

## **Placing the cranial morphology of a rare endemic colobine, *Presbytis natunae*, within the phylogenetic context of its genus.**

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The attributes that make SE Asian leaf monkeys appealing and informative subjects for evolutionary biologists also make them challenging to study. Because they inhabit major landmasses as well as scores of smaller islands, their biogeography is complex and mutable over geologically short time scales. Among these taxa, colobines of the genus *Presbytis* are no exception. This study investigates cranial shape and allometry in the Natuna Island leaf monkey, *Presbytis natunae*, compared to related species of *Presbytis*: *P. melalophos* and *P. femoralis*. Sumatran *Presbytis melalophos* forms the primary reference sample, and *P. femoralis* is included for additional context. Cranial metrics, including 3D landmark coordinates, were collected from museum specimens. A variety of morphometric analyses were performed to address two hypotheses: that (1) the insular species exhibits a derived cranial shape associated with its isolation and body size reduction, and (2) the various species of *Presbytis* are identifiable based on cranial form.

It was found that the major shape differences distinguishing the Natuna monkey from *P. melalophos* are unlikely to be related to its isolation and dwarfing, because *P. natunae* shares these shape characters with *P. femoralis*. Nonetheless, cranial size and shape analysis of these samples supports the hypothesis that species variants within *Presbytis* are morphometrically distinguishable, whereas skin and pelage characters currently define genus systematics. Although the success of cranial morphometrics as a tool for systematics and phylogenetic inference has proven to be limited among papionins and African colobines, this study suggests that its potential in Asian colobines warrants continued exploration.

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