

Researchers register new species using DNA-based description

January 25 2011



This is *Pseudomicrura afzelii*. Credit: Illustration: Helena Samuelsson / The Encyclopedia of the Swedish Flora and Fauna

The previously unknown species of ribbon worm discovered in Kosterhavet National Park in 2007 has now been scientifically named using a new method. *Pseudomicrura afzelii*, a form of nemertean or ribbon worm, has been described and registered by researchers at the University of Gothenburg, Sweden, using DNA technology.

"We've shown that it's possible to move away from the traditional, highly labour-intensive way of describing a new [species](#). Developments in [molecular biology](#) have made it possible to determine the [genetic code](#)

for selected parts of DNA both quickly and cheaply." So says Malin Strand who, together with Per Sundberg, had the non-traditional description of the new nemertean published in a scientific journal. They have also deposited a type specimen of the species at the Gothenburg Museum of Natural History together with a test tube containing the species' unique DNA. Thus the species has been given its valid formal name and can be counted as a Swedish species – and the two researchers have opened the door to new methods for determining species.

There are currently around 1.7 million known species of plant and animal, though the actual number is many times higher. To date, every new species has been described and named using the system introduced by Linnaeus in the 18th century, in other words on the basis of similarities of appearance. A species name is valid only once a detailed description of the species has been published and a type specimen has been deposited with a museum. This guarantees the link between the name and the species, and prevents the same name from being used for different species. An international committee keeps track of all valid species names.

"The description of the species is an extremely important part of the naming process. A species without a name just doesn't 'exist'. Without valid names for species, our perception of biological diversity is skewed."

However, this is a time-consuming process that in many cases involves expensive special techniques and specialist expertise. As a result, many new species are not described, but instead remain unprocessed.

Ribbon worms are an example of creatures that are traditionally described using anatomical characteristics, in other words how their internal organs such as intestines, blood vessels and brain are organised and what they look like. The recently published species description

means that the two Gothenburg researchers are paving the way for more new species to be registered by linking a species-specific DNA code to a name.

More information: The article A DNA-based description of a new nemertean (phylum Nemertea) species has been published in the scientific journal *Marine Biology Research*.

Provided by University of Gothenburg

Citation: Researchers register new species using DNA-based description (2011, January 25)
retrieved 25 April 2024 from

<https://phys.org/news/2011-01-register-species-dna-based-description.html>

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