65 to 1.6 million years ago

Tertiary

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1 - Brannam pottery vase

1886

Decorated by William Barum, Barnstaple

This vase is a fine example of local pottery of the late Victorian period. It has a brown earthenware body and slipware panels with scribed ornamentation of flowers and birds. The Brannam pottery worked glacial lake clay associated with Pleistocene boulder clay deposits near Fremington, west of Barnstaple.

2 - Model toilet bowl

A one-third scale salesman's sample.

3-4 - Cup and saucer

The manufacture of ceramic sanitary ware, tiles and tableware are the major uses of ball clay. Sanitary wares are made by casting in a plaster mould with liquid clay, or slip casting. The water drains away through the porous plaster, leaving the formed clay which is extracted by separating the parts of the mould. Most porcelain and pottery table ware is manufactured in a similar way.

5 - Clay tobacco pipe

Made as a sample by Watts, Blake, Bearne & Co.

This pipe was made in the 1980s, but in an 18th-century shape. Clay pipes are made in moulds and so the clay used needs to be very 'elastic'. The ball clays of the Bovey Basin are some of the best in the country for this. Indeed, such was the demand for this clay by 17th century pipe-makers that laws were passed to ban its export.

6-8 - Clay mining tools

Ball clay pits, Bovey Tracey

Bovey clay was worked as early as the 16th century. The clay was cut from beds by hand. Cube-shaped lumps of around 15 to 17 kilograms (about 35 lbs) are cut with a spade-like thirsting iron. These are separated from the bed by undercutting with a mattock-like lumper, then thrown up from the pit with a spiked implement, the poge. In the course of successive handling the cubes became rounded into balls, hence the name 'ball clay' now given to these deposits.

9 - Clay worker's shoes

Ball clay pits, Bovey Tracey

Not only was cutting the ball clay physically demanding work, it could also be very messy. The workmen wore simple but sturdy boots with leather uppers and metal reinforced wooden soles.

10 - Lignite or brown coal

Ball clay pits, Bovey Tracey

Lignite is fossilised plant material which is still essentially organic in nature with a high carbon content. As such it will burn readily, although with a lot of smoke. The beds of lignite were formerly used to fuel the pottery kilns. An old name for this material was retinasphaltum, combining the Greek words for resin and asphalt.

11-13 Fossil leaves and roots in lignite

14-16 - Fossil leaf impressions

Ball clay pits, Bovey Tracey

Vast quantities of decomposed granite were washed from the Dartmoor uplands into the Bovey basin, a depression formed along the Sticklepath fault, settling out as deep clay deposits. The high ground must have been heavily forested, since much plant material was also deposited in successive layers, fossilising as lignites or forming leaf impressions in overlying white, sandy clay.

17 - The Lignites & Clays of Bovey Tracey, Devonshire

William Pengelly, FGS

On the Fossil Flora of Bovey Tracey

Professor Oswald Heer Read 21 November 1861

This plate illustrates papers delivered to the Royal Society by Sir Charles Lyell on behalf of the authors. Professor Heer lists 50 species of plant found in the lignites of Bovey Tracey, four of which are depicted here. This copy is inscribed 'W S M D'Urban With Mr Pengelly's Compliments'.

18 - Granite

Lundy

The granite of Lundy, the small island off the north coast of Devon, is much younger, at 60 million years, than the Dartmoor granite. The timescale of its placement is closely associated with the rifting of continental plates that created the North Atlantic Ocean.