Book Review

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Naming Nature: The Clash between Instinct and Science.—Carol Kaesuk Yoon. New York: W.W. Norton, 2009. 352 pp. ISBN 978-0-393-06197-0. $27.95 £19.99.

My motivation for writing a review of Carol Yoon's *Naming Nature* arose when I stumbled upon a piece in the *New York Times* about the book. After reading what were small fragments of it, it seemed intriguing to me how an author could make the general public feel empathy for taxonomy, a field with such a controversial past, to say the least. However, this book is more than just another tale on the history of taxonomy; instead, Yoon uses specific moments in the history of taxonomy as evidence for her argument. In the book, Yoon takes the reader along the journey of a personal awareness, which she then uses to successfully deliver a clear message.

Naming Nature is divided into 12 chapters, grouped by 4 titles in timeline order. The book begins with the case of fish. As an introduction, Yoon uses fish to show that when ordering life science does not necessarily follow instinct (e.g., similarity) but sometimes goes totally against it. In doing taxonomy, Yoon argues, science has long been trying to fight against the "umwelt." The umwelt is an instinctive possession (or model) of nature, so rooted into us, that it is the only reason why we keep seeing fish and moths where cladists see only symplesiomorphies. Additional evidence of the umwelt, Yoon shows, is the similarity among the way different cultures have independently organized life.

Of course, fighting against the umwelt has had a price, and Yoon argues that losing this instinctive possession changed our perception of nature, detached us from life, and led us to the current crisis that biodiversity faces. This is the main argument that Yoon develops during the subsequent 4 parts of the book. Of these 4 parts, only the first (The search for the natural order begins) and the third (A science is born) describe major events in the history of taxonomy. Both of these chapters follow a timeline order for the most part.

In "The search for the natural order begins," Yoon writes about the early times of taxonomy, from Linnaeus through Darwin to Mayr, and touches on some of the traditional issues in taxonomy such as the definition of species or the disagreements between lumpers and splitters. If nowadays it seems that science and instinct go separate ways, in these chapters Yoon shows us that it was not always that way. Following Yoon's argument, these were the times where evolutionary taxonomist named nature led by and based on their umwelt.

The second part, "A vision illuminated," describes in more detail the umwelt, what it is and the scientific evidence supporting its existence. This is of course an important part of her argument, and she provides a good deal of writing about it. After what looked to me like perhaps too many examples, she nonetheless succeeds in convincing the reader not only that the umwelt explains innate skills and, therefore, it is within our most inner core, a natural tendency that we all share, but also that evolutionary taxonomists were perhaps right to follow it.

Numerical taxonomy and later the cladists arose to "liberate" taxonomists and taxonomy from the umwelt, this is more or less the argument in the section entitled "A science is born." These chapters describe the origin of these 2 schools and the evolution of taxonomy from an art into a science. Yoon discusses the death of nonmonophyletic groups that are familiar to the general public. With objectivity, a rigorous methodology and a completely changed view of the world, Yoon argues that it was the cladists who put the nail in the umwelt's coffin. In general, Yoon offers a critical view of each of these schools, not just about the cladists (there is also a strong critique of the field of molecular taxonomy in this chapter). Although during these chapters, I was always waiting for her to take sides, one can see that her writing is faithful only to delivering her message. In general, her accounts of the history of systematics are refreshing and unpretentious. These chapters also offer new details not found in other (more technical) books that have also dealt with the history of taxonomy (e.g., Hull 1988; Felsenstein 2003).

The fourth and last part of the book, entitled "A vision reclaimed", discusses at first the few traces of the umwelt inside and outside of science today. Here again she extends into some examples, such as the use of a type in taxonomy, the notion of races in humans, or the "war" against evolution. In the context outside science, Yoon describes a shift in the umwelt and discusses the reason why nowadays the umwelt is plotting against a very needed reconnection with nature. Yoon finishes the book with hopeful thoughts on the science of naming: how and why it had to triumph over the umwelt. Among these pages she invites the reader to embrace classification and to reclaim their umwelt as a way to appreciate life. Given the current biodiversity crisis, by leaving appreciation and contemplation of life exclusively in the hands of scientists she argues that we are passively witnessing the loss of the work of evolution before our eyes.

It is during the final pages of the book that Yoon delivers the most important part of her message. However, in running the risk of spoiling what I am sure will be a gratifying reading, I think it is enough to say that this book blends the entertaining style of popular science

writing with a rigorous literature revision. For the most part, except for the fourth section where the argument seems to go back and forth many times against and in favor of science, the chapters are very well connected with the general argument of the book, which makes it a fast page-turner. Biologists from any field as well as nonbiologists will find it entertaining, with a witty and confident writing style, yet nonetheless bold. Although I acknowledge that the book is directed to a general audience and hardly anyone would disagree with Yoon in that somehow we have become disconnected from life, it is open to discussion whether or not it is science (or the progress of taxonomy) that is to be blamed for our indifference toward nature or of what help it would be to science if the general public embraced taxonomy as a new hobby. These were the only matters in which Yoon left me waiting for more; however, this discussion goes beyond the scope of the book.

As I finished *Naming Nature*, it became clear to me why someone would like to write about taxonomy, and why it is so imperative to do so now. During its long history, taxonomy has fought many battles, has gone from theory blind to theory laden, and has followed and fought the umwelt. Still, the current biodiversity crisis shows that we have forgotten the base of basics. Carol Yoon's *Naming Nature* reminds us of that, hoping that it is not too late.

REFERENCES

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