

Historical Evidence of Alluvial Tin Streaming in the River Valleys of Camborne, Illogan & Redruth

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For most of the nineteenth and twentieth centuries tin streaming has meant streaming for mine tailings. Apart from the well-documented operations this century, on such rivers and moors as Kenton Marsh, Red Moor and the Hayle River, the hundreds of tinworks along the valleys of the mining districts have been concerned with catching the cassiterite washed as tailings from the large mills of the mines which lined those valleys. The genesis and distribution of the alluvial tin deposits, however, are the subject of different ideas as historians seek to reconcile the theories of the geological fraternity with hard historical fact.

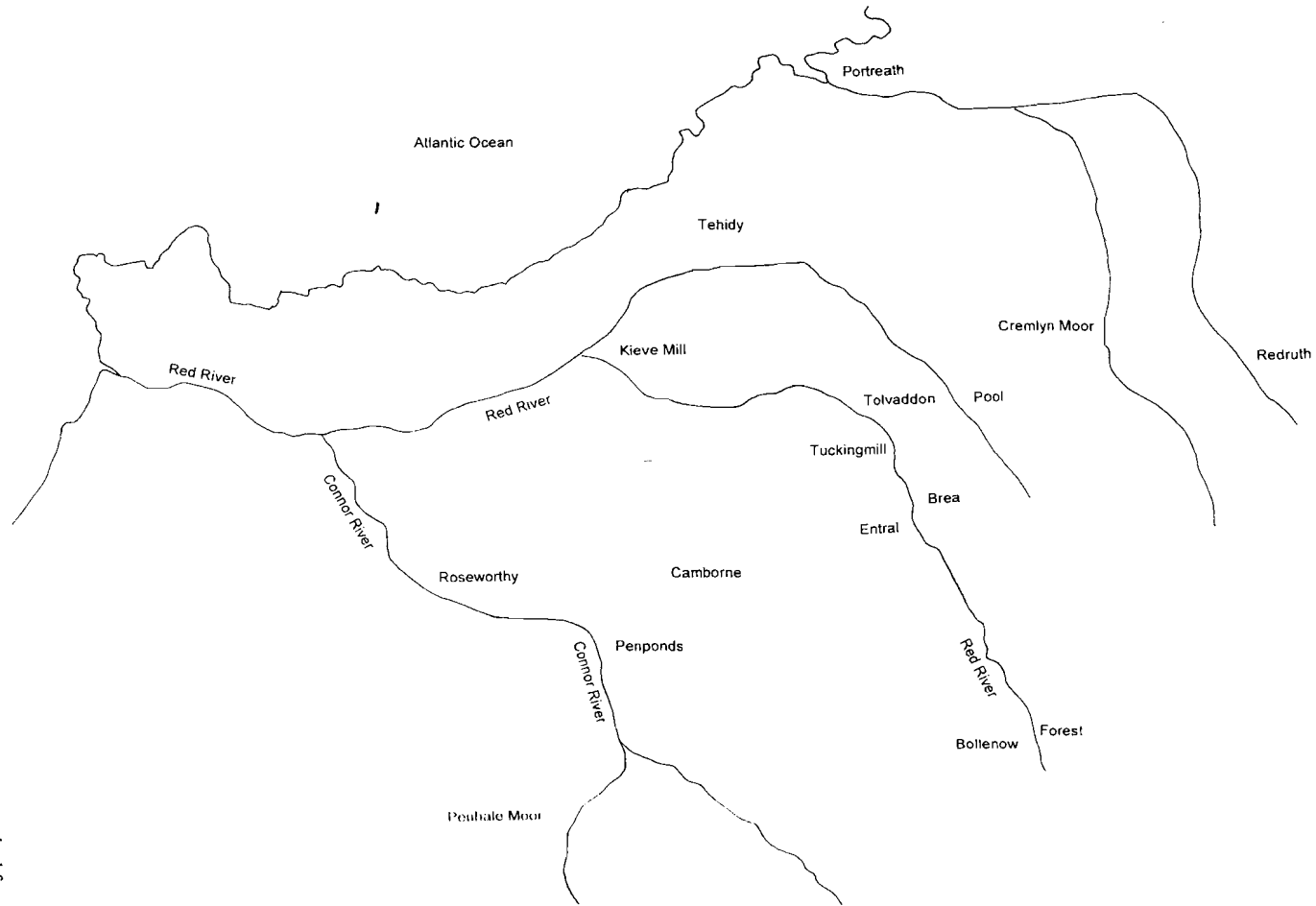
In the second half of the eighteenth century William Pryce voiced the widely held view on the origin of this detrital tin when he said that it had been ripped away from the back of lode outcrops by such cataclysmic occurrences as the flood of Noah's day. This opinion had held for centuries, and even Richard Carew, writing at the end of the sixteenth century believed it.¹

The early nineteenth century witnessed the growth of scientific interest in all aspects of geology, and such men as J W Colenso, J Carne and W J Henwood all lectured and wrote on the subject, explaining their beliefs on the origin of alluvial tin in the valleys of Cornwall and west Devon. One argument to which they all seemed to subscribe, indicated that alluvial tin had been laid down principally in those valleys which run to the sea on the south side of Cornwall. Carne wrote, in 1830:

"All the productive streams are in the vallies, which open to the sea on the southern side of the Cornish peninsula; whilst most of the richer veins are situated near the northern coast, where all the vallies open to the north: most of these vallies have been explored, but, although small portions of tin have been found in many of them, no extensive beds have ever been discovered. The mines, for instance, of the parishes of Lelant, Gwinear, Camborne, Illogan, St Agnes, and Perranzabuloe, are all near the northern coast, but there are not productive streams in any of these parishes: on the south side, however, are the streams of Perran-arworthal, Ladock, St Stephens, Roach, St Austell, Luxulian, etc. Now on looking at the direction which the streams bear from the mines, it will appear most probable that the course of the current, which swept the tin from its original situation, must have been from north to south, or rather from NNW to SSE."²

Henwood agreed with Carne when he wrote: "The immensely larger quantities of stream-ore found in vales opening to the sea on the south and south-east, than those of which the lower terminations are on the north and north-west, must be obvious to the most superficial observer."³

North running streams, worked for alluvial tin over the centuries.



4	Rec. of W ^m Polittoe & partners by the hands of Nicholas Tresadern for 1/6 p ^{ts} Dues of Tyn in Tregaferran	1 . 2
	Rec. of Digory Tinkin by the hands of D ^r & moyety of 1/6 Dues of Tyn in Tregaferran. Carnes the other moyety being M ^r Kelles	1 . 6
	Rec. of Thomas Trevarbon by the hands of D ^r for 1/6 Dues of Tyn in ^{Wales} Wales	3
	Rec. of John George by the hands of D ^r for 1/6 Dues of Tyn in Tregaferran	1 . 4
	Rec. of John Tinkin by D ^r for 1/6 Dues of Tyn in Breca	18 . 6
	Rec. of John Mansfield by D ^r for 1/6 Dues of Tyn in Carnbray Park	1 . 11
	Rec. of Samuel Luker by D ^r for 1/6 Dues of Tyn in Tregaferran	1 . 10
	Rec. of Richard John by D ^r for 1/6 Dues of Halbon Tyn ^{Stuffe in} Stuffe in ^{Conkyp^r}	16 . 6
	Rec. of John Luke by D ^r 1/6 Dues of Tyn by John Luker's mill	5 . 9
	Rec. of Alexander Pearce by D ^r 1/6 Dues of Tyn in Tregaferran	1 . 19
	Rec. of John Mansfield by D ^r 1/6 Dues of Tyn in Carnbray Park	1 . 6 . 9
	Rec. of Thomas Sampson by D ^r 1/6 Dues of Tyn near y ^e old Blowing house	1 . 5
	Rec. of William Dunkin by D ^r 1/6 Dues of Tyn in Extrall	3 . 3
	Rec. of Edward Rowcarrow by D ^r 1/6 Dues of Tyn by John Luker's mill	1 . 1
	Rec. of John Paull by D ^r the moyety of 1/6 Dues of Tyn near the River that divides the Globe Lands of Redruth from Carnbray Park the other moyety being the Rectors of Redruth	1 . 2
	Rec. of Alexander Stephens by D ^r 1/6 Dues of Tyn in Toladon Man ^r near John Spranges house	4 . 6
	Rec. of Richard John by D ^r the moyety of 1/6 Dues of Tyn in the Forest more the other moyety being T ^r John S ^r Aubryns	5 . 6
	Rec. of John Luke & partners for 1/6 Dues of Tyn in Breca	3
	Rec. of David Rowe appears Rent for a stamping Mill in Carnkyp ^r in the 25 th of December last	4
	Rec. of T ^r Richard Rowe of y ^e Man ^r of Tehidy 4 to Mich ^l last m ^o p ^{ts} of y ^e Rent of the Dues	35
	Rec. then of Henry Oliver by the hands of John July 30 . 11 which with 3 . 9 allowed him for 2 years (and Tax to Lady Day last is in full) of his 2 years Rent of 21 p ^{ts} p ^{ts} to Condemas last for y ^e Term of May is re ^{de} clear as aforesaid	30 . 11
		107 . 9 . 3

With respect to the narrower and steeper valleys which feed into those wide, flat and low valleys, like those at Pentuan and Carnon, Henwood comments: "In various parts of the vale between Carnon and Stythians search has been made for stream tin-ore, but with little success."⁴ He added: "The tin-ore was found in the largest quantity at the two points where the Stythians vale and a glen called Smelting-house vale, open into the Carnon vale, although very little has been discovered in either of the two former previous to such union. The pebbles of tin-ore are much larger toward the sea, than further up the vale." Colenso made similar points about the valley above the Happy Union tin stream near St Austell.⁵

What are we to make of these fairly unequivocal statements? Do we see them as the opinions of intelligent and well-informed 'scientists' of the first half of the nineteenth century, struggling to make sense of what they could see about them, in the light of current geological thought? Are their observations concerned with the tin streaming industry as it was in their day and as it had been within the memories of those who had taught them? Are we to regard their opinions as based upon the observations of men with only a limited body of information on the tin streaming of previous ages?

It must be rare at the end of the twentieth century for men to be overly influenced by theories put forth by geologists in the early nineteenth century. Their narrow knowledge base is apparent. They did not have access to records of tin production in the parishes to which they refer. They did not have the advantage of geological data bases, as found in Camborne School of Mines and a hundred other such institutions throughout the world. In a word Colenso, Carne and Henwood were laying the foundation for understanding such things as the origin and distribution of placer tin. At best we must use the statements of Carne and Henwood to enlighten ourselves on opinions prevalent in their day, and see their usefulness as informing on the conditions they observed in the first half of the nineteenth century.

In his excellent book *Tin in Antiquity*, Roger Penhallurick takes much of Colenso, Carne and Henwood at face value. Unfortunately, in accepting without too much question these statements, he fails to note the limitations of their knowledge of the historical tinworks in those valleys, and fails also to take advantage himself of the enormous corpus of information on tin production in those streams where he believes no tin of any consequence was found. On the river between Camborne and Illogan, Penhallurick says: "Unfortunately, there is no Red River tinstone in recoverable quantities, although traces of tin were found at a depth c.10.6m near the river mouth in a boring 100m above Gwithian Bridge." Again: "The only certainty is that the Red River, and the valley between Redruth and Portreath, contains no alluvial tin, a fact pointed out in 1830 by Carne." He also quotes F J Stephens (1899), who made the somewhat less sweeping statement that in the Red River valley 'poor tin gravel was met with constantly, but no rich pockets or patches of payable gravel'. He also observes that Stephens makes the 'interesting' statement that 'modern tin streaming' (tailings streaming) only started in Cornwall in 1860. This statement is less 'interesting' than downright amazing!⁶

Those nineteenth century writers were commenting on the position in their day. Long before the 1820s and '30s the valleys alluded to had been denuded of payable tin-ore. For many centuries, probably millenia, they had been worked and re-worked. Little would have been left but the 'poor tin gravel' referred to by Stephens. Penhallurick stretches the facts as seen in 1828-30 to mean that there had never been rich tin alluvium in those

17 ²⁷	Rec. of Alexander Stephens by D. for 1/6 Dues of Tyn in <u>Islehead on one acre</u>	4	3
	Rec. of John Dunkin by D. for 1/6 Dues of Tyn in <u>Three Moore</u>	4	
	Rec. of Thomas Duvy by D. for D. Dues of Tyn in <u>Cantray</u>	5	
	Rec. of W ^m Hocking by D. for the moiety of 1/15 part of Toll Tyn in the River und. <u>Tarwest</u> that Divides the parishes of Illogan and Redruth	2	6
	Rec. of John Luke by D. for 1/6 part Dues of Tyn in <u>Toldkethay</u>	2	6 9
	Rec. of John Dunkin by D. for 1/6 Dues of Tyn in <u>Entralle</u>	6	
	Rec. of John Rogers by D. for 1/6 Dues of Tyn in <u>Tregaferson</u>	4	0 4
Aug ^r 7	Rec. of M ^r W ^m Rogers in p ^{ty} of more money due from his grand father M ^r John Rowe on a Mortgage of part of <u>Hillwoose</u>	80	
25	Rec. of Henry Provis for 1/6 part Dues of Tyn in <u>Bree</u>	5	
	Rec. of Thomas Trevaathan for 1/4 part Tribute of 21. 6. 2 of Copper Ore weighed at wheale owle the 10 th Inst at 10 p ^{ty} Tyn	2	13 3
	Rec. of D. for D. Tribute of 8. 7 of Copper Ore weighed the 22 Inst at D. work and at D. price	1	10
	Rec. of D. for 1/6 Dues of Copper Halton ore sold for 2 Guineas	7	
26	Rec. of Richard Sparrow for the moiety of 1/6 p ^{ty} Dues of Tyn in the River und. <u>Tarwest</u> y. divides the parishes of Illogan & Redruth the other moiety being M ^r Bullers	1	7
	Rec. of D. for 1/4 moiety of 1/15 part dues of Toll Tyn in y. River that divides the parishes being in Bounds 8 & 6 below Toldkethay house y other moiety being also M ^r Bullers	3	10
	Rec. of D. for 1/6 Dues of Tyn near <u>Cantray park hedge</u> above y. <u>old Blawney</u>	2	10
31	Rec. of M ^r Luce Fraed appears Rent for <u>Manwinion</u> to Lady Day last	20	
Sep ^r 8	Rec. of John Paull y full Consideration money for lease of three lives of a Messuage & Tenant near <u>Cantray</u> formerly in the possession of Jane Tongy	52	10
	Rec. of Thomas Puntire in part of the Rents of the Man. of <u>Tehidy</u> to Mich ^l 1722	8	2
8 th Nov ^r	Rec. from the <u>Eastern Estates</u> as by a paper of particulars	196	7
9 th	Rec. of John Rogers for 1/6 Dues of Tyn in <u>Tregaferson</u>	5	
11 th	Rec. of Alexander Paull 20 for a years rent of <u>Redhoe</u> to Michaelmas 1726 out of which allowed him 16. 6 for a years Land Tax to that time so rec ^d dead	19	3 6
15 th	Rec. of M ^r Philip Reynolds for a parcel of Tyn <u>Stuff</u> sold him in <u>Cantray Hall</u> the 3 of June last and payable the 3 rd Instant	50	
4 th Dec ^r	Rec. of M ^r Richard Canbury in full for y Consideration of lease of three lives for a house late <u>Emond Mills</u> in the parish of <u>Illogan</u>	33	10
11 th	Rec. of Grace Richards in full for a cherry of due on the Death of Charles Richards also on the moiety of higher <u>Cantray</u> p ^{ty} of <u>Tehidy</u> Rents y. Tyn of	10	
		485	15 0

northern and narrower valleys. In 1843, fifteen years after making the above statement, Henwood modified it somewhat with the following: "The narrow valleys in the district have been all streamed for tin ore at various periods and in the Carnon Valley very large quantities have been found."⁷

One of the most important alluvial tracts, worked for tin from medieval times till the twentieth century, is along the Hayle River. It fails to conform to the model produced by Henwood and Carne in the early nineteenth century. The Hayle River flows to the north coast and its alluvial tin could hardly have been laid down in the fashion described by them. It is saved from dismissal by these theorists due to the uncomfortable fact that it was worked for large tonnages of alluvial tin throughout the nineteenth and early twentieth centuries.

Historical evidence for continuous working of payable alluvial tin ore, in those parishes referred to by Carne and Henwood (Lelant, Gwinear, Camborne, Illogan, St. Agnes and Perran-zabuloe) as being barren, from the medieval period until the eighteenth century, is considerable. By the end of the thirteenth century the extent of streaming below Redruth (Euny) Church was such that the itinerant Justices visiting Cornwall heard complaints against the tanners who had damaged the river banks: "the Bridge of Reswythen (below Redruth Church) had been ruined by the tinworks of Ralph Wenna of Redruth and John de Treveyngy, tanners, who had undermined it." One of the tanners appeared to defend himself, but he was convicted and ordered to pay for the bridge's repair.⁸ Reference to a blowinghouse at Rosewithian (Reswythen) Downs, in 1509, and a letter from Thomas St. Aubyn, dated 1533, show that the river between Trevingey and Barncoose was still being streamed for tin 230 years after the 1301 court hearing. The letter says: "At St Unye sanctuary, tanners work as well within the close as without; the latter by custom and the former by licence of the parson."⁹

Downstream, in 1507, there were streamworks at Cremlyn Moor, near the place where the Blowinghouse Viaduct now crosses Tolskithy Valley. The tinwork was called 'Whele Crymlyn on Hale Crymlyn (Cremlyn Moor)'. During the seventeenth century two blowinghouses are mentioned in this valley, and one of them, the 'Lower Blowing House', recorded in 1650, was at Cremlyn Moor, below Wheal Raven. The other one, called 'Old Blowing house', in 1694, was at the bottom of Blowinghouse Hill, below the main road roundabout.¹⁰

The 1737 Tehidy Manor Map by William Doidge, shows some thirty sets of stamps along the stream between Cremlyn Moor and the valley to the east of Carnkie Village. Undoubtedly, much of their work was to crush lode ore from the mines on either side of the valley, but it is fairly certain that a significant proportion of their throughput came from alluvial tin, dug up in the valley adjacent to these stamps.

Between June 1722 and April 1735 there were thirty-two parcels of tin streamed from the river between Trevingey and Tarewaste, totalling nearly 14 tons of black tin. Most of this came from the valley between Tarewaste and Tolskithy, with the rest coming from the river between Carn Brea and Trevingey. An average of over a ton of black tin a year is impressive. In the years between 1776 and 1778 another 16cwt is recorded for that part of the valley.¹¹

In 1352 tanners working for placer tin along the stream near to the present brewery at Redruth were the cause of complaints due to the damage they had done to leats, which fed grist mills there. The moor at Vauxhall, Redruth was called Soul Moor, and in 1498 there

1726	30 th Sep ^r	Rec ^d of Jacob Romfry for 1/6 th part Dues of Tyn in <u>Cornbray Park</u>	18	3
	4 th Oct ^r	Received of Alexander Paull 20 for a years Rent for <u>Rogheare to Mich^l</u> 1725 out of which allowed 16 for a years <u>Tons</u> tax to that time so rec ^d clear	19	4
	6 th & 11 th Oct ^r	Rec ^d from the <u>lasten Estates</u> including 55 for the first paym ^t of John Ballamys lease of three lives of the <u>Tenom^t</u> of <u>Hillstree in Devon</u> & also 36 1 for the full consideration of W ^m Marfields lease of three lives for the <u>Tenom^t</u> of <u>Calcaithar in Pounds tocke</u> paym ^t & for some Coppinwood	232	2 1/2
	17 th	Rec ^d of Mary Jackson a Year & three Quarters Rent for <u>Rosebery</u> to Michaelmas last	7	
	18 th	Rec ^d of William Hocking for the moiety of 1/15 th part Dues of Tyn in the <u>River</u> near the <u>Pelichers Stamps</u> that <u>Divides</u> the parish of <u>Illogon</u> and <u>Redwith</u> the other Moiety being M ^r Bullens	55	3
		Rec ^d of W ^m Mayjards for 1/6 th part Dues of Tyn in <u>Cornbray Parke</u>	2	
	19 th	Rec ^d of Thomas Treverton for 1/6 th part Dues of Tyn out of <u>Whale</u> <u>Cowle worke</u>	6	4
	22 nd	Rec ^d of Thomas Sampson for 1/6 th part Dues of Tyn in <u>Soldkithay manse</u>	10	6
	18 th Nov ^r	Rec ^d then & formerly of M ^r John Daniell for himself & M ^r Robert Aving 12 Years Rent for 1/4 part of the <u>Town Mills</u> of <u>Turoc</u> being 5 p ^{ar} ms to Michaelmas last	3	
	21 st	Rec ^d of Samuel Enays Esq ^r Seven years & one Quar ^r Rent for <u>Cornbray</u> <u>Parke</u> to Michaelmas last being 21 10 0 p ^{ar} Annum 155 17 6 out of which allowed him 4 7 for seven years & Quarters Land Tax to that time at the rate of 12 p ^{ar} and is full of his Rent to the said Michaelmas last so rec ^d Clear	551	10 6
		Rec ^d of David Rogers for the Moiety of 1/6 th part Dues of Tyn in the <u>Forest Moor</u>	13	
	12 th Dec ^r	Rec ^d of Henry Provis for 1/6 th part Dues of Tyn in <u>Brea</u>	1	1
		Rec ^d of Richard Provis for 1/6 th part Dues of Tyn in the <u>Tenom^t</u> of <u>Brea</u>	1	
	16 th	Rec ^d of M ^{rs} Anne Paull in part of 22 1 5 Due last <u>Lady Day</u> for the Rent of <u>astomps</u> on <u>Brea</u> the sum of	18	1
			421	14 8 1/2

was a large tin stream working there called 'Whyte Hale Seule Moor'. Another stream-work on that moor was registered as 'Lost Kewthyry on Hale Soulsmere'. There are also references to tin streaming at Treleigh at the beginning of the fifteenth century.¹²

The small stream through Pool Village, with its relatively narrow moor on either side, was also streamed for alluvial tin. Two stream works registered in 1507 lay along that moor. At 'Parke Trelowyth' there was 'one tinwork between Trelowyth and Trevynsyn', and another 'in Hale Tehydy called Hale Coys'. The former lay close to the front of Pool School and the latter at Halgoss, on the south-east side of Tehidy.¹³

The streams on the west side of Camborne were similarly worked for tin 500 years ago. The wide, flat alluvial ground between Carnhell Green and Barrripper had a series of stream works butting up to each along both sides of the moor. 'Whele Penhale on Hale Penhale', 'Whele Trenewyth beside Hallegarrak', 'Whele Bossrawell in Hale Bossrawell (Bosprowal)', 'Kettabedron (Cathebedron)', and 'Whele Halgarrak', were worked all along that moor in the reign of Henry VII. Below Penponds there was a tinwork called 'While an Piece on Bosowsowe (Bojawsa) Moor'. Further downstream an important tinwork called 'Polmidoe', was mentioned, in the 1601 and 1613, statements of the Camborne Parish Bounds. It was on the boundary between Gwithian and Camborne parishes, below the hamlet of Roseworthy. Such was the reputation for rich alluvial tin there, that Stephens quoted a well-known proverb, to the effect that an ox laying down in Barrripper Moor, would return its value in tin.¹⁴

When we come to the Red River itself we are presented with a large body of information on the production of tin from river alluvium. It is no coincidence that a blowing house existed at Trevenon, on the side of the valley opposite Trevarnoe, in 1542. The source of its black tin would certainly have been the streams along the valley between Entral and Reskadinnick. It was given as an established boundary point for Trevenon Estate.¹⁵

Forty-six years later, in a Tehidy Manor lease agreement for the tenement of Brea, James Bassett granted "all those two stampinge milles his water courses letes and buddels with all and singular their appurtenances profitt and commodities which all latelye were in the fearme and occupacon of the said Umphry Crane." This streaming operation was differentiated from the lode mining nearby by a clause, which reserved to Bassett the right to 'digge delve and searche for Tyn there and tyn ther founde....'¹⁶

An early eighteenth century map of the area around Treskillard, shows five clearly marked areas described as 'stream works'. They lie on a small feeder stream to the Red River. These areas are on high ground with only the slightest indent to indicate the wet moorland. The water runs west and north-west toward Newton Moor. Doidge's Tehidy Manor Map of 1737 also has these tin streams. Doidge shows stream works along the entire central part of the Red River Valley. Sixteen sets of stamps lay between Brea and Entral Moors on the south to Tehidy Mill on the north. Undoubtedly much of their feed came from the numerous streaming operations along the river.

From the eighteenth century there are a large number of payments for tin won from the Red River Valley in the Tehidy Manor records. The alluvial streams between Entral, on the Camborne side of the river, and Brea, on the Illogan side, produced 31 parcels of tin between 1722 and 1735. The dues paid to the Bassets was 1/6th and produce varied from as little as 24s in value to as much as £22.16s. and the total tonnage of black tin was over 8¹/₄ tons.¹⁷

The Illogan side of the moor between Bolenow and Forest, at the top end of the Red

(28)

5726	13 th July	Rec ^d of Thomas Stewart on for 1/6 th part Dues of Tyn in Wheale on Oule	6	
		Rec ^d also of him for 1/4 th p ^{te} Tribute of the said Tyn	3	11
35		Rec ^d of Thomas Lowrose for 1/6 th part Dues of Tyn in Cambrey Parks	6	
		Rec ^d of Edward Noncarrowe for 1/2 th moiety of 1/6 th part Dues of Tyn in the River that Divides the parishes of Megan & Redruth under the Tenom ^t of Parke Colly the other moiety being M ^r Bullow	0	
		Rec ^d of W ^m Bone for 1/6 th part Dues of Tyn in Cambrey Parks	9	6
29 th		Rec ^d of Thomas Portne in part of Rents on the Man ^r of Tuhidog ^h to Mich ^o 1722	38	19 6
4 th Aug ^t		Rec ^d of Mary Angove for 2 burys due on the Death of W ^m Angove & Jane Angove his sister 2 lives on a Croft or field of ground part of the Tenom ^t of Camborne Duer	1	
		Rec ^d also of her in part of more Rent due for part of the said Tenom ^t of Camborne Duer which the said W ^m Angove held by parolle	5	
26 th		Rec ^d of M ^r John Coster and Company for 1/6 th part Dues of 25 9 of Copper Ore weighed at wheale on Oule the 24 th of May last being 2 12 at 38 p ^{te} Tyn is in Money	4	17 6
		and also 1/4 th part Tribute of the remaining Ore being 12 18 at 1 p ^{te} Tyn	3	4 3
		Rec ^d of William Dunkin for 1/6 th part Dues of Tyn in the Tenom ^t	3	5
27 th		Rec ^d of M ^r Philip Sheynolds for 1/6 th part Dues of Tyn in Wheale & George Bounds in Carnkyo Hall	8	14
28 th		Rec ^d of David Rogers for the Moiety of 1/6 th part Dues of Tyn in the Forest	3	
		Received of Edward Rowe for the Moiety of 1/6 th part Dues of Tyn in the River under the Tenom ^t of Trevingy	15	
		Received of Thomas Sparron for 1/6 th part Dues of Tyn in Entrall	13	
29 th		Received of John Mitchell for 1/6 th part Dues of Tyn in Cambrey Parks	5	3
3 rd Sep ^r		Rec ^d of Alexander Robert's at Borruggo for 1/6 th part Dues of Tyn in Cambrey Parks	2	10
			39	4 0

River, produced an impressive tonnage for the fourteen years between 1722 and 1736. Forty-eight parcels of black tin were sold which totalled 14¹/₄ tons - an average of over a ton a year. During the next three years annual production doubled, with 22 parcels making 6¹/₄ tons of concentrate. The following extract serves to demonstrate the nature and size of these stream works.

"Forest Moor				
Nov. 23	1736	Received of David Rogers	1/12 Dues	£6.10. 0
	1736	Received of David Rogers	1/12 Dues	7.0
	1736	Received of Philip John	1/12 Dues	4.9
Feb. 21	1736/7	Received of John Roberts	1/12 Dues	£1. 2 .9
April 9	1737	Received of Philip John	1/12 Dues	14.9
April 24	1737	Received of Andrew Penpraze	1/12 Dues	2.2
May 4	1737	Received of John Vivian Jun.	1/12 Dues	£1. 1. 0
May 23	1737	Received of John Roberts	1/12 Dues	13.0
June 9	1737	Received of John Trevethick	1/12 Dues	4.0
July 30	1737	Received of Henry Osborne	1/12 Dues	3.6
Aug. 2	1737	Received of John Roberts	1/12 Dues	9.0
Aug. 3	1737	Received of David Rogers	1/12 Dues	5.6
			(Total)	£12.17.11"

"Forest Moor				
Nov. 2	1737	Received of Philip John	1/12 Dues	14. 9
Nov. 17	1737	Received of John Roberts	1/12 Dues	2. 9
Nov. 28	1737	Received of Philip John	1/12 Dues	12. 8
Dec 22	1737	Received of David Harvey	1/12 Dues	12. 0
June 3	1738	Received of John Roberts	1/12 Dues	£1.16. 2
Aug. 14	1738	Received of Zacharias George	1/12 Dues	12.1 ¹ / ₂
Dec. 22	1738	Received of John Dunkin Jun.	1/12 Dues	16.7 ³ / ₄
Mar. 31	1739	Received of Henry Craze & ptrs	1/12 Dues	4.1 ¹ / ₂
Sept. 18	1739	Received of William Dunstone	1/12 Dues	4. 0
Nov. 9	1739	Received of Richard Osborne	1/12 Dues	11. 4
			(Total)	£6.6. 6 ³ / ₄ ¹⁸

At a glance it might appear that these are extremely insignificant amounts of tin produced from Forest. Total dues come to the £19.4.5³/₄d, which was one-twelfth of the total, and thus the sum return on the Forest tin for the three years between November 1736 and November 1739 was £230.11.3d. The London tin metal price at the time averaged about £74 a ton, and the total tonnage of white tin would have been about 3.1 tons. At a rate of fifty-fifty the black tin for three years was about 6.2 tons. A production of two tons per year for a small streaming area like Forest is impressive.¹⁹

On March 11 1725/6 Peter Willoughby paid 1/6th dues of 10s.6d. for tin he streamed 'in the moor near John Spargons house in Tolvaddon Downs'. On April 8 1726 he paid another 5s. dues for tin won from the same place. January 4 1726/7 Bennet Avery paid 4s.6d. for 1/6th dues for tin he produced on the moor at Tolvaddon, and in July 1727 James Willoughby paid 6s.9d. on two parcels of black tin streamed there. Alexander

Rec. of Richard Rogers in full for a parcel of Tyn stuff sold him at Cunhy's in August last	23	50
Rec. of Richard Hallett & partners & Majesty of 1/6 part Dues of Tyn in Tregajonnan Carake the other Majesty being Mr. Rolles	52	6
Rec. of John Luke 20. 6. 3 & allowed him 13. 3 for adpays land near Michaelmas last w ^{ch} makes up his years Rent to that time for M. Chilly Mulls being 29 p an sot u. clear as above	28	6 9
Rec. of William Broad half years Rent to Lady Day last for Minowman M ^{ch} of Mr. Budge for 1/6 part Dues of Tyn out of Wharal St. George Cunhy's & Cunhy's	5	1
Rec. of John Pearce for 1/6 part Dues of Tyn on the Moores near the Springmishouse called Tolwadon	6	
Rec. of Mr. Torrill for 1/15 part Toll Tyn in Mr. Browns Bounds in Cumbrey Downes	1	
Rec. of John Duchen for 1/6 part Dues of Tyn in the Incement of Cunhy's	3	2 8
Repaid of W ^m Hushing for the Majesty of 1/15 part Toll Tyn in the parish that divides the parishes of Hlogon and Reduth w ^{ch} or the Tyn of Tawest the other Majesty being Mr. Bullens	52	6
Rec. of David Rogers for the Majesty of 1/6 part Dues of Tyn in the parish the other Majesty being John S. Dubyns	53	6 8
Rec. of Richard Tullom for 1/6 part Dues of Tyn in the Tyn of Cunhy's	5	
Rec. of W ^m Harris for 1/6 part Dues of Tyn in y ^e Tynment of Tregajonnan	9	6
Rec. of Alexander Beard for the Majesty of 1/6 part Dues of Tyn in Tregajonnan Carake	50	2
Rec. of John Priddy for 1/6 part Dues of Tyn in y ^e Tynment of Tregajonnan	6	4
Rec. of Richard Tany for 1/6 part Dues of Tyn in Tobias Tullams Moor near Cundrye Ball	3	
Rec. of Thomas Jordan jun ^r in part of more money due on note to M. Budge in his life time	9	2
Rec. of John Greene for 1/6 part Dues of Tyn in Cumbrey Parke	50	
	80	7 11

Stephens paid 4s.6d. in dues on Tolvaddon Moor tin July 4 1728. In 1736 Thomas Williams paid 1/15th dues of 5s of tin he streamed from Tolvaddon Moor, and on June 17 1738 John Dunkin paid £2.2s. dues (1/15th) also won from Tolvaddon Moor.²⁰

Between May 1760 and March 1773 alluvial tin was produced from no less than eight locations on the Red River, including Brea Moor, Entral Moor, Forest Moor, Tolvaddon Moor, Magor Croft, Rosewarne Downs and Trevorna Moor. Brea Moor alone produced nearly three-quarters of a ton of black tin between March 31 1764 and February 6 1768.²¹

The Tehidy Proposal and Memorandum books do not add much to the information we have on streaming the river valleys running to the north coast, but there are several pieces of information there that are of interest. The Proposal Book entry for September 2 1756 has this: "Nancekuke. George Hellans of Redruth desires a sett to stream Tin in John Brown's More in Little Nancekuke under 1/7 dish and desiring an answer thereto."²²

A July 2 1771 entry has: "James Vivian Esq. proposes to take a set for Copper, Tin, etc. (mine and stream) in that part of Treswithian called the Race - viz. as far north as Alexander Cocking's House, as far south as the Fields called Treglenwith's now in the possession of Mr. Treveson and as far east and west as the Tenement extends - agreed 22 July 1771 - usual conditions."

The Memorandum Book has these two entries: "April 8th 1768. John Davye applies for a streaming set for himself which he proposes should extend from the Red River southwards as far as Mrs. Catherine Johns Grist Mill and from the said Mill southward as far as Mr. Vivian's Lower Stamps. Said John Davye also applies for a set for his brother, which he proposes should extend from Tehidy Mill to Trevorna Gate." On April 15 1768 there is the following: "Alexander and Francis Pearce both of the parish of Illogan do hereby declare that they have streamed the south east corner of Tolvaddon Downs under Pearce's Quarry and Stamps, by leave of Mr. Basset to whom the 1/6 dues of what they got were paid by Mr. John Edwards to whom the same ore was sold by them, as they have been informed and believe. Witness our hands."²³

On March 20th 1970, R O Burt, Manager of The Cornish Tin Smelting Co. Ltd, delivered a paper at the Camborne School of Mines, entitled 'Mineral Recovery from the Red River Valley, Cornwall.' Burt outlined the history of alluvial tin steaming along the Red River over many centuries, giving estimates of the sort of tonnages he believed were won from the valley. He then deals with tailings streaming of more recent times, and then describes in some detail the results of Banka Drilling between Roscroggan and the sea in the spring and summer of 1965. Like Colenso, Carne and Henwood he found little in 1965 to indicate payable tin alluvium in the valley. However, unlike those worthy 19th century writers, Burt believed that this was due to centuries of removing the valuable material, rather than the less logical conclusion that there had never been much in the first place.

In 1986 and 1987 I had a series of discussions with Professor Ken Hosking at Camborne School of Mines at his home on this subject. Professor Hosking was adamant that alluvial streaming had taken place along the river valleys of Illogan and Camborne since pre-historic times. His own researches, as contained in his numerous papers, showed that even now the short, north-running streams of west Cornwall contain measurable deposits of cassiterite.²⁴ These conclusions were confirmed recently by Charles Smith, an experienced exploration geologist who has been employed in the search for metalliferous deposits in several countries.²⁵

The historical record is clear. The evidence for successful alluvial tin streaming in

recent centuries along the valleys which run northward through the parishes of Camborne, Illogan and Redruth is overwhelming.

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21. Tehidy Accounts.
22. Tehidy Accounts.
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24. Dr. K F G Hosking 'A historical review of ways and means of searching for ore deposits in the Southwest of England' (GSM Bulletin 17, December 1984) p.198.
25. Personal Communication from Charles Smith, 23 March 1999:
"Logic dictates that stream tin accumulations would occur on Bollenow Moor (\pm 140m) and also in those north-west rending streams draining Carnmenellis, Carn Brea and Carn Marth and the mineralised ground between these points and St. Agnes Beacon and Cliggah Head. The actual locations of these deposits would be dictated by the variations in the grade of the streams. The flatter graded parts being more likely to contain worthwhile accumulations of detrital cassiterite.
As these streams had thinner depths of alluvial material they would have been easier to work than the deeper more extensive alluvials on the rivers draining to the South-East. i.e. more amenable to working by small groups of poor, unresourced streamers.
It is to be concluded, that at the time of the early writers (Carne, Colenso and Henwood) on the occurrence of alluvial cassiterite deposits in Cornwall, the smaller, easily accessible ores had already been exploited. What these observers saw was what might be termed, the final stage of an ongoing mining method that had existed for centuries."

Charles Smith, 23 March 1999.