Analysis of the parietal anatomy of Old World monkeys

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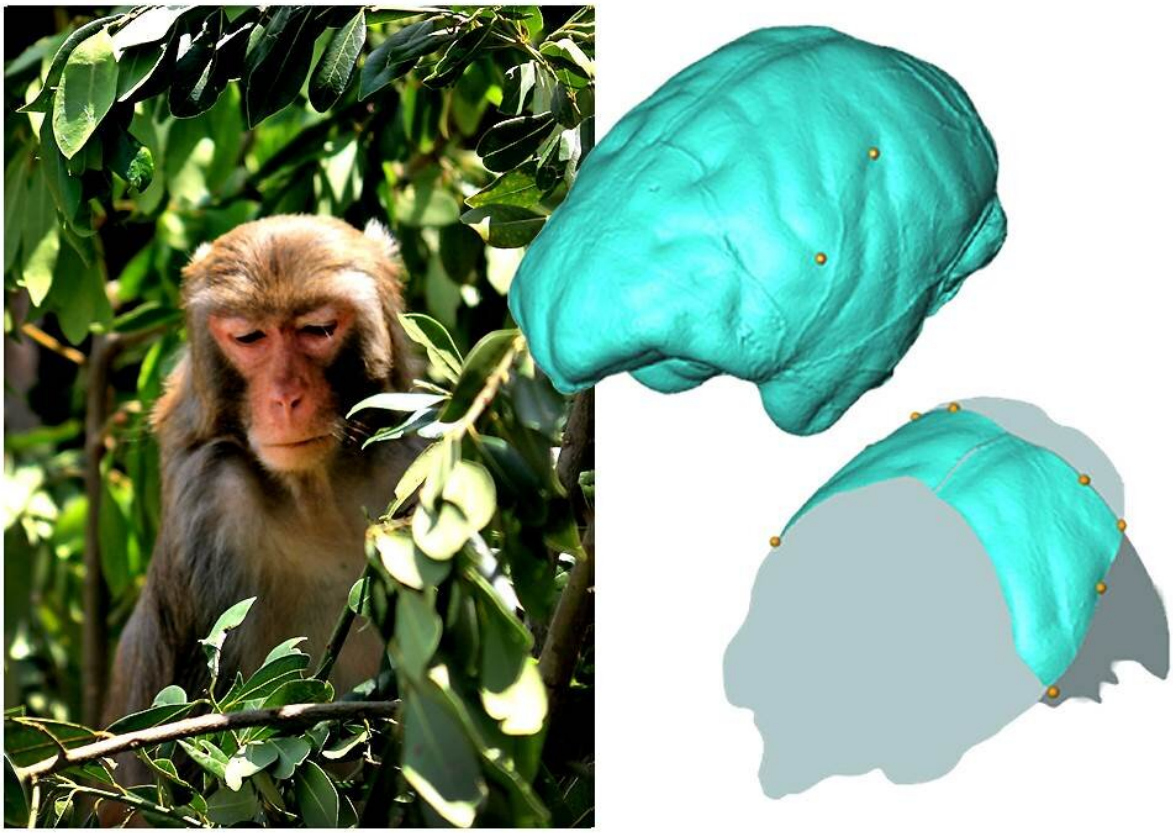

Macaca mulatta. Credit: Spartaco Gippoli

The Paleoneurology group at the CENIEH, coordinated by Emiliano Bruner, has just published a paper in the journal *American Journal of Primatology* on the variations and differences in the parietal lobes of

different species of cercopithecids, known as the Old World monkeys.

The results of this study, in which the University of Witwatersrand (South Africa) also collaborated, distinguish two groups: One with large occipital lobes and small parietal lobes (cercopithecins), and another with large parietal lobes and small occipital lobes (colobines and baboons).

The occipital lobes are particularly involved in decoding visual signals. The researchers suppose that these anatomical differences are associated with differences in behavior and cognitive abilities, probably arising from differences in dietary habits and locomotor patterns in these species.

"We have applied geometric methods of form analysis and surface analysis to the parietal lobes in 11 genera of African and Asian monkeys; then, so we could extrapolate the conclusions to the fossil record and extinct species, we used endocranial casts," explains Ana Sofia Pereira-Pedro, lead author of the study.

Body and environment

The parietal lobes of the brain are crucial to the relationship between body and environment, and they play a fundamental role at the level of the ecological and cognitive abilities of a species. Given their importance in the complexity of behavior and ecology, they are particularly developed in the primates, and specifically in modern humans. Even so, information about their anatomical variations continues to be very limited.

More information: Ana Sofia Pereira-Pedro et al. Parietal lobe variation in cercopithecid endocasts, *American Journal of Primatology* (2019). DOI: 10.1002/ajp.23025

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