



## Amber The Mystery Stone

**Amber's** rock-hard consistency doesn't quite fit with the deep transparent yellow characteristic. The fact that it often contains the remains of ancient bugs adds another challenge to classification. Is this animal, vegetable or mineral? Is it a fossil or does it simply contain fossils? Many debates continue to rage over the classification of this beautiful, ancient gift of nature, but for us amateurs who love the natural clarity and beauty, just understanding a bit about how it came to be does not warrant all the controversy. Suffice it to say, we just want to know a little about what it is and how it came to be.



### What is Amber? And How Did It Get Here?

Amber is neither a crystal nor a mineral. It is the hardened sap of an ancient tree. It started out as resin secreted to heal a wound. The resin protected the tree from a certain death by making a sticky, protective barrier against fungus. When the tree eventually fell and began to decay, the sap remained. Buried under layers of vegetation, earth and, sometimes, water, the sap continued to harden from the pressure and heat that naturally builds up in such conditions. This fossilized resin is the final product of millions of years of slow processing.

### Picture this scenario:

A fly lands on a tree branch in an area that is now the Baltic sea. While looking for food it steps in sticky sap that the tree has made to protect itself from fungal infection. As the fly struggles to escape it becomes more and more entombed in the sap until it is completely engulfed and suffocates. The tree eventually dies and falls into the swampy water from which it grew. Over the course of millions of years the tree along with countless others becomes a coal deposit and the sap with our fly inside is polymerized and hardened into amber. As more time passes the coal bed is submerged as the sea level rises. Eventually the currents uncover the coal bed, slowly eating into the Surface, little by little. When the erosion reaches the amber it floats to the surface because it is lighter than the salty water. It is then washed ashore where it can be found.

### In Glass Houses

Being a sticky sap in its beginnings, fossil resins often contains the remnants of both plant and animal parts. If you're lucky, you may find a perfectly preserved specimen. Such specimens have allowed scientists to determine that amber is produced by both conifers and deciduous trees.

**Don't Rush Me** Like other minerals and rocks, this fossil is the end result in a slow process that creates other fossil forms. If the secretions are very young or undeveloped, they may simply be a hardened resin; Copal is the next stage of development. Copal may be large and may also have remnants of insects or small sea animals present. But copal is not usually as clear as true amber and may be treated to help cure some of these imperfections.

### Uses

It has long been used for jewelry because of its natural beauty. As far back as the ancient Greeks, it has been written of, many times referencing claims to promote good health or ward off evil spirits. Today, this stone continues to be prized for jewelry and it is used in the construction of smoking devices as well.

For a collector, it is important to find a reputable dealer who can carefully help you see the difference between true amber, copal and even plastic imitations.

## Amber's Geographic Dispersion

Amber comes from throughout the world, even the Arctic. However, in terms of commercial availability, the Baltic area of Europe produces vast amounts, followed by the Dominican Republic in a distant second, with minor amounts coming from Central and South America, and more specifically, Mexico and Colombia, respectively. Amber from other localities is miniscule.

### **Baltic Amber**

An enormous amount of fossil resin is extracted on the shoreline of the Baltic Sea, and these strata are dated to be Eocene in age, give or take a few million years, thus making it some of the oldest amber that is available in commercial quantity. The largest Baltic amber mine is in Kaliningrad, Russia, but Baltic amber is also found in Lithuania, Latvia, Estonia, Poland, Russia, and sometimes washes ashore far away in Denmark, Norway, and England. Fossil inclusions are relatively rare, almost always in isolation and usually tiny, and the amber is normally occluded with botanical debris and bubbles; for this reason, fossil specimens are best made viewable in pieces cut to small size prior to polishing, and pictures many times require a trinocular microscope.

### **Dominican Amber**

Geological data for amber from sedimentary deposits in the Dominican Republic predict an age dating to the Oligocene, in the range of 20 to 30 million years old, presuming the resin is a primary *in situ* deposit, and not a secondary deposit by transport/erosion etc.

Dominican amber from Cotui, however, is Pliocene or Pleistocene, has larger and more insects, and is otherwise indistinguishable from older material from the dated sedimentary deposits. Since resin-producing trees are still abundant in this tropical island area, resins of any age are possible. The older fossil resins are from deep mines in the hillsides, and the extraction can be a dangerous proposition, with risk of being buried in a cave in. The insect inclusions in Dominican amber are fairly abundant, the insects larger, and the amber of higher clarity than found in Baltic amber. Though uncommon, fossil associations are found more frequently in Dominican amber.

### **Colombian Amber**

Far and away the most fossiliferous amber originates in Colombia, albeit it has become fairly widespread that all fossil resin from Colombia is called copal. The amber versus copal distinction is lost on many geologists and paleontologists that are aware that scientific data is unavailable to determine the age of fossil resins from this region. The consensus age estimate seems to be Pleistocene (up to 2 million years old), but estimates range to the Lower Miocene (about 20 million years old). Though geological studies are unlikely soon in this region that is controlled by drug cartels, it seems safe conjecture that there is a large range of age across different deposits, similar to that of the Dominican Republic. In the Dominican Republic, mine cave-ins are a danger for some of the older deposits; in Colombia the danger might be AK47's of the drug producers. Whether amber or copal, young or old, the fossil insects and other arthropod inclusions and their associations are truly sublime in Colombian amber. Perhaps the most impressive aspect of Colombian amber to those with a scientific propensity is the wonderful fossil associations. So many species are often in association that the specimen will represent an ecological cross section of an ancient rainforest.

Source: [http://www.fossilmuseum.net/Tree\\_of\\_Life/FossilAmber.htm](http://www.fossilmuseum.net/Tree_of_Life/FossilAmber.htm)