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The All-Species Inventory

BY JACK HITT

Experts estimate that there are around 100 million species in the world. What percentage of these flora and fauna have we named in the 250 years since Carl Linnaeus devised a classification system to complete Adam's task? Remarkably, only 2 or 3 percent. So two blue-sky thinkers in San Francisco - Kevin Kelly and Stewart Brand - recently came up with a solution to this problem: the All-Species Inventory. The goal is to identify and name every living thing, all in a single human generation.

This effort will be organized by the newly created All-Species Foundation, which has already raised $1 million for the project. What the moon shot did for technology, the All-Species Inventory hopes to do for ecology.

The process that gets us to that long list may well rewrite our basic ideas about our fellow passengers here in the Ark. For one thing, we might end up junking Linnaeus's system, which in modern form divides the natural world into categories like phylum, class, order, genus and species. According to the rules set out by his 1735 classic, "Systema Naturae," life forms are described by their visual characteristics and then boxed accordingly. The problem is that relationships among different-looking animals are harder to notice. The current dinosaur theory holds that they developed into birds after a couple hundred million years. Linneaus's system does not permit us to see that or express it. The All-Species Inventory plans to use a more up-to-date system, cladistics, that stresses evolutionary relationships rather than characteristics. Using a cladistic chart, it becomes apparent, for example, that the lungfish is more closely related to the cow than to other fish.

But there are many other innovations that would have to be developed quickly for the All-Species Inventory to meet its generational deadline - a globally accessible database; technologies for identifying life at the bottom of the Marianas Trench and the top of a rainforest canopy; fast DNA identification. (It's said that some of Charles Darwin's own collection still languishes on shelves in England awaiting names.) An all-species inventory would require that we figure out how to identify viruses and bacteria, which enjoyed a kind of biological anonymity in the previous century.

There are potential dangers to the inventory project, too. What if a pharmaceutical company leapt on the idea and started patenting all the new life forms the inventory identified? What if the warm and fuzzy notion of an all-species inventory suddenly became a laundry list over at the patent office?

Such questions would have to be fought over, which is the point of any idea this big. In the end, we would be rewarded with a more complex sense of the natural world around us. Or, if nothing else, we can prove or disprove J.B.S. Haldane's famous observation. At a time when it was first determined that roughly 20 percent of all the species on the planet are beetles - that's right, beetles - Haldane was asked by a skeptical member of the clergy if his long work in evolutionary biology had given him any interesting insights into the mind of God. Yes, Haldane replied. He has "an inordinate fondness for beetles."