Kingston Local History Society
Summary of presentation exploring the ancient tin mining industry on Dartmoor and showing surviving sites from the Bronze Age. Given by Nigel Grist, local historian on 22 February 2018 by Rae Musk

Nigel explained that he knows Kingston village well as he walks his dog in the area; and he is a local historian; a Dartmoor Guide and photographer. His presentation was based on the themes of tin and bronze in the context of moorland, mines, metals and moulds. His dog, an enthusiastic canine explorer, loves the moor and featured in many of the pictures shown.

Tin is a soft heavy metal, close to lead in the Periodic Table and has traditionally been used mainly as part of an alloy – such as pewter (*tin and lead*) and Bronze (*tin and copper*) and plating for steel. Key uses include pewter plates; and tin cans (*prior to replacement with aluminium).* There is evidence that mining of metals on Dartmoor started in about 4,000 BC and bronze age items and buildings have been located across most of the moors. Dartmoor, Devon and Cornwall have very high concentrations of tin in the ground, found particularly in valleys and fault lines. Dartmoor itself is deep and thick, some 5 – 6 kilometres, and emerged from a French volcano, in magna like form, which led to tin and other deposits creating fault lines in the granite. These fault lines contained rich tin deposits, some of which have not been found. The ore itself is tin oxide, usually gold or black and very dense and heavy. The main concentration is on Western Dartmoor in major deposits, especially in valleys, with the richest deposits higher up and the worst quality deposits lower down the valleys. The rich deposits were soon used up and *the 'tinners'* moved to edge of rivers to find new veins. Evidence of this working is easily seen today across Dartmoor, in the form of '*industrial spoil heaps'* of thousands of tons of excavated earth and rocks; by sharp edges of land where the mining of a vein stopped; by 'bowls' and pits excavated by the miners; and by walls behind which waste was stored. Mining activity went down to the Erme river and today's Erme Pits are a wonderful wildlife base, whilst Sheepstor Pits date from C12. Other key features include valleys, which appear to be natural but are in fact tin mines. Shafts were dug for speedy access to the tin loads and some are still in existence - some as shallow depressions caused by trial pits to find the tin lodes; others 90 metres deep and, in one case, an apparent valley which is, in fact, an open worked mine. Other clues to tin working include '*Mortar stones'* used to smash the tin ore in a form of '*mortar and pestle'* approach, with evidence of supporting mechanical power. Also '*buddles*', which were used to wash tin and remove the waste. In 1598, Sir Francis Drake commissioned the Crown to put pressure on the tinners as the waste silt caused by their activities ran down to Plymouth and blocked up the city's fisheries. But otherwise, the value of the final tin product in the 13C made the tinners a very powerful body, with their own parliament, laws and jail and the national Parliament was forced to capitulate when 11,000 tinners threatened to march on London in response to the Crown's seeking to impose restraints on their powers.

Nigel explained the 9 steps of the low grade (*technologically)* but very labour-intensive process from location of the ore through to final sale. Included in the process were massive granite blocks for furnaces and these blackened rocks are a feature of today's Dartmoor. Float stones (*washing troughs*) and mold stones, which included a trapezoidal depression for casting big ingots. Water was a key component of the process and the leats built by the tinners are still evident and still contain running water, as well as evidence of manmade deviation of some the flow of water. Buildings are further evidence with the *'Dries'*, used to dry clothes; wheel pits; and tinners' caches (*hidey holes for shelter, sandwiches and tools)*

There is wide evidence of the Bronze Age across Dartmoor, including single large standing stone; stone rows; stone circles *(some double and some in a figure of eight; burial areas and concentric circles - one known as 'the dancers'*), some of which may have been moved by Victorians '*tidying up'*! One of the stone rows is over 3 metres long and believed to be the longest in the world. Nigel's excellent photographs and explanations included Bronze Age evidence of an ancient animal pond; hut circles; large enclosures; drainage to keep rabbits dry (*they provided meat for Plymouth and fur for the London market*); and burial mounds, some with the capping stones still in place. In 2005, an unopened 'cyst' (*burial ground*) was discovered and the contents removed by archaeological process. Included was a fur parcel containing beads and other jewellery as well as the bones of a relatively young woman, who was deduced to be of importance given the burial process and the use of a bearskin to wrap her bones. Only recently, another circle of 32 stones, over 3,000 years old, has been

unearthed from the peat. There is also evidence of ‘reeves’ (*territorial boundaries*) over thousands of kilometres of the moor.

In summary, Nigel provided a fascinating insight into the mining industries, which shaped the character and landscape of Dartmoor as it is enjoyed today by a wide range of people, both locally and from further afield. He illustrated his presentation with excellent photographs, which showed graphically the massive impact made by mining to create the unique Dartmoor landscape of today.