

The art of fossil preparation

Although fossils can be found in most parts of Britain, some sites are more prolific than others, and some localities, such as the Dorset coast, yield vast numbers from the cliffs, only to be broken up by the waves if not collected. Some fossils are found as loose specimens and only a wash is required. Others will be found still embedded in the rock and some work will be needed to reveal them. Extracting fossils from the rock in which they are enclosed (the matrix) is known as fossil preparation or 'prepping'. Many of the fossils for sale on this website have been prepared by professional fossil collectors who are highly skilled in their craft.

Fossil preparation is often a difficult and laborious business, especially in hard rocks such as limestone, and skill is required to ensure that the fossil is not damaged in the process, but if done well the results can be stunning. Fossils are rarely completely removed from the rock; the ideal result is to remove sufficient rock to expose the fossil, clean the surfaces of the fossil and trim the block so that the whole specimen will sit neatly on a shelf or in a cabinet. Leaving the fossil partially enclosed or standing proud on a smooth surface of matrix is not only aesthetically pleasing but provides support for the fossil and enables you to see the context of the find. Alternatively, fossils such as corals can be revealed by cutting the block in half with a diamond saw and polishing the flat surfaces to reveal the detail of the structure. Fossil preparation can often take hours of work, especially where the surface of the fossil is ornamented or has spines. In the case of larger specimens, such as marine reptiles that grace our museums, literally months of work could be involved.

The professional collector uses a number of different tools in his workshop to turn a muddy lump of rock with only a fragment of the fossil visible, into a fine display piece suitable for a collector's cabinet. The first step is to carefully wash the specimen to remove mud and sand and slowly dry it out, although some rocks, such as shale, are friable and may first need to be stabilised with glues to prevent them disintegrating. Some repair may also be necessary, as it is often not possible in the field to extract fossils in one piece. The block may then need to be trimmed with a hammer and chisel, diamond saw or commercial 'rock-trimmer'. The next stage will be the gradual excavation of the rock to reveal the fossil, either done by hand using a fine chisel, or with a pneumatic 'pen' with a vibrating tip. The final layer of rock in contact with the fossil will be removed by hand using fine dental tools or with an air-abrasive tool, or a combination of both. Specimens where the mineral that composes the fossil is softer than the surrounding rock require particular skill and patience. A final stage could be to protect the fossil with a light varnish but this is generally to be avoided if at all possible so that the end result looks completely natural. The entire process is mechanical without resorting to acids or other chemicals, which are usually only employed for exceptionally hard rocks and used only by the palaeontological laboratories of universities and the major museums.

Elephant and mammoth teeth and tusks dating from the Ice Age present a particular challenge. Because they are relatively young in geological terms (usually less than a million years old) the fossilisation process is not yet complete and they are regarded as 'subfossils'. Subfossil bone usually warps and cracks as it dries out and special treatment with glues, followed by repeated immersion in dilute PVA, is the preferred solution. If subfossil bone has completely dried out, and has survived the treatment, it should not deteriorate further as long as it is protected from extremes of temperature and humidity.