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Skeletons in the Closet: Researcher Estimates Invalid Species Names

Many species have invalid names, creating havoc for those scientists who are in the business of classifying both fossils and current living things, as well as for others who rely on this information.

John Alroy, researcher at the National Center for Ecological Analysis and Synthesis at the University of California, Santa Barbara, delved into the topic in his paper presented at the Geological Society of America last week in Boston. Alroy said nearly a third of all names have been thrown out.

"I'm not counting the number of invalid species to date," said Alroy, "but rather I'm estimating the number of invalid species that haven't been caught yet. About one fifth of the names currently in use are likely to prove invalid."

The situation presents current and future problems as more and more species are at risk of extinction; their correct, valid names become a critical issue. "There is a broad scientific

consensus that a global mass extinction is now underway, and that this extinction eventually may rival the five most severe biodiversity crises in the history of multicellular life on Earth," said Alroy.

He explained that the number of species at risk of extinction remains uncertain because there are serious statistical barriers to estimating per-species extinction

rates and also the total number of living species.

Alroy said that the total number of living species were originally published as spanning three to 30 million, and only lately have been narrowed to five to 15 million.

Reasons for the uncertainty include uneven taxonomic coverage. This leads to poor knowledge of highly diverse taxonomic groups -- for example, terrestrial arthropods (including insects, crustaceans and spiders). Additionally, classification is uneven in certain regions such as tropical forests. There is also a lack of standardized sampling schemes, and there are statistical problems with methods for extrapolating counts of diversity.

Popular species like butterflies have an even higher rate of invalid names he said.

"We need another thousand years," said Alroy. "It's a very slow process to vet the names. Some people work 40 years on this."

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