

action of the fire. If it be now examined, it will be found to have lost nearly half its original weight, and to have become exceedingly brittle; this, as already mentioned, being the natural property of phosphate of lime, when deprived of its animal cement. We may perceive on the surface of a bone so treated, a number of minute crevices, showing where this animal substance had been situated, in its original state. On breaking the bone across, we may also discover the size and shape of the cavities which contained the marrow, or oily fluid above mentioned.

It is easy to reverse this process by steeping the bone in an acid sufficiently diluted to prevent its injuring the animal membrane, but yet sufficiently powerful to dissolve the phosphate and carbonate of lime. Diluted nitric or muriatic acids may be used for this purpose, and will, in this way, gradually separate the earthy particles from the membranous portion of the bone. During the action of the acid a few bubbles of carbonic acid gas make their appearance, indicating the presence of a small quantity of carbonate of lime, which always exists in bones, intermixed with the phosphate. The phosphate may be recovered from its solution in the acid by precipitation with a pure alkali, such as a solution of ammonia. This precipitate is readily dissolved, without effervescence, by nitric, muriatic, or acetic acids. A small quantity of sulphuric acid may also be detected in the fluid by the addition of nitrate of barytes. Iron, in small quantity, is also found in the composition of human bones.

The substance which remains, after the earth has been thus abstracted, retains the exact figure and dimensions of the original bone, but has lost all its other mechanical properties. It is soft, flexible, and elastic; resembling in every respect the muscular or fibrous structures, and being, like them, resolvable into gelatin and albumen by long boiling in water. This substance has sometimes, but erroneously, been considered as identical with cartilage; for it has neither the whiteness, nor the elasticity, nor the texture of cartilage, nor is it at all similar to that substance in its chemical