

New paper reveals 100 new species of lichenized fungi

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In an unprecedented coming-out party, 100 newly discovered species are revealed to the world in a single scholarly paper coordinated by Field Museum scientists.

The 100 organisms are lichens, a type of [fungi](#) that form associations with [algae](#) and populate environments from arctic tundra to tropical rain forests. And the usual inattention bestowed upon new lichens is one reason for aggregating so many new ones in a single paper in the Feb. 18 issue of the journal *Phytotaxa*.

It is estimated that about 100,000 fungal [species](#), including 17,500 lichens, have been discovered and named, but there may be a million more species waiting to be noticed by science. Lumbsch and his Field colleague Robert Licking recruited 102 lichenologists from 37 countries to write the massive paper to help draw attention to huge shortfalls in our knowledge of the diverse life on Earth.

A massive collaboration such as the lichen project has some benefits over traditional biology that is done by individuals or small groups, Lumbsch said. Descriptions of the lichen species provided in the *Phytotaxa* article are more uniform than would likely be true if the 100 new species each appeared in a single article.

Deciding which characteristics of a lichen species to discuss has often been at the whim of individual biologists. Some fancied color while others were more intrigued by texture. As a result, some descriptions

from decades ago are difficult to compare with modern information.

"Molecular data show that some characteristics biologists once regarded as minor really carry more importance," Lumbsch said.

The lichen collaboration is intended to demonstrate to biologists that even though they join with a large group in presenting their findings, they still receive full credit and don't lose authority over their discovery, he said.

Another benefit from the lichen collaboration is that besides being in the scholarly paper, every newly found species got its own Web site, part of the [Encyclopedia of Life](#) project fostered by the Field Museum and several other institutions. That project seeks to build a public Web source for information on all known species.

"We wanted to show these scientists how easy it is to contribute their information to the Encyclopedia of Life and how useful that is," said Lumbsch.

While biology traditionally has been more solitary, many in the field acquired an appetite for larger collaborations with the project to map the human genome more than a decade ago. Since then, such collaborations have become more common, especially in projects that seek to coordinate understanding of life on the planet, Lumbsch said.

Recruiting biologists to join the lichen collaboration wasn't difficult, he said, but "sometimes getting them to pay attention to deadlines wasn't so easy."

The project, which took about a year to complete, would have been impossible without the Internet and e-mail, Lumbsch said, but even with e-mail communications were very time-consuming.

"I would like to do it again," he said. "But first I will talk to some information specialists to learn how we might facilitate communications so my e-mail inbox doesn't keep overflowing!"

Provided by Field Museum

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