Darwin's scientific women

Activity 1a: Female language
Subject: English
45 Minutes

Suggested preparation

Presentation:
Darwin's scientific women

What do I need?

Letter 6511: enclosure: the stone grasshopper, Mary Barber
Letter 8113: Mary Treat to Charles Darwin, 20 Dec 1871
Letter 3997: John Scott to Charles Darwin, 18 Feb [1863]
Who's who?
Letters questions: Female language

Naturalists Mary Treat and Mary Barber shared important scientific observations and discoveries with Darwin that he would have not otherwise have known about, but how did they communicate their findings? What do language, tone, and vocabulary tell us about women's education and position in nineteenth-century society?

What do I do?

1. Discuss whether you think there is a difference in female and male writing styles. Give examples and explain your ideas.

2. Read through the letters and 'Who's who?' and answer the questions below the letters.

3. Analyse the letters for potential gender differences in writing style. Annotate your findings.

4. If you think there are differences in the way that the letters are written, how could you explain those differences?

5. If you were comparing the language of modern letters of men and women, would there be any differences and, if so, how would you account for them?

Letter 6511 enclosure, the stone grasshopper, Mary Barber

[This is part of a paper by Mary Barber that was read at the Linnaen Society meeting on 4th February 1869 but not published. It was sent in a letter to Darwin by his friend Joseph Hooker who remarked 'Is it not a most charming description?']

There is in this country a stout built square looking Grasshopper, which is called (from the great resemblance it bears to a piece of stone) the `Stone Grasshopper'. so strikingly does it resemble in shape and color the stones amongst which it resides, and no matter what the formation or color of the rocks may be, our friend the `Stone Grasshopper' will `follow suit', it will be of precisely the same color or colors as the rocks and soil …

... The outer coating or case of the `Stone Grasshopper' is extremely hard and rough to the touch like the surface of a stone, and if by chance one of them is allowed to fall among the rocks the sound produced by its fall is like that made by one pebble striking against another, and the creature apparently receives no injury ...

... To some these facts may seem trifling but they are not in reality so, for they go a long way to advance and prove the truth of what Mr. Darwin has so cleverly described in his `Origin of Species' that the innumerable species of the animal kingdom—throughout the universe adapt themselves to surrounding circumstances, and through long periods of time grow into what we now find them— Creatures wonderfully adapted to fulfil their destiny amid the most variable conditions of life, no matter where those conditions may be ...

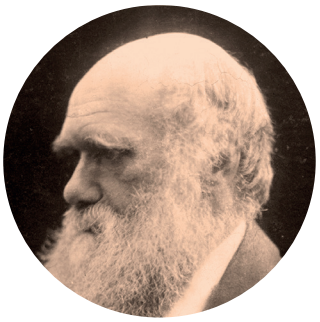
... I have told you that the case of the stone grasshopper is a hard case but (excuse the pun) let me hasten to undeceive you for his case is by no means a hard one, the "lines have fallen to him in pleasant places" he is a happy little creature living in ease and plenty, basking the live long day in the sunshine, and chirping his merry song, and dun though his coat may be, he can nevertheless boast of rainbow-colored hues, for upon the inner part of his thighs are placed the most brilliant of shot colors, purple—blue, and red, and these I have no doubt he occasionally displays,— as for the rain it cannot wet him through, and to the wind he is equally indifferent for like Friar John in Marmion—"But little cares he or kens which way it blows!—

Letter 8113: Mary Treat to Charles Darwin, 20 Dec 1871

Vineland, New Jersey
Dec. 20, 1871.

Mr. Darwin:

Dear Sir,



... Now that I am writing I will give you my observations on Drosera, which have escaped the notice of botanists. I had two or three species of these pretty plants growing for window ornaments; and soon saw that D. longifolia was a fly-trap of considerable power. The unlucky fly—a common house fly—would no sooner be caught by the sticky glands of the leaf, than the blade would at once commence to fold about its victim; it folded from the apex to the stem of the leaf, after the manner of its vernation.

Closer and closer it held the poor fly in its embrace, until it ceased its struggles, when it soon became partly absorbed by the plant.— Prof. Gray will give my observations on this plant in his new edition of "How Plants Grow".

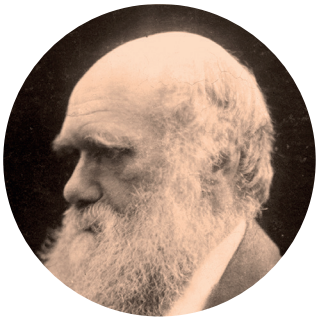
I do not know that my experiments can be of use to you, but I thought perhaps they might interest you. A life time of observation and experiments could not repay the debt of gratitude we owe you.

Yours most respectfully,

Mrs. Mary Treat.

Letter 3997: John Scott to Charles Darwin, 18 Feb [1863]

Edinburgh
Botanic Gardens
18th. Feby



Sir.

In my last, I asked you if I might now send the capsule of Acropera, thinking it might be sometime before it matured. I am now, however, forced to do so, in consequence of its unexpected partial dehiscence. A few days before I last wrote, it changed colour slightly around the apex, this has slowly increased, though still as you will observe confined to the upper part. I, thus, had not the least suspicion of its bursting for some weeks at least, and I can assure you I was not a little vexed yesterday on observing what had happened, as I have thus lost a number of seeds. It is, I think, unusual to see them burst, before being at least partially coloured over. Perhaps the abnormalities of placentæ, utriculii, &c. which you first drew our attention to in this orchid, may have something to do with this. I will be anxious to hear the results of your dissection ...

... Excuse this hurried note.

I remain Sir,

Yours very respectfully

John Scott.

I have just received your letter with varieties of Maize. I am glad that you have been able to afford me so many.

Letter questions:

1. In the text by Mary Barber, how does she describe the appearance and behaviour of the grasshopper? How would you describe the kind of language that she uses?

2. Compare the letter above to that from Mary Treat. What is similar and what is different?

3. How is the letter from John Scott different from the previous two letters, in terms of writing style and vocabulary

Darwin's scientific women

Who's who?

Elizabeth Garrett Anderson

(9 June 1836 – 17 December 1917)

Physician and supporter of women's rights.

Elizabeth Garrett was born in Whitechapel, London. She was initially educated at home but at 13 was sent to boarding school. She was always interested in politics and current affairs but decided to pursue a career in medicine at a time when women were prevented from qualifying as doctors in Britain. She worked as a nurse while studying privately and was eventually allowed to attend the dissecting room and lectures at Middlesex Hospital until a petition by male students forced her to leave. She was refused entry to several medical schools but continued to study privately until taking her Society of Apothecaries exam in 1865, and was awarded a licence to practise medicine. She was the first British woman qualified to do so, but could not work at any hospital so set up her own practice, eventually providing medical care to poor women and children across London. In 1874, she co-founded the London School of Medicine for Women, the only teaching hospital to offer courses for women. A colleague of Darwin's wrote to Emma Darwin to ask her to support Garrett's becoming Professor of Physiology at Bedford College for Girls.

Mary Elizabeth Barber

(5 January 1818 – 4 September 1899)

Naturalist, artist, and writer in South Africa.

Mary Barber (born Bowker) was born in Wiltshire, England, but her family emigrated to South Africa when she was 2 years old. She shared her older brother's keen interest in natural history. Barber studied birds, moths, reptiles, and plants, often creating detailed and accurate paintings. A number of species of insects and plants that she discovered were named after her. She corresponded with leading scientists and exchanged letters with Joseph Hooker at Kew Gardens for thirty years. Hooker read some of her scientific papers at the Linnaean Society and several were published at Darwin's recommendation.

Image of Mary Barber courtesy of Paul Tanner-Tremaine and Ammy Hahndiek

Lydia Ernestine Becker

(24 February 1827 – 18 July 1890)

Suffragist, botanist, and astronomer.

Lydia Becker was born in Chadderton, Lancashire, and was educated at home. She studied botany and astronomy and was awarded a Horticultural Society gold medal in 1862. In 1864, she published *Botany for novices*, which she described to Darwin as being 'chiefly intended for young ladies'. She was founder and president of the Manchester Ladies' Literary Society and persuaded Darwin to send articles for the society to discuss. She was a leading member of the women's suffrage movement, becoming secretary to the Manchester Women's Suffrage Committee from 1867, and later to the Manchester National Society for Women's Suffrage. She was editor of and a regular contributor to the *Women's Suffrage Journal* from 1870. She moved to London and was elected president of the newly formed National Union of Women's Suffrage Societies in 1887. Becker exchanged botanical information, seeds, and plants with Darwin, as well as sharing papers and a copy of her book.

Antoinette Brown Blackwell

(20 May 1825 – 5 November 1921)

Ordained minister, writer, feminist, and social reformer

Antoinette Brown was born in Henrietta, New York. In early life she began to preach in her local Congregational Church and went on to teach. Throughout her life she was a renowned public speaker. Brown was the first woman to be ordained as a minister in the United States. She was a vociferous social reformer and promoter of women's rights. She later became a Unitarian and remained committed to the idea of that women's participation in religion could improve their status in society. She was also a keen philosopher and scientist. She believed Darwin to be one of the most influential thinkers of her time. After she sent Darwin a copy of her book *Studies in general science*, Darwin's reply to thank the author began 'Dear Sir', as he assumed it had been written by a man.

Image of Antoinette Brown Blackwell from archive.org. Digitised by Wellesley College Library

Emma Darwin

(2 May 1808 – 7 October 1896)

Wife of Charles Darwin and mother of ten children; assisted her husband.

Emma Darwin (born Wedgwood) was born at the family estate of Maer Hall, Maer, Staffordshire. She was the youngest of seven children and was Charles Darwin's first cousin. Her family belonged to Unitarian church and Emma's faith remained important to her. It was something that she explored and discussed with Darwin at length before they married, and it continued to be actively analysed and debated between them. Emma Wedgwood married Charles Darwin on 29 January 1839 and they were the parents of ten children, three of whom died at early ages. Emma assisted Darwin, writing on his behalf during his many bouts of illness, monitoring his press, translating, and editing.

She also received letters detailing observations (particularly from female correspondents) of the behaviour and emotions of children. She and Darwin kept notebooks on their own children as the children grew up. Such observations informed Darwin's later works on human emotion and behaviour. Emma also wrote on the issue of animal cruelty.

Henrietta Darwin

(25 September 1843 - 17 December 1929)

Assistant to her father and editor of his published work

Henrietta was the third daughter of Charles and Emma Darwin, born at Down House, the family home in Kent. Henrietta and her brothers and sisters worked closely with their father, making observations and carrying out experiments, even as children. As she grew up, Henrietta also liaised with many of Darwin's correspondents requesting specific observations and collating their responses. Most significantly, Darwin entrusted Henrietta to edit a large proportion of his published work, including his book *The descent of man* regarding which Darwin to referred to Henrietta as his 'very dear coadjutor and fellow-labourer'. (Charles Darwin to Henrietta Darwin, 20 Mar 1871). In replying to Henrietta's suggested revisions he wrote:

'All your remarks, criticisms doubts and corrections are excellent, excellent, excellent' (Charles Darwin to Henrietta Darwin, 26 July 1867).

In August 1871 she married Richard Buckley Litchfield. Henrietta edited two volumes of family letters after the death of her parents; *Emma Darwin: a century of letters* (1904 and 1915).

Lady Florence Dixie

(24 May 1855 – 7 November 1905)

Traveller, war correspondent, writer, and feminist

Florence Dixie (born Douglas) was born in Dumfries, Scotland. She was educated at home and in a convent. In 1879, she travelled to Patagonia with her husband and enjoyed big-game hunting (although she later turned against blood sports). She brought home a jaguar and kept it as a pet, describing to Darwin how she had to give it to the zoo as it had grown too big to keep safely. In 1881, Dixie was appointed as a war correspondent of the London *Morning Post* to cover the First Boer War. Dixie was politically active; she was strongly in favour of Irish home rule and women's suffrage. In the preface to her utopian feminist novel, *Gloriana* (1890), she wrote:

'Nature has unmistakeably given to woman a greater brain power. This is at once perceivable in childhood … Yet man deliberately sets himself to stunt that early evidence of mental capacity, by laying down the law that woman's education shall be on a lower level than that of man's … I maintain to honourable gentlemen that this procedure is arbitrary and cruel, and false to Nature.'

Dixie wrote to Darwin of her observations on Patagonian animal life.

Marianne North

(24 October 1830 - 30 August 1890)

Botanical artist and traveller

Marianne North was born in Hastings, where her father became a Liberal MP. Her family supported Marianne's attempts at singing and painting as suitable activities for a Victorian lady.

After her parents died, Marianne sold the family home and began travelling with the aim of painting the flora of different countries. Between 1871 and 1885, Marianne North visited America, Canada, Jamaica, Brazil, Tenerife, Japan, Singapore, Sarawak, Java, Sri Lanka, India, Australia, New Zealand, South Africa, the Seychelles, and Chile. During this time she travelled alone through the interior of Brazil for a year and through India for eighteen months, often exploring areas unknown to Europeans. Darwin recommended to North that she visit Australia. On her return she visited Down House in 1881, to show the Darwins her paintings of Australian flora. Back in England, she approached Kew Gardens to show her work and paid for a gallery to be built to house the collection. It is part of the attractions at Kew today.

Clémence Royer

(21 April 1820 – 6 February 1902)

Scholar who wrote on economics, philosophy, science, and feminism and translated On the origin of species into French.

Royer was born in Nantes, Brittany, and was mainly educated at home. She taught herself French, arithmetic, and music to qualify as a teacher in a secondary school, living in Paris and then England. Royer moved to Lausanne, Switzerland, and in 1859 gave a series of lectures aimed at women; she was a great advocate of women's rights. She was a strong supporter of Darwin's ideas and is most known for her French translation of On the origin of species in 1862. Her preface was a strongly expressed sixty-page essay against organised religion and she added her own footnotes to Darwin's text. Darwin wrote to his friend and colleague Asa Gray:

'I received 2 or 3 days ago a French translation of the Origin by a Madelle. Royer, who must be one of the cleverest & oddest women in Europe: is ardent deist & hates Christianity, & declares that natural selection & the struggle for life will explain all morality, nature of man, politicks &c &c!!!'.

Mary Lua Adelia Treat

(7 September 1830 – 11 April 1923)

Naturalist, botanist, and writer

Mary Treat (born Davis) was born in Trumansburg, New York, but after her marriage moved to Vinelands, New Jersey. Her studies of the natural world brought her respect and a good reputation as an observer during her lifetime. As well as travelling to collect specimens, she worked part of the year at home, like Darwin, creating what she referred to as her 'Insect Menagerie', an enclosed space from which she observed the minutiae of the natural world around her. After Treat separated from her husband, Dr Joseph Burrell Treat, in 1874, she supported herself by writing popular science articles for widely read magazines and published five books.

Treat carried out experiments and collected plants and insects for leading naturalists including Asa Gray and Charles Darwin. Darwin commented: 'Your observations and experiments on the sexes of butterflies are by far the best, as far as is known to me, which have ever been made.' Darwin encouraged Treat to publish her results in an academic journal, but she remarked: 'You may wonder at my selecting a literary magazine rather than a scientific one, but I am wholly dependent on my own exertions and must go where they pay best,' Darwin acknowledged Treat's work in his book *Insectivorous plants* (1875.)