
New methods for the structural conservation of the fossil substrate

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Abstract

The Paleontological Heritage is composed mainly of the paleontological deposits and the fossil records found in them. The fossil record is a fundamental indicator to discover the truth about the life of the past, so it is essential to favor the correct conservation of its original nature.

To guarantee a correct preservation of the original identity of the fossil, it is necessary to establish the most suitable performance criteria. Before designing any conservation methodology, two essential factors must be studied; the size (macrofauna or microfauna) and the degree of mineralization of the fossils.

The structural conservation of a fossil depends on consolidation and adhesion methods. Therefore, when choosing the most suitable product to guarantee the correct preservation of the original nature of a fossil it is necessary a previous consideration of product qualities such as penetration capacity, adhesion power and its chemical compatibility, among others.

For this purpose, the efficacy and safety in the organic paleontological material of the consolidators Paraloid B-72® and Nanorestore® have been evaluated. In the first assay, the penetration capacity of the studied consolidators was examined, showing better results in Nanorestore®. In a second assay, new forms of application were proposed for these two products, in order to improve their performance. In the case of Paraloid B-72® a new format has been proposed, whose penetration capacity is limited and a better reversibility is favored, whereas the adhesive capacity of Nanorestore® has been enhanced when combined with Adper™ Single Adhesive Bond 2.

With the data obtained from these trials, it has been possible to differentiate two conservation methodologies, proposed for two different circumstances: field work (in situ) and laboratory study. In both methodologies, greater priority is given to the methods of adherence to the consolidation methods, due to their scarce interaction with the material to be treated, thus favoring greater respect for the original identity of the material to be conserved.

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