

PERRAN SMELTING HOUSE

In the mid 17th century Mellingey creek below Tarrandean was navigable for the small vessels of that time. Taking advantage of the requirements of a burgeoning mining industry a wharf was built and a blowing house erected on the south shore to process tin ore for the market. This venture was completely separate from and not to be confused with Perran Foundry. Over the next 150 years the business evolved, expanded and grew in importance and in 1812 was adapted to produce arsenic on a commercial scale, the first such plant in England. It was demolished in the 1880's and today all that remains are some ivy clad ruins on the edge of a muddy wetland and the vestiges of a water channel or leat.

Tracing its history the demand for tin steadily increased during the 17th century and Cornwall and Devon were the principal sources of supply in Europe. Up to then tin was mined largely from stream deposits and small quarries called openworks. This black tin was relatively pure and had only to be smelted in a simple furnace to achieve commercial grade metal and this was done in a blowing house. So called because the furnace charged with tin ore and charcoal used large bellows to create the heat to melt the tin. These bellows were driven by a waterwheel, in turn driven by water from a leat dug from just below the bridge in the middle of the village to Mellingey. The intake of this leat from the Trewedna stream and the supporting wall and earthworks are visible to this day.

During the 18th century the source of tin ore came increasingly from underground mining rather than surface or near surface deposits. This type of ore contained much waste material and impurities, which had to be separated out by crushing with stamps and what is called ore dressing, taking advantage of the metal's high specific gravity, before it was acceptable to the smelter. In order to handle far greater quantities of black tin many more modern furnaces, chimneys and stamps were added and the simple Perran blowing house became a sizeable industrial plant

Sometime around 1800 the Perran Smelting House closed, not because of any shortage of tin ore, but because the tin streamworks and silt in the Carnon valley blocked the navigable channel. The works were derelict in 1811, when a pioneering venture led by Dr Edwards, a Falmouth chemist, adapted the smelter for the production of arsenic, which was in great demand as a bright green dye in the Lancashire cotton mills.

Arsenic had for long been a problem impurity in the tin mines and it had to be removed by roasting the ore in burning houses or calciners. The arsenic was given off as a highly toxic gas most of which on cooling was deposited as a powder on the walls of the flues and chimneys. This substance was collected at great risk to the health of the workers from mines far and wide across Cornwall and brought to the Perran Smelter for refining and then shipped out from Penryn. All went well until 1840 when a new manager greatly enlarged the capacity of the plant, so that by 1847 great quantities of garlic smelling smoke billowed out from the seven chimneys of the plant and on still days a white poisonous fog descended on Perranwell. Arsenic was deposited on the fields, the orchards and vegetable gardens, cattle and horses died and fruit and vegetables were contaminated

In 1851 in a celebrated case at Bodmin Assizes, the manager, a Mr Garland was indicted of creating and continuing a public nuisance. The smelter was closed down shortly afterwards unable to compete with plants at Bissoe, once again became derelict and was demolished.

Chris Burton. April 2010.

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 (Perran Foundry established by Mr Read established in 1791
 ranks as one of earliest in Cornwall = Tarrandean Foundry
 of Messrs Thomas Read, closed before 1805,
 [Query this appearing in V. History of Cornwall])