

Debunking a long-held theory

"Every Living Thing: The Great and Deadly Race to Know All Life"

Jason Roberts
Random House, 2024

"Kingdom, Phylum, Class, Order, Family, Genus, Species": the famous taxonomy of all life, constructed by Carl Linnaeus. Outside the scientific world, most people still accept its basic structure, though acknowledging that it has been modified by the works of Darwin, Huxley, and Mendel (not to mention Watson, Wilson, and Crick). Jason Roberts' "Every Living Thing" presents a new perspective on the history of this taxonomy by adding another name to the list above: Georges-Louis Leclerc, Comte de Buffon, keeper of France's Jardin du Roi, mathematician, "celebrity savant," whose best-selling "Histoire Naturelle" contained reflections on natural history that Darwin acknowledged to be very like his own.

You have probably heard of Linnaeus. Have you heard of Buffon? Almost certainly not. Roberts explains why in this brilliantly researched double biography.

Buffon and Linnaeus, both born in 1707, wrote massive works of natural history which, often revised and updated, made them major rivals in their ambitions "to know all life." Their audience was huge, and the arguments over their theories were bitter, for the history of all life raised difficult questions. Linnaeus avoided many of these by believing that God had created all nature, and that individual species remained as he had created them; the challenge lay simply in recognizing them and placing them in categories.

Buffon, on the other hand, came to see that "species" depended on the ability to produce fertile offspring, thus freeing himself to understand extinction and, beyond that, the idea that over an expanse of time, species could change in response "to the climate in which they lived."

While he periodically faced charges of blasphemy for asserting that the "expanse of time" might be greater than the Creation story assumed, Buffon responded with revisions that surrounded such assertions with pious statements. But he left the assertions

themselves unchanged.

Roberts' book skillfully places the two men ("polar opposites") in the complex context of Enlightenment Europe's politics and society. Early chapters follow the quests of the two young savants, both from very modest families, for advancement—a process requiring perseverance, social connections and luck. Once established, they attracted followers who supported their theories by working in the great botanical gardens in Uppsala and Paris.

Linnaeus' followers were able to continue his work after his death from Alzheimer's disease; but the French Revolution destroyed the aristocratic patronage on which Buffon's eminence had depended. In 1790, an anti-aristocratic mob disinterred his corpse, making it necessary for many of his followers to de-emphasize their research or to shift their connections to those who sided with Linnaeus's *Systeme Naturelle*.

The results of the chaotic decade in which the shift occurred were two. First, the idea of fixed species definitively replaced Buffon's suggestion that species changed in response to their environment. Second, Linnaeus' 1758 division of *homo sapiens* into racial groups, in which white Europeans were "governed by laws" and Black Africans were governed only "by whim," took precedence over Buffon's insistence that since all specimens of *homo sapiens* could interbreed, their physical and intellectual differences were minimal. By 1800, Linnaeus' categorization had become a springboard for new works which divided *homo sapiens* into a hierarchy in which white Europeans (now called Caucasians) were superior to the "degraded" race of Black Africans. Such views attracted and supported powerful patrons who had fortunes to gain in colonialization and the slave trade.

There are less unfortunate reasons for the survival of Linnaeus' much-revised taxonomy; among others, that it provided a hierarchy.

But as the final chapters of Roberts' book point out, recent biological discoveries have evolved so far beyond Linnaeus' categories that biologists are considering abandoning his taxonomy entirely and returning to a complex network of species that Buffon, with patient observation and limited magnification, intuited a quarter of a millennium ago.



One-Minute Book Reviews

Laura Stevenson

