

## Ball Clay Mining

The Devon ball clay industry has been in operation for at least 250 years and probably since the age of those inveterate quarriers and miners for mineral wealth, the Romans.

The term ball clay appears to have derived from the lumps or balls of clay approximately 8 in. in diameter which were produced in the early days of the Devon and Dorset clay mining industry. The name now describes the highly plastic, white-burning secondary clays which are an essential constituent in the manufacture of pottery.

Ball clay is formed during the decomposition of granite. The action of water as steam together with carbon dioxide results in the breakdown of feldspar into kaolinite. This is basically china clay, quarried around St. Austell and south-west Dartmoor. Ball clay is a secondary derivative of china clay, being formed during the erosion and subsequent transportation by water, and occurs as a sedimentary deposit remote from the original source.

The South Devon deposits are found in the Bovey Tracey basin, which is about ten miles in length and three miles wide. The exact depth of the basin is not known but drilling shows clay at 1,050 feet and the seams are about 250 feet thick.

The bulk of the production was always by open-cast working, but, in order to extract the different types of clay at depth, a system of adit mining was introduced. The adits were all driven from the east of the outcrop in

Towards the end of underground operations in 1998, a train of trucks is lowered into E.C.C. Ball Clays' last remaining adit near Kingsteignton.

barren ground and descended into the clay seams. At the working face, clay was dug out with compressed-air spades and loaded into trucks which were rope-hauled to the surface. Production by this method was about 15 tons per shift.

The writer recalls a private tour of Watts, Blake, Bearne & Company's No. 5 or 6 adit in the late 1980s, when a cutter-loader machine on crawler tracks (like the one pictured) was being used along with a train of four side-tipping trucks, which may now be on site here. Production was then about 50 tons per shift, each train taking away 2½ tons of clay. The train was first rope-hauled to an underground junction, where the rope from the surface winch was attached and the train hauled up the main adit. As in the picture, steel arches were installed at 2 ft. 3 in. centres and the tunnel was fully lined with 3 in.-thick larch planks. There was a communication system, an air duct and an overhead surveying line.

It is little known that these adits passed beneath the River Teign, although no extraction took place beneath or beside the river.

Both clay companies ceased underground mining in 1998. The mines were costly and inefficient and the clays they won had by then been exposed in the quarries.



A working face in one of Watts, Blake, Bearne & Company's Kingsteignton mines in the 1970s, showing a Westphalia boom-cutter loader filling a single 12 cwt. Truck. This would have been man-propelled back to the main haulage adit.