

Report on pumice-like material from the Applecross Area

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Several pieces of “pumice-like” material were recovered from surveys and excavations from the Applecross area. These will be discussed in turn below.

Site 147 (NG7865 3296)

Several pieces of apparently dark grey “pumice” were recovered during the SFS Coastal Survey in 2002 from site 147 (NG7865 3296) close to Plockton. These pieces are angular to sub-angular in appearance and resemble dark grey “pumice” recovered (by AJN) from sand dunes at Sand (Applecross) and the shore at Applecross Bay in 2001 and by Stephen (sorry forgotten surname) from Scalpay. Superficially, these pieces resemble dark grey pumice which occurs throughout archaeological sites throughout the west coast of Scotland (Newton, 1999). The pieces, like pumice, are less dense than water and float, which accounts for their widespread coastal distribution.

The “pumice” collected by AJN was crushed and analysed on an electron microprobe. The thin sections showed that unlike pumice, the matrix of the material was black, whilst pumice glass is typically clear with a dark brown tint. Quantitative geochemical analysis showed that the material was not pumice, ie not a silicate glass. In fact, it was not possible to determine its composition. Qualitative energy dispersive analyses were also undertaken on the same samples and these showed the material did not contain any of the major elements normally associated with natural pumice. The most notable peaks were for sulphur and chlorine.

The conclusion has to be that this is not a natural volcanic deposit. It is not clear, however, what the material is, but it forms a regional deposit, stretching from Scalpay north to Applecross and Sand and south to the Plockton area. Further investigation of this material is required to establish its origin and date.

Toscaig 2 (S1026)

Although this dark grey material is vesicular, like pumice, it is in fact denser than water and does not float. It is therefore, not pumice.

SFS2000 NW A2B Sp. 2

As with the Toscaig 2 piece, this is dark grey and vesicular but is denser than water and is not pumice.

SFS2000 NE A2B Sp. 9

This light coloured sample again contains vesicles, but again is denser than water. It appears to be similar to a small piece of light coloured material from the rock shelter at Sand. This was also identified as pumice, but geochemical analysis showed that this was largely composed of calcium and phosphorus, i.e. it was bone.

Conclusions

These results show that it is easy to misidentify pumice. Ocean-transported pumice, by definition, must be less dense than water. Therefore, any clear samples that sink cannot be ocean-transported pumice. The dark grey pumice found at Applecross, Sand, Scalpay and Plockton does float, but is still not pumice. Pumice is composed of clear silicate volcanic glass, whilst this material comprises dark material, with sulphur and chlorine being the identifiable constituents. These are unlikely to be actually the most numerous components of the substance, but more detailed work will need to be carried out to identify what these are. Only by carrying out this work will the origin and age of this interesting deposit be established.

References

Newton, A.J. (1999) *Ocean-transported pumice in the North Atlantic*, Unpublished PhD thesis, University of Edinburgh, pp394.