

Two new species of orchid found in Cuba

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The mechanisms that explain the amazing variety of orchids are only now being discovered. This is a specimen of *Encyclia navarroi*. Credit: Angel Vale

Researchers from the University of Vigo, in collaboration with the Environmental Services Unit at the Alejandro de Humboldt National Park (Cuba), have discovered two new species of Caribbean orchid.

The Caribbean islands have been natural laboratories and a source of

inspiration for [biologists](#) for over two centuries now. Suffice to say that the studies by [Charles Darwin](#) and Alfred Russel Wallace in the tropical archipelagos contributed to the emergence of the [theory of evolution](#).

In this case, a Spanish research team from the University of Vigo has discovered two new [species](#) belonging to the orchid family (Orchidaceae: Laeliinae) in Cuba. They have been called *Tetramicra riparia* and *Encyclia navarroi*. The two plants were found in the eastern and western zones of the island respectively.

"The first species described, *Encyclia navarroi*, is an orchid with considerably large flowers. A year later we discovered the *Tetramicra riparia* species, with very small flowers. The latter is so named because it grows on the banks of stony streams in the mountains of Baracoa, one of the rainiest and least explored areas in Cuba", as Ángel Vale explained to SINC. Vale is a researcher at the University of Vigo and co-author of the studies published by the journals *Systematic Botany* and *Annales Botanici Fennici*.

Darwin was very much drawn to the orchid family, and used it to propose certain hypotheses about the importance of the relations between flowers and pollinators for biodiversity. Between 25,000 and 30,000 species of these plants are estimated to exist. However, the mechanisms that explain this amazing variety are only now being discovered.

"We could highlight their extraordinary capacity to interact with different types of pollinators. Contrary to most plants, many [orchids](#) do not produce nectar or other substances to compensate insects and birds that visit them", explained the researcher.

Orchids' deceit pollination

Despite this, floral visitors are attracted by orchids' colours and shapes, which enables the plants' sexual reproduction. This is known as deceit pollination.

The University of Vigo Plant Ecology and Evolution research team, which Vale belongs to, is studying the ecological and evolutionary consequences of deceit pollination in orchids that are endemic to the Greater Antilles: Cuba, Jamaica, Hispaniola and Puerto Rico. One of the mysteries they aim to solve is if the deceit orchids have a greater taxonomic and genetic diversity than other nectar-producing species.

Vale and his team are drawing up studies in the Antilles not only to reconstruct the evolutionary history of orchids but also to analyse the effect of pollinators in the reproduction of plants, and how this interaction has modelled the colourful aspect of these Caribbean flowers.

"Despite the fact that *T. riparia*'s flowers have a complete central petal, just like other species that make up a subgenre endemic to Cuba; the way they grow is very similar to a more widespread group that seems to have diverged on the neighbouring island of Hispaniola. Our work provides molecular evidence of the greater relationship of *T. riparia* with these species on the neighbouring island. This is in consonance with the geological history of the [Caribbean islands](#), according to which the eastern end of Cuba was in close contact with that land", pointed out Vale.

Scientists are currently trying to estimate how many millions of years ago this and other Caribbean species saw the light of day. This will enable them to test whether the ancestor of this species was already in Cuba, or if on the contrary, it evolved from an ancestor that colonised the island from neighbouring archipelagos.

"Just as with most orchids, which offer no compensation to their

pollinators, *Encyclia navarroi* and *Tetramicra riparia* receive very few visits from bees. This is one of the basic reasons that guarantee the survival of these plants, and also help protect the populations of their [pollinators](#)", explained the scientist.

More information: Ángel Vale, Danny Rojas, Yosvanis Acanda, Natividad L. Sánchez-Abad y Luis Navarro. "A New Species of Tetramicra (Orchidaceae: Laeliinae) from Baracoa, Eastern Cuba" Systematic Botany 37(4): 883-892, octubre-diciembre 2012. [DOI 10.1600/036364412X656491](https://doi.org/10.1600/036364412X656491)

Ángel Vale, Danny Rojas. "Encyclia navarroi (Orchidaceae), a new species from Cuba" Annales Botanici Fennici 49: 83 – 86, 26 de abril de 2012.

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