Ironstone Mining
(An extract from a chapter of the book "Great Ayton – A History of the Village by Dan O'Sullivan")

Another important local mining industry was ironstone. There were three ironstone mines in the neighbourhood round about the time of the first world war. The shortest-lived was the Gribdale, or Ayton Banks, mine (map reference NZ 45/586110), a small concession operated from 1910 until 1921 by the Tees Furnace Company. This mine worked the *Peckten* seam of ironstone, so-called from the type of fossil found in the ore. Its location was quite inaccessible even for a narrow gauge rail-line, so an overhead cableway was constructed, carried on metal pillars supported by concrete bases, some of which may still be seen. The cableway took the ore one and a half miles from the mine, past Aireyholme, to a railway siding at the north end of Cliff Rigg, where it was loaded onto trucks.

A second mine was the Roseberry mine, located on the southern flank of Roseberry Topping (reference NZ 45/582124). Roseberry was operated briefly between 1880 and 1883, and then reworked by the Tees Furnace Company and then by Burton & Sons, between 1907 and 1924. It had a long, narrow-gauge railway which took the ore down an incline to a siding north of Cliff Rigg. The mine worked the *Main* ironstone seam, and its workings extensively honeycombed Roseberry Topping. The company was accused in the local press of causing the partial collapse of the peak of the hill in 1912. However, this was strenuously denied by Mr Burton, and today geologists are inclined to think that the erosion of the peak has, in fact, been partly a natural process which might have occurred anyway. Roseberry was the largest of the three local mines, employing at one time over 200 men and producing 1,000 tons of ironstone a day for the TFC's works at Lakenby and Skinningrove. At the peak of production in 1919 three trains filled with stone were leaving Roseberry every day for Teesside. When the mine closed in the mid-twenties there was much unemployment but fortunately at about this time I.C.I. started taking on miners for their workings at Billingham.

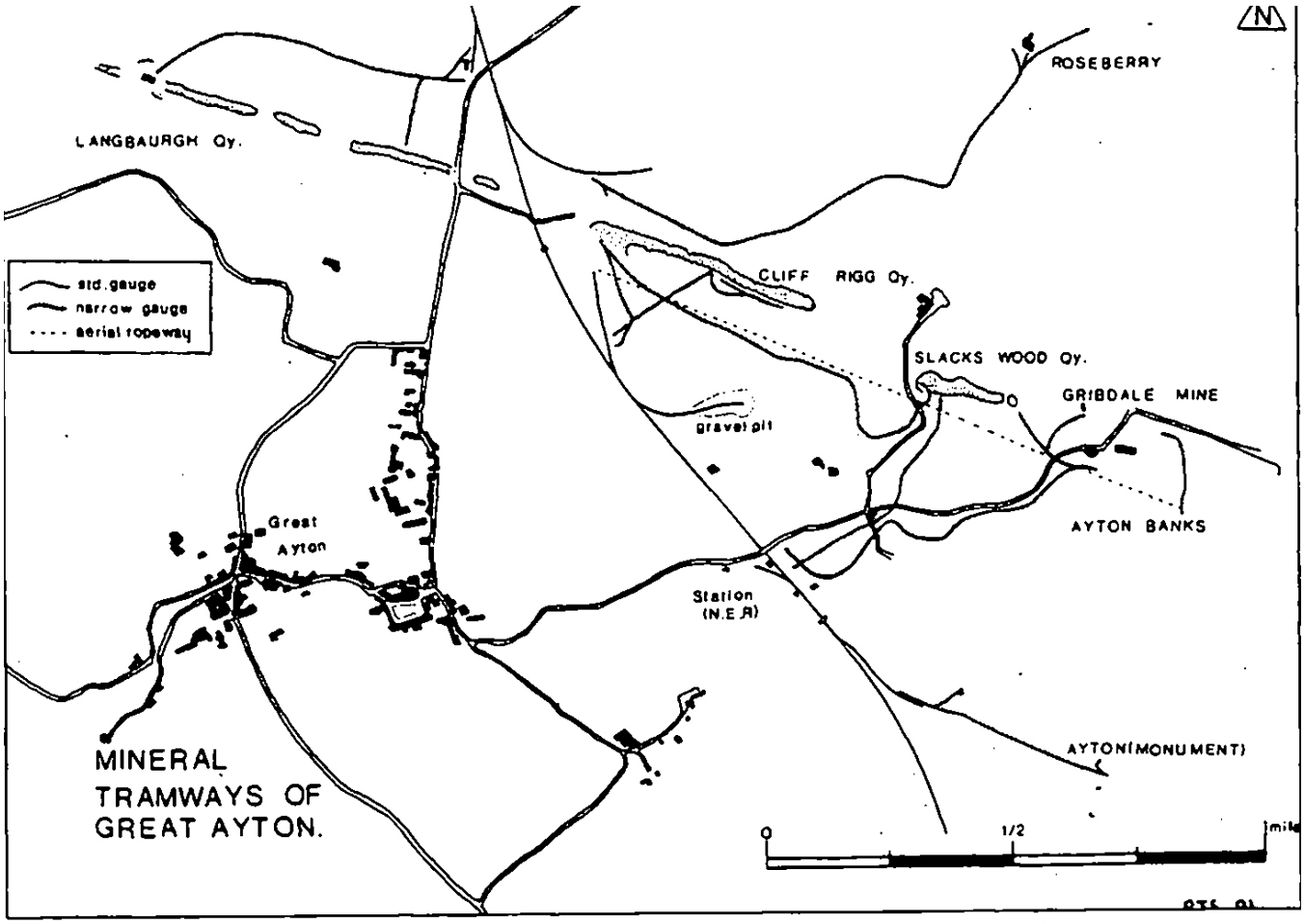
The third mine was Pease & Partners'Ayton (Monument) mine on the hillside below Captain Cook's monument (reference NZ 45/585103). It was worked between 1909 and 1928. We know quite a lot about this mine due to the researches of the industrial archaeologist, Richard Pepper. Ayton Monument always operated very much at the economic limit, due to a fairly low iron content plus a large percentage of silica which made the ore difficult to smelt. There were also major problems with drainage throughout its history. Although the mine was electrified in about 1921 (eight years earlier than Great Ayton), it was not economic to keep extending the powered transport system into the working places, so the link was provided by ponies, which were stabled at Summerhill Farm north of Gribdale, where a second drift entrance to the mine had been made.

Miners at the Monument mine worked in pairs, each miner having a filler, and these two-men teams were part of a three-shift system, working round the clock, six days a week. Payment was by the yard at 24/- a yard, and an average output per team per day was 0.94 yards, or 12.76 tons; hence each team might earn £6-16-0 a week to be distributed between filler and miner. I quote Richard Pepper's account of a typical mining sequence (which seems to be very similar to what was going on simultaneously in the whinstone mines not far away):

> *1 The miner would select the spot in the face of ironstone he was going to drill. At Monument the face was approximately 5 feet high and 13 feet wide.*
> *2 A shallow hole would be made in the face with a pick.*
> *3 Drilling would then be commenced. Hand drilling machines with a rotary action were used.*
> *4 Once the hole was complete it was scraped out using a brass scraper.*
> *5 It was at this point that the gunpowder was added. It was rammed into the hole using a copper stemmer. The powder was held in place by pushing clay or even horse droppings into the hole.*
> *6 A fine copper rod with a tapered end was then pushed through the stemmings and into the powder. More stemming would then be added.*
> *7 The pricker would then be removed by gently turning it.*
> *8 Into the hole left by the pricker would be inserted a squib.*
> *9 The squib would be lit.*
> *10 The miner would retire to a safe place to await the explosion.*

As the following table shows, during the years between 1911 and 1924 there were never less than 300 employees in total at the three mines near Ayton. The peak year for production of ironstone was 1919 when three trains a day left Roseberry and at least one a day from the other mines.

Year	*Monument*	*Roseberry*	*Ayton Banks*	*Total*
1907		*91*		*91*
1908		*228*		*228*
1909	*41*	*202*		*243*
1910	*50*	*216*		*266*
1911	*64*	*288*		*352*
1912	*102*	*280*	*3*	*385*
1913	*77*	*283*	*21*	*381*
1914	*78*	*302*	*276*	*656*
1915	*87*	*235*	*66*	*388*
1916	*96*	*232*	*74*	*402*
1917	*132*	*259*	*87*	*478*
1918	*?*	*?*	*?*	*?*
1919	*168*	*386*	*104*	*658*
1920	*174*	*271*	*99*	*544*
1921	*169*	*220*	*79*	*468*
1922	*110*	*200*		*310*
1923	*136*	*?*		*?*
1924	*163*	*164*		*327*
1925	*159*	*8*		*167*
1926	*10*	*8*		*18*
1927	*161*			*161*
1928	*142*			*142*
1929	*7*			*7*
1930	*14*			*14*[6]



This plan is taken from Richard Pepper and Richard Stewarts' book, The Mineral Tramways of Great Ayton.