

Charles Darwin's botanical connections with Oxford

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Summary

During the celebrations of the 200th anniversary of the birth of Charles Darwin (1809 – 1882), it seemed an appropriate time to look at the handful of herbarium specimens¹ collected by Darwin, held by Oxford University Herbaria, and work out how they came to be there.

Introduction

At the age of 22, Charles Darwin, a graduate of the University of Cambridge, accepted the post of gentleman companion aboard *HMS Beagle*, under Captain Robert FitzRoy. The expedition embarked on a surveying voyage around the world. During the voyage, which lasted five years (1831 – 1836), Darwin collected plants from South America including specimens from Brazil, Argentina, Chile, Peru and the Galapagos Islands. Furthermore Darwin wrote a journal, kept specimen notebooks, and penned copious letters home and to his mentor, Professor John Stevens Henslow. In his 'Autobiography', Darwin wrote "the voyage of the *Beagle* has been by far the most important event in my life, and has determined my whole career." (Darwin 1888a). It was at this time that Darwin formulated his ideas on the origin and evolution of species, which was to revolutionise previous beliefs.



John Stevens Henslow, by permission of the National Portrait Gallery

¹ Herbarium specimens are plants or parts of plants which have been pressed flat and dried, and then attached to stiff pieces of card by glue, tape or thread. As a minimum, the plant specimen must have a label stating when and from where it was collected. The label may also give many other details about the plant in the living state and its locality. Label information has enormous research value, for example in studying taxonomy, the flora of a particular area, global plant distribution, ecology, climate change, phenology and, of course, forensics. If preserved well and kept in a dry atmosphere, herbarium specimens can last for hundreds of years. In Oxford University Herbaria there are specimens that are over 400 years old.

Specimens collected by Darwin in Oxford University Herbaria

Mikania trinervis Hook. & Arn. (Family: Asteraceae)



Image by kind permission of the Oxford University Herbaria

This specimen was collected in February 1832 from Bahia in Brazil. Bahia is today called Salvador. This area was the second port of call on the voyage of *HMS Beagle*, after the Cape Verde Islands. Darwin spent 19 days on land in Salvador where the vegetation today is dry coastal scrub. The genus *Mikania* occurs in the tropics, primarily in the New World, and comprises about 430 different species. Many are climbers, some are epiphytic. There is a duplicate of this specimen in the Cambridge University Herbarium, which has been re-identified by Tod F. Stuessy as *Mikania* cf. *leutzelburgii*.

In a letter Charles wrote to his father dated March 1st [1832] from Bahia, or San Salvador, he says “I arrived at this place on the 28th February, and am now writing this letter after having in real earnest strolled in the forest of the new world. No person could imagine anything so beautiful as the ancient town of Bahia, it is fairly embosomed in a luxuriant wood of beautiful trees, and situated on a steep bank, and overlooks the calm waters of the great bay of All Saints.” (Darwin 1888a).

***Oxalis corniculata* L. (Family: Oxalidaceae)**



Image by kind permission of the Oxford University Herbaria

This specimen was collected in February or March 1832 from [Bahia] Salvador in Brazil. The specimen is stamped "Mus. Henslow" and it was therefore originally part of John Stevens Henslow's collection in Cambridge.

Oxalis corniculata is a cosmopolitan weed with yellow flowers. The species is considered to be an Old World plant but has spread considerably.

***Chuquiraga erinacea* D. Don (Family: Asteraceae)**



Image by kind permission of the Oxford University Herbaria

The label on this specimen clearly shows that Darwin collected the plant in October 1832 from Bahia Blanca on the coast of Patagonia, Argentina. Darwin spent 41 days in this area. Before arriving there, he wrote to his friend Frederick Watkins, on 18th August 1832, “We sail in the course of a day or two to survey the coast of Patagonia; as it is entirely unknown, I expect a good deal of interest.” (Darwin 1888a). Patagonia is a vast area of southern Argentina and Chile between latitudes 39° and 55°S. The Patagonian landscape is comprised of semi-deserts, shrub steppes, shrub-grass steppes and grass steppes. Steppes usually refer to landscapes without trees. *Chuquiraga* species are xeromorphic shrubs with thorns in the axils of the leaves and are adapted to life in very dry conditions.

***Chuquiraga kingii* Ball (synonym of *C. avellanae* Lorentz) (Family: Asteraceae)**



Image by kind permission of the Oxford University Herbaria (though this is stated to be in Darwin's writing, that is not the case)

Darwin collected this specimen from Port Desire, Patagonia, Argentina, sometime between 23rd December 1833 and 4th January 1834. *Chuquiraga avellanae* (syn. *kingii*) is a dwarf shrub with a cushion habit and it occurs in semi-deserts and shrub steppes.

In a letter from Darwin to Henslow, dated March 1834, while in East Falkland Islands, he writes "I collected all the plants, which were in flower on the coast of Patagonia at Port Desire & St. Julian; ... With them are as many seeds, as I could find (you had better plant all the rubbish which I send, for some of the seeds were very small). The soil of Patagonia is *very* dry, *gravelly* & light". (<http://www.darwinproject.ac.uk/entry-238>).

How did Oxford University acquire a handful of Darwin specimens from the *Beagle* voyage?

This is a slight mystery as there is no documentation that refers to the matter. Darwin had sent most of his plant collections back to his mentor Henslow and they are now held in the Herbarium at Cambridge University. There are also Darwin specimens held at Kew, which were acquired by Darwin's friend Joseph Dalton Hooker and a few in the Herbarium of the Royal Botanic Garden Edinburgh, which were originally in the possession of William Hooker (Joseph's father, Regius Professor of Botany at Glasgow). John Stevens Henslow (1796-1861), Professor of Botany at Cambridge University, who had recommended the young Charles Darwin as the naturalist on *HMS Beagle*, corresponded with William Baxter (1787-1871), Head Gardener at the Oxford Botanic Garden. They exchanged books and some (dried) plant specimens, and Professor Henslow visited Mr Baxter in Oxford in July 1837. Did he bring the specimens with him? A letter written by Henslow to Baxter, on the matter of exchange of specimens, is held in the Druce archives of Oxford University Herbaria (see transcript below).

There is also the possibility that Henry Borron Fielding, whose herbarium was bequeathed to the University of Oxford in 1851, acquired the Darwin specimens from his friend William Hooker with whom he corresponded between 1834 and 1851 (letters at R.B.G. Kew). Joseph Hooker went on to marry Henslow's daughter in 1851, which resulted in another connection, but perhaps the exchange was less likely via this route.

Transcript of letter written from Professor Henslow to Mr Baxter, Botanic Garden, Oxford (Autographs 7 1680-1860)

Letter dated 22 June 1830 Cambridge:

My dear Sir,

I am sorry I could not get to the Garden a second time during my short stay in Oxford – but we found that Dr Williams was not in the University & having so many things to see I could not spare the time – I send you a few botanical memoranda - & have to beg a favour of you, which is this – Be so good as to fill the tin box [vasculum] which will be sent to you with this letter with wild specimens of *Senecio squalidus* from the walls & forward it to me – I want to dry as many as I can get. If you procure them early one morning & send them off by the Cambridge Coach at 7 o Clock either Monday, Wednesday or Friday (from the Angel) I shall get them before 8 o Clock in the evening & can preserve them the same day – Be careful to select such specimens as are in good flower, & without much unnecessary stalk about them, as I shall receive the, fit for preserving – I am going out of Cambridge for 3 or 4 days after July 2 & would therefore thank you to send them either before then or after July 6th.

Believe me

Very truly yrs

J.S. Henslow

Darwin and Oxford

In 1847 a meeting of the British Association took place in Oxford and Darwin attended the meeting. He wrote in a letter to J.S. Henslow dated "Saturday night 1 April 1848: How pleasant the meeting at Oxford was; it is a white week in my memory."

He refers to his Oxford visit again in a letter written a year and a half later, just after returning from a British Association meeting in Birmingham: "It was a good meeting, but partly not being very well and partly from the place being so large & nasty, the meeting was not very brilliant to me, - not to be put into the same class with the Oxford Meeting, which, however, was too pleasant to be hoped to be rivalled. What days were Blenheim, Nuneham & especially Dropmore!".
(<http://www.darwinproject.ac.uk/entry-1254>).

The Department of Plant Sciences at the University of Oxford houses the Druce Herbarium, bequeathed by George Claridge Druce (1850-1932), one of the founders of the present day Ashmolean Natural History Society of Oxfordshire. A Druce Archive of letters and papers is held within the Sherardian Library, as well as in the Druce Herbarium itself. Within this collection a letter written to Druce from Darwin was found, signed by Darwin himself. This came to light after the bicentenary celebrations in 2009 but will no doubt be of interest to current members of the Society. A transcript of the letter from Druce Archive Box 5, letter number 3, appears below:

Letter dated [Ap]ril 25, 1876 Written from Down, Beckenham, Kent – Railway Station Orpington, S.E.R.:

Dear Sir

I beg leave to return my sincere thanks to the members of the Nat. Soc. & Club of Northampton for the honour which they have done me of electing me as a member. I hope that the Soc. may long flourish & continue to spread a love of the natural sciences in the neighbourhood.

I remain Dear Sir
your & faithful servant
Charles Darwin

Druce liked to correspond with the most well-known, active and elite natural historians of the day. He never seems to have thrown a letter away, whatever the subject matter, and even organized the letters into bound volumes in his own idiosyncratic manner. He must have written to Darwin in the hope of receiving a reply for his 'collection' and perhaps for starting a dialogue with him.

Conclusions

It seems most likely that Henslow brought a few Darwin specimens from his collections in Cambridge over to Oxford to show William Baxter, or even sent them to him. There is some evidence that this might have been the case as one of the herbarium sheets, that of *Oxalis corniculata*, is stamped 'Mus. Henslow', as are the sheets in the Cambridge University Herbarium.

However the specimens collected by Charles Darwin came to be held in Oxford, it shows that exchange and correspondence were at the heart of the botanical community in the nineteenth century. In the modern day, showing Darwin specimens from the *Beagle* voyage to visitors to the Herbarium always provokes a response of excitement and makes the figure of Darwin come alive for the onlooker!

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Darwin Correspondence Project at <http://www.darwinproject.ac.uk>

Druce Archive: Box No. 5, Sherardian Library of Plant Taxonomy, Oxford University.

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