

THE
FOSSIL
WEEK

ABSTRACT BOOK

5TH INTERNATIONAL
PALAEOONTOLOGICAL
CONGRESS

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S1 - Ancient ecosystems trapped in amber

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The age and paleobiota of Ethiopian amber revisited

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Fossiliferous amber from Ethiopia was reported a decade ago and was considered to be early Late Cretaceous in age (Cenomanian, ca. 93–95 Ma) based on initial assignment of palynomorphs and physicochemical properties of the amber. This assumed Cretaceous age has recently been questioned, given subsequent discovery of extant genera among the arthropod inclusions, and identification of erroneously determined palynomorphs. An investigation of additional amber material and associated sediments is presented here, which provides compelling evidence that the material is much younger in age, datable to the Cenozoic, Early Miocene (16–23 Ma). Palynomorphs from the samples have yielded large numbers of typically long ranging Cenozoic pollen, some of which are known within nearby basins in South Sudan to be particularly common in terms of a climate controlled regional plexus of abundance in the Early Miocene. The newly-studied insect fossils mostly belong to extant families and genera. A particular reference to ants is made here with the report of 60 individuals mostly assignable to extant genera of Dolichoderinae (e.g., *Ravavy*, *Technomyrmex*), Myrmicinae (e.g., *Carebara*, *Melissotarsus*, *Monomorium*, *Rhopalomastix*), Ponerinae (e.g., *Cryptopone*, *Hypoponera*), and Pseudomyrmecinae (e.g., *Tetraoponera*), but also some undetermined, possibly extinct genera. Chemical analysis indicates that Ethiopian amber belongs to the Class Ic ambers that were mostly produced by the Fabaceae (Legume family of flowering plants). The resin producer may have been allied to the genus *Hymenaea* that is well known in the prolific East African Zanzibar copal trade, and other Neotropical ambers. It is noteworthy that one of the more common pollen types recovered from the amber-containing sediments, the genus *Striatricolpites* (= *Striatopollis*) plus much rarer *Margocolporites* spp., come from within the order Fabales, that includes the Fabaceae family. Although much younger than previously estimated, Ethiopian amber remains of great interest as fossil insects are exceedingly rare in Africa, and the Miocene age permits comparison to coeval worldwide ambers of similar fabaceous origin such as Dominican, Mexican, and Peruvian amber.

* Speaker