

Epistolary Exchange: the Familiar Letter and the Female Botanist, 1760–1820

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An investigation into women's involvement with botany in the eighteenth century invariably leads to the culture of letters. The Duchess of Portland (1715-1785)¹ compiled notebooks on natural history, but it is her letters that allow us to uncover social networks and document the circulation of ideas involving botany and plant collecting. The Duchess's ten-year correspondence on botany with Jean-Jacques Rousseau (1712-78) is significant in illuminating the role of women in botanical culture. At this time, biological specimens were classified according to the taxonomic system of the Swedish naturalist, Carl Linnaeus (1707-78),² who himself exchanged letters on classification with a number of British women, notably the plant collector, Anna Blackburne (1726-93) (Wystrach 148-68). Consequently women were soon conversing in a new Linnaean language. It is no coincidence then that the two most widely-read introductions to Linnaean botany at this time were epistolary: Thomas Martyn's *Letters on the Elements of Botany Addressed to a Lady* (1785), translated from Rousseau, and Priscilla Wakefield's, *An Introduction to Botany; in a Series of Familiar Letters* (1796).³ The rendering by Priscilla Wakefield (1751-1832) of Linnaeus in English rather than Latin meant that, for the first time, literate but unlearned young women gained access to botany through letters:

Till of late years, [botany] has been confined to the circle of the learned, which may be attributed to those books that treated of it, being principally written in Latin: a difficulty that deterred many, particularly the female sex, from attempting to obtain the knowledge of a science, thus defended, as it were, from their approach. (*An Introduction to Botany* ii)

The readership for Linnaean texts in English fostered an audience that was inclusive of women and adaptations and translations of Linnaeus in English flourished, but this is not straightforward, since authors of scientific texts carefully modified their Linnaeanism for female readers as I will show. Botany books written by women in an informal "familiar format", such as Wakefield's *Introduction*, demonstrate that knowledge of botany at this time was feminised and polite (ii). Maria Jacson's *Botanical Dialogues* (1797) and Harriet Beaufort's *Dialogues on Botany* (1819) should perhaps be mentioned here alongside Sarah Mary and Elizabeth Fitton's *Conversations on Botany* (1817) and Jane Marcet's *Conversations on Vegetable Physiology* (1829). The familiar format embraced both dialogues and letters. The familiar letter in particular had a strong relationship to the conduct book or advice book, which had sprung from a long tradition of literature directed towards promoting ideal behaviour. Whilst I acknowledge the impact of this tradition on the development of botany books for young women, my emphasis will be on drawing out the emancipatory moments in science writing for girls, offering a textual reading which teases out the many ambiguities and contradictions involved in young women's access to botanical science in the eighteenth century.

Jean-Jacques Rousseau was instrumental in shaping the feminisation of botany in England at this time due in part to Thomas Martyn's translation of the *Lettres*

elementaires sur la botanique (1771-73), which had been for Madame Étienne Delessert, the owner of a famous herbarium and botanical library.⁴ They offer guidance to a young mother over the instruction in botany of her daughter. Thomas Martyn, Professor of Botany at Cambridge, translated Rousseau's epistolary botany into English as *Letters on the Elements of Botany Addressed to a Lady* in 1785.⁵ His work was inscribed on the title page, "To the Ladies of Great Britain No Less Eminent for Their Elegant and Useful Accomplishments Than Admired for the Beauty of Their Persons." Martyn openly courted female readers, capitalising on Rousseau's address to a young mother, creating a vogue for botany books written for a particular class of enlightened British women and promoting botany as an elegant pursuit for "Ladies".

British women were familiar with Rousseau the botanist⁶ and this is borne out in their own botanical writing; he is rumoured, too, to have botanised in Derbyshire with the Duchess of Portland.⁷ Charlotte Smith (1749-1801), whose *Rural Walks* (1795) and *Rambles Farther* (1796) are largely comprised of botanical dialogues, identified with the solitary botanising figure of *Reveries*, and Maria Jacson (1755-1829) cited Rousseau on the title page of her *Botanical Dialogues* (he was introduced in England to her cousin Sir Brooke Boothby, a member of The Botanical Society at Lichfield). Priscilla Wakefield's *Introduction to Botany* of 1796 comprised *A Series of Familiar Letters* between two sisters, Felicia and Constance. Wakefield recognisably modelled her own botanical letters on Rousseau's, showing again his profound influence on botanising women. Thus both texts explain the Linnaean system in a series of letters and centre on intimate exchanges of knowledge between two females. They also each feature a botanising tutor who superintends the letters. Both sets of letters take the reader, letter by letter, through each Linnaean order or class, emphasising the importance of classification. The familiar letter employed by Wakefield, Rousseau and Martyn (Martyn in fact appended some of his own letters to Rousseau's eight) was central to the dissemination of botany for young women.

Botany provided an epistolary space for an amusing interplay of Rousseauvian education and Linnaean classification. Wakefield appropriated the methodology of Linnaeus and the familiar format of Rousseau and adopted these to her own purposes in the letters.⁸ The received image of Rousseau as a botanist is usually that of the solitary herboriser; however, the *Lettres* show a new kind of sociability in relation to botany through a dialogue between a tutor, mother, and daughter. Wakefield develops this dialogic sociable model into one that is exclusively feminine in her letters on botany, replacing Rousseau's male tutor with a female mentor, and positing a familial model comprising of a governess and two sisters. Felicia undertakes a direct observation of plants in the local fields and hedgerows, accompanied by her governess and imparts her new found knowledge at the end of each day in a letter to her absent sister Constance:

My fondness for flowers has induced my mother to propose Botany, as she thinks it will be beneficial to my health, as well as agreeable, by exciting me to use more air and exercise than I should do, without such a motive; because books should not be depended upon alone, recourse must be had to the natural specimens growing in fields in and gardens; how should I enjoy this pursuit in your company, my dear sister! but as that is impossible at present, I will adopt the nearest substitute I can obtain, by communicating to you the result of every lesson. You may compare my descriptions with the flowers themselves,

and by thus mutually pursuing the same object we may reciprocally improve each other. (2)

The sisters are to spend the summer apart as Constance has been sent away to stay with their aunt. Sisters who had become separated (usually by marriage) often enjoyed an elaborate daily correspondence that substituted for actual conversation (Cohen, "Familiar Conversation" 104). Epistolary fiction often works according to a similar formula whereby two or more people, separated by an obstruction, which can take a number of forms, are forced to maintain their relationship through letters (Perry 93-117). The familiar letter, fictional though not strongly narrative, inhabits a middle space between novels and real exchanges and relies on this motif of separation:

The further I advance in my study, the more pleasure I take in it, and should value it as an important addition to the number of my innocent enjoyments, if partaken with you my dear Constance. Though far separated from each other, I am still desirous of associating with you, as much as the mode of communication will permit, in the delight I feel in examining pointals and stamens. (17)

Speaking of her governess, Felicia writes, "botany supplied us with subjects for conversation" (3); her epistolary exchanges with Constance develop out of these instructive conversations which substitute for formal lectures. The letters point to sociability, and reciprocity and yet the correspondence can be understood as being self-reflexive rather than genuinely dialogic, because all the letters are from Felicia to Constance (a one-sided exchange in the manner of a conduct book). This sense of didacticism is ambiguous, however, since Felicia acknowledges and responds to the letters she has received from her sister; though they do not appear in the volume, there is a sense of dialogue, as here:

The appropriation you express, my dear Constance, of my endeavours to amuse you with an account of my botanical lectures, encourages me to proceed, though with great diffidence, as I find the subjects become more intricate as I advance. (10)

The familiar letters ensure that knowledge is imparted gradually, by degree, and the lessons are not undertaken out of a sense of duty: they are interesting and pleasant. They exemplify the Enlightenment transformation of Horace's ideal of instruction blended with amusement. In juvenile literature this ideal had developed out of the teachings of John Locke.⁹ The Martyn/Rousseau letters also conform to this educational ideal and similarly focus on female learning; however, an element of eroticism can be detected in the botanical exchanges which is noticeably absent from Wakefield's Quakerly text. This potential eroticism in botanical texts for women becomes a source of added tension when brought into contact with the Linnaean sexual system, as we shall see.

In the first of the Martyn/Rousseau letters we learn that "maternal zeal" has driven a young woman to embark on a course in botany so that she may teach her daughter about plants. The tone is one of mutual improvement brought about by the intimate exchange of knowledge between a mother and daughter. The relationship between the mother and her male instructor is understated here but it is played out in a flirtatious botanical dialogue in the remaining letters. Rousseau was influenced by

popular science dialogues such as Fontenelle's *Entretiens sur la Pluralité des Mondes* (1686) where a cultured Parisian philosopher instructs the "most amiable creature in the universe", a Marchioness, in the mysteries of Cartesian astronomy (19).¹⁰ Through Aphra Behn's English rendering of it in 1688, and other translations, it became a widely read and influential text for women.¹¹ Fontenelle unveils the secrets of astronomy to an enlightened "lady" and Rousseau similarly initiates a young woman in the "mysteries of vegetation":

When you have examined this petal, draw it gently downwards, pinching it slightly by the keel, for fear of tearing away what it contains. I am certain you will be pleased with the mystery it reveals when the veil is removed. (36)

In Rousseau's Linnaean disclosure, botanical knowledge is made to seem illicit. The young woman is instructed to proceed with caution when it comes to her daughter and to "unveil to her by degrees no more than is suitable to her age and sex" (26). This hint of erotic pleasure is understandably missing from Wakefield's text. The open book of nature was both concealed from and unveiled to women in varying degrees during the eighteenth century; few, however, considered a study of sex life of plants to be quite so conducive to female character building as Rousseau. Botanical metaphor was crucial in debates around female botanising at this time and it is the sexual system of botany and its representation to which we now turn.

The authors of botanical texts wooed female readers, drawing on familiar analogies between women and flowers to celebrate the virtues of the 'British fair' in their prefatory material. Linguistic conventions were already in place whereby flowers were emblems of purity, beauty and fragility, the so-called female virtues, and whose ephemeral beauty was associated with the female body. Such floral imagery proliferated not only in poetry, essays and letters but had extended to philosophic and scientific writing (Edmund Burke comes to mind here).¹² That traditional pastoralism, looking nostalgically to some lost Eden, employed flowers as symbols of innocence; this was dramatically disturbed when the Swedish botanist and taxonomist, Carl Linnaeus, focussed on the flower in order to detail the sexuality of plants by offering precise descriptions of their organs of generation. In the *Systema Naturae* of 1735, Linnaeus abandoned previous formal systems of classification and founded the "sexual system." In this system, classes are distinguished by the number or proportion of male parts or stamens in each flower, whereas orders in many of the classes are distinguished by the number of female parts or pistils (Morton 263).

Linnaeus developed an anthropomorphic imagery for flowers which is borne out in English adaptations of his Latin works. James Lee's *Introduction to Botany* (1760) was the first work to present the sexual system to British readers: here "male" stamens are "husbands", "female" pistils "wives" and sexual union a "marriage". Meanwhile, flowers lacking stamens or anthers are termed "eunuchs". (Lee 79, 85, 88, 161). In another Linnaean text, Hugh Rose's *Elements of Botany* (1775), the union of stamens and pistils during fertilisation is likened to "husbands and wives on their nuptial bed [. . .] the *calyx* then is the marriage bed, the *corolla* the curtains, the filaments the spermatic vessels, the *antherae* the testicles, the dust the male sperm, the *stigma* the extremity of the female organ, the *style* the *vagina*, the *germen*, the ovary" (151). This boudoir version of botany unleashed onto the public imagination the idea that plant reproduction was analogous to human sexuality.¹³

The sexual system teems with marriage metaphors but Linnaeus had made explicit the indiscriminate sexuality of plant reproduction, devoid of modesty, with

little or no degree of selection over sexual unions. In this period the order of society was assumed to rest on the order of nature; controversies surrounding the sexual system in England intensified due to the number of women who were practising the modern system of botany. Charles Alston, former King's Botanist and Keeper of the Royal Garden, complained of obscene names being imposed by sexualists on the fructification of vegetables and branded Linnaeus, "too smutty for British ears," fuelling debates about whether women might be instructed in Linnaean botany without offending female delicacy (1:266).¹⁴ In the 1790s, the reactionary poet, topographer and naturalist, the Reverend Richard Polwhele, was unable to comprehend how an examination of a plant's organs of generation could be conducive to female modesty and warned that botanising girls anatomising the sexual parts of the flower were indulging in acts of wanton titillation:

With bliss botanic as their bosoms heave,
Still pluck forbidden fruit with mother Eve,
For puberty in sighing florets pant,
Or point the prostitution of a plant;
Dissect its organ of unhallow'd lust,
And fondly gaze the titillating dust. (lines 29-34)

These sighing, panting girls are partaking in something akin to sexual experimentation: "I have several times seen boys and girls botanising together," exclaimed the outraged Polwhele, before confessing that he had at first written:

More eager for illicit knowledge pant,
With lustful boys anatomise a plant;
The virtues of its dust prolific speak,
Or point its pistil with unblushing cheek. (note to line
29; 8)

Polwhele characterises botanic exploration as an uneasy blend of science and voyeurism; the scrutinising gaze of the female botanist penetrates a microscopic world in order to expose the organs of generation. His text demonstrates the spread of Linnaean ideas in England and the anxieties surrounding the figure of the female botanist in the last decade of the eighteenth century.

One of the earliest proponents of women's botany, William Withering attempted to "fair sex" it:

From an apprehension that Botany in an English dress would become a favourite amusement with the ladies, many of whom are very considerable proficient in the study, in spite of difficulty; it was thought proper to drop the sexual distinctions in the titles to the Classes and Orders. (1:v)

Withering omitted the sexual distinctions that defined Linnaeus's classes and orders, producing a decorous botany that young women could be exposed to with safety, whereas his arch rival and fellow member of the Lunar Society in Birmingham, Erasmus Darwin, specifically focused on the Linnaean sexual content to create a provocative poetic account of the sex life of plants. *The Loves of the Plants* (published in 1789) was to form part of the epic poem, *The Botanic Garden* in 1791. Darwin cast himself in the role of a flower painter displaying the "Beaux and Beauties" of the

vegetable world before the eyes of his female readers as if they were "diverse little pictures suspended over the chimney of a Lady's dressing-room, *connected only by a slight festoon of ribbons*" (vi). He restored the sexualised nomenclature which Withering had deliberately erased, initiating female readers into the secret world of "vegetable loves" and encouraging women to engage with their own sexuality through botany.

Darwin's libidinous work proved profoundly influential in exciting women's interest in botany and this in turn increased those sexual anxieties that were already surrounding the female botanist. In 1790, the philosopher and naturalist John Berkenhout wrote to his son:

The lady who asked the question whether women may be instructed in the modern system of botany consistently with female delicacy? was accused of ridiculous prudery; nevertheless, if she had proposed the question to me, I should have answered—they cannot. (307)

Botany was suddenly at the forefront of debates on female education. Mary Wollstonecraft, opposed the threat by Berkenhout and his followers to limit women's access to botanical knowledge. She argued in *A Vindication of the Rights of Woman* (1792) that, contrary to Berkenhout's "gross idea of modesty," female reserve was "far from being incompatible with knowledge" (123). Fortunately, the "fair book" of botanical knowledge was not to be firmly "shut with an everlasting seal" as Wollstonecraft feared. Erasmus Darwin's *A Plan For The Conduct of Female Education in Boarding Schools* (1797) recommended a number of titles on botany, including the Martyn/Rousseau *Letters*, Maria Jacson's *Botanical Dialogues* (1797), Curtis's *Botanical Magazine*, and the Botanical Society at Lichfield's translations from Linnaeus. Yet this knowledge still had to be placed under constraints.

Women were encouraged to broaden their knowledge of plants in the schoolroom but gender-coded representations of botany often depicted it as a genteel amusement for "ladies" within a familial setting. Rousseau, for example, was concerned that his botanical "ladies" did not consider botany to be a "great undertaking": "You must not [. . .] give more importance to Botany than it really has; it is a study of pure curiosity" (71). As a rational, industrious study, botany was thought highly beneficial to female minds. Thus, Wakefield promoted botany as:

a substitute for some of the trifling, and not to say pernicious objects, that too frequently occupy the leisure of young ladies of fashionable manners, and, by employing their faculties rationally, act as an antidote to levity and idleness. (iii)

Botany and no other natural science has thus been singled out to act as an antidote to 'feminine' faults such as idleness and frivolity. It is these traits, along with insubordination, which Rousseau warned are "most dangerous" and "very hard to cure once established" in girls.¹⁵ He reassures the young mother who features in *Letters on the Elements of Botany* that botany can supply an alternative focus for these wayward urges. Wakefield and Rousseau's botanical texts are exemplary in that they indicate the ambivalence in the process of the feminisation of botany: whilst they are open to an emancipatory reading, offering women access to scientific knowledge for the first time, they also have a conservative function in that they can reaffirm conduct book constructions of femininity.

Conduct books and advice manuals were often published in letter form: Lord Chesterfield's *Letters to His Son* 1774 and Hester Chapone's *Letters on the Improvement of the Mind* are notable examples of this genre.¹⁶ These texts advised on matters on education, appropriate recreation, and polite conversation. Whatever the format, the underlying goal of all conduct books was the formation of a good and virtuous person, or what was thought of as such. Epistolary novels which claimed to be educational, such as Samuel Richardson's *Clarissa* (1747) or Frances Burney's *Evelina* (1778), had a similar relationship to this literature. Burney's novel, for example, offers advice on a young lady's "entrance into the world," played out in the public arenas of pleasure gardens, theatre visits, and masquerades.¹⁷ *Evelina*'s adventures in London allowed Burney to explore the conventions governing young women's behaviour in public at a time when modesty governed comportment, demeanour, dress, and expression. Wakefield's fictional letters, in some degree, developed out of the narrative form of these advisory epistolary novels. Felicia's letters on botany, then, are often a vehicle for sisterly advice or religious guidance, but she never neglects to emphasise learning from experience and the pursuit of scientific knowledge:

Before you dismiss the Mallow tribe, take your microscope and examine the dust of the anthers; it will afford you entertainment, being curiously toothed like the wheels of a watch. The most minute parts of nature are furnished with an elegant nicety, that surpasses the utmost efforts of art. The finger of the Divine Artist is visible in the most minute of his works; let us be excited to observe them with the greatest attention, they will not only supply us with present amusement and wonder, but will serve as a hidden treasure to alleviate the solitude and wearisomeness of old age. May a similarity of taste and sentiment continue to unite us in the same pursuits, to the end of our days. (122)

The emphasis on 'proper' feminine roles in botany books demonstrates that, while popular translations from Linnaeus led women out of the labyrinth of ignorance and local knowledge, they were still bound by the cords of propriety. The sisters are encouraged to derive knowledge from their own observations and "to confirm [their] knowledge by practice" (25) but they are never entirely alone. Felicia's botanising activities are always subject to the ever watchful eye of the governess and her letter writing in the evening in the drawing room is similarly scrutinised. Richardson's *Clarissa* had dramatised the often minute regulation of young women's letter writing; similarly, we learn from Felicia in *An Introduction to Botany* that the botanising governess "superintends my letters and points out what I should write," that she is "incapable of methodising accurately" without her assistance, for she "will not allow me to do anything without some degree of regularity" (29). Regulation can be authorised by natural history: Felicia is encouraged to observe the "beautiful regularity in most of nature's works" (32). This concern with regularity and order enables that familiar slide from the natural to the social, making botany ideal disciplines for women and children.¹⁸

Ambivalence towards independent learning is easily detected in the aversion to natural history as bookish theory in these texts. This has an important relationship to the sociability that is involved in epistolarity. Wakefield and Rousseau both reject book learning in natural history lessons for young women, though this is not clear-cut. They insist that book learning in itself is inadequate and substitute lessons in outdoor

exploration and direct observation. These methods, it can be argued, discouraged women from the solitary pursuit of scientific knowledge – though this, too, is ambiguous. Rousseau was famously antagonistic towards book learning: something of a contradiction given his role as an educationalist and writer.¹⁹ Books, he argued, “lead us to neglect the book of the world,” and book learning came into conflict with his idea of “an education according to nature” in *Emile* (1762) (414, 147). Given Rousseau’s hostility to books, it comes as no surprise to find that his botanising ladies are encouraged to study botany in nature herself and not from the pages of a book. Wakefield’s approach to the study of nature was informed by Dissenter notions of immediacy, utility, and fidelity to observed facts; it was, similarly, closely connected with that tradition of fieldwork in natural history which emphasised direct observation and visual perception: “Remember to use your eyes,” wrote Wakefield, “and let none of nature’s beauties escape your attention” (*An Introduction to Botany* 77). She implies that outdoor botanical activity is more beneficial to the female mind and body than book learning because “books should not be depended upon alone” (2).

Wakefield’s Felicia does retire from company and indulge in some private botanising (“suppose me seated in our dressing room, with many specimens before me of the class *Tetradynamia*” [113]) but, somewhat subversively perhaps, can only do this because it is assumed that she is writing letters at her desk. Thus women were dissuaded from the solitary pursuit of scientific knowledge and from closeting themselves away with books and specimens. This can be seen as a way of diverting women away from masculine knowledge, embodied in books and learned languages; at the same time, however, Enlightenment modernists tended to see the way forward for science as being precisely this turning away from books towards experience. Thus Bacon had argued against the appeal to canonised texts such as those of Aristotle, proposing a new, inductive science; Newton had applied this method with spectacular success in his experimental science in the fields of optics and mechanics; Locke had provided Newton with an empiricist underpinning that again stressed the derivation of knowledge from experience rather than written authority. Hence, to encourage women to actively derive botanical knowledge from observation and experience was, in some way, to invite them to participate in the whole modernist project of experimental science.

The familiar letter could similarly act to discourage the solitary pursuit of scientific knowledge. The letter by its very nature was both public and private, but the familiar letter in its published form promoted shared experience, sociability rather than solitariness. Epistolary correspondence and conversation were regarded as “kindred subjects” in conduct books and women were often advised to transcribe actual conversations on interesting subjects in letters.²⁰ Read aloud, botanical letters could substitute for conversation, and conversation in turn could be seen as a means of safeguarding against female learnedness or pedantry, because it took precedence over solitary pursuits (reading in private for example) and could act as an antidote to the type of introspection and self-musing that conduct books tended to discourage in girls.²¹ Conversely, conversation of this kind was educational and instructive too since it ensured that one’s botanical opinions were open to contradiction and refutation once they were made public.

I now want to develop my exploration of the ambivalence in the process of the feminisation of botany by analysing the use of Linnaean methodology in these texts. Wakefield takes the reader through each Linnaean class in turn, paying great attention to taxonomy. Rousseau’s letters expound what he believed to be the ‘true’ study of botany in a similarly methodical manner. There is an – understandable –

misconception that Rousseau, who in the "Discourse on the Sciences and Arts" famously linked the advancement of the arts and sciences to the spread of luxury and the corruption of morals, was antipathetic to the scientific frame of mind.²² In fact, Rousseau was driven to study plants systematically in spite of his hostility to academic science. He had begun notes towards a dictionary of botanical terms in the year 1764 which was eventually abandoned; however, from it remained a history of the "rise and progress of botany" which celebrated Linnaeus's contribution to the advancement of the science. Martyn's translation of this essay formed the introduction to the *Letters*, when the work appeared in English in 1785. What is striking about Rousseau's essay is that, contrary to the expectations we have noted, it shows a typical Enlightenment concern with methodology and systematic thought:

Distant voyages were incessantly enriching Botany with new treasures; and, whilst the old names already overloaded the memory, it was necessary to invent new ones incessantly for the new plants that were discovered. Lost in this immense labyrinth, the botanists were obliged to seek a thread to extricate themselves from it; they attached themselves therefore at last seriously to method. (9)

Rousseau lionises Linnaeus for supplying the Ariadne 'thread' in botany, a universal system which led botanists out of the labyrinth of local knowledge and instigated botany's departure from herbalism and superstition – a break with apothecaries, herbalists, infusions and poultices.²³ According to Rousseau, Linnaeus's simple binomial nomenclature had created a new language for botany "which is as convenient and necessary for botanists, as that of algebra is for mathematicians" (12).

Wakefield was also indebted to Linnaeus, "the great master of method and arrangement" (44), for making the acquisition of botanical knowledge easier for the novice. She urged her readers to embrace Linnaean systematics, "for it is by method only that it is possible to obtain a knowledge of so many particulars" (26), and endeavoured to explain the importance of the new system of botany. Martyn, however, feared that the introduction of method would lose him the attention of his female readers and made the following plea:

Do not suffer yourself to be terrified at the word *System*. I promise you there shall be little difficulty in it to you who have patience and attention and as little parade of hard words as possible, only allowing me to name my classes and orders. (86) (Martyn's emphasis)

Passages such as this point to one way in which women as consumers of science were perceived; here, in a somewhat patronising way.

However, the authors of these introductory, but systematic, texts encouraged radically different levels of engagement for their female readers: from gentle exercise and plant collecting in Rousseau, to empirical science, dissection and microscopy in Wakefield, who urged: "confirm your knowledge by practice and do not suffer a day to pass without amusing yourself in dissecting some flower or other" (25), and "apply your microscope, and you will be pleased with the beauty and variety discernible in this little-regarded flower" (136). However, despite these different emphases, both Rousseau and Wakefield's texts gave botany a familial setting and discouraged much beyond simple classification and plant collecting. Wakefield introduced the female reader to scientific classification but avoided using scientific terms in the body of the

text, substituting common names such as 'Lungwort,' 'Houndstongue,' 'Goosefoot,' and 'Henbane,' where possible, and placing botanical nomenclature, *Pulmonaria*, *Cynoglossum*, *Chenopodium*, *Hyoscyamus*, in footnotes.

Whilst she was committed to the cultivation of female minds and the development of female reason, she delimits this with many gender and class-specific boundaries.²⁴ This order and regulation could be authorised by botany. For Rousseau, too, as Martyn emphasises, botany was a means by which women could become acquainted with – and implicitly, socialised into – an ordered system: "you must go forth into the garden or fields, and there become familiar with that beauty, order, regularity and inexhaustible variety which is to be found in the structure of vegetables" (ix). Botany, then, could be used for disciplinary purposes, encouraging women (who were imagined to lack discipline) to engage with order and regularity.

Observation of the natural world, it was suggested, is a source of self-regulation for the unlearned – notably, women excluded from formal education, but also the labouring classes.²⁵ Martyn's "Ladies of Great Britain" are encouraged to learn from the direct experience of plants in the nearby field or garden rather than from the pages of a book:

I beg leave to protect against these letters being read in the easy chair at home; they can be of no use but to such as have a plant in their hand; nor do they pretend to anything more, than to initiate such as, from their ignorance of the learned languages, are unable to profit by the works of the learned, in the first principals of vegetable nature. (x)

However, despite being enticed out of studious isolation into the fields and gardens, these women were not expected to 'parade' their scientific knowledge in public; we can now see the feminisation of botany in relation to the gendered dichotomy of the public and private spheres. Sarah Fitton sought to legitimise botany's suitability as a scientific pursuit for women by announcing in the preface to her *Conversations on Botany* (1817) that "botany is not a science of parade" (viii-ix).²⁶ Propriety dictated that women should use their botanical knowledge with discretion, to guard against provocatively parading any knowledge of Latin, or scientific terms, in public. Rousseau endorsed Linnaeus's binomial system of assigning universal Latin names to species yet he obviously felt that women were not an appropriate audience for such language:

Nothing is more pedantic or ridiculous, when a woman, or one of those men who resemble women, are asking you the name of an herb or a flower in a garden, than to be under the necessity of answering by a long file of Latin words that have the appearance of a magical incantation; an inconvenience sufficient to deter such frivolous persons from a charming study offered with so pedantic an apparatus. (13)

A female audience, it seemed, called for a more familiar, domestic approach to scientific study. Rousseau advocated that botany remain in the feminine domestic sphere, shielded from the vanity of authors and professors; when self-interest comes into play, Rousseau argues, "the woods become for us merely a public stage where we seek applause" (*Reveries* 116). He sought to protect botany from the taint of ambition, and yet it was botany which gave women such as Wakefield entry into professional writing. In publishing and allowing her name to appear on the title page instead of the

obligatory "by a Lady," Wakefield paraded her botanical knowledge on the "public stage." Sensitive to accusations of immodesty, she apologised in her preface for "obtruding" her work "upon the public" despite its moralising intentions (iii).

Despite these limitations and contradictions, Wakefield's and Rousseau's botanical letters were unique in giving women access to botanical knowledge for the first time. They demonstrate sociability and the desire for self-education, declare the advantages of the new language of botany, and advance the new empiricist science. What is more, they epitomise Enlightenment botany, moving away from the particularised knowledge of the old herbals and embracing the universal systematising of Linnaeus. Botany, here, is dialogic and exploratory; the medium of familiar conversation lures women into deriving botanical knowledge from their own observations, allowing them to participate in experimental science. I have argued that epistolary texts in particular demonstrate ambivalence in the process of the feminisation of botany, but they are not simply didactically disciplinary works; they offer young women access to the scientific exploration of plants for the first time and are open to an emancipatory reading.

Thus the familiar letter facilitated the dissemination of botanical knowledge in spite of its moralistic associations with advice or conduct books. This exchange of ideas occurred via a host of dialogic activities: conversation, social networks, letter writing, publication and translation, and further responses to printed texts. Botany was tightly enmeshed with the voyages of discovery, yet women's botanical study was largely confined to the drawing-room, garden, and hedgerow. As a private activity, shielded from the corruptions of public life, botany mirrored the confinement of the feminine domestic sphere and yet, adapting Linnaeus and his followers, these female botanists contributed to the circulation of botanical ideas. Yet still the principal impulse behind this was the Anglicisation of the Linnaean system, but this, in turn, conjured up its own attendant anxieties. Barred from academies, universities and learned societies, British women entered into aesthetic, philosophical, and scientific debate, by way of botany and the familiar letter.

Notes

1. Lady Margaret Cavendish Bentinck, the Duchess of Portland (1715-1785), kept a menagerie and botanical garden in the grounds of her house at Bulstrode. She employed naturalists such as James Bolton and the Reverend John Lightfoot, founding member of the Linnaean Society in London, to arrange and document her natural history collection, the largest in Britain. For a brief account of the Duchess's involvement with natural history, see Allen (*Naturalist in Britain* 29-30). For the Duchess and botany, see George (*Botany, Sexuality and Women's Writing* 5, 9) and Cook (142-56).

2. Carl Von Linné (1707-78). Linnaeus's principal works include *Systema naturae* (1735), *Species plantarum* (1753), and *Genera plantarum* (1754). Examples of early British adaptations of his botanical works are James Lee's *Introduction to Botany* (1760), and Hugh Rose's *Elements of Botany* (1775), loose translations of Linnaeus's *Philosophica botanica* (1751). The Lichfield Botanical Society, headed by Erasmus Darwin, was instrumental in further promoting Linnaeus in Britain, producing their own more accurate translations from Linnaeus which were published as *A System of Vegetables* (1783) and *The Families of Plants* (1787). I have written on the significance of these English translations and British women writers' engagement with Linnaean botany in *Botany, Sexuality and Women's Writing*.

3. The Martyn/Rousseau *Letters* were read extensively and reprinted eight times over the next thirty years. Wakefield's *Introduction* went through eleven editions and was last reprinted in 1841. It was also translated into French in 1801.

4. Madame Delessert (1747-1816) had written to Rousseau throughout his wanderings and in 1771 asked for his help in introducing her daughter, Marguerite-Madeleine, to botany (McMullen 15-18; Wokler 110-14). Alexandra's Cook's notes to the letters are also very informative (Rousseau *Botanical Writings* 8: 130-172, 8:309-314).

5. Thomas Martyn (1735-1825) succeeded his father, John, to the Chair of Botany in Cambridge in 1762. He gave a course of public lectures introducing the Linnaean sexual system to the British public in 1763. He was elected a fellow of the Royal Society in 1786. For Martyn's published works, see Henrey (2: 54-57).

6. I elaborate on Rousseau's involvement with British women botanists in *Botany, Sexuality and Women's Writing* (5-6). Scholarship on Martyn's translation of Rousseau's botanical letters is limited, however. Marc Olivier has written about them briefly (161-9). I explore them more fully in "Cultivating the Botanical Woman" (3-11), and in *Botany, Sexuality and Women's Writing* (43-80). I should mention that there are two modern editions of the letters: Ernest J. Bonnet and Bernard Gagnebin's *Lettres sur la botanique* (1962), and Bernard Gagnebin and Marcel Raymond's *Lettres sur la botanique et Fragments pour un dictionnaire de botanique* (1969). As for recent translations into English, there is Kate Ottevanger's *Pure Curiosity: Botanical Letters and Notes Towards a Dictionary of Botanical Terms* (1979); and Alexandra Cook has translated the *Letters* and added scholarly notes and other correspondence: *Botanical Writings. The Collected Writings of Rousseau*, 8: 130-172 (2000).

7. For a detailed study of their relationship, see Cook "Botanical Exchanges"; brief references to their meeting appear in Edmunds and Eidinow (287).

8. The Linnaean letter, popularised by Wakefield, continued to thrive as a sub-genre of women's writing into the nineteenth century with texts such as Sarah

Waring's *A Sketch of the Life of Linnaeus in a Series of Familiar Letters Designed for Young Persons* appearing in 1827.

9. In *Some Thoughts Concerning Education*, Locke recommends books such as Aesop's *Fables* "which being stories apt to delight and entertain a child, may yet afford useful reflections to a grown man" (116-17). John Newbery, the first large-scale publisher of children's books in Britain, set about commissioning books which conformed to this Lockeian ideal of pleasurable instruction.

10. The "worlds of Fontenelle" was one of the few books that Rousseau carried into his father's workshop and read to him everyday during his work (Rousseau, *Confessions* 5: 8). For the influence of Fontenelle and the familiar way of dialogue in the scientific education of women, see Myer.

11. Behn's *A Discovery of New Worlds* appeared in 1688 just two years after the French original.

12. For an example of Burke's floral metaphors, see *A Philosophical Enquiry* (105-6). I discuss these analogies in relation to botany in *Botany, Sexuality and Women's Writing* (29).

13. A number of critics, notably Philip Ritterbush, François Delaporte, Londa Schiebinger, Janet Browne, Tim Fulford, and Alan Bewell, have explored botany and sexual politics in the late eighteenth century. I have engaged with these debates and taken them further in my book: *Botany, Sexuality and Women's Writing*.

14. Charles Alston (1685-1760) succeeded George Preston as Professor of Botany at the University of Edinburgh in 1738. Alston had studied under botanist/physician Hermann Boerhaave at the University of Leyden and favoured Tournefort's non-sexual system of classification.

15. "Idleness and insubordination are two very dangerous faults, and very hard to cure once established. Girls should be attentive and industrious, but this is not enough in itself; they should early be accustomed to restraint. [. . .] Their childish faults, unchecked and unheeded, may easily lead to dissipation, frivolity and inconstancy. To guard against this, teach them above all things self-control" (*Emile* 332).

16. See Morris. For the letter's relationship to the conduct book, see Myers.

17. Vivien Jones's introduction and notes to this edition are insightful and useful in showing how the novel can function as a conduct book.

18. Such as the age-old use of the social system of the bee to justify monarchy and a hierarchical class structure (ironically, the queen bee was for a long time thought to be male and this was used to justify patriarchy in addition). Terry Eagleton succinctly discusses the problems of naturalism, where "there can be a direct inference from fact to value, or from nature to culture" (103), in his chapter, "Culture and Nature (87-109).

19. In *Emile*, Rousseau asserts that "when I thus get rid of children's lessons, I get rid of the chief cause of their sorrows, namely their books" and boasts that "Emile, at twelve years old, will hardly know what a book is" (*Emile* 80). However, he does allow Emile to read *Robinson Crusoe* because it is the one book which "supplies the best treatise on an education according to nature" (147). Sophy, when she is older, is offered *Telemachus* and selections from *The Spectator*, though she is advised to "study the duties of good wives in it" (413). The sections on Sophy in *Emile* allow us to see that Rousseau is clearly repulsed by the idea of a "learned lady": "a female wit is a scourge to her husband [. . .] from the lofty height of her genius she scorns every womanly duty, and she is always trying to make a man of herself after the fashion of

Mlle. L'Enclos" (371). For his own part, he states, "I hate books; they only teach us to talk about things we know nothing about" (147).

20. Michèle Cohen elaborates on this idea using examples from Hester Chapone ("Familiar Conversation" 103).

21. "The girl who 'always muses by herself is apt to contract a sullen, sulky and supercilious air', while engaging in conversation ensures one hears one's own opinions contradicted and refuted" (Charles Allen, qtd. in Cohen ["Familiar Conversation" 106]).

22. Ann Shteir states that Rousseau had been "antipathetic to systemising and to any focus on names of plants" (*Cultivating Women* 20).

23. Botany, explains Rousseau, in his *Reveries of the Solitary Walker*, involves "pure and disinterested contemplation" and could not be further removed from medicine and anatomy, from 'stinking corpses, livid running flesh, blood, repellent intestines, horrible skeletons, pestilential vapours" (114).

24. In *Reflections on the Present Condition of the Female Sex*, she warns against women moving into masculine spheres and straying too far outside the domestic home. She also advocates that a woman should be educated according to her social position in society (67). In a similar way she derives social implications from the Linnaean hierarchy of classes and orders (*Introduction to Botany* 162).

25. Thomas Martyn, addressing his audience of "fair countrywomen and unlearned countrymen," claims that a reading of the Letters will save the "unlearned" student of botany from becoming "bewildered in an inextricable labyrinth of unintelligent terms," as he imagines might have happened if they had gone straight to the works of Linnaeus (viii).

26. Much of Fitton's work is derivative and this description of the virtues of botany is taken directly from Maria Edgeworth's *Letters For Literary Ladies*. Edgeworth is, in fact, discussing chemistry in these terms (21).

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