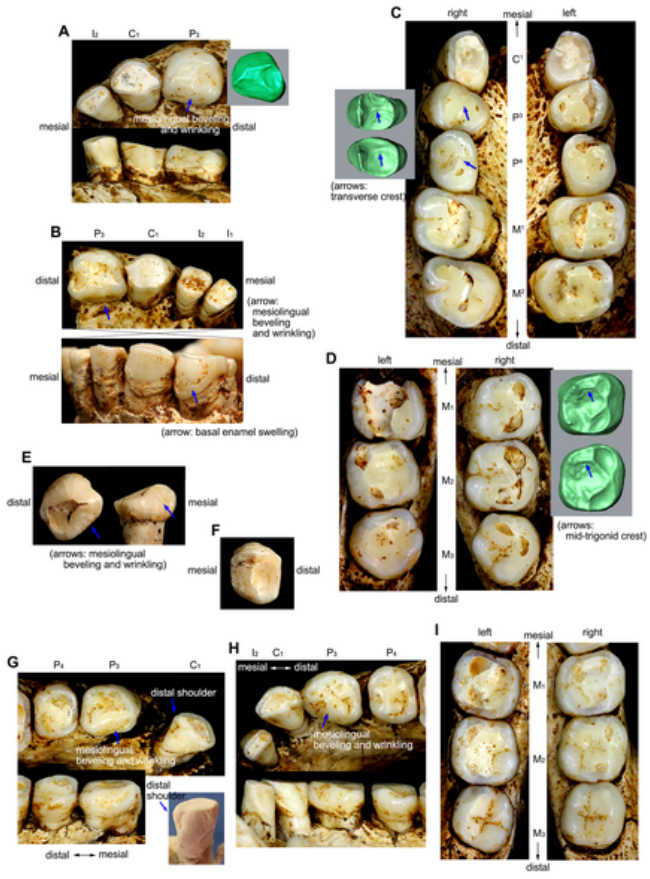
Dental analysis suggests Homo floresiensis was a separate species from modern man

20 November 2015, by Bob Yirka



Teeth of Homo floresiensis. Credit: *PLOS ONE* (2015). DOI: 10.1371/journal.pone.0141614

(Phys.org)—A team of researchers affiliated with the National Museum of Nature and Science in Japan, The University of Wollongong in Australia and The National Research and Development Centre for Archaeology, in Indonesia, has performed the first comprehensive analysis of the teeth from the skeletal remains of several of the creatures found on the Indonesian Island of Flores starting back in 2003—they are reporting that their examination has revealed that the creatures were indeed members of a separate species from modern humans, not modern humans with microcephaly. In their paper uploaded to the open access site *PLoS ONE*, the team describes their analysis and what they found that led them to their conclusions.

The child-sized skeletal human-looking fossils found on Flores began to be referred to as the remains of a Hobbit when it was discovered that they belonged to fully grown human-like creatures. Standing at just 0.9 meters when alive, the hobbits would have been considerably smaller than modern humans, or even other human cousins that have since gone extinct. Researchers have found the remains of nine of the skeletons, the bones of which have been found to be approximately 18,000 years old—together the discovery has caused much debate about whether the creatures were a species separate from modern humans, or if they were modern human that had simply suffered from microcephaly—a condition that leads a person to have a small body and head, and also some degree of retardation. To help settle the debate the researchers with this new effort undertook a serious examination and analysis of the creatures' teeth.

In all, the researchers looked at 40 teeth—their analysis consisted mainly in comparing and contrasting them with teeth from 490 modern humans from across the globe and with teeth from extinct human cousins. Their efforts reveled that the teeth were similar in size to those of modern humans who were short in stature, but other features were quite dissimilar—some of the traits were similar to those found in other early hominins, while others were similar to those seen in more advanced hominins. Because of the dissimilarities with modern humans, the researchers reject the notion that the teeth belonged to modern humans and instead suggest they more likely belonged to a species that had derived from *Homo erectus*—they likely became smaller due to living with limited resources on an island, aka, the island effect.

More information: Yousuke Kaifu et al. Unique Dental Morphology of Homo floresiensis and Its Evolutionary Implications, *PLOS ONE* (2015). DOI: 10.1371/journal.pone.0141614

Abstract
Homo floresiensis is an extinct, diminutive hominin species discovered in the Late Pleistocene deposits of Liang Bua cave, Flores, eastern Indonesia. The nature and evolutionary origins of H. floresiensis' unique physical characters have been intensively debated. Based on extensive comparisons using linear metric analyses, crown contour analyses, and other trait-by-trait morphological comparisons, we report here that the dental remains from multiple individuals indicate that H. floresiensis had primitive canine-premolar and advanced molar morphologies, a combination of dental traits unknown in any other hominin species. The primitive aspects are comparable to H. erectus from the Early Pleistocene, whereas some of the molar morphologies are more progressive even compared to those of modern humans. This evidence contradicts the earlier claim of an entirely modern human-like dental morphology of H. floresiensis, while at the same time does not support the hypothesis that H. floresiensis originated from a much older H. habilis or Australopithecus-like small-brained hominin species currently unknown in the Asian fossil record. These results are however consistent with the alternative hypothesis that H. floresiensis derived from an earlier Asian Homo erectus population and experienced substantial body and brain size dwarfism in an isolated insular setting. The dentition of H. floresiensis is not a simple, scaled-down version of earlier hominins.

APA citation: Dental analysis suggests Homo floresiensis was a separate species from modern man (2015, November 20) retrieved 14 April 2021 from https://phys.org/news/2015-11-dental-analysis-homo-floresiensis-species.html