AMBER

by

Agnieszka (Agnes) Muszyńska

Introduction

Since pre-historical times, amber deeply fascinated man as a gem, as a remedy, and finally, as a chance to look back into the past of the Earth with a remarkable clarity. Amber's warm lustrous touch beguiles us and the astonishing inclusions, often found within it, capture our imagination. The telltale of the natural history of amber spans time, the continents, and many peoples and societies. It also ranges from religion and art to commerce and the cutting edge of contemporary science, presenting an unusually rich and deep subject.

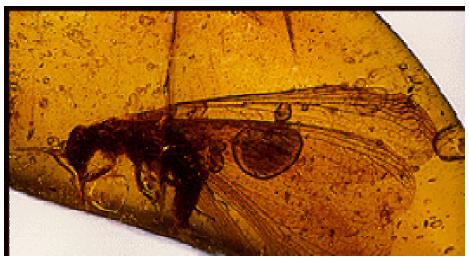
What is Amber?



Amber with a fly

The 25- to 360-million years old amber, a beautiful most often yellow/gold/brownish gem, is a petrified resin from ancient trees. All known deposits of amber come from various tree species, which are now extinct. One of these trees, specifically in the Baltica (lands where now is Baltic see and Scandinavia), was Pinites succinifer, which shares many characteristics of the currently living species Pseudolarix, similar to a pine or spruce tree. During the Tertiary époque, big forests grew on lands. The pine and other tree resin may have originally been excreted as a defensive mechanism against insect infestation or fungal attack. Often insects, or rather any small arthropods "committed suicide" by being too close to the ancient tree sticky and gooey resin. Due to winds and gravity, the resin could also trap other fascinating remains of the past – like feathers, flowers, leaves, needles, seeds, and pollen.

Once released from the tree, the resin would begin to go through a number of stages in order to become amber. The first stage involved the slow evaporation of volatile oils. This could take anything from 100 to 1000 years for the oils, called turpenes, to fully dissipate. As the resin hardens, it helps to preserve the possible inclusions by dehydrating the organisms and killing any bacteria that might cause decay. Moreover, the organisms' tissues do not shrink, as they normally would during the dehydration process. As a result, their cellular structure remains intact, making amber inclusions perfect for DNA studies.



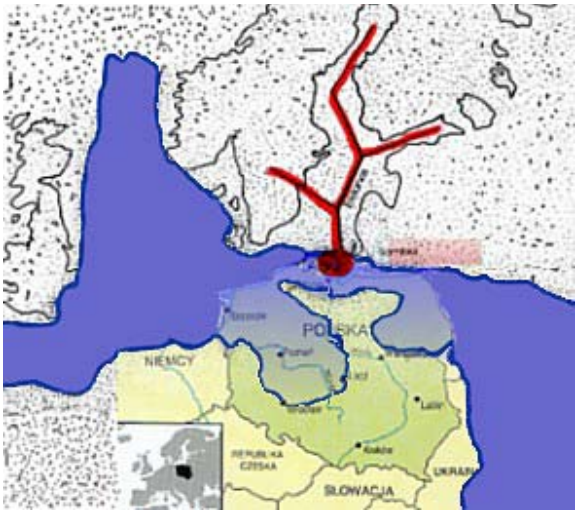
Amber encapsulating a 30-million year old termite [Smithsonian Institution]

When the oil evaporation is completed, the resin would become harder and becomes "copal" (copal is nowadays often sold as amber; it is, however, much, much younger and of significantly lower quality than amber). Following the dispersal of the oils, the next stage is the polymerization-like process of cross chain linking of the molecular structure within the copal. This makes the copal harder and less brittle. This second stage may take millions of years before the process turns the copal into something approaching the structure of amber. It is speculated that either one or both of these stages in the formation of amber must take place in an anaerobic environment, or it may have to sustain a



Ancient centipede in amber [Gdańsk Amber Museum]

period of immersion in water. When amber is exposed to air for several years, it undergoes oxidation, which causes a distinct darkening and crusting of the gem surface. If sustained over millions of years, the amber can fragment and breakdown into small tiny splinters and shards. Amber from the Isle of Wight in U.K. is amongst the older found in the world, an estimated 120 million years. Not surprisingly, the pieces found are small and tiny, weighing only a few grams. Much younger Baltic amber (a mere 40 to 50 millions years old) can be found in quite large blocks, in some cases weighing several kilograms. The Mexican and Dominican Republic's amber is even younger – only 25-30 million year old.



Map of the Northern Europe about 40-50 million years ago. Dotted – land, blue – Tetrys Sea, red – hypothetical route of the river Eridan transporting amber during upper Eocene

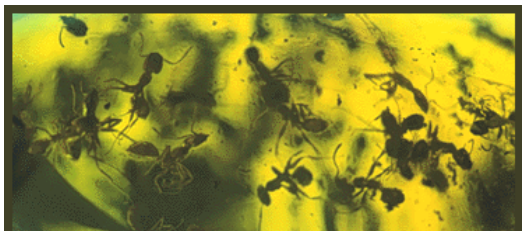
Baltic amber started being formed, at the landmass called Baltika (or Fenno-Sarmatia), while a part of the present-day Europe lay underneath the Tetrys Sea. Baltica was covered by the Eocene forest: pines, oaks, magnolias, sequoias, thujas, cypresses, with large ferns and moss. Nowadays, morphological studies made it possible for palaeobotanists to identify over 200 plant species from this Eocene forest. The ground was saturated with water. Flowing downstream, the tree resin was carried from inland by the river Eridan and deposited in its delta: the present Baltic Sea's Bay of Gdańsk (German Danzig; currently – Polish town). It is here that the largest deposit of amber has been found.

Treasures Within Amber

The most exciting and interesting aspects of amber are the flora and fauna inclusions, which are often found within it. Each specimen, encapsulated within amber, brings us the testimony of these old times. The most frequent inclusions to be found in amber, particularly Baltic amber, are insects, representatives of the Diptera Family, or true flies. These tiny flies would have lived on the fungus growing on the rotting vegetation of the forest, of which no doubt there was enough to support an enormous population. Mammalian animals also have left their mark in the amber record. Their hair can infrequently be found trapped as tufts or single strands. Surface of some amber lumps bears prints of mammal paws. A part of the spine and ribs of a mouse were discovered in amber from one of the Dominican Republic sites and a large mammalian jaw with molars was discovered encased in the Baltic amber. Over 2,600 species were identified in amber. It is this aspect of amber, these frozen moments in



A mosquito in amber [Palanga Museum, Lituania]

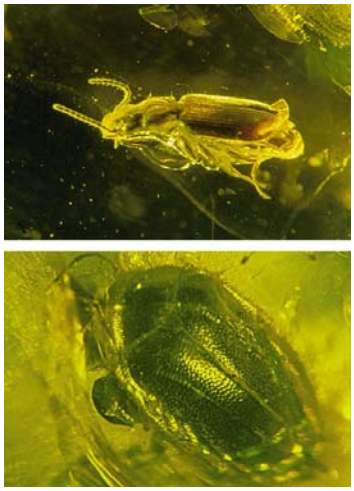


Ancient ants in amber



A bee encapsulated in amber

time, which give us this insight into the ecology of ancient times, which makes it so fascinating and compelling to study. Several years ago, the movie "*Jurassic Park*" caused a surge of popular interest in amber. Actually, the *Jurassic Park* made amber famous! The book and the movie used the idea that amber containing an ancient mosquito might be the key to recreating dinosaurs. The basic goal was to remove blood from the gut of a mosquito, which had fed on a dinosaur just before being trapped in tree resin, which later became amber. With the present significant progress of the Nuclear Biology, the idea might soon be realizable… although not too appealing!



Beatles in amber



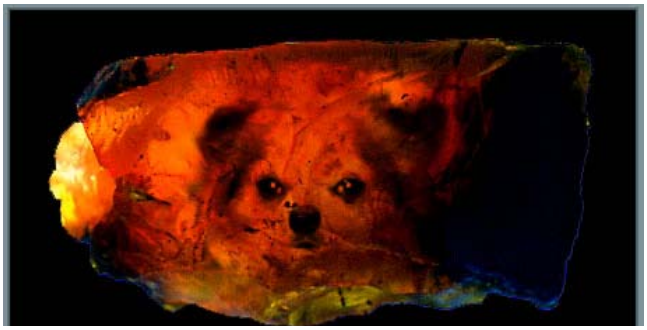
The oldest known amber containing insects *rhyniognata hirsti*, comes from the Lower Cretaceous (about 146 million years ago)

Currently, the DNA can be recovered from many biological samples encapsulated in the ancient amber. By looking at specific parts of the code, scientists can now compare the "spelling" of the code to that of existing organisms.

Amber excavated in a particular location can reveal information not only on the presence or absence of specific plants and animals, but also about primordial climate, sea level, and environmental conditions. The scientists are now able to reconstruct the ancient ecosystem with amazing intricacy. Recently found species of termite in Dominican amber exist now only in Australia. Thus amber can help also uncover animal migration patterns. (See several interesting amber specimen at http://www.amnh.org/exhibitions/amber/).

It should also be recognized that amber provides a somewhat skewed view of this ancient world. For example, it is unusual to find cockroaches in amber. But, cockroaches most certainly did exist as every stage of pupation is present within the amber record, but why so few adults? The reason is quite simple; cockroaches were big enough and sufficiently strong to pull themselves out of the resin. Analysis of the amber deposits needs, therefore, to be done with a high degree of circumspection and reasoned insight.

In 1997, the unusual specimen was discovered by Ms. G. Gierlowska from Gdansk, Poland, while examining material from the Quarternary deposits in the region of Gdansk. The lizard (family Lacertidae) encapsulated in amber is not fully intact, although its parts are well preserved.



A canine encapsulated in amber



A wasp in amber



Ms. Gierlowska's lizard trapped in amber

Recently excavated in Mexico, an 80 kg solid block of nearly transparent amber dating from the Oligocene/ Miocene (~ 25 million years ago) contained an astonishing discovery. Entombed within

the amber, the perfectly preserved intact head of a small canine, resembling an ancestral relative of the present-day Chihuahua breed of domesticated dog, was revealed to a group of geologists and amber specialists from the Universidad del Perro. Despite the highly suspect nature of the find, gas pyrolysis and infrared spectroscopic analysis of the resin unequivocally confirmed its authenticity. Removal of a tiny tissue sample was undertaken using extreme precautions and new archival methods to prevent tissue degradation and to protect the precious sample within. Sequence analysis of PCR-amplified extracted DNA fragments revealed that it belongs to a now-extinct small mammalian canine species that once roamed the tropical forests of Southern Mexico and Central America. Modern wild Chihuahua breeds in Mexico are insectivorous hunters; their ancient ancestors may have hunted insects that congregated on amber resin-exuding Hymenaea trees in the extensive forests that covered Mexico millions of years ago.



Insects in amber [Amber Museum in Gdansk]

Organisms preserved in amber are prized by paleontologists because of the fine details they retain. Such specimens are not rare, but gaining access to them without damaging them can be tricky. It was therefore with trepidation that scientists at the American Museum of Natural History, recently broke open several pieces of amber to reach eight primitive termites that had been trapped within the resin about 20 million years ago, in what is now the Dominican Republic. After dissecting the termites, they proceeded to examine them under an electron microscope. They were hoping to find the preserved remains of tiny wood-digesting organisms and then to determine how similar they were to microorganisms that live today. The researchers were not disappointed. The termite gut sections revealed not only bits of wood, but also numerous protists and bacteria, including large spirochetes. The amazing preservation meant that cell walls, even nuclei and tubules inside cells, were clearly visible. The fossil microbes were strikingly like the modern-day gut residents that break down the wood eaten by termites; a sign of remarkable stability in the evolutionary story of this ancient partnership.

Amber's Electromagnetism

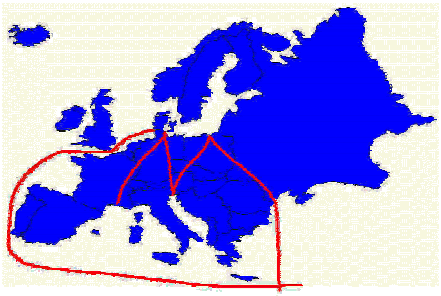
Amber has also an unusual feature: it is electromagnetic. When rubbed – it charges negatively and attracts small particles. Greek philosopher Thales (624-546 B.C.) from Miletus in Asia Minor, discovered this static electricity, while playing with amber. Actually, the word "electron" means "amber" (also means "shiny" and "glaring") in Greek!! Today, every first, introductory lecture on modern "Electricity" always starts with the Greek story about amber-elektron!

History of Amber

Amber was known to men already in the Paleolithic era (the second period of the Stone Age; 1 million years B.C. to 8,000 years B.C.). Un-worked amber, used as a tool or possessed by humans, was found in the caves of French Pyrenees (~ 13,000 B.C.). The oldest amber artifacts ever excavated are roughly hewn beads that date back to 11,000- 9,000 B.C. During the Mesolithic period (8,000 - 4,500 B.C.), amber craftsmanship had developed to the point of including small



3,000-year old amber man-amulet

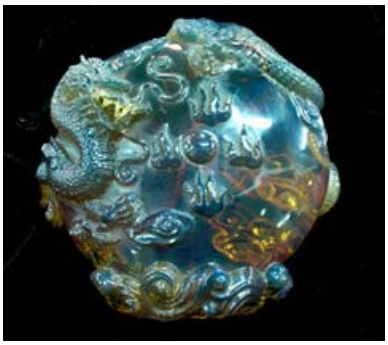


Amber Trails in ancient Europe

sculptures of men and animals that have been discovered in Europe. Amber beads have been found in 4,000 year old graves near Stonehenge, England. Amber trade burgeoned around 3,100 - 2,500 B.C., especially in the eastern Baltic region. Between 2,300 - 700 B.C., at the "Bronze Age", amber started being used to decorate bronze artifices. During the "Iron Age" (700 - 400 B.C.), the Baltic amber was imported to Greece by merchants traveling on the well-known "Amber Route" (or "Amber Trail") to Alexandropolis. The famous archaeologist, Heinrich Schliemann, after his excavations of Mycenae and the fabled city of Troy, reported finding large quantities of ancient amber! Amber from the Baltic area has been found also as far away as Egypt, Northern Ireland and Mesopotamia. The amber found in Egypt has been dated to approximately 3,200 year B.C. The grave of Egyptian pharaoh Tutankhamen contained amber relics. Tiny pieces of amber have been discovered inserted beneath the skin covering the hands of many other Egyptian mummies. The Egyptians believed that amber secured the mummy against destruction and decay. Amber necklaces have been recovered from Etruscan graves dating from 500 B.C. From all accumulated data, it is also evident that amber played an important role in the cultural life of the peoples of the ancient time. Amber's occurrence among grave goods and the prominence given to it, clearly indicates that it was held in some awe by these earliest societies. In Rome under Nero's rules, an enormous amount of amber was imported from the Baltic area through another "Amber Trail" to Aquilea. In Roman society, it was believed that amber would increase fertility, keep body healthy, as well as provide good luck. Roman gladiators used to sew pieces of amber on their clothes for success in fight. In *Metamorphoses*, Ovid poetically called amber "Sun tears". Homer referred amber to as "*Golden beads, like Sun*". Although the historian Pliny the Older complained: "*Among luxury objects, amber reaches so high prices that a small amber figurine representing a man is much more expensive than any living slave man*."



Amber beads found in an ancient grave [Denmark National Museum]



Chinese Amber "Blue Dragon"

There also exist documents that in ancient China, amber was playing a significant role in medicine, jewelry, and as decorative carved stone. Chinese people believed that amber was the soul of tiger, which had died and passed into the earth. The Tibetans had a beautiful name for amber, which means, "perfumed crystal". In Islamic cultures, prayer beads were often made with amber to reflect divine inspiration guidance.



Rough amber pieces

There exists a long list of the amber-related theories conjured up by ancient alchemists and philosophers. For example, during the Roman era in the 1st century, it was thought that amber was created from lynx urine, with the dark amber being the product of the male and light colored amber coming from the female. Actually, the Roman name of amber was *lyncurium*, which means "lynx urine". Another fascinating theory was that the rays of the setting sun somehow became congealed in the sea, which was then cast upon the shore in the form of amber. Some people believed that amber pieces were petrified tears of Gods (the Sun God, in particular).

By 240 B.C., a Roman astrologer discovered that amber shared many of the same characteristics and properties with gemstones, but still it was somewhat different. He then found that a tree, which grows in Liguria, that produced resin

looking similar to amber and figured out that they had to be related. He also found that while the beautiful amber of gold color was most common, other amber colors existed.

Amber characteristics

Actually, the amber's color array is extremely rich, ranging from near ivory-white (osseous), through all shades of yellow, brown, and red. There are even examples of blue, green, violet, and black amber. Blue-green amber is thought to result from two possible causes: the permeation of raw resin by some mineral deposits present either in the soil, into which it fell, or the settling of volcanic dust and ash onto the resin when it was first secreted. By whatever process, the resin became impregnated with some other compounds, which produced its distinct shade. These rare colors today are highly sought after, with the green and blue being the most valuable. Currently, the green amber can easily be produced by thermal processing of a regular yellow amber specimen.

Baltic amber comes in a wealth of varieties produced by the great differences in the degree of its translucency and color – from pale yellow through numerous shades of yellow to white, bluish, greenish, beige and brown. These are among the factors which make amber such a highly desirable and valued raw material in the art and jewelry trades. Baltic amber varieties can be divided into primary and secondary. The fundamental criterion in distinguishing the primary varieties is the internal structure of the amber, which constitutes the key to establishing its color and translucency. This depends on the amount of air bubbles contained within a given piece of amber and their distribution.



Rainbow amber

Typically, amber is transparent or translucent with a greasy-like shine; this variety does not contain any air bubbles or perhaps only single, fairly large ones measuring 0,5 - 2,0 mm in diameter. The translucent amber – parts of which contain large concentrations of air bubbles – produce a clouded appearance. However, once the amber is heated, oil fills those spaces of air, which then transforms it to the clear shade we know it as best. In opaque yellow amber – the number of air bubbles in this variety reaches 25,000/1mm², its color ranging across all shades of yellow and beige. Opaque white amber – containing up to 900,000 air bubbles per mm² has an internal structure, which appears like solid foam. The color of this variety ranges from white to blue.



Blue amber necklace

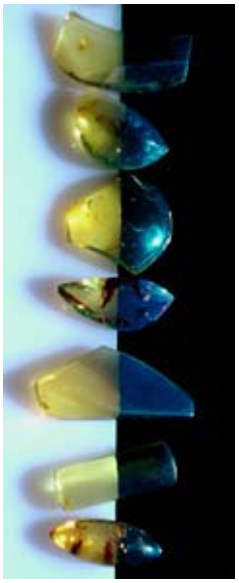
The claim of strong fluorescence in amber is often exaggerated. Generally, the fluorescence is weak and photographs, which show glowing pieces of amber, are usually achieved with exposure times in excess of 2 minutes under strong UV lamps.

Just as many other gems are treated and stabilized to bring out luster and shine, the same treatments are used on amber.

Amber burns easily, excreting resinous fragrance. Actually, in several languages the name for "amber" was a derivative of German word "*bernstein*", meaning a "stone, which burns".

Similarly to other organic matter, amber is mainly composed of carbon (61-81%). The rest are hydrogen (8-11%), oxygen (~10%) and various other elements. One of the amber chemical formula is $C_{10}H_{16}O$ (resambling camphor), or $C_4H_6O_4$ (succinic acid); there exist several other formulae.

Amber is sensitive to heat; it is combustible and reacts with chemicals. In the course of time it loses its brilliancy.



Pieces of amber on light and dark background showing different colors

Imitations of amber include celluloid, Bakelite, epoxy, and copal, its time-related predecessor.

The Latin name for Baltic Amber is "succinite" (means resin), for the younger Dominican amber –" simetite".

Where the Amber Comes From?

The world's largest amber deposits come from the shores and bottom of the Baltic Sea, where amber has been harvested, traded, and crafted into decorative objects during at least 13,000 years. The 400-square-mile Samland Peninsula near Kaliningrad alone has produced 90% of all the amber in Europe. The other large source of amber is in the Dominican Republic. Dominican amber is 20- to 25-million years younger than the Baltic amber. There exist many other locations, where amber, or its older variations, which do not have jewelry quality, like cedarite, yelenite (North America) were found.



Open pit amber mine near Kaliningrad

Amber has historically been extracted from the sea and land by a number of different methods. Recently, extraction methods have become more efficient. Early records show fishermen actually casting their lines for amber, which storms and winds brought up from the bottom of the sea. The first pieces of amber were found on the beaches, when they washed ashore. Looking for amber pieces, while walking on the Baltic beach shore is still the best entertainment for people vacationing there.

The development of open pits has allowed amber to be extracted more quickly and efficiently. However, this method has proved most harmful to the environment.

In the 1970-ies a largest maritime development project to build the Northern Port on the Baltic See in Poland was launched. The port was supposed to be big and very modern, to unload the old ports of Gdansk and Gdynia. During a very early digging at the see-side, they discovered huge deposits of amber. For the communist government unfortunately, the planned port was more important than amber, so they continued the project. These massive layers of amber are now hidden under the concrete sea front, huge buildings and heavy machinery of the port…



Amber box

Amber Artifacts

Since the Paleolithic era, people have carved beads, charms, and religious objects from amber, often believing that it held special symbolic powers. The oldest amber amulet is more than 13,000 years old. For several thousands of years, fascinating amber artifacts proved high level of invention, imagination, aesthetics, and craftsmanship of the artists. From late Paleolithic époque, 12,000 - 11,000 B.C., anthropomorphic amulets related to fertility cult and faces of deities were found in large quantity in burial locations. Similar objects, plus zoomorphic amulets related to haunting magic, were found in burial places of Mesolithic époque, 8,000- 4,500 B.C. Actually, various amber amulets started being produced in Gdansk area around the 8,000s B.C. (Gdansk, was and is still now the "World Capital of Amber".) A large development of amber craftsmanship occurred in the Neolithic époque (4,500 - 1,800 B.C.). In ancient cultures amber was associated with the sun, warmth, protection, and healing. Amber was directly related to



Amber box [Malbork Museum]

gods/goddesses or natural spiritual forces, and these were always beneficial ones, having to do with abundance: harvest, fertility and health.

During last 13,000 years, amber artifacts included sculptures, cups, sugar bowls, boxes, lamps, mosaics, medallions, coats of arms, miniatures of sailing ships, jewelry, and many others. With time, amber artifacts were composed together with metals, first – bronze, then iron, gold and silver, as well as with other gems.



Amber and brass votive vessel



Amber chandelier

During the 16th and 17th centuries, craftsmen perfected the traditional methods of sculpting and relief carving in amber and established two new techniques: encrustation – the piecing together of intricate amber mosaics that were subsequently glued to a piece of wood and *verre églomisée*, in which ornamental designs – landscapes, and phrases were engraved onto the back of a transparent piece of amber and often highlighted with a piece of ivory or gold foil. Using these newly acquired techniques, master artisans created decorative objects that often surpassed those of previous centuries in both intricacy and size.



Amber Chamber in Tsarskoye Selo at the beginning of the 20-th century

The largest and most known artifact, ever made of amber was the "Amber Chamber" of the Tsar palace in Tsarskoye Selo (one of St. Petersburg's suburbs), Russia. It was produced by the 17th century Gdansk craftsmen, Andreas Schlüter, Gottfried Wolfram Gottfried Turau, and Ernest Schacht. The Amber Chamber was presented by the Prussian King Friedrich Wilhelm I to the Russian Tsar Peter the Great in 1716. The Chamber consisted of a series of large amber panels of mosaics, backed with gold leaf and mirrors, which covered the inside of a chamber. Six tons of amber was used to create this Chamber. Due to its amazing beauty, it used to be called the "Eighth Wonder of the World". During the Second World War, the Chamber was captured by the Nazis, dismantled and... the entire collection of panels and other amber items disappeared with no traces – till today. According to different sources, the Amber Chamber was either destroyed by the Allies' bombing, or buried in a silver mine not far from Berlin, or hidden on the shores of the Baltic Sea, or – its amber, piece by piece – was stolen and dispersed.



Amber Chamber reconstructed in the 1990s



Amber Chamber in 2003

In the 1970s the Soviets decided to reconstruct the Amber Chamber. Finally, on May 31, 2003, Russian President Vladimir Putin and German Chancellor Gerhard Schroeder, together with other national leaders attending the Russia-EU summit in St. Petersburg, officially opened the reconstructed Amber Chamber at the Catherine Palace Museum-Reserve at Tsarskoye Selo. The opening of the Amber Chamber was one of the key events of the celebrat-



Silver and amber sugar bowl made by a Polish craftsman in 2002

ions dedicated to the St. Petersburg's 300th anniversary.

Luxurious, albeit less grand works of amber during the 18th century included phials, boxes, jewelry, walking stick handles, and various sculptures.

During the second half of the 20th century, amber craftsmanship has come full circle and once again, Gdansk became the epicenter for amber art (see an example – the sugar bowl, 2002).

At present, the Polish amber craftsmen are building an impressive amber altar of about 120 m^2 area in St. Bridget church in Gdansk, as a votive for regained independence of Poland.



This amber egg of value US $ 16,000 was presented by Mrs. Heidrun Mohr-Mayer to the City of Gdansk for the city's 1000th anniversary. Gold elements and enamel arms of Gdansk were crafted by Victor Mayer; amber parts with insect inclusion - by Podżorski. Total weight 213.48g; gold 18k 136g, amber 76g, diamond 0.2 carat, ruby 1.3 carat, sapphire 1.46 carat.

Amber as a Medicine

Since prehistoric times, amber was believed to possess magic powers. Its unusual warm feel, its lightness and luster fascinated people. Additionally, its combustibility, low hardness, low heat conductivity, and also its mysterious electrostatic attraction, from the very beginning when people found amber, placed it at the first place among *magical stones*.

During pre-historical time, amber was worn as a talisman of good luck. Later on, powers attributed to amber included strength, good luck, everlasting bond of eternal love, healing, protection, calming for hyperactivity and stressed nerves, enhancing humor and joy. People thought that amber had the power to repel all misfortune away from them. Legends say that amber was believed to provide magicians and sorcerers with extraordinary enhanced powers.

Since amber contains both plant and animal life, it was thought to be a vessel of eternal youth. Amber amulets provided the wearer with healing energy, mental stimulation, and balance in life. They protected from the evil eye.

The ancient Greeks and Romans firmly believed in the magic powers of amber. The Romans discovered that amber had real medicinal qualities. The earliest accounts of amber's medicinal properties are found in the works of Hippocrates (460 - 377 B.C.), who is known as the father of medicine. Amber was ground to a powder and then mixed with wine and drunk for medicinal purposes. It was also burnt; burning amber diffuses a resin-type, healing scent. Since these times, amber has been commonly used as an ingredient of odorous healing mixtures. The inhalation of amber incense or vapors has a long history of medicinal use.

Callistratus stated that a short string of amber beads worn around the neck brought relief to the wearer in some cases of severe head, neck and throat complaints. Wearing amber bracelets was thought to be beneficial to sufferers of rheumatism and arthritis. Amber reduced fatigue and feelings of general weariness. A similar effect was said to be achieved by rubbing the body with a fairly large piece of amber. Various other creams, balms and infusions of amber steeped in alcohol were also recommended for external use. All manner of concoctions, of which amber was the main ingredient, were also widely used to remedy respiratory complaints, bronchitis, asthma, heart problems and ailments of the circulatory system, bowel and bladder disorders. According to Pliny the Elder – amber of gold variety, worn around the neck helped against fever and other ailments, taking ground amber with

honey improves unclear vision and soothes stomach ailments. Amber was practically applied to cure all diseases, just like aspirin was till not long ago.

During antiquities, after being consumed for medicinal purposes, a chunk of remaining amber or the amber powder, kept in a small vial, was often worn around the neck, which is how it first started being worn as amulet-jewelry. Amber was also used in treating painful ear conditions. Again, in powder form, amber was mixed, this time with honey and rose oil, and then packed into the infected ear – thus, possibly this way amber earrings were originated!

According to folk legends of several countries, amber helps remove energy blockages, strengthens physical body. It is also excellent for enhancing altered states of consciousness, balances endocrine and digestive network and provides relief from several illnesses, like croup, asthma, fever, glandular swellings of the throat and lungs, eye problems, and tonsillitis.

In the newly opened Museum of Amber in Gdansk, there are medicinal books from 16th and 17th century with many recipes for amber-related medications.

According to a recipe of St. Hildegard (12th century): during 14 days put amber for an hour in beer, wine or water; for stomach ache, drink small quantities after meals. According to Agricola (16th century) – amber in liquid prevents bleeding, vomiting, head ailments, tonsilitis. According to Culpeper (17th century) – 10-12 grans (~0.06 g) of amber heals urination difficulties. According to Freyer (19th century) – succinic acid dissolved in water and then several times distilled, helps for skin contractions, asthenia fever, nervousness and apoplexy. In other nineteenth-century literature there is evidence that amber was used as a remedy for virtually all illnesses.



Amber tincture from Gdansk

Nowadays, the amber is still very much appreciated by the contemporary "healers". They claim that amber helps the body to heal itself by absorbing and transmuting negative energy into positive energy. It helps to calm the nerves, enliven the disposition and enforces natural physical processes by cleansing the body. Amber, therefore, enhances the connection of the conscious self to universal perfection. Amber expands the sun and life potential within us and gives us peace. Apparently, via orange and yellow colors, it aids in the making of correct choices and aligns mental and emotional bodies. Amber works also as an excellent device for detoxification and protection from radiation, especially x-rays, sun, computers, planes, and other toxic energies.

All over the world, amber mixtures and tinctures are known panacea for any ailment. One may ask whether the contemporary tree resin may have any similar values?…

The "healers" additionally suggest wearing yellow amber jewelry, as it enhances one's wisdom, clarity, and self-esteem. Yellow is seen as a cheerful color and wearing a pendant, ring or earrings with yellow gemstones can help brighten the day making the wearer feel more optimistic and confident. The color yellow signifies intellect, confidence, divination, communication, eloquence and… travel. Yellow is the color of the element air and is symbolic of the sun, grain, and the power of thought.


Amber medicine bottles

In today's era of "healthy lifestyles", when everything "closer to Nature" is in vogue, using every available natural product has become very popular. Thus, it is obvious that medicines, which main ingredient is amber, are in such great demand at "healthy" drug stores. Also the cosmetics industry uses amber in a wide range of creams, tonics and treatments, which are easily absorbed into the skin's deeper layers.

For many generations, the application of amber in medicine was more or less consciously based on their producing an excess of negative electric charges. Components or derivatives of amber, especially succinic acid and succinic oil, produced since the 17th century with dry distillation method,

are still used today. Contemporary scientists proved that succinic acid is active in energy-yielding metabolic reactions.

Nowadays homeopathic pharmacies in Europe sell amber ointment and amber spirit: against rheumatic or neuralgic pains or arthritis; – amber drops in spirit at a homeopathic dilution D_6: as a stimulant (10 drops 3 times a day half an hour before meals).

With all these panaceum claims related to the amber, it is, however, difficult to draw a line between the omnipotent role of amber-amulets, and the real role of amber in health protection, which gave origin to folk medicine. Already very early, the experiment-based belief in the healing power of amber coexisted with magical lore, and in the absence of scientific studies on the subject – just as in the time of superstition – it keeps existing in the times of conquest of the universe.

Amber in Jewelry

From its earliest history, adorning the jewelry of ancients on every continent, amber fascinated with its appearance of "liquid gold" with life inside, both forever frozen in time. Its golden transparency lends it a quality, which even diamonds do not share.



Amber and silver bracelet

Amber, an enigmatic object of beauty, strange and unique, is an attractive gem – considered both as a mineral and a semiprecious stone. Regarded as being highly sensual and magnetic, it is well appreciated as a beautifying jewel by mankind since the Stone Age.

Amber insures very long enjoyment of the qualities that make the wearer attractive.

Wearing a carefully and beautifully crafted amber jewelry is like to be close to warm essence of sunshine from millions of years past, just like "before time began".



A broche: Amber with an encapsulated scorpion



A pendant: amber and citrine in silver



Amber necklace and earrings

Final Remarks

Amber, that marvelous creation of nature, attracted and fascinated man since prehistoric times. Glorified in legends and songs, made famous by since Antiquity, it became a significant part of the history of human culture. Amber symbolizes time and practically teaches us that time is not significant. Amber stirs the soul, delights the eye, warms the hearth, sooths the stomach, and excites the world's scientific imagination.

For an artisan, amber provides a remarkable medium to work with and to create some of the most beautiful objects for us to admire and enjoy. For the scientist, amber provides a glimpse into the past, a window into history of the Nature. The acquired knowledge may soon lead to revolutionary results, which would improve our life on Earth.

Gardnerville, NV, June 2006