
Research Article

'We the Tormentors': Death, Emotions, and Gender in the Life and Work of the Entomologist Margaret Fountaine

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This paper combines the history of scientific collecting with the history of emotion. It does so by using a unique combination of private and public sources – the diaries and articles of entomologist Margaret Elizabeth Fountaine (1862–1940). Fountaine practiced entomology at a time when there were few women in science, and in particular in entomology, requiring each woman to make her own way and devise her own strategies and scientific persona. Fountaine's emotions towards collecting insects were ambivalent, and while collecting was a source of great pleasure to her, it was also at times a source of guilt and pain. Indeed, in her diaries she exhibited a range of emotions, including pity for the insects. However, in her articles she exhibited a more limited emotional palette, as the scientific persona she chose to construct was built from two narratives – the objective researcher and the white imperial huntress – and these, while bestowing authority upon her, only allowed for the expression of certain emotions. In addition to showing how Fountaine had to tailor the emotions she exhibited, this paper also suggests that objectivity in collecting was another kind of emotion. It was an attempt to distance the collector from the subjects of collection by using instruments and interacting with them in a supposedly emotionless way. This paper argues that when examining the making of scientific knowledge we should look at both its cerebral aspects and its emotional aspects, as the latter also played an important role.

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At the heart of natural history collecting there is a dilemma – naturalists usually have a deep-seated love for the natural world; however, in order to be a collector, one often has to kill what one loves. During the nineteenth and early twentieth centuries there were several large, public debates regarding cruelty to animals – from the foundation of the Royal Society for the Prevention of Cruelty to Animals in 1824, to the anti-vivisection debates of the 1870s onwards which questioned the ethics of causing pain and killing animals for scientific purposes. These debates were about defining the nature of science, how it should be practiced, and what should be the relationship between emotions and science. Women played a significant role in these debates and participated in different anti-cruelty movements.¹

It was not only cruelty to mammals and birds that was debated, despite historians' focus on them, but also to insects.² British entomologist Margaret Elizabeth Fountaine (1862–1940) and her diaries are an ideal

¹ For more on women and anti-cruelty movements, see Merchant, *Spare the Birds!*; Donald, *Women Against Cruelty*; Gates, *Kindred Nature*. For more on the anti-vivisection debates, see Bates, *Anti-Vivisection and Medicine*; White, "Darwin's Emotions," 811–26.

² For a discussion of debates regarding cruelty to insects in the first half of the nineteenth century, see Hollerbach, "Of Sangfroid and Sphinx Moths," 201–20; for a discussion on debates regarding methods of killing insects for collections and cruelty in seventeenth- and eighteenth-century Continental Europe, see Hünninger, "Nets, Labels and Boards," 686–705; for a more general book on entomology in the long nineteenth century, see Clark, *Bugs and the Victorians*.

place to explore these issues in a new way. Most historians who have written about emotions and natural history focused either on very public sources (such as those relating to the anti-vivisection debates), or private ones. In the case of women there has been a particular focus on their engagement and writing in the public sphere. Here I will use a combination of Fountaine's publications together with private sources in the form of a diary, kept from the age of fifteen until her death, to discuss emotions, objectivity, and sympathy in science. Fountaine was a lepidopterist who collected butterflies around the world until the very day she died. She left behind a collection of 22,000 specimens, and bequeathed four meticulous sketchbooks to the British Museum, used by scientists to this day, detailing her innovative work on butterflies' life cycles.³ For Fountaine, killing insects was part and parcel of her work as an entomologist, work that was fundamental to her identity, making her views and emotions regarding cruelty to animals different to those of women who participated in the debates without practicing science. Fountaine represents an intersection of several different problems in the history of science and knowledge, and it is helpful to think through her about the emotional economy of collecting, cruelty and vivisection, and of imperial exploration and hunting. While there is extant literature in each of these fields, there remains much work to be done in connecting and drawing lines between them.

The life and work of Fountaine have been examined by several scholars. Sophie Waring asks how unusual Fountaine actually was for her time,⁴ while Harriett Blodgett focuses on the form of her diaries.⁵ Both Julie English Early and Heidi Liedke look at the way Fountaine navigated the public and private spheres both in her work and in her travels, while blurring the boundaries between the two and resisting social pressures to maintain a distance between them.⁶ According to Barbara T. Gates, Fountaine exemplified the way women used practices that were considered feminine to make their way into scientific communities. She also notes Fountaine's anthropomorphizing of insects, which will be discussed in this article.⁷ However, while Early and Gates look at the ambivalences in Fountaine's life, including towards the insects she captured, it is not the main focus of their arguments and much remains to be derived from her diaries and articles. In addition, in the past couple of decades since the above were written, the history of science and emotions has grown and it is time to re-approach these fascinating texts.

The emotional turn in history can be traced back to the past couple of decades. Historians have tended to dismiss emotions in science, or else to argue they were usually expressed for the purpose of showing the scientist as heroic or masculine, facing suffering to further progress. In particular, little has been written about how women appropriated scientific values and 'scientific emotions'.⁸ The editors of the *Osiris* issue "History and Science of the Emotions" called in 2016 for historians of science to look at other kinds of emotions, such as jealousy and anxiety, and at alternative ways of expressing emotions.⁹ This is part of my purpose here, to look at the wide range of emotions Fountaine experienced and utilised during her life and work as an entomologist. This article draws inspiration from the movement that views emotions as an integral part of science and perceives science in a holistic way which also looks at the intimate and domestic components of the practitioners' lives. A good example of this kind of scholarship is Jim Endersby's examination of the close friendship between Joseph Hooker and Charles Darwin and their embodiment of sensitivity and sympathy through their roles as not only men of science but also husbands and fathers.¹⁰

An interesting question which arises in the history of emotions in science, and which will be explored in this paper, is the problem of objectivity. In their 2007 book, Lorraine Daston and Peter Galison trace the emergence of scientific objectivity and argue that it did not always define science. They describe objectivity as 'blind sight', writing that "to be objective is to aspire to knowledge that bears no trace of the knower," which means supposedly no trace of their emotions either.¹¹ The ideal of objectivity in science developed during the nineteenth century, and required the production of a 'view from nowhere', in order to show

³ Fountaine's butterfly collection can be found at the Norwich Castle Museum under the name The Fountaine-Neimy Collection; for Fountaine's sketchbooks, see Fountaine, *Sketchbooks*.

⁴ Waring, "Margaret Fountaine," 53–68.

⁵ Blodgett, "Preserving the Moment," 156–68.

⁶ Early, "Work, Life, and Text," 183–97; Liedke, *Idling in Victorian Travel Texts*, 201–28.

⁷ Gates, *Kindred Nature*, 86–88 and 206.

⁸ For a discussion of male scientific objectivity, see White, "Darwin's Emotions," 811–26; for women and objectivity see – Oreskes, "Objectivity or Heroism?," 87–113.

⁹ Dror, Hitzer, Laukötter, and León-Sanz, "An Introduction," 1–18.

¹⁰ Endersby, "Sympathetic Science," 299–320.

¹¹ Daston and Galison, *Objectivity*, 17.

nature 'as it really is'. Scientific knowledge was supposed to be somehow ideally separated from emotions and for this, scientists and writers had to persuade their peers and readers that they were impartial by using language and descriptions devoid of sentiment. The natural sympathy that often occurs between humans and animals was seen as an obstacle to research and practitioners of science attempted to remove it through using instruments and procedures that turned animals into objects to be studied and not pitied.¹² Charlotte Sleight claims objectivity was equivalent to killing the sentimental self, the part that "would otherwise be entangled - sentimentally, ecologically - with the killed animal specimen," and for this reason killing the animal was a way of killing a part of the self and demonstrating objectivity. But killing the animal does not mitigate the love of the collector and could also be perceived as an expression of that love.¹³ This is somewhat similar to Rob Boddice's argument that to contemporaries nineteenth century vivisection was an act of sympathy, as it was supposed to eventually lessen suffering.¹⁴ Indeed, several historians of science have argued that objectivity wasn't merely a form of scientific identity, but also a kind of emotion.¹⁵ Other scholars, such as Shavit and Griesemer, have shown that some scientists perceived emotions to be an integral part of objectivity. They analyze the philosophy of conservationist George Bird Grinnell, who argued that an observation could only be considered scientific if it included all possible information needed to understand its context and replicate it, including the observer's emotions.¹⁶

This essay explores Fontaine's ambivalence towards the practice of collecting insects. By using both her private diaries and her published articles as sources, I analyze how she perceived the practice of collecting versus how she portrayed herself to the entomological world as an entomologist. I will argue that while in her private writings she allowed herself to exhibit a full range of emotions, from pride and joy to remorse and pity, her public persona demanded the expression of a much more limited emotional palette. The first part of the article will give an overview of women in the British entomological community together with some biographical information on Fontaine. Then I will discuss Fontaine's emotions as they come to light in her diaries, from the joy of possessing specimens to the acute pain of having to kill the butterflies she raised. The final section will argue that in her public writing Fontaine made the strategic decision to evade the label of female sentimentality by using two opposing narratives – the objective researcher and the white imperial huntress.

I do not argue that Fontaine was more emotional than male entomologists, but rather that she had to negotiate her emotions in different ways, and to hide some of them in order to avoid marginalizing stereotypes.

Between Exclusion and Authority

Fontaine was born in Norfolk to an upper-middle class family and became financially independent at twenty-seven after receiving an inheritance. By 1895 entomology had become her main occupation and career. She was extremely widely travelled, collecting and studying butterflies in numerous countries around the globe, and was well-known and liked in the European entomological community. She was considered an expert on lepidoptera, especially their breeding and life cycles, and in 1898 and 1907 respectively became a member of the Entomological Society of London, and of the South London Entomological and Natural History Society.

Between 1892 and 1940 Fontaine created an impressive collection of butterflies and published nineteen articles and notes in the entomological periodical press.¹⁷ This was unusual. Women have always been excluded from science to a certain degree, but during the nineteenth century their exclusion became even more pervasive partly due to the beginning of professionalization in science around the 1870s. Research in the life sciences moved from the home to the laboratory, to which women had limited access. Women were also barred from taking degrees in universities until the 1880s and in Cambridge and Oxford until well into the twentieth century.¹⁸ Even when they did acquire higher education few women

¹² White, "Darwin's Emotions," 823–24.

¹³ Sleight, *The Paper Zoo*, 33.

¹⁴ Boddice, *The Science of Sympathy*.

¹⁵ White, "Darwin's Emotions," 812; Daston, "The Moral Economy of Science," 224.

¹⁶ Shavit and Griesemer, "Science and Sentiment," 283–318.

¹⁷ Fontaine's articles were published in *The Entomologist*, *The Transactions of the Entomological Society of London*, and *The Entomologist's Record and Journal of Variation*.

¹⁸ Dyhouse, *No Distinction of Sex?*, 12.

achieved academic positions.¹⁹ By the end of the Victorian era, women who practiced science had few, if any, predecessors, making it necessary to create new identities for themselves. Unlike men, they could not get jobs in museums, universities, or laboratories, other than as support staff. As a result, they practiced science at home or in liminal spaces such as the field.²⁰

According to data I gathered about the Entomological Society of London, in 1897, the year Fountaine joined the society, there were six other women and together they made up 1.62 percent of the society. By 1921 women formed only 2.2 percent of the membership. The situation in another popular society was very similar – when Fountaine was elected as a member of the South London Entomological and Natural History Society in 1908, she was the only woman among 167 men. Attention to numbers is important when discussing women in science; Margaret Rossiter has argued that the percentage of women in each field of science directly influences their experiences in that field and the options open to them. With women making up less than eight percent of practitioners, British entomology at the time conformed to Rossiter's definition of a 'peripheral field' in which all women are exceptions. In such fields there were no clear career paths for women and each had to be creative and make her own way.²¹

Fountaine started collecting in the early 1890s while holidaying in Europe, and soon discovered she was a "born naturalist."²² Her love for entomology grew as she accumulated more specimens, and her passion "increased daily, as I added constantly new species to my collection."²³ By 1897 collecting had become her primary objective and shaped her travels. Her first entomologically-determined destination was Sicily, which appealed to her because no British lepidopterist had been there before. From there on, she devoted all her time to collecting and travel.

Collecting was one of the scientific practices most accessible to women, and creating a collection of exotic specimens, especially from around the empire, gave women some authority in the entomological community. That was because most entomologists could not afford to travel around the world. Fountaine's collection was unique for two reasons; its sheer breadth, containing specimens from every continent, except for Antarctica; and the fact that she hand-reared many of the specimens from ova or larvae, so her specimens were pristine. In addition, during the process she gained a lot of knowledge about life cycles, behavior, and food plants. As a result, the practice of collecting was central to her identity as an entomologist.

Ambivalent Emotions

Fountaine evidently derived great pleasure from collecting. Her collection was both a source of aesthetic joy, and a repository of memories, with each specimen evoking a different time and place, people, and experiences. Every time she rearranged the drawers she tapped into these memories. Here she is describing a virtual voyage through her cabinet drawers, reminding her of days spent with her beloved partner Charles:

A few brilliant Preponas... [gave] me such a longing to be back in Brazil... the contents of the next drawer took me back to India and Java, for there were the Kallimas, so reminiscent of days long, long ago, such happy days spent with dear Charles, and then came the Charaxes full of hot African sunshine.²⁴

The butterflies, those "dead relics of a bye-gone summer," embodied the landscapes in which they had been collected. She writes, "something must always still be left of the sunny mountains and glowing valleys... so long as I can take out one of my cabinet drawers, and feast my eyes on its contents."²⁵ While Fountaine loved butterflies as living, joyful creatures, she also loved them as beautiful, still objects. When describing an accident that befell her collection which caused discoloration she was horrified and wrote that "we had loved them so much, and been too proud of them, and that was why this dire catastrophe [sic] had

¹⁹ Dyhouse, "British Federation of University Women", 478.

²⁰ For more on women and science, see Hill, *Women and Museums*; Shteir, *Cultivating Women*; Guelke and Morin, "Gender, Nature, Empire," 306–26; Ogilvie, "Obligatory Amateurs," 67–84; Gates, *Kindred Nature*; Schiebinger, *The Mind Has No Sex?*; Sheffield, *Revealing New Worlds*.

²¹ Rossiter, "Which Science? Which Women?," 169–85.

²² Fountaine, *Diary*, 947.

²³ *Ibid.*, 1007.

²⁴ *Ibid.*, 2997.

²⁵ *Ibid.*, 1938.

befallen us."²⁶ For Fontaine, butterflies hovered on the line between subjects and objects. She loved them flying around happily, hungrily drinking nectar, but she also loved possessing them as objects through the practice of killing and collecting.

Fontaine also enjoyed the thrill of hunting butterflies. In her diary she explains that an entomologist's hard physical life was worth it for:

The joys of this one day when the enthusiastic butterfly-hunter meets for the first time a treasure such as this, flying everywhere in wild reckless profusion, alluring the excited biped to rush heedlessly over ground of the roughest description, now jumping, now slipping, maybe sometimes even falling, but never pausing in the hot pursuit of the fascinating, little insect that will make such a grand acquisition to the collection at home...²⁷

At the same time Fontaine genuinely loved and felt great sympathy for the butterflies she collected and guilt about killing them. She describes herself and her partner as, "the spoilers seeking for their prey, it is true that we were, but spoilers who loved the tiny lives they quenched into silence."²⁸ Hence Fontaine's dilemma; in order to be an entomologist she had to kill the butterflies she loved, as her entire identity and authority as an entomologist rested on her collection. When collecting specimens of the species *Papilio napi* she wrote, "It seemed so brutal to rob them of all their little dusky wives, and the mothers of the next brood... but then there was no choice but to take a 'good thing' when I saw it, or give up collecting altogether."²⁹

While her love of entomology was usually strong enough to distract her, it was not always sufficient. After spending three days catching nearly all the *Colias chrysotheme* in an Austrian forest, Fontaine was overwhelmed with guilt and wrote: "I hated myself soundly for having been the cause of this cruel slaughter."³⁰ She confided in her diary that she often thought of the butterflies spending their days in their beloved glades, blissfully happy, "till we come with our nets, we the tormentors, the destroyers, and we take their little lives from them, and call it 'science', when hundreds of tiny existences are cut short..."³¹ In another passage she describes a new batch of salmon-colored butterflies that have just emerged in one of her breeding cages:

Just come out into their new life, how they longed to spread their beautiful wings and fly away... Instead of which they would be made to pass their short existence in the dark under a bed in my room, soon afterwards to have their little flutterings quickly silenced, while a number of dead, or dying butterflies would be lying at the bottom of the breeding cage. And now they will be perfect specimens in collections for years to come.³²

Her feelings were further complicated when she started hand-rearing butterflies. The maternal act of daily care made her loath to kill them. She writes mournfully: "I feel dreadfully sorry to have to kill them as soon as they emerge, they are so weak and helpless."³³ One example from Fontaine's diary is especially illustrative. She had managed to breed one female *Papilio dardanus*. At first, she was excited, as she had been missing a female of that species for her collection:

I never before felt more sorry for any butterfly I have ever bred; she stretched out her long proboscis, and seemed to be feeling about to find something to suck, and I? I gave her petrol, till she died! And that was all!

She was then reminded of an incident from her childhood. Her father and brother were killing sparrows as pests. She retained a vivid memory of one female sparrow she had released from the net, who looked at her with piteous eyes, she longed to release her, but afraid of angering her brother, she killed her:

²⁶ Ibid., 2121.

²⁷ Fontaine, "Butterfly Hunting in Greece," 61.

²⁸ Fontaine, Diary, 1843.

²⁹ Ibid., 1184.

³⁰ Ibid., 1328.

³¹ Ibid., 1401.

³² Ibid., 1608.

³³ Ibid., 3034.

And still the look of that helpless, little hen-sparrow, has come back to me through life from time to time, but never quite so vividly as on that day; and now that ♀ Dardanus will always be there in my collection to remind me of the pangs of remorse I felt before I took her life; the little caterpillar I tended with such care!³⁴

Fontaine is not just describing her emotions, but also those of the butterflies', who she represents as feeling creatures that suffer. She was caught between her protective feelings for the butterflies, and the reality that her chosen vocation necessitated their killing. Once the butterfly she desired as a specimen emerged, her feelings towards the little creature she had nurtured caused her to feel like a murdering mother. In a conversation with a botanist acquaintance, she asked whether he had ever felt sorry to cut down trees. He replied that sometimes he felt "some slight qualm of regret." To which Fontaine responded in her diary, writing: "But, of course, I quite understand that it is his job, just as it is my job to catch a beautiful and rare specimen of a butterfly when I see it, however reluctant I may feel to do so."³⁵

Fontaine was critical of entomologists who killed more than they needed. One acquaintance of hers "not unfrequently captured bees by mistake, and when I would plead the release of some poor, honey-laden wanderer... the only answer I would get was: 'When they once gets into the bottle, they never comes out again [sic]!'" Fontaine was enraged.³⁶ She was also extremely disturbed by the collecting practices of some of her dear Hungarian friends, one of whom, for example, believed that one had to catch 'everything', which meant "a useless and senseless slaughter of many common butterflies, even the bad specimens being killed and thrown away." This seemed excessive to Fontaine, who tried to convince them to let the bad specimens out without killing them. Her friends argued that common butterflies and bad specimens should be killed to prevent their being caught again. "A poor excuse indeed," she noted, "for the useless sacrifice of so many little lives."³⁷

Fontaine's ambivalence extended to other animals. In Damascus she was appalled by donkeys who "were treated with savage cruelty", and asses heading to Mecca who had their "nostrils slit up several inches."³⁸ While travelling in the Philippines Fontaine insisted her pony drivers not use whips while driving her.³⁹ She was aware of the incongruity of her sensitivity to cruelty to animals, and her own practice of killing for collecting. Upon encountering boys mutilating frogs she was horrified but noted that she "could not offer ever so gentle a reproof, in consequence of my own occupation, though theirs was senseless slaughter, and, of course, mine is not."⁴⁰ Here again we see her oscillation between guilt, and believing that her work was legitimate because it was scientific.

Fontaine also had qualms about animals being killed for scientific purposes. Ornithologists' collecting practices deeply disturbed her. When visiting an ornithologist whose practice it was to collect nests together with the eggs and both of the bird parents, she felt "a pang of pity to think of the whole little family party, thus exterminated."⁴¹ Similarly, while travelling with the German ornithologist Emilie Snethlage in South America, Fontaine described how she "shot about half a dozen poor, little birds, which made me very unhappy, though of course I disguised my feelings, and pretended to be very pleased, especially over one, very rare albino."⁴² Several years later she was delighted to discover that a married couple of keen ornithologists she met at a hotel in Tanzania were not "shooting birds as specimens for collections, but studying their ways and habits."⁴³ Upon visiting the Pasteur Institute in Guinea where monkeys and apes were exposed to tropical diseases to produce vaccinations, she asked if one of the "poor chimps" cannot be cured, and was told that they don't want to cure him, as they need him to die to create the vaccination. She writes about this later "alas! That so many achievements in this poor, sad world must be built up on the foundation of such intense pain and suffering... what can be the meaning of it all?"⁴⁴ But despite these notions, Fontaine did not join any anti-vivisection movements.

³⁴ Ibid., 3042–43.

³⁵ Ibid., 3098.

³⁶ Ibid., 1150–51.

³⁷ Ibid., 1392.

³⁸ Ibid., 1539.

³⁹ Ibid., 2595.

⁴⁰ Ibid., 2453.

⁴¹ Ibid., 2094.

⁴² Ibid., 2887.

⁴³ Ibid., 3113.

⁴⁴ Ibid., 2752.

Fontaine's sympathy for butterflies also comes to light through her habitual anthropomorphization of them in her diary and articles. She always referred to them as 'he' or 'she', and when seeing a species for the first time, described it as making their "acquaintance."⁴⁵ Butterflies could be "shy,"⁴⁶ or else "annoy[ed] and disgust[ed]."⁴⁷ One species, "romp[ed] and gambol[ed] with his fellows" all through the summer, and when caught he was "angry, not frightened."⁴⁸ The same applied to butterfly caterpillars – those of one species were described as "lively and quarrelsome with one another". They even had "skirmishes", in which one of them "murdered" another.⁴⁹

By looking at the way Fontaine anthropomorphized insects, and how she seemed to think they experience the world, we can learn about the way she herself felt and experienced the world. In particular, she emphasized how much they enjoy their short lives, and how much they love being free. In South Africa Fontaine had her first experience of tropical butterflies. "The intense heat seemed to have a most invigorating effect upon them," she wrote, "they all seemed in such a violent hurry, as though trying to wedge in as much joy and gladness as possible, in the short span of their brief existence."⁵⁰ She described butterflies in Uganda as "these wild, rapid lovers of the sun," she managed to catch a few, but as they were quite damaged they were subsequently released, at which she added, "though it was a pleasure too, to see with what gladness these wild and lovely creatures dart away to enjoy yet more fully their brief but happy lives."⁵¹ Elsewhere she described the thrill of releasing caught specimens – "It is always an intense satisfaction to me to release these captive butterflies... instead of dashing against the window-pane as usual, to their great joy they pass out into the sunshine outside; and once again she is free, a wild, beautiful *Charaxes* - free to wander whither she will."⁵² In Fontaine's descriptions butterflies view humans as mostly annoying beings that capture and rob them of their freedom. Of the *Charaxes iasius* butterflies she caught in Corsica she wrote that they were "prisoners being carried away to die, just as their brilliant lives of summer gladness had only just begun, guiltless creatures to be sacrificed to the whim of one of those great beings in the world, belonging to the Genus Hominum."⁵³

In Fontaine's own life freedom gave her joy. Living outside 'civilized' European society, was what she cherished – travelling and leading a semi-nomadic lifestyle. In one place Fontaine writes in her diary:

The civilization of Athens didn't appeal to me at all... I longed to be back in the wild, open mountains, free to lead my own unsophisticated life, away from the trammel and conventionalities of civilization. Freedom is my idea of the crowning joy of life, without it I care not to live... I want to see all I can of this beautiful world before I have to leave it, and life is so distressingly short.⁵⁴

Fontaine projected some of her own feelings onto the butterflies, and thus sympathized with them. Society tormented Fontaine just as humans were the butterflies' tormentors. She felt thankful to the butterflies, as her love for them, and her chosen pursuit of entomology, changed her life's direction from one which she believed would have made her miserable. In her twenties, Fontaine considered a musical career, which was then forsaken in favor of entomology. When visiting Milan several years later she felt suffocated – "the atmosphere of the place seemed to choke me, I felt that they were slaves, those people, slaves to their vanity and ambition, slaves also to their current passions; and I was free!" she looked at the Milanese musical world around her and thought "what my life too might have been, was it to be wondered at that I loved my butterflies! Those little insects which had so largely helped to influence me in deciding to abandon all idea of entering upon a musical career."⁵⁵

Another aspect of Fontaine's emotions towards the butterflies was a kind of maternal feeling, as her breeding projects made her a butterfly-mother to thousands of larvae. Once the larvae were out of the eggs she was often too busy for anything else. In a way she sounds like the mother of a new-born child. While

⁴⁵ Fontaine, "Five Months' Butterfly Collecting," 193.

⁴⁶ Fontaine, "Amongst the Rhopalocera," 237.

⁴⁷ Fontaine, "Descriptions of Hitherto Unknown," 50.

⁴⁸ Fontaine, "A Few Notes," 102.

⁴⁹ Fontaine, *Diary, 2064–2065*.

⁵⁰ *Ibid.*, 2039.

⁵¹ *Ibid.*, 2042.

⁵² *Ibid.*, 2117.

⁵³ *Ibid.*, 1960.

⁵⁴ *Ibid.*, 1485.

⁵⁵ *Ibid.*, 1995.

in Rhodesia she recounted: "in my room I am surrounded with cages of caterpillars, some of which were feeding on a long, trailing creeper, which it takes us all our time to find in the day-time."⁵⁶ Some larvae continued feeding for as long as six months and constituted a serious demand on her time and attention.⁵⁷ During this time Fontaine often had to turn down party invitations and other social engagements. "No social invitation was accepted if it clashed with a day when young larvae were due to hatch out, or too many required feeding for anything else to be thought of."⁵⁸ She also sometimes referred to her caterpillars in familial terms – in Chile she was invited to spend Christmas with friends but had to decline because of her "big family of caterpillars."⁵⁹ Fontaine found the butterflies she nursed more difficult to kill and writes – "I know the day will come when I shall wonder however I had the heart to kill these little creatures as I do, more especially, the bred specimens."⁶⁰

In order to assuage her guilt over killing the butterflies, Fontaine at times focused on the good she did by breeding them. She believed that in this way more eggs, larvae, and pupae survived to full-term and fulfilled their destiny in becoming butterflies, and her habit was usually to release several of the butterflies. "My only consolation," she wrote of *Cyrestis* butterflies she was breeding and whose impending death was making her very unhappy, "being that had their larvae not been found by me, very few of them would ever have reached maturity at all."⁶¹ When raising *Charaxes varanes* butterflies in South Africa ninety-seven perfect specimens had emerged, of which she released ten, "which was at least eight more than would have existed at all, had these eggs been laid outside, and left to be sucked by the ants, the young larvae eaten by innumerable enemies, or stung by ichneumon flies."⁶² Here again we can see Fontaine's moral math:

Once again she is free, a wild, beautiful Charaxes - free to wander whither she will, and lay eggs all over her own food-plants, to be banqueted upon by innumerable ants, for how few in their native state ever come to anything? One percent at the most... Whereas when they are safe with me, I generally manage to breed from fifty to ninety percent, and sometimes more.⁶³

For Fontaine entomology was more than a hobby, and even more than a vocation – it was what made her able to live a life she loved, and formed her connection to the world, and to other people. Collecting, and the travel it involved, constituted the base of her social life and of a wide circle of entomological friends around the world. It was also at the center of her identity as a scientific entomologist and heroic traveler, and finally, it was a way to commune with the nature she loved so much.

The (Un)Emotional Public Persona

Fontaine used the articles she published in the entomological press to help craft her scientific persona.⁶⁴ Women were largely absent from entomological periodicals. For example, between 1898 and 1912 only four women published articles in the *Entomologist*, and between 1871 and 1921 only eight women published articles in the *Transactions of the Entomological Society of London*. Fontaine's publications were somewhat unusual, and in a landscape mostly devoid of women she had to develop strategies for her work to be published and respected.

All of Fontaine's articles conform to a prevalent genre in entomological periodicals at the time, which comprised a travel narrative by a collector followed by a list of the species caught. Travel writing was deemed suitable for women as it was not considered necessarily rigorous and scientific. However, travel also entailed freedom of movement in places and landscapes that were considered dangerous as well as compromising to middle-class femininity,⁶⁵ and some female writers chose to remove any hint of wilderness from the places in which they worked to make them appear appropriate for a lady.⁶⁶

⁵⁶ Ibid., 2088.

⁵⁷ Fontaine, "Descriptions of Hitherto Undescribed," 61.

⁵⁸ Fontaine, *Diary*, 2124–25.

⁵⁹ Ibid., 2986.

⁶⁰ Ibid., 1608.

⁶¹ Ibid., 3035.

⁶² Ibid., 2068.

⁶³ Ibid., 2117.

⁶⁴ For more on scientific personae, see Daston & Sibum, "Scientific Personae."

⁶⁵ For more on women and travel writing, see Melman, *Women's Orients*; Mills, *Discourses of Difference*; Siegel, *Gender, Genre, and Identity*.

⁶⁶ For example, the botanist Kate Furbish employed this tactic, see Norwood, *Made From This Earth*, 72.

Fontaine chose a different strategy to maintain her authority. As a woman publishing in a male field, she used tropes often associated with masculinity.⁶⁷ She emphasized the wildness of the sites and landscapes she visited, to represent herself triumphing over them, and inferred an association of her practice of collecting with the hunting of big game. In her diary she confided that while writing her first article she had been afraid of being too “frivolous,” and as a result wrote a slightly different version of her visit than what actually happened. To evade possible suspicions of frivolity she interspersed her observations and lists of specimens with tales of bravery.⁶⁸

From that first article on, Fontaine’s publications were chockfull of adventures, often showing her surmounting dangerous situations. As when she collected in the swamps of Costa Rica while “risking snakes, tarantula spiders, and other horrors,” which included ticks, that once, during a chase, covered her from head to toe.⁶⁹ She used hunting tropes from her very first article, in which she described how, as she neared the shores of Sicily, she peered through the port-hole of the ship, and thought “of all the little sleeping insects dispersed over those mountains, as yet innocent of the hand of the spoiler.”⁷⁰ The places in which she collected are described as the “happy hunting-grounds of the entomologist,” butterflies are “prey,”⁷¹ they “fall victim to the net,”⁷² or are “prisoners in the net,”⁷³ and are caught by “stalk[ing]” them first.⁷⁴

Hunting narratives were also an acceptable form for portraying other emotions that arose during a hunt, such as excitement, pleasure, disappointment, or pride. Consider the following example:

I at once gave chase, trembling with excitement, and slipping and falling more than once. But the pherusa was fast getting the best of it; flying with the wind, it seemed to have no intention of settling or of doubling in its rapid flight. My heart sank within me, when, lo! There was another, and yet another! I then found that this wanderer, though itself now quite lost to sight, had guided me to the spot where several of its companions soon fell an easy prey to my net.⁷⁵

Note the tangible description of her excitement, and the vivid description of the chase. Fontaine’s writing is highly emotional for a scientific article: she records excitement, thrill, happiness, and sadness. This genre of writing was often emotive, both in the sense that it imbued the landscape with meaning and emotions, and also in that emotions (although only a narrow spectrum of them) could be expressed in it: awe at nature, joy, excitement, maybe even sometimes fear, but not sadness for the animals, pity, or remorse. The hunting narrative enabled her to display emotions on a scientific platform without seeming to be feminine. It also allowed her to include romantic and atmospheric descriptions of the landscapes she travelled through, such as a description of riding through a storm.⁷⁶

The emotions Fontaine could portray were, however, limited. She did not give herself full reign to let her love of butterflies show and did not write of them in her articles in the same way as in her diaries, going no further than sometimes describing a species as “beautiful.” Furthermore, in her diary Fontaine allowed herself to feel pity, to personify butterflies, and to criticize contemporary collecting practices. In her personal writing she vacillated between two narratives: a sympathetic narrative, and a more imperial one of travel and conquest. In her articles she used only the second narrative, and there is no hint of the first. She could not allow herself sentimentality if she wanted to be considered a serious entomologist and not merely a woman who dabbled in natural history.

Fontaine was aware of her weaker position as a woman in the scientific world. She writes in her diary:

Very soon now I should once more go out into the wide world alone... [knowing] that as a woman, the odds must always be against me, and yet to fight well the foes that would impose upon to molest me, to hold my own on the slippery path-ways over which my feet must tread, till I feel that

⁶⁷ For more on other strategies women chose to get scientific material published, see Sheffield, *Revealing New Worlds*.

⁶⁸ Fontaine, *Diary*, 1290.

⁶⁹ Fontaine, “Five Months’ Butterfly Collecting,” 194.

⁷⁰ Fontaine, “Notes on the Butterflies of Sicily,” 5.

⁷¹ Fontaine, “Two Seasons,” 284.

⁷² Fontaine, “An Autumn Morning,” 15.

⁷³ Fontaine, “A Few Notes,” 102.

⁷⁴ Fontaine, “A ‘Butterfly Summer,’” 159; Fontaine, “Five Months’ Butterfly Collecting,” 194.

⁷⁵ Fontaine, “Notes on Butterflies of Sicily,” 5.

⁷⁶ Fontaine, “A Butterfly Summer,” 80–81.

so far from scorning it I rejoice in my woman-hood, for I know that its power is great and not to be overthrown. And wherein does my power lie? In the chance game of Fate turning in my favour? In the solid background of a few thousands in gold, which are mine? In physical attractions, or mental affinities? No, in none of these things! But merely in my own identity.⁷⁷

She chose to build her authority on her collection, on the fact that she collected widely and in places most entomologists could not reach, either because they did not have the time or because they did not have the money, and on her first-hand knowledge of the butterflies' habits, life cycles, and interactions with their environment. She reinforced her authority over the knowledge she had using three strategies. The first was the adoption of the imperial white hunter narrative, similar to Mary Louise Pratt's 'Monarch-of-all-I-survey.'⁷⁸ The second was by not challenging what was expected of women in other ways: she did not argue about classifications or write about physiology, but instead stuck to collecting, illustrating, and studying the butterflies' life cycles. The third was by de-stressing her femininity through choosing not to portray her emotions towards the butterflies, and her qualms over killing them, so as not to be viewed as an emotional female.

The other prominent women entomologists who worked at the same time as Fontaine also refrained from expressing emotions towards insects in their published texts. Emily Mary Bowdler Sharpe (1868–19??) almost never used the first person, and wrote authoritatively in dry, technical language. Many of her publications are taxonomic lists and descriptions with no narrative. Mary de la Beche Nicholl (1839–1922) wrote travel narratives similar to Fontaine's. Eleanor Anne Ormerod (1828–1901), the founder of the discipline of economic entomology in Britain, did not show emotionality towards insects, but rather towards humans – the farmers and agriculturists to whom she represented herself as a kind and caring mother figure, in order to retain her feminine respectability while developing methods for the mass destruction of insects.

The way a practitioner of science chose to portray their emotions directly affected their scientific persona and the claim they had to authority and knowledge. There were several 'types' of scientific persona which held an aura of authority, but it was hard for women to comfortably don any of them. Naomi Oreskes argues that in modern science there are two competing images of scientists, and that women do not fit neatly into either, and as a result are obscured and marginalized by scientific narratives. The first image is that of the objective, hyper-rational scientist in the lab, who emphasizes the mental, and is viewed as cold, calculating, and lacking feelings. The second is the heroic scientist, who puts an emphasis on the physical, and risks his life on his quest for knowledge, while being deeply passionate, and very masculine. As women were thought to be inherently unable to be objective they did not fit into the narrative of objective science, but they also had trouble fitting into the heroic narrative because it was so closely associated with masculinity.⁷⁹ I argue that while women indeed did not fit comfortably into either of these narratives, they did attempt to use them to their advantage. In a similar vein Miriam Junghans, who writes about the German ornithologist Emilie Sneathlage, who quite unconventionally became the director of the Museu Paraense Emílio Goeldi in Brazil, argues that one of the contributing factors to her legitimacy as a scientist was her bravery and heroism, and that she exhibited courage in a strategic way.⁸⁰ In Fontaine's case she managed to use both of the above tropes in her articles, despite their seeming incongruity. In her travel writings she portrayed herself as the heroic entomologist, risking life and limb to reach hitherto-unknown-to-science butterflies. However, her scientific persona, and her public writings, were also tinged with the idea of objectivity, as she attempted to remove any trace of her love for the butterflies, her guilt in killing them, and her compassion for them from her writings.

Conclusion

Fontaine's diaries lead us to ask whether natural history collecting could be construed as an act of love, despite ending with the death of the subject. We can also see from the diaries that objectivity was not contradictory to emotions such as love, but rather could be employed by the practitioner alongside them. The act of collecting brought the collector closer on the one hand but using instruments such as a net to

⁷⁷ Fontaine, *Diary*, 1641.

⁷⁸ Pratt, *Imperial Eyes*.

⁷⁹ Oreskes, "Objectivity or Heroism?," 87–113.

⁸⁰ Junghans, "Among Birds and Net(work)s," 96–97.

catch butterflies, followed by poisonous chemicals to kill them created a gap between the human and the animal. Fontaine most often felt sympathy for butterflies either when meeting them in nature and seeing them fly wild, or while breeding them and essentially living with them in her private space. She did not feel pity for dead specimens she saw in others' collections or in museums, and neither was she racked with guilt while looking over her own collections. Distancing from nature and from the subjectivity of animals was an emotional act. In Fontaine's case the distancing was partial – in her articles she retained her connection to the landscape, but distanced herself from the butterflies.

Entomology, as it was practiced in the field, was about a whole variety of experiences both sensory and cerebral. In a way, entomologists' perception was augmented: they were keenly aware of the different seasons and how they corresponded to the insects' life cycles, and they were attentive to the changing weather, and to the plants around them. Practitioners of the science also enjoyed the aesthetics surrounding it, from the touch of a soft wing to the sensation when sliding a pin through a specimen. Many entomology guidebooks also contained quotations from poets such as Shakespeare and Keats relating to insects and to nature. This was another way in which entomology augmented entomologists' experiences: it connected them to literature and poetry in a new way.

The sources for this paper, Fontaine's entire diaries from the age of fifteen to seventy-nine, are unique as a personal record. They allow us to peep into the intimate thoughts and feelings of a female entomologist, so that her sometimes uneasy relationship with the creatures that formed the foundation of her identity as an entomologist can be minutely analyzed. Her diaries also make it possible to explore her relationship to knowledge. Knowledge is constructed of both 'science' and our emotional reactions to the natural world, and also stems from how we relate to the world. The practice of collecting in nature enmeshed 'objective' knowledge together with other kinds of knowledge, such as emotional reactions and feeling a part of nature, and as historians of science we should put these feelings and emotions back into our research.

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The author(s) has/have no competing interests to declare

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