



## **EMBARGOED PRESS RELEASE**



### **20 new gurgling and creaking frog species from Madagascar named**

15 DECEMBER 2022

Taxonomists are working against the clock to discover and catalogue new species before they disappear, to make it possible to protect our planet's remaining biodiversity. Major strides are needed to move towards completing the biological inventory on Earth. Now, a large international team has made a huge stride forward on the taxonomy of Madagascar's frogs, naming 20 new species at once. The article was published under open access in the journal *Megataxa*.

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The frogs belong to the genus *Mantidactylus* subgenus *Brygoomantis*, which contained just 14 species until now. These small, brown frogs are ubiquitous along streams in Madagascar's humid forests, but are inconspicuous to the eye. The males emit very subtle advertisement calls to attract females. '*The calls typically sound like a creaking door, or a gurgling stomach*' says lead author, Dr Mark D. Scherz, Curator of Herpetology at the Natural History Museum of Denmark, '*Finding, recording, and catching calling individuals of these frogs is a real challenge, but has proven critically important for the discovery and description of these many new species. That means a lot of time on hands and knees in the mud.*'

PRESS INQUIRY CONTACT:

**DR MARK D. SCHERZ**  
Natural History Museum Of Denmark  
University of Copenhagen  
Gothersgade 130  
1123 København K  
DENMARK

TEL +45 42 55 95 88  
EMAIL [MARK.SCHERZ@GMAIL.COM](mailto:MARK.SCHERZ@GMAIL.COM)

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[www.markscherz.com/brygoomantispress](http://www.markscherz.com/brygoomantispress)

The team has been building to this for a long time. '*This is the culmination of intensive fieldwork across Madagascar over more than 30 years*' says Dr Frank Glaw, Curator of Herpetology at the Zoologische Staatssammlung München, in Munich, Germany, '*Our dataset contains genetic data from over 1300 frogs, and measurements of several hundred specimens.*'

One key tool in the authors' arsenal was the use of cutting-edge 'museomics', where DNA is sequenced from old museum material. This is often difficult, because DNA degrades over time and due to various chemicals that are used to preserve animal specimens. But using an approach called 'DNA Barcode Fishing', the team were able to get useable DNA sequences from most of the relevant museum material. '*Museomics gave definitive identifications of sometimes very ambiguous-looking specimens,*' says senior author, Professor Miguel Vences of the Technische Universität Braunschweig, '*This gives us a level of confidence in our species descriptions that was not previously possible based on morphology alone.*'

Even this huge stride forward doesn't seem to be the last word on the subgenus *Brygoomantis*. '*There are still several *Brygoomantis* lineages that are probably separate species, but that we didn't have enough data or material for,*' says Dr

Andolalao Rakotoarison, co-chair of the Amphibian Specialist Group for Madagascar, ‘Even for those species for which we have names, we know almost nothing about their biology or ecology. We need a lot more field research on these frogs, and more specimens in museum collections, to really gain a good understanding of them.’

Citation: Scherz, M.D., Crottini, A., Hutter, C.R., Hildenbrand, A., Andreone, F., Fulgence, T.R., Köhler, G., Ndraintsoa, S.H., Ohler, A., Preick, M., Rakotoarison, A., Rancilhac, L., Raselimanana, A.P., Riemann, J.C., Rödel, M.-O., Rosa, G.M., Streicher, J.W., Vieites, D.R., Köhler, J., Hofreiter, M., Glaw, F. & Vences, M. (2022) An inordinate fondness for inconspicuous brown frogs: integration of phylogenomics, archival DNA analysis, morphology, and bioacoustics yields 24 new taxa in the subgenus *Brygoomantis* (genus *Mantidactylus*) from Madagascar. *Megataxa*. <https://doi.org/10.11646/megataxa.7.2.1>



Caption: There are now 35 species in the *Mantidactylus* subgenus *Brygoomantis*. Image credit: Scherz et al. 2022



Caption: *Mantidactylus betsileanus* is widespread in eastern Madagascar, but northern populations are now recognised as a distinct species, *M. jonasi*. Image credit: Miguel Vences and Frank Glaw

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Caption: *Mantidactylus jonasi* is one of the 20 new species described by Scherz and colleagues. It is widespread in northern Madagascar. Image credit: Mark D. Scherz



Caption: *Mantidactylus augustini* is one of the 20 new species described by Scherz and colleagues. It occurs in northeastern Madagascar. Image credit: Miguel Vences

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