

Quarrying for natural resources has taken place in Headington for approximately 600 years. A fashion developed where major buildings were constructed from Headington stone. Because demand was so high, quarries, like that at Shotover, began to spring up over the entire Headington area.

This helped to discover other natural resources, which began to overtake Headington Stone in importance. By the end of the 19th Century, more than half the population was working in association with the quarries (www.headington.org.uk).

Gypsum is one of the better-known minerals of Oxford, the most impressive crystals being found in the Kimeridge clay of Shotover, near Headington.

The crystals can be colourless/ transparent, but may be clouded, due to clay imperfections during its development. Both single and twinned crystals are common, with particular crystals in a rosette formation particularly attractive.

Fibrous 'satin spar' gypsum is however, a much more rare formation in Oxfordshire (www.oum.ox.ac.uk).

Gypsum forms during the evaporation of Ca²⁺ and SO₄²⁻ from seawater (thus it earns the term of an 'evaporite'). The two minerals precipitate out and combine to form sedimentary layers of calcium sulphate (CaSO₄ · 2H₂O). It is these two water molecules that earn it the term of a 'hydrous' mineral. Its formation also contributes to the oceanic calcium cycle, where constant levels in the sea are maintained.

The main use of this quarried gypsum is plaster, and more specifically, plaster of Paris. When gypsum is heated, water is lost, and it becomes anhydrous (Press and Siever 2002). However, when it is heated to lose only 75% of its total water content, it creates a white 'pulverulent', which is the plaster of Paris. When water is re-added, it creates very hard cement.

Other uses of gypsum include; the making of pale ale - when gypsum dissolves in water, it becomes permanently 'hard' or selintic. This improves the production; therefore, breweries dissolve quantities of mined gypsum in a process of 'burtonfization' to use in the manufacture. Gypsum also has agricultural value. It is used for dressing the land in preparation for crop growth. It is also used in the making of porcelain and glass. Because of its fine cleavage planes, it has also been known to glaze windows.

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