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BOOK REVIEW

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A New Textbook That Starts With Living Wholes

CHRIS HALL

Christopher O. and Cuddeback Blum, *Nature's Beautiful Order: An Introduction to the Study of Animals Taught by the Classical Naturalists* (Memoria Press, 2014).

Nature's Beautiful Order by Christopher Blum and John Cuddeback is that rarest of modern biology textbooks: one that starts with beauty and then works to facts and figures, rather than the reverse. Through 187 pages and 18 chapters of description, narrative, and relevant writings gleaned from natural historians of note, the authors have crafted a reader that balances knowledge and the narrative, building a framework of facts within the greater calling to “learn how to see again.”

Before the term “scientist” was coined by newspapermen in the late 1800s, thereby reducing the endeavor to its technical aspects alone, science had been more accurately described as natural philosophy, the seeking of wisdom in the natural world. Working in tandem were natural science, or the exploration of the physical world through experimentation, and natural history, which explored the natural world through careful observation. Through time, we have gotten used to the methods of natural science as the baseline for biology today, and in the process we have lost touch with the wonder and awe that come from simply spending time immersed in observation of the Book of Nature. We favor the dissection rather than the observation of the living organism, the analysis of the part rather than the consideration of the whole.

In doing so, we have also lost the reference points necessary to find our way back to our place in the cosmos. That word, cosmos, includes the concept of the container, but also the implied order within that container. Aristotle recognized that, in order to begin to make sense of the natural world, it makes sense to start with the things we can perceive with our senses first, at our scale. The order of the cosmos could be seen, reflected, in the classification of living things, starting with parts and proportion, and moving from there to behavior, systems, and functions.

In the chapter “What is an Animal?”, Blum and Cuddeback bring out a gem from St. George Jackson Mivart, a late 19th century natural historian whose wrangles with natural selection and theology make for epic reading. Mivart makes a telling point about studying a cat: “Nothing can be understood by itself. All our knowledge consists of apprehensions which have been acquired by comparing and contrasting one thing with another; and the more we know of any object, the greater is the number of relations we are able to affirm to exist between it and other objects. ...More than this, we should also understand its relations with that part of the creation which is devoid of life—in short, we should understand its place in nature” (13). Rather than take the animal apart, we should study it alive and in context, and then let the questions form that will lead us in new directions of exploration. First and foremost, start with good observation!

The challenge with most biology textbooks is that they start with the cell and work out from there, following lines of extension and extrapolation from the single unit of living organisms to their higher orders and functions. This approach often leaves the budding biologist in a cognitive lurch. The cell is rather abstract. Even when seen under the microscope, even when the names of all the organelles can roll, superimposed, from the mind to the object on the slide, the cell is still a thing of inaccessible scale. It is also a design that can’t stand on its own. It cannot be fully understood without knowing the context in which its function is both implied and dictated.

As the authors point out, even Darwin, who was no fan of Aristotle’s methods, conceded that he was “one of the greatest, if not the greatest, observers that ever lived” (6). Without intending to do so, Aristotle also uncovered something that many biology teachers discover: students relate to what they can perceive, which, being incomplete and therefore mysterious, leads to questions and curiosity that open up further exploration. In this way, the wonder is preserved without losing it to cold dissection. To paraphrase C.S. Lewis’s *Abolition of Man*, when it would explain, it would not explain away, and when it spoke of the parts, it would remember the the whole.[i]

Each section of *Nature’s Beautiful Order* takes the student on an observational exploration of an organism. Starting in the ocean with the lobster, cuttlefish, and sea urchin, the book proceeds to the bee, drawing comparisons and contrasts between the physical and behavioral traits of each organism relative to the others studied so far. From the amphibian frog to the turtle to the Canada goose, the authors extend the comparisons, and then rest for a few chapters on birds, uncovering the mechanics of flight and migration, bird song, and relationship with humans. Using excerpts from Audubon, students are encouraged to seek out the company of birds in both the wilderness of the woodcutter’s story and that of the backyard wilderness that beckons from just beyond the study window.

Following the hierarchy of Creation, the book concludes with two chapters on man. In “Man the Upright Animal,” comparisons and contrasts are drawn between all the previous studies and our unique position in God’s order. The authors state, and then proceed to draw out through example, that “man truly belongs to the animal kingdom, but he also truly belongs to another kingdom” (175). In “Man the Steward,” the authors conclude their work with a call to be grateful. Man has been given dominion, but also the responsibility to work. “It is tilled fields, orchards and vineyards,” they say, “that produce food as no un-cultivated land ever does” (185). Bolstered by the admonishment to work by the sweat of our brows, we are called to enter into our role as attentive stewards of this world, and humbly continue our study of God’s highest creation: ourselves.

If you adopt *Nature’s Beautiful Order*, I would recommend two companion activities. They will

make the journey that much sweeter.

First, get a sketchbook. One way that Louis Agassiz, one of the foremost natural historians of the 19th century, trained his graduate students involved parking them for hours, alone except for a bottle of preserving solution, with a fish. After the clutter of the mind died down, the students inevitably noticed, and then sketched, details of gill and fin, scale and eye that they had missed before. The narrative of this book brings about the longing to see, which can lead naturally to the desire to draw. And not just to draw, but to render: drawing from a depth of observation that seems to come from an exchange of essence between the subject and the sketch. Starting with the seeing, the elements of art enter naturally into the picture, and can transmit through the hand and pencil an act of charity. This kind of soulful study brings new knowledge into resonance with the call to be artists, co-creators, and sets into perspective the lessons of apprenticeship to the Master. The *telos*, or ultimate end, of any rendering is an encounter with beauty, which was, in the medieval mind, a quality not of an object itself, but a beckoning from behind the object's apparent qualities towards God Himself. Beauty through the eye, charity through the pencil, study through the senses, and wonder through the heart.

Second, develop a dedication to daily encounters with animals and organisms. Not forced, but simply encounters. Go for a walk and see what lessons God provides. This mindset towards the study will make the underlying lessons of the book stand in relief: natural history is not about experimentation in the lab, but encounters with God's created reality. There is a place for natural science, but not a stand-alone place, nor a place without reference and relation to the deeper connectedness of creation. Stepping out of the pages and into the "lab" of the cosmos will have implications for the way in which the book becomes a part of the student, rather than simply an object of study.

Nature's Beautiful Order is a book that has been sorely needed in science circles for quite some time. It works in very necessary ways upon the fabric of our understanding: we inhabit an ordered world, and we do well to study that world from reference points we know well, our senses first, which will lead us inevitably towards deeper questions about what we perceive. Aristotle may not have known about modern natural science, but he had a firm grasp on the foundations of natural history, and in so doing, he orients us, even through the passing centuries, towards the fullness of a modern natural philosophy.

Chris Hall is the Lower School Academic Dean and Science 6 teacher at The Covenant School in Charlottesville, Virginia.

[i] C. S. Lewis, *Abolition of Man* (HarperOne, 2015; first ed. 1944), 80–81.

