I'm writing this article in January, just as I return to classes after the winter break. It was a wonderful respite, in part because I had time to do some uninterrupted reading, to lie on the couch and really get into a book, and then another, and another. Fortunately, I received several great books as Christmas gifts – and I augmented this stack with a few gifts to myself. There was no real rhyme or reason to the selection, but as I look back over my reading spree, I notice that a couple of themes weave the books together, and I'd like to examine them here.

I began the holidays with Sara Maitland's (2008) The Book of Silence, which describes her exploration over a number of years of silence and solitude. They go together. It's difficult to have true silence in the company of others, as Maitland discovered when she slowly moved toward a silent life. First, separation from her husband found her living alone, but that didn't seem to be enough for her, so she tried a number of experiments in deeper silence. These included a six-week retreat on the Isle of Skye. She had stocked up on food and other necessities so she wouldn't have to interact with anyone, though she does admit to having had a cell phone and a car radio for emergencies. She found this a deeply transforming experience, which just made her hunger for more silence. This led to three years in a small house in an isolated part of England, a silent retreat in the desert, and another in the primeval woods of Scotland. Maitland finally built her own retreat because she simply didn't want to give up the silence she had discovered.

Actually, Maitland discovered more than one silence. She found that the silence of the desert was very different from that of the forest – and that silence was entwined with nature and with the spiritual. She noticed that with silence came an intensification of her senses. On the long walks she took, she became much more aware of the birds and plants and terrain she encountered. Maitland includes descriptions of living in silence written by naturalists such as Thoreau and Gilbert White, so her book is in part a meditation on nature. She developed a great sense of connection with the living world, in part from her explorations and in part because of the time she spent in prayer. This really is a comprehensive book on silence, because she includes what she learned by reading about the hermits of old, particularly the early Christians who went into the desert to find solitude. Her own time in the desert made her realize that solitude in an arid and relatively unchanging landscape had a very different character from what she had experienced in Britain. In the desert, silence created a form of freedom “from one's self and freedom to be oneself” (p. 221). This was possible because of inner emptiness that made room for religious experience, but it did not make room for creativity. Maitland was surprised to find that silence made it more difficult for her to write, and particularly to write fiction, even though in the past she had published several novels.

Maitland contrasts desert silence with that of the forest and of other British landscapes, which she describes as leading to a more “romantic” experience of silence, which writers like Wordsworth found a rich ability for their creativity. Maybe being in the forest would reawaken her ability to write. As she ends her book, the jury is still out on this question. Obviously, she can write nonfiction – very well indeed – but stories still elude her. However, in her newly built aerie she hopes to find a balance between the two silences and stoke her storytelling fires once again.

**Nature**

On the same day that one friend gave me The Book of Silence, another presented me with The Good in Nature and Humanity (Kellert & Farnham, 2002), which has the subtitle “Connecting Science, Religion, and Spirituality with the Natural World.” These two books set the tone for my vacation reading because several other books I read were also related to the themes presented in these. My friend Julie gave me The Good because the collection contains a short story that she wanted me to read: “The Mappist” by Barry Lopez. It's about a travel writer and cartographer who has a real feel for the places he visits and charts a real connection with the terrain. This is, in a sense, what the entire book is about: how we can come to develop a connection to nature, a link that can feed our spiritual life and also help to preserve the environment as well. One of the editors, Stephen Kellert, is the author of a book on biophilia (Kellert, 1997), the concept developed by Edward O. Wilson (1984) that humans have an innate urge to relate with other species. In those earlier works, the emphasis was more on the aesthetic and moral implications of the concept; in The Good, the spiritual is added to the mix, to make an even stronger case for the need to nurture our biophilic ties to the living world.

**Pro & Con**

I enjoyed The Good because it was a relief to have science and religion treated as possessing something in common rather than considered in opposition to each other, which is the most frequently presented view of their relationship. For example, Richard Dawkins forcefully argues this perspective in his latest book, The Greatest Show on Earth (2009). A few months ago, Dawkins had an article in The Wall Street Journal explaining his central argument that evolution leaves God with nothing to do and, therefore, God is an outmoded concept. By presenting the case against God in terms of evolution, Dawkins is perpetuating the idea that the two are fundamentally opposed to each other and are the quintessential battleground between religion and science. In a companion piece, Karen Armstrong, the author of The Case for God (2009), contends, as she does in her book, that this viewpoint is hardly the only one possible (both articles are available on the Web at http://online.wsj.com/article/SB10001424052702034401045744405030643556324.html). I was heartened to find someone taking a positive stance on the science/religion relationship, so I got a copy of her book. I have to admit that I didn't get Dawkins's book as well. Since he has presented his argument repeatedly, I felt I had some sense of it, while Armstrong's viewpoint was
new to me, though she has written several books on various aspects of the history of religion.

Armstrong describes two ways of thinking, speaking, and acquiring knowledge, what the Greeks called logos (reason) and mythos (myth). These are now often seen as in opposition to each other, with reason relating to science and myth to religion. In addition, the latter has developed the notion of something untrue, as opposed to its original meaning of a different way of thinking, one that could deal with what cannot be explained by reason. In other words, mythos is a different way of knowing and focuses on “the more elusive, puzzling, and tragic aspects of the human predicament that lay outside the remit of logos” (p. xii). Armstrong’s main argument is that religion in the West has relied too heavily on logos, on developing a theology that reasons out its stance, using methods of thought similar to those used in science, but for different purposes, and perhaps for purposes for which this method is not well suited. By employing science’s methods, religion appears to have steadily lost ground to science as more and more of religion’s explanations of phenomena, from the structure of the universe to the origin of life, have lost out to scientific explanations. In the meantime, religion has been neglecting the other ways of knowing that are more in its domain, such as meditation and contemplation of the ineffable.

In her examination of the history of religion, Armstrong makes it clear that many of the religious stances and cultural attitudes that we see as fundamental instead have a history, meaning that they haven’t always been viewed as they are today. For example, in the 17th century, under the influence of Newtonian physics, theologians saw science as providing an argument for God’s existence as well as a description of how the mind of God worked. Science was seen as supportive of religion rather than contrary to it. However, this viewpoint created an environment in which religion, in a sense, came to rely on science, and as science changed and religion failed to, the latter came to seem dated and wrong-headed. This led in the late 19th century to books that documented—and solidified—the idea that science and religion were at odds (Draper, 1874; White, 1897).

Armstrong ends her review by pointing out writers in the 20th and 21st centuries who have moved away from this antagonistic view to seeing points of congruence. The chemist Michael Polanyi (1962) writes of tacit knowledge, which involves not only reasoning but a form of being with the object of study that is closer to mythos than to logos. At the same time, theologians such as Karl Rahner stepped back from an emphasis on reasoning and instead stressed the importance of mystery as an aspect of life, and this mystery which cannot be described is God. Finally, Armstrong writes that “We have become used to thinking that religion should provide us with information. Is there a God? How did the world come into being? But this is a modern preoccupation. Religion was never supposed to provide answers to questions that lay within the reach of human reason. That was the role of logos” (p. 318). On the other hand, religion’s task was to help us deal with realities for which there were no easy explanations, problems with no solutions, such as mortality, pain, and outrage. But “during the early modern period, Western people fell in love with an ideal of absolute certainty” (p. 322) that now seems unattainable even in scientific realms.

I am not sure whether Armstrong’s viewpoint will make sense to other people, but it makes sense to me. I am hardly trying to proselytize for any religion; rather, I’m arguing for a view of the relationship of science and religion that is less confrontational. This is particularly important to me because I teach evolutionary biology, which has become one of the major “battlefields” between the two “camps.” While I realize that it’s important to deal with this issue and to guard against undermining biology education in this country, I personally prefer to accentuate the positive: the Clergy Letter on evolution, Wilson’s (2006) The Creation, which is framed as a letter to a Baptist minister calling for a coalition between science and religion to save the environment, which is vital to both, and National Institutes of Health Director Francis Collins’s (2006) explanation of his deep commitment both to God and to evolutionary medicine.

### Herding Goats & Making Cheese

My son Geoff doesn’t like surprises at Christmas, which means that before then, I have to find out from him what he wants, and he has to know what I want. Since he just bought a house, he says he wants gift cards for home improvement stores for the rest of his life. I, on the other hand, want books and always have a few suggestions to give him. This is how I came to acquire Goat Song by Brad Kessler (2009). Its subtitle is what attracted me: “A Seasonal Life, A Short History of Herding, and the Art of Making Cheese.” What more could I want from a Christmas gift? The book turned out to be a treasure. It chronicles Kessler’s journey from Manhattan to rural Vermont, where he and his wife bought a farm and decided to buy a few goats as well. Kessler seems to have carefully researched each of his moves: into the country, into goat herding, into goat breeding, etc. He is a writer by profession, and books are an essential part of his approach to any subject. The background information he acquires is then presented for the benefit of his readers, along with the more down-to-earth lessons he learned by actual herding, breeding, and so on.

After thorough investigation, Kessler chose to begin with the purchase of two female Nubian goats and two kids. Nubians are large, so they produce more milk than most goats do. But before there can be milk, there has to be breeding and then kids. Kessler chronicles the ups and downs of this adventure, from Hannah, who didn’t like being milked — and let him know it — to Lizzie’s brush with death after being infected with the meningeal nematode *Parelaphostrongylus tenuis*. Both Hannah and Lizzie improved with time, and after a couple of years and a couple of additions to the “herd,” Kessler had sufficient milk to experiment with cheese making, which he also researched carefully before beginning. His book is so interesting because of how he juxtaposes information and experience. He covers not only how to raise goats and make cheese but also the history of these practices. And to tie Goat Song to the others I’ve discussed, there is also a spiritual aspect to his chronicle, as he describes how Nubians are desert goats, sometimes raised by hermits in the early years of the church, and like many of the writers in *The Good*, Kessler has discovered the relationship between nature and spirituality and between nature and morality. Goat Song was a nice accompaniment to the other books I read over the break, but the book that meant the most to me was one I bought for myself — and as a gift.

### Botanists & Poets

I saw a positive reference to *The Poet as Botanist* by M. M. Mahood (2008) and decided to get myself a copy. As soon I leafed through it, I knew it would make a perfect gift for my friend Michael Boyle, who is a poet, a lover of science, and the author of *Science as Sacred Metaphor: An Evolving Revelation* (2006). She had given me *The Book of Silence* for Christmas, so I was glad that I had an equally wonderful book to give her. Then I ordered my own copy of Mahood’s book and had a wonderful time reading it. Like Michael, Mahood is a retired professor of literature, and like Michael, she isn’t afraid to read the scientific literature. They also have in common a love of poetry. Mahood focuses on five writers who each had a deep knowledge of botany and so brought to their writing a solid grounding in the science. The first of the five is Erasmus Darwin (1731–1802), about whom I knew very little beyond the fact that he wrote book-length poems about plants (three of them), one with an evolutionary tone that may have influenced his grandson Charles. I found it interesting that at the time Erasmus was writing his first long poem, *The Loves of the Plants*, he was also translating Linnaeus’s *Systema vegetabilum* into English. Loves was first published anonymously, but Darwin was so encouraged by its reception that he began on a second work, *The Economy of Vegetation*, and the two were later published together under his name as *The Botanic Garden* (1791).
The next two poets whom Mahood treats are less well known, at least to me. George Crabbe (1754–1832) was trained in medicine but then became a clergyman. Like many in this profession, he was a talented naturalist. However, he is best known for two books of poetry, The Village and The Borough (both are available through Project Gutenberg at http://www.gutenberg.org). Mahood notes that in the latter work Crabbe outlines how the plants in an area change over the years, an early form of the idea of succession. The next poet, John Clare (1793–1864), had a hard life, much of which was spent in poverty. He lived most of his last 27 years in an asylum. However, his love of nature and poetry combined to help him create a body of work that received renewed attention in the 20th century. While Crabbe was interested in insects and plants, Clare found ornithology as well as botany fascinating. They both were truly careful observers of nature and were able to translate those observations into poems that also reflected deep observations on humankind as well.

The next author is the more familiar John Ruskin (1813–1900), who also ended up institutionalized, but before that he wrote a great deal on art and nature — and the relationship between them. He thought that artists should carefully observe nature in order to portray it as realistically as possible, and his writings influenced a number of artists both in Britain and the United States. The fifth and final volume of his Modern Painters (1860) contains an essay entitled “On Leaf Beauty,” and the second section of The Queen of the Air (1869) is also about botany. However, the writer whom Mahood treats with the greatest claim to being a botanist is D. H. Lawrence, who studied botany at University College, Nottingham. He obviously used his education: Mahood notes that there are 145 named plant species in his first novel, The White Peacock (1911). One of the reasons I found The Poet as Botanist fascinating is that I am so ignorant of literature that almost everything in this book was new and exciting to me. I had no idea that Lawrence had written a book of poetry called Birds, Beasts and Flowers (1923). I’ve only just dipped into it, but I’m already intrigued by his fascination with toadstools.

In a final chapter with the wonderful title “Poetry and Photosynthesis,” Mahood reviews the work of more recent poets, and I found it exciting to discover a number of poets whose work I can explore. These include the American poets Richard Wilbur and Theodore Roethke, and Michael Longley from Ireland. Mahood ends with the Australian Les Murray’s Translations from the Natural World (1994). She does a wonderful job of explicating his poem “Sunflowers,” which weaves the botanical intricacies of embryonic development with meditations on the meaning of presence in the world. She ends by writing: “The plant kingdom is a world in which some of the finest poets have been happiest, as I too have been happy to bring the reader to some of its flowers” (p. 258).

○ Mythology

Another wonderful book, one which ties together many of the themes I’ve already covered, is Peter Bernhardt’s (2008) Gods and Goddesses in the Garden. It deals with the Greek and Roman myths that serve as the basis of so many plant names and is very different from the other books by Bernhardt that I’ve read, though it is equally fascinating. The earlier works (1989, 1993, 1999) were collections of essays on various aspects of plant life, and since Bernhardt has a penchant for the odd as well as a gift for looking at even common plants in uncommon ways, these were great books. In Gods and Goddesses, he goes in a very different direction, delving into what Armstrong would call mythos and describing how scientific language frequently draws from mythology. One of Bernhardt’s main aims is to make taxonomic terminology more interesting and palatable, since it’s so often seen as a barrier rather than a point of entry into the study of species. In the preface and first chapter, he makes a case for the advantages, and also joys, of proper terminology.

Bernhardt obviously had fun ferreting out the intricacies not only of botanical relationships, but of mythological relationships, which can be even more tangled, and he does a good job of sharing the fascinating discoveries he’s made with his readers. There are two ways I could see to approach this book. One is to read it from cover to cover, as I did, and be amazed by the breadth of mythological references in plant names. The other is to search out a favorite species or genus and see if it has classical ties, in a large number of cases, you will not be disappointed. Bernhardt alternates between mythology and botany, first presenting a group of related deities and then the plants whose names were inspired by these mythological beings. There is a genus of palms with leathery fronds called Euterpe after the muse who played the flute; these delicate palms seem to dance in the wind. We tend to associate Arachne with spiders because Athena turned this weaver into a spider when her cloth was superior to that of the goddess. However, there are a number of orchids, including Cystostylis arachnites, Maxillaria arachnites, and Ophrys arachnites, that have long, curved petals and sepals reminiscent of a spider’s legs. Ultimately, this book brings to the fore yet another link between religion, literature, and science — between mythos and logos. Its author is an example of a scientist who is not afraid to dig deeply into other areas of culture to find their links to science.

○ Filling in a Gap

In order to fill in a gap that occurred in earlier columns, I feel honor bound to mention one more gift, this one from my sister, who presented me with E. Charles Nelson’s (2009) An Irishman’s Cuttings. I wish I had had it when I was writing my columns on my Irish adventure (Flannery, 2009, 2010). I’d just like to say that Nelson, who was a plant taxonomist at the Irish National Botanic Gardens at Glasnevin, has great information on the noted Irish botanists I mentioned, Augustine Henry and Robert Lloyd Praeger. He also describes how Charles Darwin corresponded with the director of the Botanic Gardens to obtain specimens of insectivorous plants. Since Ireland has so much bog land, where such plants thrive, Glasnevin was a wonderful resource for Darwin when he was doing research for Insectivorous Plants (1875).

Finally, Nelson tells the story of how Joseph Hooker, director of the Royal Botanic Gardens at Kew, negotiated with Lady Doneraile of County Cork to trade plants, which she very much wanted from Kew for plant-derived products for Hooker’s growing economic botany collection. These items included mittens knit from nettle fibers, bog-oak jewelry, shoe insoles created from the down of bog cotton, and a lace parasol made from “botanical threads,” that is, fibers from such plants as nasturtium, honeysuckle, and sweet pea. Though hardly of economic importance, these articles nonetheless provide insights into how plant material was used in the 19th century, when people had so much more contact with nature, particularly in Ireland, where most of the population lived in rural areas. Nelson’s essays provide a reminder that while British botany was obviously much more significant than Irish, the former did receive support and enrichment from the latter, just as I’ve received enrichment from my hoard of wonderful books on so many aspects of nature.

References


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