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Islands in the sky : species diversity, evolutionary history, and patterns of endemism of the Pantepui Herpetofauna

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STELLINGEN

Behorende bij het proefschrift
*Islands in the Sky: Species Diversity, Evolutionary History,
and Patterns of Endemism of the Pantepui Herpetofauna*

door **Philippe Jacques Robert Kok**

1. Contrary to common belief, many extant species or populations from individual tepui summits were only recently isolated (Holocene/Pleistocene), including in genera that diverged from their known sister group in the Eocene (*this thesis*).
2. Isolation of individual tepuis most likely does not date back to the Cretaceous (*contra* Salerno *et al.* 2012), and likely did not occur before the Eocene, and not at the same pace for all tepuis (*this thesis*).
3. Endemism in Pantepui *sensu lato* most probably results from “non-stochastic” processes such as vicariance caused by geological and climatologic events (*this thesis*).
4. The antagonism between vicarianists and dispersalists is no longer legitimate because multiple nonexclusive processes implying vicariance and dispersal apparently shaped the Pantepui biodiversity (*this thesis*).
5. At the species level, faunal biodiversity and endemism on tepui summits are not “astonishing” (*contra* Rull 2009), but Pantepui could have been an ancient cradle of diversity for the surrounding lowlands (*this thesis*).
6. Morphology alone can sometimes be strongly misleading to distinguish among species in amphibians and reptiles, therefore, whenever possible, any morphological study should be performed in a molecular phylogenetic context.
7. Amphibians are ideal models to study genetic adaptation to highland habitat since they need adaptation to thermic, hypoxic, and oxidative stress both in larval and adult stages.
8. Species as we intuitively understand them are freezed frames in time. We ignore when they begin and when they end, but they are nevertheless recognized by humans since time immemorial, and are necessary components of cladogenesis.
9. Scientists always look for a pattern in observations or experimental data, a story, which sometimes confers to the quest of some sort of design. We should finally realize that there is not always a pattern and that our human brains can find patterns and stories in everything.
10. The discovery of the existence of God, or extraterrestrial life, is not worth to be published in high impact factor journals such as Science since this will only confirm widely spread believes.