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New Cretaceous records and the diversification of crown-group ants (Hymenoptera: Formicidae)

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The knowledge on Cretaceous ants has significantly improved within the last decade, thanks to increasing discoveries from insect-rich amber deposits. Yet, the vast majority of fossils found preserved in Cretaceous deposits belongs to extinct, stem-group ants such as the Sphecomyrminae and Brownimeciinae. To date, only nine species in eight genera have been attributed to crown-group ants. Among these, however, *Burmomyrma rossi* Dlussky, 1996 should be excluded from Formicidae and transferred to Falsiformicidae (Chrysidoidea). Also, the placement of three species from Campanian Canadian amber is still debatable: *Canapone dentata* Dlussky, 1999, originally placed in Ponerinae and later transferred to Ectatomminae; *Eotapinoma macalpini* Dlussky, 1999 in Dolichoderinae; and *Cananeuretus occidentalis* Engel & Grimaldi, 2005 in Aneuretinae. The three species were each based on a unique specimen that was only partial or partly visible, two of which have been lost, and their precise affinity remains enigmatic. Similarly, imprint fossils from the Turonian of Botswana, that were tentatively placed in Ponerinae (*Afropone oculata* and *A. orapa* Dlussky, Brothers & Rasnitsyn, 2004) and Myrmicinae (*Afromyrma petrosa* Dlussky, Brothers & Rasnitsyn, 2004), were based on poorly preserved specimens and assignment to these subfamilies has been questioned. Finally, only two of the nine described species are definitely assignable to extant subfamilies: *Kyromyrma neffi* Grimaldi & Agosti, 2000, a Formicinae from Turonian Raritan amber; and *Chronomyrmex medicinehatensis* McKellar, Glasier & Engel, 2013, a Dolichoderinae from Canadian amber. Here I present six new morphotypes from Burmese amber that are assignable to crown ants: a Ponerinae, a Formicinae, and a Dolichoderinae in early Cenomanian amber from Northern Myanmar ('Kachin amber'); and a Ponerine and two Dolichoderinae in late Campanian amber from Central Myanmar ('Tilin amber'). These records greatly expand the known diversity of Cretaceous crown ants, and shed a new light on the origin and early diversification of extant ant subfamilies prior to their great Cenozoic expansion.