Marine fossils in amber support the Flood Log-Mat Model

Michael J. Oard

Amber has been used as a gemstone since early man first occupied Europe.[1] Amber is a hard, brittle fossil resin, found in sedimentary rocks, that is derived mostly from coniferous trees. It is usually yellowish to brownish and translucent or transparent, and it sometimes encloses insects and other organisms. Large quantities of amber can occur in some areas, such as 82,000 kg mined from a deposit in Myanmar (Burma) between 1898 and 1940.[2]

Several new amber sites and much new study of amber has occurred during the past decade.[3] However, the trapping of organisms in amber is rather unusual and rarer than most scientists are aware, although most of the studies focus only on the insects and not the process. The lack of organisms in most amber is considered a mystery by some researchers.[4]

The origin of amber is generally unknown.[5] It is commonly found in marine sedimentary rocks: "All known amber-bearing beds are or have been associated with marine deposits, indicating an inundation with salt water at some time in their past."[6]

Amber is also found in lignite, a low-grade coal, and probably requires a low amount of heat and overburden pressure to transform the resin into amber.[7] "The major processes that affect amber-bearing deposits during diagenesis are overburden pressure and elevated temperature."[8] Therefore, amber likely forms similar to coal, the origin of which is also poorly known.[7]

Amber and other fossilized tree resins are now known from hundreds of sites ranging from Upper Paleozoic to recent in the uniformitarian dating scheme.[9] Practically all of the amber is located from the Cretaceous to the Miocene of the late Tertiary.[4] A wide range of small organisms have been found in amber, such as flowers,[10] a crab[11] and a mole cricket that burrows into the ground.[12]

Much amber, including Baltic amber found along the shores of the Baltic Sea, has been re-eroded.[13] Amber from Alberta likely was re-eroded and deposited 600 km away in Manitoba.[14] Amber from such sites is commonly rounded.[15]

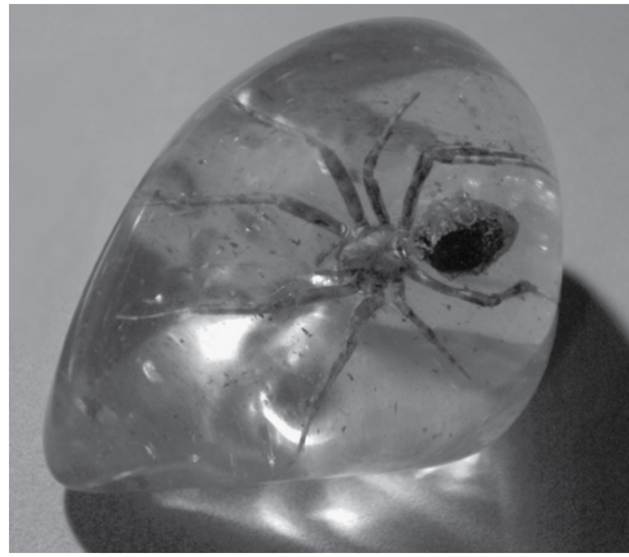
Photo by Elisabeth <www.flickr.com/photos/13521837@N00>

Figure 1. Spider in a piece of amber. Amber is sometimes reworked and rounded after deposition.

Even marine organisms in amber

One would expect only terrestrial organisms that lived in trees, and not aquatic organisms, to be found in amber:

> "To find aquatic organisms in tree resin may seem to be highly unlikely, but the fossil record provides numerous amber-preserved limnetic arthropods (e.g., water beetles, water striders, and crustaceans) and microorganisms (e.g., bacteria, algae, ciliates, testate amoebae, and rotifers)."[16]

However, a fair number of aquatic organisms, as well as organisms that lived in the soil, have been discovered in amber;[17] for instance, larvae of mayflies, caddisflies, and stoneflies.[18] Schmidt and Dilcher state:

> "Finds of obligate aquatic larvae of dipterans and caddisflies, which pupate and emerge exclusively under water, and finds of larvae of mayflies and water bugs, which usually never leave the water, cannot be explained by these theories …"[18]

Such observations are difficult to explain and usually involve some type of hypothesis in which amber falls or oozes to the ground or drops into water bodies from trees, for which there is some evidence from the swamps of Florida.[19] But of course one "fly in the ointment" is that the resin needs to be exposed to air in order to solidify.

Even more surprising is the discovery of marine organisms in amber. Poinar noted almost 20 years ago the curious observation of a certain water strider in Baltic amber whose modern representatives "normally live on the surface of the ocean, often far from land."[20] Recently, a marine crustacean was found in amber. It was discovered at more than one location, which was a surprise:

> "Finally, although the inclusion of such distinctively marine forms like tanaidaceans [a crustacean] within amber is unusual, even unexpected, it is apparently not unique. R.-P. Carriol (personal commun. 2004) mentioned that he is working at [*sic*] a description of tanaidaceans in amber from the Albian-Cenomanian of France, and these are apparently unrelated to our Spanish material."[21]

Diverse marine diatoms, radiolarians, sponge spicules, foraminifera, and a spine of a larval echinoderm have been found in amber from southwest France.[22,23] Shark teeth are also found in the sedimentary rocks that contain the amber. Such observations are considered highly unlikely: "The presence of marine organisms in tree resin, however, seems highly unlikely…"[24] The explanation offered is that resin-producing trees at the beach received marine microorganisms blown into the resin by the wind.

Explained by log-mat model during the Flood

Given the observations that amber is often found in marine sedimentary rocks, the unknown origin of amber, and the freshwater, marine, and fossorial (those that live in the ground) organisms in amber, maybe it is about time to rethink its origin. The association with low grade coal is another hint that the creationists' log-mat model may also explain amber, since the model provides an explanation for coal.[25–27] It is interesting that in a schematic for the formation of amber, one step is tree resin falling into sediments from a floating log.[28]

One can easily envision billions of logs floating on the floodwaters after being uprooted in the initial Flood catastrophe. Many organisms would end up taking refuge on the logs, even those organisms from freshwater, marine, and fossorial environments. The floating logs would be a unique ecosystem. Resin given off by the trees would sometimes trap organisms. Tree resin, plant debris, and even vertical trees would sink onto the freshly-laid Flood sediments and become buried rapidly. Heat and pressure would later transform the resin and plant debris into amber and coal, respectively. Thus, amber, coal and polystrate trees[29] would end up in sedimentary rocks. The log-mat model can also explain delicate insect fossils, since insects would float on the log-mat and often fall into the water and end up buried in the sediments.

Although insects can be trapped in resin today, the conditions for forming amber would be unlikely or rare after the Flood, since heat and lithostatic pressure from burial seem to be required for the formation of amber. Therefore, the occurrence of amber can be used as another of the many indicators[30] supporting a Flood/post-Flood boundary in the late Cenozoic, since amber is commonly found in sediments throughout the Cenozoic.

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