timber which was a cargo in both directions, sand for building, manure and probably bones for the Bone Mills indicated on the old Ordnance Survey maps.

NOTES

1. *The Sherborne Mercury*. 18 March 1793.
2. The Duke of Bedford was the chief landowner in the Tavistock area on the Devonshire side of the river Tamar.
3. *The Sherborne Mercury*. 29 December 1800.
4. *The Sherborne Mercury*. 5 April 1802.
5. *Ibid.*
6. Devon Record Office L 1258 Devon Letters D 67 From Mr Bray 9 October 1802.
7. *The Sherborne Mercury*. 3 August 1807.
8. Devon Record Office L 1258 Letters B 43 From Mr Wilson. 9 November 1833.

SOURCES

The Duke of Bedford's Tavistock Estate Papers.
The Plymouth and Dock Telegraph
The Sherborne Mercury
The Tavistock Gazette
The Western Daily Mercury
Booker, F. 1971. *The Industrial Archaeology of the Tamar Valley,* Newton Abbot.
Hadfield, C. 1967 *The Canals of South West England,* Newton Abbot

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The Morwellham Open Air Museum for the photograph of the Canal.

(*Further articles or other forms of information on the Tamar quays, trade, boats, etc. would be warmly welcomed. Could "Tamar" become a 'clearing-house' for all the pieces of information that people have acquired by reading, observation or anecdote over the years? Gathered together, they should gradually become a source of reference for the history of the valley. Ed.*)

A MEDIEVAL QUARRY PUZZLE

Frank Booker

While silver and lead mining in the Bere Alston peninsula in the Middle Ages and in the 18th and 19th centuries has been fairly well recorded, much less is known about the trade in blue roofing slate obtained from quarries in the area which may well have played a part in the extensive trade in slate carried on along the south coast in medieval times.

Blue slate from the older rock formations in Devon and Cornwall was extensively used in the Middle Ages for roofing in a wide area of southern England. It provided more robust and less inflammable roof cover than thatch or shingles, although these continued in common use. The evidence has been clearly summarized by Jope and Dunning in The Antiquaries Journal, Vol. 34, July 1954, who point out that blue slate, unlike the often more locally available stone slates from limestone, sandstone and other formation in southern England, can usually be split much more thinly, thus giving a lighter roof. Medieval blue slates, to quote Jope and Dunning, are usually less than ¼ in. thick as compared with ½ in. to 1 in. thick for Pennant Sandstone (Bristol) or Cotswold "slate". Thus "good roofs can be obtained with blue slate which weighs only 3 lb per square foot compared with 12-14 lb per square foot for Pennant or Cotswold slates."

The Exchequer Rolls have many references to the use of, and trade in, blue slate. Thus in 1296 (two years after 370 lb of silver was sent to the king from Martinstow (Maristow) 23,000 'sclattes' were obtained from Birlond (Bere Ferrers) at 5d per thousand and 10,000 from 'Hassel' (L. F. Saltzman in English Industries in the Middle Ages spells it 'Hassal') in the Tamar Valley for miners' buildings at Martinstow. Slates were also exported from the district, as 2,000 'sclat de Cornwyall' (as Devon blue slate was also known) were bought for 10s for a house in the New Forest in 1363.

Blue slate similar to that found in the Bere Alston peninsula and in north Cornwall has been excavated from Totnes Castle. It has been found at Porchester Castle, at Winchester and as far east as Canterbury and Dover. Some 800,000 Devon blue slates were exported through Plympton, Totnes and Dartmouth in 1427 for the king's buildings at Winchester. There is also evidence for the export of slate from

Plymouth. A considerable quantity of the Devon blue slate sent to Southampton seems to have been re-exported. For example, in 1436, a man was granted an export licence to ship 100,000 Devon blue slates to Mont St Michel in Brittany in payment for a ransom. What crime or misdemeanour attracted so unusual a forfeit is not clear.

Thus evidence of considerable activity both in the quarrying and export of blue slate in medieval times and slightly later is abundant. What has long puzzled me is the whereabouts in the Tamar Valley of the quarries from which some of this slate came. It must be confessed straightaway that the site referred to as ''Hassel'' in the Tamar Valley has so far defied indentification, at least by me. It has been conjectured as being Hartshole, some 2½ miles south west of Tavistock or Parswell (known in 1551 as Passell) a farm one mile south west of Tavistock. The old name ''Passell'' seems to provide an almost give-away clue in favour of the present-day Parswell but search and inquiry has not revealed any positive trace of a roofing quarry there or at Hartshole.

The ''Hassel'' working may, after all, have been only a small quarry which the passage of some 700 years or more has obliterated. The so-called Birlond quarry, however, appears to have been a more extensive working and, as it is unlikely to have been opened up simply to supply slates for Martinstow, one would expect to find around Bere Ferrers a large area of disturbed ground where slate debris predominated. There is, in fact, at Liphill (or Lipple as it is locally known) about two miles north west of Bere Ferrers, a long abandoned slate quarry (SX 443642) filled with blue slate debris. It is suggested here that this might have been the Birlond or Bere Ferrers quarry.

Liphill, almost opposite Cargreen, is an area of mudflats bordering the river from which muddy channels run to a long abandoned and now hardly discernible quay. The name Liphill may well be fairly recent; it is probable that in medieval times the whole area was loosely known as Birlond. The quarry workings are within about 100 metres of the quay and the spoil dumps are concealed not only with a mat of ground vegetation but with stands of mature oak, beech and other trees. A solitary walnut tree also flourishes. The quay foreshore is thickly strewn with broken slate, probably used as hardcore. Judging by the denseness of the vegetation the quarry is unlikely to have been worked for some 200 years. One of the oldest inhabitants in the area, now well over 80, has no memory of it having been worked.

It is best approached by taking the narrow road from Bere Ferrers signposted to Clamoak. About halfway along, the road descends

steeply to cross a stream at Tuckham bridge. As it climbs out of the valley a field gate on the left marks the entrance to a public trackway known locally as Caterpillar Lane. The ground to the left of the trackway falls away steeply to a valley bottom which was formerly regularly flooded by the tidal Tamar and there is a tradition that salt pans were worked there by the monks of Buckland Abbey. There are still several shallow lagoons which were at one time managed as fish farms for the Mount Edgcumbe estate.

Traces of the quarry do not become apparent until one is close to the quay at the end of the lane. Careful examination shows the steep bank on the right hand side of the track to be a scree of discarded blue slate. The slate outcrop appears originally to have been worked back for some ten or more metres almost to the edge of the road to Clamoak. This can be seen better from the road itself, where almost at the top of the hill as it climbs out of the valley, a pillar of rotted or expanded slate has been left intact. Behind the pillar is a pit along the top of which is a little used farm cartway running over a thick deposit of slate debris which extends like a mine burrow into an adjoining field. Judging by the thick covering of grass and other plant life, the debris has remained undisturbed for many years. The pit itself has clearly been much deeper and to get at blue slate hard and compact enough for roofing it was probably worked for ten or more metres below the overburden. There is evidence of still continuing falls of rotted or expanded slate from near the top of the quarry face. Such falls over many years have probably helped to raise the level of the pit bottom as well as contributing to the widespread scree.

There is then ample site evidence of a once extensively worked slate quarry. How confident can one be, after 700 or more years, that this is the original Birlond quarry mentioned in the Exchequer Rolls? One cannot, of course, come to such a dogmatic conclusion on the present evidence, but if the site is assessed objectively there are a number of factors in favour of a tentative assumption that it could be.

Firstly, the quarry is undoubtedly a very old one and worked an outcrop of blue slate.

Secondly, the mass of discarded slate debris strongly suggests that it was in the main a roofing slate quarry. Quarrying for walling slate would have left much less debris as slate for this purpose does not need so much cutting and trimming. Quarries opened by farmers for walling slate, of which there are several in the district, are usually isolated pits taken down for only a few feet below the overburden.

Thirdly, the slate on the site has widely spaced joints making it ideal for splitting into thin rectangles.

Lastly, there is the siting of the quarry near a quay, a particularly important point. Given the presence of suitable slate, the two main considerations for opening a medieval quarry would have been a demand for its material and good transport facilities. Apart from the immediate need for buildings at Martinstow, there would have been a ready demand for roofing slate in Plymouth itself, easily reached by water from the quarry site. Plymouth could have been used also as a centre for the re-export of slate to other sites along the south coast. The quarry's situation adjacent to a Tamar quay was thus an ideal one for the rapid and cheap transport of its products. The availability of water transport has always been an important consideration for quarries in this area. The Tavistock canal, almost immediately after its completion, was linked by a cut to the Mill Hill quarries. The extensive and important Cann slate quarry, near Plymouth, was linked to the Plym by a canal. The big medieval slate quarry at Charleton, near Kingsbridge, was developed close to the Kingsbridge estuary to facilitate the transport of its slate to Dartmouth. In our own times, the profitability of the great roadstone quarries at Poldrissick and Treluggan was enhanced by their nearness to the river Lynher on which they developed their own quays.

The Liphill site, therefore, is clearly one inviting further study. Some limited digging may reveal examples of slate tiles and perhaps slate workers' tools. The extensive records of the Mount Edgcumbe family, who were the mineral lords of the area, remain to be looked at, although those consulted so far have not yielded any clues.

I am grateful to Dr J. Harvey, of the geology department of the Plymouth Polytechnic, for his assistance in identifying the Liphill slate and his comments on the quarry.

REFERENCES:

1. E.M. Jope and G.C. Dunning. The Use of Blue Slate for roofing in Medieval England, *The Antiquaries Journal,* Vol. 34, July 1954, pp. 210-11.
2. L.F. Salzman, *English Industries in the Middle Ages,* (London 1964) pp.89-90.

3. Frank Booker, *Industrial Archaeology of the Tamar Valley* (Newton Abbot 1967).
4. Jean Lindsay, *A History of the North Wales Slate Industry* (Newton Abbot 1974).
5. Rev. A.J.C. Beddow, *A History of Bere Ferrers Parish* (Tavistock 1975).

For the geology of the district, W.E.A. Usher and J.S. Flett, *The Geology of the Country around Plymouth and Liskeard* (Geological Survey Memoir, 1907) and H. Dewey, *British Regional Geology South West England* (London 1948) are useful.

MINING AT DEVON GREAT CONSOLS AFTER 1903

Lt. Commdr. P.H.G. Richardson R.N.

Almost every visitor to Morwellham must depart with some awareness of our West Country mining heritage, which for the majority may only amount to an increased consciousness of the signs of past mining to be seen elsewhere in the two counties. A small, but perhaps growing, number may leave with a desire to know something more of the significance and history of the various mining relics they may see.

For more serious inquirers much local mining literature does exist, mostly either written 70 to 100 years ago or else derived from books and documents of that vintage; but though containing a wealth of statistical and other information this does not always reveal a great deal of the small detail of actual day to day life and activity on the mines.

Recently, however, some entirely fresh documentary evidence has been brought to light regarding Devon Great Consols Mine. This does not relate directly to the great days of 1844-1903, when the mine was closely linked with Morwellham, but to a later re-working which took place between about 1915 and 1930, and although on a small scale only, for which reason it did not attract a great deal of attention, it was nevertheless a microcosm of former days, so that the evidence now available is correspondingly interesting.