

## **A gigantic marine ostracod trapped in mid-Cretaceous amber of Myanmar (Burmite)**

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The Burmese amber (or 'Burmite', ~99 Ma, Myanmar), widely known for exquisite preservation of a mid-Cretaceous terrestrial faunas including dinosaur remains and birds, also yields marine macro- and microfossils which can provide important contextual information on paleoenvironment and amber formation.

Our first finding of a valve of a 'gigantic' (12.9 mm) marine ostracod in a specimen of Burmese amber effectively doubles the age of the ostracod amber record, but also offers the first representative of the Subclass Myodocopa (Ordovician to recent) in amber, an exclusively marine and weakly calcified group with a poor fossil record (Xing et al., 2018). However, lacking soft parts and the complementary right carapace valve combined with a broader range of carapace features and examples of morphological stasis, restrict our inferences at lower taxonomic level.

The amber that constitutes our specimen was produced under two distinct sets of conditions. Subsequent resin flows in the amber specimen contain terrestrial arthropods (spider fragments) and insect frass. The 'marine' resin flow that contains the ostracod is relatively clear and is separated by a prominent drying line from a secondary 'terrestrial' resin flow that contains multiple, dark, organic particles of insect frass, as well as the fragmentary remains of spiders. These features resolve an enigmatic taphonomic pathway which seems to be much less elaborate than scenarios for inclusion of aquatic (freshwater mostly) organisms in amber proposed before and support a marginal marine setting for resin production. The resin was probably released underwater or at the water's edge, encapsulating the ostracod, then the resin mass dried subaerially for a significant length of time before a subsequent resin flow captured a range of terrestrial inclusions. This combination of marine and terrestrial resin flows may have been brought about by variation in water levels. While many sites of the mid-Cretaceous Burmese amber exhibit marine influences (marine fossil content), full paleoenvironmental and geological details for the numerous amber-producing sites in the Kachin state of Myanmar have yet to be reported.

In addition to its significance of the Burmese amber deposits as important archive for mid-Cretaceous terrestrial life and biodiversity, our find emphasizes the significance and further potential of these deposits as archive for contemporaneous marginal marine life and biodiversity.

### Reference:

Xing, L., Sames, B., McKellar, R., Xi, D., Bai, M., Wan, X. (2018): A gigantic marine ostracod (Crustacea: Myodocopa) trapped in mid-Cretaceous Burmese amber. *Scientific Reports* 8: 1365. <https://www.nature.com/articles/s41598-018-19877-y> (Open Access)