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Linnaeus: 'Systema Naturae' ('A General System of Nature')

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Reflections on the various works in the exhibit

Imprints and Impressions: Milestones in Human Progress

Highlights from the Rose Rare Book Collection, Sept. 29-Nov. 9, 2014

Roesch Library, University of Dayton

Carl Linnaeus

Systema Naturae (A General System of Nature)

- Leiden, 1735
- First edition

As of 2014, an astounding 1.9 million animal species have described and given scientific names. For plants, the number of named species is somewhere in the range of 400,000. This diversity, though impressive, may be only the beginning of detailing life on earth.

For instance, though we have named 1.9 million animals, estimates of the total diversity of animal species on earth range from around 5 million to 11 million. So, despite all our advances and best efforts, the scientific community has discovered and named perhaps less than a quarter.

On the surface, this paints an exciting picture for the future of Biological Science—until we consider the ongoing extinction crisis. By some estimates, 140,000 species per year are going extinct on earth, and the current extinction rate is 1,000 times higher than pre-modern times. Considering how little we actually know about the species present, what we have is a race to name species before they disappear.

This is a race that scientists are almost certainly losing; such a loss highlights the fact that the naming of species is a cardinal goal for science in the coming decades. This is a task that began in the 1700s by a vanguard of early biologists and their undeniable champion, Carl Von Linne, later referred to as Linnaeus, and his masterwork *Systema Naturae*.

Early efforts to name species emerged from some combination of curiosity about life and the religious concept of “learning the mind of the Creator by studying his Creation.” Whatever the motivation, the objective was daunting. In an era before electric lights, much less motor-powered boats, biological exploration was an intrepid endeavor that often involved facing various dangers while traveling to the far reaches of a wild planet. Even after new creatures were discovered, there was no systematic way to name and organize them. Although others were working on the issue at the time, Linnaeus is credited with “discovering” the naming system that ultimately has been used

to systematize the planet's diversity. The now familiar ranking system of kingdom, phylum, class, order, family, genus, species was popularized and solidified by the work of Linnaeus.

For biological scientists, developing this system ranks among the greatest scientific accomplishments. Beyond developing the system, Linnaeus was also responsible for placing a great many organisms into their place within the system by giving them names and their proper spot in the hierarchy. Indeed, a great number of the plant species found in North America have after their

name the letter "L," which signifies that Linnaeus himself looked at the first specimen, determined what it was and what species it was most closely related to, and gave it the name that defines it to this day.

Systema Naturae is a living document with many varied editions, as Linnaeus both developed the naming system and continued to fill it with actual specimens. It encapsulates a most grandiose venture: detailing and categorizing all life on the planet. The book is a true masterpiece.

—Ryan McEwan, PhD, Professor, Biology