

A MATERIAL CALLED “GREEN AMBER”: WHAT IS IT? WHERE DOES IT COME FROM?

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In March 2006, at the International Jewellery Fair in Hong Kong, a new “gem” appeared called “*green amber*”, with a bright green colour (similar to peridot), and sometimes bright yellow-green, transparent with a sub-vitreous lustre (Fig. 1). A Hong Kong based company sold it as “*green amber*” but did not specify where the deposits were situated (information taken from the article by Abduriyim A., *et al.*, 2009).

We found the same type of material in Tucson during the Fair in February 2008, which was presented by a Lithuanian based company as “*extremely rare Baltic amber*”.

At the Hong Kong Fair in March 2009 we came across another Lithuanian based company presenting a vast assortment of the same material. An explanatory note, attached to the products on sale, called it “*Caribbean green amber from Brazil, Colombia, Ecuador, Guatemala and Venezuela*”.

It should be remembered that the only natural green amber which is known of for certain **is found exclusively in Mexico and the Dominican Republic, and it is extremely rare** (Fig. 2).

It is likewise very strange that the information as to the **certain** site of the presumed deposits of this material is contradictory and vague.

Therefore, we decided to **characterise it** by means of standard gemmological analyses on 97 samples, comparing them with the results we obtained on samples of natural Mexican amber, natural Baltic amber and natural non-fossilised resin (otherwise known as **copal**) coming from Colombia (Fig. 3).

Of the various tests we conducted, the floating and solubility tests (Fig. 4) provided results similar to those observed in samples of Colombian copal.

We then submitted some samples of natural Mexican amber (including one natural green amber), Colombian copal and the material in question to the FTIR analysis (Fourier transformed infrared spectrophotometry).

With minimum variations, the FTIR analysis showed on all the 97 samples peaks of 635, 697, 888, 945, 1255 and 1446 cm^{-1} which are characteristic of immature resin (copal). See Fig. 5.

Therefore, our conclusion is that **all** the 97 analysed samples are: **Colombian copal subjected to a multi-stage heating process in autoclaves under increasing pressure.** This process is well described in the



Fig. 1 – Samples of “*green amber*” under our analysis.

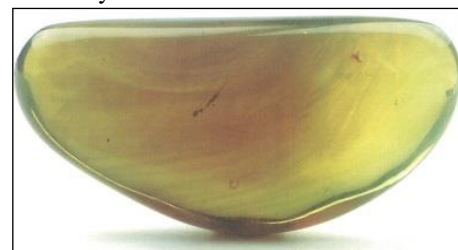


Fig. 2 – Extremely rare sample of natural green amber from Chiapas (Mexico).



Fig. 3 – Samples of copal under our analysis, coming from Vélez – Santander (Colombia).



Fig. 4 – Detail of the surface of the “*green amber*” after testing with pure alcohol.

work by Abduriyim A., *et al.*, between 2007 and 2008, which was initially published in Japan in 2008. Moreover, the same study mentioned a peak in “green amber” of 820 cm⁻¹; we found this in **all** the 97 analysed samples (again see Figure 5). **This peak is a typical diagnosis of the multi-stage process**, and it is **no accident** that it is not found in natural amber and natural copal. In the light of this study, the news regarding the massive on-going importation of copal from Colombia to the Baltic region between 2001 and 2005 would therefore **CONFIRM** this fact.

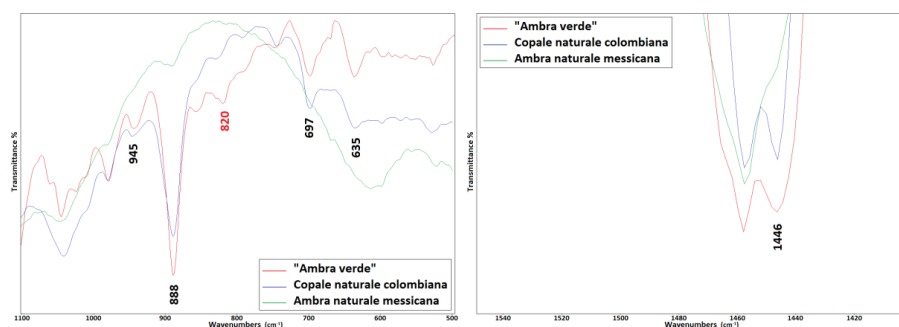


Fig. 5 – IR spectrums on samples of: “green amber”, natural copal and natural amber.

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