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Review of Mary Baine Campbell, Wonder and Science: Imagining Worlds in Early Modern Europe.

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Mary Baine Campbell, *Wonder and Science: Imagining Worlds in Early Modern Europe*. Ithaca and London: Cornell University Press, 1999. xiv + 366 pp. ISBN 0801436486.

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"Wonder is at present," medieval historian Caroline Walker Bynum claims in her new book *Metamorphosis and Identity* (Zone Books, 2001), a 'hot topic'" (38). And no one could accuse Mary Campbell of jumping on the marvelous bandwagon: her superb *The Witness and the Other World: European Travel Writing, 400-1200* (Cornell, 1988) helped introduce medieval and early modern scholars to the wonders of "new world" travel writing. Stephen Greenblatt's interest in the topic did not hurt, of course, and he has made several crucial contributions to the field: *Marvelous Possessions: The Wonder of the New World* (Chicago, 1991), "Resonance and Wonder" (reprinted in *Learning to Curse*, Routledge, 1990) and the chapter on Shakespearean ghosts in his recent *Hamlet in Purgatory*(Princeton, 2001) are the most obvious. Paula Findlen has linked wonder to Renaissance collections and *wunderkammern* in her brilliant *Possessing Nature*(California, 1994), while Lorraine Daston and Katharine Park—separately and together, culminating in their magisterial *Wonders and the Order of Nature, 1150-1750* (Zone Books, 1998)—have dauntingly anatomized the massive body of marvelous discourses. The last few years have brought tremendous interest in antiquarians and collectors—see Peter Miller's splendid *Peiresc's Europe* (Yale, 2000) and recent books on Athanasius Kircher (Ingrid Rowland's *The Ecstatic Journey* [Chicago, 2001] and Daniel Stolzenberg's edited collection *The Great Art of Knowing* [Stanford, 2001], the former a catalogue of an exhibit in Chicago, the latter coinciding with a Kircher show at Stanford). The wondrous and strange Museum of Jurassic Technology in Culver City, California, has kept the spirit of the Renaissance curiosity cabinet alive, as Lawrence Weschler revealed in his book on the museum and its founder, *Mr. Wilson's Cabinet of Wonder* (Pantheon, 1995). And recently the Jurassic was home to a reconstruction of Kircher's cabinet.

Why, though, is wonder "hot"? People have never stopped being interested in the marvelous, of course—"Believe It or Not!"—but that ongoing fascination does not explain the surge of interest in medieval and early modern wonder. Shakespeare scholars Terry Eagleton and Michael Dobson see Shakespearean wonder as a political capitulation and an epistemological cop-out: one marvels instead of acting or attempting to know. But wonder need not be a reflection of political quietism or intellectual passivity. Certainly, wonder is an affective response to a wide range of phenomena: things rare and strange, small and large, beautiful and horrific. But at the same time, wonder is a cognitive response—a suspended state between unknowing and knowing, a stage on the way to finding something out. Passivity need not—indeed should not—be a part of wondrous inquiry. This was Aristotle's sense of wonder, at least as described in the *Metaphysics*: wonder started the philosophical process, and then wonder dissipated with knowledge.

But what if the wonder-canceling knowledge is not available? Herein lies at least part of the current fascination with the medieval and, especially, the early modern marvelous: in our poststructuralist age, we are skeptical of intellectual certainties and overly wrought systems of classifications—in literary interpretations, in museums, in science. While this skepticism can lead to Sokal hoaxes, it can also lead to a healthy inquiry about historical moments when there was less confidence that everything could be systematically known. An emblem for this pre-

modern (or pre-Enlightenment) moment is the *wunderkammer* or curiosity cabinet of the sixteenth- and seventeenth century. In these proto-museums, marvelous objects found in nature and made by human beings were displayed together, affording tremendous delight and provoking questions while resisting claims to certainty and final answers. These qualities help to explain the surge of interest in Kircher and his cabinet. So, while there is astonishment in the wondering act (the marveller's turning-to-stone that is captured nicely in the Elizabethan/Jacobean word "astonied"), wonder is very much involved in the quest for—if not necessarily the attainment of—knowledge.

Campbell's book is welcome because the wonder and literature nexus has not been fully explored (though there has been more exploration than Campbell recognizes). *Wonder and Science* has two important goals. First, Campbell wants to reveal the intersection of fact and fable, of "the techniques of ethnography and realistic fiction" (17). The introduction seems a little uncertain about what the nature of this relationship is, however. Is the book about the "mutually exclusionary process of development, in the brethren discourses of natural philosophy (which includes the cosmography and anthropology crucial to any history of 'worlds') and of fiction, of Truth seen as constituitively distinct from Beauty" (6)? Or is it about these two brothers acting as a "hybrid" (18), revealing "shared and opposed aims and techniques" (17)? The chief concern of the book is actually the latter, and Campbell is at her best when she shows the mutual interpenetration—and not the "mutual exclusionary process"—of these discourses: scientific/anthropological texts taking on literary strategies, tropes, and narrative patterns, and fictional texts questing after knowledge and truth through their fictive forms. An obviously related aim of the book is to think about how these discourses and their historical moment fit into the history of the novel.

The second goal—indicated by the book's title—is to explore how wonder functioned in this intersection. Campbell wants "to defend the value of the 'cognitive emotion'" (3) that is wonder from two sets of detractors. First, wonder needs a defense against those scholars who see it as a tool of colonizers and who associate wonder with "the manipulation of the colonized, the selling of the colony to backers back home, the exoticizing of whatever could be (or seem to be) subdued" (3). (Campbell unfairly puts Greenblatt in this camp; he goes to great lengths *not* to demonize wonder. For one example of many, see *Marvelous Possessions*: "I do not think that this possessive use of the marvelous is decisive or final" [24)].) But wonder also needs to be protected from post-Enlightenment certainty, needs to be recovered as an important epistemological vehicle: Campbell argues for the value of a pleasurable emotion, or relation to knowing, that requires the suspension of mastery, certainty, knowingness itself. And no one can deny the actual functionality of such a relation to knowing, at least no one who has ever observed a seminar or a lab in motion. The animus that relegates wonder and other cognitive pleasures to the trivial or sentimental sidelines of life's serious business is a historical product of the transformations under observation in this book. (3) Strangely, it is this goal—one consistent both with Campbell's earlier scholarship and with her commitment to wonder in her accomplished poetry—that is the less fully realized of the two.

Campbell has picked a terrific place to center her explorations: although she looks back to the sixteenth century (and, of course, even further back to classical and medieval texts) and ahead to the eighteenth century, the seventeenth century is an ideal site for exploring the liminal status of

these discourses. Her first section—entitled "Imagination and Discipline"—begins with a chapter that effectively explores the presence of aesthetic delight and observation in the midst of proto-ethnographic texts by André Thevet, Thomas Hariot, John White, and Theodore de Bry. Showing that imagination and fiction take over from fact (Thevet); that the emphasis turns to "exoticism" (White; 57) and "erotic looking" (de Bry; 66); and that these discourses reveal a variety "before it is codified and regulated as an institution—a science, an academic discipline, a genre" (66)—this chapter seeks to establish the order of things before the fall into rationalism, codification, certainty: "a culture's temporarily unregulated free play" (67).

But a strange thing happens rhetorically: even before leaving this chapter, Campbell gets us ready for the next, in which exoticism leads to "exorcism" and "Wonder comes under attack in a number of major seventeenth-century attempts to purify the codification and transmission of knowledge, as well as representation of the scene in which knowledge is acquired" (67). The moment of free play seems always already constrained, and throughout I wanted more examples of wonder and fiction's "unregulated" power.

Indeed, Campbell seems more at home dissecting wonder's detractors than analyzing its champions, and the second chapter of this section—on Francis Bacon, Thomas Browne, and Robert Plot—is one of the book's best. We see under Campbell's expert guidance that in this "transitional century" (77) wonder—which Bacon contemptuously called "broken knowledge"—and ornamented language received similar attacks: both wonder and rhetoric were guilty of "superfluity" and "curious variety" (Bacon, in Campbell, 77). The ideal *telos* here would be Thomas Sprat's call, in his *History of the Royal Society*, for "so many things, almost in an equal number of words"—for an eradication of "specious *Tropes* and *Figures* (Sprat, in Campbell, 36; 74). What is interesting, though, is that Bacon and Browne could never get to the Spratian ideal: both found wonder at once compelling and repellent; both wrote in beautifully ornamented prose. This chapter works so well because the story is less clear, less teleological: wonder and rhetoric fight back, refuse to be subsumed by reason and "natural language."

The book's next section—"Alternative Worlds"—begins with a strategy similar to that of the first section. Giordano Bruno, Galileo Galilei, and Johannes Kepler are summoned as examples of those who—in their scientific and fictive writings—saw wonder and aesthetic pleasure wrapped up in the scientific method; mutual interpenetration abounds. The focus here is on actual and imagined other worlds, with a special emphasis on the moon. Campbell sees Kepler's *Somnium, sive astronomia lunae* (1634) as a supreme example of the "intertwined history (here fused) of fiction and anthropology" (143). Scientists—as well as fiction-makers—must imagine in order to discover a plenitude of (im) possible worlds. But the story darkens again in the chapter's closing discussion of Bernard le Bovier de Fontenelle's *Entretiens sur la pluralité des mondes* (1686). Here, according to Campbell, Kepler's kind of imaginative "lunar anthropology" (143)—that which reveals "an appetite for the hybrid" and allows him "to tolerate ambivalence" (138)—gets gendered. In Fontenelle, then, "wonder, curiosity, sympathy, and speculation belong to the female speaker, and knowledge, numbers, authority, and the power of demystification belong to the male" (149). It is very interesting to watch what happens to the wonder/knowledge dynamic when a female author—Margaret Cavendish—engages with other-worldly fiction.

First, though, Campbell examines the "celestial fictions" (151) of Francis Godwin (*The Man in the Moon*, 1638) and Savinien Cyrano de Bergerac (*L'autre monde ou les estats et empires de la lune*, 1657), further exploring how the moon works with the imagination to provide alternative worlds. For these writers, Campbell claims, the moon becomes an emblem of something both real *and* unknowable. Both writers' narratives, "like dreams..., mimic features of the known world; but also like dreams, they are more concerned to explore desire and to test the dreamer's improvisatory skill than to depict a recognizable actuality" (170). For Campbell, Cyrano goes farther, is even more radical, because he ultimately puts forth fiction "as a concept acidly destructive of scientific (perhaps more specifically Cartesian) certainty" (171).

The narrative of this section darkens, too, with the final chapter, in which the emphasis shifts from the vast to the minuscule—to the microscopic (Robert Hooke) and the interior (Margaret Cavendish). In Hooke, then, we get a focus on "verisimilitude's other worlds, especially a world called Nature"; his *Micrographia* is an "ethnography of the miniature" (185; 192). So far, so good, but Campbell's sense that Hooke's work—as compelling as I find her idea of the "eroticization of sight" (184)—is connected to fetish and pornography seems a bit of a stretch. And her pessimistic vision of his narrative—"a turn from the sublime, the transcendent, the celestial to the concrete, the physiological, the mundane—a depressed turn but a decided one" (202)—is certainly not the only way to read *Micrographia*. Here, Campbell misses a chance to emphasize that there may be some wondrous free play—or at least fluidity—that remains. For it is possible to see Hooke's "turn" as one from content to form, from wondrous stories to marvelous mechanics. Nature—through a microscope—becomes a brave new world that has such spider legs and drone-fly eyes in it.

Margaret Cavendish is summoned to remind us "what the microscope missed" (213). Compellingly, Campbell leads us through Cavendish's attacks—especially in *The Description of a New World Called the Blazing-World* (1666)—on microscopists and "their assumption that the instrument offers them in some sense access to the interior of things." For Cavendish, interiors are unknowable—at least through observational tools: "observational detail is always detail on the surface" (215). While not abandoning the marvelous, Cavendish senses its dangers—for an epistemological project and for women.

Part III—"The Arts of Anthropology"—is the strongest cluster of chapters, and one is left with the impression that this section was the *telos* that drove the rest of the book. The previously examined texts seem to have been preparing us for the way in which texts explored here—chiefly, John Bulwer's *Anthropometamorphosis* (1650), Aphra Benn's *Oronooko* (1688), Joseph Lafitau's *Moeurs des sauvages amériquaines* (1724), and George Psalmanazar's *A Historical and Geographical Description of Formosa* (1704)—reveal the ongoing negotiations between the anthropological recording of other cultures and the marvelous imagination of other worlds. I do wish—as she tells us she originally intended to do—that Campbell had finished with Swift's *Gulliver's Travels*, even if she had provided the sort of brief description that she gives of Robinson Crusoe in her coda. But I also understand how compelling it is to finish with a text—Psalmanazar's—created by a pseudonymous author writing a "true" history and providing a "real" language that were completely fabricated. Perhaps wonder and the imagination do prevail in *Wonder and Science*.

Still, as a contribution to the history of wonder, this very fine book is not all it could be. Although rich in references to most of the many fields it explores, *Wonder and Science* suggests that one book by J.V. Cunningham published in 1951—though undoubtedly important—is the sum total of books written about wonder and literature. But at least three important books sharing Campbell's interests need noting: Thomas Bishop's *Shakespeare and the Theatre of Wonder* (Cambridge, 1996), Douglas Biow's *Mirabile Dictu: Representations of the Marvelous in Medieval and Renaissance Epic* (Michigan, 1996), and James Biester's *Lyric Wonder: Rhetoric and Wit in Renaissance English Poetry* (Cornell, 1997). Campbell is not as much in the wilderness as she suggests. More problematic, Campbell does not anchor her definition of wonder in any primary texts. Her sense of the concept—defined above—is compelling and smart, but without a classical, medieval, or early modern anchor, "wonder" can slip to "sublimity" and back; the term comes to seem more private than historical. Wonder and the sublime are, of course, related, but the period that Campbell is interrogating is the one in which discussions of the marvelous are tending to emphasize "the sublime" instead of "*maraviglia*" and its cognates. Why this happens is a complicated issue, of course, but one that needs addressing on some level.

Further, Campbell's über-narrative—"the story of the conceptual and aesthetic containment of wonder by a civilization ever more rational, utilitarian, and knowing" (313)—itself ironically helps to contain wonder. Although the book ends with a wonderful triumph of fiction, the "story" that Campbell tells privileges those texts that critique and dismantle wonder. A notable example of this tendency occurs in the Bulwer chapter. Discussing Bulwer's disapproval of monstrosity, Campbell contrasts his vision with that of François Desprez's *Recueil de la diversité des habits* (1562). This earlier text, we are told, provides a "democratically alphabetical parade of human, subhuman, semihuman, and nonhuman fashion plates. . .[that] is something at home in a world still short of knowability. . . . [I]t simply follows the random logic of the alphabet through whatever the alphabet presents, leaving the reader to extrapolate a structured cosmos on her own" (254). The appeal of the *Recueil*, then, is like the appeal of the wonder cabinet: it provides an insight into a "world still short of knowability"—before rigid classification and the culture of mastery set in. But Campbell's emphasis is on the doomed nature of this world, not on its power or on its ability to shape a new way of knowing.

Campbell's narrative—a version of which Lorraine Daston has memorably called the "naturalization of the preternatural"—is an important one but is not the only one. For this story suggests that wonder has no afterlife, when clearly it does. In addition to the sublime, wonder is related to Freud's uncanny ("*unheimlich*"), to surrealism (André Breton and Pierre Mabille resurrected "the marvelous" as the supreme goal of art and literature), and to magic realism. And, as Caroline Bynum states, there is a "presentist" role for wonder as well. Concluding her chapter on wonder—originally a 1996 address to the American Historical Society—Bynum claims that historians need to—as she does—adapt and adopt a wall slogan from Paris in 1968: "Every view of things that is not wonderful is false" (Bynum, 75). This is a call that could and should also be heeded by literary critics and literary historians, for it recognizes that truth—or at least the not-false—can dwell in the strange, the rare, the fictive.

And it is to Campbell's credit that her book—albeit at times indirectly—makes this point. *Wonder and Science* is filled with a love for and a display of cornucopian texts: the wondrous

multiplicity of other cultures, natural phenomena, language, and metaphor clearly thrills Campbell, and she in turn thrills us. She has also made a strong claim for the importance of the aesthetic to discussions of gender, politics, cultural hybridity, and the body in an age of criticism when one still has to apologize for invoking such a category. Campbell's book—like Psalmanzar's—reminds us that on some level, paradoxically, every view of things that is not aesthetic (marvelous, fictive, fashioned) is false.