Gilles Auguste Bazin's "True Novel" of Natural History

Marc Olivier

During the eighteenth century, the study of insects became a worthy pastime, which many theologians endorsed as a spiritually uplifting activity, an opportunity to admire God's handiwork. In the tradition of Bernard Le Bovier de Fontenelle or Algarotti, many writers encouraged women, in particular, to put down their copies of *L'Astrée* and to pick up a book about science. When properly presented, Fontenelle believed that science could be not only palatable, but also pleasurable to women. Passions normally stirred by fiction could be stimulated by scientific truths and directed towards useful ends.[1] Louis de La Caze, physician to Louis XV, argued in favour of the inclusion of women in science, but his reasons for such a concession to equality only reinforced the notion that a woman's capricious attention span would naturally reduce her involvement to mere flirtations with serious knowledge. Owing to their distinct physiological makeup, claimed La Caze, women naturally required continuous change and variety in their studies. In this light, the sciences became yet another

1 "Je ne demande aux Dames pour tout ce sistême de Philosophie, que la même application qu'il faut donner à la Princesse de Cléves, si on veut en suivre bien l'intrigue, et en connoître toute la beauté." Bernard Le Bovier de Fontenelle, *Entretiens sur la pluralité des mondes* (Paris: Brunet, 1724), 5.

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possible diversion.[2] For many, the promotion of God's "Book of Nature" as a morally superior alternative to romance novels justified the (limited) inclusion of women in science as amateur naturalists.

Often derived from more substantial works, popular writings were too quickly discounted by scholars for their apparent superfluity. Traditionally, works such as Charles Devillers's *Journées physiques* (1761) or Gaspard Guillard de Beaurieu's *L'Élève de la nature* (1763), if studied at all, were cited only as hollow representatives of salon jargon and flowery rhetoric, while their content and its relation to a literary style were ignored.[3] Only in recent years have scholars— particularly those with an interest in gender and science—begun to reassess the importance of scientific literature written for women.[4] While women have participated in the sciences more than traditional historical accounts have granted, their role is best characterized as a problematic oscillation between inclusion and exclusion. In the eighteenth century, men of science excluded women from their academies, yet they actively sought the approbation of refined women through both lecture hall and salon.[5] Nature *herself,* commonly personified in the feminine, was linked to women, who, in turn, could be viewed alternately as possessors of sacred powers or as hyphens between the world of men and that of

2 "Les femmes ont donc naturellement besoin d'une suite et d'une variété d'objets, qui ne sont pas si nécessaires aux hommes." Louis de La Caze, *Mélanges de physique et de morale* (Paris: Guerin, 1763), 325.

3 Daniel Mornet's classic study *Les Sciences de la nature au XVIIIe siècle* (New York: Franklin, 1971) suggests that the rhetoric and poetics of natural history overshadowed scientific clarity for much of the eighteenth century. He focuses on Buffon and dismisses most other writers as parasitic.

4 See Barbara T. Gates, *Kindred Nature: Victorian and Edwardian Women Embrace the Living World* (Chicago: University of Chicago Press, 1998), and Ann B. Shteir, *Cultivating Women, Cultivating Science* (Baltimore: Johns Hopkins University Press, 1996). For a more general European perspective, see Londa Schiebinger, *Nature's Body: Gender in the Making of Modern Science* (Boston: Beacon Press, 1993). In *The Sciences in Enlightened Europe,* ed. William Clark, Jan Golinski, and Simon Schaffer (Chicago: University of Chicago Press, 1999), see Spary, "The 'Nature' of Enlightenment," 272–304, which deals briefly with Bazin; and Mary Terrall, "Metaphysics, Mathematics, and the Gendering of Science in Eighteenth-Century France," 246–71, looks at the gendering of math during the eighteenth century. Terrall also gives a good overview of scientific literature for polite society in "Natural Philosophy for Fashionable Readers," in *Books and the Sciences in History,* ed. Marina Frasca-Spada and Nick Jardine (Cambridge: Cambridge University Press, 2000), 239–54.

5 Dena Goodman describes the power of salon culture, Enlightenment critiques of that culture, and its decline in *The Republic of Letters: A Cultural History of the French Enlightenment* (Ithaca: Cornell University Press, 1994). See also Geoffrey V. Sutton, *Science for a Polite Society: Gender, Culture, and the Demonstration of Enlightenment* (Boulder: Westview Press, 1995). For an example of how the popularizer of science could find himself feminized and ridiculed by those who sought to exclude women, see Jan Golinski, "Humphey Davy's Sexual Chemistry," *Configurations* 7, no. 1 (1999): 15–41.

animals.[6] Similarly, literary science represents a borderline genre, often seen as lacking the legitimacy of its masculine academic counterpart, yet resembling more closely the object of study—nature as book or spectacle. One might ask, then, not only how feminized scientific literature both includes and excludes women, but also what it includes and excludes of nature herself. This article focuses on the writings of Gilles Auguste Bazin (d. 1754), a best-selling author of entomology literature for women in eighteenth-century France. Through two female characters, Clarice and Hortense, Bazin models a feminized natural history. A popularizer of René Réaumur's (1683–1757) *Mémoires pour servir à l'histoire des insectes* (1734–42), Bazin transformed his academic source into something more suitable for the salon. This study will argue that Bazin's creation of what he calls a "true novel" of the history of insects represents not merely a case of flowery rhetoric obscuring serious science, but a hybrid genre that more closely resembles the fluidity of the great Book of Nature than do taxonomic lists.

Bazin's first popular work, *Histoire naturelle des abeilles* (1744), focuses on the admirable economy of domestic bees.[7] Before entering into the dialogue form, Bazin briefly introduces the reader to the two characters: Clarice, an educated mother of a country household, and Eugène, a personification of the author himself. The story begins with Clarice's attempt to return the fifth volume of Réaumur's *Mémoires pour servir à l'histoire des insectes* to Eugène. She announces that although he had almost persuaded her to read it, further reflection produced two strong deterrents: first, that not having been exposed to the sciences, she is inclined to fear anything that takes on an erudite tone; and second, that the study of natural history is incompatible with her life as a mother and as a woman.[8] Laws and customs are already established, she asserts, and they must be obeyed. Consequently, women must accept that they are condemned to ignorance of the sciences. Handing Eugène his book, she declares, "Gardez pour vous la science, et laissez-nous des lectures qui soient simplement enjouées et amusantes; c'est tout ce qu'il faut à notre sexe, du moins à moi" (*HN*, 1:2–3).

6 For an example of the latter, see Schiebinger on mammals in *Nature's Body*.

7 For a brief analysis of this work, see Spary, "The 'Nature' of Enlightenment," 284–87. Spary sees the work as an extension of Bazin's desire to serve the public good by transforming the wives of provincial landowners into philanthropic apiculture enthusiasts. She downplays Bazin's novelistic pretensions in favour of a more civic-minded reading.

8 Gilles Auguste Bazin, *Histoire naturelle des abeilles*, 2 vols. (Paris: Guerin, 1744), 1:2–3. References are to this edition (*HN*). "Que diroit-on de voir une mere de famille, à la tête d'un ménage de Campagne, passer alternativement de l'examen d'un Problême à la revûe de la Basse-cour, ou du compte de ses Fermiers, à un calcul Géométrique?"

The objections that Clarice expresses suggest both a desire for a pleasurable reading experience and a fear of transgressing social and cultural norms. Faced with these concerns, Eugène must enter into a dialogue of persuasion, of justification, and ultimately of compromise. He must entice Clarice with the desirability of his proposal, convincing her that the appeal outweighs any cultural interdictions, and that nothing is truly transgressive about his proposition in the first place. This is not Descartes or Newton, he tells her, but a story about a people "dont la passion dominante est la prospérité et le bien de la famille; d'un peuple, en un mot, qui semble avoir pris modèle sur vous" (*HN*, 1:4). In this light, her study of bees would be an extension of her family life, rather than a point of rupture with domesticity. By framing her study of bees as self-study, or the study of the family economy, Eugène transforms the vice of curiosity and of potential neglect of her household into a virtue and a benefit.[9] Still unwilling to keep the tome by Réaumur, Clarice proposes a compromise by asking Eugène to tell her about bees himself: "Enfin, je ne vous demande que le Roman, mais le Roman vrai de l'histoire des Abeilles" (*HN*, 1:6). The two agree that every evening after dinner they will wander through Clarice's alley of linden trees and observe the hives kept by the gardener. This opening exchange replaces the scholarly work with a series of leisurely discussions—conversations that will transform the discarded volume into a more pleasing and appropriate form: the true novel. Through Clarice's request for a novelistic presentation of "true" natural history, Bazin defines a literary means whereby women ostensibly become naturalists without disrupting gender conventions.

Clarice's rejection of Réaumur is crucial to Bazin's project, reasserting boundaries between academic and popular science and providing the pretext for the invention of a more literary alternative. Clarice self-excludes as a potential reader of the original work and suggests a more literary replacement. The rejected volume contains Réaumur's observations on bees along with his critique of his predecessors both ancient and modern. Réaumur dismisses other works, citing as primary faults the authors' lack of experimentation and their perpetuation of myths. Those authors made bees the model of a perfect monarchy and extolled their admirable qualities to the point of absurdity, claiming that "Ce sont des mouches vertueuses qui aiment les vertueux, et qui savent

9 Although perhaps a stretch, one may see in the exchange the same paradoxical justification of vice as virtue used by Bernard Mandeville in the *Fable of the Bees* (1714, 1723, and 1728), trans. into French in 1740, just four years prior to Bazin's work.

distinguer des vicieux qu'elles haïssent."[10] Réaumur's goal is to promote more accurate observation, to eradicate irresponsible analogies (such as the idea that bees have a model legal system), and to replace fictitious marvels with marvellous truth: "Le faux merveilleux qui leur a été attribué, sera remplacé par du merveilleux réel qui a été ignoré" (5:207). Réaumur does not crusade against the marvellous, nor does he seek to deprive bees of soul or feeling; he only wishes to destroy the *false* marvellous. Clarice's (that is, Bazin's) rejection of Réaumur's work should not be read in opposition to the conclusions of the *académicien*, but rather as a reconfiguration of those findings for a different arena. Consequently, while Réaumur discourages analogical thinking about bees because of their incommensurability with discussions regarding the state, Bazin sees the creatures' devotion to mother, hive, and posterity as a model for the family—an analogy that justifies Clarice's interest in natural history. Like Réaumur's *Mémoires*, Bazin's "true novel" presents real wonders as a substitution for fictions. Unlike his source, Bazin encourages analogical thinking and uses the mimetic power of literary devices to transform both female interlocuter and reader.

Bazin's transposition of Réaumur into dialogue form (recast as *roman vrai* by the interlocuters) draws upon a tradition of hybridity dating back to Plato and employed often, but not without criticism, in early modern and Enlightenment natural history and physics. As Daniel Brewer has observed, among theoreticians in seventeenth- and eighteenth-century France, "the philosophical dialogue's hybrid nature was perceived as a threat to the integrity and purity of philosophical discourse."[11] Brewer contrasts the "classical" dialogue, or *lieu clos* created to stabilize meaning, with the works of Diderot and others who "seek by means of dialogue not to silence the other but to give it voice, or at least mark its position, without precipitating the dialogue's fall into monologue."[12] The classical dialogue "seeks to contain an alterity that threatens to disrupt philosophical discourse by destabilizing its force and placing the absoluteness of its truths into question."[13] Maurice Roelens has shown that the setting for philosophical dialogues manifests control and closure: "Le lieu choisi pour les entretiens est un refuge, un abri, une retraite définie par sa clôture et sa distance par rapport au

10 René-Antoine Ferchault de Réaumur, *Mémoires pour servir à L'histoire des insectes*, 6 vols. (Paris: L'imprimerie royale, 1740), 5:216.

11 Daniel Brewer, "The Philosophical Dialogue and the Forcing of the Truth," *MLN: Modern Language Notes* 98, no. 5, Comparative Literature (1983): 1234–47.

12 Brewer, 1246.

13 Brewer, 1245.

monde."[14] In light of those definitions, Bazin's use of a pastoral setting (Clarice's country home) and the didactic trajectory of his narrative (Eugène will teach Clarice how to become a naturalist) suggest a classical dialogue. Yet, however conciliatory the pastoral tableau of master and pupil in Bazin's work, within the closed space the voice of nature is rendered more subversive—a phenomenon that is best understood in light of eighteenth-century taxonomies.

As the popularity of natural history grew during the eighteenth century, the flux of the natural world became increasingly subjected to the systematic policing of elegant and ever more rigid taxonomies.[15] The competing systems of Buffon and Linnaeus demonstrate highly differing degrees of tolerance for both ambiguity and literary language. Michel Foucault vividly portrayed Enlightenment efforts to grapple with the continuity of nature through language, but, perhaps because of his broader analytic ambitions, he downplayed any differences in those rivals.[16] Conversely, Phillip Sloan has argued that Buffon's critique of Linnaeus stemmed from much more than a bruised ego, and reveals profound epistemological differences.[17] Buffon attacks his rival's fabrication of an arbitrary system, which, for all its mathematical beauty, fails to represent the complexity of concrete specimens. He contends that Linnaean systematic taxonomy imposes a set of purely artificial boundaries, categories essential to human imagination but not present in the continuum of the animal world. In Buffon's view, the more complex the system of classification, the more natural the system. His espousal of complexity pushes natural history towards a self-negating taxonomy. Or, as Buffon states, "The more one increases the number of divisions in natural things, the closer one will approach the truth, since there actually exist in nature only individuals ... . The Genera, Orders, and Classes exist only in our imagination."[18] Buffon imagines a taxonomy

14 Maurice Roelens, "La Description inaugurale dans le dialogue philosophique aux XVIIe et XVIIIe siècles," *Littérature* 18 (May 1975): 51–62.

15 The history of the cabinet of curiosities makes a good case study of the transition from a free-associative interaction with the natural to an increasingly predetermined, ordered contact, and has been well documented by historians. See esp. Lorraine Daston and Katharine Park, *Wonders and the Order of Nature* (New York: Zone Books, 2001). Chap. 9, "The Enlightenment and the Anti-Marvellous" (329–63), offers a particularly compelling account of the eighteenth-century crusade against wonder and the marvellous.

16 Michel Foucault, *Les Mots et les choses* (Paris: Gallimard, 1966). See esp. chap. 5, "Classer" (137–76). Foucault maintains that, in spite of their rivalry, Buffon and Linnaeus use the same structure in the same way: "Buffon et Linné posent la même grille" (148).

17 Phillip R. Sloan, "The Buffon-Linnaeus Controversy," *Isis* 67, no. 3 (1976): 356–75.

18 Buffon, "Premier discours de la manière d'étudier et de traiter l'histoire naturelle," cited in Sloan, 359.

that recognizes the discontinuity of each individual and that does less violence to the continuity of a Great Chain of Being.[19] Buffon's project was to create a history as opposed to a catalogue of nature. His goal, according to Sloan, was "something other than the supplying of a body of descriptive and classificatory fact." Sloan calls his enterprise a "cosmology, an historical geology, and a genetic account of the generation of organisms."[20] Buffon, who entered the prestigious *Académie des sciences* via the literary salon, adopts a system that favours detailed description and narrative history. His own system of classification proposes a reading of nature over time, whereas Linnaean taxonomy dwells in an eternal mathematical present, devoid of temporality, neatly dividing continuity into order through minimal descriptive criteria.

In Linnaean taxonomy, precision triumphs over the narrative of flux. Ambiguity is systematically eliminated as organisms are neatly arranged and classified—a phenomenon that Ann B. Shteir sees as a reassertion of gender difference on a broad scale:

> Linnaeus's sexual system reads as a conservative gender construction. It embodies clear and naturalized sexual differences and distinct gender boundaries; it asserts the biological incommensurability of the categories "male" and "female." His highly naturalized and gendered theory about male/female difference in plant reproduction can therefore be read as illustrating a larger moment of reaction to cultural fears about blurred distinctions in sex and gender, and to gender ambiguity and shifting sex roles.[21]

Fructification becomes the foundation of botany, the single characteristic according to which all plants can be classified. This clear-cut means of division becomes possible only through the symbolic destruction of hermaphroditic defiance. That moment came when Rudolph Jacob Camerarius (1665–1721) demonstrated in 1694 that although most plants are hermaphrodites, they do reproduce sexually.[22] Joseph Tournefort (1656–1708) furthered the idea that reproductive characteristics should form the basis of a natural system of classification, and Linnaeus adopted that view in his own taxonomy. The complexity of the hermaphroditic botanical world was suddenly manageable.[23] The

19 Arthur O. Lovejoy's classic study *The Great Chain of Being* (New York: Harper, 1965) provides an insightful account of the history of that idea.

20 Sloan, 366.

21 Shteir, 17.

22 For a good, basic overview of these key moments in natural history, see Thomas L. Hankins, *Science and the Enlightenment* (Cambridge: Cambridge University Press, 1985), 145–57. For a more thorough study on the importance of plant sexuality, see Schiebinger, "The Private Lives of Plants," in *Nature's Body*, 11–39.

23 For an eighteenth-century example of the anxiety over hermaphroditism and the eventual

rationality of a simple system liberated natural history from multiplicity, from temporality, and from the sort of descriptive narrative espoused by naturalists from Aristotle to Buffon. Literary natural histories, such as those of Buffon or Bazin, provide access to a world not policed by the same rigid taxonomic distinction as their catalogue-style counterparts. Not all popularizers of natural history were actively anti-Linnaean—Bazin's source, the mathematician Réaumur, was a vocal critic of Buffon—but the literary adaptation of scientific writings (Linnaean or otherwise) necessarily subverted many decisively carved boundaries by virtue of its form alone.[24]

In Bazin's work, the transformation of natural history into a true novel of natural history creates connections between subject and object not present in Réaumur's original work. The novel form and its *de rigueur* anthropomorphization of the insect world establishes the mimetic contagion that facilitates Clarice's (that is, the female reader's) transition from woman and mother to naturalist. As Clarice's study of the true novel of bees progresses, her identification with the protagonists begins to invade her family life. The night of the eighth interview, she tells Eugène that she has begun inadvertently to call her child "ma petite nymphe" (*HN*, 1:285–86).[25] Clarice's newfound bond to the bees eclipses her former concerns about the appropriateness of her studies: "Je veux à toute risque aller jusqu'au bout, et dussai-je devenir nymphe moi-même, il faut que je sçache comment une nymphe devient Abeille" (*HN*, 1:286). Clarice's studies consume her, and even friendly visits from the neighbours become unwelcome intrusions on her new passion. The true novel of bees is converting Clarice into a naturalist. In Emma C. Spary's terms, Clarice is "completely integrated into the language of agricultural improvement" by the end of the second volume.[26] And, while we find Clarice proposing potentially useful and ambitious apicultural projects in the end, her transformation is unavoidably accompanied by a subversion of generic

declaration that all hermaphrodites are deformed women, see Jacques Gautier d'Agoty, *Observations sur l'histoire naturelle, sur la physique, et sur la peinture*, 6 vols. (Paris: Delaguette, 1752), vol. 2.

24 For more on the relations between key naturalists during the Enlightenment, see Jacques Roger's seminal work, *Les Sciences de la vie dans la pensée française du XVIIIe siècle: la générations des animaux de Descartes à l'Encyclopédie* (Paris: Albin Michel, 1993).

25 "Ce matin encore, j'ai poussé la distraction jusqu'à demander à la nourrice de mon enfant, comment se portoit ma petite nymphe; j'appellois son berceau un Alvéole, ses langes des dépouilles. Je me suis avisée de me scandaliser de ce que ce petit innocent ne me rendoit pas des hommages et des respects."

26 Spary, "The 'Nature' of Enlightenment," 287.

presuppositions regarding literature, culture, and the natural world. The substitution of the borderline genre for the scholarly work anticipates the general destruction or questioning of boundaries that Clarice encounters as she redefines herself. The divisions between male and female, nature and culture, insects and humans diminish as the dialogues progress. And, as Bazin ventures beyond the exemplary economy of the domestic bee in his sequel to this true novel of natural history, concerns for agricultural improvement all but vanish. Within the "closed" pastoral setting, ever stranger new worlds unfold, and the management of Bazin's literary model takes on greater importance.

Encouraged by the popularity of *Histoire naturelle des abeilles,* Bazin soon published a four-volume sequel, *Abregé de l'histoire des insectes pour servir de suite à l'histoire naturelle des abeilles* (1747). As Bazin passed from a study of more useful domestic bees to wild bees and other insects, he added a third character, a young widow named Hortense, visiting from Paris. Hortense provides a naive perspective no longer shared by Clarice, who, although not yet a fully initiated naturalist, is now a keen observer of bees. Hortense will become a new kind of convert: she represents the concerns of a woman active in city social life. She has difficulty believing that the study of insects has anything to offer that can compete with the games, the intrigues, and the spectacles of city life. Her primary motive is pleasure: eager to be entertained during her time in the country, she is not interested in hearing about insects, "dont le nom seul est dégoûtant."[27] Yet, with her more experienced friend Clarice as travelling companion and Eugène as guide, her intellectual *ménage-à-trois* in the country becomes a voyage of self-transformation.

At the beginning of the first lesson, Eugène announces that, without leaving the area around Clarice's home, they will travel to foreign lands, discover new peoples, and encounter new mores. Eugène promises that Hortense will learn "qu'elle habite au milieu d'une infinité de nations différentes," some analogous to the society in which she lives, but many others strange, exotic, and even barbaric (*AHI,* 1:23). Clarice then enthusiastically declares, "Menez-nous, Eugène, dans ce nouveau Monde. Voyageons par ce Parc. Allons de nations en nations" (*AHI,* 1:25). In the course of only two lessons, Hortense progresses from questioning the existence of difficult-to-find bees to performing her own observations. By day five, she has fully embraced the study of insects. By the eleventh meeting, the disgust she once felt for insects has

27 Bazin, *Abregé de l'histoire des insectes pour servir de suite à l'histoire naturelle des abeilles,* 4 vols. (Paris: Guerin, 1747), 1:16. References are to this edition (*AHI*).

yielded to new sensations. She initiates that day's discussion with a testimony of her altered perception:

> Je vous avouerai franchement que je crois sentir quelque changement dans mon esprit et dans ma façon de penser, depuis nos derniers Entretiens. Mes yeux me paroissent plus nets, plus perçans; il me semble que je vois mieux ce que je vois, et mille choses que je ne voyois point auparavant; vous-mêmes, je vous vois plus distinctement. Qu'il passe sous mes yeux une Mouche, un Moucheron, ou le moindre petit volatile, je lui demande s'il n'est point de notre connoissance; je suis tentée de le saisir. J'en vois en songe, j'y pense en veillant, je me remplis d'idées nouvelles; les réflexions s'accumulent; je deviens rêveuse. (*AHI*, 2:79–80)

Hortense is now intimately involved with her travels into other worlds, and thoughts of her new pastime overwhelm her. Her heartfelt declaration of passion for insects takes on the tone of the courted heroine who has surrendered herself to the seduction of a persistent suitor. Her language mimics the expressions of the romance novels she would likely be reading, were she not so involved in her new course of studies. Clarice furthers the erotic undercurrent of the discourse by promising Hortense that divine beauties will penetrate her soul with joy, and her mind will be instructed and her judgment perfected as she continues her observations (*AHI*, 2:80): "Voilà des promesses bien séduisantes," responds Hortense (*AHI*, 2:81). Bazin has placed the study of insects in a domain that can only be described by the ambiguity of the French word *volupté*—an intense pleasure of the senses that can be either moral, aesthetic, or sexual.

As travellers, Eugène, Clarice, and Hortense speak of venturing beyond the boundaries of their own country and of entering the lands of various insects. The tools used for this temporary disintegration of discontinuity are both rhetorical and technical constructs that permit a sometimes dangerously transparent mediation with a continuous subhuman realm. The microscope, a privileged mediator between visible and invisible worlds, is repeatedly used as a gateway to the countries of insect "peoples"; therefore, learning to see microscopically becomes a rite of passage into the realm of continuity. Clarice's rising status as a mediator herself is clearly established near the beginning of the sequel, when Eugène gives her a handheld microscope, a gesture symbolically suggestive of intellectual hermaphroditism. Hortense, not yet fully initiated, must listen as Clarice gives an account of what she sees. Clarice remains the privileged narrator of field observations throughout the lessons, while Eugène continues to preside as the storyteller.[28]

28 Eugène's role can be seen as emblematic of the limitations given to the female authorial

The language of transgression must also be understood. Theirs is not a secret, scientific language riddled with technical jargon and Latinate terminology, but one that prizes simple, naive eloquence and thrives on analogical rhetoric. A liberal dose of metaphor blurs the distinction between humans and insects. In fact, Bazin makes it easy to forget any dissimilarity: rather than call insects by Latin names, he speaks of tapestry-weavers [*tapissières*], masons [*maçonnes*], joiners [*menuisières*], and carders [*cardeuses*]. Furthering the familiarity set up by their names, the descriptions of their activities and the sometimes similar, sometimes foreign customs of their societies create an ongoing analogical tension that threatens to dissolve the boundaries between their world and ours. The three naturalists are often tempted to speak of their travels among "unknown peoples" as explorers journeying from country to country in the human world, rather than as scientists scrutinizing fundamentally foreign creatures. The favoured rhetorical devices, like the favoured technical device, magnify the subject to the point of intrusion on human discontinuity. The power of language and of the lens facilitate a descent into hidden worlds that, if not carefully kept in check, can just as quickly become an ascent for the nonhuman subject into the realm of the human.

Although Bazin is by no means conservative in his use of rhetorical ornamentation, he carefully sets limits to moments of literary excess. Characters who begin to exhibit signs of reckless abandon, who overenthusiastically yield to the suggestion of continuity, are met with immediate censure by their peers. And no one is exempt: even the more experienced of the two women, Clarice, and the seasoned instructor, Eugène, find themselves reprimanded for ecstatic expressions of overindulgent union with the insect world. While studying the admirable society of bees, Clarice is overcome with admiration for the wisdom of the mother bee, who knows exactly how much food her child will need from birth to adulthood. Her respect for the bee's maternal know-how leads to a hierarchical inversion: "Je suis tentée de croire à présent que c'est nous qui sommes les Bêtes" (*AHI*, 1:85). Eugène hastens to temper her enthusiasm: "N'allons pas si vite, s'il vous plaît" (*AHI*, 1:86). Whatever admirable qualities a bee may possess, Eugène forbids that it challenge the ultimate supremacy of the human race. From the very first lesson, Eugène clarifies this irrefutable ranking: "Il est vrai que de tous

voice during that period. On gender and authorship, see Carla Hesse, "Reading Signatures: Female Authorship and Revolutionary Law in France: 1750–1850," *Eighteenth-Century Studies* 22, no. 3 (1989): 469–87.

les animaux, après l'homme, ce sont les Mouches à miel qui jouent le plus grand rôle sur la terre" (*AHI*, 1:2). The moment of questioning, resulting in an inversion of the human/animal relationship, produces the unsustainable peak of boundary transgression.[29] Eugène polices Clarice as she pushes beyond the boundaries, and Clarice does the same for Eugène.

When describing the life of the carder bee, Eugène also inappropriately elevates the status of the bee; but rather than invert the hierarchy, as Clarice does, Eugène eliminates difference altogether in a moment of poetic excess. The bee, described as passing from a solitary existence to life as a member of society, is transported into the human world as Eugène makes it the hero of an *aventure de roman*:[30]

> Chez les Perses et dans ces temps barbares, où les mariages entre les freres et sœurs étoient permis, il arriva un jour qu'une femme voyageoit sur mer avec son époux; elle étoit enceinte: une tempête s'éleva, fit échoüer le vaisseau sur des rochers, et tout l'équipage fut abysmé dans les eaux. Elle seule, par un sort heureux, ou malheureux, comme vous voudrez le nommer, se trouva sauvée, ayant été jettée par les flots dans une Isle déserte. Là abandonnée, et privée de tout secours humain, les premiers momens de son désespoir furent employés à jetter des cris pitoyables, à se plaindre aux rochers, à *dire aux Astres innocens, tout ce que fait dire la rage, quand elle est maîtresse des sens,* à parcourir ces lieux inhabités, à chercher des yeux s'il n'étoit point quelque route, quelque moyen de se sauver, quelque main secourable qui pût la tirer de cet abysme de misère. (*AHI*, 1:286–87)

This literary digression, which continues at some length, is not received by the women with the sort of enthusiasm Eugène had expected. Clarice ridicules his gratuitous poetics and use of a quotation by Renaissance poet François Malherbe (in italics). Hortense thereafter becomes wary of any suspect expression, and she is quick to inquire if it is another rhetorical figure meant to amuse them (*AHI*, 1:319–20). Eugène must quickly repent and strip away all irresponsible superfluities: "Point de chicane," promises Eugène, "Tenons-nous à l'essentiel" (*AHI,* 1:290). Retracting any suggestion that bees possess human sentiment, Eugène reasserts the boundaries that his literary adventure calls into question. His immediate reversion to the "essential"

29 Georges Bataille would characterize such unsustainable flirtations with continuity as sacred eroticism, the "sacred" representing a temporary fusion with the animality from which the "profane" human world actively seeks to distance itself. He would call such a moment a "perte volontaire" of our fabricated discontinuity. Bataille, "L'Erotisme," in *Oeuvres complètes* (Paris: Gallimard, 1957), 10:36.

30 "Cette singularité qui occupe une partie de la vie de notre Mouche, seroit tout-à-fait romanesque, si elle étoit transportée parmi nous. J'ai envie de vous la décrire sur le ton d'une de nos aventures de roman."

demonstrates his willingness to conform to the limits of a ritualized transgression—the *roman vrai* as opposed to the *aventure de roman*. Eugène's momentary abandon and subsequent self-critique emphasize the interplay of two competing systems: literature and scientific literature, or, in the terms of Réaumur, the *faux merveilleux* and the *merveilleux réel*. The true novel of natural history, which Bazin hopes to write, always anticipates a fusion of human and animal, which, at the same time, it always works to prevent. These flirtations with continuity create a voice for nature as the subversive interlocutor within the otherwise closed or classical discourse. On a stylistic level, Bazin seeks to maintain a happy medium between savant and popular writing—a goal he shares with his predecessor, Fontenelle. Yet, as the savant community increasingly associates imaginative literature and its rhetorical tools with excess and confusion, the middle ground appears to be no more than a border, a space requiring oscillatory occupancy. As Fontenelle warns, "les milieux sont trop difficiles à tenir."[31]

From domestic bees to wild bees and other insects, the discussions between Eugène and Clarice drift from admirable curiosities to unsettling anomalies. The world of bees, though not entirely analogous to eighteenth-century French society, poses little threat to its social framework. The subsequent voyages in the meadows around Clarice's country home take Eugène, Clarice, and Hortense to insect communities that often recall the expertise of French country artisans. After Hortense returns to the city, however, Eugène and Clarice direct their attention to insects whose very existence calls into question the most fundamental divisions of the human world. The quasi-scientific dialogue of the three naturalists now becomes an epistolary narrative of flux.

The first of the letters from Eugène to Clarice is a nearly ninety-page questioning of boundaries, when the clear categories of male and female, animal and vegetable, life and death, are threatened by the discovery of the polyp. The polyp is both fusion and fission, continuity and discontinuity. Eugène writes, "Un chétif Insecte vient de se montrer au monde, et change ce que nous avions cru jusqu'à présent être l'ordre immuable de la nature. Les Philosophes en ont été effrayés; un Poëte vous diroit que la Mort même en a pâli, et qu'elle a craint de perdre ses droits" (*AHI*, 2:185). Primarily an abridgment of Abraham Trembley's *Mémoires, pour servir à l'histoire d'un genre de polypes d'eau douce, à bras en forme de cornes* (1744), the letter dramatizes the problematic nature of

31 Fontenelle, 3.

a discovery that seemed to bridge the gap between plant and animal.[32] These tiny aquatic creatures possessed the basic characteristics of animals: they moved, responded to touch, and caught food with their tentacles and digested it. Their means of reproduction, however, seemed more in keeping with the nature of plants. Eugène calls the sexually ambiguous creatures *living family trees*:

> Il n'y a point de différence de sexe entre un Polype et un autre Polype; chacun est tout à la fois le pere et la mere des petits qu'il met au monde. Ces petits tout formés sortent de toute la surface de son corps comme les Peintres représentent Eve sortant du côté d'Adam. Ils restent quelque temps après leur naissance debout et implantés sur cette surface par leur partie inférieure; et pendant que ces premiers enfans paroissent achever de naître, ils en font déjà autres semblables à eux, qui en sont encore comme les premiers; en sorte que le pere de toutes ces productions est grand-pere avant que d'avoir achevé d'enfanter son premier né. Il est à la lettre un arbre généalogique; c'est un tronc d'où la famille sort, comme les branches sortent d'un arbre. (*AHI*, 2:187–88)

The confusion of categories in this mother-father plant-animal only increases in the face of its potential annihilation. As Trembley discovered, if cut into pieces lengthwise or crosswise, or even turned inside out, the polyp will thrive: "Ce qui donneroit la mort à d'autres, ne sert qu'à le multiplier," writes Eugène (*AHI*, 2:189).

This blurring of boundaries is not limited to the letter on the polyp. Bazin's reader enters a world constantly in flux, where clear-cut divisions are called into question, and where metamorphosis destroys any illusion of stability. Letter seven from Eugène to Clarice tells of a "lion de Pucerons qui se change en une fort jolie Demoiselle" (*AHI*, 3:250). In the course of its short life, this tiny insect provides a spectacle of both barbaric violence and admirable beauty. Eugène suggests catching some on a branch and placing them in a jar in order to watch the entire life cycle of the ferocious destroyer while performing daily household duties. From the very moment of its birth, the baby "lion" exhibits formidable fierceness. Eugène writes, "Vous le verrez au milieu d'un troupeau pacifique que sa présence n'effraie point, portant la mort à droite, à gauche ... . Il n'y a patrie ni parenté qui tienne contre un si furieux appétit" (*AHI*, 3:254). The rage of the insect's unbridled hunger creates a scene of indiscriminate destruction. Eugène suggests that none of the constraints that typically constitute a civilized society is respected; nothing can temper the "lion cub's" voracious desire to

32 For a more in-depth look at the metaphysical problems posed by the discovery of the polyp, see Viriginia P. Dawson, *Nature's Enigma: The Problem of the Polyp in the Letters of Bonnet, Trembley, and Réaumur* (Philadelphia: American Philosophical Society, 1987).

consume. This slaughter continues for nearly two weeks, when, in the words of Eugène, "vous le verrez penser à la retraite" (*AHI*, 3:254). Suddenly, the formidable lion becomes docile and pleasing to look at as it prepares for metamorphosis. With a spinneret at its anus, the insect engages in an alluring dance of self-transformation. Although the narrative still refers to the insect in the masculine, the "lion" is now admired for its feminine-like supple body and its skilled weaving of fine thread. At the same time, such typically feminine traits are counterbalanced by the praise of the insect's speed and agility and by the ejaculatory nature of its production. The sexual ambiguity of the process of metamorphosis suggests a moment of continuity that is the very nature of erotic transgression. Soon, the active effacement of boundaries that constitutes the process of enshrouding and eventually negating the fierce lion yields to a dormant period of complete continuity.

Post-metamorphosis, the insect is no longer referred to as a "he," but as a "she." The violent consumption that characterized the lion has disappeared. In place of the barbarian emerges a beautiful *demoiselle*. From its long and elegant body and delicate wings, to its dazzlingly brilliant eyes, Eugène describes an ethereal creature worthy of admiration. While the lion seems to have no other function than to consume, the *demoiselle* seems to be made to please the eye of the observer; while the lion is portrayed as an active, wilful creature, the *demoiselle* is viewed only as a passive object of beauty. Contained within the life cycle of one insect are two very different modes of being: the one aggressive, violent, and masculine; the other passive, pleasing, and feminine—the two joined by a moment of neutral continuity. The linguistic transformation of gender in Eugène's narrative and the characteristics of the insect being referred to in the masculine or the feminine mirror the social and pedagogical attitudes of each gender, as initially expressed by Clarice before her first lesson. The indiscriminate and barbaric appetite of the young lion is more typical of masculine education, for the duty of men is to avidly consume knowledge—an outlook expressed by Rousseau in the famous passage from *Émile,* "L'homme dit ce qu'il sait, la femme dit ce qui plait; l'un pour parler a besoin de connoissance et l'autre de gout."[33] Or, in Clarice's words: "laissez-nous des lectures qui

33 Jean-Jacques Rousseau, *Oeuvres complètes,* ed. Bernard Gagnebin and Marcel Raymond (Paris: Gallimard, 1969), 4:718. Rousseau encouraged women to study botany in his *Lettres sur la botanique* (1771–73), yet his own use of botany as a tool for memory and poetics (*Les Rêveries du promeneur solitaire* [1782]) makes botany inseparable from the imaginative and the literary. See Marc Olivier, "Lessons for the Four-Year-Old Botanist: Rousseau's 'Forgotten Science' of Childhood," *French Literature Series* 31 (2004): 161–69.

soient simplement enjouées et amusantes; c'est tout ce qu'il faut à notre sexe, du moins à moi" (*HN*, 1:2–3). Clarice knows that the act of conducting scientific observations while running a household poses a threat to the boundaries of male and female models of education. The budding female naturalist risks developing an appetite for learning to the detriment of her duties. She may come to disregard her family, her country, and her place in society. Clarice questions the appropriateness of Eugène's proposal, just as Hortense initially objects to the unpleasurable idea of learning about insects. In order for either woman to accept the course of studies, the transgression of boundaries must be contained within an appropriate medium—the novel. The masculine mode of learning can then be reconfigured to emerge, like the *demoiselle*, in a more pleasing form. In its new theatrical or literary manifestation, the spectacle of nature can be incorporated into the heart of a woman's home without changing the apparent structure of her life. Form tempers content. Bazin beckons his female readership into a man's library, but only to borrow a novel.

Bazin's transformation of academic science for a female audience suggests that popularizations or adaptations of male-gendered natural history merit attention for their contributions to the inclusion as well as to the exclusion of women in science. The metamorphosis of the *lion des pucerons* into a *jolie demoiselle* viewed above as a spectacle in a closed and gendered domestic space is emblematic of Bazin's work. His dialogic narrative, itself a staged transformation, metamorphoses Réaumur's *Mémoires,* the interlocutors, and perhaps the readers or spectators who witness the change. In that regard, Bazin's work should not be read as a completed adaptation—a pre-existing *demoiselle*—rather as a process or negotiation demonstrating ambiguity and continuity, yet ending in a feminized, pleasing, and contained literary specimen. In order to include Clarice's participation in natural history, Bazin must justify the violence to the original text. In so doing, one could say that he simultaneously works to include and exclude, that he brings academic science to women while keeping them distanced from methods of reading nature that do not coincide with his rewriting. Bazin's reconfiguration is more than a work of subtraction. Rather than merely reproduce Réaumur without the jargon and with a few pleasing flowers of rhetoric, Bazin gives voice to change, to becoming, to flux, ambiguity, and continuity in ways excluded from less literary natural histories.

Brigham Young University