

Devil's Toenails

A recent walk to Hill Spinney was notable for the absence of birds and seemed to confirm what is happening at both a local and a global level – the sixth extinction on our doorstep. And with nothing much to look for I headed home by the way that I'd come forgoing the usual circular walk for the promise of an earlier cup of tea, and there on a path walked countless of times was the smooth surface of a fossil just beginning to emerge from below. A quick excavation revealed a good size Devil's Toenail, three inches long and a couple of inches wide: a long extinct marine bivalve related to modern-day Oysters but laid down here many millions of years ago at the time of the Jurassic when dinosaurs still roamed the earth and Bedfordshire was covered by a clear coral sea. Or was it first laid down here? For what intrigued me was why should this fossil be emerging now on a well-worn grass-covered path and why free of its oolitic limestone substrate?



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A search through the literature confirmed it as one of the Gryphaea family and probably *Gryphaea arcuata* commonly found in glacial tills and gravels in North Bedfordshire, laid down then at the time of the Jurassic sedimentary clay rather than rock but subsequently moved on by Ice Age glaciers. As for its coming to the surface now, this is a well known phenomenon to any gardener or farmer where rocks and stones have been deposited by glaciation. In the States they are known as fieldstones and can lower the value of the land through the constant need to clear them.

At least two processes are at work: that of erosion and, at our latitude, that of frost. Because 'stones are better conductors of heat than soil so the stone (or fossil) conducts heat away from the warmer soil beneath it. That colder soil under the rock then freezes before other dirt at the same depth' and when water freezes 'it expands and pushes the rock up a little'. So from a period when what is now Bedfordshire was under water at the latitude of the Bahamas, some 227-151 million years ago, this fossil has first been petrified where the nature of the original material has been replaced by others, and then scattered by glacial action which ended as recently as 10,000 years ago. This glacial action has covered much of the earlier deposits of Jurassic limestone and clay with a deep layer of 'Boulder Clay', so named because it contains many rocks and stones carried here from much further afield, especially from the north and the east. So as well as fossils 'from below', including others such as ammonites, we have 'erratics' totally unrelated to the earlier rocks also emerging 'from below'.



An example of a
Bellarmine jar

This area has also produced some interesting archaeological finds because of the presence of a former coaching inn on the road to Astwood and London. I have before me a fine crest from the belly of a late sixteenth century Bellarmine jar recovered from this site, so named after Cardinal Robert Bellarmine. The salt-glazed jar was originally imported from the Netherlands and as Cardinal Bellarmine was a bitter opponent of the Dutch Reformed Church you can be sure that it wasn't designed to drink his health. A coin of the reign of Constantine the Great has also been found nearby. So if the skies above are grey and empty it's worth being a true monk for a while with eyes

cast to the ground in a posture of humility, engaged that is with the humus all around us. And in all humility I have to confess that I'm not a geologist and everything above needs much qualification.