PUDDINGSTONE

Hertfordshire Puddingstone is a naturally occurring rock which, as its name suggests, is common to Hertfordshire, although it's also found to a lesser degree and in smaller quantities in West Essex, parts of Middlesex, Bedfordshire and Buckinghamshire.

In appearance it resembles an old-fashioned plum pudding, its rounded pebbles resembling the plums or currants.

It is a rock valued by lapidarists for its patterns and colouring when polished. Archaeologists and historians associate it with tool manufacture and route-markers, farmers curse it for the damage it does to ploughs, as do civil engineers for its untimely appearance in building foundation excavations.

For centuries Hertfordshire Puddingstone has become an integral part of the folklore of Hertfordshire as is shown by the many alternate names such as - 'Growing Stone', 'Breeding Stone', and 'Angel Stone'.

CHARACTERISTICS

- Puddingstone is found in blocks scattered over the Hertfordshire countryside, ranging in size from less than 10cms across to large boulders over 2m across. It is only very rarely found as bedrock in situ.
- It is renowned for its extreme hardness. This results from cementation of the pebbles with silica. If a Puddingstone cracks, the split will usually occur across the very tough flint pebbles because the cement is even harder. Nearly all the flint pebbles are oval in shape with a diameter of 0.5 to 5cms. Mineral impurities in the pebbles give a variety of colours, black, brown, red, yellow, pink, orange, etc., and sometimes they exhibit colour banding. The matrix between the pebbles is also variable in colour.
- Bradenham Puddingstone occurs in Buckinghamshire at Bradenham near High Wycombe. It has small, brown angular flint chips instead of rounded flint pebbles.

FORMATION

Hertfordshire Puddingstone is a sedimentary rock of the type known as conglomerate. It probably originates in the Reading Beds- deposits of sands, clays and pebbly gravels which were laid down around 54 million years ago.

At this time practically the whole of Britain was dry land covered by a deep layer of chalk which had been deposited on the sea bed 20 million years earlier. Part of the south-east was a giant estuary where sands and clays were brought by many rivers flowing from land to the west, north-west and north. Flint nodules in the chalk were removed by the river and rounded to form pebbles as they were carried along.

Millions of years later the sea retreated and the estuary became dry land. In places water containing silica in solution percolated up through the beds of sand and cemented them into a very

hard sandstone known as sarsen. Where bands of flint pebbles occurred in the sands the silica solution cemented the material into the hard conglomerate we now call Puddingstone.

Eventually weathering and glacial action exposed, eroded and transported the sarsen and Puddingstone, scattering boulders and fragments over much of the landscape north of the Thames. Blocks of sarsen were used to build parts of Stonehenge and Avebury Rings.

HERTFORDSHIRE PUDDINGSTONE IN FOLKLORE AND RELIGION

Legends and myths regarding its origins and strange powers abound in Hertfordshire and Buckinghamshire. It is thought that the name 'Puddingstone' dates from Saxon times and that the other names such as 'breeding stone' and 'mother stone' are of much earlier pagan origin.

The belief was widespread among superstitious villagers that the 'breeding stone' or 'mother stone' was always growing and collecting to itself pebbles or 'fruit' or 'children'. There appears to have been a vague belief that the stones were actually alive, could move and had human feelings!

'Growing stone' was a common superstition among farmers who believed that the stones would grow in their fields and damage their crops and ploughshares. In reality hard frosts, soil erosion and ploughing of surrounding soil often progressively exposed the stone on the surface.

When there was bad weather, with torrential rain and flooding puddingstones would be exposed by soil erosion. Later Puddingstone would become associated with misfortunes such as floods so it was called the 'woe-stone'.

Pieces of the stone known as 'hagstone' or 'witchstone' were often placed on the doorstep of a house or carried in the pocket to ward off evil. A parish record of 1662 states 'that a hagstone be placed on the coffin, for her bodie within be bewitched.' This was to prevent a suspected witch from escaping. In AD.601 Pope Gregory issued a letter to missionaries which decreed that pagan idols and myths should be sanctified by incorporating them into the teaching and fabric of the church. Consequently large blocks of Puddingstone were often used as a foundation stone for church towers, buttresses and porches.

USES

Puddingstone was first used as an alternative to flint to manufacture stone implements during the Stone Age. The Romans transported large numbers of Puddingstone querns. Rotary corn - grinding tools around the country and other Puddingstone querns have been dated up to the medieval period it has also been used as a whetstone for sharpening swords and knives.

The hardness of Puddingstone makes it of value to the lapidarist as it takes a high polish to reveal the variety of colours in the embedded pebbles. Whatever the truth about the powers and unusual properties of Puddingstone without doubt it is one of the natural features for which Hertfordshire is justly known.

Location

There are two locations under discussion, one in the arable Newberries Field, grid reference 173997 and one in the adjacent coniferous woods, grid reference 174994.

Geological Importance

In the arable field north of Bluebell Wood [Newberries Field] some Hertfordshire Puddingstone has been brought to the surface by cultivation. This unusually hard rock has led to this area being classified as a Hertfordshire Regionally Important Geological Site (RIGS). RIGS were created by a nation-wide initiative of English Nature.

The current land owners are proposing that this field be taken out of the Greenbelt for development. If this occurs it would mean that an area of geological interest would be lost. This part of our Hertfordshire heritage and once lost can never be replaced.

To the north east of Bluebell Wood, within the newer planted coniferous woods [Big Wood], there is another RIGS. This is the ONLY in situ exposure of Hertfordshire Puddingstone.

Apart from the loss of a geological interest, there is another problem with building on the northern end of the field where the Puddingstone is found. This is a very practical problem of digging in the area. Mr David Curry, geologist at the Museum of St.Albans, advises that if digging machines are used then they are likely to have problems and come across large areas of Puddingstone up to 10 feet long /deep. In a similar area in St.Albans, the Seventh Day Adventist Church had to move the site of the building because of the Puddingstone - it was practically too difficult to build in the original site as planned.

Harold Knee, historian wrote in 1976:

PUDDINGSTONE

There is a good opportunity just now of seeing the various stages in the formation of Hertfordshire Puddingstone - or, as it was anciently called, 'Plumb-Puddingstone' or Motherstone (Hertfordshire conglomerate) in the pit on the left at the top of Aldenham Avenue - before it was extended to Loom Lane.

In places the whitened sand is quite loose and can be scraped away with the fingers setting free the water-worn pebbles embedded in it. In the next stage the sand is loosely stuck together into a soft sandstone by the cementing action of flint dissolved in water finding its way downwards into the earth. A further step is reached when the cementing process has made a rock out of the sand and stone, which cannot easily be broken in the hands; when it is broken, however, the stones come out whole. Finally, the cement becomes as strong as the stones so that when the mass is broken the stones break across with the cement.

There was a 'Motherstone dell' somewhere in Newberries Park, and it is known that some of the buttresses of' Aldenham Church are largely composed of this stone. Fine examples of this stone can still be seen in the revetting of the bank on the east side of the footpath, which crosses Aldenham Avenue from Loom Lane and goes on to the Recreation Ground; it is close to the corner house. J.H. Saul, who wrote 'Radlett - Past and Present' (1927) used some of this stone for his rockery and was asked to explain why he had used concrete!

THE USE OF HERTFORDSHIRE PUDDINGSTONE
In the construction of Aldenham Church Tower

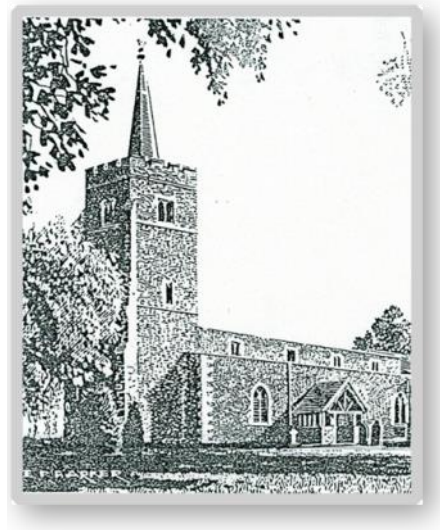
by David Robertson

Aldenham Church lies near the centre of the Hertfordshire Puddingstone deposits. It is, therefore, perhaps not surprising that the 13th Century builders of the great tower should have used this local resource, intermingled with flint.

What, of course, is the real surprise about the use of this stone to build the tower is the rarity of this geological rock. It has been suggested that there are only about 200,000 tons of this material in the whole world.

The extent of this deposit is found in a narrow band through Hertfordshire from Sarratt in the west to Cheshunt in the east, with a northern limit at Redbourn. This is an area of 20 miles by 10, and it is the ***only*** source of this type of rock in the world. It is therefore a considerable rarity but, as no real use has ever been found for it either industrially or commercially, it has not been treasured.

Hertfordshire Puddingstone may well be found in construction outside this area, but there is little doubt that in such a case it will have been 'imported'.



Many rockeries are made of this stone; some walls have it (there is an impressive use of it in a boundary wall in Aldenham Avenue, Radlett); and other churches possess some stones but none to exceed the amount used in the construction of Aldenham Church tower.

Many have searched, in vain, for the source of the Puddingstone used in the Aldenham Church tower. There are two deep pits to the south and north of the church, only a few hundred yards away, but neither has provided puddingstone.

Some examples of Puddingstone


A cut stone


Puddingstone mortared in a wall


Kingsbury Mill, St.Albans


Aldenham Church Tower


Phillimore Tomb, Aldenham Church