

## TUFA AND SPELEOTHEM OCCURRENCE IN NORTH AND WEST CORNWALL

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Quaternary tufa deposits and speleothems in the inland limestone areas of northern and central England, Wales and Ireland are well documented. Tufaceous deposits and speleothems in Cornwall have been largely unrecorded. They are however, a far from rare occurrence in coastal localities in North and West Cornwall. These coastal tufa accretions, with various fabrics, range in size from small mounds a few metres across to cascades and swathes, extending up to 400 m along cliff-faces. Particularly good examples of speleothems in sea caves have been identified at Holywell Bay north of Newquay. Although small in scale these Cornish speleothems and tufas, several of which are active, offer the opportunity to study the biological, geochemical and geological aspects of their development in a coastal environment.

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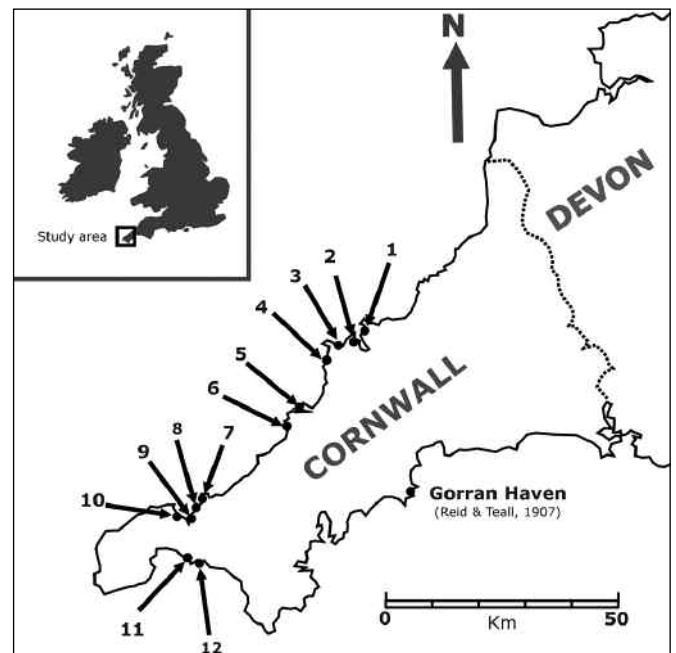
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### INTRODUCTION

Possibly the only extant specific references to tufa occurrence in Cornwall in a geological context are Reid and Scrivenor (1906, p.89) who mentioned tufa in Holywell Cave, near Newquay, North Cornwall, Reid (1907) who noted tufa west and east of Gorran Haven, South Cornwall, and Clarke (1968) who referred to the strong spring-line tufa deposit at Boat Cove, near Porthcothan, North Cornwall (Figure 1). This paucity of references is not surprising since thick limestone sequences, normally associated with better known tufa formation in the other parts of the UK and Ireland are virtually absent in Cornwall. To the authors' knowledge there have been no reports of speleothems in Cornwall. This review draws attention to the widespread distribution and variety of the tufa occurrences seen in North and West Cornwall and outlines their geological setting. It is virtually certain that there are many other tufa and speleothem occurrences in both North and South Cornwall. This preliminary paper is intended to spur their recognition.

### BACKGROUND

The terminology used in the literature on carbonates originating in terrestrial environments is unclear (Flügel, 2004; Pentecost, 2005); the terminology adopted in this paper follows that of Pedley (2003) and Pedley (2009). The term tufa in this paper refers to the normally porous, often soft, calcareous deposits that precipitate from ambient temperature CaCO<sub>3</sub>-rich freshwater as accretions in open air situations. Calcareous speleothem is used to denote the non-porous, usually hard, precipitates from ambient temperature CaCO<sub>3</sub>-rich freshwater forming the dripstones, flowstones, stalactites, roof bosses, stalagmites and dams found in caves.



**Figure 1.** Map showing the location of tufa and speleothem occurrences in north and west Cornwall. The numbers refer to the localities listed in Table 1.