Visitors, ed. 2. Edinburgh: Adam and Charles Black.
- Williams, R. B. 2004. John Van Voorst. In: B. Lightman, ed. 2004. The Dictionary of Nineteenth-Century British Scientists. 4 vols. Bristol: Thoemmes Continuum. Vol. 4. Pp. 2063–2066.
- Williams, R. B. 2016. Francis Martin Norman (1833–1918) of Berwick: His botanical beginnings in Madeira, and an annotated bibliography of his publications. Hist. Berwickshire Naturalists' Club 53(part 2 for 2015): 173–205.
- Williams, R. B. 2017. The publication dates of the parts-issue of Richard Thomas Lowe's A Manual Flora of Madeira (1857–1872), with a publishing history. Bol. Mus. Hist. Nat. Funchal 67(347): 5–23.
- Williams, R. B. 2018. Richard Thomas Lowe's unfinished A Manual Flora of Madeira: The fate of the letterpress remaining after his untimely death. Huntia 17(1): 37–48.
- Williams, R. B. 2019. Cambridge University Herbarium Archives: Translocations of its botanical manuscripts among Cambridge libraries (1967–2018), amendments to records, and collation of indexes. Huntia 17(2): 141–149.