

pyrites, and an exact cast of the original shell has thus been obtained. Petrified wood is also of very common occurrence.

These remains of an earlier creation had long been known to the curious, and classed as *freaks of Nature*, for so we find them described in the works of the ancient philosophers who wrote on natural history, and in the few treatises on the subject which the Middle Ages have bequeathed to us. Fossil bones, especially those of elephants, were known to the ancients, giving rise to all sorts of legends and fabulous histories: the tradition which attributed to Achilles, to Ajax, and to other heroes of the Trojan war, a height of twenty feet, is attributable, no doubt, to the discovery of the bones of elephants near their tombs. In the time of Pericles we are assured that in the tomb of Ajax a *patella*, or knee-bone of that hero, was found, which was as large as a dinner-plate. This was probably only the patella of a fossil elephant.

The uses to which fossils are applied by the geologist are—First, to ascertain the relative age of the formations in which they occur; secondly, the conditions under which these were deposited. The age of the formation is determined by a comparison of the fossils it contains with others of ascertained date; the conditions under which the rocks were deposited, whether marine, lacustrine, or terrestrial, are readily inferred from the nature of the fossils. The great artist, Leonardo da Vinci, was the first to comprehend the real meaning of fossils, and Bernard Palissy had the glory of being the first modern writer to proclaim the true character of the fossilised remains which are met with, in such numbers, in certain formations, both in France and Italy, particularly in those of Touraine, where they had come more especially under his notice. In his work on “Waters and Fountains,” published in 1580, he maintains that the *figured stones*, as fossils were then called, were the remains of organised beings preserved at the bottom of the sea. But the existence of marine shells upon the summits of mountains had already arrested the attention of ancient authors. Witness Ovid, who in Book XV. of the “Metamorphoses” tells us he had seen land formed at the expense of the sea, and marine shells lying dead far from the ocean; and more than that, an ancient anchor had been found on the very summit of a mountain.

“Vidi factas ex æquore terras,  
Et procul a pelago conchæ jacuere marinæ,  
Et vetus inventa est in montibus anchora summis.”

Ov., *Met.*, Book xv.

The Danish geologist Steno, who published his principal works