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## **Phylogenetic structuration along an altitudinal gradient in Papua New Guinea (Hemiptera; Fulgoromorpha)**

**Maxime LE CESNE, Adeline SOULIER-PERKINS**

Muséum National d'Histoire Naturelle, Institut de Systématique, Evolution, Biodiversité (ISYEB), UMR 7205  
MNHN-CNRS-UPMC-EPHE, Sorbonne université, CP 50, 57 rue Cuvier, 75005 Paris, France

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A first approach on how the communities of Auchenorrhyncha were structured was conducted by Dem (2011). Those first results were confirmed by Le Cesne (2013). The modification of the communities compositions, along the Mount Wilhelm's slopes, were observed. The involvement of biotic and abiotic factors was highlighted in order to explain the compositions changes along this altitudinal gradient.

From those preliminary observations, we would like to understand how throughout time the phylogenetic structuration of those hemipteran communities took shape and which factors were involved. Two main hypotheses can be advanced. 1) The diversification of the studied group is constrained by some environmental factors which limit its dispersion. It is then expected to see on the phylogeny, that taxa from the same altitude are more closely related to each other than they are to taxa found on different altitudes. 2) The interspecific competition is driving the evolution of the group, we can then expect that taxa, collected on the same altitude, will be scattered across the phylogeny.

Using molecular data, a phylogeny, for three fulgoromorphan families present on Mount Wilhelm, was built in order to test those hypotheses. If for the Achilidae nothing can be said since the number of specimens collected was not big enough, we can notice that the Cixiidae diversification was constrain by environmental factors while the interspecies competition was at the origin of the actual community structure of the Derbidae.