

Plant DNA speaks English, identifies new species

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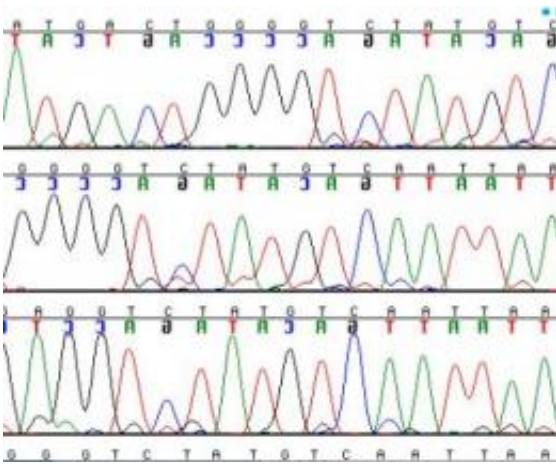
This is the type specimen of *Brunfelsia plowmaniana*. Like classical barcodes can be used for identifying documents or objects, the DNA barcode reveals the identity of an organism: *Brunfelsia plowmaniana*. The QR code leads to the Wikipedia entry for the new species. Credit: Susanne Renner

The important changes to the way scientists name new plants that took effect on 1 January 2012 included the fall of the so-called Latin requirement - a stipulation that descriptions or diagnoses of new species had to be in Latin.

The new rules make it possible to take full advantage of an ongoing revolution in how [botanists](#) and mycologists verify that a particular

species is indeed new to science: Many studies now routinely include the sequencing of short DNA regions that will amplify easily, even when the DNA comes from old [specimens](#).

Such "[barcoding](#)" [sequences](#) can be used to confirm a suspected new species as long as related species that already have a scientific name are also being sequenced for the same DNA stretch.



This image shows nucleotide differences in a short non-coding region of plastid DNA, such as typically used in plant barcoding. The lower two species are closely related and only differ in the A (Adenine) in position 2 from the left, while the top species is more distantly related and shows numerous differences. Credit: Susanne Renner

There is no standard Latin vocabulary for describing [DNA barcoding](#), yet in English, there is.

In an article in the open access journal *PhytoKeys*, botanists Natalia Filipowicz (Medical University of Gdańsk), Michael Nee (New York Botanical Garden), and Susanne Renner (University of Munich), now provide the first English-language diagnosis of a new species that relies

exclusively on DNA data.



This is a leaf of the related species *Brunfelsia unifolia*, whose DNA barcode differs from that of *Brunfelsia plowmaniana*. Credit: Susanne Renner

Their publication of a new species in the Solanaceae genus *Brunfelsia* also includes a traditional morphology-based description and pictures of the plant, but the researchers trust that "molecular diagnoses" will become a standard feature in future taxon descriptions.

The DNA sequences generated for the study have all been deposited in the public database [GenBank](https://www.ncbi.nlm.nih.gov/genbank/), enabling other researchers to make use of them.

More information: Filipowicz N, Nee MH, Renner SS (2012) Description and molecular diagnosis of a new species of *Brunfelsia* (Solanaceae) from the Bolivian and Argentinean Andes. *PhytoKeys* 10: 25-36. [doi: 10.3897/phytokeys.10.2558](https://doi.org/10.3897/phytokeys.10.2558)

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