

The Structure of the Whitby Jet Industry in 1871

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The first national population census was held in 1801 but was not very detailed. By 1871 much more information was recorded such as place of birth, occupation and the relationship of each member of the household to the head. The census enumerator entered all particulars into his own hand-written book which formed the basis of the official, published figures. It is these enumerators' books which are such a rich source for the local and demographic historian.

This study of Whitby jet-workers in North Yorkshire has been compiled from the 1871 enumerators' books and it has been possible to produce figures for the numbers in the workshops, the percentage of jet-workers in the working population, age distribution, father/son connections, sibling density in the trade, geographical location and immigration.

The background history of the jet trade has been sketched in from other sources but the main body of the article is based firmly on the enumerators' returns.

In the early years of the nineteenth century a certain Captain Tremlett believed that jet could be worked by machine to produce ornaments and jewellery and so persuaded two local jet-carvers to turn the jet on a lathe. The method was successful but it was not until the 1850s that the trade was firmly established in Whitby.

According to the **New Whitby Treasury** of April 1854, there were 1,000 persons employed in mining and working jet, including their dependants. Jet goods manufactured in 1853 were valued at £20,000 but the writer freely admits that no accounts were kept and so these figures are only estimates. The trade had been boosted by pieces being shown at the Great Exhibition of 1851 and in 1855 Gillbank's **Directory of Scarborough and Whitby** stated that jet working was the principal occupation of the town.¹ By 1873 the annual value of goods produced was reputed to have reached over £90,000 when the industry was at its peak.² Between 1870-2 1,400 men and boys worked in the trade according to Kendall but he does not say how he arrives at this figure.³ It does not tally with the 1871 census figures.

In 1876 the **Whitby Gazette** reported that the jet trade was in a very depressed state and could not possibly get any worse and still exist as one of the industries of the town. Even before this date the trade fluctuated as the **Gazette** reported in 1858. Rough jet was bringing two shillings and nine pence per pound but a year or two earlier it would have brought six shillings.

Woodwark explains the decline in terms of new materials coming onto the market after 1870 such as Spanish jet which was friable and brittle, vulcanite, French jet, glass and celluloid. Soft jet from Whitby itself was also used and this produced inferior articles giving the industry a bad reputation. The fashion in jewellery changed but the Whitby workers did not follow the trend for lighter, smaller pieces and perhaps the most important factor, the structure of the industry itself was unable to cope with the falling demand. It was a very fragmented trade with many workers sharing a workshop but selling the finished objects individually to dealers at the end of the week. There was no check on quality and no co-operation between men which could have resulted in a joint venture to save the industry.

In 1885 a move was made to form a limited company to enable small workmen and wholesale dealers to combine together to sell the goods for a low but fair price. Nothing came of the agreement. Again in 1890 it was suggested that the jet ornaments should be marked to show whether they were made from hard, soft or imported jet but no action was taken.

According to Woodwark there were 600 men employed in the trade in 1883 with average earnings of one pound per week, whereas previous earnings about 1870 had been three to four pounds. The figures dropped to 300 the following year but he does not give any source for them. By 1921 the numbers were down to forty.⁴

The jet articles were sold in the town to residents and visitors alike (the holiday trade was steadily increasing from the 1850s onwards) and there was a strong London market. Queen Victoria encouraged the use of jet as suitable mourning wear after the death of Prince Albert in 1861, giving the industry a great boost. Many pieces were exported to France and jet jewellery was displayed at Paris exhibitions. In 1854 Isaac Greenbury received a commission for a jet chain, four feet six inches long, from the Queen of Bavaria.⁵

Kendall talked to Matthew Snowdon, a jet-worker himself, who described the workshops as he knew them towards the end of the nineteenth century. Workshops were to be found in many tenements and houses, especially near the harbour in the old part of the town.⁶ They were usually small and cramped and shared by a number of workmen who were probably self-employed. There were no factories in the modern sense of the word, the rooms used being cellars or any room in a house which could be utilised. Some masters did have a workshop in which they employed their own work-force but there were 1006 jet-workers according to the 1871 census and only 282 were employees leaving 724 apparently self-employed. These figures are misleading as many of the latter were youngsters who were not likely to be self-supporting. Probably a number of the men would have a boy to help but did not state this to the enumerator (Table 1).

Table 1. Jet workshops in Whitby 1871

No. in workshop	No. of shops	Total no. of men
1	3	3
2	2	4
3	6	18
4	7	28
5	1	5
6	5	30
7	3	21
8	3	24
12	1	12
13	1	13
14	1	14
17	1	17
26	1	26
29	1	29
38	1	38
	37	282

Figures denote workmen only and do not include employers.

Table 2. Occupations in Whitby 1871

Number of category	Designation of work	Number of persons
1	Professional men including doctors, lawyers, police, surveyors, bankers	119
2	Churchmen and ancillary workers	25
3	Tax men	5
4	Teachers	74
5	Booksellers and newspaper men	32
6	Preparation and sale of food including fishing	302
7	Preparation and sale of drink	83
8	Production and sale of clothes including dressmakers	533
9	Building and allied trades	171
10	Ship building including owners and ships' chandlers	412
11	Workers with minerals including jet	1123
12	Workers with other natural products such as leather, wood	42
13	Agriculture	119
14	Miscellaneous trades	65
15	Sailors and the harbour	214
16	Postal service	15
17	Transport – horse and rail	127
18	Artistic occupations e.g. painting, music	18
19	Recreational activities including lodging-house keepers	89
20	Shop keepers	62
21	Office workers	12
22	Servants	985
23	Labourers, scavengers, prostitutes	200
Total		4827

A grand total of 4,827 people were gainfully employed in the Whitby of 1871. Of these the jet-workers constituted the largest group being made up of 1006 men and boys. There were an unknown number of sailors away at sea but for the purpose of this article only those at home have been counted. The range of occupations is given in Table 2. This table illustrates the dependence of the town on the jet trade and the ship-building industry. Both of these were to crumble by the end of the nineteenth century, the former for reasons already discussed and the latter because steam ships replaced sails and the harbour at Whitby was too small to cope. The number of servants and workers in the production and sale of clothes, including dressmakers, is very large but the majority of these were young girls who probably worked for a pitiful wage until marriage and in economic terms would not constitute a vital part of the trade of Whitby.

The division of labour in the jet shops can be broken down to a certain extent but a vast number of men simply stated that they were jet-workers or jet ornament manufacturers. The latter term carries overtones of ownership of a jet workshop but is applied indiscriminately to youngsters as well as older men. An industry which employs 20.84 per cent of the working population could be thought to have a complicated labour structure but in actual fact it was a simple cottage industry and this was one of the reasons why it could not cope with the recession of the 1880s and later, being largely fragmented into single units.

Snowdon has some interesting points to make about the apprenticeship system. Apparently it was not usual for boys to be formally apprenticed. Some were but the majority simply agreed to work for one man for a stated number of years. Thirty-three lads described themselves as such but there were 303 youngsters aged between eight and sixteen who would be learning the trade. Only six men described themselves as journeymen and three as masters but many more men would consider themselves capable of carrying out all the processes involved in making ornaments and jewellery. Only one man states that he mined jet and he probably worked close to Whitby along the cliffs or shore.

The rough jet was bought by merchants or dealers who would travel to the mines to buy direct but some miners would come to the town to sell to the small man or indeed in large quantities to the workshop manager. There were sixteen rough jet merchants in Whitby who would grade the jet according to quality and size, storing it in a warehouse divided into various rooms so that the customer could select pieces more easily. These warehouses need not be specially built but could be houses which had been converted. Two warehouse-men are listed in the census and two female assistants in jet stock rooms which could have been warehouses or perhaps they were working with the finished articles.

In the workshop itself the following processes were carried out. First came the chopping out, next the cutting and turning, after that the grinding and milling, then the brushing and polishing and finally the finishing touches were added.⁷

Not all these processes appear in the job descriptions. One finds fourteen jet-turners, four carvers and one medallion carver. It was the foreman who handed out

the rough jet to the workmen and who was responsible for the smooth running of the workshop. He had to watch very carefully for fire which destroyed a number of premises as the jet shavings were very inflammable. Two men called themselves foremen in these returns.

Only four ornament dealers are listed but there must have been many more outlets for the finished articles than this. One of the shops employed a clerk and there were also three clerks working for the manufacturers. There appears one jet mount dealer who would supply the metal mounts for ear-rings and probably fasteners for necklaces and pins for brooches.

Nine females worked in the jet trade according to the returns and two have already been mentioned. The others were shop women, assistants in jet workshops, stringers and carders. The former strung beads together whilst the latter fixed the jewellery onto cards. The jet trade did not provide many jobs for women, unlike the fishing industry where the majority of wives and daughters would help with the line baiting and collecting shell fish to sell. No women stated that they worked in the ship-building trade.

On looking at Table 3 one is immediately aware of the large percentage of young men working with jet. There are more lads aged sixteen than any other age group and between the ages of eleven and twenty the trade carries 492 young men and boys. Over the next decade there is a sharp decrease which is yet more pronounced between the ages of thirty-one and forty. After the age of forty only a small proportion of the total work force appears.

Table 3. Ages of jet-workers, fishermen and shipwrights

Age	Fishermen	Shipwrights	Jet-workers
8			1
9			3
10			12
11			15
12		1	34
13		3	48
14		6	57
15		9	58
16	1	8	75
17	1	7	56
18	2	7	56
19	1	12	54
20	2	11	39
21-30	18	62	269
31-40	23	81	149
41-50	23	80	49
51-60	12	59	19
61-70	4	30	11
71-80	3	12	1
81-6	2	3	—
Total	92	391	1006

In the case of the fishermen and shipwrights the pattern is quite different. Numbers are small in the younger age groups, gradually building up to the main body of workmen between the ages of thirty-one and fifty. After this there is a gradual decline amongst the older men.

Why should the jet-workers be so different? One cause could be financial. Little is obtainable about comparative incomes in the Whitby of 1871 apart from Woodward's statement that jet men earned between three and four pounds per week at the height of the trade.⁸ The boys, too, probably earned a good wage which compared well with other trades.

Working conditions would be much easier in the jet shops than in the shipyards or at sea. The work was not so physically demanding, the shops were warm in winter and there was less risk of injury.

This does not really explain why there are so few older men in jet work. If the conditions were so good for the youngsters, would not this induce the men to stay in the trade? Compared with the fishing and ship building trades, jet was a comparative newcomer but had been in existence since the 1830s. So some young men entering between 1830 and 1850 should still have been working in 1871. Matthew Snowdon claimed that jet-workers were healthy but great quantities of dust were produced and jet does include sulphur which cannot have resulted in favourable working conditions over a long period.⁹ Older Whitby people remember jet-workers who died young having contracted silicosis but it is difficult to substantiate these claims as the parish registers for the relevant period do not give occupations nor cause of death.

The census enumerators' returns were checked to see whether there was any tradition of sons following fathers into the jet trade (Table 4). A comparison was made with fishermen and shipwrights but in all cases very few followed their father's trade but one must remember that married sons could have left home and be engaged in the same trade as father.

Table 4. Number of families in which father and son work at same trade

Trade	Number of families	Number having father/son in trade	%
Fishermen	86	5 (2 mother/ daughter)	5.81
Shipwrights	307	20	6.51
Jet-workers	760	42	5.52

Judging from the number of young men working in jet, the vast majority of youngsters in Whitby must have been trying their hand at carving jet ornaments regardless of the trade their fathers followed.

This is borne out by Table 5 which illustrates the popularity of jet work amongst young males. Thirty per cent of families having sons working in the jet trade had two brothers working and a few had three or four boys in the trade. Young shipwrights did not appear to follow each other into the trade to the same extent and the numbers involved in fishing are too small to produce viable results. Again one must remember that there were older, married brothers who had left home.

Table 5. Number of sons as jet-workers, fishermen, shipwrights

Trade	No. of families with son	1 son employed	%	2 sons employed	%	3 sons employed	%	4 sons employed	%
Jet-workers	283	170	60.07	85	30.03	23	8.12	5	1.76
Shipwrights	47	38	80.85	9	19.14	—	—	—	—
Fishermen	7	5	71.42	2	28.57	—	—	—	—

Working from the birth place of the migrants one sees that there was no great surge of people to Whitby to engage in the trade. The table (Table 6), shows that the greatest number came from Yorkshire itself and most of these were within fifteen miles of Whitby. So although the local young men found the work enticing in 1871, there was little sign of families being attracted from other industrial areas such as London, the Midlands or Merseyside.

Table 6. Immigration of jet-workers into Whitby

Birthplace	Number of men
Yorkshire North Riding	
within 5 miles	49
within 10 miles	21
within 15 miles	18
within 15 + miles	41
Yorkshire West Riding	17
Yorkshire East Riding	14
Durham Co.	18
Northumberland	3
Derbyshire	1
Lincolnshire	3
Staffordshire	1
Cheshire	1
Cambridgeshire	1
Norfolk	1
Suffolk	1
Kent	4
Hampshire	1
Gloucestershire	2
Devon	1
Cornwall	1
Ireland	5
Scotland	5
Canada	1
U.S.A.	1
Greece	1
Total	212

Total number of jet-workers born in Whitby is 1006 minus 212 = 794.

Jet-workers would appear to have congregated in the older parts of the town and it is possible to illustrate by means of a map that certain streets and yards near the harbour must have held a jet-worker and possibly a workshop in every other house (Table 7 and fig. 1).

Table 7 shows that the percentages of workers range from 39.36 per cent to 11.65 per cent. Enumeration districts twenty and twenty-one are not true percentages as not all households were counted, many being outside Whitby town.

Table 7. Concentration of jet-workers' housing in Whitby

Enumeration district	No. of households	No. containing jet-workers	%
1	156	47	30.13
2	188	74	39.36
3	225	51	22.66
4	195	74	37.94
5	169	47	27.81
6	168	61	36.30
7	173	44	25.43
8	191	63	32.98
9	155	42	27.09
10	179	52	29.05
11	153	46	30.06
12	266	31	11.65
13	192	27	14.06
14	114	15	13.15
15	157	36	22.92
16	177	22	12.42
20	79	1	1.26
21	79	17	21.51

Districts one to six inclusive covered Church Street, Henrietta Street, Grape Lane, Sandgate and all the yards on the east side of the Esk. Crossing the river, districts seven and eight cover Baxtergate and its yards which run close to the harbour. Moving up the cliff-side Flower-gate falls within district nine and Cliff Street and Haggarsgate in district ten. The Cragg in district eleven is another area thickly populated with jet-workers but district twelve covers the West Cliff Estate started by George Hudson in 1849 and continued by Sir George Elliot. It catered for the holiday trade and not for local tradesmen. Still on the West Cliff the houses in Skinner Street, Well Close Square and Clarence Place showed slightly more workers in district thirteen, but Bagdale in district fourteen which had some fine Georgian houses, only carried jet men in its yards. The other outstanding Georgian terrace, St Hilda's Terrace, contributed nothing to the percentage of workers in district thirteen.

The Fishburn Park Estate behind the railway station began to rise about 1860 and these houses were not as large as those on the West Cliff Estate nor quite as commodious for visitors. Part of the estate carried a rate of 22.92 per cent in district fifteen but district sixteen in the same area dropped to 12.42 per cent. District

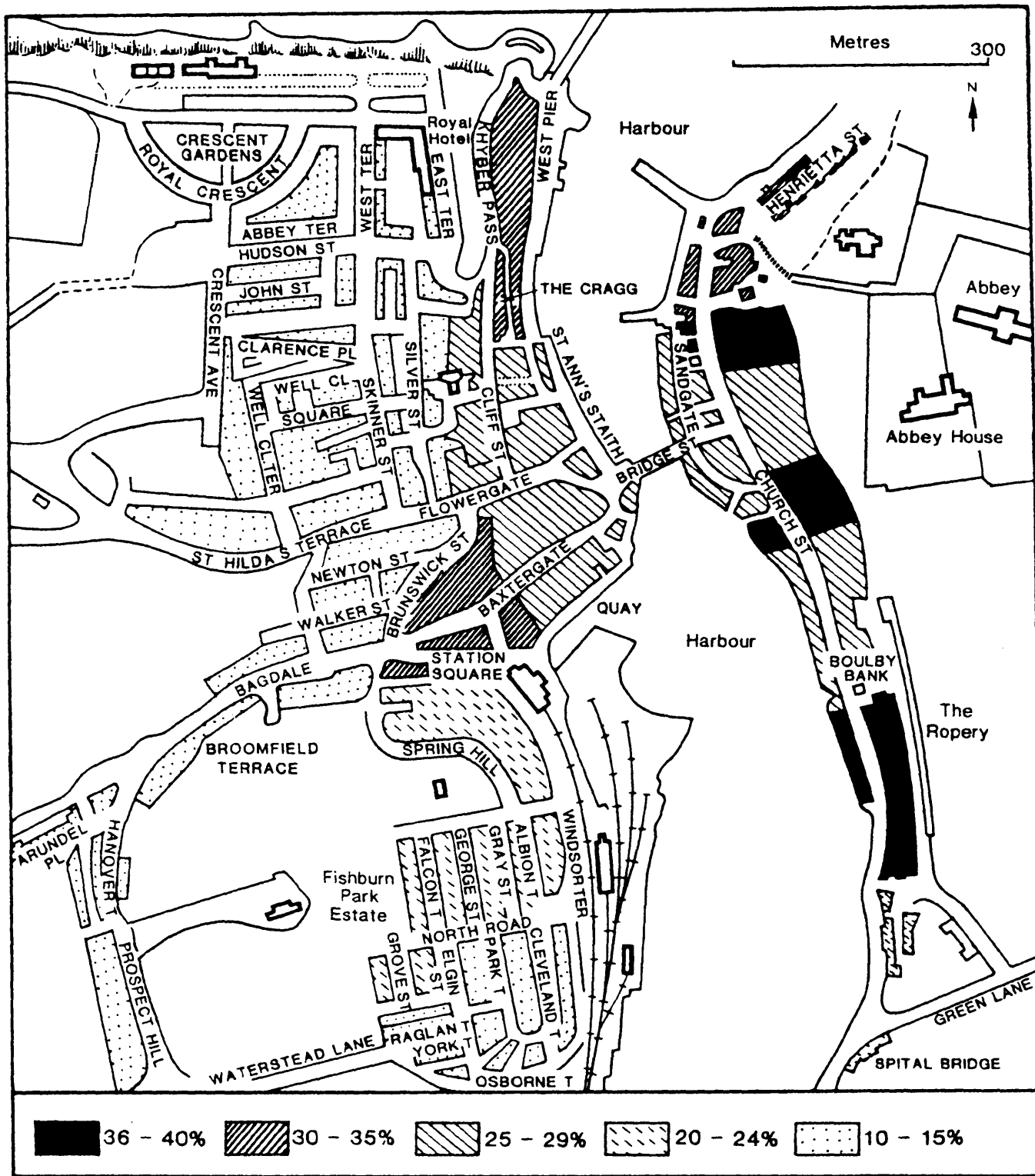


Figure 1 Concentration of jet-workers' houses in Whitby

twenty-one covers the area of the ship-yards at the upper end of Church Street and many of the houses held shipwrights but the percentage of jet-workers was 21.51 per cent. This does not include all the households so the figure is artificially increased.

In its heyday the jet industry was the life-blood of Whitby but perhaps the town was too dependent on one outlet for work-men and so when the trade dwindled in the 1920s and 1930s a gap was created which has never been successfully filled.

The enumerators' returns are a very rich source for local history research. They provide much more than the number of people in a town and their geographical location. As shown in this paper, the complete infra-structure of an industry can be recorded and further studies of other groups could produce a picture of all the occupations in the town at one particular point in time.

NOTES

1. B. H. Gillbank, **Visitors' and residents' directory and gazetteer of Scarborough and Whitby**, 1855, p. 32.
2. A. Raistrick, 'Industrial history' in A. Raistrick (ed.), **North York Moors, National Park guide no. 4**, 1969, p. 56.
3. H. P. Kendall, **The Story of Whitby jet**, 1936, p. 4.
4. T. H. Woodwark, **Rise and fall of the Whitby jet trade**, 1922, pp. 10-11.
5. Kendall, p. 4.
6. *ibid.* pp. 6-7.
7. L. Taylor, **Mourning dress**, 1983, p. 235.
8. Woodwark, p. 10.
9. Kendall, pp. 7-8.