

The following paper was researched and written by well known author and historian Enid Gauldie who has kindly given permission for it to be included in this history.

The Dighty Water runs from its source in the Sidlaw Hills to join the Tay Estuary at Monifieth, some ten miles away. Because Dundee was always short of water this little river was very important to the town as a source of power for its industries. At one point it was reported that there were 56 different mills along its course, turning simple machinery for grinding and washing. [1] Nine of these were bleachfields. When the New Statistical Account was compiled between 1834 and 1835 only four were left. The same four survived into the twentieth century.[2]

These sites first attracted my attention when I was a little girl playing in the countryside behind Broughty Ferry. I found a set of ruined buildings and, daring to look inside one of them, found a rough floor covered with discarded wooden clogs. Ten years later, my university tutor suggested I take on an industrial theme for my postgraduate thesis. When I told him about that discovery he told me to go and find out what that building was and what it was used for. The result was a large and unwieldy volume from which I am now trying to extract material of local interest which is not readily available elsewhere. [3]

The oldest site on the Dighty is the one whose use lasted longest. Midmill, which ended its life known as the Dundee Bleachworks and owned by Cargill and Company, began as the middle one of the Town of Dundee's mediaeval corn mills. It was bought by the Town Council from the landowner, David Graham of Fintry, in 1621, and was first used for bleaching after the town sold it to the Incorporated Trade of Waulkers in 1735 for 1200 merks Scots [4]

The waulker trade was already far past the height of its influence in 1735. Its 18th century records complain incessantly of the decay of trade and the numbers of craftsmen entered in the Lockit Book fell throughout the century.[5] Until 1735 the waulkers of Dundee had contracted with millers on the Dighty for the washing of their cloth. The purchase by them of Midmill in 1735 may have been the Trades' answer to the Board of Trustees who, in 1732 had remarked on the lack of efficient bleaching facilities in the district and had helped the Town Council of Dundee to establish a 7 acre bleachfield at Pitkerro, about 2 miles from Midmill on the Fithie, a tributary of the Dighty.

After the Union of Parliaments in 1707 Scotland had derived great, and indeed lasting, benefit from the setting up of a body to encourage the development of industry. Most of the attention of this body, titled the Board of Trustees for the Encouragement of the Manufactures was given to the ancient and backward linen industry, then our best hope for exports. The Trustees noted that Scotland could not then compete with the Low Countries

in the bleaching and finishing of linens and they brought over skilled workers and awarded prizes for improvements in that department.

No attempt was made by the Waulkers to seek guidance or financial help from the Trustees, although without the approval of that body it is hard to see how any bleaching venture could succeed in that period. Midmill was used only as the most primitive kind of washing mill, not as a bleachfield in any modern sense of the word, throughout the 18th century. It was not of sufficient importance to be mentioned in the Old Statistical Account and can have been of little consequence either to the Town of Dundee or to the Incorporated Trade of a Waulkers, whose records, as published, do not mention it. In 1823 the Incorporation had been reduced to one member and would have ceased to exist had it not been found necessary for political[6] reasons, to provide artificial respiration.

The means chosen to revive the ancient corporation as a body with voting powers in the town could do nothing for its business activities. Midmill reverted to ownership of the Town Council who let it out to William Brown, [7] at that time operating a spinning mill at Trottick, close by. Trottick mill [8] was burned down for the second time in 1811 and Brown's attention became concentrated on his spinning ventures within the town's boundaries, West Ward Mill, founded 1806 and East Ward Mill, founded 1809 .The bleaching business at Midmill then failed . [9]. James Berrie and Miller Berrie took over the business in about 1818[10]

The source of the Berrie capital is not known for certain but we know that James Berrie was already engaged in the linen trade in Dundee [11] and may have accumulated capital for investment in bleaching through his linen dealing activities. James was also brother-in-law to James Carmichel, the well known engineer, whose interest in the linen trade had already led him to invest capital in a spinning mill and may perhaps have induced him to provide some backing for the Berries' establishment at Midmill.

Under the Berries the firm handled a fair proportion of the town's bleaching business and provided employment for a fluctuating number of men and women which varied from seven in winter to thirty in summer[12] The years between 1811 and 1842 were not easy ones for the linen trade. T he town's principal bleacher went bankrupt twice during the period and in 1842 the town itself was bankrupt.[13] The Berries failed in 1838. The business at Midmill was then run by John Laing, Kinmond and Hill with Joseph Duncan as the managing partner. They carried on until 1851.

Midmill was now mortgaged to the Dundee Bank. Duncan's trustees sold the firm to the bank by public roup, the object being to get a better title to the property. In 1854 Cargill and Company bought the works from the Dundee Bank on terms of gradual payment for £3,250. [14]

Although this seems to represent a very large increase on the purchase price of 1,200 merks for the same property in 1735 it was not a large amount for a well situated bleachfield. Borland and Company had spent more than £4,000 on their field sixty years earlier.

In fact very large amounts of capital were not required for the setting up of a bleachfield. The basic equipment of the linen bleacher remained the same throughout the eighteenth and nineteenth centuries. The only essential powered machines were wash mills and beetles and these were known in the first half of the 18th century. The water wheel which turned them very often preceded the rest of the works, having been inherited from much earlier establishments on the same fall of the river, usually tuke, or washing mills or, even earlier, meal grinding mills. [15]

The new owners, Cargill and Company were not Dundonians. Cargill was one of the many hundreds of linen trade workers attracted into the growing industrial city from the declining towns in the counties of Angus and Perthshire.

There was still a Cargill at Midmill when I came to explore it and he was extremely generous with his time and interest, allowing me to see everything that had survived and to meet and question elderly ex employees who had worked at the bleachfields. My great regret is that when I was privileged to explore these early sites, then almost as they had been for a century or more, I had neither the knowledge, the techniques, or the back up to do them justice. I had no camera, I could not draw, I had no technical ability. And, the profession of Industrial Archaeology not yet invented, I had no one to turn to for advice. Neither University or City employed professional archivists in those days I did have the wit to recognise that these were valuable historical sites, every bit as valuable as the more fashionable Pictish villages and Viking tombs, and I recorded them as best I could. Eventually my researches were noticed. I was particularly lucky to attract the interest of two men, from different parts of the world, of great distinction in the field of mill studies. The first was Anders Jespersen of Copenhagen, one of the great molinologists. The second was Rex Wailes, a retired engineer and expert on windmills. They both became treasured friends and between them extended my knowledge and showed me how to go about things.[16]

But I had no weight when it came to pushing my case When I tried to persuade town councillors that Midmill should be preserved as an important part of Dundee's history, I was told that a choice had to be made between much needed schools and houses and not so important heritage sites. And now there is a large school and acres of housing where Midmill once stood. I was so lucky to see those vast echoing sheds with their ancient coal fired boilers, their huge vats for soaking the goods in chemicals, the tall calendars for mangling, the 13 foot water wheel which turned them. And perhaps I was even more lucky to talk to people who had worked them, both there and at Baluniefield, the floor swimming in water, the wind and even snow blowing through the louvered walls. They showed me a range of sheds still known to workers as the 'Crimies' because they had been first erected to meet a rush of military orders for the War in the Crimea. They told me how they had paid a

minder sixpence a week to look after their children, how hard the work was, how cold, but how much they preferred it to working in the spinning mills in town. It was quiet in the bleachworks. You could gossip and talk and you were not tied to one repetitive process all day long.

Cargills had, in fact taken over at a time of upturn in the trade. War was always good for business in Dundee. However the boom was soon over. In 1856 an article about the trade of Dundee reported that 'latterly, owing to the great advance in the price of bleaching materials and also of labour the trade is not a paying one, prices of bleaching having continued the same, while some colours leave an actual loss.' [16] There was, it was said, too much competition among bleachers and prices were run down unnecessarily.

For competition on the Dighty Cargill had to face the long established firm of Turnbull and Company at Claverhouse, John McIntyre at Douglasfield and Daniel Drimmie at Panmurefield. Drimmie had come from Aberdeen, where his father was a bleacher, to set up business on the Dighty in 1839. Some of the manufacturing firms in Dundee, notably Cox's at their Camperdown Works, also handled their own bleaching.

Midmill was the only one to remain in the same hands throughout the next century and the only one still operating when I began to explore their history. It was well placed on the river, being sufficiently far from Claverhouse for polluted water to have cleared before it reached the dams and settling ponds and sufficiently near to the next bleachfield down river to harass the competitors there. To make the position even more secure Midmill bought up the small splash mills up river, not for their value as mills, but for the water rights they gave. The age of these primitive splash, or washing, mills cannot be certain but they probably existed in the seventeenth century. The names of Honeygreen and Fountainbleau, both of which were acquired in the 1850s, are now preserved only as street names in Dundee's northernmost housing scheme. [17]

In spite of the introduction of jute, Dundee's linen production increased fairly steadily in the next twenty years. In 1848, 47512 tons of flax were imported to East Coast ports. In 1862 the figure had risen to 54586 tons. Jute had risen from 8905 tons in 1848 to 38,277 tons in 1862. The increased prosperity of the town was reflected in all branches of the trade, and, even in these years of great increase in jute production, linen suffered no real decline, but only a decline in relative importance. [18]

Midmill, with a good water supply and placed on a main road into the town, was in a good position to take advantage of the opportunities the town's prosperity offered.

The firm built cottages and bothies for their workers. The year after starting business Cargill was faced with the visit of the Queen's Commissioner inspecting the open air bleachfields and was able to claim that his employees already worked under the conditions suggested in the proposed bill. He testified that he found it more profitable to employ men during reasonable hours than to attempt to extract responsible work from grossly over tired

workers. It was a position that contrasted strongly with the protestations against the bill by the master bleachers of Perth. Cargill and Company were linen yarn bleachers only, handling a smaller and less valuable product than the linen and cotton cloth manufacturers of Perth, exercising less skill and expecting less profit.

Linen bleaching, until the Second World War, still involved the 'grassing' or 'crofting' of yarn, with fairly lengthy and repeated periods of exposure to sun and air. The lack of reliable sunshine in Scotland meant that cloth might be laid and lifted time and again as sudden showers or frosts threatened. This involved, in the constant shifting of wet weights of linen, excessively heavy labour and made bleach masters attempt to get through the bulk of their orders in the more clement months of the year. To do this they engaged large numbers of workers who were employed for a season and paid off in the winter. So there were two kinds of worker employed at bleachfields, those employed only seasonally and a permanent core of men and women who worked full time and all year round on the same premises.

This core consisted of the skilled workers and maintenance men. To maintain an efficient organisation it was necessary to provide accommodation which would keep these people loyal to the firm for which they worked. Not only for the usual reasons of efficiency was it desirable to keep a steady population of workers on bleachfield premises. Bleach masters had a special reason for not wanting to lose their trusted workers to other firms. Many of the processes involved in bleaching were closely guarded secrets. The exact ingredients and techniques were carefully protected from leakage of information. Each firm gave a distinctive finish to its cloth or yarn. Orders were placed by merchants for that particular finish which could not be supplied to exactly the same specification by a rival. It was, therefore very much in the firm's interest to maintain a happy work force that was not anxious to move.

The best way to do this was to provide houses for workers and their families within the bleaching village. Employment was often then available for both husband and wife with the promise of future work for their children. The worker most unlikely to leave his master was the one contentedly housed. There was a need for two different kinds of housing, temporary accommodation for a migrant work force, permanent dwellings for a core of skilled workers and their families. Single people were put up in bothies. Although much criticised, especially by parish ministers who saw them as dens of immorality, the bothies in fact probably provided more comfortable accommodation than the cottages the people had left behind. Structurally sound and well roofed, there was a better chance of the bothy being dry than many rural cottages had provided. I saw and photographed some of these bleachfield bothies just before they were demolished.[19] One whole end wall would be taken up by the huge fireplace on which the people cooked their food and dried their clothes. The range at Claverhouse in the late 19th century ate 82 tons of coal a year.[20] Bunk beds with chaff mattresses and woollen blankets were provided, some on the ground

floor, some in the floored gallery above which was reached by a ladder. Cargill and Company, at Midmill, made an allowance of whisky to the watchman, one of whose jobs was to lock the door of the women's bothy at night.

A distinction, when discussing working conditions has to be made between Eastern and Western Scotland, between cotton and linen works. In Paisley, for instance, a "woman house" inside the works had women sleeping three to a bed, the beds pushed together to accommodate as many as possible. Sick lay in the same beds with the healthy.[21] But, in the linen bleachfields the bothy remained both a friendly and a comfortable place, in which girls from the Highlands, who came for a season, often gladly remained for years until they 'married out of the bothy'.[22] Not all Highlanders at bleachfields were part of the seasonal population. Some did settle and raise their families. Eighteen out of fifty three names on Midmill wage list in 1836 are Highland names. [23] At one time Midmill's management employed a Gaelic speaking foreman to supervise the non English speaking section of their workers. Bothy accommodation was suitable only for the young and unmarried. In the linen fields, because the work was heavier and more often took place outdoors, a larger number of men was employed . Only twelve out of fifty three workers at Midmill in 1838 were women.[24]The necessary distance of bleachfields from towns, caused by the need for space and water power, made the provision of family type cottages important. A row of terraced housing built to house Baluniefield workers can still be seen on Pitkerro Road, now within the Dundee boundaries although, when they were built, some distance from other settlements.

The owning of bleachfield villages encouraged employers to take an interest in the welfare of their employees. For some this was an honest humanitarian principle, for others a rational care for the capital the workers represented, for most a reasonably sensible combination of the two points of view.

The oldest of the Dighty sites to be operated as bleachfield and not only as waulk mill was Douglasfield. First mention of it occurs in 1756 when Milton Haugh Field[25] in the parish of Dundee and the shire of Forfar, owned by John Speid, bleacher, was granted £50 by the Board of Trustees towards the cost of erecting a bleachfield there. In the same year Hector Turnbull, of Luncarty, Perth, was given permission to instruct Alexander Morison of Dundee in the secrets of bleaching "upon his giving security not to divulge the method." [26]

This field was, for the first two or three years, called Speid and Yeaman's, thereafter Douglasfield. Milton Haughfield is not used again, although the name can be seen on some maps of the Dighty bleachfields. John Speid and Patrick Yeaman were both members of the Incorporated Waulker Trade of Dundee, and it is perhaps a not unconnected fact that they were very disinclined to submit to the discipline of the central authority of the Linen Trustees.[27] Yeaman was five times Provost of Dundee and his name lives on in Yeaman's Shore. Speid, or perhaps his son, was later employed by the Trustees as a stamp master.[28]

Morison was at first an employee, having come to Dundee from Perth, and the original capital for the venture came from Speid and Yeaman. But before long the firm was Morison's and he was also dealing in linens in Dundee with considerable success.[29] He had accumulated, by 1792, sufficient capital to indulge in a scheme, in which Robert Dunsmore, George Dempster and other landed gentlemen were also involved, to bring the textile industry to the County of Sutherland.[30] We know that his financial resources were not exhausted by this venture because, in 1797, he installed a Boulton and Watt engine at Douglasfield,[31]

Morison's daughter Jane married William Sandeman, eighth son of William Sandeman, the distinguished Perth bleacher.[32] This had become a very respectable connection. The first William had recorded his coat of arms as William Sandeman of Luncarty in 1780 (not without the help of the marriage of his daughter Sibella to Robert Boswell, clerk to the Lord Lyon.) Financially it was at this time and even sounder connection.

Morison took his son in law into partnership both in the bleachfield and in the linen dealing business, and after Morison's death the firm became known as Sandeman's. Very much the largest share of the town's bleaching business fell to Douglasfield in the first quarter of the 19th century. To such an extent was this true that, when Sandeman's resources failed, in 1810/11 his failure affected the stability of the whole town. "The head bleacher failed for £70,000 and the banks bridled up their discounts at once, alleging that all the spinners were creditors of the head bleacher." [33]

Sandeman's failure was caused by a sudden drop in the world flax prices at a time when he had large stocks on his hands which had been bought at earlier high prices. The consequent devaluing of his stock was a blow from which a business less soundly based could not have recovered. His recovery, although complete, was not long established before a country-wide depression in 1825 caused him again to go bankrupt. It was dealing in linens which gave first Morison and then Sandeman the capital which put their bleaching business in advance of others in the district. They were, for instance, in a position to install power driven machinery before the end of the 18th century.

But if linen dealing helped the bleaching business, it also made it more vulnerable to drops in world prices. Because a bleacher did not usually own the goods he handled, and because his processes took so long, recessions did not immediately affect his output. A crisis might well have passed while a bleacher was occupied with linens sent for bleaching before the crisis began. Although long term depression could not help but affect the quantity of business handled by bleachers they were not so greatly affected by sudden price drops as were linen dealers.

From 1825 the Douglasfield bleachfield was operated by William's son, Robert, and the trustees of his sequestered estate, among whom was William Baxter.[34] It did not ever recover its earlier position of strength and, in 1837, for the first time since the founding of

the Dundee Perth and Cupar Advertiser, Douglasfield did not advertise, as it has hitherto done annually, its intention to lay down cloth for bleaching.

Robert Sandeman continued in business as linen merchant and calenderer in the town of Dundee and the bleachfield lay idle until it was taken over by a John McIntyre in 1844.

The McIntyres were a linen manufacturing family from Glenshee with business interests in Blairgowrie. John McIntyre managed Douglasfield and, in 1861, acquired the nearby bleachworks of Baluniefield from Charles Norrie, a Dundee manufacturer who had begun bleaching there in 1856. Baluniefield remained in McIntyre hands, operating as W. A. McIntyre and Company, until 1954.[35]

Neither Douglasfield nor Baluniefield was well placed for clear water. Midmill could, with its dams and sluices, hold up the supply and inevitably did let down into the river at the end of the day fouled water used in its bleaching processes. The two lower fields had access only to as much water as Midmill chose to allow them and they were, as a result, the first on the river to be hit by drought. To make the situation harder, the level of the river on which Baluniefield, in particular, was built, was liable to flooding when the river was high. Spate could put the works out of action by washing up under the boiler fires and quenching them. The McIntyres had not chosen their site wisely. Its tendency to flooding was not unknown and had, in fact, been noted in the Old Statistical Account of Dundee.

“No part of the parish is subject to inundations except the bottom where Fithie and Dighty join” [36] . This was the exact spot on which the Baluniefield bleachfield was built, on ground which had been an old pendicle croft.

Douglasfield, during its ascendancy, between 1780 and 1825, had not found the water situation too difficult. Midmill offered little in the way of competition until the second half of the 19th century. It was only when the trade of Dundee increased that demands made upon this not very large water of Dighty became too much of it to meet.

There are three sources of information about the water supply of bleachfields in this area.

The first is a “Report relative to a drain for Dighty bleachfields, Glamis, 6th December, 1832.”

“The Dighty being a small stream and drying up much in summer, which, from the contiguity of Dundee, increase of trade, improved modes of bleaching, the dregs and wastes have of late years increased so much that during the season in particular the water of it is rendered quite turbid, and becomes a serious nuisance to the under heritors as also injurious to the bleachfields for the want of pure water.

Not only the lower bleachfields but the farmers whose lands bounded the river, objected to the pollution and a plan was drawn for a system of filters with a sewer into which waste matter could be discharged away from the river.

The second source has an element of the farcical about it. Dundee's rapid population growth had placed too great a strain on the ancient wells which had served her people for drinking water for centuries. Some alternative supply was urgently required. Among other schemes was one for supplying the town with water from the Dighty. In spite of evidence gathered from bleachfield owners that the stream in summer dried to the merest trickle and that its pollution killed fish within its banks and poisoned cattle and plants upon them the scheme was taken as far as being presented as a consolidated bill to Parliament in 1835.[37]

A third source of information about difficulties of water supply for bleachers is the sequence of legal cases in which one bleacher sued another over the pollution of the stream, in which farmers sued bleachers over damage to their crops and which culminated in the petition of appeal to the House of Lords of McIntyre Brothers, Baluniefield, in 1889. McIntyres were by that time now also owners of Douglasfield.

They had been sued by Messrs Watson and Shield, Panmurefield, below them on the river, because, to surmount their own difficulties, they had abstracted water from the Fithie Burn, which joined the Dighty immediately below their own works. The right to dam the water supply above any works has always been conceded, but the water below a works was regarded commonly as being the right of the next works downstream and not to be interfered with. Watson and Shields claimed that their works at Panmurefield had been able to operate with an adequate supply of water from the time of its establishment by Daniel Drimmie in 1829 until 1887, when, after McIntyres' abstraction of the Fithie water, it was found impossible to obtain a supply of water on week days.

After exhausting the supply of water stored on Sunday they were compelled either to close their works for the remainder of the week or to risk damaging the yarn. McIntyre's case, as presented to the House of Lords, rested chiefly on their claim to have a right to do as they were done by- it was the effect of Midmill's operations upon Baluniefield's work which forced Baluniefield to endanger Panmurefield's position. "There are numerous bleachfields higher up the river than Balunie. Among them are Balmuir, Claverhouse, Dundee Bleachworks (Midmill), Douglasfield, Harestane(Trottick), Maryfield and Fountainbleau. There are also plash mills such as Honeygreen plash mill as well as public works of other kinds, such as Rosemill manure and sulphuric acid works... The Dundee Bleachworks is the largest on the Dighty and one of the largest bleachworks in Scotland. After the water passes these works it is no longer fit on ordinary work days for bleaching or other manufacturing process but only for turning water wheels. The respondents have for a considerable time conceived the idea of abstracting water from the Fithie Burn for the purpose of their bleachworks in order to save them buying the Dundee town water which they have hitherto used." [38]

The amalgamation of Baluniefield and Douglasfield in McIntyre hands helped less than had been hoped because Douglasfield's own supply had been so materially affected by its proximity to Midmill. Panmurefield, which had passed from Drimmie to Watson and Shields

between 1860 and 1887, was bought by Midmill in 1927 and closed down in 1932. Its limited usefulness had not justified the replacement of its antiquated machinery while Midmill, having been reorganised and fitted with new machines, was in a position to handle the custom of both firms on one site.

When I explored them in the 1960s Panmurefield and Baluniefield both stood derelict. Only the remains of buildings and settling ponds betrayed Panmurefield's century's use as a bleachfield but Baluniefield stood for a short while longer complete with ancient buildings and lay out and some interesting and well preserved water powered machinery.[36]

The long and expensive legal proceedings has crippled Baluniefield financially, making investment in new machinery and the modernisation of the works impossible. Although it continued in existence after the court cases well into the middle of the next century it was not, and could not be, a serious rival to the two large and powerful works upstream.

Midmill's real competitor was the bleachfield at Claverhouse. With Douglasfield, Claverhouse had dominated the market for bleached goods since the late 18th century. It entered the 19th century in the hands of Thomas Collier and Company who advertised in 1806 that "they have begun to lay down cloth and will continue to bleach this year at last year's prices." [37] Their business was not as widely spread as Sandeman's. They did not attempt to compete in the Perth, Aberdeen and Edinburgh areas, but they had agents for collecting cloth from customers throughout the whole of Fife and Forfarshire. In 1812 they "begged leave to inform the manufacturers of Dundee and its vicinity that they have fitted up part of their work for the purpose of bleaching and boiling all kinds of yarns which they are now able either to bleach or boil and to return dry in a very short time, at any season of the year and at moderate prices." [38]

Collier, like Sandeman at Douglasfield, was hit by the slump in 1811/12 and in 1813 sold his business to Hector Turnbull of Luncarty (whose sister was married to William Sandeman, s brother.) In a family as interlaced as the Sandeman- Turnbull one the possibilities of the site and existence of enough business in he district for two major bleachfields cannot fail to have been discussed. The business of Sandeman, Turnbull and Company at Luncarty, near Perth, had been hit by the some crisis which had destroyed Collier at Claverhouse, crippled Douglasfield and forced the letting or sale of many other bleachfields in the area. But it seems that, in spite of the loss of very large sum of money by the company, individual members of the family were able to salvage enough capital to begin again with new businesses. Dr Henry Samuel Boase joined the firm as managing partner in 1838, lived on the site and was, after Turnbull's death, wholly in charge of the works until his own death in 1883. He was succeeded by is son.[37] This firm, like Midmill, remained a successful enterprise until after the Second World War, although in its latter years it was absorbed into Baxter Brothers.

Its success was based, like Midmill's, partly on its position on the river, which ensured it a clear and uninterrupted water supply. Trottick mill and Rosemill, very much higher upriver, were acquired for the rights over the water supply. But it also had exceptionally efficient and intelligent management. Hector Turnbull was the son of the man who had been known as "the best bleacher in Scotland" and brought to the firm his family's wide experience of bleaching over more than half a century. Dr Boase was a trained chemist with an inventive mind, a liberal attitude and considerable ability in a period when an understanding of the chemical principles involved in bleaching was very necessary but nevertheless not common. [38]

Of the other bleachfields on the Dighty which appeared for varying lengths of time and went under, none could withstand the tendency which became more pronounced over the century for more and more work to be handled by fewer and fewer firms. It was inevitable that those who had the first essential advantage of good siting and who had the capital resources and intelligent backing to exploit that advantage should emerge as the survivors. It was natural, then, that, because the first bleachers to settle on the Dighty chose the best river side sites, firms on those sites remained dominant.

Dundee is no longer a textile town. The Dighty is now just a country stream, its days as a provider of power to an important industrial city quite forgotten. Only the endurance of names ending in "field" such as Panmurefield, Douglasfield, Baluniefield, among the housing schemes and light industries fringing the city commemorates the vanished history of linen bleaching and water power.

Footnotes for Bleachfields on the Dighty

1] Old Statistical Account, Forfarshire vol. p.

2]

3] This thesis, entitled Scottish Bleachfields, is deposited in Dundee University Library

4] Warden, A. J. Burgh Laws of Dundee, 1872, Dundee p.549

5] do.

6] Gauldie, Enid, One artful and ambitious individual, Alexander Riddoch, Provost of Dundee, [1745-1822] Abertay Historical Society no. 28 Dundee 1989, passim.

7] Mr. Cargill's private diary, 1870

8] Brown, William, Reminiscences of flax spinning, Dundee 1862

9] Brown, William, Essays in flax spinning and remarks on the management of East Mill, Dundee, 139-40, Dundee University Library, mss

10] do

- 11]Dundee Directory, 1818
- 12] Midmill Pay lists mss.
- 13]Boase, C.W. A century of banking in Dundee, Edinburgh, 1867
- 14] Mr. Cargill's private diary, mss. Page in my possession.
- 15]Fuller descriptions of bleachfield machinery can be found in Gauldie, E.E. Water-powered beetling machines, Newcomen Society Transactions, vol.XXXIX, 1966-67 and Gauldie, E.E. Mechanical aides to linen bleaching, Textile History, vol.1 no.2 , 1969
- 16] See, for instance, Transactions of the International Symposium of Molinology, Portugal, 1965 and Wailes, Rex, Windmills in England, London, 1948
- 17] The property of landowner McGavin of Ballumbie and let to Cargill
- 18] Warden, Alexander, History of the Linen Trade p.
- 19]See my photograph of Baluniefield bothy.
- 20] Information given to me by the caretaker of the works
- 21] Select Committee on the employment of women and children in the bleaching establishments, proceedings and evidence, 1857-8. Dr Boase annotated his copy of this report in a very frank and illuminating fashion and I have deposited the copy given to me in Dundee City Archive.
- 22] Private information given to me by workers
- 23] Midmill wage lists, rough copy in my possession
- 24] do.
- 25] Milton Haugh field is shown on a survey of Douglasfield and Baluniefield executed in 1860, the property of Wemyss, Honeyman and Company, Kirkcaldy.
- 26] States of the Annual Progress of the Linen Manufacture SRO NG1/42
- 27] Minutes of Board of Trustees, SRO NG 1/1 1752 26 June
- 28] do
- 29] Warden , Burgh Laws,p.
- 30] George Dempster of Dunnichen took an interest in both the political affairs of Dundee and in the linen trade. He had some 'encouragement' from the Board of Trustees to set up a linen venture on his Sutherland estates at Skibo
- 31] I helped to arrange the relocation of this interesting machine to the care of the National Museum of Scotland (*note it is now in the hands of Dundee City Museum and Art Gallery awaiting a suitable building in which to rebuild it for public display*).

32] A full genealogy of the Sandeman family can be found in Perth Public Library

33] Lamb Collection 196 B It had become so hard to acquire credit that the government allowed firms to issue their own copper coins as had ben done previously in 1796. Dundee Museum has samples of Baluniefield coins deposited by me

34]Baxter Brothers of Dundee

35] Information from Mr Cargill

36] OSA, vol 8 p199

37] Report relative to the proceedings in parliament for obtaining a water supply to Dundee.

38 Dundee, Perth and Cupar Advertiser, 1806.