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'A young slip of botany': botanical networks, the South Atlantic, and Britain's maritime worlds, *c.*1790–1810*

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Abstract

This article explores the relationship between science and empire, through the prism of British botanical engagement with the South Atlantic in the late eighteenth and early nineteenth centuries. It investigates the logistics of plant exchanges, as information, expertise, and specimens followed the maritime contours of the British empire. The discussion traces the nascent network-building undertaken by officials, residents, and visitors on St Helena and at the Cape of Good Hope, and the exchange of plant specimens with London and, crucially, with other places around the empire. The article suggests that such activities offer perspectives on wider patterns of interaction with an area located at the crossroads of Britain's maritime empire. In time, the region forged its own botanical networks and created alternative axes of exchange, association, and movement.

Keywords botany, British empire, Cape of Good Hope, natural history, St Helena, science

On 26 June 1793, Major Francis Robson, a former captain in the Madras establishment and now lieutenant governor of St Helena, wrote to William Forsyth in London. He assured Forsyth that he was 'not tired of pursuing natural history by any means'. But he added the caveat that he found his position somewhat 'ill convenient' for such activities, as they were 'attended with great expense – all going out and nothing coming in return'.[1] Robson's correspondence with Forsyth, the superintendent of the Royal Gardens of St James and

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1 Royal Botanic Gardens, Kew (henceforth RBG), Forsyth correspondence, FOR/1/2, p. 70, Francis Robson to William Forsyth, 26 June 1793. For more on Robson, see Thomas H. Brooke, *A history of the island of St Helena: from its discovery by the Portuguese to the year 1806*, London: Black, Parry and Kingsbury, 1808, p. 271.

Kensington, offers a particularly personal insight into the wider phenomenon discussed in this article: British botanical engagement with the southern Atlantic Ocean in the late eighteenth and early nineteenth centuries. By the early years of the nineteenth century, the region's interest to the 'naturalist' and 'botanist' had almost become a truism.[2] The taking of the Cape in 1795, and the altered political circumstances brought about by the consolidation of Britain's hold on the southern reaches of the South Atlantic and on the Indian Ocean, offered increased opportunities for British botanists – both amateur and professional – to study and collect there.

This article explores the relationship between science and empire, through the prism of those botanical activities. It is concerned with the period before large-scale British colonial involvement in the region, when botanizing efforts there were influenced and affected by Britain's extensive and expanding maritime networks of trade and empire. Government officials, East India Company employees, private residents, and expert visitors increasingly engaged in botanical investigations, the exchange of plants and other specimens, and the establishment of institutions to promote such activity at the Cape of Good Hope and on St Helena. The discussion investigates the exchanges facilitated by people such as Robson, as information, expertise, and specimens followed the maritime contours of the British empire. In particular, it considers the practices of collecting and exchange, key features of knowledge creation in the period and often linked to processes of imperial consolidation and colonial expansion.[3]

The article traces the nascent network-building undertaken by officials, residents, and visitors on St Helena and at the Cape, and the exchange of plant specimens with London and, crucially, with other places around the empire. Focusing on the movement of plants – as well as the institutions established to succour, store, and study them – offers ways of interrogating the relationship between the applications of science and the consolidation of empire. The discussion suggests that such activities offer perspectives on wider patterns of interaction with an area located at the crossroads of Britain's maritime empire. In time, the region forged its own botanical networks and created alternative axes of exchange, association, and movement. Rather than a unique phenomenon, then, the example of British botanical engagement with the South Atlantic at the turn of the nineteenth century might be regarded as a case study – albeit with specific political and social

2 *Anon. Sketches of India; or, observations descriptive of the scenes in Bengal: written in India in the years 1811, 12, 13, 14; together with notes on the Cape of Good Hope, and St Helena, written at those places in Feb., March, and April, 1815*, London: Black, Parbury, and Allen, 1816, p. iv. By the time that Matthew Flinders called at the Cape in 1801 – on a voyage to chart and survey Australia in HMS *Investigator* – he remarked that it 'cannot now be supposed to furnish much of novelty in the department of natural history, especially to transient visitors'. Nevertheless, he continued, it still afforded 'much instruction and amusement to English botanists. It did so to our gentlemen, who were almost constantly on shore upon the search; and their collections, intended for examination on the next passage, were tolerably ample.' See Matthew Flinders, *A voyage to Terra Australis undertaken for the purpose of completing the discovery of that vast country*, London: G. & W. Nicol, 1814, p. 43. See also Hedley Twidle, 'Prison and garden: Cape Town, natural history and the literary imagination', PhD thesis, University of York, 2010.

3 Robert E. Kohler, 'Finders, keepers: collecting sciences and collecting practice', *History of Science*, 45, 4, 2007, pp. 428–54. On wider connections between information-gathering and empire, see C. A. Bayly, *Empire and information: intelligence gathering and social communication in India, 1780–1870*, Cambridge: Cambridge University Press, 1997. On connections between collecting – in all its various guises – and processes of imperial consolidation and colonial expansion, see Maya Jasanoff, *Edge of empire: conquest and collecting in the East, 1750–1850*, London: Harper, 2006. See also Helen Cowie, *Conquering nature in Spain and its empire, 1750–1850*, Manchester: Manchester University Press, 2011, pp. 38–9.

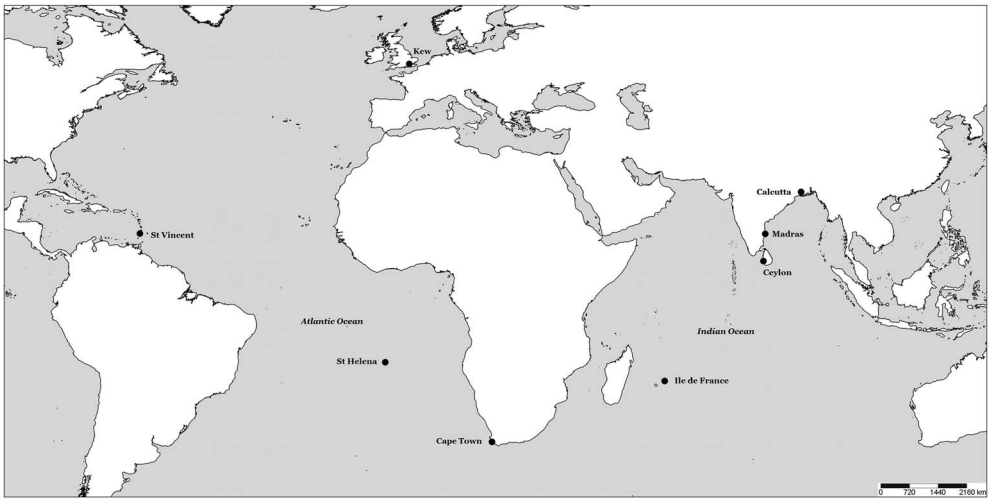

Figure 1. Map showing botanic gardens mentioned in the text.

contexts – for a wider phenomenon.[4] By exploring this particular example, therefore, the article argues for the central location of so-called peripheral regions in the development of European science and empire (see Figure 1).

The connections forged and facilitated by early modern science (and its proponents), and their relationship with the development of early modern European empires, have inspired much scholarly discussion.[5] Historians have long been concerned with the ways in which processes of movement and circulation affected the dispersal of information and the formation of knowledge.[6] This focus on the 'transit' of knowledge and its material culture emphasizes 'the multifarious and multidirectional nature of global exchange and encounter'.[7] Recently, the work of a number of scholars has further disrupted the reification of metropolitan centres and colonial peripheries. As Sujit Sivasundaram has suggested, historians need to regard individual places on their own terms and pay attention to their ability 'to act as a node or a circuit of information'.[8] Khyati Nagar has shown that 'science circulated in multiple communication networks', and that such networks of communication between India and Britain were not always controlled by powerful administrators in the metropole.[9] And, specifically in relation to

4 There were parallel developments elsewhere in the British empire at the time. See Miles Ogborn, 'Talking plants: botany and speech in eighteenth-century Jamaica', *History of Science*, 51, 172, 2013, pp. 251–82.

5 For an overview, see Paolo Palladino and Michael Worboys, 'Science and imperialism', *Isis*, 84, 1993, pp. 91–102. For recent examples, see Susan Scott Parrish, *American curiosity: cultures of natural history in the colonial British Atlantic world*, Chapel Hill, NC: University of North Carolina Press, 2006; Harold J. Cook, *Matters of exchange: commerce, medicine, and science in the Dutch Golden Age*, New Haven, CT: Yale University Press, 2007; James Delbourgo and Nicholas Dew, eds., *Science and empire in the Atlantic world*, Abingdon: Routledge, 2008; Brett M. Bennett and Joseph M. Hodge, eds., *Science and empire: knowledge and networks of science across the British empire, 1800–1970*, Basingstoke: Palgrave Macmillan, 2011; Peter Boomgaard, ed., *Empire and science in the making: Dutch colonial scholarship in comparative global perspective, 1760–1830*, Basingstoke: Palgrave Macmillan, 2013.

6 James A. Secord, 'Knowledge in transit', *Isis*, 95, 2004, pp. 654–72.

7 Bernard Lightman, Gordon McOuat, and Larry Stewart, 'Introduction', in Bernard Lightman, Gordon McOuat, and Larry Stewart, eds., *The circulation of knowledge between Britain, India and China: the early-modern world to the twentieth century*, Leiden: Brill, 2013, p. 8.

8 Sujit Sivasundaram, 'Sciences and the global: on methods, questions, and theory', *Isis*, 101, 2010, pp. 157–8.

9 Khyati Nagar, 'Between Calcutta and Kew: the divergent circulation and production of *Hortus Bengalensis* and *Flora Indica*', in Lightman, McOuat, and Stewart, *Circulation of knowledge*, pp. 158, 153.

European activities on the maritime route between Asia and Europe, Lissa Roberts has further emphasized the capacity of places, such as the Île de France (Mauritius), to be central and centralizing locations in their own right.[10] She advocates focusing on 'the relative location of a centre of accumulation', as well as on 'the media and pathways through which the movements of people, objects and knowledge have taken place'.

Such circulation of data and material has been considered extensively in relation to the North Atlantic.[11] This has yet to be done, however, for the southern hemisphere, where the gravitational pull of the British empire in Asia exerted its influence ever more strongly as the eighteenth century progressed. Similarly, much attention has been devoted to British scientific engagement with the Indian subcontinent, principally through the activities of the East India Company and its agents.[12] Minakshi Menon has recently argued that the East India Company and its institutions in India played crucial roles in shaping practices of natural history in the subcontinent and that, conversely, those practices influenced the Company's structure and practices of governance. There was, in the work and ideas of William Roxburgh for example, an almost symbiotic relationship between control of the natural world and the consolidation of state power.[13] But there is little consideration – the ground-breaking work of Richard Grove excepted – of the ways in which botanical practices affected, and were affected by, the maritime route to India or the colonial outposts along that route that supplied, refreshed, and protected Britain's oceanic empire.[14]

While British interests extended across the South Atlantic and included South America, this article focuses on those locations – specifically St Helena and the Cape of Good Hope – where East India Company ships called most frequently and where maritime connections with Asia were most pronounced. By exploring the connections between this South Atlantic region and London – as well as, crucially, the connections forged within the region itself and with the Indian subcontinent – this article contributes to scholarship that seeks to reorient European science in the extra-European world away from interpretations that depend on what Susan Scott Parrish has called 'the unidirectional power of metropolitan science to remake the imperial periphery in its own image'.[15] Instead, it suggests that connections facilitated by empire were more complicated, often bypassing imperial metropoles, and linking nodes at the so-called 'peripheries' to each other.

10 Lissa Roberts, '"*Le centre de toutes choses*": constructing and managing centralization on the Isle de France', *History of Science*, 52, 2014, pp. 319–42.

11 Kapil Raj, *Relocating modern science: circulation and the construction of knowledge in South Asia and Europe, 1650–1900*, Basingstoke: Palgrave Macmillan, 2009, pp. 20–1. Specifically on the North Atlantic context, see Londa Schiebinger, 'Scientific exchange in the eighteenth-century Atlantic world', in Bernard Bailyn and Patricia L. Denault, eds., *Soundings in Atlantic history: latent structures and intellectual currents, 1500–1830*, Cambridge, MA: Harvard University Press, 2009; Sarah Irving, *Natural science and the origins of the British empire*, London: Pickering and Chatto, 2008.

12 Adrian Thomas' detailed examination of the establishment of the Calcutta Botanic Garden offers an excellent insight into the intersections between botanical science and networks of exchange in India. See Adrian P. Thomas, 'The establishment of Calcutta Botanic Garden: plant transfer, science and the East India Company, 1786–1806', *Journal of the Royal Asiatic Society*, 16, 2, 2006, pp. 165–77. For a recent example of this approach, see Vinita Damodaran, Anna Winterbottom, and Alan Lester, eds., *The East India Company and the natural world*, Basingstoke: Palgrave Macmillan, 2014.

13 Minakshi Menon, 'Making useful knowledge: British naturalists in colonial India, 1784–1820', PhD thesis, University of California, San Diego, 2013, pp. xiii–xiv, 225.

14 Richard Grove, *Green imperialism: colonial expansion, tropical island Edens and the origins of environmentalism, 1600–1860*, Cambridge: Cambridge University Press, 1996. See also A. T. Grove, 'St Helena as a microcosm of the East India Company world', in Damodaran, Winterbottom, and Lester, *East India Company*, pp. 249–69.

15 Parrish, *American curiosity*, p. 7, n. 7.

Contrary to Robson's stated views above, the evidence suggests that the region was, in fact, very well situated to facilitate flows of information, expertise, and specimen exchanges with people and institutions beyond the region – often in London, at the metropolitan heart of empire, but also in India. And far from Robson's gloomy assessment that 'nothing' of botanical interest ever came here, the discussion below demonstrates that, under British rule, St Helena and the Cape were at the centre of a series of overlapping systems of botanical exchange. This article suggests, then, that the potential for knowledge gathering and dispersal was contingent and crucially dependent on place. In considering 'the conduits and heterogeneous networks' through which such data and specimens passed, it attempts to reimagine the geographies of British botanical exchange.[16] It traces flows of information and material along maritime routes of communication, situating the South Atlantic at the oceanic crossroads of empire.

The article offers a four-fold approach. It begins by positing the South Atlantic as a region which developed links between and across European empires. By highlighting the array of connections forged through botanical engagement with this part of the world, it demonstrates that the activities of British botanists did not take place in a hermetically sealed 'British' world. The second section moves on to focus on the British example in particular. It shows that even those based at the heart of London's scientific world, such as Sir Joseph Banks, depended on local and personal connections in the South Atlantic brought about by changing patterns of British engagement with the rest of the world, and with India in particular. Botanical exchanges were not the exclusive preserve of a cadre of elite metropolitan practitioners. Rather, they depended on agents based on the ground. The final two sections build on this theme, exploring the importance of personal and professional links sustained between the Cape, St Helena, and other parts of the world, the intersecting roles of amateurs and professionals, the importance of expertise, and the development of institutions. The third section considers networks and exchanges between the South Atlantic and India. The article concludes by investigating the development of institutions at St Helena and the Cape which served similar functions, connecting these places with the Indian subcontinent, and forcing us to reconsider the ways in which such networks of botanical exchanges worked in the period.

Botany and empires in the South Atlantic

By the late eighteenth century, botanical exploration at the Cape and on St Helena was neither new nor an exclusively British activity. Indeed, as Sir George Yonge, an early British governor of the Cape readily acknowledged, such activities had been championed by other countries 'before we began our career'.[17] The remitting of plants permeated intellectual life and scientific activity in all of the European maritime empires. Botanists and other plant collectors travelled widely and communicated frequently with colleagues in other countries. They exchanged ideas and specimens readily, acknowledging that botanical science could best be advanced by the pooling of knowledge.[18] When it was under the control of the Dutch East India Company, for example, the garden at Cape Town acted as a 'point of intersection where local knowledge,

16 Raj, *Relocating modern science*, pp. 7, 22.
17 British Library (henceforth BL), Africa, Pacific, and Asia Collections (henceforth APAC), MSS Eur D809, Sir George Yonge to William Roxburgh, 8 December 1791.
18 David Mackay, *In the wake of Cook: exploration, science and empire, 1780–1801*, London: Croom Helm, 1985, pp. 12–13.

needs and networks flowed into the global (trade) canals, to be brought to distant shores'.[19] The French and Portuguese were also deeply involved in forging connections between the region and the wider world. And these often cut across national and imperial borders. William Roxburgh, for instance, remarked on the 'frequent conveyances from Rio de Janeiro to Calcutta, for both plants and seeds'.[20]

The Cape, in particular, had long been a magnet for European scientists.[21] The Dutch had been collecting seeds and plants, as well as transferring them between South Africa and elsewhere around the Indian Ocean, almost from the time when Jan van Riebeeck first established a permanent victualling station at the Cape in 1652.[22] In 1779, the Cape Fiscal, W. C. Boers, sent 150 plant specimens to Batavia as a contribution to the natural history collections there.[23] Indeed, the Dutch even supplied 'the rarest and the best of every species, both in plant and seed' to the ships of the 'First Fleet' as they called on their way to establish a British penal colony in New South Wales.[24] The Cape also received specimens in return. Robert Percival, one of the first British officers to enter Cape Town after its surrender, commented on the riches presented by the Company's garden. The plants represented the role that the Cape played under Dutch rule in bringing together specimens from a diversity of places, as several were 'from Europe, many from India, Otaheite, and other parts of the world', including 'the tea plant, and bread fruit tree'.[25]

And it was not just the Dutch who took an active botanical interest in the region. Sir Joseph Banks lauded the French for their 'transportation of useful plants from one part of the globe to another', which set an example for everyone else.[26] When he arrived as the first British civilian governor of the Cape, Lord Macartney took the 'earliest opportunity' to make enquiries for Banks about 'the dried plants etc. which had been left at this place by the French naturalists'.[27] The French islands in the south-western Indian Ocean also acted as centres of scientific research in the southern hemisphere.[28] William Roxburgh corresponded with botanists with connections there, such as Céré, de Cossigny, and Jannet.[29] Here, too, links with the wider world played an important role, as shrubs and trees came from all over the globe.[30]

19 Alette Fleischer, 'The Company's garden and the (ex)change of nature and knowledge at Cape of Good Hope', in Lissa Roberts, ed., *Centres and cycles of accumulation in and around the Netherlands during the early modern period*, Berlin: Lit Verlag, 2012, p. 101.
20 William Roxburgh to Joseph Banks, 28 November 1814, in Neil Chambers, ed., *The Indian and Pacific correspondence of Sir Joseph Banks, 1768–1820*, vol. 8: *letters 1810–1821*, London: Pickering & Chatto, 2014, p. 114.
21 See Fleischer, 'The Company's garden', pp. 101–28. See also Mia C. Karsten, *The old Company Gardens at the Cape and its superintendents*, Cape Town: Maskew Miller Ltd, 1951.
22 See Simon Pooley, 'Jan van Riebeeck as pioneering explorer and conservator of natural resources at the Cape of Good Hope (1652–62)', *Environment and History*, 15, 1, 2009, pp. 3–33.
23 Robert Ross and Alicia Schrikker, 'The VOC official elite', in Nigel Worden, ed., *Cape Town between East and West: social identities in a Dutch colonial town*, Hilversum: Uitgeverij Verloren, 2012, p. 41. For more on the wider Dutch networks in the Indian Ocean into which the Cape slotted, see Kerry Ward, *Networks of empire: forced migration in the Dutch East India Company*, Cambridge: Cambridge University Press, 2008.
24 David Collins, *A voyage to New South Wales with Governor Phillip*, London: J. Debrett, 1790, p. 5.
25 Robert Percival, *An account of the Cape of Good Hope*, London: C. & R. Baldwin, 1804, pp. 118–19.
26 Joseph Banks to Lord Liverpool, 11 August 1796, quoted in Grove, *Green imperialism*, p. 337.
27 Bodleian Library of Commonwealth and African Studies, Rhodes House, University of Oxford (hereafter RH), Macartney Papers, MSS.Afr.t.3, Lord Macartney to Joseph Banks, 24 July 1797.
28 Marc Serge Rivière, 'From Belfast to Mauritius: Charles Telfair (1778–1833), naturalist and a product of the Irish Enlightenment', *Eighteenth-Century Ireland*, 21, 2006, p. 126.
29 T. F. Robinson, 'William Roxburgh (1751–1815): the founding father of Indian botany', PhD thesis, University of Edinburgh, 2003, p. 159.
30 Jacques-Henri Bernardin de Saint Pierre, *A voyage to the island of Mauritius*, London: W. Griffin, 1775, pp. 118–31.

Regardless of language spoken or national allegiance, there were also many practical issues to be considered by anyone attempting to transport seeds and live specimens across extensive oceanic spaces. Seeds were carried in sealed, air-tight bottles, preserved in beeswax or sugar, or dried in papers. Tubers were packed dormant in peat, while tubs, barrels, and casks carried live plants bedded in wood mould and moss, which helped to retain moisture.[31] Although advice was available, the failure rate was high.[32] The exchanges detailed in this article took place before the development of the Wardian case, which transformed seaborne plant transportation. Before then, problems abounded. Fresh water was a precious commodity, while animals and livestock on board were prone to eat unprotected plants. Spray from salty sea water presented the biggest threat to live specimens on any sea-going vessel but bringing plants from Asia to Europe was particularly difficult as it involved crossing the equator twice and passing through a variety of hazardous environments.[33]

Nevertheless, despite commonalities across and between European empires, there are also distinctive characteristics in relation to the logistics and practicalities of specimen transfer across the oceans. For instance, from the early eighteenth century, British botanists relied much more heavily on commercial shipping networks and personal relationships to transport specimens than their continental (specifically their French) counterparts.[34] These personal connections often delivered plants, seeds, and specimens to London but they also linked other regions of the globe with the South Atlantic. And even those exchanges that brought material to Britain relied on local contacts. Rather than seeing these channels of communication as being directed exclusively from the metropolitan centre, the evidence suggests a more variegated pattern, with those in Britain – both men of science and general amateurs of botany – relying on the endeavour, interest, and goodwill of those in the field, at the 'edge' of empire.

Botanizing, collecting, and exchanging: the metropolitan connection

The natural history networks forged between the South Atlantic and Britain in the late eighteenth and early nineteenth centuries were eclectic. They comprised a mixture of 'professional' men of science, with specific interests and agendas, and amateur colonial officials and residents, whose reasons for collecting and sharing botanical specimens were less systematic. All of them, however, took advantage of the increasingly robust British presence in the region to facilitate the exchange of material.

Francis Masson was one. He had originally travelled to Africa with the Dutch East India Company (VOC) but he went back on two occasions with the help of Joseph Banks.[35] Masson

31 Nigel Rigby, 'The politics and pragmatics of seaborne plant transportation, 1769–1805', in Margarette Lincoln, ed., *Science and exploration in the Pacific: European voyages in the southern oceans in the eighteenth century*, Woodbridge: Boydell, 1998, pp. 84–7.

32 See, for example, John Ellis, *Directions for bringing over seeds and plants, from the East Indies and other distant countries in a state of vegetation*, London: L. Davis, 1770; John Ellis, *A description of the mangostan and the bread-fruit*, London: John Ellis, 1775; John Fothergill, *Directions for taking up plants and shrubs, and conveying them by sea*, London: s.n., 1796.

33 Rigby, 'Politics and pragmatics', pp. 87–8, 96–7.

34 Christopher M. Parsons and Kathleen S. Murphy, 'Ecosystems under sail: specimen transport in the eighteenth-century French and British Atlantics', *Early American Studies: An Interdisciplinary Journal*, 10, 3, 2012, p. 505.

35 James Britten, 'Francis Masson', *Journal of Botany*, 22, 1884, pp. 114–23. For a comprehensive consideration of Masson's activities in South Africa, see M. C. Karsten, 'Francis Masson, a gardener-botanist who collected

was an undergardener in Aberdeen when he was chosen by William Aiton of Kew to take part in a natural history mission to South Africa. Taking outward-bound passage as a supernumerary aboard the *Resolution* on James Cook's second voyage to the Pacific, Masson arrived at the Cape in late 1772, where he collected seeds and plants for the Royal Botanic Gardens for two years. He returned to South Africa in 1786, remaining rather longer, until 1795. An indefatigable collector, he made numerous journeys into the interior with Carl Thunberg and sent large collections to Banks.[36]

During his time at the Cape, Masson kept Banks abreast of progress and developments. On one occasion, he wrote to say that he hoped that the seeds he had sent to Britain had 'arrived in time to sow'. He continued by informing Banks that he had managed to procure permission to visit the Hottentot Holland Mountains, but only for five days. While there, he was lucky enough to find some of the rarest species of heath ('Erica') and protea in seed. From the evidence of the many new plants he found there, Masson concluded that the locality had never been properly explored, a hint which Banks, with his immense resources and connections, would rectify in the future. Masson finished by informing Sir Joseph that he was sending a parcel of 117 species, of which a catalogue was enclosed, by Sir Thomas Milne.[37] In this one letter, then, both data and material were sent to Banks in London from southern Africa, assisting the process of cataloguing, calculating, and ordering over which Banks presided. Masson also acted as a conduit for other collectors wishing to transport material back to Britain. For example, when he stopped at St Helena, he was engaged by Francis Robson to take samples of ferns back to Britain. As Mrs Robson informed William Forsyth at Kew, 'Mr Masson has taken a number of the same sort home for our friends'.[38]

The British capture of the Cape in 1795 brought amateur botanists and non-professional collectors to the region. John Barrow arrived with the new governor, Lord Macartney, and he was soon travelling on the colonial frontier and collecting specimens. He told Lady Anne Barnard, another British resident at the Cape, that he would be able 'to furnish Mr Barnard with specimens of *all* the woods of Southern Africa':

> I found a new Strelitzia, a curious plant which will be a very acceptable thing in England. I sent half a dozen bulbs by the Hope, and desired Maxwell to put one by for you – if you happen to have a botanical friend in England, I know of no plant that could be half so agreeable. This is the worst season in the world for obtaining the seeds of plants, which is the only part of them I think it is worth while to collect.[39]

Barrow's letter also highlights the role of female botanists, who became increasingly important as botany was equated with ideas about women's nature and their natural roles from the second half of the eighteenth century.[40] An interest in the language of flowers was esteemed, as

at the Cape', *Journal of South African Botany*, 24, 1958, pp. 203–18; 25, 1959, pp. 167–88, 283–310; 26, 1960, pp. 9–15; 27, 1961, pp. 15–45.

36 James Britten, 'Some early Cape botanists and collectors', *Journal of the Linnean Society (Botany)*, 45, 301, 1920, p. 41.

37 Francis Masson to Joseph Banks, 8 March 1786, in Warren R. Dawson, ed., *The Banks letters: a calendar of the manuscript correspondence of Sir Joseph Banks*, London: British Museum, 1958, p. 591.

38 RBG, FOR/1/2, p. 92, M[rs] Robson to William Forsyth, 11 May 1795.

39 John Barrow to Lady Anne Barnard, 12 October 1797, in Dorothea Fairbridge, ed., *Lady Anne Barnard at the Cape of Good Hope, 1797–1802*, Oxford: Clarendon Press, 1924, p. 50.

40 Alice N. Walters, 'Conversation pieces: sciences and politeness in eighteenth-century England', *History of Science*, 35, 1997, pp. 121–54.

Dianne Lawrence has shown, as an expression of female refinement and a marker of feminine taste.[41] It was Queen Charlotte's chosen pastime, for example. And in 1773, Joseph Banks bestowed the name *Strelitzia reginæ*, referred to in Barrow's letter above, on the exotic bird-of-paradise flower recently introduced into England 'as a just tribute of respect to the botanical zeal and knowledge of the present Queen of Great Britain'.[42]

Barrow's correspondent, Lady Anne Barnard, was no mean botanist herself. She wrote to Macartney, who had by this time retired to Europe, that she was 'nursing up plants of different sorts in packing-cases and pots, to be ready for a sea voyage by & bye, of which my dear Lord shall have the first choice if he is possessed of a greenhouse'.[43] On an excursion to Table Mountain, she did not neglect to take up 'what plants I could get': 'I have one bush which if it lives will be the first that ever reached England of the sort, & is very beautiful, a chocolate and pink flower.'[44] While many interpretations dwell on women as 'consumers' of flowers and plants, Lady Anne offers evidence of direct and active female involvement in their cultivation and the development of botanical science in the region.[45] She was not the only one: Henrietta Clive showed a keen interest when she called at the Cape on her way to India, and Anna Maria Walker cut her botanical teeth on St Helena, where her father, Robert Patton, was governor, before going on to play a key role in collecting, cataloguing, and recording plants in Ceylon.[46]

Another key figure in expanding the botanical networks of the British empire, and the Cape in particular, was William Roxburgh, the superintendent of the East India Company's Botanic Garden at Calcutta. On 14 January 1798, Roxburgh informed Banks that he was about to embark on a Danish ship for the Cape 'on account of his health, and eventually for England should circumstances render it necessary'.[47] But, whatever the state of his health, Roxburgh was not about to miss an opportunity to botanize at the Cape. When he arrived there, he immediately wrote to Banks by 'Mr Brown the Surgeon of the Albion' and 'sent many seeds, specimens etc. all of which I hope you have received safe'. He proceeded to 'embrace the opportunity of writing you a few lines under the care of Mr Fontana, a Surgeon on the Bengal Establishment, who goes on to England in the same ship'. The surgeon carried 'for you a large collection of seeds'. But there was a slight problem: 'They are numbered, as usual, but unfortunately [I] forgot the list behind me. I have wrote for it and shall send it to you by the first conveyance after it reaches me.'[48]

The following year, on his way back to India, Roxburgh again sent seeds collected at the Cape to London.[49] Although he feared that Banks 'may not want much Cape seeds, yet I will collect and send you some as soon as I have a little time'.[50] Sir Joseph also received specimens

41 Dianne Lawrence, *Genteel women: empire and domestic material culture, 1840–1910*, Manchester: Manchester University Press, 2012, pp. 142–5.
42 Quoted in Ann B. Shteir, *Cultivating women, cultivating science: Flora's daughters and botany in England 1760 to 1860*, Baltimore, MD: Johns Hopkins University Press, 1996, p. 36.
43 Lady Anne Barnard to Lord Macartney, 18 October 1800, in Fairbridge, *Lady Anne Barnard*, p. 231.
44 *Ibid*., p. 234. Dorothea Fairbridge maintains that this was a protea plant. However, Lady Anne may equally have been referring to a pelargonium, which became a popular house and garden plant.
45 Lawrence, *Genteel women*, p. 145.
46 Shteir, *Cultivating women*, p. 193. See also H. J. Noltie, *The botanical collections of Colonel & Mrs Walker: Ceylon, 1830–1838*, Edinburgh: Royal Botanic Garden Edinburgh, 2013.
47 BL, Additional Manuscript (hereafter Add. MS) 33980, p. 126, William Roxburgh to Joseph Banks, 14 January 1798.
48 BL, Add. MS 33980, p. 137, William Roxburgh to Joseph Banks, 24 April 1798.
49 BL, Add. MS 33980, p. 184, William Roxburgh to Joseph Banks, 30 March 1799. See also BL, Add. MS 33980, p. 170, Joseph Banks to William Roxburgh, 7 January 1799.
50 BL, Add. MS 33980, p. 138, William Roxburgh to Joseph Banks, 24 April 1798.

from Roxburgh's son, John, whom the latter had left at the Cape to collect for the Botanic Gardens in Calcutta.[51] John's father asked him to send collections to Banks, especially examples of heath.[52] The seeds were sent on the *Hillsborough*, which sailed for England on 26 January 1801. Unfortunately, this trip was less successful than expected: there is a note in Banks' handwriting recording that the specimens were 'very indifferent'.[53] Nevertheless, the Roxburghs' presence at the Cape attests to the Indian connection, which, as we will see, was a crucial aspect of the British botanical engagement with the South Atlantic.

Sir Joseph Banks was not the only London-based recipient of botanical material and information from the Cape and St Helena. William Forsyth also collected material from correspondents in this part of the burgeoning British empire. His appointment as superintendent of the Royal Gardens in 1771 located him at the centre of a web of potential correspondents. One Mr Emolie wrote from Cape Town, asking Forsyth to 'send me some instructions on botany – what [are] the easiest modes for preserving the bulbs of roots, the stems and flowers etc.'.[54] He also seems to have provided material assistance in the form of tools and plant supplies. On St Helena, for example, Major Robson's wife entreated Forsyth to provide the new gardener shortly to embark for the island with implements and 'two or three guineas worth of flower seeds and a few bulbous plants such as you think will grow here'.[55] But this was a two-way process and many of these correspondents subsequently remitted botanical specimens to Forsyth. For example, he received a steady stream of letters and specimens from St Helena. Although Thomas McRitchie, gardener to the Robsons, complained about the lack of contact, this did not deter him from making collections on Forsyth's behalf. Despite having 'never received a letter from you these two years past', he told Forsyth that 'I have made a collection of everything the island naturally produces', which he planned to send when a suitable opportunity arose.[56] The Robsons themselves were also in touch with Forsyth. Major Robson's wife wrote to him, informing him that she had 'sent you a large tub of fern plants. They look very well.'[57]

In many of these cases, the geographical position of the South Atlantic offered extensive opportunities for both amateur and professional botanists to make use of ships returning to Europe. The Cape often acted as a point of transhipment. Andrew Barnard, the resident colonial secretary, collected specimens for Lady Jane, wife of Henry Dundas. Barnard wrote to Dundas to say that he had 'employed two persons who have promised either to bring or send me pieces of all the different sorts of wood at Ceylon, which her ladyship expressed a desire of having, and that I will send them home as soon as I receive them'.[58] St Helena's geographical position, on the sea route for East Indiamen returning from the East, also offered opportunities for those on the island to use such channels to send material back to Britain. Robert Patton, governor of the island, used the Company's commercial connections to send plant specimens to the horticulturalist Charles Francis Greville. The ship on which Brooke planned to send his specimens

51 John Roxburgh (1777–1823) was William's 'natural' son, born to an Indian woman shortly after William's arrival at Madras. For more information on John Roxburgh, see Robinson, 'William Roxburgh', pp. 85–91.
52 BL, Add. MS 33980, p. 261, John Roxburgh to Joseph Banks, 6 January 1801.
53 BL, Add. MS 33980, p. 269, John Roxburgh to Joseph Banks, 20 February 1801.
54 RBG, FOR/1/2, p. 111, J. Elmolie to William Forsyth, 17 June 1797.
55 RBG, FOR/1/2, p. 103, M[rs] Robson to William Forsyth, 14 November 1796.
56 RBG, FOR/1/2, p. 48, Thomas McRitchie to William Forsyth, 14 June 1792.
57 RBG, FOR/1/2, p. 92, M[rs] Robson to William Forsyth, 11 May 1795.
58 Andrew Barnard to Henry Dundas, 23 August 1797, in A. M. Lewin Robinson, ed., *The letters of Lady Anne Barnard to Henry Dundas*, Cape Town: A. A. Balkema, 1973, p. 65.

had just arrived from the Battle of Pulo Aor. One of the principal supercargoes on board, Mr Lance, was taking 'China productions of plants' to Greville, as well as 'a numerous collection of which he is conveying home for His Majesty's Garden at Kew'. In any case, Lance's 'general attention to the vegetable family on board the Earl Camden' presented a good opportunity

> to send you a healthy and promising plant of the Barringtonia which he has promised to take under his particular charge and protection, and send, with what he has to give you from himself. He has also taken charge of a box directed for you, which contains a piece of the island coral, that may not be curious, but it is certainly beautiful. One of our island fishermen brought it up with his fishing line.[59]

The geographical position of the South Atlantic, at the intersection between the Atlantic and Indian oceans, made it an important location for collecting, transmitting, and transhipping botanical material to Britain. But those who received this material in Britain, whether as men of science or as amateur botanists, comprise only one element in the larger picture of the British botanical engagement with the South Atlantic.

The South Atlantic and alternative networks of botany

In an expanding empire, plant exchanges were not necessarily centred on London. The rising importance of Britain's Asian empire shaped botanical engagements with the region in significant ways. At the end of 1797, for example, the British authorities at the Cape were in the process of organizing a return passage to India for 'Buckshu', a 'black gardner' [*sic*] and a 'native' of Bengal. Christopher Smith, the nurseryman at the Botanic Garden in Bengal, had requested that this person (who had 'brought some plants from Amboyne for this place, St Helena, England, and Bengal') 'might be provided with a passage to Calcutta by the first convenient opportunity'.[60] Only a few years later, in January 1799, another trajectory of Britain's global empire intersected with the region, as Philip King called at the Cape in HMS *Porpoise*. King was on his way to New South Wales, to take up the position of governor there, and his retinue included three gardeners. One of these, George Caley, was just eighteen when he accompanied William Roxburgh to visit Lady Anne Barnard: 'Doctor Roxburg [*sic*] came to breakfast and brought with him a young slip of botany sent by Sir Joseph Banks and a society of gentlemen chiefly of the mercantile line who are desirous of having all the different specimens of heaths and all the flowers which the Cape affords.'[61] Both of these examples highlight the alternative 'routes' that botanical exchanges centred on the South Atlantic could take.

The South Atlantic had long been at the crossroads of botanical exchanges. An Indian traveller on his way to Britain, Mirza Abu Taleb Khan, described how St Helena nurtured trees and plants from both Europe and Asia.[62] An anonymous account, written a few years earlier,

59 BL, Add. MS 42071, pp. 121–2, Robert Patton to Charles Francis Greville, 17 June 1804. The *Barringtonia* mentioned here could refer to a number of species, native to South and Southeast Asia, which had been cultivated on the island as a result of previous exchanges.

60 RH, MSS.Afr.t.3, Acheson Maxwell to John Pringle, 17 January 1798; RH, MSS.Afr.t.2, Hercules Ross to John Pringle, 25 December 1797.

61 Diary entry, 3 March 1799, in Margaret Lenta, ed., *Paradise, the Castle and the Vineyard: Lady Anne Barnard's Cape diaries*, Johannesburg: Wits University Press, 2006, pp. 52–3.

62 Mirza Abu Taleb Khan, *Travels of Mirza Abu Taleb Khan in Asia, Africa, and Europe, during the years 1799, 1800, 1801, 1802, and 1803*, transl. Charles Stewart, London: Longman, Hurst, Rees, Orme, and Brown, 1814, p. 97.

remarked on the striking juxtaposition of 'English vegetables and every kinds of fruits' with 'plants and trees of the east' at the governor's country house.[63] And in the first decade of the nineteenth century, William Kerr at Canton arranged to send 'a large collection of the most valuable fruit trees procurable' there to the island, in the hope that 'they will answer the climate better than the European fruits'.[64] A similar trend is evident at the Cape: when he returned alone for a second sojourn, Andrew Barnard sent his wife, Lady Anne, 'a Loquat plum, a Chinese fruit of excellent flavour' from the Cape shortly before his death there in October 1807.[65] By virtue of its position as a nodal point for specimen transfer and knowledge exchange, and in a similar way to that identified by Lissa Roberts on the Île de France, the South Atlantic region rapidly became an important centre in its own right.[66] It sustained networks which often bypassed European scientific circles, moving to other parts of the empire.

As we have seen, William Roxburgh corresponded with Joseph Banks in London but his own Indian connections suggest something of the more complex patterns of exchange that characterized botanical exploration in the South Atlantic in the period. His friendship with Father Christopher John at Tranquebar, for example, enabled him to dispatch specimens to scientists across northern Europe.[67] Roxburgh was clearly adept at forming informal networks that cut across geographical boundaries and national loyalties, and his presence at the Cape indicates how these alternative connections might have worked in practice and the means by which the region was not only connected with London but was also potentially part of a wider Indian Ocean world of science. Roxburgh already had a wide spectrum of contacts, many of which bypassed London: by 1793, he was distributing teak seed, Bengal hemp, Virginia tobacco, Cerulean indigo, and Arabian coffee, and sending plants to England, St Helena, the West Indies, and different parts of India.[68] He soon identified the possibilities offered by the acquisition of a botanical base in Africa. When he arrived at the Cape, he brought 'many fine plants in the highest order on shore with me here'.[69] He also sent 'Pentapetes Linn. Pterospermum suberifolium' (the cork-leaved bayur) to St Helena, where 'it was reared in the Company's nursery from seed'.[70] Roxburgh did not collect for the scientific establishment alone: Lady Anne Barnard noted in her journal that she drove out to her country residence outside Cape Town, the Vineyard, 'to plant some seeds given me by Dr Roxburgh and which I have delayed putting in the ground'.[71]

Roxburgh recognized the region's potential for advancing the work of his own institution. While politicians and officials identified prospects for the recruitment of troops, Roxburgh saw the chance of acquiring some useful additions to his botanical establishment.[72] So, when

63 Hertfordshire Archives and Local Studies, DE/B472/25930c (1789), 'Account of the island of St Helena'.
64 William Kerr to Joseph Banks, 29 December 1804, in Neil Chambers, ed., *The Indian and Pacific correspondence of Sir Joseph Banks, 1768–1820*, vol. 6: *letters 1801–1805*, London: Pickering & Chatto, 2013, p. 395.
65 Fairbridge, *Lady Anne Barnard*, p. 331.
66 Roberts, "*Le centre de toutes choses*".
67 Mark Harrison, 'Networks of knowledge: science and medicine in early colonial India, *c.*1750–1820', in Douglas M. Peers and Nandini Gooptu, eds., *India and the British empire*, Oxford: Oxford University Press, 2012, p. 209.
68 Thomas, 'Establishment of Calcutta Botanic Garden', p. 172.
69 BL, Add. MS 33980, p. 138, William Roxburgh to Joseph Banks, 24 April 1798.
70 RBG, William Burchell Papers, WJB/1/3/23, 'An alphabetical list of plants seen by Dr Roxburgh growing on the island of St Helena in 1813–14', p. 316.
71 Fairbridge, *Lady Anne Barnard*, p. 200.
72 On troop movements and the connections between India and the Cape, see John McAleer, '"The key to India": troop movements, Southern Africa, and Britain's Indian Ocean world, 1795–1820', *International History Review*, 35, 2, 2013, pp. 294–316.

Lieutenant John Owen was dispatched by the Bengal Presidency to the Cape to recruit soldiers for its army from the defeated Dutch garrison in 1797, Roxburgh lost no time in contacting the army man. As Owen recalled, Roxburgh wrote to him, asking him 'to make a collection of any curious plants, flowers, bulbs, or seeds I might meet with during my residence at the Cape of Good Hope, and forward them' to Sir John Shore, the governor general at Fort William.[73] Later, when Roxburgh travelled to Britain, he left his son, John, at the Cape to collect for his father's garden in Calcutta.[74] Henrietta Clive, travelling with her husband (the new governor of Madras) and children met Roxburgh in South Africa. She was less than impressed, as Roxburgh's gruff exterior overshadowed his expertise: 'There happens to be a most learned botanist from Bengal who is such a boor that it is more than I can bear.' Nevertheless, Lady Clive recognized that his contacts and connections were likely to prove useful for her garden at Madras, as he promised to 'collect for me and I think I shall be able to send plants in from all parts of the world'.[75]

There was also a burgeoning exchange in botanical, horticultural, and zoological specimens within the region, between the Cape and St Helena. Andrew Barnard asked Robert Brooke, governor of the island, if he might send some pheasants to the Cape: 'I am told that you have a vast number of the English breed of pheasants at St Helena; if you could spare a few merely for the purpose of propagating the breed here you would exceedingly oblige me by sending them by the first safe opportunity.'[76] The authorities on the island were always keen for specimens from mainland Africa. In 1814, they wrote to the Cape with 'descriptions of the best sort of timber in the neighbourhood of Plettenberg Bay', requesting that means be taken 'for procuring and transmitting to us the seeds of the plants that are enumerated': 'Fir; Stinkwood or native oak; Izen or iron wood; Red and white els; Hassagai; Saffron wood; White and hand pean; Essen or ash; White bosh hout; Door boom … And above all the Cape yew.'[77] John Pringle, the East India Company agent at the Cape, sent 'the list of forest tree seeds' to the governor, Sir John Cradock, who duly forwarded them to St Helena in response to this request.[78]

But St Helena was not confined to dealing with the Cape. The island's position at an oceanic crossroads, and its situation as a way station, meant that it had long been subject to influences from elsewhere and it received varieties of plants from a number of places. On his way from the Pacific to the West Indies, for example, William Bligh exchanged indigenous St Helenian trees for breadfruit and Timorean plants.[79] In 1788, in a sign of the multiple botanical influences that affected the island, the 'Superintendent of Improvements', Henry Porteous, tried 'productions of the warm climate of India':

> Conformable to my orders, I am now naturalizing all the trees and shrubs which came from India in the garden in James's Valley, where in a short time I trust there will be a

73 BL, India Office Records (henceforth IOR), P/4/50, pp. 255–6, John Owen to Sir John Shore, 6 February 1797, in Public Consultations at Fort William, 3 May 1797, para. 87, quoted in Tim Robinson, *William Roxburgh: the founding father of Indian botany*, Chichester: Phillimore, 2008, p. 210.
74 BL, Add. MS 33980, p. 261, John Roxburgh to Joseph Banks, 6 January 1801.
75 Henrietta Clive to Lady Douglas, 7 June 1798, in Nancy K. Shields, ed., *Birds of passage: Henrietta Clive's travels in South India, 1798–1801*, London: Eland, 2009, pp. 52–3.
76 Andrew Barnard to Robert Brooke, June 1799, in Fairbridge, *Lady Anne Barnard*, p. 123.
77 BL, IOR, G/9/13, pp. 37–8, M. Wilks, J. Skelton, H. W. Doveton, and Robert Leeck to Cape of Good Hope factory, 14 February 1814.
78 BL, IOR, G/9/20, p. 31, John Pringle to Sir John Cradock, 4 April 1814.
79 Donal M. McCracken, *Gardens of empire: botanical institutions of the Victorian British empire*, London: Leicester University Press, 1997, p. 13.

> fine collection, as those already procured and planted grow very well, viz. the mongosteen, mangoe tree, baseen plantain, jambo malac, coffia etc. but we soon hope to propagate a much greater variety of trees and shrubs here, as the soil and climate seem so peculiarly well adapted to Eastern productions.[80]

And when William Roxburgh called at the island in 1814, he identified a host of plants introduced from elsewhere, such as 'Cordia macrophylla [the broad-leaved cordia], a large tree from Bengal', 'Daphne odora [winter daphne] … from China', and 'Mespilus japonica' (possibly the loquat, of the genus *Eriobotrya*, which is still sometimes referred to as the Japanese medlar).[81]

Maritime routes and connections were crucial in facilitating the transfer of material from India to St Helena. The complex logistics involved in arranging such transfers can be gauged from a series of letters relating to the transfer of botanical specimens from the subcontinent to the island in 1790.[82] Captain Thomas Foxall, of the *General Goddard*, was charged with paying 'every attention to the preservation thereof during the passage to that island'.[83] On 9 April, the planters on St Helena reported to the authorities at Fort St George the safe arrival of the ship by which 'we received the twelve nopal plants sent hither by Dr Anderson; also a plant of the Bread Fruit Tree consigned to us from Mr Roxburgh of your settlement; and we have the pleasure to inform you that they are in a very thriving situation'.[84] In September, Captain James Munro, commander of the *Houghton*, was 'directed to receive on board your ship from Dr James Anderson a box containing different forms of plants, to be delivered to the Society of Planters of St Helena'. Once again, the captain was requested 'to preserve them from injury during the voyage'. One and a half chests containing plants were duly received on board.[85] The following year, Major Francis Robson wrote to Anderson to acknowledge yet more assistance from Madras: 'It was with infinite satisfaction I received your kind letter of the 15th February last. We received the plants etc. for the Planters Society, and the Governor placed them under the care of Mr Porteous.'[86]

The correspondence between James Anderson in Madras and various contacts in the South Atlantic illustrates the alternative tides of specimen exchange and scientific expertise that British maritime links facilitated. Anderson studied medicine at the University of Edinburgh and acted as ship's surgeon on various East Indiamen before taking up a medical position in the Madras Presidency, where he eventually became physician general. The St Helena Planter's Society requested 'the favour of [his] opinion and advice' on their schemes. Established with the intention of increasing 'the annual produce of this little spot, by raising a spirit of active application in the inhabitants', they sent him 'a copy of the report of the Honourable Company's gardiner [*sic*], which may in some degree enable you to judge what success may be

80 Henry Porteous to Robert Brooke, Governor, and the Council of St Helena, 1 April 1788, in James Anderson, *Correspondence for the introduction of cochineal insects from America, the varnish and tallow trees from China, the discovery and culture of white lac, the culture of red lac. And also for the introduction, culture and establishment of mulberry trees and silk worms …*, Madras: Joseph Martin, 1791, p. 7. For more on Henry Porteous, see Alan Frost, *The global reach of empire: Britain's maritime expansion in the Indian and Pacific oceans, 1764–1815*, Carlton, Victoria: Miegunyah Press, 2003, p. 196.
81 RBG, WJB/1/3/23, 'Alphabetical list of plants', pp. 303, 305, 313.
82 Robert Clerk to James Anderson, 11 January 1790, in Anderson, *Correspondence*, p. 11.
83 Robert Clerk to Thomas Foxall, 11 January 1790, in *ibid.*, pp. 11–12.
84 Extract of a letter from St Helena, 9 April 1790, in *ibid.*, p. 16.
85 Robert Clerk to James Munro, 15 September 1790, in *ibid.*, p. 15. For more on the Planters' Society, see Frost, *Global reach*, p. 196.
86 Extract of a letter from Major Robson, 2 July 1791, in James Anderson, *The continuation of letters on the progress and establishment of the culture of silk on the coast of Coromandel*, Madras: Joseph Martin, 1792, p. 17.

expected to result from our pursuits and what assistance you can afford us to promote them'.[87] In short, Anderson in Madras provided an alternative source of expertise. He also offered a certain amount of patronage, or at least access to it, by assuring the St Helenians that, in order to ensure that 'no assistance may be wanting which this country affords', he had 'directed your plan to be published in our Courier'.[88]

Anderson also sent plants to the island, together with significant amounts of information and context which were unavailable to the islanders: 'I send by Capt. Gregory a box filled with the yam *Dioscorea alata*. … I take this opportunity to assure you they will prove a great means of maintaining the inhabitants if the planters … will pay attention to their culture.' Another box contained seeds which would 'afford food for the poultry and fodder for the cattle', as well as tree seeds 'chiefly with a view to establish sufficient firewood, and to serve as a shelter and support to the vine of the yam'.[89] As Anderson pointed out, some of these trees could be put to other uses, and he enclosed an extensive and impressive list which detailed some of these alternative uses.[90]

Anderson's connections with the South Atlantic were not solely confined to St Helena. Lord Macartney and Anderson were old friends, presumably as a result of Macartney's time as governor on the Coromandel Coast. Having heard about Anderson's 'cultivation of the cotton shrub', one of his many schemes undertaken 'to benefit the public', Macartney got in touch, as one consequence of the British acquisition of the Cape was an attempt to grow cotton in the colony. Macartney was disarmingly honest in doubting 'its being able to rival' Anderson's, but he was undeterred – 'We ought nevertheless to aim at perfection, however we may fall short of it' – and to aid his schemes he envisaged making use of the connections between the two places: 'Allow me then, my dear sir, to address myself to you to assist my pursuits and to request that you would be so good as to send me a bag of cotton seeds for sowing, by the earliest opportunity with any such directions or instructions as you may think useful for the management of them.'[91]

The circuits of information and specimen exchange between the Cape, St Helena, and India, encapsulated in Anderson's correspondence and evident in other examples, demonstrate the alternative networks of empire sustained by the South Atlantic region. Bypassing Britain entirely, these connections forged and strengthened links between locations in the Indian Ocean, showing some of the ways in which Britain's Asian empire worked in practice. Another way in which botanical exchanges between the South Atlantic and the rest of the empire were facilitated was through the establishment of institutions that allowed the more systematic accumulation and exchange of knowledge. Chief among these were botanic gardens; here, again, potential connections between the South Atlantic and India were to the forefront.

Botanic gardens and networks of exchange

Colonial botanic gardens were important institutions in facilitating plant exchanges.[92] If, as Donal McCracken observes, such gardens in the colonies 'rarely had anything to do with each

87 St Helena Planters' Society to James Anderson, 14 June 1788, in Anderson, *Correspondence*, pp. 4–5.
88 James Anderson to St Helena Planters' Society, 4 February 1789, in *ibid*., p. 10.
89 *Ibid*., p. 9.
90 'List of roots and seeds sent to the St Helena Planter's Society', in Anderson, *Correspondence*, p. 10.
91 RH, MSS.Afr.t.3, Macartney to James Anderson, 18 September 1797.
92 Nuala C. Johnson, *Nature displaced, nature displayed: order and beauty in botanical gardens*, London: I. B. Tauris, 2011, p. 6. See also Andrew Cunningham, 'The culture of gardens', in N. Jardine, J. A. Secord, and E. Spary, eds., *Cultures of natural history*, Cambridge: Cambridge University Press, 1996, pp. 38–56.

other' in the Victorian period, the evidence from the South Atlantic suggests that there was a lively cross-fertilization of material and expertise at an earlier date.[93] And, as with the personal networks discussed above, this exchange of objects, specimens, and expertise offers insights about the role of imperial connections. These institutions became 'hybrid spaces' where 'the conventional leitmotif of centre–periphery relationships' was challenged.[94]

Echoing the attention paid to Kew by Banks, the interest of various governors in the Company Gardens at Cape Town highlights changing British attitudes to the botanical riches of southern Africa and the region's place in Britain's empire. Their concern reflects the fact that an ideology of 'improvement' shaped activities throughout the empire.[95] For example, according to Robert Percival, Lord Macartney ordered the garden 'to be replanted and laid out' upon his arrival in 1797, while simultaneously procuring 'a great number of very curious plants from Asia, Europe, Africa, and South America; most of which thrived very well'.[96] But Macartney's efforts paled in significance beside those of William Roxburgh and Sir George Yonge. In both these cases, their ideas for improving and expanding the botanical institution at the Cape relied on significant support from, and interaction with, similar institutions in India.

William Roxburgh's vision for the empire's botanic gardens was wide-ranging. Rather than simply seeing them as places from which to gather specimens, he had a Banksian view of their value: 'We may then, if this place [the Cape] remains in our possession, soon hope to see all the plants of the East carried westward and those of the West brought East.'[97] In this scheme, the Cape would become the centre of its own network, bypassing London and creating an alternative hub of botanical activity, supplying and being supplied from further afield. He admitted that:

> Since we have been in possession of the Cape of Good Hope, it has often occurred to me that a small garden establishment there would be of infinite use. In the first instance as a resting place for plants to recoup at from India to Europe and the West Indies; and from these countries again to our colonies to the eastward of the Cape, and for forwarding the plants of the Cape itself, as well as for introducing others into that colony should we retain it; or even should it be restored to the Dutch at the close of the War.[98]

But Roxburgh was not in a position to effect any permanent change at the Cape. He was merely a peripatetic botanist. Macartney's replacement as governor, Sir George Yonge, was much better placed to create the kind of institutions at the Cape that Roxburgh and Banks craved. Yonge's blueprint for botanical exploration and exploitation in southern Africa not only drew on Banksian ideas of utility, but also located the Cape at the centre of an alternative axis of empire connected with India rather than London.

Yonge's various schemes for 'founding theatres and masquerade rooms', as Richard Wellesley described them, were partially responsible for eliciting unfavourable judgements on his governorship. But among these plans were ideas relating to agricultural improvements and scientific advances, which situated plant exchanges and botanical research at the heart of his

93 McCracken, *Gardens of empire*, p. 2.
94 Johnson, *Nature displaced*, p. 7.
95 Richard Drayton, *Nature's government: science, imperial Britain, and the 'improvement' of the world*, New Haven, CT: Yale University Press, 2000, p. 113.
96 Percival, *Account*, p. 119.
97 BL, Add. MS 33980, p. 138, William Roxburgh to Joseph Banks, 24 April 1798.
98 William Roxburgh to Joseph Banks, 10 December 1796, quoted in Robinson, *William Roxburgh*, p. 210.

strategy for the colony's development.[99] Yonge had already been involved in initiatives for establishing a garden at St Helena when he was Secretary at War in London. He was able to 'prevail with the East India Company to establish a garden in that island and also to give orders for seeds and plants of all kinds which may be useful in medicine and commerce to be brought and cultivated there in order to [have] them from thence conveyed in a favourable state to St Vincent'.[100] He had similarly grand designs in mind for the Cape, which would have connected the colony with other areas in the empire on an economic basis, bypassing the imperial metropolis in a similar way to that envisaged by Roxburgh. Just as Joseph Banks considered Kew as 'a great botanical exchange house for the empire', so Yonge imagined something similar for the Cape.[101]

The warnings of the War Office issued to Yonge to curb his spending provided the governor with the occasion to justify his plans.[102] His wish was, he said, 'to restore [the garden] in some degree, to make it of some use, and in particular to make it afford a valuable addition in time to His Majesty's Garden at Kew'.[103] He outlined his strategy for achieving this objective by informing Dundas that he had applied 'before my departure to the Court of Directors of the East India Company for their countenance and assistance from their presidencies in India and elsewhere'. He was happy to report that, with 'a liberality of sentiment, and a love of science', they 'sent such general circular orders to all their settlements, as have produced me very considerable assistance indeed, and I will add that I also submitted … to continue my superintendence of the Botanical Garden at St Vincent, in order to direct a mutual supply to each garden'.[104]

Sir George's subsequent correspondence reveals more about his views on the connectedness of the empire. He wrote to Sir Stephen Lushington, the Chairman of the East India Company, on 10 May 1799, expressing his belief that 'as Governor of the Cape, I feel it my duty, and it is my intention, to restore and improve the Botanical Gardens there, which had been lately rather neglected'.[105] Yonge continued in this vein: 'I hope to put it on a footing, which may render it more generally useful even than it had ever yet been, and I hope for the cooperation of every man, or body of men, who are friends to botany and to science.'[106] Importantly, Yonge's vision was one that circumvented London. He was, he wrote, commanded to facilitate connections with the Cape, just as 'directions having likewise here been given for the Duke of Portland's Office to form a connexion between the Cape and the South Waters'. It only remained for 'the East India Company to give a sanction to a similar cooperation with their settlements in India'.[107]

In this important letter, Yonge drew direct parallels between his botanical plans and wider questions of what purpose the Cape might serve as a hub of empire:

> It appears to me, that, by this means the Botanical Garden at the Cape may become what the situation and valuable productions render it particularly qualified for: the centre of

99 J. K. Laughton, 'Yonge, Sir George, fifth baronet (1732–1812)', rev. Jonathan Spain, in *Oxford Dictionary of National Biography*, Oxford: Oxford University Press, 2004, online edn, May 2009, http://www.oxforddnb.com/view/article/30223 (consulted 16 October 2014).
100 Sir George Yonge to Alexander Anderson, 31 March 1787, quoted in Grove, *Green imperialism*, p. 340.
101 Quoted in Jim Endersby, *Imperial nature: Joseph Hooker and the practices of Victorian science*, Chicago, IL: University of Chicago Press, 2008, p. 233.
102 War Office to George Yonge, 28 July 1800, in George McCall Theal, ed., *Records of the Cape Colony*, 36 vols, Cape Town: The Government of the Cape Colony, 1897–1905, vol. 3, pp. 203–4.
103 Yonge to Dundas, 5 January 1801, in *ibid.*, vol. 3, p. 375.
104 *Ibid.*, pp. 375–6.
105 BL, IOR, E/1/100, p. 204, Sir George Yonge to Sir Stephen Lushington, 10 May 1799.
106 *Ibid.*
107 *Ibid.*

> union, correspondence and connexion with every part of the globe, for the purposes of useful science, more especially as I understand there is an easy and immediate communication with the West Indies from the Cape, the voyage … not exceeding a month or six weeks sail at the most.[108]

Ultimately, he was requesting authorization from Lushington to correspond with other people and establishments in the Company's dominions. Yonge envisaged a connection between these different gardens with the result that 'by a communication of the contents of each garden, mutual aid may be given to all'. The benefits to be derived promised to contribute 'not only to articles of ornament but of domestick viability of food, of medicine and of commerce'. As was his wont, Yonge had great ambitions for his scheme. He imagined a future where he would 'extend this plan', which, 'by means of a connexion in the every [*sic*] part of the globe', would greatly benefit 'mankind in general'.[109]

Clearly Yonge was granted permission to initiate this network of correspondence because, on 29 May 1799, the authorities in Bombay reported:

> It being the intention of Sir George Yonge the Governor of the Cape to restore and improve the Botanical Garden there, we direct that he be provided with a catalogue of the plants at Bombay, and that Dr Helenus Scott be requested to correspond with His Excellency from whom he will receive every assistance which can lend to the encouragement of such productions and to the promotion of science.[110]

Less than a week later, on 5 June 1799, the establishments in Bengal and at Fort St George directed catalogues of the plants in their respective gardens to be sent to the Cape, as well as ordering their botanical superintendents to get in touch with Yonge.[111] The following year, exchanges of plants and specimens took place between the Cape and India. On 2 September 1800, it was reported that the superintendent of the Botanic Gardens in Bengal had 'shipped on the Princess Mary, now under dispatch, two chests of plants and a box containing above one hundred kinds of seeds, accompanied by a catalogue of the plants at present growing in the Hon'ble Company's Botanic Gardens in Bengal for the information of His Excellency the Governor of the Cape'.[112] The following month, 'a supply of seeds and plants for the Cape of Good Hope, which have been collected [by] the superintendent of the Nopalry' were 'embarked on the Queen' from Madras.[113] Yonge wrote to Wellesley in India, recording his appreciation, and saying that he was:

> much obliged to the Court of Directors for the liberal manner in which they sent orders to assist the Botanical Garden here, from a love of science which does them honor, and I need not say how much I feel the kindness with which you have been pleased to lend assistance, which has been of great service to the institution & I trust in the end will be of public utility.[114]

108 *Ibid.*
109 *Ibid.*
110 BL, IOR, E/4/1014, p. 411, Public letter, Bombay, 29 May 1799, para. 33. The reference is to Dr Helenus Scott (1757–1821) of the Bombay Medical Service.
111 See BL, IOR, E/4/648, p. 640, Public letter, Bengal, 5 June 1799; E/4/885, p. 537, Public letter, Fort St George, 5 June 1799, para. 49.
112 BL, IOR, E/4/60, Public letter, 2 September 1800, para. 24.
113 BL, IOR, E/4/327, Public letter, 9 October 1800, para. 126.
114 BL, Add. MS 13785, p. 47, Sir George Yonge to Richard Wellesley, 24 January 1801.

A similar process of network creation and nurture took place on St Helena. In May 1787, long before Yonge reached the Cape, the St Helena Planters' Society was founded 'with a view to promote the better cultivation and improvement of this island'.[115] In their correspondence with James Anderson in India, they elaborated their intentions further. Not only did they want 'to increase the annual produce of this little spot, by raising a spirit of active application in the inhabitants'; they also envisaged playing an active role in creating new botanical and horticultural knowledge. More specifically, 'as we consider the climate and soil here to be happily suited for botanical experiment, our desire is to advance and extend the species of culture by every encouragement in our power'.[116] To this end, they latched on to the geographical location of the island at the maritime crossroads of empire: 'We have already many plants and trees natives both of Europe and Asia; and we think the situation on this island is peculiarly well adapted to render it an intermediate nursery for the preservation of such plants as may not have strength to endure the whole course of a voyage to Europe or to the Eastern world.'[117]

Anderson's response to the Planters' Society indicates the mutual benefits of botanical exchanges, and a wider recognition of the role that the South Atlantic could play in Britain's burgeoning botanical empire. He intended 'to stock your garden with nopal plants' from India in an attempt to cultivate the cochineal insect. But the planters should also 'be ready to treat such insects as the Court of Directors will think proper to send you from America; from whence they will be conveniently taken up again by outward bound ships'. In this example, Anderson was convinced that St Helena 'by its central situation may become very instrumental' in this whole business.[118] The island continued to fulfil the same function, as 'a repository, or resting place, to the valuable productions of the East, intended for Europe', when James Drummond called in 1807.[119]

Conclusion

Sverker Sörlin argues that 'Centrality or peripherality was not primarily a matter of geographical location.'[120] The disparate and diverse links sustained by St Helena suggest the 'polycentric' nature of scientific connections and the significant role that these locations in the southern reaches of the Atlantic and Indian oceans played in Britain's botanical engagement with the wider world.

In claiming that nothing came back 'in return' for his botanizing activities, Francis Robson underestimated the place of St Helena and the Cape in the British botanical and scientific firmament. Botanical networks of exchange, as this article has demonstrated, were more complex and disparate than Major Robson suggested. Those centred on metropolitan people and places – such as Sir Joseph Banks, William Forsyth, or Kew – were undoubtedly important.

115 Robert Brooke, David Kay, Rev Mr Wilson (Treasurer), N. Bazett, and William Wrangham to James Anderson, 14 June 1788, in Anderson, *Correspondence*, p. 4.
116 *Ibid*., p. 4.
117 *Ibid*., pp. 4–5.
118 James Anderson to St Helena Planters' Society, 4 February 1789, in Anderson, *Correspondence*, p. 10.
119 James Drummond to Joseph Banks, 30 June 1807, in Neil Chambers, ed., *The Indian and Pacific correspondence of Sir Joseph Banks, 1768–1820*, vol. 7: *letters 1805–1810*, London: Pickering & Chatto, 2013, p. 266.
120 Sverker Sörlin, 'National and international aspects of cross-boundary science: scientific travel in the 18th century', in Elizabeth Crawford, Terry Shinn, and Sverker Sörlin, eds., *Denationalizing science: the contexts of international scientific practice*, Dordrecht: Kluwer Academic Publishers, 1993, p. 45.

But they were not the only ones.[121] While many botanical exchanges did follow well-trodden pathways to London, the movement of botanical specimens, the establishment of gardens, or the activities of those forging exchanges were not always 'imperial' in character. Botanical collecting and scientific endeavour were not necessarily always, or even primarily, related to imperial or political concerns. Trade, empire, and botany do not always map directly or neatly on to each other. Processes of knowledge creation existed in imperial, transoceanic, and transnational contexts.[122] As we have seen, more complex relationships developed between the exchange of information and the movement of objects on the one hand, and maritime routes of trade and political power on the other.

Botanical activities at the Cape and on St Helena made these places regional hubs of scientific endeavour in their own right, forging local systems of knowledge and bypassing metropolitan institutions in London.[123] Steven Shapin has remarked that the intellectual and cultural uses of science 'must be sought in local conditions and examined in local terms'.[124] And, as Nigel Rigby has demonstrated, local, particular, and specific circumstances fundamentally affected the development of scientific networks in different parts of the world and their contribution to empire.[125] These local networks facilitated the safe passage of goods – including the many plants and botanical specimens – as well as the transfer of scientific expertise. The discussion above, drawing on a multi-centric approach to empire in general and relating to the South Atlantic in particular, therefore offers a more nuanced approach to empire, focusing on its alternative networks and the routes of exchange, cooperation, and intersection that often circumvented Europe.[126] The example of the South Atlantic illustrates how a peripheral area, a 'young slip' in botanical and scientific terms, developed and matured through a combination of factors – political and scientific – to become a locus of activity. If science facilitated empire, then empire – or rather its complex networks of exchange, circuits of knowledge, and circulation of personnel and expertise – also facilitated science.

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121 See Satpal Sangwan, 'Natural history in colonial context: profit or pursuit? British botanical enterprise in India, 1778–1820', in Patrick Petitjean, Catherine Jami, and Anne Marie Moulin, eds., *Science and empires*, Dordrecht: Kluwer Academic, 1992, pp. 281–98.

122 For an excellent recent study of these broad issues in relation to British imperialism and global ecological change in the nineteenth century, see James Beattie, Edward Melillo, and Emily O'Gorman, eds., *Eco-cultural networks and the British empire*, London: Bloomsbury, 2014.

123 See Roy MacLeod, 'On visiting the "moving metropolis": reflections on the architecture of imperial science', in Nathan Reingold and Marc Rothenberg, eds., *Scientific colonialism: a cross-cultural comparison*, Washington, DC: Smithsonian Institution Press, 1987, pp. 217–49.

124 See Steven Shapin, 'The Pottery Philosophical Society, 1819–1835: an examination of the cultural uses of provincial science', *Science Studies*, 2, 4, 1972, p. 313.

125 Rigby, 'Politics and pragmatics', p. 85.

126 For an analogous approach, though for a later period, see James Beattie, 'Plants, animals and environmental transformation: Indian-New Zealand biological and landscape connections, 1830s–1890s', in Damodaran, Winterbottom, and Lester, *East India Company*, pp. 219–48.

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