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LAST MINUTE

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Research in collaboration with the University of Oviedo sheds light on the formation of species

The study, published in the journal "Nature", contradicts the genomic theory of sympatric speciation (where there are no barriers to reproduce)



Gonzalo Machado Schiaffino.



TRADE
Gijón

Wednesday 28 October 2020, 17:20



Research in collaboration with the **University of Oviedo** has shed light on the process by which a variety or race can become a differentiated species in contexts in which there is no physical barrier that prevents the reproduction of its individuals with those of other varieties, a question that has intrigued evolutionary biologists since **Darwin**.

If a species is physically separated from the others, it is understood that differences accumulate and a new one arises, but why does this occur when there are no barriers? The conclusion of the study, published in the journal '**Nature**', is that this process occurs if the variety has a differentiating morphological character or trait in which many genes are involved. To date, this was assumed to be more likely in the case of few genes.



Crater lake of Nicaragua (Lake Apoyeque).

Los resultados contradicen, por tanto, la teoría genómica de la especiación simpátrica (donde no hay barreras físicas que impidan la reproducción). Los y los investigadores estudiaron un tipo de peces neotropicales de lagos formados en cráteres de ocho volcanes inactivos de Nicaragua, uno de los pocos casos reconocidos de especiación sin barreras.

El trabajo ha estado liderado por **Andreas Kautt** y **Axel Meyer**, de la **Universidad de Konstanz (Alemania)**, con la colaboración de **Gonzalo Machado Schiaffino**, del **Área de Genética del Departamento de Biología Funcional de la Universidad de Oviedo**.

Studying in great detail the genome of 453 individuals of different species and varieties of these fish, the research team found that those varieties that differ in a trait whose genetic basis is polygenic (that is, many genes involved encode to determine the trait, for example that the fish are elongated) can more easily promote rapid speciation in sympatry, compared to those varieties whose difference is due to a trait that is determined by one or a few genes (mono / oligogenic): examples: orange color; hypertrophic lips (very prominent).