

PLASTDUR GLUE TO SAVE THE REMNANTS OF 8-MILLION YEAR OLD MARSH CYPRESS FOREST

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The remains of a marsh cypress forest, estimated to be 8-million year old, are considered to be a world sensation. They were found in Bükkábrány while a spoil was being cleaned, 60 metres deep under the ground, in the lignite mine of Mátra Power Plant Closely-held Joint Stock Company more than one month ago. These marsh cypresses had lived on the periphery of the former Pannon Sea under subtropical climate, in the Upper Miocene Era (11.6-5.3 million years ago). The finding is unique because the stems were preserved in their original places, in standing position until the height of 3-5 metres with a diameter of 2-3 metres. Such an old forest has not been found in its original state. The wet sand bed, covering the 70 - meter high trees, has conserved the original tree structure; therefore the trees have not been carbonized or silicified, but have been preserved in their original form and material. During the exploitation there was a chance to study the whole structure of the annual ring, bark and branches of these trees.

After the discovery of the trees the mine cultivation was disrupted, and workers started to dig around the trees. From the wet substance, the stems are gradually drying and, because their cellulose framework has decomposed, pulverize. The preservation of the finding could not be solved on the area of the mine that is why the next step was the lifting up and the preservation of the trees, so that even the public could admire them. The experts of Bükk National Park started to prepare the stems for the safe transportation, nevertheless there are no worked out plans either for the preservation or for the transportation.

The four marsh cypresses have already been transported to Herman Ottó Museum, in Miskolc. The trees were continuously treated with water in order to stop a further deterioration. The tallest tree is 4 metres high, its mass is nearly 5 tons and its lower diameter is 2 metres. The trees, which can be hurt extremely easily, can only be transported in standing position and with special vehicles. At the museum over the sand bed, which holds the trees, a pavilion will be set up to protect the trees from the adversities of weather.

The other group of the trees, after having been cleaned and stabilized by a special treatment, has been transported to Ipolytarnóc, to the visiting centre of Bükk National Park Directorate, where the maintenance of the state of the matchless finding is solved until a final preservation solution is found.

This is the work which PLASTDUR LTD has joined in. The company has been transporting a linking material with a special composition to strengthen the structure of the trees standing on the exploration field. This material is milk white water dispersion as a liquid and after drying it becomes colourless, its waterproof quality will be D4, and it will be as solid as the material of the tree/wood. The polymer will be injected into the spongy tree body, behind the bark which contains a lot of water. There the polymer, mixing with the intercellular water, will diffuse to the surface of the fibres. The size of the molecule will prevent polymer from getting into the inside of the cells. Among the macromolecules having been absorbed to the surface not only secondary, but also primary bonds will be established to the effect of the space netting component in the wet substance. Inside the stem it takes 6-8 hours for the glue to get solid, which can keep the fibres of the tree even after the complete evaporation of the water. The water evaporates from the colloid solution, soon after having reached the surface during the natural drying process, and the polymeric molecules will form a waterproof, hard and translucent film on the surface of the bark.

The glue can be diluted, it does not contain any organic solvent material harmful to health, any demulcent or any component damaging the material of the tree. After space netting the chemical structure of the glue does not change, therefore it is not inclined to ageing. Fungi or acids coming into existence during deterioration do not damage the trees. The application of plastics widely-used in modern technology for saving exploration findings is not unknown, but in such an amount it is used only in few cases. The value of the preservation work is further enhanced by the fact that, by applying Hungarian basic materials, Hungarian researchers, finding explorers can reach excellent results in the maintenance and preservation of fossils of past times even on an International basis.