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A Garden of Love and Science:  
Erasmus Darwin's The Loves of the Plants

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## **The man of science and the man of poetry**

In his *Preface* (1800) to the *Lyrical Ballads*, William Wordsworth makes a clear distinction between the 'man of science' and the 'man of poetry'. Even though both of them have the same goal, which is to gain knowledge about the world, their methods and productivity are not even close. The man of science works long and hard to attain truth, using mechanical research to establish facts. Poetry, on the other hand, sees knowledge as pleasure.

Knowledge in this sense is vivid and existent in everyone. The poet is capable of sharing pleasure with others through emotion, while science remains a solitary business. Wordsworth even states that as a method, poetry is primal in finding the truth:

The knowledge both of the Poet and the Man of science is pleasure; but the knowledge of the one cleaves to us as a necessary part of our existence, our natural and unalienable inheritance; the other is a personal and individual acquisition, slow to come to us, and by no habitual and direct sympathy connecting us with our fellow-beings. The Man of science seeks truth as a remote and unknown benefactor; he cherishes and loves it in his solitude: the Poet, singing a song in which all human beings join with him, rejoices in the presence of truth as our visible friend and hourly companion. Poetry is the breath and finer spirit of all knowledge; it is the impassioned expression which is in the countenance of all Science. (par. 20)

We think of Wordsworth as a major figure in shaping the literary thinking of this era, however, there was another endeavor, which aimed at combining science and art, and that was didactic or scientific poetry.

Wordsworth aims to identify the differences between the 'man of science' and 'the man of poetry'. This suggests that such a differentiation was not present at that time. In truth, at the beginning of the eighteenth century, science was an organic part of culture. It was an era when science and literature both had a broader meaning than nowadays. Aristotle's categories of natural philosophy (a scientific study of nature) and natural history (the observation of nature) were still dominant, although, the spread of experimental science (the basis of today's modern science) had already begun, originated from the innovations of empiricist scientists like Isaac Newton and Francis Bacon. As for literature, in the first part of the eighteenth century, it was a medium for conveying philosophical ideas, and that included science as well. What is more, natural history was quite fashionable on the literary market; hence many writers featured scientific themes in their works. (Lawlor, 38-40)

Scientific poetry in the first part the eighteenth century mainly involved observations about nature, description of natural phenomena, featuring natural philosophy – all in the framework of poetry.

However, there was a change in the second part of the century. It is a common belief that romantic poets of the era had an aversion towards science. This belief is only partly true. Romantic poets, like Wordsworth and Coleridge, were intrigued by science; some of them even pursued it as a professional (for example, John Keats was a medical doctor). Yet, there were certain branches and certain aspects of modern science that they did criticize. While the thorough observation of details of natural history was in harmony with the romantic concept of nature, the mechanical, technological side of experimental science was far from the poetic trend of the era. (Lawlor, 51)

This mechanic science is what Wordsworth's 'man of science' pursues, and as such, it cannot be a part of poetry, which is "the breath and finer spirit of all knowledge" (Wordsworth, par. 20). The distinction is made on the basis of passion and emotion. Science, in this sense, is deemed to be cold and deprived of the passion of poetry.

While the endeavor of combining science and poetry was popular in the first part of the eighteenth century, a slow shift towards separating the two began. It is true, that the criticism of romantic poets did not concern all fields of science; yet, the general idea about science was changing. As a result, some formerly popular poetic trends became less appreciated.

## **Erasmus Darwin**

Erasmus Darwin (1731-1802) was one of the most famous figures associated with the scientific poetry of the first half of the eighteenth century. Being a scientist and a poet, his self-claimed aim, stated in the "Advertisement" at the beginning of his poem, *The Loves of the Plants* was "to enlist the Imagination under the banner of Science". He wanted to propagate intriguing scientific discoveries in an entertaining form.

The reception of his works was ambivalent. Some considered this combination of science and poetry intriguing, while many of Darwin's fellow poets found it revolting. Wordsworth, it seems, was, of the latter opinion, and, as mentioned above, saw the 'man of science' and the 'man of poetry' as fundamentally different.

It is interesting, however, that Samuel Taylor Coleridge felt more ambivalently about the matter. In 1797, in a letter to John Thelwall, he writes the following: "I [am] absolutely

nauseate[d by] Darwin's poems" (Griffiths, 645). In one of his essays, however, he praises Darwin's philosophical thinking and his use of analogies (Porter, 213). An oeuvre that invited such diverse response is surely worth further examination.

Is scientific and literary thinking fundamentally different from each other? I will try to answer this question through analyzing a significant attempt to combine the two – Erasmus Darwin's *The Loves of the Plants*.

*The Loves of the Plants* was first published in 1789. Later, it became the second volume of a collection called *The Botanic Garden*. It contains two long poems: "The Economy of Vegetation" and "The Loves of the Plants". *The Loves* is a long description of personified flowers, and their various love affairs. It is divided into four cantos, written in heroic couplets, composed within a mythological frame. All these features show the influence of Alexander Pope. There are also Interludes interjected in the main storyline. In these Interludes, we can read about the Poet's conversations with a Bookseller. The Poet is trying to explain his views on literature in order to sell his own work. These self-referential parts break the elevated mood of the verse by their mocking tone, but they also reveal some interesting thoughts on poetry, which are most probably Darwin's.

The narrative framework of the poem is day's walk in a garden. The poet summons a Goddess of Botany, who becomes the narrator of the love stories. The poem aims to tell how plants experience love. Or so it seems, but a closer look will reveal that there is much more than that.

The poem with its various levels of interpretation features complex scientific theories as well as mythological elements and literary allusions. It challenges social conventions and, simultaneously, introduces extravagant ideas about women and sexuality. In what follows, I will explore these dimensions, in relation to one main question – whether science and poetry can work together in harmony or not.

## Organizing principles

### 1) Science and mythology

*The Loves* was made in defense and admiration of Carl Linnaeus's<sup>1</sup> taxonomy, as it is stated early in the poem:

Botanic Muse! Who in this latter age  
Led by your airy hand the Swedish sage,  
Bad his keen eye your secret haunts explore  
On dewy dell, high wood, and winning shore. (1.31-34)

Accordingly, one of the poem's organizing principles is the Linnaean system. Having a strict scientific system as the backbone has its impacts on the structure. If we look at the poem, the first thing we notice is that long passages of prose are interposed into it (see the Appendix on page 20). These 'philosophical notes' complement the verse with necessary, but not commonly known information about the scientific background of the poem. According to Dahlia Porter (214), while this peculiar structure is borrowed from Alexander Pope, the function is different, as it can be seen "as a material analogy between the generally distinct languages of science and imagination" (214). The verse has a clear layout, and its "crafted and polished rhyming couplets constantly suggest control and containment" (Packham, 197). The heroic couplets and the cantos seem to mirror the formal strictness of science as well.

It was the formal style that was the focus of criticism for Romantic poets. They argued that the neatly rhyming couplets, the use of (what appeared to them as) pompous words and Latin were showing how mechanic this poem was. They saw it as a meaningless play with style, lacking "the restorative powers of poetry". (Packham, 193)

However, the structural clarity can be seen as a tribute to science, as well as a classical trait. As for the vocabulary of the poem, Latin as the universal language of science obviously cannot be avoided. Only with the use of Latin names is it possible to identify terms and species unmistakably. Noticeably however, in the notes, he explains foreign expressions, and what is more, he creates new, English words for botanic categories (such as 'stipule'), reforming the scientific diction of his native language (Browne, 600).

The use of heroic couplets, the mythological environment and supernatural elements show Darwin's indebtedness to neo-classical literature and to Pope in particular. As we could see

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<sup>1</sup> Carl Linnaeus was a Swedish botanist, who founded the binominal nomenclature – the naming system of modern biology.

above, in the invocation the poet calls on the Botanic Muse, and also a series of supernatural creatures, evidently recalling Alexander Pope's *The Rape of the Lock*:

Descend, ye hovering Sylphs! aerial Quires,  
And sweep with little hands your silver lyres;  
With fairy footsteps print your grassy rings,  
Ye Gnomes! accordant to the tinkling strings (1.1-4)

Remarkably, simple animals are also addressed. In a series of apostrophes (which proved to be an inspiration of Blake's *Book of Thel*) the narrator summons humble creatures:

Ye painted Moths, your gold-eyed plumage furl,  
Bow your wide horns, your spiral trunks uncurl;  
Glitter, ye Glow-worms, on your mossy beds;  
Descend, ye Spiders, on your lengthen'd threads;  
Slide here, ye horned Snails, with varnish'd shells (1.25-29)

Talking to the Muse, the supernatural creatures (fairies, gnomes, nymphs) and creatures of nature provides the framework of all the four cantos.

The whole poem is a series of personifications, both of flowers, but of animals as well. In the opening lines, magical and natural combine in a beautiful picture of nymphs and animals mingling around the narrator, creating an atmosphere of magic. These starting lines and the framework itself embed the following scientific thought into a classical context. The concept of using literary tradition as a basis for a taxonomic verse shows that in Darwin's view, the two complement each other in a harmonic way.

Mythological and humble, natural creatures meet in the first pictures, suggesting that the narrator stands in a place where the supernatural and the worldly can coexist. This place is Darwin's Botanic Garden.

## 2) The (Botanic) Garden

As the title of the volume indicates, the locus of *The Loves of the Plants* is a garden. As Janet Browne claims, it is "far more than a simple trope: it served as an organizing principle and as structure and metaphor" (606). Accordingly, the garden is the locus in a geographical and a rhetorical sense as well.

First of all, it is an actual garden, belonging to the material world. Browne reveals that "the garden loosely described is the poem was none other than his own in Lichfield, carefully laid out by himself, here translated from a form intended to delight the visual senses into the

medium of poetry.” (606) Therefore, the garden serves as a basis of the narrative that frames the poem. The poet is strolling in his own garden, taking in the scenery of rich flowerbeds, slipping into a world of imagination while trying to describe it through the eyes of a divine narrator. This daydream, this ‘reverie’ leads to “imaginative pleasure, speculative survey, vivid recall” (Packham, 205). Interestingly, the stance of the observant poet finding pleasure in the visual beauties is not unlike Wordsworth’s. Darwin, however, chooses a supernatural narrator, the Botanic Goddess, who in herself embodies the mixing of the material and the spiritual – she is a deity of a natural science. The real and the ideal, the scientific and the poetic realms run parallel with each other exactly because of Darwin’s chosen narrator.

By specifying his garden as a botanic one, Darwin adds a scientific dimension to the locus. In a botanic garden, flowers are planted in order, with regard to their taxonomic classification – a clear tribute to Linnaeus. (Browne, 606) Also, in a botanic garden, exotic and native plants can be found alongside each other. Amongst the eighty-three species Darwin describes, there are many plants that normally would not survive under the English climate. Therefore, this garden opens up dimensions both vertically and horizontally, as it combines the supernatural and the natural, and also the familiar and the foreign. All species Darwin describes can easily fit in the ‘space’ of a botanic garden, and into the stream of the poem as well.

The image of a garden is embedded in the literary canon, starting with the Christian trope: of the Garden of Eden. Browne (606) claims that Darwin’s allusion to the classical Garden of Eden is in connection with the idea of having a world beyond social boundaries and the usual conventions of the real world. While her statement is most probably accurate, there might be even more to this picture. We see a garden inhabited by mythical creatures and tenderly loving flowers – it is a true and ideal world, an Eden. It implies that in an ideally constructed world, science does not strip nature of its magical and emotional features, but admires them. In Darwin’s garden, an ideal world is realized. The spiritual and the material, the poetic and the scientific join and spread their beauty together. The Botanic Garden is an ideal locus of harmony; a place very much like Blake’s Eden, in which Urthona, spirit of prophecy and poetry

rises from the ruinous walls

In all his ancient strength to form the golden armour of science

For intellectual War The war of swords departed now

The dark Religions are departed & sweet Science reigns (407, *The Four Zoas*, IX 852-855)

Where Blake personifies psychic forces and drives, and talks about intellectual warfare, Darwin personifies flowers and describes a peaceful garden.

### 3) Personification

The underlying figure of speech of *The Loves of the Plants* is personification. Animals, plants, mythical creatures are given human-like features – emotions and consciousness.

Interestingly, Wordsworth formed a somewhat negative opinion of personification. In the *Preface*, he accepts that sometimes it is a device derived from passion, but rejects its use as a rhetorical device or a stylistic trick, saying it is not part of natural language:

The Reader will find that personifications of abstract ideas rarely occur in these volumes; and are utterly rejected, as an ordinary device to elevate the style, and raise it above prose. My purpose was to imitate, and, as far as possible, to adopt the very language of men; and assuredly such personifications do not make any natural or regular part of that language. They are, indeed, a figure of speech occasionally prompted by passion, and I have made use of them as such; but have endeavoured utterly to reject them as a mechanical device of style, or as a family language which Writers in metre seem to lay claim to by prescription. (par. 9)

Coleridge also seems to separate personification from the animation and recreation of objects, which the poet does based on his or her creativity, and as Packham puts it: “The animation of external objects by poetic imagination was thus distinguished from a personification perceived as a mere rhetorical and poetic convention” (192).

The witty and playful style of *The Loves* is the reason why Darwin’s critics deem his use of personification a rhetorical trick and do not look at it as a creative poetic device. It is true that the poem has a light tone, and its language is so polished that sometimes it seems like a play with words. However Darwin explains his view on the use of personification in the first Interlude, and it is clear that his intention was not only to entertain. In this Interlude, a Poet and a Bookseller are having a conversation about the differences between poetry and prose, and their devices. It is almost like a lecture given by Darwin himself, elaborating his own view on the matter. Trying to identify the differences between poetry and prose the Poet of the first Interlude explains the following:

Next to the measure of the language, the principal distinction appears to me to consist in this: that Poetry admits of but few words expressive of very abstracted ideas, whereas Prose abounds with them. And as our ideas derived from visible objects are more distinct than those derived from the objects of our other senses, the word expressive of these ideas belonging to vision make up the principal part of poetic

language. That is, the Poet writes principally to the eye, the Prose-writer more abstracted terms. (n.pag.)

Darwin, then, thinks that poetry is mainly visual, while prose features more abstraction. Packham highlights that later in the Interlude it is explained that personification and allegories are, as she says, tools “to transform the overly-abstract language of prose and produce a more visual poetic language, the better to engage the reader’s ‘eye’ and produce the images at which poetry aims.” (197) So Darwin does not see personification as a mere mechanic device. Personification in *The Loves* is used to convey vivid images to the reader, to make them more accessible to them.

Personification also can be seen as a device for drawing parallels between two things – the one that is personified, and the one whose characteristics are given to the former. In this sense, personification can be seen as a poetic type of analogy.

#### **4) Analogy**

Analogy has been deeply embedded in European culture. The first debates about it date back to Aristotle. In his philosophy, analogy means a resemblance between relationships (Griffiths, 648). Finding similarities and comparing the relations of things is an ancient way to gain knowledge. In the eighteenth century, one of the most prominent authors using analogy as the basis of his works was Emanuel Swedenborg. He used the term ‘correspondence’ to describe basic relationships that can be found between the human and the divine world. Somewhat similarly, Darwin also described a correspondence between the natural and the supernatural, and aimed to extend the use of analogy to as many fields as possible.

Analogy has an important role in the foundation of modern science as well. One of its fundamental notions, evolution, is related to analogical thinking. A main evolutionary concept is that similar forms are related to each other. Similarly, modern science has a tendency to look for parallels and correspondences.

Darwin believed that with analogy one can discover patterns of nature and draw conclusions regarding the natural order. As Griffiths says, he “conceives of analogy as a key component of experience, harnessing the empiricist theories of John Locke and David Hume in a thoroughgoing transformation of analogy’s foundation and status.” (651)

*The Loves of the Plants* provides a literary frame for enumerating Darwin’s observations of plants and it organizes them into a network, where their relations can be established and

examined. As, for example, in the case of the Barometz, the flower's visual description in the verse is the first element in a long chain of associations:

Cradled in snow and fann's by arctic air

Shines, gentle BAROMETZ thy golden hair (1.283-284)

The flower has a woolly appearance and is surrounded by snow. Based on this image, Darwin elaborates a complex analogy, explained in the notes below the lines cited above.

The thick downy clothing of some vegetables seems designed to protect them from the injuries of cold, like the wool of animals. Those bodies, which are bad conductors of electricity, are also bad conductors of heat, as glass, wax, air. [ ...] The fat or oil of whales, and other northern animals, seems designed for the same purpose of preventing the too sudden escape of the heat of the body in cold climates. Snow protects vegetables which are covered by it from cold, both because it is a bad conductor of heat itself, and contains much air in its pores.

Here, we can see a multileveled analogy. For once, there is a resemblance in appearance between Barometz's and sheep's wool. Then, Darwin assumes that the function of such an attachment must be similar – flowers and animals use it for preserving heat. Another parallel is established, as he explains that northern animals' fat and oil has the same function. This resembles snow, as it envelops flowers and protects them from the cold. All materials mentioned share a common characteristic: they are bad conductors. This many-sided strict analogy is typical in *The Loves*. (Porter, 219)

It seems that for Darwin analogical thinking is important in how he thought about the human mind and its processes. He believed that the brain is a pattern-based engine (we would say 'computer' today) that is capable of analyzing multiple kinds of analogies (for example: rational, intuitive). (Griffiths, 646-647)

Darwin suggests that drawing analogies is something the human mind does instinctively. It foreshadows what Immanuel Kant says about perception. Even though Darwin most probably never read the *Critique of Pure Reason* (it was translated into English in 1838), his ideas are remarkably similar to how Kant thinks about the workings of the mind. Putting it very simply, Kant says that we have concepts we are born with and these concepts get filled with meaning through experience. The mind intuitively relates concepts with experience; therefore analogical thinking is a natural way of building up knowledge.

Science and poetry both use analogy as a tool for conveying ideas. In science, using analogy is a way to look for patterns and to establish universal rules based on them. In poetry similes, metaphors and personification can be seen as forms of analogy as they establish

connection between things based on similarities. *The Loves* uses both representations (the scientific and the literary) at the same time, uniting the two fields with the basic urge to connect similar things. In this sense, science and poetry are connected as well, because they depend on the same, intuitive processing principle of the mind.

Packham claims that we can differentiate between two kinds of analogies: loose and strict ones. (204) A loose analogy can be based on an individual impression and an individual logic, while a strict analogy is based on universal characteristics and features that can be perceived by anyone. Fundamentally, science uses the former, while poetry prefers the latter. For conveying scientific ideas, a loose analogy might seem too superficial. However, in *The Loves*, it is a tool for making understanding easier, by leading the reader's thoughts from simpler pictures towards more complex ones.

Interestingly, in contrast to analogy, which aims to find similarities and connect ideas, taxonomy seeks to differentiate and define separately. Coleridge disparagingly calls Linnaeus's work a 'huge catalogue' and it is exactly for giving life to this rigid system, by adding harmony, vitality to it, that he praises Darwin's work. In other words, Darwin made this scientific achievement more available and vivid with the help of poetry. (Porter, 213-214)

Even with this added vivacity, taxonomy is an essentially rigid system, but it is exactly this rigidity that Darwin utilizes in *The Loves* to evade a possible problem with analogical thinking. Analogies provide diverse, multilevel sets of pictures, but they can also become confusing if they proliferate uncontrollably, as the mind can go on with connecting thoughts endlessly. Darwin uses taxonomy as an anchor to keep the stream of associations in check. As Porter puts it:

In the textual elements that act out its compartmentalizing work – the page format and typography, the couplets and end stops, the generic divisions between allegorical verse and scientific prose – taxonomy stems the tide of unbounded analogy, forcing it to halt, only so it can begin again with the next plant that is a maid who loves and burns. (219)

Darwin uses the different types of analogy in many ways. He describes relationships to explore scientific patterns and to help the reader understand the logic behind natural phenomena. Associations are also a part of his poetry in the form of personifications and metaphors. A main analogy is delineated by the whole of the poem – it is the one between science and poetry. Scientific and poetic elements run in parallel through *The Loves*, originating from the analogical thinking of Erasmus Darwin, which expanded to both fields.

Apart from using peculiar devices for grounding its structure (such as taxonomy and analogy), *The Loves of the Plants* has considerable philosophical depths. The unique representation of nature introduces theological and social issues, questions regarding human superiority, sexuality and the possible roles of women. These themes reflect on Darwin's way of thinking, which was, in some aspects, unconventional in his age.

## **Philosophical themes**

### **1) Women in love**

For centuries, women were considered inferior to men. Aristotle was one of the main figures who proposed this notion. He provided – what he then believed to be – a scientific reasoning in *Generation of Animals*, explaining on biological grounds that women naturally belonged under the rule of men, as they are merely mutated, deformed creatures. In the *Politics*, he states that women lack authority, hence, they are only fit for submissive roles in the households as well. (Parsons)

His views were widely accepted in Europe and were rarely challenged until the era of the Enlightenment. However, in *The Loves of the Plants*, Darwin seems to go counter the general assumptions about women. He uses the same scientific and biological framework of reference as Aristotle, only to show the exact opposite. In his poetry, it is natural for women to be diverse, regarding both their roles and their sexual behavior. They are equal, what is more, powerful in the sense of making their own decisions and being the rulers of their fate.

In *The Loves*, only women have names and attributes. There is a wide range of characters, from the loving, domestic mother to the cruel, dominant queen. In contrast to traditional views on women, Darwin introduces many different roles they are capable of taking up. Their personalities are very different, and their sexual behavior is not uniform either. There are humble, fair ladies, matching the expectations of the age:

Thy love, CALLITRICHE, *two* Virgins share,  
Smit with thy starry eye and radiant hair; (1.45-46)

But also, there are violent, femme fatale-types of women, like Kleinhovia:

With frolic eye she views the affrighted throng,  
And shakes the meadows, as she towers along,  
With playful violence displays her charms,  
And bears her trembling lovers in her arms. (1.189-191)

The poem stretches the definition of marriage by presenting alternatives for conventional monogamy. Flowers have human-like love affairs; however, we cannot say that the poem delineates a general picture of contemporary love life. While there are some 'conventional couples' (for example Curcuma, who has only one husband), it is more common to have extraordinary relationships in this imaginary world. For example:

Proud GLORIOSA led *three* chosen swains,  
The blushing captives of her virgin chains. –  
– When Time's rude hand a bark of wrinkles spread  
Round her weak limbs, and silver'd o'er her head,  
*Three* other youths her riper years engage,  
The faltter'd victims of her wily age. (l.119-124)

According to these lines, Gloriosa basically lives in polyandry (one woman and six men). And what is more, she continues to seduce young men even when she is old.

Darwin goes beyond polyandry in his depiction of relationships. There is Silene, who has two sisters and the three of them have ten husbands. These peculiar marriage arrangements are mostly the results of taxonomy, as flowers have an exact number of reproductive organs. Silene must have two sisters and ten husbands, because the flower itself has three pistils (female organs) and ten stamens (male organs). While these peculiar arrangements also serve to educate the reader, another aim might be to overstep the taboos of sexual life to challenge the strict Christian tradition.

Surely, Darwin describes women with a respectful attitude. However, as Browne points out there are no educated women in this picture (616), no intellectuals, no artists, writers or teachers. By allowing women freedom in sexuality, Darwin breaks away from the standards of his time, but he does not seem to assume the same freedom in the fields of education. There is one important exception, however, and that is the Goddess of Botany. (Browne, 617) Being the narrator of the poem, she proves to be an expert in science and she is also a great poet. With her voice, Darwin can leave behind the tone of a gentleman and can speak freely about women and sex. Choosing the Goddess as the narrator shows Darwin's great respect for educated women.

It can be pointed out, that the women represented in the poem come from the supernatural world and the world of flowers, but never from the human world. There is no explicit statement about women's situation in a human society. Still, even if we do not look at the flowers as metaphors for humans, Darwin gives them female attributes that was unusual at the time.

In Darwin's ideal garden, women are given freedom, an opportunity to detach themselves from the conventions of the real world, but tradition is not the only thing they are separated from. Through the poem, there is no mention of tragedy, loss, illness or sorrow. Even though sexuality is a central theme, there are no cases of rape, heartbreak, or sickness. In this sense, it is a true Garden of Eden, an inordinately ideal world, where women do not need to worry about violence, infidelity, or the consequences of sexual intercourse (namely unwanted pregnancy). Given such a setting, the characters can experience sexuality stripped of concerns and tragedies, which are the central themes of many novels of the period.

In the framework of a poem, Darwin uses a biological background to elaborate his opinion about a matter what we would call today a gender issue. *The Loves* is a revolutionary poem in the sense of giving women more attention and more freedom than they were ever allowed in the eighteenth century, and also because it does that by merging scientific and social issues through poetry.

## **2) Nature with a soul**

Based on Aristotle's observations about nature, European canon, from fairytales to Romantic literature commonly used analogies between humans and animals. Partly because of this tradition, partly because of natural similarities in behavior, animals can be easily represented in an accessible way for the readers. However, in Darwin's work, plants are in the focus instead of animals. In nature, plants do not show any signs of emotion or human-like behavior, and yet, in the *The Loves of the Plants*, they are as emotional and conscious as an animal, or even as a human. This rare representation raises a theological question: Where should we draw the line between creatures that have a soul, and creatures without one? Are animals and plants emotional and conscious creatures? If yes, does that mean that they have a soul?

Although plants are living things, their lives are very different from animals' or humans', so additional attributes are needed in order for the dramatization to work. Darwin introduces one plant as a single character and a community at the same time. Besides the animation of the flower itself, he describes its stamens and pistils as if they were men and women (Borwne, 594). We can see an example of that in the description of the iris:

The freckled IRIS owns a fiercer flame,  
And *three* unjealous husbands wed the dame. (1.71-72)

In the note below this couplet, Darwin describes the flower's reproductive organs further, being as accurate as possible:

Flower de Luce. Three males, one female. Some of the species have beautifully freckled flower; the large stigma or head of the female covers the three males, counterfeiting a petal with its divisions.

So the reproductive organs are males and females, living in a marriage together, on one single flower. This representation is important for multiple reasons. First of all, the number of each organ on a plant is the basis of Linnaeus's taxonomy, and as such, it needs to be highlighted. Second, these are the organs of reproduction, or in Darwin's ideal world, of love. Hence, their importance to a natural system is unquestionable, and they are also realizations of the main driving force of the poem (which is reproduction). Lastly, the unconventional statuses of these personified men and women connect the poem to social issues, of which I will talk later on.

Darwin shows that love is present in the lives of plants, just as it is in the lives of animals and humans. Contrary to common belief, he sees flowers as equally capable of emotions and conscious thinking. It is an effort to bring people closer to botany, as one of the poem's many aims is to advertise this field, which most might deemed boring.

Despite the thorough personification, the question remains: if one can feel love, does it mean that one has a soul? The evolutionary theory challenges the Christian tradition in the sense that it suggests the existence of a common origin of every living creature – meaning all species' progress can be traced back to less developed creatures, and eventually to single-cell organisms. The Bible, on the other hand, says that mankind is different, as God created humans after his own image and gave them a soul. This positions humans above animals and plants. Although the argument is not stated clearly in *The Loves*, the whole idea of plants having love affairs suggests that Darwin saw humans, animals and plants as equal or at least strongly connected.

The poem contains implications of a special view of life and its attributes. What is alive, feels – that could be one of the conclusions of *The Loves*. In other words, basic emotions are universal, shared experience of humans, animals and plants, merging seemingly different realms together.

### 3) A network of life

Besides creating a network of personification, analogies and allegories, *The Loves* delineates a bigger, more complex idea – interconnectedness. Giving human characteristics to animals and plants does not only make them more accessible to us, it also suggests that humans are not so different from other creatures either. Love is an emotion that connects all creatures on Earth, regardless of their forms. The drive to find a partner is common in all species, and it is also the engine of progress (or what science will later call it, evolution). This thought is powerful from a scientific and a literary point of view as well.

Art is usually seen as a human activity, literature even more so. Most of the time, literature (and poetry) focuses on the human world. Humans tend to think of themselves, as special, even superior creatures. This tendency was even stronger in the ages when Christianity was the basis of everyday thinking. Christian belief marks mankind as divine and separated from the natural world – humans are created and treated differently from other species. This suggests that we are more, somehow superior to animals and plants.

In the scientific world, the same way of thinking dominated a very long period of time. While it focused its attention on nature, observing and analyzing it, humans as species were considered unquestionably special. Intelligence and having a soul – these attributes separated us from other living organisms. Hence Charles Darwin's claim that our ancestors were the same as apes' met with disbelief and astonishment. He contradicted the paradigm based on human superiority and the roots of his theory can be found in his grandfather's, Erasmus Darwin's works.

*The Loves of the Plants* is quite subtle about evolutionary theory. The whole concept of flowers having husbands and wives shows that even though plants live a different kind of life, the basic drives (in this case, love and reproduction) are the same in every creature. Browne claims that "his poem was constructed around the idea that human actions in the realm of love were, in reality, natural phenomena and not owing to attributes bestowed by a creator" (614). In the closing scene of *The Loves*, Darwin implies that marriage is not a sacred bond, but more like a natural relationship, which plants and animals are also capable of forming. The closing scene in question shows a grand wedding ceremony:

*A hundred virgins join a hundred swains,  
And fond ADONIS leads the sprightly trains;  
Pair after pair, along his sacred groves  
To Hymen's fane the bright procession moves (4.467-470)*

There is no mention of the Christian God in this ceremony. Only the mythological elements of the framework of the poem are represented. The pairs are formed naturally and their bond does not need a Christian vow or a temple to be valid. Some criticized Darwin for his literary representation of religion, which they thought was bordering blasphemy.

However, Darwin was not an atheist. He claimed to be a deist and he did not present the ideas of interconnectedness or evolutionary progress as counterarguments of God's existence. On the contrary, every discovered natural law and correspondence was, for him, a proof to an intelligent deity behind the world's creation. (Ruse, 56)

In connection with the natural ceremony described in the last scene of *The Loves*, the personification changes 'directions'. Up until this point, flowers were given human characteristics. The lack of a sanctified bondage in their human-like ceremony can be seen as an implied question. Do humans need God to sanctify their relationships, or are their bonds simply natural? Even though Darwin does not give an answer, he very subtly challenges the Christian conventions of love and marriage.

*The Loves* establishes a relationship between living creatures through their emotions. Nature is represented as one big network of life, humankind included. Humans are just as organic parts of this natural system as plants and animals. This seems to deprive us of our special status, and in a way it does, as Erasmus and Charles Darwin say that natural laws apply to us in the same way as they do to everything else in our world.

## Conclusion

Based on a very concrete scientific schema – Linnaeus’s taxonomy – Darwin managed to map out a network of complex philosophical ideas, with the aid of poetry. Through *The Loves of the Plants*, he introduces science as a vivid, intriguing field, which, despite its need to establish separate categories, reveals patterns and connects ideas together. Besides the underlying evolutionary theory, Darwin evokes a network of life in which every living creature is connected. This idiosyncratic system of thoughts reappears in his other works as well, but as Browne points out, these concepts “never came together again in quite the same evocative combination of philosophical and social values” (621).

The idea of interconnectedness represented in *The Loves* leads the reader to social and philosophical questions. Are humans an organic part of nature or are they different or special based on a divine volition? Darwin implies that marriage and consciousness are not necessarily closely related to God and Christianity. He represents them as natural phenomena, having multiple forms, all acceptable and relatable. Darwin, therefore, challenges the conventions of his age.

Darwin’s challenge is more explicit regarding women. *The Loves* features women in diverse roles, it describes their characteristics and sexual life, and does it all from a scientific point of view. Having different kinds of roles and relationships is the natural state of women in the poem. This seems to counter the conventional ideas according to which women are biologically made in a way to be subordinates to men. In *The Loves*, instead of subordination, they are in the focus of attention, and what is more, they are given a freedom of sexuality. This revolutionary concept is derived from Darwin’s personal view of women, which was different from most of his contemporaries’.

Darwin also seemed to disagree with Wordsworth, among others, in the matter of combining science and poetry. In the *Preface* of the *Lyrical Ballads*, Wordsworth implies that science is cold and rigid, and as such, it is distant from the realm of poetry, inferior to it even. Darwin, however, thought that through similar mental processes, a connection can be drawn between the two fields. The strict analogies of science and the loose ones of poetry support each other in making complex scientific concepts accessible to the reader. Exactly because of its aim to educate, *The Loves* was criticized with shifting its focus completely to science, using poetry only as a mechanic tool – a method despised by Wordsworth. Even Darwin

himself says, that he uses poetry ‘under the banner of science’, implying a hierarchy between the two.

However, as we saw, *The Loves* is not solely about science. Despite the strong scientific side, the literary side is not neglected either. As Packham says, “poetry here is oddly functional, both in making itself the instrument, the mechanism, by which science will be animated, and in the admitted ‘production’ which its animation provides.” (207) Therefore, while poetry does fill the part of the mere instrument, it becomes something more in the process. The multiple themes and layers presented in this essay proved that *The Loves* is a complex piece of art, both in a scientific and in a literary sense.

In conclusion, Erasmus Darwin’s *The Loves of the Plants* is a peculiar combination of science and poetry. It connects scientific and literary thinking on the basis of the universal, analogical workings of the mind. With this, the poem implies that there are no strong boundaries between the two fields. What is more, by combining them, one can establish a complex network of philosophical associations, valuable from the literary and the scientific points of view as well.

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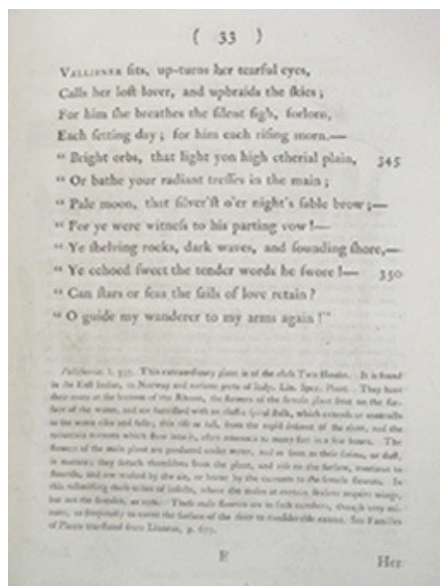
## Appendix

The Loves of the Plants, published in 1791 together with another long poem, under the name of The Botanic Garden:

Picture 1.



Picture 2.



Source:

University of Saskatchewan. University Library, Rare Books Online Showcase Archive. 2012 June. March 14. 2014. <<http://library.usask.ca/archives/collections/published-works/rare-books/rare-books-showcase/rarebooksarchivejune2012.php>>.