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HYMENOPTEROUS INSECTS IN THE BEMBRIDGE MARLS (LOWERMOST OLIGOCENE, S. ENGLAND) AND IN SOME OTHER FOSSIL SITES

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The order Vespida is abundant in the Bembridge Marls insect assemblage being second only to the dipterans. The study under the INTAS Project # 03-4367 just completed by a team of students has revealed 1460 hymenopteran fossils and recorded 20 families, 78 genera and 11 species, with 51 species, 13 genera, 2 tribes and 2 subfamilies described as new. Most abundant are ant fossils (84%) followed by the braconid (5%) and ichneumonid wasps (2%). Bembridge Marls fossil site is unique in its preservation features being a kind of “opaque amber”, a rare case of rock deposits yielding perfectly three-dimensional fossils, apparently due to unusually rapid lithification of the medium around the insect corps. In respect to hymenopterans, the assemblage is unique in the overwhelming abundance of weaver ants *Oecophylla* (some two third of all ants). Additionally, the assemblage looks paradoxically because of combination of high thermophilous, mainly tropical insects like the above *Oecophylla* ants, Polybiini wasps, or the fig pollinating wasps Agaonidae, and the characteristically temperate forms, e.g., *Leucotaphus gurnetensis* ant which is most probably a species of *Lasius*. This contradiction known as Wheeler’s dilemma is indicative of the extinct equable (non-seasonal) climate characteristic primarily of the Eocene and thus apparently extending somewhat into the Oligocene. Bembridge hymenopterans are much more similar to those in the Lower Eocene Baltic amber than in the Florissant beds reportedly of the latest Eocene age. This implies the Bembridge Marls to be older than Florissant beds and so casts doubts on the dating of one or another of these two fossil sites.