

BCA Biological Structure Group David Blow Poster Prize

Information on the crystal by David Rice 1991

This year (1991) saw the inauguration of a new trophy to be awarded for the BSG poster presented at the annual meeting of the BCA. The trophy itself comprises a piece of Blue John crystal mounted on an oak plinth, both items being donated by Peter Harrison, the owner of the Treak Cliff Cavern at Castleton. Blue John stone has some historical interest as it was used in many Victorian memorabilia.

Blue John stone was first discovered around 1750 in Treak Cliff, a hill at the western end of the Hope Valley, Castleton in Derbyshire. Within ten years it became fashionable to have ornaments on a fireplace in Blue John, so by 1770 there were sixteen mines working in the one hill. They supplied the stone to about thirty firms in the local area which worked the Blue John into ornaments for the stately homes of England. Some Blue John was exported to France to have ormolu and clockwork movements fitted. The French described the mineral as 'Blue jaune' after its colour which is basically yellow with bands of blue. The French name was subsequently corrupted by the English into 'Blue John', the name by which it is now known.

The base of the mineral is calcium fluoride and in Treak Cliff this fluorite vein is adjacent to mildly radioactive rocks. The blue colour is thought to be due to the inclusion in the crystal lattice of hydrocarbons which have been modified by subjection to millions of years of mild radiation. The mineral is thus rare, and thought to be found only in Derbyshire, and only there in one hill, with other coloured fluorites such as those found in China, being related but non-identical.

Blue John as an ornamental stone fell out of fashion at the end of the Victorian era and to maintain an industry much valuable Blue John was used for fluxing steel. The result of this use is that large pieces are now unobtainable, though plenty remains for jewellery. The particular piece of crystal that forms the prize was mined in 1760 from the top of the Witches Cave in Treak Cliff cavern in Castleton. The crystal was found in the 'Cliff Blue' vein, one of the fourteen named veins that run through the hill. On mining, the rock broke in three pieces. One of these went to the Geological Museum in London, the second to Manchester University whilst up to now the third and finest piece had remained on display at the Cavern shop.

The mine and quality of this particular crystal is quite exceptional. The cubic morphology (space group $Fm\bar{3}m$) is well defined and the surface of the crystal displays many lattice dislocations with the overall faces being concave in nature, again thought to be due to the inclusion of hydrocarbons in the lattice. The plinth on which the crystal is mounted was constructed by David Elliot, a Castleton cabinet maker and is part of an English oak from the Lake District, which was felled in 1977. The plates and shields are of sterling silver and were engraved by Peter Devine of Sheffield.

The BSG Committee would like to express its thanks to Peter Harrison for his generous gift of the Blue John and the oak. This attractive prize will, I am sure, over the years attract a great deal of interest, stimulating healthy competition for it.

May the best poster win!

David Rice.

Hard copy found and typed in by Elspeth Garman 23/1/16.

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