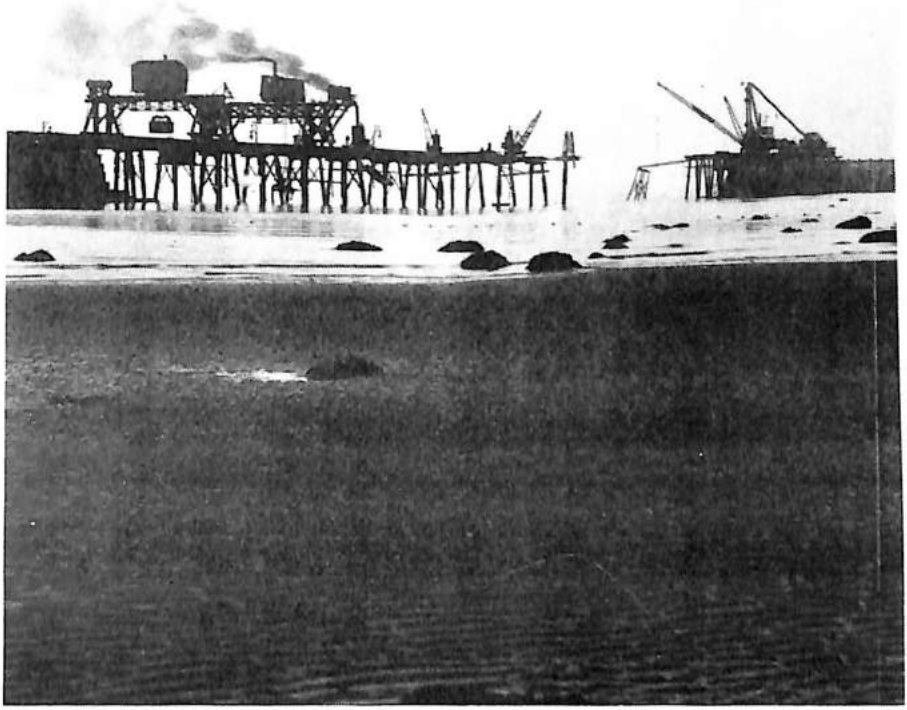
SCOTTISH INDUSTRIAL HISTORY



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1990 marked the thirtieth anniversary of the establishment of the Business Archives Council of Scotland.

The front cover illustration is of travelling 'Goliath' cranes constructing the East Sea Wall at Methil, Fife, 5 August 1910

The back cover illustration is a cotton net etc. price list for 'Fishermen' issued by David Gillies, November 1876

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VOLUMES 11 - 13 1990

CONTENTS

STONEYWOOD MILL: A GLIMPSE OF INDUSTRIAL PATERNALISM

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In May 1986 fire gutted Stoneywood House on the northern outskirts of Aberdeen.[1] A recent press report on its restoration to former splendour contained the comment that, 'photographs of the building devastated by fire must have been the first that some local residents had ever seen of the neighbourhood big house'.[2] It is a salutary reminder of transience that the importance of Stoneywood House, its grounds and its successive occupants, can so easily pass into relative obscurity. Not so long ago, it was the scene of a remarkable example of the eclipse of land-based economic power and the rise of a new industrial order based on the manufacture of paper.

A MacLaren[3] has argued a good 'fit' between Aberdeen's historical data and T C Smout's[4] contention of widespread co-operation between landed and commercial interests in industrial development.

> The growth of Aberdeen as a centre of industrialisation was based in a large part on capital accumulated by several well-known local families. The peculiar homogeneity of the north-east population may well have contributed to the close co-operation of these families which represented both landed and merchant interests. A stronger tie no doubt was their close economic interdependence. Whilst the country gentlemen depended on domestic manufacturing among their tenants as the most important source of income for the regular payment of rents, the wealth of the city was based on the export of these same goods.[5]

However, the early history of papermaking at Stoneywood Mill, on the banks of the River Don, was considerably more complicated than this general thesis of interdependence might

suggest. At Stoneywood, the key to industrial development lay in the bleak aftermath of political and military failure.

James Moir (1710-84) succeeded to the Stoneywood estate as fourth laird in 1739. The Moirs had been a politically active family,[6] and James Moir identified closely with the Stuart cause, heading 'Stoneywood's Regiment' as a Lt. Colonel in the 1745 rebellion. After the Culloden defeat, he spent a year in hiding from the English authorities until he was able to get passage, first to Norway and thence to Sweden. Moir settled to a life in exile and established himself in trade with the encouragement of James Leslie, Secretary to Prince Charles. Moir succeeded in an idemnification claim against the French Government for having, 'raised, clothed and victualed his regiment in the Prince's service until it was ready to join the army'. He received further material support from the grant of naturalisation by the Swedish Court which gave him exemption from certain taxes 'exigible from foreigners'.[7] Thus situated, he lived in exile for fifteen years, until in failing health, he obtained permission to return to Stoneywood.

Moir, it would seem, had two major problems on his return in 1762. First, the estate, while not forfeit to the crown, had fallen into disrepair during his absence. Second, he did not have a male heir.[8] These two factors, along with his mercantile experience in Sweden, offer more by way of explanation for his association with commerce and industry in the post-exile years, than does, the 'congruity of interests' thesis. Of his several ventures in this period, only one achieved lasting success - papermaking. Ironically, in this, his involvement was peripheral.

In September 1770, Moir leased part of his estate by the River Don - the island of Stoneywood - to two Aberdeen businessmen: bookseller John Boyle and Richard Hyde, a dyer. Their interest appears speculative,[9] for while they established the first mill, Boyle sold his half-share in 1771 to Hyde who, in the same year, sold a half-share to Alexander Smith, an Aberdeen wigmaker. In 1772, Boyle disposed of his remaining holding to Thomas Spark, a local merchant. In 1773 Spark sold out to Smith, who thus acquired sole ownership of the mill. At the same time Smith took out a separate lease on Waterton Farm, part of the Moir estate.

Smith was joined in his papermaking venture by a local merchant, Patrick Pirie (died 1787) who had, in 1778, married Smith's daughter Margaret. In 1794 Smith tried to dispose of the mill but could not find a buyer so, on his death in 1796, the leases on Waterton Farm and the 'Island of Stonewood' passed to his only son, a nine year old boy who died in 1800. Then, by the terms of Smith's will, inheritance passed to his grandson, Alexander Pirie. After the turbulence of the first thirty years, the mill was to develop in the hands of the Pirie dynasty for the next 122 years[10] and while the merger with Wiggins Teape Ltd in 1922 served to alter the nature of ownership, the family maintained a boardroom presence into the post-war years.[11]

Dynastic control was an important factor because it underwrote a particular kind of relationship between the mill and the community. The Pirie family established themselves not only as powerful employers dominating the local labour market, but as a social and political influence echoing, even surpassing, the role of the landed gentry.

Alexander Pirie had not inherited all the land thereabouts associated with the Moir family, only that specifically itemised in his grandfather's leases. The residue was sold by Maria Moir, in November 1789, to James Forbes of Seaton and then passed, by marriage, to the Hay family. In the first instance, then, the Piries did not directly replace the old landed gentry, but gradually enhanced their position in this respect as the paper mill developed and flourished. In fact, in the earliest years of their ownership they shared the river bank at Stoneywood with another paper mill run by Charles Smith, Alexander Smith's nephew, and described as being, 'under the patronage of James Forbes, Esq of Seaton'[12] with a lease for the purpose on the east wing of the then ruined Stoneywood House.[13] This second mill continued until 1832 and ended in a long litigation with James Hay, the then owner of the land. At that stage, Piries took over the premises but it continued to have a separate identity seemingly impervious to the fact of its incorporation.[14]

> It continued in varying forms till 1832, when it was merged in Pirie's mill, and although the term is now

> meaningless, that part of the factory is still known as the Upper Mill.[15]

Thomson[16] reported that licenses for Scottish paper mills increased at a net rate of one per year from 1784 to 1825. In the following decade there were net losses of one or two per year on average, and from 1835-1860 further net gains. Against the fluctuating fortunes of the industry at large Pirie's expanded, even capitalising on the disastrous flood of 1829 with subsequent rebuilding and modernisation. From thirty workers in 1820, they expanded to employ 100 women and some seventy or eighty boys in 1848.[17] By 1886, the mill employed 1500 people.[18] The expansion was not limited to the mill at Stoneywood, with a rag works established at Woodside in 1856, and an envelope making works[19] in Aberdeen in 1862. Bartlett noted that Alexander Pirie and Sons, were by 1879, employing some 2,900 people - 1,500 at Stoneywood, 400 at Woodside and 1,000 in Aberdeen.[20] By the turn of the century there were subsidiary companies in England and overseas.

However, Stoneywood remained the centre-piece of the Pirie empire, a fact consolidated by family acquisition of much of the surrounding land.

> In May 1877, a large portion of the estate of Stoneywood, and portions of Auchmill and Sclattie, and also the lands of Mugiemoss and Bankhead, were purchased by Messrs Pirie and James Gordon Hay of Seaton, and the estate thus acquired was formed into a new and separate property, to be afterwards known as the Estate of Waterton.[21]

The Pirie family not only established a land base typical of the old order, but adopted a paternalistic pattern of relations with their workforce and the community adjacent to Stoneywood Mill. Abercrombie and Hill[22] and Joyce[23] have commented that the inadequate infrastructure of industrialisation gave employers the opportunity to increase their control through the provision of housing, schooling and other facilities for their workers. In this vein, Pirie's instituted a works library as early as October 1849. The 1871 library catalogue stated not only that all company

employees and 'tradesmen and labourers employed at the works' were entitled to membership, but that:

> Persons residing in the surrounding neighbourhood, and not employed at Stoneywood Works, may also become subscribers, if approved of by the Directors, such persons to be responsible for the safety of the books, the due observation of all rules, and also to pay ninepence a quarter of twelve weeks.[24]

The firm also erected and maintained a school to serve the needs of their employees' families. It lasted from 1865 to 1880, after which it became the Works Hall and was used as a centre for several village social activities.[25] In what today would be termed a 'feature article', the *Aberdeen Daily Journal* in 1901 reported:

> In the midst of improvements for increasing and maintaining the standard of the output of the works, the employees have not been neglected, their interest being well attended to in accordance with the centralisation scheme which is such a marked feature of the establishment. There is at the works, a fine hall, with kitchen and dining-room for the use of the workers, many of whom reside in Bucksburn, Woodside, and Aberdeen. There is another hall, where entertainments and meetings are held, this building being controlled by a committee of the employees. The park[26] and cricket ground are also under the management of this committee, and it says a good deal for the nature of the ground, as well as the cricketing skill of the employees, that Stoneywood Cricket Club has the honour of holding the Aberdeenshire Cricket Association's Cup, a trophy which at present occupies a prominent place in the office of the works.[27]

The firm showed generosity in other ways. On the occasion of the mill's 150th anniversary, the *Aberdeen Daily Journal* reported:

> In this connection it may be mentioned that Messrs Pirie have recently gifted 19 acres of ground to the Aberdeen District Committee for the erection of dwelling houses at Stoneywood under the housing

> scheme. The building of the first installment of 62 four-roomed cottages will commence next month.[28]

Pirie family members differed in style, but more in terms of variations on a theme than any outright rejection of the firm's paternalistic presence in the community. Dynastic control and more specifically, the 'intermittent control' system that operated between 1870 and 1920 served to free family members for the pursuit of other interests.

> The fact that certain of them, after an early occupancy of the position, went into the background for a good many years to emerge later in life makes rather a broken effect and prevents setting down a continuous facade.[29]

Alexander Pirie II (1811-75), for example was a director of the Aberdeen Steam Navigation Company, the Newcastle and Hull Steam Shipping Company and the company that established and managed the Aberdeen Railway. He was involved in local politics as a 'power behind the throne'.

> At various times in the history of local politics his name was mentioned for the provostship, and he was occasionally spoken of as representative of the city in Parliament, but for neither did he manifest any inclination. In politics he was a Liberal, and he acted as proposer for Mr George Thomson when he was elected member for the city. More recently he proposed Mr Farley Keith, on which occasion the warmth of his reception showed that he would have been no unwelcome candidate for the highest of honours which the citizens has to bestow, had his ambitions pointed that way.[30]

A later member of the family D V Pirie, did in fact serve as Liberal MP for Aberdeen, defeating Tom Mann, the candidate from a nascent Labour movement.[31] By comparison, A G Pirie (1836-1904), although residing at Stoneywood House between 1856 and 1869, and for the last twelve years of his life, took 'little or no part at all in political affairs'[32]

One of the more interesting members of the family, from the

industrial paternalism point of view, was Francis Logie Pirie (1841-1915), described in a 'personal appreciation' as:

> Genial and affable in manner, he was very much liked by those who knew him. He always made a point of looking up the 'old hands' and having a pleasant chat with them, and these happy 'for gatherings' were much appreciated by the employees ... He took a great interest in the works, and every time he came north showed his practical concern in the welfare of the employees by calling at many of their houses. Once they got Mr Logie Pirie's favour the never lost it; he was loyal to them in every way.[33]

Francis Logie Pirie was significant for public expositions on employer-employee relations that underline the paternalistic philosophy. His lecture on 'Co-operation in Production', given at Stoneywood Church Hall on 3 September 1884 in aid of the church building fund, made explicit reference to a family model[34] of work relations prior to industrialisation.

> The connection then between the employer and the workmen was of the closest. Very often the workmen lodged with their employers, fed at the same table, and formed part of the same family. When a workman married and established a home of his own, the employer still maintained the same kindly interest in the fortunes of himself and his family. In the workroom, employer and workman could be seen at work side by side - the latter, though rewarded only with a weekly wage, as interested in the success of the venture of the former.[35]

Lamenting the loss of such a close relationship with the development of large industrial enterprises, he advocated a form of industrial partnership to foster equal interest in their success. There were problems foreseen though, in the application of these ideas:

> An additional difficulty arises from the diversity of ability and character - above all, moral character - that is seen amongst workmen, as amongst all other classes. Were all workmen equally steady and

> conscientious, there could be little doubt on the part of the capitalist as to the policy of associating the workmen with himself in the closest co-operation.[36]

In a later lecture, given at Aberdeen Music Hall in 1889, Pirie was warning his audience of the dangers of commercial complacency, and identified worker motivation as a problematic factor.

> Can our working classes conscientiously claim the character for close application and willingness to exert their best powers during working hours that is admitted on all hands to be a marked characteristic of the American workman? In other words, do they rank the dignity of the labour and the duties attached to it as highly as the latter does?[37]

The context of this lecture was particularly interesting because, in the same year, the labour movement had its first clash with Messrs Pirie, and new dimensions in employer-employee relations were emerging.

> Attempts to establish strong and stable union organisation amongst the paper workers, one of whose major grievances was long hours of work - in 1889 they were asking for a sixty-eight hour week - were no more successful than amongst the textile workers. Partly no doubt, this was due to the relative isolation of the paper workers from the main stream of events in Aberdeen; partly, it was due to the determination of the employers to prevent the establishment of unions in their mill. The first signs of trade unions appeared in 1889, when a dispute over wages developed into a lock-out at the Stoneywood Mill; in spite of financial help from the Trades Council, the men soon returned to work on the employer's terms, which included a signed statement from the workers to the effect that they would have nothing to do with Trade Unionism.[38]

Strangely, Diack[39] described this result as a 'draw' and recorded that the union - the Paper Worker's Union - had gained a negotiating position by the 1930s.

The tradition of employer paternalism became firmly entrenched in the mill's labour catchment area. Although the mill was merged

with Wiggins Teape Ltd in 1922, the name of Alexander Pirie and Sons was used until 1968 and still formed part of the long-service employees' frame of reference in the 1980s.

> We always said that when Wiggins came in that we didn't work for Wiggins. We were Pirie's. We old ones - it might be Wiggins Teape or BAT - we're all Piries's. You hear people squealing about working for his family - they were this or that - but we were proud.[40]

The abrupt transformation of Aberdeen from a 'cosy corner'[41] into a major centre for oil-related industry and commerce, and the subsequent weakening of that economic strength, should not overshadow the history of its traditional industries. While not necessarily agreeing with his conclusion, it is easy to see a logic in a comment from another retired employee of Stoneywood Mill:

> There was quite a few lads at one time of day - they had just a few years with us - left to go to the building trade and things of that sort. I always said, "How long will that last?", The paper trade - there'll always be paper to make.[42]

Acknowledgements

The author gratefully acknowledges the helpful criticism and advice of Robert Bayliss, and the friendly expertise of staff in the local studies department of Aberdeen Central Library.

NOTES

1. *Press and Journal* (Aberdeen), 'Fourteen Escape in City Fire,' 31 May 1986.
2. *Evening Express* (Aberdeen), 'Stoneywood is Back with a Blaze of Glory', 18 Jul 1987.
3. A Maclaren, *Religion and Social Class* (London, 1974).
4. T C Smout, 'Scottish Landowners and Economic Growth 1650-1850', *Scottish Journal of Political Economy*, Vol.2 (1964).
5. Maclaren, *op. cit.*, p. 19.
6. James, the second laird, sat in the Scottish Parliament as a member for Aberdeenshire 1689-1702 and 1702-1707. He was also one of the commissioners appointed for settling the union of the kingdoms. (See A

Moir, *Moir Genealogy and Collateral Lines* (Aberdeen, 1913) p. 149. J Cruickshank, *Newhills: The Annals of the Parish* (Aberdeen, 1934) p. 29, noted that both the second and third lairds were prominent in the 1715 rebellion.)

7. P Morgan, *The Annals of Woodside and Newhills*, (Aberdeen, 1886) p. 170.
8. James, the fourth laird, had seven sons who died in childhood and an eighth who was killed in America. A Mitchell-Gill, *The Families of Moir and Byres* (Aberdeen, 1885) p. 74.
9. P Morgan, *op.cit.*, p. 177, noted that Boyle, in addition to being a bookseller was also a printer and ran a bookbinding business. In the same year (1770) that he became involved with the paper mill, he started a weekly newspaper.
10. J Bartlett, 'Alexander Pirie and Sons of Aberdeen 1860-1914, '*Business History* (Jan 1980) pp. 18-34, records than even when the company 'went public' in the latter half of the nineteenth century, the family retained control of the firm. Between 1898 and 1914, six of the ten directors were Piries and a further two were promotions to the board 'because of their faithful service'.
11. D Morgan, 'The Denburn from Source to Sea: Part 29; at Poynerook with Piries', *Leopard*, no. 90 (Jun 1983) pp. 5-6.
12. P Morgan, *op.cit.*, p. 179.
13. Stoneywood House was rebuilt in 1850.
14. Two guides to the mill, Pirie and Sons, *A Tour Round Stoneywood Paper Mills* (1947) and Wiggins Teape, *Stoneywood Mill: Notes for Visitors* (1986) make reference to the Waterton section of the mill.
15. J Cruickshank, *Newhills: The Annals of the Parish* (Aberdeen, 1934) p. 34.
16. A Thomson, *The Paper Industry in Scotland 1590-1861* (Edinburgh, 1974).
17. Cruickshank, *Alex Pirie and Sons Ltd (Paper Manufactures). Stoneywood and Waterton Works 1770-1945: the History of a Notable Enterprise and Well-know Incorporation* (typescript with original photographs, 1946).
18. P Morgan, *op.cit.*
19. For a history of the envelope works see D Morgan, *op.cit.*
20. Bartlett, *op.cit.*
21. P Morgan, *op.cit.*, p. 174.

22. N Abercrombie and S Hill, 'Paternalism and Patronage,' *British Journal of Sociology*, Vol 27, no. 4 (Dec 1976) pp. 413-429.
23. P Joyce, *Work, Society and Politics: The Culture of the Factory in Later Victorian England* (Brighton, 1980).
24. Pirie and Sons, *Catalogue of the Stoneywood Works Library* (1871).
25. Cruickshank, 1934, *op.cit.*, p. 23.
26. The park occupied the site of the old Greenburn Market established by the first laird in 1701. The Pirie family enclosed the area for the use of the workpeople and the local community. P Morgan, *op. cit.*, p. 173.
27. *Aberdeen Daily Journal*, 'Stoneywood Paper Works: Remarkable Progress of an Important Industry,' 23 Aug 1901.
28. *Ibid.*, 'Stoneywood's 150th Anniversary: Works Celebration Today,' 14 Aug 1920.
29. Cruickshank, 1946, *op.cit.*, p. 63.
30. Obituary in *Aberdeen Daily Journal*, 24 November 1875, quoted verbatim in P Morgan, *op.cit.*, p. 185.
31. K Buckley, *Trade Unions in Aberdeen 1878-1900* (Edinburgh, 1955). D V Pirie, the sitting Liberal member was defeated by the Independent Labour Party candidate, F H Rose, in the 1918 election for the Aberdeen North constituency, F Craig, *British Parliamentary Election Results 1918-1945* (Glasgow, 1969).
32. *In Memoriam: An Obituary of Aberdeen and District for 1904* (Aberdeen, 1905).
33. *Aberdeen Daily Journal*, 'Late Mr Francis Logie Pirie: A Personal Appreciation,' 15 May 1915.
34. Joyce, *op.cit.*, p.20, noted that it was, 'this personal embodiment in the family or family head that gave paternalism its cutting edge'.
35. F L Pirie, *Co-operation in Production or Industrial Partnerships* (Aberdeen, 1884) p. 17.
36. *Ibid.*, p. 16.
37. F L Pirie, *Our Commercial Competitors in America* (Aberdeen, 1889) p. 19.
38. Buckley, *op.cit.*, p. 23.
39. W Diack, *History of the Trades Council and the Trade Union Movement in Aberdeen* (Aberdeen, 1939).
40. Retired employee of Stoneywood Mill quoted in P Lyon, *Nearing Retirement: A Study of Late Working Lives* (Aldershot, 1987) p. 44-5.

41. H Hamilton, 'Industries and Commerce,' in A O'Dell and J Mackintosh (eds), *The North-east of Scotland* (Aberdeen, 1963). *Economist*, 'Industrial Scotland: a Nation Catches Up,' Vol. 217 (6-12 Nov 1965) pp. i-xiiv.
42. Lyon, *op.cit.*, p. 48.

FROM MILTON TO MADRAS: A LIFE OF PATRICK MITCHELL, 1784-1848, CALICO PRINTER

Sheila Downie

Isle of Seil

Driving along the present A82 twelve miles west of Glasgow, past the huge Esso truck farm, fast food restaurants, petrol filling stations and other trappings of the late twentieth-century landscape, it is difficult to realise that the small village of Milton was once the hub of a huge textile manufactory supplying printed cotton goods to all corners of the world. The printfield was situated on the banks of the swiftly flowing burn hidden in a cleft of the hills rising on the north bank of the Clyde. All that remains today of this bastion of the Industrial Revolution is a scatter of Gothic ruins, whose romantic aspect amidst a sylvan setting of rhododendrons and native trees, belies their former industrial bustle. The genius behind this enterprise was Patrick Mitchell.

Like many other Scotsmen of energy and vision he was a son of the manse. Born in 1784, the fourth son of the Reverend Andrew Mitchell of the United Secession Church in Beith, Ayrshire, he was educated at the Public Grammar School[1] and the University in Glasgow. He followed the usual route of study for a MA, matriculating into the Latin class in 1797, but instead of following his two elder brothers into the ministry it would appear he was deflected from the study of divinity into an apprenticeship in the cotton dyeing trade. How this was viewed at home in Beith is not recorded. At any rate he appears to be a diligent apprentice, filling many notebooks[2] with his experiments in trying to make colour adhere to cotton cloth.

The dyes he was using were the usual vegetable dyes of the day - indigo or woad for blue, madder for red and weld for yellow. Surprisingly, in view of the amount of green in nature, there is no natural source for this colour and much experimentation was carried out to find a satisfactory green. After a seven year apprenticeship, at the age of nineteen, he was employed by R Gillespie in Anderston at a salary of £150 per annum rising to

£200 in his second year. While he was working for Gillespie, he recorded in his notebook that he 'printed for the whole of the winter of 1807 at Turkey Red shawls with chemical black'. In the same notebook he also includes experiments with China Blue and mulberry. The production of Turkey-red cloth was highly specialised and as Gillespie's was a printing firm, the Turkey-red cloth would have been dyed elsewhere. Patrick's efforts were directed towards the various types of resist printing involving the use of mendants and throughout his career he always refers to himself as a 'calico printer'.

At the end of his contract in Anderston he was ready to move to the bigger and more successful firm of William Stirling & Co, which had been established in 1770 in the vanguard of the cotton printing trade, on the banks of the river Kelvin. A plaintive notice in the *Glasgow Mercury* of December 1787 points out one of the minor difficulties of such a business at this time:

> carried away by the water on Monday last from different fields on the banks of the Kelvin - a considerable quantity of brown and half bleached linen & cotton cloth and a few pieces of printed calicoes.

In addition to Stirling, other firms in the Glasgow area were jumping on the cotton bandwagon. Thomas Stewart & Co were advertising, 'Policate[3] (sic) handkerchiefs in fast colours at 8d a dozen', in 1787. Business must have been favourable, for the following year the price had gone up to 12d a dozen. John Ross had, 'fine printed callicoes in new and fashionable patterns at 18d the yard', and Henry Monteith, the doyen of calico printers in the city, had cornered the world market in printed handkerchiefs. These bandannas were very versatile - they were used much as we might use a box of tissues today - as well as being eye-catching items of apparel. He had uncovered a rich seam which he mined energetically, exporting so many bandannas that they became known on the continent as 'Monteiths'.

In 1772 William Stirling & Co set up another printfield at Cordale, in the Vale of Leven. The Reverend Mr Gordon Stewart, describing his Parish of Bonhil (sic), explains the attraction of the river to calico printers.

> The Leven is remarkable for the softness of its waters, which fits in, in a peculiar manner for the purpose of bleaching. It is seldom or never muddy, as the rivers and burns of the Highland hills fall first into Loch Lomond where the mud they carry along with them subsides.[4]

According to Mr Stewart there had been a printfield on the Leven as early as 1768.

William Stirling & Co bought the neighbouring printfield of Dalquhurn when it came onto the market in 1789, making the company the largest manufacturers of printed calicoes in Scotland. An interesting glimpse of an eighteenth century printfield is revealed in the 1789 sale notice for Dalquhurn which appeared in the *Glasgow Mercury*:

> This manufactory is delightfully situated on the banks of the Leven, and within two miles of the town of Dumbarton whence any number of pencillers and other work people may be procured. The premises are completely surrounded by a river and a canal 18 feet wide at bottom admits water sufficient to drive two large wheels to work three pairs of wash stocks, a calendar, an indigo mill, with a machine for polishing copper plates; two large pumps which supply the wash stocks together with boilers and sowesing canes. There is a most compleat and convenient set of vats furnished with all the necessary apparatus for carrying on the dyeing of CHINA BLUE .... There are three copperplate shops ... the printing shops contain 30 tables (mostly mahogany) ... the pencilling shops, with tables will hold 200 pencillers and the different apartments are furnished with stoves. There is a large assortment of copper plates and block prints, many of which are perfectly new, executed in latest stile and adapted for furnitures, garments, handkerchiefs and shawls of all sizes and colours.

It was into this burgeoning industrial area that Patrick Mitchell moved when he joined William Stirling & Co in 1811. The following year a formal contract was drawn up stating his salary to be £500

per annum for the first two years and £600 thereafter for the next three years.[5] He was appointed 'general manager and conductor of the business either at Cordale, Glasgow, London or Manchester'. From the time he moved to Cordale, there was continuous correspondence from head office in Glasgow, giving instruction, demands, advice and orders. Mr Desmore, the chief designer, was bombarded with patterns to draw up. Mr McGregor, in charge of the finishing plant, was addressed severely by William Stirling:

> I must draw Mr McGregor's serious attention to the unusual number of damages we have lately had in our goods. The number of pieces we have had returned from the calendars is very great and the loss consequently incurred very considerable.[6]

In February 1811, Patrick set off for Manchester to make contact with the firm's agents in England. Mr George Stirling, the financial controller, had a cash flow problem and frequently urged Patrick to find a source of 'cloth on long credit' and to give 'every preference to those who buy short bills and endeavour as much as possible to sell for present bill down'. From a perusal of the correspondence it would appear that much was expected of the new manager - a supply of cloth on long credit, favourable terms for indigo, supplies of patterns from the London houses, cash orders for finished goods and sources for the supply of drugs (chemicals) of the trade.

In June he returned to his cottage at Dalquhurn, close to the works at Cordale. Instructions arrived daily from Glasgow urging goods to be 'pushed' and the finished bales to be sent up to the city 'by the cart'. Black and white checks were popular with James Black & Co.[7] Morrison's order, however, was more complicated - green grained, yellow and pink on twenty-one inch cloth , code M, blue was to be pencilled around the pink. Pencilling was a time consuming process mainly carried out by women. It involved filling in any area of solid colour in a design with a paintbrush. On 24 June there was another large order from James Black for 1,500 pieces.[8] This order was needed quickly so capacity must have been considerable to cope with this quantity.

Letters from William Cunningham, the firm's design director, reveal the amount of detail involved in the type of patterns they were printing at this date - 'Draw the patterns border and enlarge the scale'; 'reduce the figure, introduce more black'; 'number 81 and 26, if touched up, might be made to last the season'. No pattern book from Cordale survives to let us see what patterns 81 and 26 looked like, nor do we have any idea of the designs in green and black supplied by Chippendale & Thomson which Mr William was so enthusiastic about when they were printed. Black grounds were mentioned frequently and much effort was expended in experimenting with black dyes - a bale of printed cloth had been returned from London with the complaint that the black had turned brown - 'they will not stand comparison with English ones', wrote Cunningham, 'find some way of making them better'.

It was not surprising that the emphasis in the letters is on design which had an important bearing on the look of the furnished fabric and ultimately on the commercial success of the enterprise. A manufacturer giving evidence to one of the many Parliamentary Select Committees on design[9] sums it up succinctly:

> what is it that makes the trade at all? Is it not the design upon the fabric, and the colour upon it and the invention of art that is put upon it; if you put more and better of all these things you will have more trade.

Although his turn of phrase was more pedestrian, this was the message William Cunningham was trying to impart to the staff of Cordale.

At the end of the Napoleonic Wars when trade with the continent was beginning to pick up, Patrick Mitchell's thoughts turned to what was happening outwith the confines of the British Isles. Calico printing was the branch of the trade most sensitive to fashion and here the French were the clear leaders. So it was to Paris that he set off in the summer of 1816. He was soon able to write back to his brother Moncrieff, from the Rue de L'Exchequier, that as far as technology was concerned the Scots had nothing to fear from French competition. By the autumn he had already visited Mulhouse, Geneva and Rouen, all important continental centres of calico printing. No record exists of his impressions of these factories but a fascinating account, written in his own hand,

survives containing his observations on the renowned printfield of Oberkampf et Cie at Jouy-en-Josas, near Versailles. Something of the scale of the operation is conveyed in a nineteenth century account which states that the average hourly production of printed cloth was between 4,500 and 5,000 metres. Oberkampf had set up his works in Paris in 1759, later moving to the cleaner air and more spacious surroundings at Jouy on the banks of the Bievre. The cloth laid out in the fields to dry attracted the attention of the aristocracy on their way to and from the court. Their interest was sustained by the high quality of the finished goods. It was company policy to use only the best cloths, the most expensive dyestuffs and to employ artists and engravers of talent. Like Wedgwood and Flaxman in England, Oberkampf formed a symbiotic relationship with J B Huet, the leading decorative artist of the century. It was Huet who produced the famous 'Labours of the Workshop' series on which the company's prestige was founded. The bread and butter products of the factory were the ordinary Indienne prints for the dress trade.

Patrick Mitchell's description of the print works is in the form of a letter dated 5 October 1816.[10] It begins 'Dear Sir' but he probably had no intention of sending it, using the letter form merely as a convenient *aide memoire*. As at many places of universal renown, the physical reality was smaller than he had anticipated. He conceded that the works were large but added, 'I had formed a much higher idea of their extent than the site justified'. In the margin of the letter is an aside - 'Size of Cordale', indicating in dimensions at least, his own operation was comparable with this famous site. As Cordale depended very largely on the pureness of the water, about which there was some pride in Scotland, his first observations were about the driving power of the water of the Bievre - 'They have not more water than in the Yoker burn'. He commented on the importance the French attach to engraving and the high standard of the 'furnitures' (furnishing fabrics) they were printing. The designs were scenes of public buildings and views of the countryside around Paris, printed from high quality engraved copper plates. He described the cylinders, 'all the rollers were brass cast upon an iron spindle and turned together; there cylinders must have cost an immense amount of money'. He

hoped that this mode of engraving might be established at home (there were cylinders at Cordale so this must have been a refinement of cylinder printing to which he refers). He also admired the work of the block printers of whom he saw about eighty. They did no night work, implying that this might be the practice at his own factory. Costs, of which he was always acutely aware, were commented on. The stout 1400 Cambric he saw being printed cost about 18d a yard 'and they sell these dark ground fancies at 3/- to 3/6d English measure'. Drugs were as expensive as they were at home with the exception of madder, the cultivation of which the French government encouraged in the area of Rouen.

It did not occur to him to question the superiority of French design and he does not speculate on how they achieved this pre-eminence. We must assume that he was content to continue to receive designs from Paris, London, or wherever else there was a source of supply, which might answer his need to keep a stake in the fickle world of shawls, slingdangs and sarongs. Having satisfied himself that the French were not as great a threat as he had supposed, and no doubt having made some useful contacts from his tour, Patrick Mitchell returned to business in the Vale of Leven. It is clear from his correspondence that he was intending to stay on at Cordale, at the end of his first contract with Willaim Stirling & Co. However, the turn of events a few miles to the east of the Leven, at Milton, were to offer him a unique opportunity to further his career.

In the 1790s the printfield at Milton, on the Littlemiln of Auchentorlie Burn, a few miles east of Dumbarton, belonged to a calico printer called Day Hort McDowell. McDowell of Walkinshaw, as he is described in assignations and dispositions in the title deeds of the mill, replaced an existing cotton mill on the site, with a four storey sandstone building (Plate 1). It is possible that he also built the mansion house in close proximity to the mill still in existence today. It would appear that his finances were severely overstretched by the scale of his constructions, to the extent that he committed suicide in 1809. His heirs continued in business until 1817 when they were forced to sell up. Patrick Mitchell decided this was an opportunity not to be missed and

negotiated a purchase price of £4,500, a large amount for an individual without partners. For this sum he obtained the mill, machinery, utensils, ten acres and one rood of land, and the elegant Georgian mansion house with its fine views of the river. Over the years he continued to improve the property, adding small parcels of land and expanding the capacity of the mill by the addition of new buildings. Evidence that the printworks was a large concern is visible today in the ruins strewn over the ravine down as far as the 'King's Highway', now the A82. The present pony field on the site is still infertile as a result of the vast quantities of noxious substances used in the bleaching, dyeing and printing processes.

Like many entrepreneurs of the late eighteenth and early nineteenth centuries, Patrick Mitchell held the reins of the business entirely in his own hands. He was financial director, marketing manager, design director, works manager and personnel manager, in addition to organising his export trade and keeping in constant touch by letter with shippers and his agents throughout the world. He lived for the rest of his life at Milton House, travelling daily by the steamer from Dunglass to his office at 111 Ingram Street, Glasgow. He never married but brought his nephew, Andrew Muter, into the business in 1827, training him in all aspects of the trade, so that when he died in 1848 the transition from uncle to nephew passed almost unnoticed.

In the beginning labour relations at Milton were good. In his obituary he was likened 'as a father unto his employees'.[11] By the 1820s he employed over 300 people at the mill. The wage for a journeyman amounted to 30 shillings per week, for a labourer 15 shillings and 5 shillings for children. These wages were an improvement on the prevailing rates for the trade at the turn of the century.[12] Despite the steady increase in wages, expectations also rose in the wake of the Reform Bill of 1833. When the promised utopia failed to materialise there was trouble at the mill. In November 1833 Patrick Mitchell's workers went on strike. Ever mindful of the threat of cheap Indian competition he refused their demands for more money. The workers were replaced by unemployed weavers from Bridgeton. 'I have now made up my mind to take on three hundred by the first of February', he wrote to

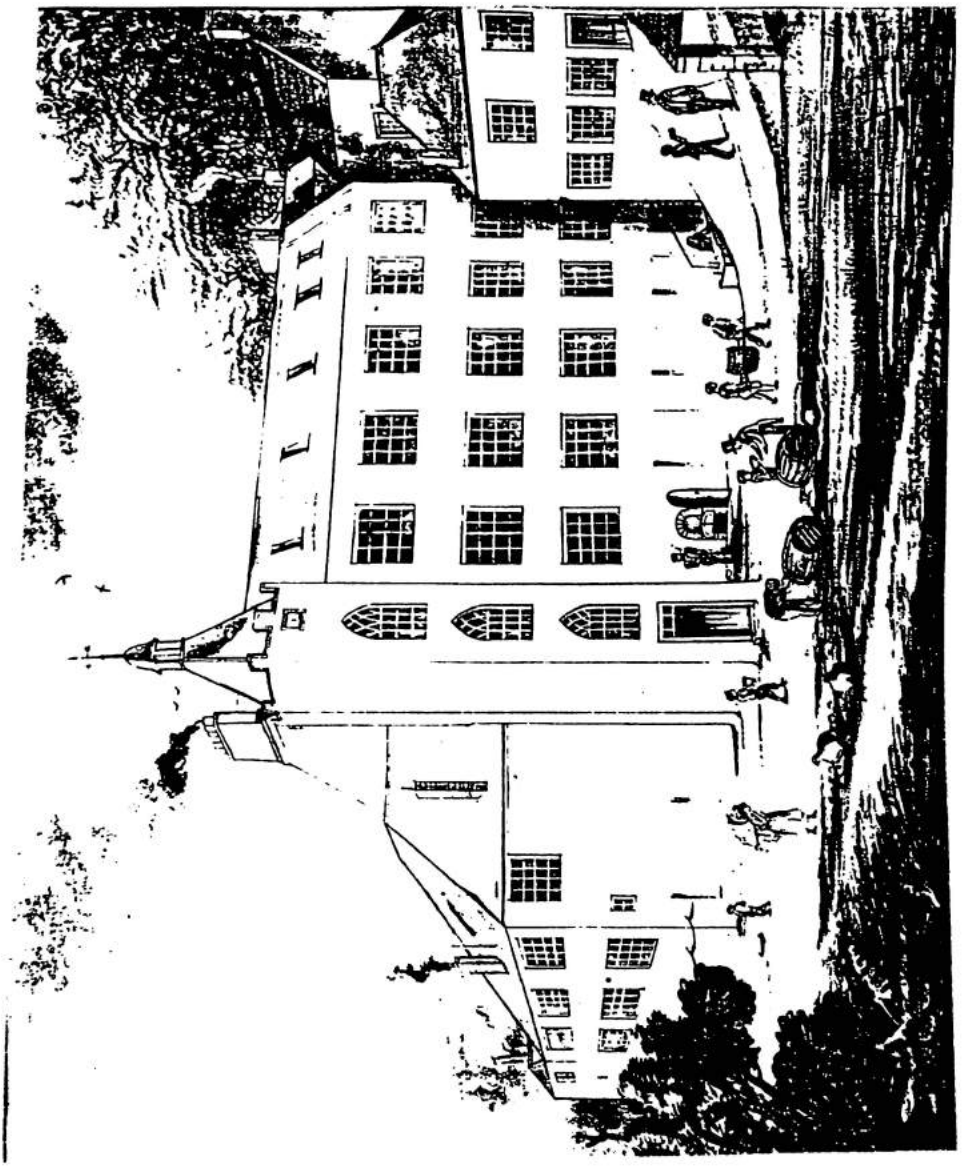


Plate 1. Watercolour of counting house, printing shops and calendar of Milton Works by William Donnelly
Glasgow University Archives, DC90/9/45

his nephew, Andrew, in January 1834. He was also looking for thirty young lads as apprentices and proposed paying them five shillings per week. Such was the anger of his workers that the 'Bridgtonians' had to be escorted to the mill under military guard. The windows of Milton House were stoned and at this point, as violence escalated, Patrick took himself off to stay with his brother in Glasgow, leaving his nephew to deal with 300 smashed windows at the factory. Soldiers were put on sentry duty and patrolled in front of the house to prevent further damage. At the end of 1834 the strike collapsed and the workers returned to the mill at the same wage rates that had prevailed before the strike.

Many of those employed at Milton were Irish. Seven out of eight members of the McIlray family worked at the mill,[13] the youngest aged four being presumably too short to reach the printing table. Robert Cairn, a big lad of eight, was already working as a tearer, applying the dye to the printing block before handing it to the journeyman who stamped the cloth. Patrick Mitchell considered himself a fairly enlightened employer and was described in his obituary as an 'ardent reformer'. Reform, however, did not encompass changing the whole basis on which the trade was carried out; a dependence on cheap labour in order to compete successfully in what was a cut-throat market. In a letter of March 1845 he outlines his objections to a proposed parliamentary bill to regulate the labours of children. He considers the bill, 'quite uncalled for and quite unsuitable to the economy of a calico print work and could not be carried out without causing the greatest sufferings to the parties whose benefit it is proposed to legislate', adding indignantly, 'I am not aware that I have ever had a complaint from a child of excessive work'. Children at Milton worked ten hours daily, Monday to Friday and seven hours on Saturdays. However it must be said that conditions there appear enlightened when compared with what prevailed at other mills where children often worked from six in the morning till half past eight at night for 3 shillings a week.

Mitchell's genius lay not in industrial reform but rather in combining all that was best in design with a sound knowledge of dye chemistry. This, allied to an indefatigable drive, purpose and energy, allowed his business to prosper. In the 1840s when the

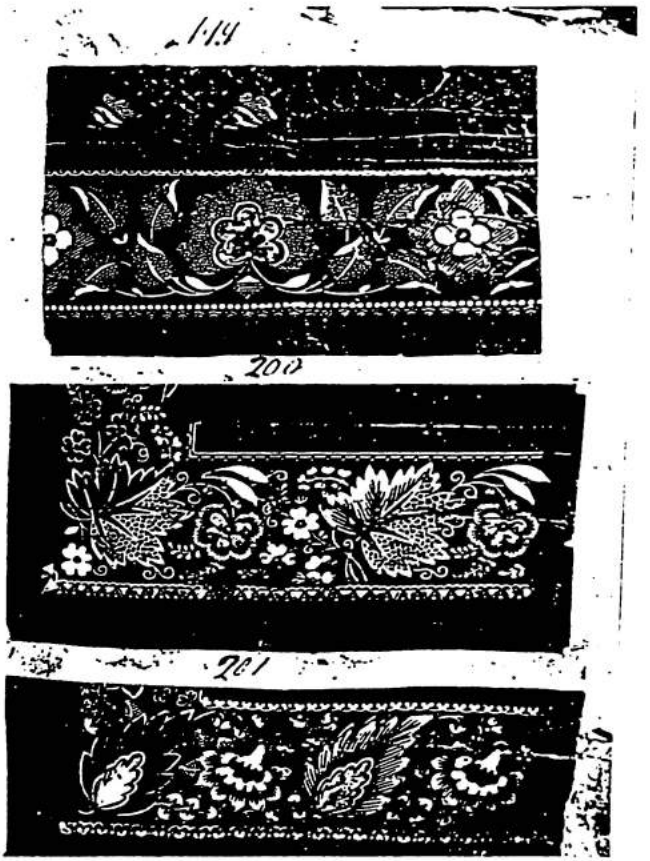
mill was almost entirely devoted to supplying the export market, he relied very heavily on his agents abroad. In March 1846 Patrick writes to Madras,

> Having taken into serious consideration the recommendations in your letter of the chintz bandannas, as being an article of constant demand and ready sale, and mentioning yellow grounds as particularly liked, I have with great care and at considerable expense prepared two musters which I will send to you as samples.

The mercantile strength of Patrick Mitchell lay in his ability to supply the market with what it wanted. Looking at the indigo and logwood printed sarong lengths,[14] which were rescued from the attic at Milton House, it is difficult to realise they were not produced last week in Kuala Lumpur. The freshness of the colours, crispness of the fabric and the distinctly Javanese look of the design belie their 1830s Scottish origin. During the 1830s and 1840s thousands of bales of printed cloth were shipped out to his network of agents in Madras, Bombay, Calcutta, Batavia, Singapore, Mexico and Australia, each carefully printed with designs to suit the different markets - 'black and white slendangs and ladies dresses of patterns designed specially to resemble the one handed to us'. Bandannas were articles in constant demand in Calcutta. Consequently repeat orders were sent on a regular basis. The sale of goods designed as wearing apparel was more problematic. Clothing was, and is still, affected by fashion and so it was an act of faith for Patrick Mitchell to send off his printed bales to these distant destinations not knowing whether they would meet the season of their demand on time, or whether the pink spots with yellow stripe which were all the rage in the spring might be decidedly *passe* by the time the ship reached New South Wales in the autumn.

The vigour and seriousness with which he attached the constant demand for novelty never flagged and in January 1848 he was preoccupied with improving the 'souls' of his fabrics. Writing to his agent in Bombay, he said:

> I am glad to find your prices gradually creeping up ... I have prepared a fresh shipment of pine cone patterns



Examples of designs for shawls
Glasgow University Archives, DC90/9/129

(sic) which I think very desirable and well suited to your sales, having a great deal of novelty about them and as the cloth is much firmer (sic) and beautifully done up, I trust that they will meet the views of your buyers at enhanced prices.
Shortly after writing this letter, on his way up to his office in Glasgow, Patrick Mitchell died on the lighter taking him out to the steamer at Dunglass.

A flavour of the output of Milton Mill is contained in the pattern book[15] which has survived from the earliest years of Patrick Mitchell's association with Milton. Into this volume are pasted up more than 800 hand-painted designs on paper, in India ink, watercolour and body colour, mostly border and filling patterns for shawls (Plate 2) in addition to a few drawings for commemorative handkerchiefs. The designs are anonymous, named designs being a twentieth-century phenomenon. Designing and drawing were occupations handed down from father to son in the nineteenth century. 'A style to answer the needs of the market', was what Patrick required of his pattern drawers. He did not see his role as producer of innovative textiles, nor did he ally himself with leading artists of the day to enhance the aesthetic qualities of his products. His interest focused on well-made, quality goods which would sell readily. What we are looking at in the pattern book is not art with a capital 'A', rather a collection of provincial and often charming designs to suit a long-vanished world of fashion, furnitures and foreigners.

NOTES

1. This information is contained in his passport which was hand written by the Lord Provost of Glasgow, Henry Monteith, one of the first successful calico printers in the city.
2. The notebooks of Patrick Mitchell are in the National Library of Scotland, Edinburgh.
3. Pullicat, a town north of Madras gave its name to a certain type of printed handkerchief.
4. *The First Statistical Account of Scotland, vol. III* (Edinburgh, 1792) p.443.
5. In 1811 an average salary of a manager was between £120 and £150 per annum.
6. Glasgow University Archives (G U A), DC/90/9/129-139.

7. James Black & Co survived until 1899 when the remaining calico printers in Britain amalgamated to form The Calico Printers Association Ltd.
8. A 'piece' of cotton was 100 yards long.
9. *Select Committee on the Copyright of Designs, Minutes of Evidence, Parliamentary Papers 1840.*
10. G U A
11. *Ibid*
12. Donald McLeod, *Clyde District of Dunbartonshire*, (Dumbarton 1886)
13. Census Returns 1841, 1851
14. Now held in the National Museum of Scotland, Keeper of Textiles, Naomi Tarrant.
15. G U A, *Milton of Colquhoun Pattern Book*, DC/90/9/129

NEWMILL: AN EARLY SCOTTISH COTTON MILL

Stuart M Nisbet

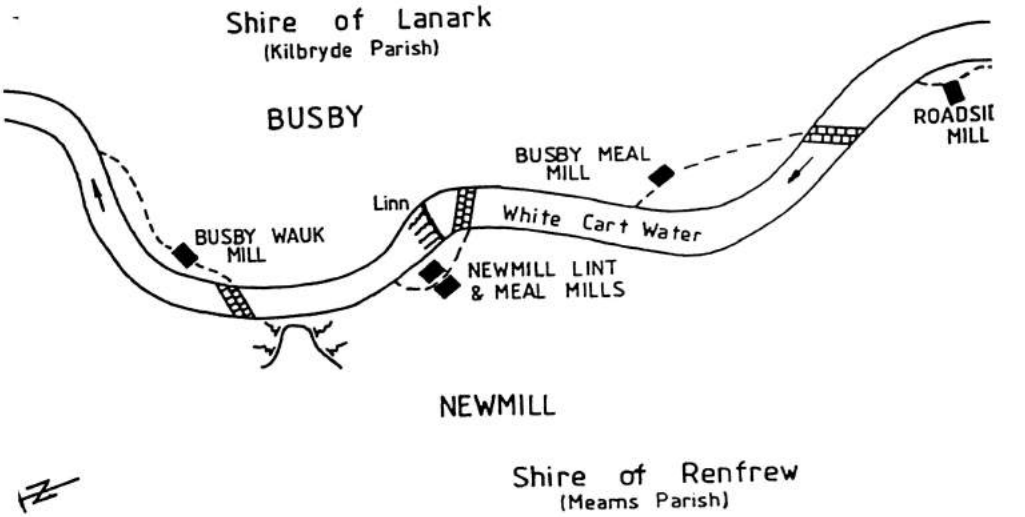
Clarkston, Glasgow

The very earliest rural cotton spinning mills, which heralded the Industrial Revolution in Scotland, are an important part of our industrial heritage, but have been poorly documented to date. This article documents the evolution and first two decades of one of Scotland's earliest cotton mills - Newmill.

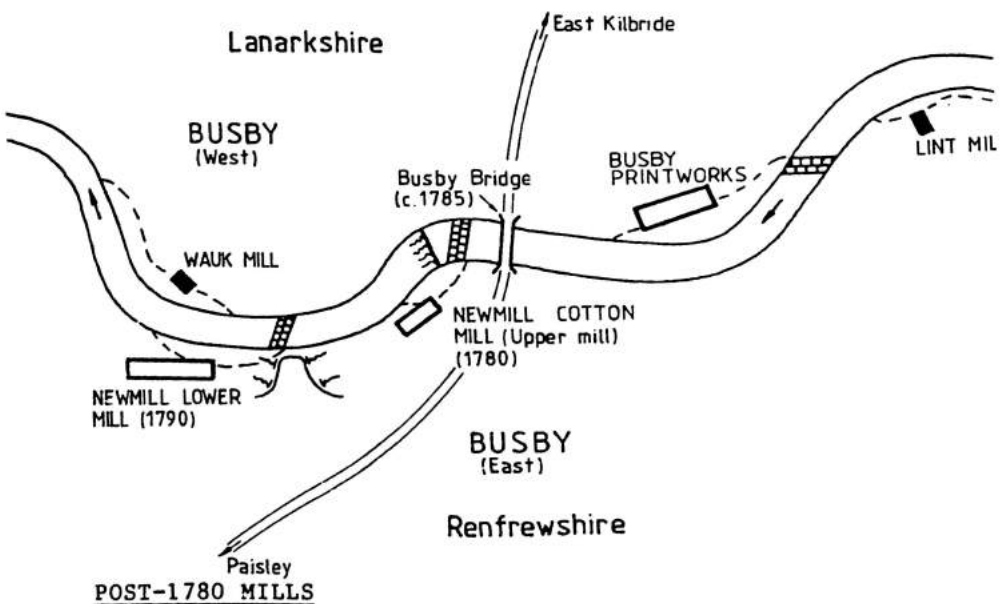
Newmill was situated on the White Cart Water in Mearns Parish on the eastern boundary of Renfrewshire. It's six metre high linn (waterfall) was a prime source of water power. The immediate vicinity supported several water powered mills long before the dawn of the industrial age (Figure 1). A meal mill at Newmill is documented from as early as the year 1300 and two centuries later it was included in a sale of the lower part of Mearns.[1,2] Newmill meal mill appeared on Blaeu's Atlas in 1654, and forty years later it is recorded that the miller was Alexander Young whose family were also millers at Mearns Mill upstream.[3] Multure was still in existence in 1744, although the local parish was not astricted to Newmill.[4] The last miller prior to the founding of the cotton mill was John Stevenson in 1799.[5] A meal mill on the opposite bank of the River Cart, on the lands of Busby, is documented from before 1490.[6] (Figure 1) In 1575 multure was in existence, when the landowner was granted Busby together with half the mill lands.[7] In 1787 the mill was still in operation at which time the miller was Arthur Moore.[8]

From the 1780s Scottish landowners were beginning to realise the value of suitable riverside sites and advertise them in the press. A piece of holming ground on Stamperland Farm, a short distance downstream from Newmill, was advertised as a suitable bleachfield site in 1782.[9] Busby meal mill was advertised in the *Glasgow Mercury* on 12 September 1788:

> There is upon this estate, about fifteen acres of ground very proper for a Printfield or Bleaching Ground, and the present corn-mill can be erected into a Cotton Mill



PRE-1780 MILLS



POST-1780 MILLS

Figure 1. Watermills in the vicinity of Newmill

> or other manufacturing machinery and has command of about 25 feet of fall.

Busby meal mill site was a natural location for water based industry. Despite its seemingly flat site, the available head of water was comparable to that at the linn at Newmill.[10] This was confirmed recently by a level survey.[11] The above advert did not meet with success until eight years later when a bleachfield was set up next to the mill. In a short time the bleachfield grew into a large printworks, swallowing up the old meal mill.

By the 1790s, adverts promoting suitable mill sites in the area were commonplace. The waterfall in what is now Linn Park, a mile downstream from Newmill, was advertised in 1792:

> An excellent situation for a Cotton Mill near Glasgow. The Wauk Miln situated at the Linn on the water of Cart, about a quarter of a mile above the village of Cathcart with a capital fall of great power.[12]

Such was the value of water powered sites by this time that grain mills which had been a vital part of the community for centuries could disappear almost overnight. It is clear that rapid changes were occurring in Scotland as the demand for water power increased.

Water powered cotton spinning launched the industrial revolution in Scotland, but small scale industrial use of water power was introduced to the textile industry fifty years earlier in the form of lint mills. These rural water powered mills were given practical and financial encouragement by a Government body, 'The Board of Trustees'. Lint mills mechanised the laborious process of preparing home grown flax for hand spinning. From the mid eighteenth century they became a real threat to the traditional grain mill sites. On the larger sites, however, the two could exist side by side.

By the 1770s a lint mill was established at Newmill beside the old meal mill. The exact date of its founding is not known. A similar lint mill at Roadside, less than a mile upstream, is documented from 1750.[13] (Figure 1) A Board of Trustees survey describes Newmill lint mill in 1772.[14] It used water powered mallets to beat the stems of raw flax and weaken them. The stems were then passed through openings in a large drum to be

'scutched' by vertically mounted revolving rotor blades, also driven by water. The scutching process employed five people at Newmill, but the work was seasonal. The miller kept only two full-time assistants and hired more as required. The charge for dressing the flax by water powered beating and scutching was tuppence per stone.

When Newmill lint and meal mills were sold in 1780 for the construction of the cotton mill, there is no mention made of the lint mill in the sale deeds. One contemporary historian reported that both mills were demolished the year before the sale. The lint mill reappeared four years later when the newly built cotton mill was advertised in the *Glasgow Mercury*. The proprietor reported that there was a good stance for another mill on the cotton mill lands and that there was almost a complete set of lint mill 'graith' (machinery) on the site.[15]

The lint and meal mills at Newmill were sold by local landowner, Sir Michael Stewart of Blackhall, to Glasgow merchant, William Ferguson, in December 1780. Ferguson was an established textile dealer and manufacturer with a business right at Glasgow Cross. Beside the linn at Newmill, he built the fourth cotton spinning mill in Scotland. The first and second Scottish mills were at Rothesay on the Isle of Bute, and Penicuik, Midlothian.[16] The third was at Dovecothall, on the River Levern, less than five miles from Newmill. Both Dovecothall and Newmill were established in 1780, but Dovecothall was leased in June, six months before Ferguson signed a feu contract for Newmill.[17]

The site at Newmill was confined, perched on a ledge in the side of a steep bank beside the falls. Ferguson's first task was to widen the ledge and construct retaining walls to support the slope above. He then built his cotton mill. It was three storeys high, plus loft and rubble built with internal brick partitions (Figure 2). The roof was tiled, with skylights to allow the attic to be used as working space. One third of the mill provided accommodation for six working families. Houses elsewhere on the mill lands supported another three families. The first and second floors of the mill held twenty-eight water frames, each with forty-four spindles. The upper floor and attic were used for carding, drawing, roving and reeling.[18]

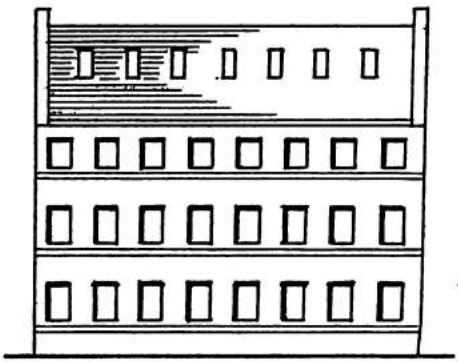
The linn at Newmill provided a natural head of six metres. This was increased by a further two metres by a dressed stone dam a short distance upstream from the falls. The dam provided a take-off point away from the turbulence of the falls and created a significant amount of storage which was occasionally required. Ten years earlier the proprietor of the lint mill on the site reckoned that the water supply was adequate except in periods of drought or when the river was frozen. By comparison the flow in the White Cart today varies by a factor of over a thousand, from just over 0.1 cubic metres per second to 150 cubic metres per second.[19]

The available head of eight metres recorded in 1787 is exactly the height today from the original crest of the dam to the invert of the wheel pit.[20] At the western end of the dam is a sluice which controlled the flow of water via a twenty-five metre long lade to the wheel. The lade terminated in a wooden channel, which passed over the roof of the mill's smithy before driving the wheel. The waterwheel, situated in a pit at the eastern end of the mill, was five metres in diameter and 1.1 metres wide, providing twenty-two horsepower.[21] The elevated channel and sunken pit suggest that the wheel was overshot. The cog or pit gear also drove a wauk (wash) mill.[22] A much earlier wauk mill existed directly across the river from Newmill (Figure 1).

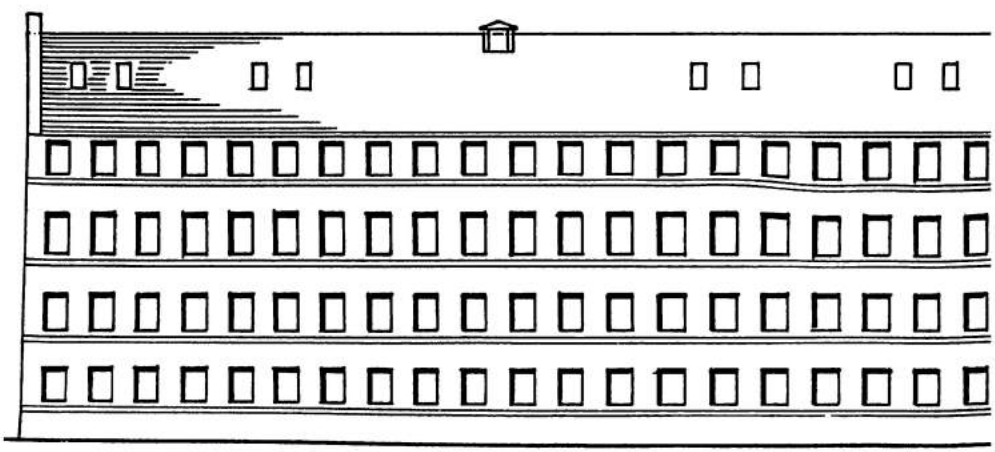
In March 1783, less than a year after spinning had commenced, William Ferguson advertised Newmill in the *Glasgow Mercury*.[23] Ferguson both owned and managed the mill, and claimed that his reason for selling was due to a leg injury. Whether this excuse was genuine or not, he latterly owned a textile factory in Glasgow's Calton in 1798.[24] He also remained proprietor of his 'Scotch Cloth Shop' at No 2 Gallowgate until his death in 1815.[25] In September 1783 Ferguson sold Newmill to Richard Thomson who had also recently acquired Dovecothall Mill.[26] In the purchase deeds for Newmill he is described as Richard Thomson, cotton spinner, residing at the mansion house at Dovecothall Mill. Newmill and Dovecothall were to have several connections and many similarities (Figure 3).

Richard Thomson's insurance policy of 1785 for Newmill survives:

Richard Thomson of Glasgow, Merchant and Cotton



Newmill Upper Mill (William Ferguson 1780)



Newmill Lower Mill (James Doxon 1790)

Figure 2. Newmill Upper and Lower mills

> Manufacturer, on his Cotton Mill situated at New Miln Parish of Mairns and County of Renfrew, Stone and Tiled, not exceeding £200. Utensils, stock and machinery therein, not exceeding £800.[27]

The valuation is rather low. At this time there were only six mills in Scotland. A decade later, when there were over twenty mills in Renfrewshire alone, Newmill was valued at £5,000.[28]

Richard Thomson was to become a major figure in the newly born cotton spinning industry. Shortly after purchasing Dovecothall and Newmill, he was in partnership with William Gillespie and James Monteith at Glasgow's only water powered cotton mill at Woodside on the River Kelvin.[29] Thomson's ownership of this trio of early mills has been documented elsewhere.[30] Richard, along with his brother, Robert Thomson, appear to have been sons of Robert Thomson, senior, one of Glasgow's major established textile merchants. Unfortunately the Thomsons are not so well documented as the better known Gillespies and Monteiths. It is likely that Newmill had a link with Richard Arkwright through the Thomsons. In 1783 Arkwright came to Glasgow and was entertained at dinner by the principal manufacturers of the city. Among those attending were James Monteith, senior, Robert Thomson, senior, and William Gillespie.[31] (Further down the guest list were several manufacturers from Anderston village, plus David Dale, who a few days later, visited the Falls of Clyde with Arkwright).

In December 1788 Richard Thomson sold Newmill to its first English owner, Robert Twyford, a yarn merchant from Deansgate in Manchester.[32] Twyford owned property, stock and a dwellinghouse valued at £8,500[33] in Manchester from as early as 1781 and he is listed in the Manchester and Salford trade directories from 1781 until at least 1797.[34] Scottish cotton mills were evidently a worthwhile investment at this time as Twyford followed in Thomson's footsteps at Newmill's sister mill. In November 1787 it is recorded that he is part of the management at Dovecothall mill.[35]

Twyford began carrying out improvements to the machinery at Newmill, probably based on his experience in Manchester. In addition to eight complete spinning frames running 1,500 spindles,

Twyford had installed four spinning jennies.[36] He also had several additional water frames of a new type. However, before his improvements were complete, he ran into financial difficulties which were to destroy his business reputation in Scotland. Six years later his Glasgow creditors were still chasing his debts.[37] Twyford only held on to Newmill for eighteen months. In July 1788 he sold Newmill to another Manchester merchant, James Doxon of Stockport, Lancashire.[38] Doxon was to become the most significant of the early owners since the founder William Ferguson.

James Doxon was a cotton merchant and owned two spinning mills in Stockport. It is possible that he owned these English mills

A. MILL BUILDINGS

MILL	RIVER	BUILDING	WATERWHEEL	MACHINERY
NEWMILL	White Cart Water	3 Storey plus loft by 8 bays long	4.6m dia.x 1.1m thick	1200 Spindles 1782 2544 Spindles 1794
DOVECOTHALL	Levern Water	3 Storey by 8 bays (23.2m by 8.5m)	4.9m dia.x 0.9m thick	1350 Spindles 1782

B. OWNERS IN FIRST DECADE

	1780	81	82	83	84	85	86	87	88	89	90
NEWMILL	William Ferguson				Richard Thomson			Robert Twyford		James Doxon	
DOVECOTHALL	Ramsay, Leviston Love, Clurdsey, J & W Haugh				Richard Thomson			Robert Twyford			

Figure 3. Newmill and Dovecothall Mill mill buildings and owners

before he purchased Newmill, although he is only listed in Manchester trade directories from the year of Newmill's purchase.[39] When he bought Newmill, the cotton industry was in the doldrums. There were various notices in the Glasgow press in early 1788 regarding the stagnation of the trade.[40] Two major spinning partnerships were dissolved in the winter of 1788/89, and other mills were put on the market,[41] including Thornliebank, a few miles from Newmill.[42] Doxon may have purchased Newmill hoping for an upturn in the trade, but this did not happen. Four months after he bought Newmill, he put it back on the market, reducing the price from £4,000 to only £1,500. Newmill had been closed and its seventy workers[43] laid off by March the following year, at which time it was still unsold.[44]

Accommodation for the labour force had been provided from the beginning. It was essential in the early rural mills to provide living quarters to attract the workers to a new way of life. When Doxon purchased the mill all seventy employees were housed in buildings on the premises. The effect of the closure of the mill in 1788 was devastating, one of the earliest cases of large-scale industrial unemployment. Fortunately Doxon's fortunes improved drastically over the next two years, and by the beginning of 1790 he was planning ambitious expansion on the lower half of his mill lands.

In 1788 Doxon reckoned that Newmill was capable of running 1,500 spindles and at small expense this could be doubled to 3,000.[45]. There was little space for any further mill buildings on the narrow site beside the falls. Access, by a narrow zig-zag track down a near vertical bank behind the mill, was also far from ideal. The mill lands were split in two by a cliff jutting right out to the edge of the river. It must have been clear to Doxon that the remaining lower half of his lands held the potential for future expansion and better access. The only difficulty was in providing a suitable head of water, as unlike his existing mill, there was no convenient waterfall adjacent.

Doxon's solution to the power problem of his 'Lower Mill' was to build a second dam on the river. He purchased the right to build this 'lower' dam from the owner of the lands across the river in 1790.[46] This gave him the right to, 'erect and use in all time coming', any dam or dams between the linn and the termination of

his lands downstream. To provide for expansion at his existing 'Upper Mill', Doxon also purchase the right to raise the existing Newmill dam. These transactions were subject to several constraints, including preventing flood damage to the lands of Busby opposite and securing the workings of Busby Wauk Mill which was still operating at this time.

Doxon's new Lower Mill was more than twice the size of Ferguson's Upper Mill. It was four storeys high plus basement and nineteen bays long (Figure 3). Unlike the Upper Mill, some fine photographs of Doxon's Lower Mill survive.[47] Two years after the completion of the Lower Mill, major alterations were carried out at the existing Upper Mill to link the two mill lades. The tail race at the Upper Mill was altered and a culvert and tunnel constructed from the wheel pit, under the mill, beneath the mill plateau and through the cliff which split the mill lands, to meet the Lower Mill lade.[48] This gave the Lower Mill two independent sources of power: from the continuation of the Upper Mill lade and from its own lower dam. This allowed Doxon considerable flexibility in the running and maintenance of his mills. His schemes suggest that, apart from being a shrewd merchant, he was also something of an engineer. In Stockport he owned the right to erect a weir to direct the river through a tunnel to another site.[49]

By 1793 the Upper and Lower Mills at Newmill contained thirty-six water frames running over 2,500 spindles.[50] Three years later the mills gave employment to 360 workers.[51] By this time the River Cart had been bridged just upstream from the Upper Mill dam, linking Newmill with Busby. The mills, together with the growing village adjacent, became known as Busby. The name 'Newmill' did not formally disappear until 1809, when births on both sides of the Cart became commonly recorded as being in Busby.[52]

Unfortunately Doxon had stretched his finances to the limit at the wrong time. In 1793, soon after the completion of the Lower Mill, the Napoleonic war broke out and, during that 'dreadful year', three Glasgow banks failed. A Court of Session paper describes the situation admirably:

> This Mr. Doxon was engaged in a great variety of Cotton Works, in several parts of England. He likewise carried on a Cotton Work at Busby Mills near Glasgow.

> Though Mr. Doxon was a man of very considerable property, he always had occasion for a large credit. In the spring of the year 1793 when failures among mercantile people were exceedingly numerous, Mr. Doxon became unable any longer to support his credit and a commission of bankruptcy was issued against him.[53]

Both mills were put up for sale at the bargain price of £3,000.[54] In March 1794 a notice to his creditors marked the end of James Doxon in Scotland.[55] Most merchants and manufacturers had their ups and downs around this period, but for Doxon this really was the end. Two months later a full column in the *Manchester Mercury* advertised his Stockport mills, property, warehouses, land, machinery and waterwheels. What really brings home the extent of his debts are the sale of his family home and the seat-rents of his pews in St Peter's and St Anne's churches in Manchester.[56]

The Upper and Lower Mills were sold to Doxon's brother-in-law, Thomas Everett, a London banker.[57] Despite Doxon's misfortunes, they were clearly still a going concern. Everett's Glasgow agent was Robert Armour, who shortly put the mills back on the market.[58] Ownership of the mills was retained by Everett and thereafter they were let to a succession of tenants. The first tenant cotton spinner was Thomas Moffat, who, by the close of the eighteenth century, had suffered the same fate as Doxon. In July 1801 a petition was put before the Court of Session for a sequestration of Moffat's assets.[59] In effect, his debts were so small that Malcolm McFarlane, one of the main creditors, was resisting the official process as it would leave little cash to settle Moffat's debts. McFarlane was to become the main tenant at Newmill in the early 1800s. Following in the footsteps of his predecessors, he became bankrupt by 1815.[60] However, as Malcolm McFarlane commences cotton spinning in 1799, the history of the first two decades of Newmill draws to a close. Spinning at Newmill is well documented in the nineteenth century.[61] Despite the rise of Glasgow as the centre of cotton spinning with the advent of steam power, many of the early rural mills relied principally on water power to the end of their lives.

The main building of James Doxon's Lower Mill survived until the late 1960s when it was burned to the ground. A smaller two-bay extension survives. The Upper Mill was demolished and the site cleared around the turn of the century, but the retaining walls and underground lade system are remarkably well preserved. A river walkway has been considered for some time, passing both sites and would be extremely worthwhile, if only to open up the spectacular Busby Linn to public view. This natural feature deserves more recognition as it was the prime cause of the growth of the villages of Newmill and Busby.

Acknowledgements

I am grateful to Dr T C Welsh for pre-eighteenth century material and encouragement in pursuing this research. I am also indebted to Lynne Hamilton, Stockport Local Studies Librarian, for assistance with English manufacturers. Principal secondary sources are *Busby and its Neighbourhood* by the Rev William Ross, LL.D (1883) and the excellent *Water Power in Scotland* by John Shaw (1984).

NOTES

KEY

RMS Register of the Great Seal, Scottish Record Office
RS Renfrewshire Sasines
LS Lanarkshire Sasines
GM *Glasgow Mercury*
GA *Glasgow Advertiser*
GC *Glasgow Courier*
MM *Manchester Mercury*
BOT Records of the Board of Trustees, Scottish Record Office
HSR Crawfurd, *History of the Shire of Renfrew*, (1782)
GLS Guildhall Library, London, Sun Fire Office Policies
SL Signet Library, Edinburgh

1. J A Strang, *A History of Mearns Parish*, Vol.III (1939), p.422-6 (unpublished).
2. RMS, Vol.II, No.3339 (2 May 1509).
3. Poll Tax Roll, Mearns Parish (1695).
4. RS, 10 May 1744.
5. RS, 1 Dec 1780.
6. RMS, Vol.II, No.1936.
7. Renwick's *Glasgow Protocols*, Vol.IV, Nos.1045, 1046.
8. William Ross, *Busby and its Neighbourhood* (Glasgow 1883), includes the Parishes of Carmunnock, East Kilbride, Mearns, and Cathcart.
9. GM, 26 Sep - 3 Oct 1782.
10. GM, 12-19 Mar 1788.
11. Level survey by the writer, Jan 1987.
12. GA, 19-23 Nov 1792.
13. BOT, NG1/1/11, 22 Feb 1751.
14. BOT, NG1/19/1, 'Report from Stampmasters anent the Lintmills in the irrespective Districts, Summer 1772'.
15. GM, 6-13 Mar 1783.
16. John Shaw, *Water Power in Scotland) 1550-1870* (Edinburgh, 1984), pp.318, 332.
17. George Crawfurd, *The History of the Shire of Renfrew* (Paisley, 1782), and RS, 1 Dec 1780.
18. GM, 6-13 Mar 1783.
19. Lower Clyde Water Board, Flow Records at Overlee Weir (1984).
20. Level survey by writer, Jan 1987.
21. Crawfurd *op.cit* and *Factory Commission Report on Cotton Mills, Parliamentary Papers* 1834, XX, pp.187-8.
22. GM, 6-13 Mar 1783 and Crawfurd *op.cit.*
23. GM, 6-13 Mar 1783.
24. GC, 12-19 Jul 1798.
25. *Glasgow Post Office Directory* 1787, 1788, 1790, 1799,1815, 1816.
26. RS, 1 Sep 1784.
27. GLS, Policy No.500923, MS 11936/327.
28. 'Valuation of Scottish Cotton Mills' in *Economic History Review*, 2nd Series, XXIII (1970).
29. GM, 22-29 Sep 1785.
30. Scottish Industrial Heritage Society newsletter, Jul 1988.

31. Senex, *Glasgow Past and Present*, Vol.II (Glasgow, 1884) p.53
32. RS, 30 Sep 1786.
33. GLS, Policy No.452057, MS 11936/296.
34. *Manchester and Salford Trade Directories: Elizabeth Raffald's (1781); Tunnicliff's* (1787); *Lewis's* (1788); *Scholes* (1794, 1797).
35. GM, 7-14 Nov 1787.
36. GM, 15-22 Sep 1788.
37. GM, 15-22 Jul 1794.
38. RS, 29 Apr 1788.
39. *Manchester and Salford Trade Directory*: *Lewis's* (1788); *Scholes* (1794, 1797).
40. GM, 13-20 Jan 1788, etc.
41. GM, 14-21 Jun 1788 (Todd/Shortridge/Bartholomew); 14-21 Oct 1788 (Houston/Ritchie/Findlay/ Miller); 4-11 Sep 1788 (Hall, Gilmour & Co, Pollokshaws); Feb 1789 (Monteath, Findlay & Co).
42. GM, 6-13 Jul 1789 (Thornliebank).
43. GM, 15-22 Sep 1788.
44. GM, 2-9 Mar 1789.
45. GM, 15-22 Sep 1788.
46. LS, 26 Mar 1790.
47. Eastwood District Council Photograhic Collection.
48. The underground lade system is documented by the writer in *Scottish Archaeological Gazette*, No.19 (1989)
49. MM, 14 Jul 1795 and newspaper cutting, Stockport Local History Collection.
50. GM, 26 Nov - 3 Dec 1793.
51. Sir John Sinclair, *Statistical Account*, Mearns Parish (Edinburgh 1796).
52. Mearns Parish Records, Paisley Museum.
53. SL, Session Paper 394/4, 2 Mar 1798.
54. GM, 26 Nov - 3 Dec 1793.
55. GM, 18-23 Mar 1794.
56. MM, 14 Jul 1795.
57. RS, 11 Mar 1794.
58. GM, 17-24 Jun 1794, 5-12 Aug 1794, 22-29 Mar 1796.
59. SL, Session Paper 428/2, 1 Jul 1801.
60. Scottish Record Office, CS, 96/395.
61. See Ross *op.cit*, and Parliamentary Papers, 1834, *op.cit*.

Archive Report Number Four

BIGGAR MUSEUM TRUST : A COUNTRY MUSEUM ARCHIVE

Biggar Museum Trust had its origins in a small private venture in a store at the back of my ironmongery shop in Biggar. Here a small indoor 'street' of shops and windows was created and it was opened by Hugh McDiarmid in May 1968. It was clear from the start that the locals would regard it as a depository for unwanted 'treasures' and by the time the Trust came into being a few years later, the policy of accepting all gifts of a local nature, however trivial they seemed, was already established. Over the years the Trust has expanded its activities and it now has an enormous accumulation of ephemeral material spread through its various displays or housed in its offices at Moat Park, Biggar.

The Trust was primarily responsible for the preservation of Biggar Gas Works, which first produced gas in 1839, as an ancient monument. They are the only preserved gasworks in Scotland and are now administered by the Royal Museums of Scotland. The surviving records of the works go right back to its establishment in 1839 and include shareholders minutes and other records, plans and wage books. The Trust also has a collection of covenanting material which is housed in Greenhill, a farmhouse which was taken down from its original site at Wiston, on the other side of Tinto Hill from Biggar, and carefully re-erected near Gladstone Court, Biggar. It also owns four churches around Biggar, two of them in the village of Lamington, the old parish church of St Ninian and the laird's private Episcopalian chapel.

The Trust intends converting part of St Ninians as a workshop and studio for a local stained glass artist, using the remainder to tell the story of the early Baillies of Lamington and their links with Sir William Wallace. The laird's private Episcopalian chapel, all 1850s 'Barchester Towers' in inspiration, is filled with brightly painted windows and with encaustic tiling on the chancel floor and walls. Here the story will be told of the young English Member of Parliament and his long neglected Scottish inheritance, the building up of a new estate, visits of royalty and prime ministers,

with the next generation taking their places as governors in India and Australia. Like the Empire, the Big House and the family have gone, and only this small gem and the Victorian village remain to tell the tale.

The other former church open to the public is the Moat Park Heritage Centre in Biggar, opened by HRH The Princess Royal in 1988. The entire history of the upper Clyde and Tweed valleys over the 6,000 years of human habitation is illustrated there. Within the Moat Park offices is a sizeable collection of documents, photographs and other archival material. The earliest charter is of King Robert II for lands given to the Menzies family at Coulter, near Biggar, in 1385. There are also business records, garnered from lawyers attics and from the annual Hogmanay bonfire in the High Street, belonging to long-forgotten milliners, drapers, grain merchants and tailors. From a butcher's day-book, written with a pencil stump on greasy pages, I learned what my own grandmother was buying to feed her bairns in the 1880s. The local house painter's records are virtually complete for seventy years. Who would have thought that he once employed thirty men and apprentices? His time books, wage books, estimate books, and ledgers record much of the redecoration of castle and cottage in the area, even the regular painting of the pillar boxes in the villages around Biggar is faithfully recorded.

From my own business came similar records going back to the time when my great uncle kitted out a local farmer for a trip to South America; gun, powder, shot, ramrod and a bowie knife, just in case the gun did not work. The same ledger records that every village had at least one joiner for whom business varied from year to year, from no demands for a coffin to times when diphtheria, scarlet fever or typhus prevailed and he was rushed off his feet. John Gladstone, my great uncle, was ready with coffin handles, gimp pins, mountings and cords, black for grown ups, white for children.

The Friendly Society records provide good genealogical sources, and the local masons have allowed the Trust access to their records to copy relevant details, going back to 1725. Other groups have deposited their records, Gala Days, Flower Shows,

Recreation and Bowling Clubs amongst them. The now defunct Whipman Society and The Clydesdale Volunteers' records are much more useful, in some instances, than the baptismal records of the parish. The Volunteers, in fact, included height, complexion and hair colouring in their records of the young men. More recent records include the ARP and billeting of evacuees at the beginning of the Second World War.

In the day book of the Crawford Inn details can be found of the post-boy's' duties between 1831 and 1855, prior to the railway's arrival. Here are the journeys of princes, politicians, engineers, actors and vanloads of criminals for trial, even 'a travelling shop' and the Duchess of Buccleuch's pianoforte on its way from Drumlanrig to Dalkeith. A vast collection of newscuttings dating from the 1850s has been laboriously catalogued. 130 years of such trivialities as 'Feline Precocity' jostle with screaming headlines 'ATTEMPT TO PROVE BIGGAR WORTH INSANE'. This records one Mary Cameron who did a mock hari-kari with a pig's bladder filled with blood stuffed up her bosom and a turnip hook in an attempt to melt the heart of the Inspector of Poor, a respectable bank agent, in 1868.

The Trust also has a significant collection of posters, handbills, booklets and tickets from local sources. One such source was a very damp linoleum covered floor under which was found a sodden copy of 'An Agreement Between Master Shoemakers and Workmen' drawing up agreed rates of wages for the repair of all types of ladies' and men's shoes in 1872. From architects and other sources we have built up a collection of house plans. A few of the plans date from the 1830s but the majority date from the turn of the century. The collection also includes the complete work of the principal local firm from the 1900s. Most of these are now catalogued.

Amongst the business records collected by the Trust are numerous ledgers and books kept by blacksmiths and joiners. From these crafts came that of the millwright, and from them the country engineers, keen to industrialise agricultural practice. One country engineer, active in Biggar in the 1850s, trained men who revolutionised the sugar industry, working in the Far East and in

Greenock where the great refineries were situated. Others developed agricultural engineering locally, such as Jimmy Cuthbertson OBE, whose specialist work is to be found on all continents and keeps roads in Britain free of snow in winter.

The most striking example of the engineering tradition, however, was the growth of Albion Motors, the great commercial vehicle manufacturers, which was started with a bond of partnership on the farm of Heavyside, Biggar, in 1899. The two young partners, son and son-in-law of the farmer, himself a self taught architect and civil engineer, were Thomas Blackwood Murray and Norman Fulton. Fed up with slow progress in George Johnston's Mo-Car Syndicate, they struck out for themselves and by 1914 were able to claim to be the largest commercial motor manufacturers in the British Empire. Their company is now part of the Leyland-Daf organisation, still playing an important part in the manufacture of commercial vehicles.

The Biggar Museum Trust houses Albion Motors' remaining archives and has inaugurated an Albion Owners Club which has a world-wide membership. At least once a week we are called upon to date and identify newly re-discovered vehicles and chassis. One such vehicle, magnificently restored by Arnotts, the Australian biscuit manufacturers, was star attraction of several bicentennial parades. The Biggar Trust has now embarked on the provision of a proper Albion Motor Museum, much of the funding coming from the successful vintage rally held here each year in August.

Although there are many thousands of photographs and negatives in the Albion Archive, there are many more in the Trust's own collection built up over the years. Apart from reproductions of Hill Adamson calotypes of local people, the earliest original photographs date from the mid 1850s. As the years pass, the number of photographs in the collection grow, and now, though a recent MSC scheme, modern copy negatives of all prints have been processed and are stored away from the main collection. The Trust has just begun participating in a new Employment Training Programme, through which it is hoped to do the same for the Albion photographs. The most recent photographic acquisitions come from amateur and professional sources. Even

the humble passport photographs are all corn for our crop. What may seem trivial or valueless now may well grow in value to those who come after.

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ROBERT WILLIAMSON PLASTERER AND BUILDER OF CELLARDYKE, 1843-1911

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Recent research into tenement building in the north Fife coastal burghs has established the importance of the role played by a comparatively small number of Cellardyke builders who, by adopting and developing a two storey formula first evolved in the 1860s, guaranteed its survival and widespread application throughout the late Victorian and immediate pre First World War periods.[1] This article focuses on the career of one of the several individuals identified as active in this respect, Robert Williamson, and documents his broader contribution to the nineteenth and early twentieth century development of the Cellardyke, Kilrenny and Anstruther Easter areas.

A starting point is provided by a group photograph of c.1880 (Plate 1) which includes Robert (back row, extreme left), his elder brother Thomas (back row, second from right) and younger sister Isabella (front row, left hand side).[2] Both brothers had commenced their careers as plasterers, working within the firm operated by their father, Robert Williamson of Pittenweem.[3]

Robert, junior, (born 1843) was approximately forty at the time the photograph was taken, and was already working on his own account, operating from a base within the two miles distant burgh of Kilrenny and Cellardyke. He had married Jane Peat, the daughter of a local farmer in 1866, and in 1868 occupied a cottage in Colinsburgh Road, Pittenweem.[4] Five years later, in July 1873, he is found advertising on his own behalf, supplying concrete blocks for house building purposes.[5] Thomas appears to have succeeded his father as the active head of the Pittenweem based firm at approximately this date,[6] an event that conceivably determined Robert's own decision to work independently of the family concern. No further evidence of his activities emerges until July 1877 when he is listed as the successful plasterwork contractor involved in the completion of Cellardyke Public School.[7]

Plate 1. Group photograph, including Robert Williamson (back row, extreme left), c.1880

Plate 2. Nos.10-14 Rodger Street, Cellardyke (1878)

It may have been this commission that first introduced him to the potential of the Cellardyke area where an ambitious programme of tenement building had been in progress for at least a decade, stimulated by the pressing housing needs of an expanding fishing community.[8] By the 1870s tenement building focused on an area adjoining and immediately to the west of Cellardyke School, adhering to the broad outlines of a feuing plan drawn up in 1876, establishing the lay-out of what would eventually constitute Rodger Street and Fowler Street.[9] Work on the first of the Rodger Street plots began in the spring of 1877 under the direction of the Cellardyke builder, Thomas Brown. A second phase of building commenced almost exactly a year later and involved Williamson who purchased an east side feu on 25 April, subsequently (8 August) securing a loan of £350 from the Anstruther notary, David Cook.[10]

The conditions laid down by the feuing agreement envisaged the erection of two terraced houses, at a total cost of £500, thereby approximating to the corner site arrangement already employed by Brown on the west side of Rodger Street. The stipulation was nevertheless ignored by Williamson who, in an open attempt to secure a maximum financial return, proceeded in accordance with a different design, with the external appearance of two dwellings (Plate 2) but subdivided internally into five flats. Four of these were rented, with the remaining two roomed ground floor unit of what now constituted 14 Rodger Street functioning as the Williamson family home.[11] The 1881 census lists this as housing a family of nine, including seven children, some of whom slept in a single storey building to the rear which, again ignoring feu specifications, operated as a works store, providing access to a limeyard.[12]

Whether Williamson was responsible for supervising the construction of these buildings is uncertain, but it is conceivable given his family's pioneering involvement in concrete house building.[13] His contribution to the subsequent development of the Rodger-Fowler Street area is unfortunately equally difficult to determine with any degree of precision, although he is documented as promoting at least five tenements between 1884 and 1885, almost all built singly and to commission, undertaken

jointly with the husband of his sister Isabella, the Pittenweem joiner, William Lumsden.[14] The family tradition that he was responsible for the majority of the Rodger Street tenements should not, however, be discounted, not least for the fact that it would explain his friendship, assisted no doubt by his 'staunch Unionist' leanings,[15] with the land superior for the area, Charles Henry Bethune,[16] as well as his ability to repay the last instalment of his debt to Cook in November 1883, albeit three months later than the originally agreed date.[17]

Reaffirming the prosperity of the post 1878 period the Williamson family moved house in 1884, this time to an appreciably larger dwelling, 'Castle Cliff' (Plate 3), the first of seven, six-apartment villas, also erected (1884-86) in partnership with Lumsden and sited two hundred yards to the east of Rodger Street, along a section of Toll Road subsequently named 'Williamson Place'.[18] Continuing the momentum of these operations, more land was purchased for house building purposes in 1885, extending along the northern boundary of the main Anstruther Easter-Crail highway.[19] A terrace of eight houses was subsequently erected on the site, constituting Melville Terrace (Plate 4), all undertaken independently of Lumsden, with each dwelling comprising seven apartments. The financial dangers inherent in such a development - which, departing from the precedent of the nearly contemporary Fowler Street tenements, was aimed unmistakably at the Anstruther and Cellardyke merchant community - were lessened by Williamson's by now well established working procedure of building houses singly or in pairs, or to commission.[20]

Significantly, this, by far the most imposing of Williamson's various ventures, was also the only one to be designed by a professional architect, John Currie of Elie.[21] The presence of concrete model buildings in the front and rear gardens of 'Castle Cliff' (Plate 3) raises the possibility that in addition to being aware of the advantages to be gained from self-advertisement, Williamson himself may have had architectural ambitions, but his pretensions in this respect should almost certainly not be exaggerated. In Rodger and Fowler Streets, for example, he simply assimilated an established tenement format, without significant variations.

Elsewhere, his designs invariably incorporated a strictly limited repertoire of simplified Jacobean elements of a type popularised by the pattern books of J C Loudon and perfectly exemplified by the gabled elevations of the Toll Road villas.

The early 1880s had thus witnessed the steady expansion of Williamson's building interests, which in turn reflected the prosperity of a local economy sustained by a prolonged herring

Plate 3. 'Castle Cliff', Williamson Place, Toll Road, Cellardyke (1884), with Robert Williamson in foreground. Photographed c.1910

'boom'.[22] Not the least impressive of his achievements was the speed with which he secured acceptance within a notoriously tightly knit community. His active involvement in the affairs of Cellardyke Parish Church may have acted as a significant factor in his respect,[23] but it is nevertheless remarkable that as early as 1881, only three years after having taken up residence in the burgh, he was elected to Kilrenny and Cellardyke Town Council. He served from 1884 until his death as a baillie and a member of the Committee of Police Commissioners,[24] the latter post guaranteeing his involvement in decisions of potentially vital importance to the local building trades.[25]

The underlying strength of Williamson's position is demonstrated by his ability to survive the consequences of slump conditions, prompted by a collapse in the fortunes of the Fife fishing fleet, datable to 1885 and lasting until the mid 1890s.[26] Something of the impact that this exerted on the building community can be gauged from the fact that of the four builders operating in Cellardyke and the Anstruthers in the late 1870s and early 1880s, one of them, Thomas Brown, appears to have ceased operating while another, Alexander Wallace, left the area altogether.[27] Revenue provided by Williamson's letted properties may have assumed considerable significance during this period. Reference in this respect has already been made to his earliest (1878) Rodger Street properties, but at least one of his Rodger Street tenements was rented out, as well as one of the Toll Road villas, and almost certainly his original Pittenweem property,[28] supplementing an income that must have depended heavily on his plastering skills. By the 1890s Williamson's dominance of this particular trade was such that he had virtually eliminated rivalry within Cellardyke itself and extended his sphere of operations to include Crail, Ovenston and St Monans.[29] Revealingly, and presumably attesting to the importance place on family loyalties, no attempt appears to have been made to secure contracts in Pittenweem, which he seems to have respected as the preserve of the original family firm.[30]

Evidence of a further and ultimately more significant product of the post 1886 crisis is provided by signs of diversification in the Williamson workforce. Until this period, and indeed until the very

early 1890s, Williamson continued to be described as a 'plasterer', suggesting that a considerable amount of the construction work associated with his building operations was contracted out, perhaps to William Lumsden. In 1893, however, he is also listed in Slater's *Trade Directory* as a 'builder' and 'slater', a change of status that was clearly dependent on maintaining a more flexible (if not necessarily larger) workforce, capable of tackling a broad range of contracts. These frequently encompassed modest commissions, including concreting, slatering, carpentry and masonry work.[31] It was thus as a general purpose builder that he supervised the repair of Anstruther Union Harbour (1898)[32] and, presumably, the continuing development of the Melville Terrace houses, the last of which progressed slowly and to commission, being finally completed in 1905.

Apparently undeterred by this lack of demand for new housing, Williamson continued to purchase land for building purposes. In 1889, for example, he failed to acquire an undeveloped plot in East Green, Anstruther, having submitted a late bid at slightly below reserve price.[33] Such a tactic was clearly intended to exploit the anxieties produced by slump conditions[34] and was subsequently employed to secure undeveloped properties in the West Forth Street and the Burnside areas.[35]

The eventual revival of the Cellardyke economy - which, as in the 1870s and the 1880s, reflected an upturn in the fortune of the fishing fleet - thus found Williamson well placed to exploit a renewed demand for new and improved houses. In late career his activities continued to be underpined by a steady demand for his plastering skills, notable commissions including work at Cellardyke School House (1904), Crail School (1908), the Waid Academy (1909) and the Anstruther Murray Library (1907-08).[36] Contrast was provided by the importance now placed on purchasing existing properties, frequently in derelict condition, which were renovated and rented out. By far the largest of these was Toft Terrace, Cellardyke, consisting of five houses purchased in 1900 and subsequently subdivided into one-, two- and three- apartment units.[37] Tenement properties in James Street were acquired and renovated at approximately this time,[38] as was Cellardyke's Old Infant School, bought by Williamson in 1901 and remodelled and

Plate 4. Melville Terrace, Anstruther Easter (1885-1905)

Plate 5. Burnside Terrace, Cellardyke (1905-1909)

extended to form six two-apartment flats, all of which were rented.[39]

The extent of this involvement in letted property raises the possibility that, as he approached the age of sixty, Williamson was anticipating retirement. Confounding this, house building continued under his direction, soon surpassing the scale of his early and mid career operations. In 1906 work began on Burnside Terrace, on land purchased cheaply one year earlier.[40] Eleven six-apartment houses were subsequently erected (Plate 5), all aimed at well-to-do fisher families. Two were rented, with the remainder built to commission, each selling at £480.[41] Williamson's pride in the undertaking is suggested by the existence of two formally posed photographs commemorating work in progress on the last of the houses (Plate 6),[42] which was completed in 1909 when the monogram 'R. W.' was added to the southernmost gable. The photographs confirm that Williamson's workforce now consisted of at least fifteen men, including hewers, carpenters and a carter, and involved three of his sons, the eldest of whom, Robert, eventually inherited the Cellardyke firm.

A second terrace, begun a year earlier in neighbouring Kilrenny, met with less success: although the first two houses sold quickly, a third, also undertaken on a speculative basis, failed to attract a purchaser and was only rented with difficulty, prompting the premature curtailment of the development (Plate 7).[43] Problems encountered at precisely the same time in letting vacant flats in Toft Terrace and the Old Infant School[44] point to the onset of yet another slump, this time of national proportions, that would last throughout the remainder of the pre War period. In contrast to the caution displayed twenty years earlier Williamson appears to have ignored these signs of threatening recession, and had already embarked upon at least two further housing developments[45] at the time of his death, following a heart seizure, on 1 September 1911.[46]

The value of his estate, a comparatively modest £1339.5.0,[47] is presumably to be explained by the extent of his investment in unfinished projects, one of which, Burnside Place Terrace, was subsequently abandoned following the completion of only two houses. Lauded in his obituary as a, 'sound practical man ... of a

Plate 6. The Williamson workforce, with Robert Williamson in centre. Photographed during the construction of No.11 Burnside Terrace, c.1909

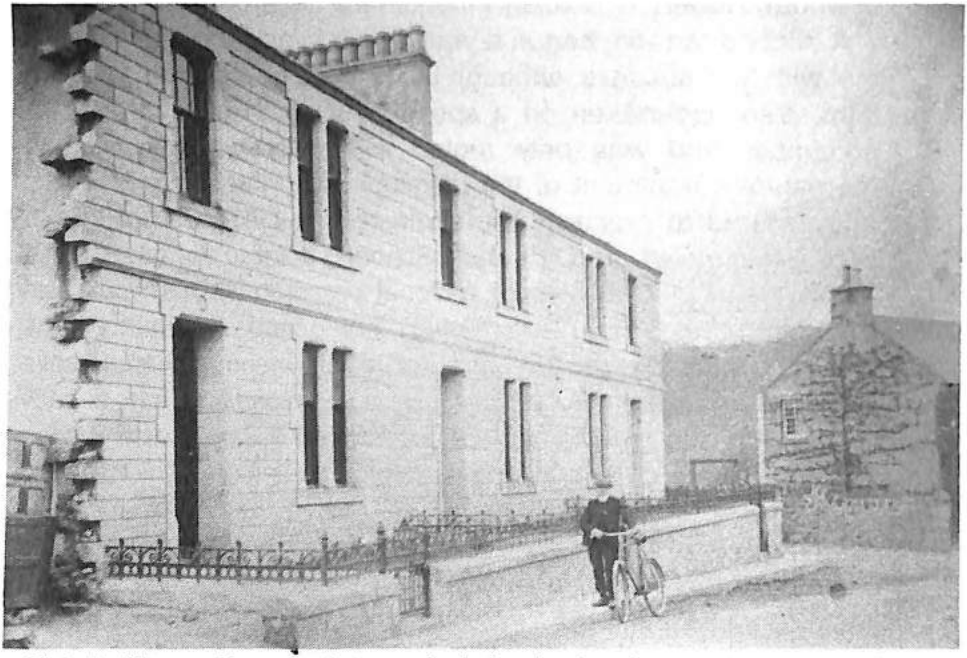

Plate 7. Kilrenny Terrace, photographed shortly after the curtailment of work, c.1908

genial and hearty disposition', who would be, 'remembered for his share in adding to the town',[48] Williamson deserves to be recognised as having made an enormously important contribution to the housing stock of a community that never in the nineteenth century supported an orthodox architectural practice. Although it would not again operate on a scale comparable to its pre First World War activities, the firm itself survived a further two generations. It latterly divided into distinct plastering and joinery concerns, both of which closed in the last decade following the respective retirements of Robert's grandsons, Robert and James Williamson.

NOTES

1. J Frew and D Adhsead, 'Fisher tenement design in Cellardyke and the north-east Fife coastal burghs, 1862-1905, *Scottish Industrial History*, Vol. 9.1 and 2 (1986) pp. 36-57.
2. Identified by Miss Jane Don of Cellardyke, a granddaughter of Robert Williamson, who kindly made available material made use of in this article, including plates 1, 3, 6 and 7.
3. As such both were presumably involved in the firm's major commission of the early 1870s, the interiors of Earlsferry town hall, 1871-3. *East of Fife Record*, 21 March 1873, p. 3. The 1871 census of Pittenweem burgh (p.38) lists Robert senior as inhabiting a West Row property. He was then aged 66, having been born in Kennoway, Fife, as were his sons Thomas, Robert, Alexander (born 1848), and George (born 1852), the last two of whom are also listed as 'plasterers'.
4. A 'Bond of Disposition...in favour of David Cook', lists the Colinsburgh Road property as a security against a loan of £350 (see below fn. 10) and confirms that it was purchased in 1868, remaining in Williamson's possession after 1878, presumably for letting purposes.
5. *East of Fife Record*, 18 July 1873, p. 1.
6. Coinciding with a change in the firm's name to 'Robert Williamson and Son, Plasterers', first listed in *Slater's Trades Directory*, 1872, p. 778.
7. As 'Robert Williamson, junior, Pittenweem', estimating the cost of work at £71.18.4. *East of Fife Record*, 6 July 1877.
8. Frew and Adshead, *op.cit.*, pp. 42-44.
9. *Ibid.* pp. 44-5.

10. Relevant title deeds, feu disposition, and 'Bond of Disposition...in favour of David Cook', all in the possession of the present owners of no. 10 Rodger Street.
11. Plans in possession of the present owner no.10 Rodger Street.
12. 1881 census of Kilrenny burgh, p.15. Ex-information Miss J Don and the late Mr J Williamson, Cellardyke.
13. For a particularly ambitious application of the system see Thomas's own house, the appropriately named 'Concrete Villa', Main Street, Pittenweem, c.1890.
14. Frew and Adshead, *op.cit.* pp. 48-50.
15. Obituary, *East of Fife Record*, 7 September 1911, p. 4.
16. *Ibid*, 26 February 1886, p.2, records that he was a guest at Bethune's wedding celebrations at Markinch.
17. 'Note of discharge', in possession of present owner, no. 10 Rodger Street.
18. The second house was advertised in the *East of Fife Record*, 14 March 1884, p. 1, as 'that cottage...adjoining Mr Robert Williamson's', i.e. 'Glen Gair', Williamson Place, Toll Road. The firm's store and limeyard was presumably transferred at the same time, also to a site in Toll Road, now occupied by T M Band, Plasterer and Slater. The new house, 'Castle Cliff', provided Williamson with an opportunity to display his plastering skills, resulting in a sequence of deeply moulded ceilings, one of which, incorporated an allegory of the four elements, elaborated upon a version of the same theme already introduced in no. 14 Rodger Street.
19. *East of Fife Record*, 26 June 1885, p. 2.
20. The first house (out of two completed) sold in March 1887 for 'fully £400', *Ibid.*, 18 March 1887, p. 2.
21. *Ibid.*, 26 June 1885, p. 2.
22. Frew and Adshead, *op.cit.*, pp. 48-50.
23. *East of Fife Record*, 7 September 1911, p. 4.
24. *Kilrenny and Cellardyke Burgh Council Minutes*, Vol.5, pp. 231, 233, 289.
25. His major interventions in this respect involved extensions of the burgh drainage system which on at least two occasions benefited his own developments, *East of Fife Record*, 2 April 1886, p.; 23 August 1901, p.4.
26. Frew and Adshead, *op.cit.*, pp. 50-1.
27. *Ibid.*
28. *East of Fife Record*, 13 March 1885, p. 1. (See above fn. 4.)
29. Key information in this respect is provided by the *Business Book* of the St Andrews architect, David Henry (now in the possession of Mr G Pryde, St

Andrews), which confirms Robert Williamson's responsibility for the plasterwork of Crail School (1894-95), Crail Police Station (1898), Ovenstone Hospital (1894-96) and St Monans Police Station (1902). *Business Book*, pp. 93-5, 153, 155, 248, 251.

30. His only recorded Pittenweem commission (for the plasterwork of an unspecified double villa) was secured in 1903, *East of Fife Record*, 20 November 1903, p. 4. Thomas perhaps reflecting his family seniority, secured a significant number of Anstruther (but not Cellardyke) commissions during the same period, including the interior of the Waid Academy (1884) and Anstruther Free Church (1889). *Henry Business Book*, pp. 1-2, 83.
31. *East of Fife Record*, 20 May 1892, p. 2; 29 July 1887, p. 2; 19 April 1889, p. 2; 24 March 1893, p. 2; 25 October p. 4.
32. *Ibid.*, 12 April 1898, p. 5.
33. *Ibid.*, 27 September 1889, p. 2.
34. 'Some properties...one said to have changed hands at a discount of 50 per cent and more. *Ibid.*, 4 October 1889, p. 2.
35. *Ibid.*, 14 March 1902, p.4; 10 March 1905, p. 4.
36. *Henry Business Book*, p. 132; *East of Fife Record*, 2 September 1904, p. 2; 31 January 1908, p. 4; 5 August 1909, p. 4.
37. *Ibid.*, 6 April 1900, p. 1; 3 April 1903, p. 1; 7 April 1905, p. 1.
38. *Ibid.*, 11 November 1904, p. 4; 26 May 1905, p. 1.
39. *Ibid.*, 22 February 1901, p. 4.
40. *Ibid.*, 10 March 1905, p. 4; 20 April 1906, p. 4; 1 June 1906, p. 4.
41. The *Rent Book* of Robert Williamson, junior, 1911-43 (now in the possession of Miss J Don, Cellardyke) includes two Burnside Terrace houses. Ex-information Mr W Thomson, Cellardyke.
42. Copies of which are held by Miss J Don, Cellardyke and the Scottish Fisheries Museum, Anstruther.
43. *East of Fife Record*, 14 April 1905, p. 4; 30 March 1906, p. 1; 13 March 1908, p. 1.
44. *Ibid.*, 28 September 1906, p. 1. The Kilrenny Terrace and Old Infant School lets were advertised for six successive weeks in *ibid.*, 1 May 1908 to 5 June 1908 and the Kilrenny Terrace lets alone from 12 June to 24 July 1908.
45. Burnside Place (immediately behind Burnside Terrace) and Harbourhead, Cellardyke, *East of Fife Record*, September 1910, p. 4; 30 December 1909, p. 4.

46. *Ibid.*, 11 September 1911, p. 4.
47. *Court Book of Commissariat of Fife*, 7 February 1912. His household furniture and effects and stock-in-trade were valued at £11.8s.9d. *Inventory*, in possession of Miss J Don, Cellardyke.
48. *East of Fife Record*, 11 September 1911, p. 4.

JOHN STEWART MACARTHUR - PIONEER GOLD AND RADIUM REFINER

D I Harvie

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1990 saw the centenary of the practical application of a new, commercially-viable, process for the refining of gold by the use of potassium cyanide by a man who fell foul of the international gold-mining bureaucracy: men who, in spite of their new-found wealth, saw fit to deny royalties to the chemist who made their fortunes.

In a score of the remoter areas of Scotland, from Ayrshire to the Shetland Islands, test-boring has been taking place recently to determine the expected profitability of new gold and silver mining industries. Most of the small, new companies holding exploration licences from the Crown Estates Commission are specially formed for the purpose, but many of them - including a majority with North American origins - have the names of classic international mining conglomerates, such as Rio Tinto Zinc and Consolidated Goldfields, associated with them. Particular interest has been centred on the area near Tyndrum, Perthshire, where one site at Cononish is said to be capable of a £60 million yield.

Despite the current level of international concern for environmental issues, a technique likely to be central to the recovery of the gold - and now recognised as environmentally undesirable - involves separation by dissolving crushed ore in potassium cyanide followed by precipitation using metallic zinc, followed by recycling of the cyanide solutions. In this connection it is worthwhile remembering one of Scotland's unsung heroes - the man who, a hundred years ago, brought to fruition this particular process of gold recovery, and who, in doing so, made possible the resurrection of the world's goldmining industry (at that time facing dereliction due to the inefficiencies of the recovery techniques then available). The most spectacular successes were in South Africa, where he has been lauded as the man who, more than any other, was responsible for that country's wealth and prosperity. Yet within a very few years of the introduction of his process, he was

dragged through their courts in a vicious display of corporate greed as the South African mine-owners fought - successfully - to prove a technical patent deficiency which enabled them, and the rest of the world, to avoid paying royalties on the use of the process.

John Stewart MacArthur was born in Norfolk Street, Hutchesontown, Glasgow, in December 1856 - one of six brothers and a sister. Their father, Robert Semple MacArthur, worked in a tailor's warehouse. Whether unable or unwilling to enter University, the young MacArthur left school at the age of fourteen - and became an apprentice chemist at the works of the Tharsis Sulpher and Copper Company, part of the great Tennant Chemical Empire. He continued, at evening classes, to study metallurgy, chemistry and mathematics until he was twenty-two.

The Tharsis company is a spectacular example of nineteenth-century Scottish business enterprise. Charles Tennant was central in taking over the originally French-owned mines in southern Spain. By developing new patents, which ensured not only a massive exploitation of sulphur production for the world's expanding chemical industry but also the additional benefit of copper recovery from the sulphur residues, the Tharsis company became the epitome of the Victorian entrepreneurial spirit - and the owner of the world's most profitable copper mine.[1] James Bone, brother of Muirhead Bone (painter, and official war artist), writing in 1901 of the Conservative Club in Glasgow's Bothwell Street, said:

> it is famous for its lunches, this Club, and on the days when the Tharsis Copper Company declares its divided, there is served, they say, in a private room, to shareholders only, a meal which would pervert a vegetarian.[2]

The young MacArthur quickly developed his metallurgical expertise in the high-profile success of the Tennant empire. An interest in photographic chemistry brought him into contact with two brothers, Robert Wardrop Forrest and William Forrest, physicians, whose practice was based in Crown Street, in the Gorbals district of Glasgow. From a simple use of photographic gold toning techniques, MacArthur's work for the Tharsis company

into the recovery of precious metals led the three men to consider the problems of gold recovery - in particular, recovery of gold from refractory ores (in which the metal was in complex association with other materials). The three were joined by George Morton, a businessman, who agreed to fund their private researches - mostly carried out in the basement of the Forrests' consulting rooms after they had all finished their day's work, and the four men formed a partnership. MacArthur later wrote of those days:

> We certainly were not capitalists, only a quartet of enthusiasts carrying out research in the evenings in a glory-hole under the consulting rooms of the two Forrests. We did most of our work between 8pm and 2am; it was usual to have pies and a pot of tea sent in from the nearest restaurant about 11 pm.[3]

In 1885 the MacArthur-Forrest Research Syndicate began seriously to attempt a cheap and simplified method of gold recovery: at that time, amalgamation was the most widely used method of separating fine gold, but was only of use in recovering that proportion of the gold which existed as free metal. A considerable amount of gold was always in intimate association with iron pyrites and other sulphides: the use of mercury, and subsequent roasting, chlorination and smelting processes were either too expensive or for geographical reasons impossible. The world's goldfields - and principally those in South Africa - were stagnating and massive tailings were accumulating at mines from which only about 45 to 55 per cent extraction had been possible.

During the previous year, in 1884, Henry Renner Cassel, a German-born metallurgist from New York, and a Glasgow accountant, James Napier, had established the Cassel Gold Extracting Company in Glasgow with £150,000 in share capital. This was a time of great activity among a considerable number of Scottish mineral extraction companies, and needless to say, Charles Tennant was behind the new company, paying H R Cassel £50,000 in shares.[4] In 1882 and 1883 Cassel had patented an electrolytic gold extraction process, and with the formation of the Cassel company, MacArthur wrote a critical review of the procedure in a professional journal.[5] He was spurred into the search for a simpler, purely chemical method, and

simultaneously attracted the interest of his superiors in the Tharsis company:

> The syndicate resolved not to use electricity, as my one short experience of the difficulty of applying the electric current to a mass of sodden ore was quite dissuasive. All the same, I did my best for a year to make electrolytic chlorination an industrial possibility. An occasional flash of success lured us on time after time, but the work was disheartening; we might get a good result on an ore from India or Victoria, but not on ores from Peru or Queensland.[6]

The new Cassel Gold Extraction Company had established a laboratory in Verulam Street, off Gray's Inn Road in London, and head offices in Glasgow's West George Street. Contacts were made with and ores tested from mines in Spain, USA, Venezuela, South Africa and elsewhere. Cassel himself was generating disagreement with the board over his assignment to the company of his patents, and the board was refusing to make payments to him until he did so. However, experiments in London appeared to be very successful and mining companies were queuing up to collaborate with the exciting new company. One such enquiry, from the Richardson Gold & Silver Mining Company of Colorado and Idaho was rebuffed by the Cassel directors in typically ebullient fashion:

> we cannot enter into any agreement, beyond testing their ores, as we wish to form a company of our own to work the whole of America.[7]

Cassel himself had travelled to Hungary, Transylvania and Costa Rica, and in May 1885 was in America on a trip planned to include Canada, Australia and New Zealand - constantly seeking to promote licences and syndicates to work his process. However, his deviousness became a matter of deep concern to the board. The negotiations he was conducting over the possible formation of an American Syndicate were highly unsatisfactory: the board discovered that Cassel was illegally attempting to sell his shares in the company. The last straw came when it was discovered that not only had the equipment in London been mysteriously sabotaged prior to Cassel's departure abroad, but, when repairs

had been made, it proved impossible to repeat the successes which had earlier been claimed.[8]

Two of the company's directors went to New York to intercede with Cassel, but he constantly failed to appear at arranged meetings and gave no indication that he would return to Britain. The company was discussing action for breach of contract against him and the lawyers in Glasgow cabled their American agents advising them to, 'keep a watch on Cassel in case of fraud.' The company was in a shambles, with almost £100,000 spent on pursuing Cassel's techniques - which even he had now abandoned. In November 1886 it was resolved that the laboratories be moved to Glasgow, and that, 'a thoroughly practical man who understands and has confidence in the process be engaged to take charge of the investigation.' Having just read John Stewart MacArthur's criticisms of the Cassel process, the directors of the Tharsis company decided that MacArthur was such a man, and at the age of thirty he became technical manager of the Cassel company, at an annual salary of £350 plus 500 company shares.[9] Cassel was behind a further fraudulent attempt to refine gold, with a new company in London in 1898 - the Gold Extraction & Bromine Recovery Company. He had substantial support, principally from Sir William Crookes and William Ramsay, both of whom were comprehensively dismissed by Cassel's critics, who said of their report, that 'it would not be creditable as a thesis in a first class school of metallurgy'. Cassel made a number of unsuccessful attempts to obtain money from the Cassel Company and, in 1901, to gain support for an application to the Institution of Mining and Metallurgy in London - support which was not forthcoming in Glasgow for a candidacy which was not accepted in London.

Two months before he accepted the Cassel appointment, MacArthur and the Forrest brothers had registered their own first provisional patent for a gold extraction process based on potassium cyanide as a solvent for gold, and further improvements were patented in 1887.[10] It was agreed that their syndicate would offer the provisional patent to the Cassel company while they perfected it and, if successful, the company would refund

expenses, pay £2,000 in cash, and one-third of profits from using and licensing the process.[11]

New premises were bought in January 1887 in West Scotland Street, Kinning Park, Glasgow and MacArthur embarked on a long series of tests, with the company now backing his own work rather than that of Cassel:

> Among the various solvents on our programme for trial, we had included potassium cyanide, and in November 1886, we tried the effect of it on the tailings of one of the Indian gold mines and, as usual, treated the solution with sulphuretted hydrogen for recovery of the gold, and, getting none, we passed on to our next solvent. We had neglected to notice that sulphuretted hydrogen did not precipitate gold from its solution in cyanide, and thus our experiment was, for the time, relegated to the shelf.[12]

Eleven months later, while devising an analytical test, MacArthur realised his earlier oversight and considered the possibility that the cyanide solvent may have indeed been successful:

> Immediately a sample of rich concentrates from a Californian mine was treated, and on this occasion we examined the residue rather than the solution, and found a high percentage of extraction. A sample of poor concentrates from India was now treated, and again a high extraction was obtained. The results were startling. We unearthed the residues from the old experiments (all our work was done in duplicate) and to our intense satisfaction we found that they too had transferred their gold to the cyanide solution.[13]

MacArthur devised a precipitation process in which the cyanide solution was passed through metallic zinc to recover the gold (in fact, he tried various forms of zinc, and eventually settled on crude zinc shavings). One of the important features of MacArthur's process was the fact that, after precipitation of the metallic gold, the cyanide solution could be recovered and re-used.

As the significance of the new process was realised, MacArthur had occasion to remember wryly the condition of the Tharsis-Cassel arrangement that the company should have prior rights:

> the assistance of the capitalist did not arrive until after the invention had been made, proved, and taken over. The whole burden of research was on the shoulders of our quartet.[14]

The ability of cyanide to dissolve gold had been known for many years, but no viable process had been devised in which practical concentration had been identified, or which allowed for precipitation of the dissolved gold from solution without the assistance of further complex chemical or electrolytic methods. Even in 1888, there were continuing arguments over concentrations, and whether oxygen was necessary. In fact, no gold had ever been refined using a simple cyanide process. In addition, MacArthur was able to prove a process which would be commercially viable. The MacArthur-Forrest patents were registered in Britain in October 1887 and July 1888 and, crucially, in the Transvaal in the South African Republic in September 1888 and May 1889. The British patent rights were vested in the Cassel Company, and those of the Transvaal in the African Gold Recovery Company, which was established to operate the patents in South Africa. The Cassel Company further incorporated The Australian Gold Recovery Co Ltd, the Mexican Gold & Silver Recovery Co Ltd, and The Gold & Silver Extraction Co of America Ltd, in order to develop and control the patents and licences in a number of other countries.[15]

Before the end of 1889, the Cassel Company had opened a second factory at Great Wellington Street, Glasgow, for the manufacture of cyanide, and had sent expeditions to New Zealand, America, Chile, British Columbia, India, Mexico, Russian Asia and South Africa, and trials and experimental cyanide plants were established in all major gold-mining centres. The first 'Cyanide Gold' was banked at Ravenswood in Queensland, Australia, and the first purpose-built cyanide plant was erected for the Crown mines at Karangahake, in the North Island of New Zealand. MacArthur himself travelled extensively, going initially to America and South Africa. Many of his principal collaborators - Alfred James, C J Ellis, William Dempster and others - preceded him, to arrange demonstration plants.

After a long and difficult journey to Johannesburg in April 1890, MacArthur noted:

> At Johannesburg some mills were going, but many were silent. The boom had passed and the blight had come. As the possibility and opportunity of speculation had dwindled, the crowd of irresponsibles who dubbed themselves brokers also dwindled till very few were left. The whole mining industry was in a precarious state. At least one-third of the houses and stores were unoccupied and gloom was general. Families were leaving, offices were being closed, and cheap sales of pianos and safes blocked the Market Square.[16]

Within two years of adopting the MacArthur-Forrest process, the economy of the Rand had substantially improved, and the Witwatersrand goldfields were becoming the premier gold producers of the world, now successfully refining up to 98 per cent of the gold left in the many thousands of tons of tailings previously abandoned as unworkable. Output from the Rand goldfields using MacArthur's process was 286 ounces in 1890 and by 1894 had reached an annual total of 549,781 ounces.[17]

The world-wide demand to licence the MacArthur-Forrest Process led the Cassel directors to express concern at the annual general meeting in 1889 that the company would require to expand greatly its cyanide manufacturing capacity, not only to satisfy its own needs, but to supply the world's mining industry. A further site was acquired, briefly, at Kirkintilloch, Dunbartonshire and another at Glenpark Street, just off Duke Street, Glasgow. Cyanide production was expanded, and a sophisticated training programme was started at West Scotland Street, in order that plant could be constructed and shipped abroad, accompanied by the company's chemists who would supervise the new plant and companies being established in the remotest corners of the earth.

West Scotland Street became something of a legend in its own time as the centre of the startling assault which was being made on the world's goldmining industry:

> Drab and smokey were the surroundings but there was a sparkle of romance in the street for on a doorway leading to a small lane was the legend - Cassel Gold

> Extracting Co. Ltd. The name of the company was engraved on a small brass plate, and it was the minute size of the plate, a few inches each way, that first attracted the eye.[18]

By December 1890 the company had representatives in every goldmining country in the world - a considerable achievement, given the rigours of foreign travel and the fact that mining areas were almost inevitably in the most inaccessible areas. At the company's annual general meeting that year, with contacts just established in Chile, Peru and Bolivia, and MacArthur returned in triumph from South Africa, the shareholders were told, 'The Heather is now on fire.'

MacArthur was in South Africa again in 1891, and wrote to the Forrests in Glasgow:

> Business is booming and we are bound to make a lot of money as far as I can see and judge. Lord Randolph Churchill dropped in on me at two seconds notice at the Salisbury [Mine] the other day and of course showed great interest in the matter - one does not get the chance of lecturing a lord every day.[19]

However, South African gratitude was not to last. Mine owners paid royalties of approximately 7.5 per cent of the gold recovered to the Cassel company via The African Gold Recovery Company, but by 1892 they had petitioned the Volksraad Chamber of Mines to seek a reduction. A number of negotiations failed to settle the matter, and attention was drawn to the use of another cyanide process being used by the Rand Central Ore Reduction Company at a royalty of only 3 per cent (in this case a method using electrolytic separation, as distinct from the simpler, chemical method of MacArthur). Demands were being made for the courts to declare the MacArthur-Forrest patents invalid:

> The royalties now paid constitute a heavy tax upon the resources of many struggling companies, and in the absence of any apparent present disposition on the part of the recovery company to meet the industry half-way, it is hardly a matter for surprise that strenuous opposition should be aroused. This we consider is a matter of extreme regret. Whether the patents should

> be proved valid or not, there can be no question that the MacArthur-Forrest process has been of the utmost service to the Witwatersrand mining industry and that its introduction and present enormous success has been almost entirely due to the energy and ingenuity displayed by the local representatives of the African Gold Recovery Company.'[20]

By this time, there were all sorts of complications involving patent rights in different countries, and MacArthur - never the grasping businessman - was feeling that his interests were being compromised, partly as a result of his being so often abroad. Letters and cables - some of them coded - were forever flying about, and he was more and more having to balance the interests of himself and the Forrests with those of their syndicate, The Cassel Company, The African Company, and all the others which were now involved. In a letter from South Africa to the Forrests in August 1891, he refers to an unsigned, coded cable he had received: he had not known who had sent it, but says:

> everything seemed to point to the Cassel Co having sent it - it fitted in with Board meeting days - its tone was rather of the West George Street than Crown Street flavour (I thought there was somewhat of "cussedness" in it which I do not associate with you).[21]

And again, a few days later, he reveals that a cable from himself to Forrest, saying, 'Berasung Inditer, Pickaninny Bright' had been code for 'Business increasing, prospects bright' and had been written that way because there had been a lot of cabling in regard to:

> a large order of cyanide and about some other things, and I thought it would not do to have you out in the cold. You will perceive that I could not cable you details but I have this week sent a lot of business items to my wife, which she will tell you at once.[22]

During the course of 1893, two further cyanide production works were opened in Glasgow, at Cathcart and, more significantly, at Shuna Street, Ruchill. The site at Shuna Street - generally known within the company as Maryhill - was to become the main centre of chemical experiment and cyanide production. The cyanide

manufacturing process which was favoured was being developed by George (later Sir George) Beilby, assisted by several others who were to achieve fame in industrial chemistry - notably Alexander Fleck, later Lord Fleck, chairman of Imperial Chemical Industries Ltd (ICI). In 1892 and 1893, MacArthur and the Forrests were following other directions in metallurgy, independent of the Cassel Company, which offered the Cathcart works to MacArthur for his own experiments. The Cassel Company's business was certainly booming: their exhibit at the World's Fair in Chicago in 1893 had been a huge boost, companies were formed in the USA, Chile and Mexico, and new contracts were being negotiated in Columbia, Brazil, Russia, Venezuela and the Straits Settlements, Malaya. In Australia, the *Adelaide Register* reported:

> Ministers' eyes glistened on Monday morning, or at any rate it may be fairly inferred that they did, for beside the dusty, musty dockets they were enabled to gaze on glittering gold. It consisted of fifty-four and a quarter ounces obtained by the Cyanide Process - the first cake of the precious metal obtained at Wadnaminga by chemical reduction.[23]

However, matters in South Africa were less satisfactory. The aggressiveness of the mine-owners was not abating in the unstable political circumstances which were leading up to the Boer War, and the annual general meeting of 1893 heard that:

> The question of patent rights in Africa has been causing some uneasiness in the minds of shareholders, owing to the circulation of certain sensational paragraphs emanating from Johannesburg.[24]

The Combined Mining Companies in the Transvaal persisted with their vendetta against the MacArthur-Forrest patents. 'The Great Cyanide Case' - as it became known - was begun at the High Court in Pretoria in February 1896. The detail of the case is essential technical, but, as in most patent cases, it revolved around arguments which suggested that the patents in question did not truly describe 'an invention' of something previously unknown.

The fact that MacArthur had successfully accomplished on an industrial scale what had before only been done *by a different method in the laboratory* did not enable him to protect his patents. The case was proved for the Chamber of Mines and against the African Gold Recovery Company, and the patents were annulled. Other countries in which the MacArthur-Forrest Process had been patented followed suit, and the Cassel Company and MacArthur both ceased to benefit in any way from the world-wide use of their process.

MacArthur was deprived of the material prosperity which should have been his, yet the service he rendered to metallurgy was outstanding, and he continued to be accorded universal acknowledgment. International business desired to obtain an unfair profit from the work of a pioneering genius, but MacArthur - never bitter - was owed an enormous debt. Even in South Africa, he was still revered; in one of metallurgy's classic textbooks on gold refining, published in 1911, the dedication is to MacArthur:

> whose pioneer researches and introduction in 1890 of the Cyanide Process, as an essential feature of Rand metallurgical practice, have rendered possible the successful treatment of ore on scientific principles, and have been a prime factor in establishing the Witwatersrand goldfields as the premier gold producer in the world.[25]

As recently as 1988 the President of the South African Institute of Mining and Metallurgy noted in an address to the Institute:

> Had it not been for the invention of the MacArthur-Forrest Cyanide Process, there is every likelihood that South Africa's economic development would have died before it had even had a real chance to begin its true growth.[26]

Writing an account of the Pretoria court case in 1933, Gray and McLachlan said:

> an endeavour has been made to present the outstanding points ... as dispassionately as possible, and if at times there has crept into the text what may appear as a bias towards the achievements of MacArthur in this respect, it is due to an admiration

> which is but natural, towards the work of such an outstanding industrial chemist.[27]

In Glasgow the attitude of the Cassel Company was very composed. On the day of the annual general meeting in 1899, for example, a letter was published in the *Glasgow Herald* from a shareholder who expressed disappointment in the directors, who, the letter claimed, seemed to have no concern for the future of the patents in South Africa after the Boer War. At the annual general meeting that afternoon the chairman referred to the letter and his response to it seems to typify the prevailing attitude:

> This company, in the first place, has nothing now to do with the patents in South Africa, beyond its interest as a shareholder in the African Gold Recovery Co, so that any question as to royalties there is entirely in the hands of the African Gold Recovery Co Ltd.[28]

In October 1900 MacArthur engaged in correspondence with J Percy Fitzpatrick of Cape Town, whose book on the affair had been published by Heinemann. MacArthur objected to claims that attempts had been made to persuade senior officers of the African Company to compromise on royalties, prior to the court case. Fitzpatrick replied by suggesting that MacArthur, as discoverer of the process was not necessarily in possession of all the facts, and pointed out that the mining companies had got together and agreed that the African Company would not have to pay £30,000 of the costs which the court had awarded. MacArthur replied, saying that he appreciated the tone of Fitzpatrick's letter and agreed with him that there would be no difficulty in their coming to a good understanding as individuals - but there was a third party involved, the British public:

> to whom [the British Public] you have given your view and to whom I would like my view of the case to be stated in some better form that a controversy in print.
>
> I regret that I cannot share your appreciation of the spirit of the Mining Companies who, when they had the power in their hands, exacted £20,000 of costs from the Cassel Co that had, in the face of scepticism and sarcasm, introduced the Cyanide Process and saved the gold industry of the Transvaal from extinction. It

> was the Combined Mining Companies, who had become wealthy by the Cyanide Process that combined their wealth to crush the Company who had pointed out the way to them. It was the Combined Companies who, having the direction of the case, applied for costly commissions to examine witnesses, some of whom would not have dared to have given their evidence before even a Transvaal judge.[29]

In the wake of the decision in the South African courts, the Cassel Gold Extracting Company became - in 1906 - the Cassel Cyanide Company, and built up a world-wide reputation over many more years for the production of cyanides for the mining industry. It became part of Brunner Mond, and therefore of ICI, in 1927, cyanide production moving to Tees-side in 1931.

MacArthur resigned as a Cassel director in December 1905, but was appointed extraordinary director - a position he retained until 1909. He continued to experiment as a practical metallurgist and travelled the world in the course of examining mines and ore deposits; wherever he went he was received with acclaim. In 1907 he established the Antimony Recovery Syndicate and in 1911 became interested in the refining of radium. He established a small works at Gas Street in Runcorn, Cheshire, adjacent to the Bridgewater Canal, where he employed about two dozen assistants, whom he trained in the highly-toxic methods of radium bromide production. In 1914 he supplied 600 milligrams of radium bromide to the newly-formed Glasgow and West of Scotland Radium Committee, which was established to ensure a supply of this new and 'magical' element for therapeutic purposes. The committee's chemist, who was to further crystalise the radium bromide, was Alexander Fleck.[30]

Radium salts had been isolated only at the turn of the century and were still principally the subject of laboratory investigation. The main uses envisaged for radium were in medical treatment of cancers and skin conditions - sometimes by the use of tiny glass tubes of radium salts in close contact, and sometimes by the use of 'radium emanation' or radon gas, which could be inhaled or used to modify substances or liquids. MacArthur initially produced radium bromide for medical uses, but was also interested in

radioactive fertilisers (the subject of much research in America and England by Suttons Seeds) and the manufacture of radium-based paints for luminous dials and military equipment, such as gunsights. The refining of uranium and vanadium for use in high-grade steel production was also under investigation.

Writing in 1919, MacArthur noted that during the years of the war the government had effectively controlled radium production for its own purposes and he expressed anxiety that, since the production of radium had hardly established a pre-war eminence, it was difficult to know how the industry might develop after hostilities ended. He envisaged three likely areas of development: radiotherapy, luminous paint manufacture and fertiliser production.

Much of the early history of radium production was characterised by what today would be though to be fanciful and dangerous practices, and some of the patents which were granted for radium products hardly bear belief. Many of the problems associated with the use of radium-based products first surfaced in the radium dial-painting industry in New Jersey and elsewhere in the United States, following the diligence of a New York dentist, who observed the catastrophic results of a number of bad practices in the handling of radium-based luminous paint. MacArthur, however, although a pioneer in radium production, was aware that caution was required in dealing with this wonderful new element, which in some quarters was being used rather more for entertainment than anything else. At the New York Casino, there were 'radium dances' and 'radium roulette', and the new 'fun' substance was part of the plot of a new musical comedy called 'Piff! Paff! Pouf!!'.[31]

> Not long after the discovery of radium, the similarity of its radiations to the X-Rays suggested that it might be of use in medicine. Accordingly it was soon possible to obtain radium water, mud or vapour baths at various Continental spas, which established 'emanatoria'. The treatment was used mainly for rheumatic subjects and neuropaths. It is hardly to be wondered at that the multitude of adventitious aids to bodily and mental well-being which are to be found at such resorts tended to obscure the real nature of the curative

powers of radium, but in other quarters radio-therapy was being taken much more seriously. It was discovered that radium was effective in arresting some forms of malignant disease, and much successful work was done in this connection, so that a steady market had just been created for the radium producer when war broke out in 1914. A natural consequence of the war was that the progress of radio-therapeutics was much delayed through lack of workers and shortage of material. In the near future there will be a large demand on the part of the medical profession for radium, not only for the treatment of disease where it is known to be of service, but also for doing experimental work. So important has this application of radium seemed, that medical men have advised the government of the United States to see to it that the whole of the radium supply in that country is reserved for medical purposes alone. They regret that so much of the limited supply of radium should be dissipated in the manufacture of luminous paint for watches, electric bell pushes, etc.

There remains the use of low-grade radium residues as fertilizer. These residues, still containing a very small quantity of radium, have been found to exert a stimulating influence on plant growth. The precise nature of the stimulus is not yet absolutely known, and has been hotly disputed. Some have denied the beneficial influence of radium altogether, but the weight of experimental evidence appears to be against them, and it is found that there is a steady demand for radium residues on the part of agriculturists and horticulturists.

Whether or not the production of radium is a key industry is a question which the mere scientist may think it presumptuous to answer; but it certainly ought to receive the attention of those who are devoting themselves to the solution of the problems of reconstruction.[32]

There was one other radium refinery in Britain prior to MacArthur's - the British Radium Corporation's works in Limehouse, London, opened in 1910, where Cornish ores were refined. Large volumes of Cornish ore were also exported to France or Germany for refining - greatly increasing the cost, and MacArthur was determined to ease the situation, using imported carnotite from Utah and Colorado in the United States of America and pitchblende from Portugal.

> As radium is analogous to, and by all purely chemical tests indistinguishable from barium, it suffices to treat an ore as if one wanted to extract barium, which, generally speaking, is converted to carbonate by treatment with carbonate of soda, the carbonates thus formed being dissolved in hydrochloric acid and separated from most of the soluble constituents by precipitation with sulphuric acid. This precipitate contains, besides the radium, the barium and lead contained in the ore. The other constituents, such as uranium, vanadium and bismuth, are dealt with by ordinary laboratory methods applied on the industrial scale.
>
> Finally, one has to deal with a mixture of barium and radium sulphates, the former in overwhelming excess, say one part of radium to 100,000 of barium. The mixture of sulphates is solubilised by carbonating as before, dissolved in hydrochloric acid and crystallised. It is found that when such a solution is saturated at the boiling point and allowed to cool, it deposits half of its barium, which contains four-fifths of the radium. This fractionation is repeated time after time, passing the crystals forward and the mother liquors back, so that each lot of back-going mother liquor meets the lower lot of forward-going crystals to form a new solution for a new crop.[33]

In April 1915, MacArthur formed J S MacArthur Ltd as an operating company, and transferred his radium operation from Runcorn to the banks of the River Leven at Balloch, Strathclyde, at the southern end of Loch Lomond, where he set up in the

buildings of a former sawmill, on land owned by his wife's family. (Plates 1 and 2) The site at Runcorn which he vacated was used to accommodate the Antimony Recovery Company.

The radium refining process was extremely hazardous, time-consuming and costly, involving much washing and boiling with acids, and up to 500 separate fractional crystallisations, depending on the level of purity required. In order to produce one of the tiny glass tubes for medical use containing 100 milligrams of radium bromide an intense chemical process was required, involving twelve tons of ore, three tons of hydrochloric acid, one ton of sulphuric acid, five tons of sodium carbonate and ten tons of coal, and large volumes of clean water. The cost was spectacularly high. MacArthur noted, at the time of the move to Balloch:

> Radium certainly seems to be expensive till one comes to consider the matter closely. 50 milligrams cost £1,000 but that would be sufficient for the treatment of 100 persons a year, which means only £10 a head: but as the life of radium is many centuries, one need not consider anything beyond a rental, and assuming that the rental is 10 per cent of the value, the treatment of 100 patients would cost £1 each. And then the value of the radium is not exhausted. In calculating the price, one has to remember all the circumstances of the production of radium. The ore is not plentiful. A great part of it comes from the remote Rocky Mountains, and before it lands in this country it has actually cost about £20 a ton for transport. Then its extraction involves, say, 50 delicate operations, and though the ore contains about one-sixth part of a grain to the ton, it is not safe to reckon on getting more than one grain from ten tons.[34]

In 1918 MacArthur paid extensive visits to derelict mining sites in Portugal, Spain and, especially, Cornwall. He was looking for unworked uranium deposits and his notebooks from the site visits to South Terras, Tolgarrick, Lostwithiel and St Just are full of sketches, calculations and measurements of shafts and topography. One notebook refers to Government proposals, 'to take us as a going concern and merge with Govt. Dep. under our

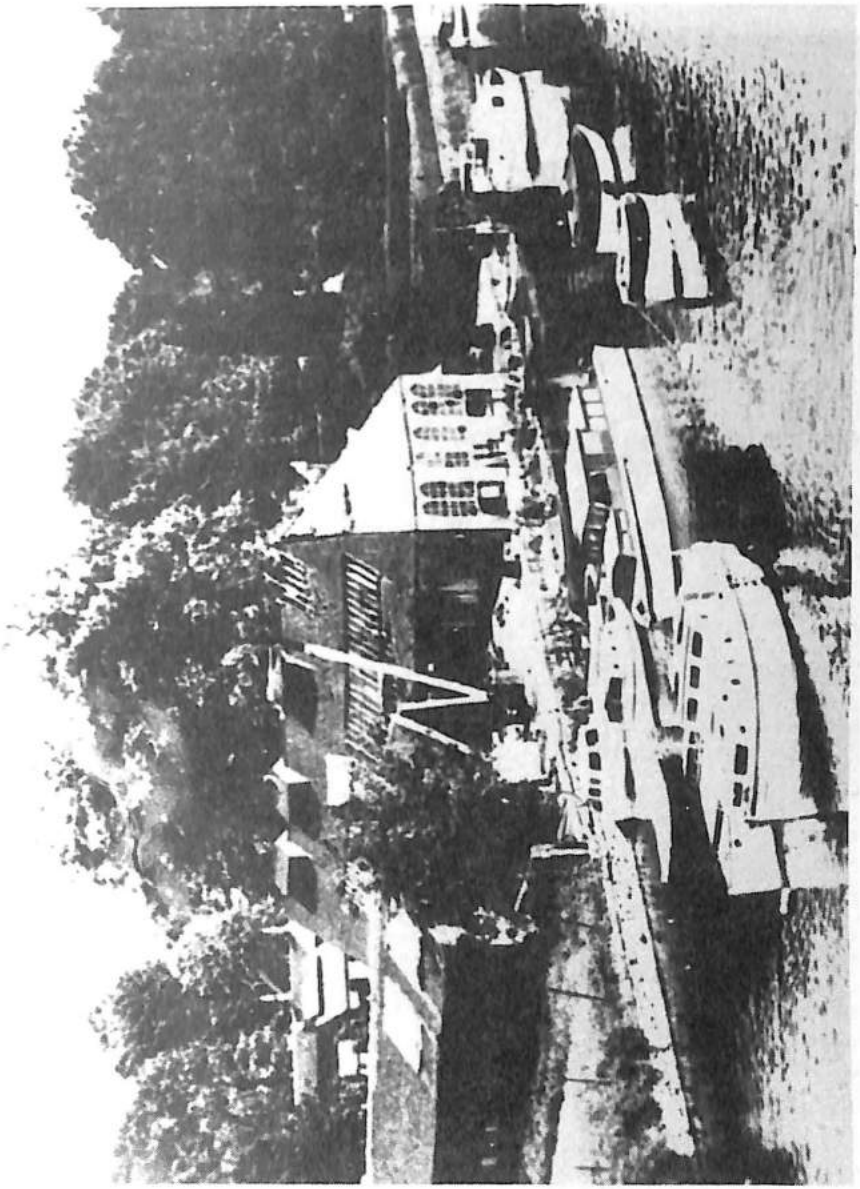

Plate 1. Building of the Loch Lomond Radium Works, Balloch. Photographed about 1959. The larger building with louvred roof was the chemical process shed.
(Courtesy Dumbarton District Libraries)

Plate 2. MacArthur's niece, Sheina Marshall. Later a noted marine biologist. In the Radium Works at Balloch
(Courtesy Miss Dorothy N Marshall)

supervision: permanent purposes - Navy, Aircraft, Hospitals, Army.'[35] He continued to produce radium salts until his death in 1920 at the age of 64 and the operation was continued until about 1927 by William Dempster, a New Zealander who had been involved in the early days of the cyanide process.

Largely as a result of the appallingly crude methods then in use, the site of the Loch Lomond Radium Works at Balloch has had an unfortunate history of radioactive contamination. The site has existed as a small boatyard since the demise of radium production. In 1948 a secret government investigation was carried out with a view to obtaining uranium for weapons production from the hundreds of tons of ores and partly-worked residues which lay around the site (radium and uranium share common ores), but what remained was in such a condition as to prove non-viable. Since that time, a number of radiological surveys of the site have taken place, and in 1963 the remaining buildings (one of which, to the horror of the health authorities, was being used by a squatting family) were bulldozed, several feet of surface covering and subsoil was dug up, and the whole lot was dumped at sea. As recently as 1977, prior to a housebuilding project on an *adjacent* site, an area of 9 feet by 200 feet was dug up to a depth of four feet and disposed of as radioactive waste. The condition of the site is such that a number of building proposals have been refused, and in the face of scientific concern, the Scottish Office is currently under some pressure to re-examine and re-survey the whole area. The site of MacArthur's refinery in Runcorn has never been decontaminated: it is now a dense housing development.

MacArthur's work on radium was just as pioneering as his earlier success with gold extraction and the celebration of his contribution to science is long overdue. He was the first gold medal winner of the Institution of Mining and Metallurgy, and his paper to the Society of Chemical Industry detailing his work on cyanidation was judged to be one of the most outstanding contributions of science to industry of the first fifty years of the century. His obituary in *Nature* noted, ' it is given to few men to discover a process which has had such a far-reaching effect in almost every branch of civilised life.'[36] His scientific achievements, and his ability to harness them to practical industry were sadly not

matched by an ability - or a willingness - to become involved with the inevitable pressures which the world's aggressive industrial development forced upon him.

MacArthur appears to have been a man with no detractors - even in the cut-throat business of commercial exploitation which he abhorred, there are no accounts which allude to him with anything other than respect. He has been remembered with pleasure by those few people still alive who knew him. One written description of him recalls:

> a man of very kind character, an elder in the kirk and deeply interested in the religious and philanthropical enterprises of the city of Glasgow. He used his wealth, for wealth came to him, although he shone more as a man of science than a businessman, to help not only his relations but also many who had been overtaken by misfortune as a result of the War.'[37]

Despite his disappointment at the way he had been treated by international business bureaucrats, he never bore any grudge:

> To his sturdy independent Scottish characteristics MacArthur added a remarkable insight and tenacity of purpose and a kindly consideration for those with whom he was associated.'[38]

His own attitude was possibly best described by himself, quoting Sir Isaac Newton, in an account of the cyanide affair:

> If I get free of this present business I will resolutely bid it adieu eternally, except what I do for my own private satisfaction or leave to come out after me, for I see that a man must either resolve to put out nothing new or to become a slave to defend it.[39]

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33. J S MacArthur, 'The Extraction of Radium', *Mining Magazine*, (Feb 1916).
34. J S MacArthur, quoted in *The Scotsman*, 18 Mar 1915.

35. Balliol College Library, *op.cit.*
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37. *Memoire* by Dr A Simpson Wells, Cape Town.
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CAPTAIN TROOP AND MISTER SHARP:

A CONTRAST IN EIGHTEENTH-CENTURY ENTREPRENEURIAL TRADING STYLES

Peter C Denholm

Bridge of Allan

Archival material on early shipping in Scotland is much more sparse than that for England, but during the last two decades, two notable sets of accounts have been given belatedly the attention they deserve. They present a unique contrast between the survival of late mediaeval conceptions of trade to Europe and the 'plantations', and the dynamic effect of the opening up, of the trade with previously closely monopolistic English colonies in 1707.

This study compares the voyages from 1753 to 1757 of the *Leith Galley* of Leith, the port of Edinburgh, managed by, Edinburgh city treasurer, Alexander Shairp, under the old merchant philosophy, trading to Jamaica and Philadelphia, with the voyages of the *Blandford* from 1768 to 1770 engaged in the Chesapeake tobacco trade, under a quite different system, managed by the firm of Dinwiddie & Crawford of Port Glasgow, Renfrewshire.[1] In the case of the *Leith Galley* the owners' accounts survive as a result of an arbitration dispute between the owning partners: for the *Blandford*, the captain's accounts were preserved in the course of processing the will and estate of ex-Governor Robert Dinwiddie of Virginia.

Alexander Shairp, city treasurer of Edinburgh, came from a well-known family of minor lairds with foreign trade connections. A John Sharp was colonial agent for the government in Jamaica in the 1750s, and Alexander's immediate family included, brother Walter, who ran a Liverpool sugar-refinery and brother John, captain of the 200-ton ship *Leith Galley*.[2]

The *Leith Galley* usually carried cargo for William Beckford's estates in Jamaica. Beckford was a member of the British parliament, and one of the richest and most influential of colonial

plantation owners. He had sponsored the grant of a Royal Charter in 1746 to the British Linen Company, a semi-government funded body designed to encourage the manufacture of linen in Scotland, which established a warehouse in Leith in 1750.[3] From the number of prominent Edinburgh citizens, mostly merchant burgesses, who appear in the ship's accounts, and who were also directors or officials of the British Linen Company, it seems clear that the ship was being run largely in the private interests of a group with Jamaican connections, headed by the Shairps. The Galley's outward and return cargoes of its 1753 voyage included consignments by many leading citizens. These included on the outward journey, Patrick Crawford of Auchinames, MP, a director of the British Linen Company; William Beckford, MP, already mentioned; John Coutts, merchant, a former Lord Provost of Edinburgh; and Thomas Allan, Dean of Guild of Edinburgh. On the return voyage consignees included Colonel Lawrence and John Morse of the Jamaica Assembly and other long-established planters of sugar and suppliers of rum, mahogany, fustic dye, wool and pimento.[4]

The shareholding of the ship was, typically for the time, divided into sixteenths, being the maximum most investors cared to put into any one vessel in consideration of the small size of ships, the absence of long-distance communication, and the roving privateers, virtually licensed pirates, of many nationalities. Originally Alexander Shairp had five-sixteenths interest in the *Leith Galley*, a large share for the time.

> For KINGSTON and SAVANNAH LA MER in JAMAICA, the Ship LEITH GALLEY, Capt John Shairp Commander, is now lying too for taking in Goods on Freight for either of the above places, and will be ready to sail (Wind and Weather serving) on or before the 6th. February next. Any who inclined to ship Goods, or take their passage, may apply at the ship ...
>
> Tradesmen such as Wrights, Mill-Wrights, Carpenters, Coopers, Masons, Bricklayers, Taylors, Blacksmiths, &c, That can have certificates of their being good Tradesmen, and are willing to indent, may

have suitable Encouragement ... A good mill-wright is particularly wanted.[5]

To earn some extra freight and passage money, as well as providing planter clients with cheap labour, the ship advertised for voluntary 'indented servants' and carried eight in the steerage quarters at a fare of six guineas each and three 'cabin passengers' who paid ten guineas which included their keep. Below decks there were also four 'servants from gaol' whose passage was entered as freight and who would be available for the captain to sell on arrival, to recoup the not inconsiderable expense of acquiring them. Items in the accounts read, 'Charges indenting servants £23.8.0.; Indenting 4 servants £3.9.6.; Necessarys for servants in gaol, 9s 9d'. Thus the captain had to maintain the latter in gaol until the ship sailed, but once under weigh they could not escape and would probably have been used to help work the undermanned ship *en route*. Recent research by Roges Ekirch shows that in England 30,000 felons were transported to America between 1718 and 1775, 16,000 from Ireland, but only about 800 from Scotland, where sentencing was different and transportation was used mainly for capital offences rather than minor ones. The Scots also had a legal right to petition for banishment before their cases came to trial, after which the court would show special leniency.[6]

It was typical of the *ad hoc* management of the *Leith Galley* that, having been advertised to sail by 6 February, she did not in fact depart until 4 March, the reason being to save insurance premiums by sailing in convoy. She arrived in Kingston, Jamaica, on 26 April 1753, and was known to be fully loaded for a return voyage by 30 July, but probably fitted in a Philadelphia trip, as she did not unload at Leith again until 22 January 1754. Then, it would seem from her accounts, that she lay idle until April 1755.

Although advertised to sail again in November 1754, she was held up by a major row among her shareholders about the loss of some £35 on the previous voyage. Two of them withdrew from partnership, leaving Alexander Shairp to attract new investment. Being personally committed to the Beckford interest, as to the British Linen Company, he could not withdraw, and was himself forced to underwrite another half-share in the next voyage, with

financial help from London, making him thirteen-sixteenths controlling shareholder.

For some centuries previously, it had been the English practice, in foreign trade ship management, to have either an educated captain who could handle the trading business of the ship as well as the sailing, or a captain suited to sailing duties only, supplemented by a 'supercargo' to handle the business side. In the former case, the captain often had family connections with the owners, whether he knew much about sailing or not, due to the special position of trust involved and the difficulty of bringing a captain to book if he served his own interest, as often happened. Supercargoes ('in charge of the cargo') were also often family members for the same reasons but, as they represented a non-paying berth, they had to be worth their passage which was not always the case.[7]

Captain John Shairp, Alexander's brother, made one or two unprofessional decisions on this voyage, such as sending Mr Beckford's linen 120 miles in the open long-boat from Kingston to Savannah la Mar. Although usually packed in water-tight barrels, it was damaged, and Mr Beckford had to be paid compensation through the ship's accounts. When John ran short of wine on the voyage, he commandeered a hogshead consigned to a Jamaican client, causing Alexander Shairp's accounts clerk some head-scratching between ledger pages.

The *Leith Galley's* cargo on this occasion included more than thirty miles of twenty-six inch wide linen of various grades, indicating a considerable British Linen Company liability for freights; also 1,400 gallons of Spanish wine, traceable to Bilbao; 400 pairs of shoes, thirteen saddles with fittings, and five horse-chaises with harness and furniture, a list as informative of the lifestyle of the planters as of the range of products of Scotland. For the use of the captain and cabin-passengers, the 'cabin stores' loaded were twenty-five barrels of Scotch salt herring, then regarded throughout Europe as a delicacy, half-a-ton of Scottish-refined sugar and two hundredweight of mustard for use with thirty-six 'mutton-hams'.

A cargo of sugar and rum eastwards weighed usually more than he general goods cargo westward, and the latter usually included

as ballast (i.e. carried in the bilge of the ship, below the cargo), the building materials for the richer planters' mansions. This time the *Leith Galley* took to Jamaica 27,000 slates, traceable in the customs accounts to the Scottish West Highlands, and 40,000 nails to fix them; other ships' ballast included ashlar and carved stone.

For her second voyage, under the new ownership, loading of the *Leith Galley* started with a consignment of linen in mid October 1754 and continued until she sailed shortly after receiving customs clearance on 15 April 1755. On this occasion she carried nearly seven miles of standard width sailcloth (even ships built in the colonies were legally obliged to use British sailcloth); 25,000 bricks, some coal, and a miscellany of shirts, sheets, pillowcases and felt hats. An unusual item was 360 dozen pieces of 'British Earthware' which may have come from Caddel's pottery established ten years earlier on the shores of the Forth.[8]

By August 1755 the owners of the *Leith Galley* were insuring her for a £750 valuation at £8.8.0. per cent including war risk - the French war was not far off - for a return trip Jamaica-Philadelphia. Little appears in the record of this leg, but it was a very regular trade at the time, originating in the inability of early square-rigged ships to sail much into the wind, and the consequent habit of west-bound traffic to sail south from Europe into the trade winds and arrive like Columbus in the West Indies, then make their way up the American mainland coast - a very roundabout business. While the so-called Northern Route became more or less standard for Scottish west coast ships, as discussed later, the safety of sailing in convoy still attracted a large proportion of the English merchant fleet and some Scots to Portsmouth or Cork, the gathering point. From the West Indies they were then in a good position to make the mainland coast, taking the Philadelphians their rum and sugar and the Jamaicans their grain on the return.

The *Leith Galley* was in Kingston by 31 March 1756, nearly a year after leaving Leith, with a load of timber for the plantation owners, the return voyage having earned a gross total of £459.2.6. in freight, rather more than the ship herself was sold for the following year. She returned as far as London by 3 July 1756, with her cargo of primary produce, earning £1,370 in freight charges,

some of which were paid by the less pecunious planters in kind - i.e. in rum. For this voyage, critical to the profitability of the whole venture, she had been insured for a value of £800, her cargo for £1,050.

The ship was put up for sale and after six months a buyer was found at £430, at which point Alexander Shairp's interest in her can be seen from his ledger page:

Paid 5/16th share of original cost of £750 =	234.7.6
Paid after arbitration a further 1/2 share	375.0.0
	609.7.6
When she was sold for £430, received 13/16	349.7.6
Nett loss:	£260.0.0

When the ship's accounts were finally closed on 22nd December 1757, however, Alexander was £1,212 in credit, and the ship had made a modest profit of £330 after paying his dues. At one point he had been £1,400 extended in financing her as chief risk-taker, but the final voyage home had been the pay-off; no one else made much on the voyage, according to the reconstruction of the ledger, but all his associates had been able to buy their private puncheons of rum and other imports related to their businesses. Alexander retired as a director of the British Linen Company that year, and lived another eighteen years, dying at the age of eighty-nine.

The performance of the *Leith Galley*, making two voyages in three-and-a-half years, was not untypical for its style of management, and will be compared later with the Scottish west coast operation in the tobacco trade. Her customs victualling register shows that under Shairp management she was operated with twelve of a crew besides the captain, which was minimal for a ship of her size and armament, implying clearly that she was expected to make the whole voyage in convoy under the protection of a warship. Her departure was delayed a whole month to ensure this, which was economical when crews were only paid for 'days at sea' and a hefty insurance premium could thereby be avoided. The speed of a convoy being that of the slowest ship, a sail-handling crew of twelve could just be expected to cope with keeping her in station in the convoy.

After the full union of the parliaments of Scotland and England in 1707, the Scottish east coast ports continued to dominate trade with Europe until about 1740. One of the anomalies which arose was in tobacco imports from America having to be trans-shipped from the Clyde overland to the Forth at Alloa. After an initial period following 1707, when they had to charter English ships, the Clyde merchants soon acquired enough capital to have their own ships built cheaply in America; they were designed for speed and manoeuvrability. To avoid the overland haul across central Scotland, they soon found it best to chance the privateers in the English Channel, and make their own delivery trips to Le Havre and Rotterdam, the main European markets for the trade.

In response to trade demands, there was a large and fast improvement in sailing-ship design in this country. In the tobacco fleet the provision of more fore-and-aft sails, as distinct from square sails, enabled ships to sail close into the wind, and made them much more handy in navigating the shoal waters of the Chesapeake rivers, or in the flukey winds on the leeward side of the West Indian islands.

From a study of thirty-five ships leaving the Clyde between 1747 and 1756, some generalisations can be made.[9] Only four were armed, three of these being bound for the Caribbean. Besides the captain, the scale of manning was about one crew member per ten tons burthen, with few differences on either side, except for armed ships, which had about one man per gun extra to the sail-handling crew. Over 180 tons the manning scale evened out, but few of the Clyde fleet were over that size. By contemporary standards both the ships discussed here were undermanned, the *Leith Galley* dangerously so.

* * *

The new Port of Glasgow, eighteen miles down the Clyde from Glasgow, had been established by the town council of Glasgow in 1668 to assert their control over customs dues on the river, and became the official port of entry in 1677. By 1762 Port Glasgow had opened the first dry-dock in Scotland, its pumping machinery designed by the young James Watt, who lived in nearby Greenock.[10]

Before it became the general practice to cover ships' bottoms

with copper sheathing, they were tarred, more or less regularly, especially if sailing to Teredo-worm infested waters such as the Chesapeake. Sometimes they were double-planked as an added insurance, the outer skin being regarded as expendable, but this was expensive At Port Glasgow in mid-century, the pressure of trade was such that there was simply not time for the old system of lowering topmasts and yards, unloading ballast, and careening every empty hull on the nearby sandbanks. But, speed being the essence of the business, weed-grown bottoms which reduced ships' performance, were as unacceptable as long periods spent in port.

In 1768 Captain Andrew Troop of the 175-ton ship *Blandford* paid twenty men 2s 8d a day for tarring his ship as she lay in the dock, and a jobber had a shilling a day for pumping it out, using Watt's horse-driven machinery. Troop's account included standing the men beer and buns on completion of outfit, which, like everything else in his immaculately-kept accounts, was a regularly recurring expense. Many who laboured at the tarring were the same local names who took passage as crewmen on the ship's regular run to the James River, Virginia. The fact that in three years only one man appears in the pay lists as having made two trips in the Blandford is indicative of the employment opportunities of seamen in the Forth area at this time. It is not surprising to find in the ship's accounts that Captain Troop had to hire a horse to ride forty miles to Ayr in search of willing hands. A month's advance was paid before sailing, to support dependents in their absence. The *Scots Magazine* reported in 1773 that:

> On Thursday, March 4th., 1773, a great number of sailors assembled at Greenock and Port Glasgow, and, in a riotous ... manner ... insisted for an increase of their wages, which the merchants declined complying with, as they have already 4s to 5s per month more than what is given in any other port in Britain, ... they went on board all the outward-bound vessels, struck their topmasts, locked up the public sail-lofts, hindered the loading and unloading of any vessels ... two companies of the 15th Regiment marched from Glasgow ... the inhabitants secured four

> of the ring-leaders, and delivered them ... to the military, who were immediately surrounded by a vast number of the sailors, and most incessantly pelted with stones ... [they] ... were at last obliged, in their own defence, to fire; whereby two women were unluckily killed ...[11]

When justice finally took its course, two of the ring-leaders were 'sent to the plantations' for two years.

Once out of dry-dock, the *Blandford* immediately started to load cargo, while simultaneously running repairs to upperworks and rigging were effected; this was all done on a regular contract basis by a local firm, and involved forty-three persons, including two women and all the permanent crew - second mate, bosun, and six sailors. The 'outfit and loading' cost £7.5.3. for labour. Other accounts show that the same local firms supplied the same range of goods for every outfitting, canvas from the Port Glasgow Sailcloth Company, rope from the local rope-walk, pulley-blocks from the chandler, and victuals for the crew organised by the port store-keeper, James King, as owners' agent, also paid anything from 3s 6d to 7s a week to a local woman for the apprentices' lodgings ashore between voyages.

Comparing the customs registers with the ship's accounts shows clearly how little time was wasted once the ship was loaded and had customs clearance; a crew was engaged and paid their customary advance, and the ship sailed. There was no question of waiting for a convoy, she would go north-about, out of the way of the privateers. She did not have to wait for a fair wind; it was one of the chief advantages enjoyed by, and indeed basic to, the Scottish trade, that six miles west from Port Glasgow the Firth widened to an extent which allowed even quite a large ship enough room to tack. To get to that point, where the Firth bent southward at Gourock, it was only necessary to hire a large rowing-boat with half-a-dozen stalwarts and a tow-rope to keep the ship's bow pointing into the wind, and the strong ebb current would push her down to Gourock.

Nor were the ship's departures ruled by the seasons. Like most of her kind, the *Blandford* could in her best years under Captain Troop do two trips, the second often starting in January; the only

stricture was a reluctance to be in the salt-water part of the Chesapeake in July and August, when the Teredo worm was most active, or in any part of the area at that time, when the malarial mosquito threatened the crew with 'swamp fever'. The ship always carried a medicine chest, stocked by the local doctors at at Port Glasgow, which included a supply of 'Jesuits' Bark', as quinine was still known.

Using the north-about route, Troop was usually reporting his cargo in at Jamestown in eight to ten weeks, and his return voyage with tobacco rarely took as much as six weeks, on a slightly more southerly course with following prevailing winds - impressive figures considering that the ship was built for carrying cargo and had nothing remotely approaching the navigation aids now available. The cargo, mostly manufactured goods from the Clyde Valley area, was designed to satisfy the creature comforts and supply the working equipment of the middling-prosperous back-country planters of the upper James River area of Virginia, and the Appomatox River as far as Blandford, now a suburb of Petersburg, Virginia, where the owners' agent, Charles Duncan, was one of at least eighty Scots factors working mostly for the Glasgow 'tobacco lords'.

Typically, in late June to July 1769, the *Blandford* was loaded, according to the customs registers with:

Copper & Pewter Wares	3,960 lbs.
Delft-ware (tin-glazed) and earthenware	584 dozen pieces
Haberdashery	20, 70 lbs.
Hatts	58 dozen
Iron, wrought ware	38,750 lbs.
Ironmonger's ware	5,200 lbs.
Leather Ware,	
Saddles, men's	no. 79
" womens'	no. 17
" small	no.170
Bridles	no.687
Stirrup leathers	prs.149
Other leather goods	656 lbs.

Paper	5 reams.
Sugar, refined	4 cwt. 2qurs.
Sailcloth (made in Port Glasgow)	261 ells
Linen	43,084 yards
Woolens	28,538 yards

There were also small consignments of:

Boots & shoes, breeches, cutlery, gloves, handkerchiefs, silk in many forms (ribbon, sewing thread, stuffs, stockings), and saddlebags.

Among Troop's accounts, one bill of lading of 1770 providentially survives, showing the destinations of the goods on a typical journey up the James River. The *Blandford* called at Norfolk, Portsmouth, Pagan Rivermouth - where Smithfield consignees collected their goods 'at the ships side' - Warwick Bay and Gray's Creek. By then she had shed nearly half her load, reducing her draught for the shallower upper reaches. On other trips she had called at Eppes Island, both to deliver goods and to collect tobacco on the way out. Entering the Appomatox River she made her main delivery to the company's agency store at Blandford, and clients at Petersburg, having by then negotiated 100 miles of winding shoal waters, on one occasion with a local pilot who signed his payment receipt with a cross.

Dinwiddie & Crawford already appear as ship-owners in 1735,[12] and by 1774 were the fourth largest Clyde importers with 2,141 hogsheads of tobacco.[13] In the exports list of 1775, they only stood sixteenth,[14] as they were stockpiling in anticipation of the revolution, and complained to the customs that there was not room in the Port Glasgow bonded store for the *Blandford's* cargo of 322 hogsheads of tobacco.[15] Using smallish fast ships, their turnover was still respectable, due to the speed of turn-round. Only Charles Duncan at Blandford appears in Troop's accounts, but the firm may have had other agents among the eighty or so factors for Scots firms said to be operating in the Petersburg area. Certainly, the ship was seldom delayed, consignments of tobacco having been booked ahead by the factor in return for credit or goods.

Some large firms had a chief factor, supervising a number of stores; a letter of 1771 from one such, to a sub-manager about to take over a new store, spells out the prevailing management attitude:

> ... be exceeding cautious who you credit ... invariably ... settle with every person once in the twelve months ... It often happens when a planter is largely in debt at settlement or when any considerable sum of money is advanced then they will offer a security on their estate which should at all times be accepted even from those best in credit.
>
> Tobacco is the chief aim of this concern ... but it will be well if you buy as many of the other articles (wheat, corn, flour, hemp) as you can find a profitable sale for in the country) or from which you can supply your store with West India goods. [He meant mainly rum, of course].
>
> On the whole in your Trade be generous, easy, affable and free to your customers, pointed and exact in fulfilling your engagements on even your most trivial promises. By these methods you will engage their esteem, regard and confidence and on this plan alone a large and extensive trade can be acquired and carried on, which you will study to do with the greatest frugality, both with regard to your expenses at home and abroad.[16]

Having a resident factor in Virginia directly employed by the ship's owners, relieved the captain of most of the ship's business ashore; unlike Captain John Shairp, Andrew Troop of the Blandford was an employee, not a family member. For his overall, obviously expert, management of the ship, including presenting her voyage accounts immaculately in a fair hand, and making occasional delivery voyages to Le Havre and Rotterdam, as well as crossing and re-crossing the Atlantic with the regularity of a bus service, he was paid £4 per month for sailing time - even by contemporary standards, a bargain rate for the owners - plus a daily attendance allowance during loading and unloading in port.

In such a regular all-year-round trade, every voyage took its chance of bad weather. In 1764 Troop, then in charge of the Dinwiddie-owned ship *Johnston*, was stranded near Port Glasgow, but his cargo was salvaged, and the ship limped on for another year or so, her eventual fate not yet having appeared in the

records. In general, Troop's regular travels in the *Blandford* suggest that he was competent to cope with any weather, but the accounts show at least one occasion when he was caught. Not long after he reported in at Jamestown on 5 September 1769, a great gale struck the Chesapeake area, scattering ships upon the mudbanks throughout the estuary;[17] the *Blandford* among them ran ashore and broke her foremast. The prompt repair action speaks volumes for the professional competence and initiative of all concerned. A new mast was ordered from Newport News, was floated up to Jamestown on a raft, on which sheerlegs were erected; negro labourers were hired from a nearby plantation to replace the stump with the new timber, which was fifty-three feet long, and cost £3.7.1.; the account included 'rum for the peaple'. But even including this delay, the ship's total time in the Bay between reporting in and reporting out again, loaded, was only forty-one days.

By 1735 already sixty-seven ships were listed as 'belonging to the Clyde', among them the *Butterfly*, master Matthew Crawford, owners Lawrence Dinwiddie & Company.[18] Lawrence's elder brother, Robert, had, since 1727, been employed in the customs service in Bermuda, having left the family merchanting firm in Glasgow. In 1739 Robert was appointed Surveyor General of Revenues for the southern part of the American colonies. He travelled throughout these colonies and the British West Indies, but his residence was in Virginia, where, in 1741, he became a member of the Governor's Council. He was appointed Lt-Governor from 1751 to 1758, and wore himself out looking after the colony's interest during the French and Indian war, retiring in 1758 to Clifton, near Bristol, England, where it may be supposed he was still in a good strategic position to advise the family firm on the state of the American trade.[19]

Brother Lawrence, twice Lord Provost of Glasgow, was a merchant with a finger in every pie; the Merchants' House, the Glasgow Arms Bank, the New Glasgow Tanworks and Shoe and Saddle Factory. In 1748 both brothers were partners in the Delftfield Company, whose works were one of the first purpose-built industrial buildings in the city. In the next thirty years it exported some half million pieces of tin-glazed ware, stoneware

and later, porcelain, to the Chesapeake area.[20]

By June 1769, the time of Troop's accounts, Lawrence had died, and Robert was retired and in poor health. But business must continue, and James King, the Port Glasgow agent, addressed urgent mail to the surviving partner, Crawford, in Glasgow, hiring a horse for 'young Borthron', the second mate of the *Blandford*, to ride the twenty miles to deliver it. In a semi-legible letter, he complained bitterly of the unreasonable demands of the customs officers while loading cargo, and wondering what had happened to the cabin passengers' stores he had ordered.

Dinwiddie had an agent in London - most necessary to keep an eye on continental tobacco orders and to arrange finance in the city, especially for payment of the swingeing duties levied on exports. The *Blandford* accounts and customs registers show how the unloading of the ship was suddenly halted in March 1769, when only a few hogsheads had been taken from her for local trade. The deficiency was quickly made good from another cargo, and she was packed off post-haste, to fill an order from Rotterdam.

The account for this trip to Holland gives a brief view of how some exotic wares could regularly reach America via Port Glasgow. Troop's purchases, under the head in the accounts 'The above is not against the Ship' - it was probably for one of the owners - included Persian silk valued at £241, and £93 worth of spices brought in to Rotterdam by the Netherlands East India Company. From the firm's point of view, it was far from being all profit - the Dutch pilotage fees for inland waters being exorbitant - but their gin was very cheap, and Troop acquired twenty stoups for the owners and eight for his crew.

From his extant accounts, from August 1768 to June 1770, the performance of the *Blandford* gives a clear picture of the commercial pressure under which Troop and his fellow-captains were operating in the tobacco trade. In the twenty-two months that they cover, the ship spent 311 days in port or collecting cargo up the Chesapeake, and 360 on ocean passage, making one trip to Rotterdam and six Atlantic crossings, and bringing home a rich miscellany of pig-iron, barrell-staves, etc., but chiefly some 480 tons of Virginia tobacco. Taking the known distance sailed by the

two ships, it can be stated, in terms of available cargo capacity, per mile, per annum, that the *Blandford* did 12 per cent better over thirteen years than the *Leith Galley* over three. Times spent in port by the latter while waiting for cargo, convoy dates, servants from gaol, or owners' disputes, amounted to months at a time, while the *Blandford's* longest delays were at her home port, waiting for an unloading berth in the tiny harbour, or for the customs officers to carry out their duties.

While the *Leith Galley's* owners were committed to the service of a small community of well-to-do elite in the Jamaica plantations, the *Blandford* was providing for a greater number of much less prosperous tobacco planters on the mainland, whose needs and interests her owners were constantly and closely studying through their local factorage system. Although some of the shareholders in the *Leith Galley* withdrew when she did not make a profit, it is doubtful whether anyone concerned would have been seriously embarrassed financially, even if she had made a much greater loss.

On the other hand, Dinwiddie's involvement in the tobacco trade can be traced back at least fifteen years in the customs records, from 1760 to 1775, in the voyages of the *Johnston* (Captain Troop from 1762), 1760-67, and the *Blandford*, 1768-74. Troop brought some 7,460 hogsheads of tobacco to Europe, valued at around £260,000 sale price, of which the British, French and Dutch governments took more than half in import/export duties. If, as seems probable, these figures were publicly known at the time, there need be little surprise either that the Clyde sailors went on strike or that the planters had a revolution, when they all had to work so hard for such a small share of the returns.

Remembering the success of the seventeenth century, Scottish trade with Europe through the Scottish Staple at Veere on the Dutch coast,[21] it could hardly be claimed that Scots merchants were ignorant of commerce before the tobacco period. It had previously been a moderate-scale, highly competitive scene in Europe - the Shairps' spread, with a sugar-house in Liverpool, a family ship's captain, and a young cousin running an agency in St Petersburg, Russia, being typical of the maximum involvement - but the scale of mainland America, both in its problems and its

opportunities, encouraged a greater breadth of outlook. It was the tobacco trade which first made Glasgow a major commercial centre. By 1776 even the set-back of the American revolution could not halt its momentum, and enough capital had been accumulated to diversify into West Indian sugar, shipbuilding, and the heavy coal and iron industries. There had been cautious good management on both sides, so that few of the debts owed by individual planters to the Glasgow tobacco houses exceeded £100 at that time, 'by the middle of 1784, on one estimate there as about 80 stores in Petersburg and as many in Richmond, still dealing with the planters.'[22] At Richmond the headquarters store of Cuninghame's of Glasgow was big enough to be used by the Virginia Assembly until the state building was completed in 1789.[23]

Scotland's most innovative contribution to the new United States was surely the provision of personal credit down to a more modest social level than ever before. The changing scene was typified in another way by the gradual conversion of the British Linen Company - originally concerned mainly in providing practical help and storage, even buying raw materials for a cottage industry - which, by the 1770s, was increasingly lending *money only* to a a widening range of minor industries, eventually becoming the 'British Linen Bank'.

To the extent that they supplied, at their own risk, the capital and tools to clear the ground, literally, for an original American cash crop, the Scottish tobacco merchants, typified by the Dinwiddies, may be said to have made a significant contribution to the colonists' capacity for economic independence.

A Note on the Shipping Accounts

In 1974, while attending a course in archives research held by R M Dell (then archivist to the City of Glasgow and later to Strathclyde Regional Council) I was, in common with the other students, presented with little researched documents on which we were asked to write a precis for the index record. In my case, the first of these was the cash book of Alexander Shairp, relating to eighteenth century voyages to Jamaica and Philadelphia of the ship *Leith Galley*, a document preserved due to a legal battle among the owning partners. The second was the microfilmed

Lockhart papers, being the captain's accounts, with all supporting vouchers, for some three years of voyages of the Glasgow tobacco ship *Blandford*, apparently preserved for settlement of the estate of Robert Dinwiddie, ex-Governor of Virginia.

Intrigued by the subject matter, and particularly by the contrast in management style and techniques between the two ships, I reconstructed the ledger of the *Leith Galley* (all items being ledger page numbers) and with the help of K G Ross, CA, of Glasgow, arrived at some appreciation of who made a profit and how. For the *Blandford* it was found possible to relate the accounts to the very detailed customs registers of the period, the 'port books', giving what is perhaps a uniquely close view of the operations end of the tobacco trade on which the original prosperity of Glasgow was founded.

I still have complete copies of both these documents. Inspection of the customs registers was run in parallel with research on contemporary Scottish pottery exports, published in *Post-Mediaeval Archeology 16* (1982) pp.73-79, relating mainly to the Delftfield Company founded by the Dinwiddies.

NOTES

1. For the *Leith Galley*, *The Cash Book of Alexander Sharp & Co*, Strathclyde Regional Archives, TD/169. The owners' accounts for voyages 1753-57. For a professional analysis of, and some of the conclusions drawn from the accounts, the writer is indebted to Mr K G Ross, chartered accountant of Glasgow, who interpreted the reconstructed ledger. For the *Blandford*, *The Lockhart Papers*, being the captain's accounts for voyages 1768-70, original in Library of Congress, copy microfilm at Colonial Williamsburg, and in Strathclyde Regional Archives, Glasgow MF612. Includes signed receipts for all the ship's expenses.
2. Scottish Record Office, *Shairp of Houston papers*.
3. Charles A Malcolm, *The History of the British Linen Bank*, (Edinburgh 1950).
4. Scottish Records Office, *Port Book*, E504/22/5/, for 31 Jan to 20 Feb 1753.
5. *Edinburgh Evening Courant*, 16 Jan 1753.
6. A Roger Ekirch, 'Bound for America, a Profile of British convicts T

ransported to the Colonies, 1718-1775'; *William and May Quarterly*, (42/2. Apr 1985), pp.184-200.

7. Ralph Davis, *The Rise of the English Shipping Industry in the 17th and 18th Centuries* (1962), Ch.VIII. This work has been widely consulted in all points of comparison with earlier English shipping practice.
8. Scottish Record Office, *Customs Registers*, or *Port Books*, series E504. The books for Leith and Port Glasgow have been extensively used in comparison with the accounts of both ships.
9. P C Denholm, 'A Note on the Pottery Exports from Port Glasgow to the Americas, 1747-60; from the customs registers', *Glasgow Archaeological Society, Bulletin 5 (1978).*
10. W F Macarthur, *History of Port Glasgow*, Glasgow (1932), p.72.
11. *Scots Magazine*, Jul 1773, quoted by Macarthur, *op.cit.*, p.74
12. J Gibson, *History of Glasgow* (1777), p.210.
13. J Pagan, *Sketch of the History of Glasgow* (1847), p.80.
14. T M Devine, *The Tobacco Lords* (1975), p.65.
15. *Ibid.*, p.108
16. Scottish History Society, *A Scottish Firm in Virginia 1767-1777*, ed. T M Devine (Edinburgh, 1984), pp.44-48.
17. *Virginia Gazette*, 14 Sep 1769.
18. Gibson, *History of Glasgow*, p.210.
19. Some biographical details have been taken from the current edition of *Encyclopedia Britannica.*
20. P C Denholm, 'Mid-18th Century tin-glazed earthenwares from the Delftfield Pottery, Glasgow ... Excavation 1975', *Post-Mediaeval Archaeology 16* (1982), 39ff.
21. Scottish History Society, *The Journal of Thomas Cunningham of Campvere, 1640-54* (Edinburgh, 1928).
22. Devine, *op.cit.*, quoting Dunlop correspondence, p.164.
23. Scottish History Society, *A Scottish Firm* (note 15), p.xvi, quoting Public Record Office, A.O., 12/56/293 (see Harrell, *Loyalism in Virginia* (Durham, N Car., 1926).

Archive Report Number Five

THE ARCHIVES OF THE GOVERNOR AND COMPANY OF THE BANK OF SCOTLAND

Alan Cameron

Bank of Scotland, Edinburgh

Bank of Scotland was founded on 17 July 1695 by an Act of the Parliament of Scotland. A subscription book for shares was opened simultaneously in Edinburgh and London. From the day the Bank opened its doors in rented premises in Mylne Square, off the High Street, Edinburgh, it was committed to making a business of banking. It is clear from the names on the subscription list and the fact that the bank's earliest 'banknotes' were issued for sums in excess of £5 sterling rather than pounds Scots, that at least part of the promoters' purpose was to finance the development of Scottish trade with England and the Low Countries. The Bank was founded one year after Bank of England and, as might be expected, the respective Acts contain many similarities and parallels. Indeed, so far as the London end is concerned, the old saw about Bank of England being founded by Scotsmen, and Bank of Scotland by Englishmen, indicates that it was essentially the same interests which were engaged in both enterprises.

There are a number of features of the Founding Act (technically it is not a charter) which, although perhaps anomalous and largely irrelevant in the early 1990s, are a source of pride within the Bank and a fundamental part of its corporate identity. The most important of these is that the Bank still trades under its founding title and statutes. The full legal title is 'The Governor and Company of the Bank of Scotland', which appears on all formal documents, and the company is also obliged to appoint a Treasurer. As a consequence, the chairman of the board of directors has always been 'the Governor' and the company's first employee 'the Treasurer'. The exact relationship and division of function between the two has varied considerably over the last 300 years. Ever since the appointment of Alexander Blair in 1838, the treasurer has been a professional banker and executive head of

the Clearing Bank. The governorship has accommodated more varied considerations. John Holland, the first governor, was an 'executive chairman', but he was replaced by a series of appointments, broadly speaking Tory in character, which helped give the Bank its reputation after 1715 of being Jacobite. From the appointment of Viscount Melville in 1790 until 1955 when Lord Elphinstone retired, the governor was, in practice, chosen from one of Scotland's 'grandee' families. Since that date there has been a steady move back towards an executive governorship and the board over which he presides is far more representative of current Scottish business interests than was the case 100, or even forty, years ago.

The Bank's shareholders, originally known as 'adventurers' (but since 1796 as 'proprietors'), had limited liability from the first day of the Bank's existence. One consequence of this is that it has never been necessary to register for incorporation under any of the Companies Acts, and the Bank is, therefore, not a PLC. During the first half of this century the Bank felt increasingly constrained by the fact that its total capital base was specified by statutes, and it was necessary to secure an additional private Act of Parliament to increase the share capital. There have been at least two occasions during the last 150 years when the effort was abandoned and it has undoubtedly proved to have been a limitation upon expansion plans. After 1951, when the Bank got approval to merge with Union Bank of Scotland Ltd, it was permitted to raise its capital like any other commercial bank.

Another peculiar feature of banking in Scotland is that the banks have the right to issue their own banknotes, a privilege which was taken away from the English country banks by the 1825 Bank Act. There were a number of reasons why in Scotland paper was accepted readily instead of coin; one of the more important was a continued lack of specie after 1707, and the fact that the whole Scottish banking system was more developed than that in England. The note issue was regulated by the 1845 Bank Act, which gave each of the Scottish banks in existence at that time an authorised issue, prohibited any new note issuing banks, and required that all notes issued over the authorised issue be covered by equivalent securities deposited in the Bank of England. This

requirement was one reason why, during the 1860s and 1870s, most Scottish banks opened a London office, rather than rely, as previously, on the services of a London agent. This, in its turn, provoked a reaction among the English banks and, in 1875, led to the agreement between the English and Scottish banks that neither would attempt to expand its branch network in the other's territory. In part, this was because each operated in a different legal and accounting environment. Broadly speaking, it is this agreement which has determined the present geographical distribution of UK bank networks. Even where a Scottish bank was a wholly owned subsidiary, as the Clydesdale was of the Midland Bank from 1919 to 1989, a separate identity was retained. It was the discovery of North Sea oil and the investment requirements of the 1960s and 1970s which shattered this comfortable pattern and began the process of English banks' penetration of the Scottish market and *vice versa*.

Bank of Scotland as it now exists is the result of two major amalgamations. In 1955 Bank of Scotland merged with Union Bank of Scotland Ltd which was Glasgow based and had a branch network predominantly in west and central Scotland. Union Bank of Scotland Ltd was founded in 1843 as the result of the merger of a number of partnership banks. The oldest of these were the Ship and Thistle Banks and later the Glasgow and Union Bank. The Union Bank was a co-partnery and one of the most fascinating documents in the archivist's care is the original articles of co-partnery which are approximately fifteen metres long and contain the signatures of all the original shareholders. Rather than enumerate the various banks which were absorbed by first Union Bank of Scotland Ltd, and then Bank of Scotland, a full bank family tree is illustrated in Figure 1. The second major amalgamation was in 1971, when the British Linen Bank, a Barclay's Bank subsidiary, was merged with the Bank of Scotland with the parent taking a 34 per cent stock share in the resulting bank. This shareholding was sold in 1984 to Standard Life which remains the chief proprietor. As matters now stand, the Bank of Scotland is an independent Scottish high street bank, with some 500 branches in Scotland, a network of regional offices in England, and a

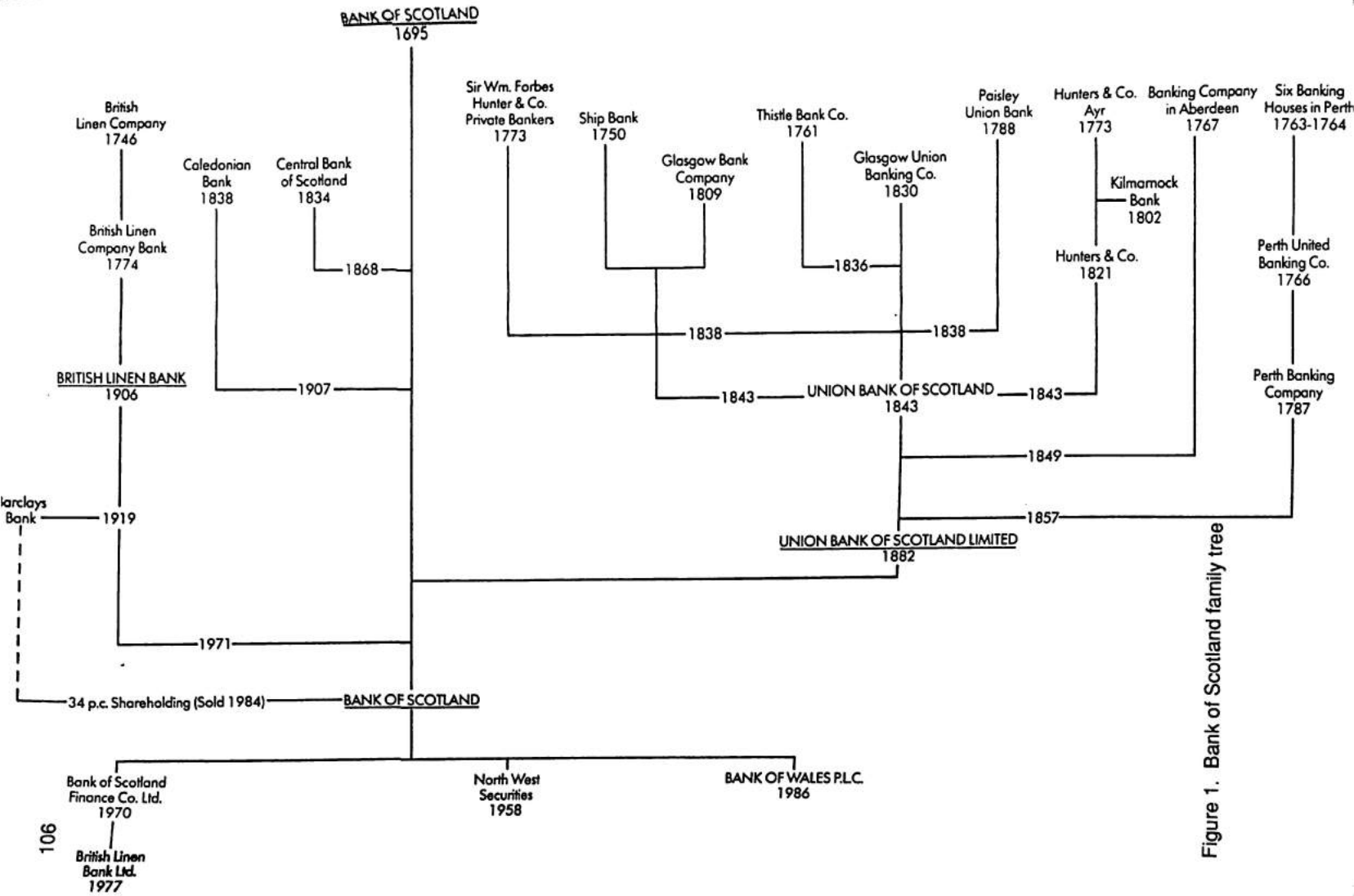

Figure 1. Bank of Scotland family tree

commitment to delivering banking services by electronic means.

As stated already, the Bank's record of its past is a very full one and the archive reflects its varied parts. The National Register of Archives (Scotland) conducted two surveys of the Bank's records. The Western Survey List NRA (Scot) 1110 covers the records of the Union Bank and its predecessors, while NRA (Scot) 945 deals with Bank of Scotland, British Linen Bank and their amalgamation. Currently the Union Bank archive is kept in Glasgow Chief Office in St Vincent Street, Glasgow, and Bank of Scotland and British Linen Bank archive is held in the bank's central record store at Sighthill, Edinburgh. Apart from the records of individual branches, some of which may be retained locally, there are significant archival holdings in Aberdeen and London. The strategy is to concentrate the archive in Edinburgh in a single archive store which is being designed to conform to BS 5454 (1989).

The researcher in Bank of Scotland's archives most likely to be disappointed is the genealogist, since the Bank's current customer base involves millions of names. It is computerised and covered by the Data Protection Act 1985 and, therefore, cannot be publicly accessed. Manual ledgers were maintained up to approximately 1970, but so far as I am aware, no single central customer list existed then. Searching for a particular customer is like looking for a needle in a haystack. There is a further complication, and that is, for over 100 years it has been normal practice within the Bank to destroy customer ledger pages, twenty years after completion. In practice this means that no branch of Bank of Scotland has a complete view of its customer history. The aggregated financial information is carried in the bank's central accounting records, but it is stripped of any personal identification.

The general question of access to customer information, even historical, is a tricky one for any bank archivist. In 1924 the Tournier judgement did not put any time limit on the period for which customer confidentiality should be maintained. The Jack Committee, which reported in February 1989,[1] considered the whole question of banker/customer relationship. Far from proposing any relaxation of the rules, a code of conduct and legislation, which will be more restrictive, is in the pipeline. This

seems to indicate that in this area it will not really be possible to operate a fixed number of years rule for access. The general principle is no access to any customer records before they are 100 years old. In this respect, they are being treated like census, health and social security records which are public records, and there is no case for easier access to bank customer records. Even here the general principle of access is subject to some important qualifications. There are a number, of primarily business customers who have been with the Bank for more than 100 years, and in such cases, to meet with the requirements of the Tournier judgement, access will only be granted with the express permission of the firm or individual concerned. Broadly speaking, all records relating to the running of the Bank and its policy are governed by a fifty year rule, but this is currently under review and *may* be shortened.

The Bank's archive is an archive in possibly the strictest sense of the word. That is to say that the records which survive were generated during the normal day-to-day process of business. This makes for an easily defined acquisitions policy. Only identified strays or items which are directly relevant to the Bank's history will be sought. There is, however, an area of uncertainty in that many of the Bank's leading figures were also involved in wider Scottish and UK issues. Material of this type will only be acquired after consultation with the National Register of Archives (Scotland) and the National Library of Scotland. As set up within the Bank, the archivist also encompasses the records management function. One of the main advantages of this arrangement is that certain categories of record can be designated archival from the day of their creation, others can be weeded as soon as their administrative usefulness is finished, and yet others can go through a process of appraisal through time to decide whether or not they merit permanent retention.

The minutes of Bank of Scotland, British Linen Bank and Union Bank of Scotland Ltd exist in their entirety, as do those of the other joint-stock banks which are part of the Bank family. The poorest record runs are from private or partnership banks, whose record-keeping was not consistent. It is necessary to give a word of warning about using bank minutes to write banking history. It is a

matter of fact that the closer to the present the minutes are, the less informative they become. Primarily, this is because they record decisions, in many cases of a purely formal kind, and rarely record the thinking and discussion which went into a decision. It is, therefore, vital that ancillary papers are kept, also policy statements and reports which examine parts of the bank's business in detail.

Of about 700 properties which the Bank occupies throughout the UK more than 200 are listed buildings with a significant history. Architectural plans, specifications and title deeds are kept for as long as the Bank holds the property, but are handed over in their entirety when a building is sold. Even here commonsense dictates that plans cannot be freely and widely available. Locations of vaults, alarm systems and so on, are simply not for public consumption.

Perhaps the most fascinating, and yet difficult, area of handling a business archive lies in the impact of computer technology. Broadly speaking, the serried banks of handwritten journals and ledgers peters out in the late 1960s when the record of transactions was transferred on-line. This has affected all accounting records, and poses a major problem for the future permanent record. The second area is a revolution which is currently in process. The use of computer networks for electronic mail delivery and the widespread use of desk top personal computers means that increasingly more and more business is being done without leaving a permanent record, other than that strictly required by law. This is an area which is being examined closely, but at the time of writing, there are no obvious solutions, and it is likely that the combination of information technology and increasingly complex business considerations will mean that the future record of the Bank's history will either be more fragmentary than in the past, or alternatively, will contain a high degree of redundancy (in the IT sense of the word).

Having secured the archive physically, the next major task will be detailed listing and cataloguing. The archive (February 1991) is being catalogued on the Bank's mainframe computer using a fourth generation relational database, and a similar system is being used for records management. These have been

operational only for the last few months, and it is too early to assess their success. However, the early indications are encouraging. It is unlikely that it will ever be printed out in its entirety as a conventional handlist, but summaries will be produced and the whole database will be available in a read-only mode in Sighthill Record Store and Head Office, Edinburgh. It may be possible to deliver it more widely through the Bank's own information network, but for the moment that is a long way in the future.

Anyone wishing to use the archive can be accommodated either in Glasgow or at the Records Store, Sighthill, Edinburgh. In the first instance an appointment is required to be made through The Archivist, Bank of Scotland, Executive Office, PO Box No 5, The Mound, Edinburgh EH1 1YZ (Tel. 031-243-5467).

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THE CENTRE FOR BUSINESS HISTORY IN SCOTLAND

A Slaven

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The Centre for Business History in Scotland (CBH), moved into new premises at 4 University Gardens in September 1989. The new Centre inherits a responsibility for promoting interest and research in business history and archives which began thirty years ago in the University of Glasgow with the establishment of the Colquhoun Lectureship in Business History, and the creation of the Business Archives Council of Scotland. The three decades between these events have been a remarkable period of endeavour and achievement in business history and business archives in Scotland. That achievement has been the outcome of a tremendously sustained co-operation among the academic and archive staff of the Scottish universities, most notably Glasgow, the local and regional archive offices, particularly Strathclyde, the Scottish Record Office, especially in the work of the National Register of Archives (Scotland), and the Business Archives Council of Scotland itself.

The Centre for Business History in Scotland was conceived in September 1987 when the Court of the University of Glasgow accepted a very generous offer of funding from the Aggregate Foundation, a charitable trust established in August 1987. In turn the University established a new Chair of Business History and appointed Professor Tony Slaven to the post as Director of the new CBH. The University also set in motion a process of renovating a fine terraced house to be the home of the new Centre, and its linked Department of Economic History.

With the opening of the new CBH premises, the wheel of business history set in motion in 1959 has effectively come full circle. For the Director, Tony Slaven, was in 1960 the first research assisting in business history, assistant to Peter Payne, the first Colquhoun Lecturer. Payne and Slaven worked out of one large first floor room in 5 University Gardens. It was there that the

first business collections, Dixons, Dennys, Stephens, and many others, found floorspace to save them from imminent destruction, and laid the foundation of the now unparalleled collection of business records housed in the University's Business Record Centre. The new CBH is situated next door to the original premises, but instead of the one room shared by Payne, Slaven, and the early record collections, the Centre occupies two complete floors and has facilities for a library, a study and research room, a seminar room, and computer suite, as well as staff and reception rooms. The Colquhoun Lectureship is also associated with the Centre, for when Peter Payne went to his Chair in Aberdeen in 1969, the Colquhoun Lectureship passed to Slaven; a third Colquhoun Lecturer, Alan McKinlay, has now been appointed as the first full-time research officer in the Centre for Business History in Scotland.

The Centre is also beginning its working life with the advantage of a new and splendid business archive facility within the University of Glasgow at Thurso Street. Continuity is again evident here, for in 1970 Michael Moss was appointed as the first surveyor for the Western Survey, and more than any other individual has been responsible for the creation of our large business collection. Now, as University Archivist, he presides over the new Thurso Street archive where the Business Record Centre provide a secure base for much future research, and an on-going challenge in archive management.

The development of computer software and personal computers capable of handling large datasets has also opened up the opportunity for the CBH to expand its databases, partly by transferring much existing data on wages and productivity to that form, but also to exploit the new techniques to make datasets of all kinds more readily and widely available to researchers. The Centre for Business History in Scotland has clearly grown out of a rich tradition, but looking to the future, it has to build on these splendid foundations.

Glasgow's contribution to business history has always been fundamentally linked to the location, preservation, and interpretation of business records. Looking to the future, one major role of the CBH is to continue to promote the preservation

and efficient organization of business records as a basis for further developing the study of business and business history. The CBH, through its link with the Ballast Trust, in which Dr William Lind plays the leading role, provides a technical archive listing service and spearheads the co-operative effort of the CBH, the Business Archives Council (Scotland) and the Scottish Record Office in surveying business records in the West of Scotland. The funding provided by the Ballast Trust also supports, in part, the management of the business record collection in the University of Glasgow.

The creation of the Ballast Trust in association with the Aggregate Foundation and the CBH have to some extent provided a short-term safety valve for the pressure of work in business archives in the West of Scotland. The listing, selecting, and cataloguing of many collections, especially of technical drawings and engineering plans, is now heavily dependent upon this source of assistance. In the medium and longer term, however, an even more pressing problem is the lack of premises for archive management and storage. A major objective of the CBH, the Ballast Trust, and all the other interested parties, has to be finding the means to provide for a major addition to our archive storage and research premises in the West of Scotland. The available repositories are effectively full, and still the flood of newly located business record collections continue, and remains to be dealt with.

Much of the strength of the research and writing of business history in Scotland has emerged from a systematic exploration of the records of the basic industries, especially coal, iron and steel, and shipbuilding. This emphasis will continue to be important in the work of the CBH; there is ongoing work on shipbuilding (Slaven) and the beginning of new work in engineering (McKinlay). These are only part of an agenda of proposed work in areas identified as being of particular interest to the CBH. Areas which will attract particular attention as the work of the CBH develops include: Business Biography and Entrepreneurship; Financial Enterprise and Institutions in Scotland; Maritime Business History; and Industrial Relations. Each of these areas is capable of supporting important work based on Scottish records and of stimulating comparative research with relevance to public policy

and private enterprise. The approach to be taken in these different areas will have a common thread. The CBH intends to explore the development of management thought, management organization and practice, and managerial strategy as a central theme in its research activity.

Two illustrations of this approach will give some indication of the situation. The current work on Scottish Business Biography led by Professor Slaven is now at the end of its first phase with the publication of the second volume of the *Dictionary of Scottish Business Biography* (1990). These short biographies, while interesting in themselves, have been part of a systematic attempt to collect a range of information on the origins and nature of the businessmen in Scotland during the last hundred years or so. The next step will be to analyse these data to attempt to draw out general statements about the development of the entrepreneur in Scotland, the type of management and business organization he created, and the view businessmen took of their role and place in Scottish and British society. Once reworked in this form, the possibility of comparative research with similar work in England, the USA, Japan and elsewhere, is greatly enhanced.

Similarly, Dr McKinlay has designed a research project focussing on employers strategies in industrial relations in engineering since 1945. His work explores issues such as wage bargaining, training and conditions of work as developed by the engineering employers in their trade association, and will utilise not only the Engineering Employers' Federation files, but papers of specific engineering companies, and files of the appropriate branches of the Amalgamated Engineering Union. The focus on management strategy sets the negotiation of industrial relations in the context of national politics and economic policy, this again providing a common theme and bridge to comparative work in other industries, and other countries.

These two examples emerge from the research of the core staff of the CBH, but it is intended that further projects will be designed in the general areas of priority interest set out above. As these succeed in attracting research funding an expansion of the research team will follow, and the research activity based in the CBH will be steadily broadened, the infusion of project researching

bringing with them new skills, insights, and vitality to contribute to the work of the Centre. The CBH has facilities capable of supporting a considerable number of projects at any one time.

The Business Archives Council of Scotland has always had the objective of working in partnership with the businessman to encourage the preservation and use of business records. The involvement of the business community has been essential in promoting the business archive developments, but there has been relatively little direct contribution by the businessman to the research and writing of business history. One important aim of the CBH is to find ways of increasing the participation of the owners and managers of business in archive research and in discussion, writing and teaching of business history.

One direct way of achieving some part of this is the traditional one of establishing the CBH as an agency for undertaking commissions to write business histories of firms, industries, and personalities. The CBH will certainly wish to cultivate such work, but this frequently produces only a passive involvement, the sponsor being content to be kept informed of progress, receive, read and comment on draft papers, and in the end, hopefully, approve publication. The aim is to move beyond this and involve businessmen in a more direct and constructive relationship with the academic researcher and students of business history.

The CBH has the facilities and resources to offer managers, young and old, short term secondment to allow businessmen to share in the research of their own industries and firms, to have the opportunity for extended reading and discussion, and to contribute to the teaching of business history by drawing on their own experience. The objective is one of mutual support and participation. Few businessmen have time during their working day to reflect on the development of their organization, its relationship to its competitors and customers, or reflect on the circumstances that lie behind their current situation, or even to consider seriously the advantages of and disadvantages of embarking upon a particular course of action. Indeed, it is rare in business for managers to be able to take the long view of where they hope their business will be in five years or ten years time.

The CBH will seek to develop study partnerships with business concerns which will provide the opportunity for some reflection and learning. Businessmen need time off to learn a little about the context in which they live and work; at the same time the academic researcher and student of business needs the opportunity to work with and learn from businessmen about the operation of their firms, their systems of collecting information, making decisions, and implementing and monitoring them. In seeking to provide an opportunity for structured short-term secondment to the CBH, the aim is not only to expand the intellectual horizons and business skills of the businessman. It is to involve men of business in helping the academic business historian to identify an agenda of important issues and the questions we need to ask to better understand our business history.

An immediate consequence of such involvement would be a widening of the intellectual framework of research activity. A further objective, however, is to improve the general level of appreciation and understanding of the world of business. Few people appear to think of business as an exciting or interesting career choice; very few have much of an understanding of business law and institutions, organizations, or the economic and policy environment in which the businessman has to function. By planning to involve business managers in the work of the CBH through short-term secondment, another objective is to bring students and managers into contact in short projects, case studies, seminars, conferences and courses. These interchanges should in turn be a means of opening up the world of business and enterprise to young people who would not normally have thought of taking up a career in business.

Nor should this be thought of as a purely theoretical set of exercises. In planning to establish such arrangements, the Aggregate Foundation and the CBH are intent on linking the study of our business history to a better appreciation and understanding of our present day problems and opportunities in industry and commerce. Developing an appreciation of business as an integral part of the education of our young students is an essential investment in securing the future of enterprise in Scotland.

While business history is a relatively young discipline in Britain, it has had a particularly vigorous record of growth in the past decade or so. A large number of individual scholars have written in the general area of business history and many institutions have a long record of research and publication. Polytechnics, as much as universities, have contributed to this; for example, the polytechnics of Central London, Coventry and Bristol. Universities like Nottingham, Liverpool, Glasgow, Aberdeen and Strathclyde have a long association with business history, as has the London School of Economics. More recently, Reading, Cardiff, Bath, Lancaster, Warwick, East Anglia and many others have established particular interests in the field.

In such a diverse and growing field there has always been academic interchange, but even with the efforts of the Business History Unit of the London School of Economics, there has still been a lack of co-ordination and effective promotion of the achievement of business historians and those concerned with business archives. The CBH is yet another agency in this diverse pool, and of itself could not hope to provide a large-scale central co-ordination or leadership. But in co-operation with others in the field the CBH has been deeply involved in the establishment of the Association of Business Historians to provide some effective national co-ordination in business history in Britain.

Such an involvement reflects not only a national need in Britain, but the lack of any systematic international linkages. In recent years there has been a rapid advance of business history in Europe and Japan, as well as in the USA. There are a number of national Business History societies which provide a forum for national and international interchange and co-operation. The CBH is committed to promoting such developments in Britain, since its own research activity can only be enriched and encouraged by national and international co-operation and involvement.

The objectives set out above cannot all be achieved quickly or simultaneously. It took two years from the formation of the Aggregate Foundation and the CBH to translate the paper propositions into a physical establishment and appoint the first members of staff. The following five years will be an important period of consolidation during which our first research projects will

be funded and launched. At the same time our new library will gradually have to acquire its specialist texts and resources, contacts and working arrangements will need to be established with the business community and with other centres with interests in business history and archives. Among the first steps toward these objectives will be the establishment of a seminar series and occasional conference on aspects of business history, certainly with specialist Scottish interest, but also comparatively, emphasising British and international dimensions. This will certainly necessitate publicity and the CBH plans to introduce and circulate a news bulletin on its activities. It will welcome news, views, and other items as contributions for publication and circulation to the widest possible readership.

Our news bulletin will also regularly publicise our facilities, and arrangements for visiting researchers, research fellows and others on short study visits or on secondment. It will also outline the services the CBH is able to provide in support of research in business history. To this end the CBH will invite applications for associate membership from individuals, companies and other organizations, who would wish to contribute to the development of the Centre, and to make use of its facilities.

Since the CBH is as yet only at the beginning of its life, it is not easy to be precise about future developments. However, if the CBH is to succeed to build fruitfully on its inheritance for the next thirty years, it will need the support and involvement of all of the individuals, institutions and organizations that have laid the foundations of business history so securely in the past. The CBH is a bold and ambitious experiment in which we hope all business historians, archivists and all with an interest in our business development, will have a share.

BUSINESS RECORDS IN SCOTLAND, 1970-1990

Michael S Moss

University of Glasgow

When I was an archivist trainee in the department of Western Manuscripts at the Bodleian Library in 1969, I can recall telling George Boyce, who was busy cataloguing the vast and largely uninteresting papers of Lord Bryce, that in the future business records would assume an increasingly important position in archival work. I spoke with great conviction from a position of profound ignorance. In my time as an undergraduate, I had read no histories of business and had only written occasional essays on economic history. I little thought that within a year I would be knocking on the doors of decaying and defunct companies in the West of Scotland in search of these very records.

My arrival in Glasgow was traumatic; the city was at the nadir of its fortunes and the National Register of Archives (Scotland) surveying methods were very different from the patient ordering and calendaring of documents I had encountered at the Bodleian Library. There was determination to save what was important, discard the ephemeral, and list as cost effectively as possible. My brief as Registrar of the Western Survey of the National Register encompassed all historical records, but there was a clear expectation by the management committee chaired by Professor A A M Duncan that I would take over where Peter Payne had left off - a year before. When I arrived I was based in the department of Scottish History, with only tenuous contacts with the University Archives. Peter Payne had gone to Aberdeen and Tony Slaven, although able to come out on emergency rescue expeditions, was heavily engaged in teaching and departmental administration. At the Glasgow City Archives, Richard Dell was hopelessly under-staffed. Goodwill, however, prevailed, fostered by Robert Smith, then chairman of the Business Archives Council of Scotland. Armed with lists of possible contacts and sources of records, I set to work with all the impetuosity of youth.

Within weeks I had uncovered significant collections of records, notably the huge archive of the Ardgowan estate at Greenock. It was a cold winter and the Estate Office was as it had been a century before, with high desks, a blazing coal fire, and an ample supply of chocolate biscuits. This lucky break gave me time to make more approaches, using lists of businesses supplied by those with a knowledge of the West of Scotland, particularly John Hume, who was heavily engaged in his industrial archaeology surveys of Glasgow. Almost at our first meeting, we decided to team up, making joint approaches; he would photograph the plant and I would list the records. This was a happy partnership. Together we discovered tons of archives and photographed premises sometimes dating back well into the nineteenth century, which were shortly to disappear. John was also able to teach me a great deal about technical records and their relationship to the purely commercial archives of an enterprise. Out of our close co-operation developed a survey of the Scottish ironfounding industry, once crucial to the West of Scotland's engineering prowess, but now in terminal decline. Although the survey conducted between 1970/71 proved fascinating, it yielded few records - although many of the businesses were over a hundred years old. This lack of written evidence was more than compensated for by John's photographic record of the industry, now the only surviving evidence of the industry, as nearly all the 150 firms we visited have closed. The decline in popularity of industrial archaeology in the last fifteen years has led archivists and museum curators to neglect the importance of making contemporary photographic records for permanent preservation.

Confirmation that, at least in the West of Scotland, large accumulations of papers of historical interest remained in private hands, encouraged the Scottish Record Office to secure funds for two further surveys based at Dundee, in what was to become Tayside, and at Aberdeen, in what was to become the Grampian region. The experience of both these surveys was broadly similar to that in the west. Under Joan Auld, now archivist of Dundee University, the Eastern Survey located and listed large numbers of collections from the traditional industries of Dundee and its surrounding area, many of which, like those in the West of

Scotland, were in imminent danger of collapse. Joan had no long tradition of business record surveying and rescue, as at Glasgow, to build on. She had not only to find the records but also persuade the University Library and the meagre local authority offices in Perth and Dundee to take them. John Hume, with his interest in industrial archaeology and history throughout Scotland, offered help and cheerful encouragement to both Joan and to Aberdeen.

Early in my days as Registrar, I had approached the surviving Clyde shipbuilding firms, but with as little joy as Peter Payne had secured in similar enquiries a decade before. However, one cold October evening in 1971, I was returning to Central Station to be greeted by the news that the Conservative government had placed Upper Clyde Shipbuilders Ltd into liquidation and that Robert Smith had been appointed provisional liquidator. Despite all his many concerns, Robert Smith lent me his support from the beginning. Confident I would find nothing, I visited Fairfields, Connells, and Stephens, to be greeted by huge caches of records. I remember going with John Hume to Fairfields where, like excited schoolboys, we found the drawings of the first compound and triple expansion engines, a remarkable collection of hull drawings and, under the foundations of the building, the firm's records back to its foundation. Their removal has become a legend. There was space only to crawl and a team comprising Richard Dell, Tony Slaven, Archie Duncan, John Hume, David Reid of Robertland, and myself, had to form a human chain to pass them through a manhole to the waiting van. At Connells, Tony Slaven and I discovered the best set of wage records of any Clyde shipbuilding or engineering firm stored in what can best be described as a boilerhouse. Together we removed them to the Glasgow City Archives where we encountered Olive Checkland, who, not batting an eyelid at our filthy condition, asked if we knew the whereabouts of a certain collection.

The Clydebank yard of John Browns proved to be a classic example of why an archivist should never give up. Repeated approaches, urged on by John Bates at the Scottish Record Office, drew a blank, until a chance conversation with the resident director's secretary revealed the existence of a large safe in the main office. I arranged a visit and found a vast room that

contained, in no particular order, the records of UCS, John Brown and J & G Thomson, apparently intact, along with wartime utility underwear and socks (I can testify that they never wear out!) and large quantities of pickled herrings ordered for the long forgotten launch of a Danish ship. There then began a period of intense work, with John Hume, Tony Slaven and John Bates, giving up as much time as they could to list the collection. It was bitterly cold and we all succumbed to chills. As the work progressed and we gained the confidence of the staff, so the real extent of the collection became apparent. Further groups of records turned up, including the all important comparison of cost and estimates books stored in the attic of the yard manager's office. Eventually, when the task was completed, the whole collection was removed to the Business Records Store at the University. The back axle of the University lorry broke on the first run, but luckily the Commander of the University Naval Squadron had arranged the loan of a huge naval lorry. During 1972, after protracted negotiations and the intervention of Edward Heath, the collection was acquired for the nation through a joint package of funding put together between the Treasury and the local authorities.

The experience of dealing with the enormous UCS collection impressed upon the Scottish Record Office the need to devise a strategy for handling large accumulations of technical records, which from now on were to be regarded as integral to a collection rather than being stored separately in a museum or specialist archive. With John Bates' encouragement, John Hume and I wrote a memorandum on the subject which resulted in the creation of a post of technical records officer at the Scottish Record Office. The first incumbent, Jack Sime, had immediately to work out retention schedules for historic and non-current drawings with the help of depositories and Bill Lind, an enthusiastic collector of ship models and a knowledgeable historian of the Clyde industry. Reinforced by Jack Sime's appointment, combined approaches were made to other engineering firms who were thought to have large accumulations of technical drawings, notably Andrew Barclay Sons & Co of Kilmarnock, which had acquired the goodwill of the North British Locomotive Company. The Barclay collection, now deposited in the Business Records collection at the University

of Glasgow, comprises drawings not only of all the steam locomotives constructed by Barclays, but the majority of those manufactured by NBL and diesel railcars built by Armstrong Whitworth, along with a mass of drawings of a bewildering variety of mechanical engineering products. Other collections with significant caches of technical drawings were those from A & W Smith, the Glasgow sugar machine manufacturers, and Fullerton Hodgart & Barclay, general engineers, of Paisley, who specialised in very deep winding gear.

I remained as Registrar of the Western Survey until October 1974, when I was appointed Archivist of the University of Glasgow. By then I had carried out more than 300 surveys and arranged for the deposit of tons and tons of records in the Glasgow City Archives ann in the Business Records Store at the University. Shortly after my appointment, day-to-day management of the collection was transferred from the Department of Economic History to the University Archives. The work of surveying did not lapse. Janet McBain took over from me as Registrar and continued where I had left off. The Western Survey continued until 1977 when the whole programme of regional surveys, sponsored by the National Register of Archives (Scotland) came to an end following the development of regional and district record offices in Strathclyde, Tayside and Grampian. The Scottish Record Office, however, was convinced that there was a need to make provision for the surveying of records, particularly those of businesses broadly conceived, throughout Scotland. Although the National Register of Archives included a surveying officer on its establishment, the occupant of this post was wholly pre-occupied in listing family papers still in private hands, and the SRO's technical archivist had more than enough to do in weeding and cataloguing the rapidly growing accumulation of marine and engineering records. Likewise, the new local authority record offices and the University Archives at Aberdeen, Dundee, Glasgow and St Andrews, lacked the resources to conduct anything more than the most urgent rescue operations. John Bates suggested that the Business Archives Council of Scotland should be the vehicle for future surveying activity, using as a model the London-based British Record Association, which received a grant-in-aid for

this purpose from the Historical Manuscript Commission. Bill Lind, who had recently taken over as secretary of the Council, was enthusiastic and the Council, through its new chairman, Norman Biggart, appealed to the Scottish clearing banks for support. When this was forthcoming, the Scottish Record Office secured a matching grant from the Treasury.

The first surveying officer was David Cross, who quickly demonstrated that the expectation that much remained to be done was entirely correct. He and his successor, Lesley Millar (now Richmond), both left to join the Business Archives Council in London, using the expertise they had gained in Scotland to conduct similar surveys south of the border. The establishment of the BAC(S) surveying post coincided with the formation of the Manpower Services Commission. Both Dundee and Glasgow University Archives secured funds from the MSC to underpin the work of rescuing and listing business collections and in so doing providing informal archival training to a number of people who later secured full-time posts in archives in Scotland. Since 1977 there have been several surveying officers of the BAC(S), each completing a regular thirty to forty surveys every year, the scope of the surveys reflecting their individual interests. Since the majority of enterprises in Scotland are situated in the central belt, by far the greatest number of surveys have been undertaken in the Glasgow and Edinburgh areas, with the listings of large collections, like those from J & P Coats of Paisley (now Coats Vyella) and Ivory & Sime, the Edinburgh-based investment trust managers. The far north, the Borders and the Islands have not been overlooked, with surveys of the records of malt distilleries and the Borders textile industry. As long as there is no complete coverage of well-staffed local authority record offices in Scotland, there will be a need for such provision. Recognizing that the annual renewal of the grant-in-aid was an unnecessary formality when the surveying officers so consistently turned up new material, the Scottish Record Office, in 1979, arranged for the cycle to be extended to three years. In addition, the size of the grant was doubled in 1989 to allow for a contribution to be made towards the salary costs of the manager of the Business Record Centre at Glasgow University, where many of the collections rescued by the surveying officer are

stored. These decisions coincided with another welcome development crowning the achievements of the past twenty years - the formation of the Aggregate Foundation and Ballast Trust based in the department of Economic History at Glasgow University.

The Ballast Trust, established by an anonymous benefactor at the same time as the Aggregate Foundation (which is described elsewhere in this journal), is designed specifically to promote the preservation of business archives throughout Scotland. As part of this policy the Trust has agreed to make an annual donation to the Business Archives Council of Scotland. In addition, small grants will be made to archive repositories to assist with the conservation and listing of major collections. Already the Dundee Archives has received a grant, matched by the local authority, to list the records of the Dundee Harbour Trust and make them available to the public. The Trust is not simply a passive body simply dispersing income to deserving causes through the secretary of the Business Archives Council of Scotland, Bill Lind; it seeks to promote the understanding and use of technical records. Already under Bill Lind's direction, the Trust is engaged in the huge task of listing the records of the Scott Lithgow group of companies at Port Glasgow, which are predominantly technical. The Trust now has a backlog of collections of technical records awaiting listing, including those of Hasties, the Greenock steering gear manufacturers rescued by the Business Archives Council of Scotland. Apart from listing technical records directly, the Trust will provide training on this specialised topic, open to archivists and museum staff from the whole of Britain.

For some time before the Aggregate Foundation and Ballast Trust were established, we at Glasgow, had been faced with an acute accommodation crisis. The original store in the Adam Smith Building, the brainchild of Roy Campbell, was bursting at the seams and an outstation at Cochno House in the country above Clydebank was inadequate. The formation of the Trust and Foundation and the creation of the Centre for Business History in Scotland coincided with the provision of funds by the University Grants Commission for the rationalisation and improvement of facilities in the History departments and the Social Sciences

building at Glasgow. As part of a package of funding, two floors of an old flour mill in Thurso Street were refurbished to high standards to create a new Business Records Centre. During the summer of 1989, the collection, which by then extended to 15,000 linear feet, was removed to the new Centre which opened to readers towards the end of October. The construction of this new store could not have happened at a more opportune time as, while work was in progress, Babcock & Wilcox, following their merger with FKI, decided to deposit the whole of their important archive (some 800 linear feet), and Barr & Stroud, the optical engineers at Anniesland, persuaded the Pilkington Group Archive to allow them to transfer their records to the University. The Glasgow University Business Record Centre is one of the best equipped archives in Scotland, but there is little room for expansion.

Despite all the many achievements of the last twenty years in securing the written heritage of Scotland's industry and commerce, there can be no room for complacency. The most urgent problem remains accommodation. In the present straitened circumstances of their finances, there can be little expectation of further accommodation from either universities or local authorities. What is desperately needed is a low-cost dump, possibly financed jointly by the Scottish Record Office, local authorities and universities. Expectations that the private sector itself could fund the preservation of records directly is unrealistic since most of the collections at risk in Scotland come from businesses that have either ceased trading or have scant resources. More seriously, in the long term, is the insidious pressures within organizations to audit the use of collections. Inevitably, in such an exercise, business records will be poor losers to parochial and local authority records, partly because many archivists have little knowledge of how they can be used by historians other than those of business itself. As a result, in some parts of Britain, but not yet in Scotland as far as I know, there are suggestions that business collections should be refused by local record offices. In preventing such an attack on a resource created with so much effort and money, the new Centre for Business History in Scotland should play a vital role. When collections are well used, like the shipbuilding and locomotive manufacturing records at Glasgow,

there are equally insidious proposals about charging. While I have no objection to readers paying for services - and this has long been our policy at Glasgow - the income generated can never meet the whole cost of maintaining an archive.

We undoubtedly now have the best provision for the preservation of business archives in Scotland anywhere in the United Kingdom, but we have probably reached the stage where there needs to be some overall policy to resist these pressures which, in the long run (when we are all dead), could undermine all our efforts. The Business Archives Council of Scotland can provide a forum for discussion, but the Scottish Record Office, which stimulated much of this work, should, through its Advisory Council, establish the policy before it is too late.

A VICTORIAN NET MANUFACTORY IN LOWER LARGO, 1867-1886

Thea Gabra-Sanders

Edinburgh

Lower Largo on the Fife coast is one of the villages which belongs to the parish of Largo.[1] In Victorian times Lower Largo was fairly prosperous, although it had its share of very poor families in overcrowded cottages; in 1861 it had a population of 202 males and 226 females.[2] It was connected with the outside world by the Thornton and Anstruther branch of the North British railway system with its own station which opened in 1856.

After the collapse of the linen industry and the closing down of the Largo Flax Spinning Mill in 1864, a considerable section of its population returned to the old industry of fishing.[3] It was in 1867 that a net manufactory was founded by a Largo man, David Selkirk Gillies (1843-1923), the eldest son of James Gillies (1816-1902), who was a ship's carpenter on a whaling ship.

After finishing his formal education at the age of thirteen, D S Gillies went to work as a clerk in a net factory in Leven, Fife. His keen business drive led him in 1867, when only twenty-four, to design and build a model net factory, which was located on Cardy Common, a gathering place for tinkers,[4] on the banks of the Forth near his parents' cottage in Largo. He was joined in the enterprise by his brothers John, James, Robert and William, one of them being a blacksmith and another a cabinetmaker. They helped him with the woodwork and the setting up of a blacksmith's shop inside the factory.[5] Financial help was provided by two of his school-friends, one sent him £200 from Canada and another an uncut diamond from South Africa. Gillies obtained a netmaking machine from the Boase firm in Leven, which he used as a model, and was able to build another 30 machines in his own workshop.

His factory was quite advanced for its time. It was constructed of red brick, flanked by a chimney at either end and had a three-pitched grey slate roof with ample sky lights, which gave it good

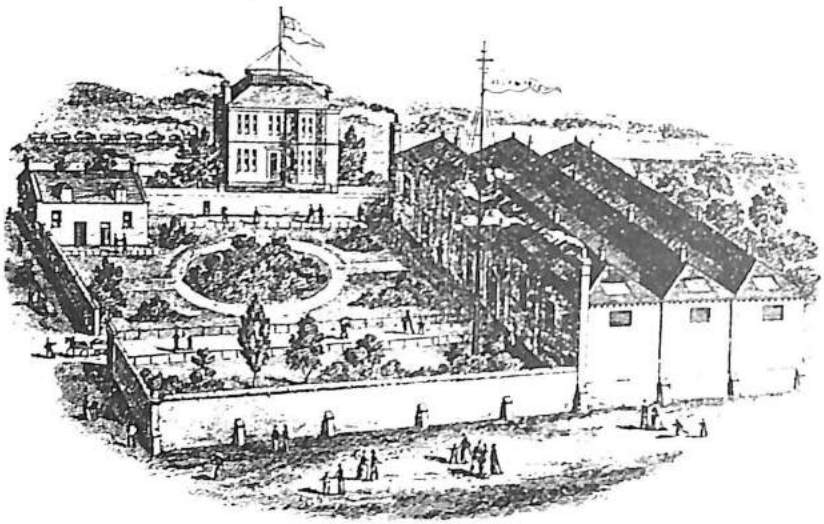
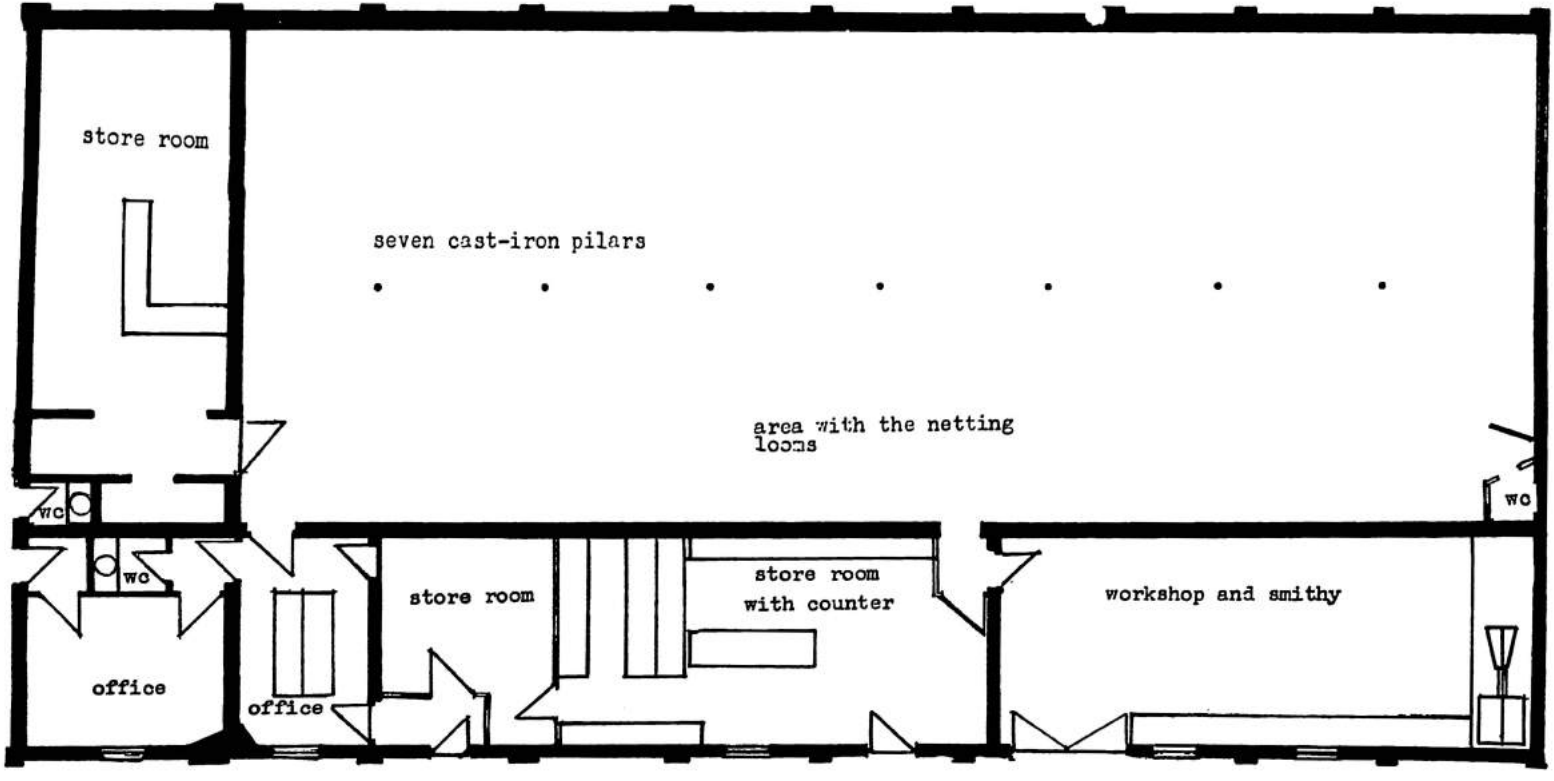


Plate 1. Trade card illustrating Cardy Works

Plate 3. Interior of Cardy Works



CARDY WORKS

scale: 1 . 100

light and ventilation and a lofty appearance. (Plate 1) Internally, the main factory wooden floor was open from end to end. Paraffin lamps were suspended from the ceiling for extra light. The walls were wood panelled with square painted shuttered windows along three sides to let in the fresh air. Off the main work area were situated the offices, store-rooms and blacksmith's shop. The offices had pine walls, moulded ceilings and cornices, a corner fireplace and handprinted linoleum, made in Kirkcaldy.

A huge clerk's desk, with date card, quill pens and brass letter scales, is still in existence, as are the leather bound ledgers, wages, and order and personal notebooks. In the store rooms, ornamental metal brackets round the walls, held up the slatted shelving for the storage of different grades of cotton twine, nets, net-mountings and bales of sail-cloth. In the centre of one of the rooms was a big wooden counter in whose drawers are still to be found trade cards, price lists and various labels. The blacksmith's shop, with its gable wall facing the sea, had a corner furnace with bellows, anvil and a workshop with various tools. (Plate 2).

Netmaking was a hand craft until the invention in Scotland in 1812 of the first hand-operated netmaking loom - 'The Jumper' - which was put into production in the 1820s.[6] Old photographs show that Gillies' netmaking machines (looms) were of the 'Jumper' type, so called because it required two hundred or more wire springs to be compressed by a foot-operated treadle on which the operator jumped.[7] The mode of working the machine, the principle of which was the forming of a sheet-bend was as follows:

> The operative moves a lever which draws the last completed row of meshes off the sinkers, and transfers them to the hooks. Another lever is moved, and the meshes caught by the needles. The effect of these changes and the movement of other parts of the machine is to twist the lower part of each mesh into a loose knot. The foot of the operative touches another lever, and a steel wire is thrust across the machine through all the knots. There is a hook at the end of this wire - or shuttle, as it is called - into which the end of a piece of cotton is fixed. The wire is then withdrawn, and as it goes, takes the cotton along with

> it. Now the 'sinkers' play their part. They consist of thin slips of brass having a hook or notch formed on the upper end, and are situated between the needles. When the twine has been drawn across through the loops of the meshes, the sinkers are released in succession and as they descend each draws down the cross thread into a loop, sufficient to form two sides of a mesh, the other two being formed by the same parts of the previous row. One or two movements more remove the knots off the needles, and draws them firmly, thus completing the operation. In forming each row of meshes, the worker has to press upon half-a-dozen levers in succession and pass from one end of the machine to the other. The occupation is consequently an unusually active one. As work proceeds, the net is wound upon a self-acting cylinder which forms the upper part of the machine. There is an index attached to the cylinder which records the progress of the work. When sufficient length of netting has been made, it is unwound from the cylinder.[8]

A mesh sheet of heavier twine had then to be fitted to the upper side of the net to stop it from fraying. This process was called the guarding of the net. The guarding was done by 'guarders' in their own homes in the village. They were often widows or mothers with young children. Various rates were applied according to the size of nets; there was not much variation in rates over the years.

In its heyday, about sixty women were employed in the factory, most of them were local, or relatives of D S Gillies. Some workers were in lodgings, although a cousin walked in daily from Buckhaven, over the Links. Photographs show that the women working in the factory wore dark high-necked, buttoned dresses, which were shortened in the front - probably to make it easy to 'jump' the machines - with white half aprons, flat dark shoes with toe-caps, and their hair drawn into buns for safety. (Plate 2) Wages were paid by the 'piece' - 50 yards of net - at the end of each fortnight (12 working days). According to the wages books the yardage of net made by each worker was recorded every day; totalled at the end of every fortnight and divided by 50. As they

were paid by the piece, the wages were not always the same. The wage rate per net in 1867 was 4s 5d and 3s 8d per net for apprentices. An experienced worker could make six nets in 12 working days, for a wage of £1.6.6. in 1867, while in 1870 she would have been paid £1.1.9.

The employees were well looked after. D S Gillies laid out a bowling green in front of the factory which could be used in their lunch hour. There is an entry in a ledger which indicates that he took his staff to visit the International Fisheries Exhibition which took place in the Waverley Market, Edinburgh, from 12 to 29 April 1882.[9]

D S Gillies was a meticulous and shrewd business man, and from his copious records we can get a very detailed impression of the daily operation of Cardy Works, from the checking up on competition by writing away for price lists, to detailed directions for 'Weaving a Bag Net and Leader'. Price lists of nets and canvas (he also was a canvas agent) were sent out regularly to potential customers such as various firms and fishermen. To promote his business he advertised in *Slater's Directory* and had representatives in various towns. Nets of different sizes were supplied to firms and fishermen in Fife, but there are also entries for Wick, Caithness, and for Thomas Montiplay and Inglis Smith in Melbourne, Australia.

Material such as net cotton twine, ossels, salmon twine, and canvas were supplied by various firms such as: Elkanan Armitage & Son, Manchester, for cotton (English and American); Laycock and Nephew, Manchester, for bales of cotton yarns, Egyptian and American cotton, osselwarp and salmon twine; Robert Thatcher, Manchester, for cotton twine and salmon twines; and I W Stewart, Musselburgh, for cotton net-mounting.

Net making, like so many occupations, is subject to circumstances. As herring shoals left the coast, Gillies, being an enterprising man, went over to boatbuilding and selling sails and chandlery supplies. Like so many purpose-built Victorian Buildings, Cardy Works is now up for sale for conversion into private accommodation.

Acknowledgements

The author wishes to thank Mrs Ivy Jardine for kindly allowing her to go through the company books and for giving much valuable information. Thanks are also due to Mr W Summers of I W Stewart, Musselburgh, for providing technical information on the 'Jumper' and Mr A C Sanctuary for his useful information and for arranging the use of the photograph of the construction of a Scots herring net from Davis, *Fishing Gear of England and Wales*.

NOTES

1. *The New Statistical Account of Scotland, Vol IX, Fife and Kinross* (1845) p. 434.
2. *Census of Scotland 1861* (1862) p. 160.
3. A S Cunningham, *Upper Largo, Lower Largo, Lundin Links and Newburn* (1907) pp. 41 and 43.
4. W A Craigie, *Dictionary of the Older Scottish Tongue* (1937) p. 436.
5. I Jardine, *Sea Toun of Largo* (1892) p. 23.
6. A Sanctuary, *Rope, Twine and Net Making* (1980) p. 17.
7. I Waller, *Knots & Netting* (1976) p. 48.
8. J W Stewart, *Patent Fishing Net* (1812) p. 4.
9. *The Scotsman*, 12 April 1882 and *Edinburgh Courant*, 12 April 1882.

Archive Report Number 6

RECORDS RELEVANT TO SCOTTISH INDUSTRIAL AND LABOUR HISTORY IN THE MODERN RECORDS CENTRE, UNIVERSITY OF WARWICK LIBRARY

Alistair G Tough

Greater Glasgow Health Board

formerly Modern Records Centre, University of Warwick

The Modern Records Centre (MRC) is a UK-wide specialist archive repository. Its collecting policy is defined primarily in terms of industrial relations and its holdings consist mainly of the archives of employers' associations and trade unions. The MRC holds a considerable amount of primary source material relevant to Scotland. This forms an integral part of archives created by British organisations. Where the Centre has received Scottish records which do not form part of a wider archive, attempts have been made to avoid retaining it. Transfers of material to Glasgow, Edinburgh and Aberdeen have taken place. The Board of Trade Library which is referred to below, was acquired by the University of Warwick from the Department of Employment. It was collected by the Labour Department of the Board of Trade and consists principally of trade union and trades council annual reports and monthly journals dating from the last two decades of the nineteenth century and the first decade of the present century.

In the description of the Modern Records Centre's holdings which follows references are only supplied where these could not be easily found by simply consulting the appropriate descriptive lists. Further information about the holdings may be obtained by consulting the printed guides (of which the most recent is R A Storey and A G Tough, *Consolidated Guide to the Modern Records Centre*, University of Warwick Library, 1986) or the National Inventory of Documentary Sources which has reproduced a considerable number of the Centre's descriptive lists. Enquiries

should be addressed to: Modern Records Centre, University of Warwick Library, Coventry CV4 7AL.

GENERAL

Confederation of British Industry (CBI) (MSS.200)

The CBI was formed in 1965 by the amalgamation of the Federation of British Industries, the British Employers Confederation and the National Association of British Manufacturers (NABM). The archive of the NABM is evidently far from complete. The only specifically Scottish item in it is a directory of Scottish members, 1956 (MSS.200/N/4/5/1). Also forming a part of the CBI archive is the archive of Wages Councils (Employers) Consultative Committee, an independent body to which the BEC provided secretarial services. Its archive contains a file of correspondence with the Scottish Trade Boards Consultative Committee, 1920-24 (MSS.200/TB/3/1/5).

The archive of the British Employers Confederation contains the following items of relevance. Subject files re: education, 1920s; industrial health, 1940s-50s; legal procedure, 1920s; Royal Commission on Scottish Affairs, 1952-54; and unemployment benefit, 1920s-40s. Files of correspondence with the following employers' organisations: Electrical Contractors Association of Scotland; National Farmers Union of Scotland; Scottish Agricultural Implement Dealers' Association; Scottish Alliance of Employers in the Printing and Kindred Trades; Scottish Association of Master Bakers; Scottish Building Contractors' Association; Scottish Carpet Manufacturers' Association; Scottish Distributive Trades' Federation; Scottish Employers' Council for the Clay Industries; Scottish Employers' Federation of Iron and Steel Founders; Scottish Federation of Aerated Water Manufacturers' Associations; Scottish Federation of Dyers and Bleachers; Scottish Federation of Grocers' and Provision Merchants' Association; Scottish Federation of Retail Tobacconists; Scottish Flaxspinners and Manufacturers' Association; Scottish Furniture Manufacturers' Association; Scottish Light Clothing Manufacturers' Association; Scottish Master Plasterers' Association; Scottish Mine Owners' Defence

and Mutual Insurance Association; Scottish Motor Trade Association; Scottish National Building Trades' Federation (Employers); Scottish Provision Trade Association; Scottish Public Works Contractors' Association; Scottish Retail Drapers' Association; Scottish Steam Drifters' Association; Scottish Steelmakers Wages Association; Scottish Tube Makers' Wages Association; Scottish Vehicle Builders' Association; Scottish Wholesale Grocery Provision and Allied Trades Employers' Association; and Scottish Woollen Trade Employers' Association.

The archive of the Federation of British Industries includes a number of specifically Scottish items. Several concern the FBI's Scottish Regional Council which was originally intended as a channel for recruitment of new members but acquired an active role in government - industry relations in the 1940s. Correspondence with and reports of the Scottish Council and office, 1938-65 are in the Secretarial Department files (MSS.200/F/3/S3/1/41-3 and /S3/2/64-9) whilst annual reports, 1953-65 are among the FBI publications (MSS.200/F/4/3/1-12). Other relevant files concern: McKenzie Committee on electricity industry, 1961-65 (MSS.200/F/3/T3/20/EL7 and /EL9); Royal Commission on Scottish Affairs, 1952-54 (MSS.200/F/3/E6/12/3 and /S2/25/1); and US Economic Co-operative Administration report on Scottish industry, 1950 (MSS.200/F/3/04/3/5).

Trades Union Congress (TUC) (MSS.292)

As the British TUC exists in parallel with the Scottish Trades Union Congress (STUC) the records of the former do not cover Scotland to the same extent as they do England and Wales. In particular, the TUC archive contains very little regarding Scottish trades councils as these function under the auspices of the STUC. Nonetheless the TUC archive contains much of Scottish interest, including files concerning: the STUC; industrial disputes; Scottish trade unions; Scottish industries; and trade union recruitment. The files relating to the STUC include: correspondence, 1925-60; circulars and bulletins issued by the STUC, 1925-60; papers re the STUC's education scheme, 1925-26; papers concerning trade boards, 1928-30; and a file concerning STUC proposals for statutory encouragement of

collective bargaining, 1930-39. The industrial dispute files include papers on: shale miners, 1925-26; clerks at Carron works, Falkirk, 1941; refusal of newspapers to employ trade unionists, 1924-29; colliery enginemen, 1929; and colliery deputies, 1945-46. The Scottish unions for which files exist are: Scottish Union of Bakers, 1925-55; Scottish Graphical Association, 1929-43; Jute, Flax and Kindred Textile Operatives, 1956-60; Scottish Legal Managers and Inspectors Association, 1938-40; Scottish Motormen, 1939-59; Scottish Union of Power-Loom Overlookers, 1947; Shale Miners and Oil Workers, 1957; Scottish Transport and General Workers Union, 1952-53. The industries for which files were maintained include mining, shipbuilding, jute, fisheries, transport, public services and utilities: in most instances the files contain much which is relevant and a goodly amount which is either of English or British relevance.

BANKING, INSURANCE AND WHITE COLLAR EMPLOYMENT

Association of Supervisory Staffs, Executives and Technicians (ASSET) / Association of Scientific Technical and Managerial Staffs (ASTMS) (MSS.79)

Founded in 1917 and renamed ASTMS in 1967 (following the amalgamation of ASSET with the Association of Scientific Workers) this union underwent meteoric expansion in the 1960s and 1970s to become Britain's largest white collar union. It has now been absorbed into Manufacturing Science and Finance. Along with the ASSET/ASTMS archive, the Centre has received the papers of General Secretary, Clive Jenkins. These include his files as a member of the British National Oil Corporation's Board of Directors, 1979-82, which will be opened to research in 2002.

The principal archive of ASSET/ASTMS contains a substantial series of subject files on companies. Of these approximately thirty-five files deal with employers in Scotland. Subject matter include union-recognition and inter-union disputes, salaries and plant closures. The files cover the years 1956 to 1982. The archive also contains duplicated minutes of the Scottish Divisional Council, 1960-72, with the reports of full-time officials to the Council, 1966-71.

Guild of Insurance Officials (GOIO) (MSS.79)
Formed in 1919 the GOIO transferred its members to ASTMS in 1970. The archive contains: reports of the full-time officials based in Glasgow with minutes of the area committee for Scotland and North East England, 1963-71; and subject files concerning Scottish insurance companies, 1921-71 (mainly 1940s to 60s).

National Union of Bank Employees (NUBE) (MSS.56)
NUBE was formed in 1946 by the amalgamation of the Scottish Bankers' Association (SBA) with the Bank Officers Guild. The records of the SBA are not included in the NUBE archive. It does, however, include a number of subject and correspondence files concerning the Scottish banks and Scottish branches of NUBE, 1940s-70s. The principal subjects are salaries, relations with their staff associations and recognition by the banks. Also included are some minor SBA publications, 1930s and 1940s, and duplicated minutes of NUBE's committees for British Linen Bank Staffs, 1958-63.

CLOTHING

A R Rollin (MSS.240)
The papers of Rollin, an official of the National Union of Tailors and Garment Workers, include a file concerning Glasgow tailoring trade unions, 1930s and 1940s.

Scottish Operative Tailors and Tailoresses Association
Half-yearly reports, 1887-1912, and a conference report, 1910, are to be found in the Board of Trade Library.

CONSTRUCTION

Refractory Users Federation / Oil and Chemical Plant Constructors' Association (MSS.91)
The records of this association include: committee minutes, 1952-69; and, subject files, 1962-82, including industrial relations at sites at Grangemouth and in the Shetlands.

Scottish Plasterers Union (SPU) (MSS.126)

Microfilmed copies of the union's records prior to 1927 are deposited in the National Library of Scotland, along with the Edinburgh and Montrose branch records of the National Association of Operative Plasterers (NAOP), 1864-1955. The SPU amalgamated with the NAOP in 1969 which, in turn, was absorbed by the Transport and General Workers Union in the following year. The records at Warwick comprise executive council signed minutes, 1955-68, and Glasgow District general, quarterly and committee meetings, signed minutes 1916-26, 1933-42 and 1950-54.

Settmakers Union

The Settmakers and Stoneworkers Journal, 1893-1909, is to be found in the Board of Trade Library.

Union of Construction, Allied Trades and Technicians (UCATT) (MSS.78)

UCATT was formed in 1971 as the end product of a long and complex process of amalgamations between trade unions of bricklayers, cabinet makers, carpenters, painters, slaters and tilers, stone cutters, stone masons, builders' labourers and building technicians. Among its predecessor unions are four purely or largely Scottish organisations, some records of which are preserved in the Modern Records Centre. These are:

United Operative Masons Association of Scotland (UOMAS)

Revived in the 1850s from an earlier organisation, the strength of this union lay mostly in Glasgow and the surrounding area. In 1920 it merged into the Building and Monumental Workers' Association of Scotland. The records consist of Glasgow and suburban lodges: correspondence book, 1900-04 and standing committee minute book, 1899-1903. In addition to these, the Centre also holds annual reports for the union as part of the Board of Trade Library collection, 1894-9. The archive of the National Union of Railwaymen contains a UOMAS rule book for 1915 (MSS.127/NU/5/5/6/108).

United Operative Masons and Granite Workers' Union

Formed in 1888 in Aberdeen this union's strength lay mostly in the

North East. The records consist of general roll of members, 1888-1933. In addition, the Board of Trade Library collection includes the following: annual reports, 1897-1900; balance sheets, 1893-96; and journal, 1902-07 (incomplete).

Building and Monumental Workers' Association of Scotland (B&MWAS)

Formed in 1920 from the Scottish Operative Masons, the Aberdeen Granite Workers and two smaller stoneworkers' societies, the B&MWAS amalgamated with the Amalgamated Union of Building Trade Workers in 1942. The records consist of: Granite Workers' section general ledger, 1936-41; B&MWAS cash books, 1938-42, register of members, 1920s-30s, and journal, 1924-41.

Associated Society of Carpenters and Joiners

In 1856 the United Joiners of Glasgow and the West of Scotland were organised and, in 1861, they took a leading part in forming the Associated Carpenters' and Joiners' Society of Scotland. The influence of this society later spread to Ireland and parts of England and in 1911 the Associated Society was admitted to the Amalgamated Society of Carpenters and Joiners. The records consist of: fortnightly returns/monthly reports, 1872-26,1880-85, 1910-11; annual reports and delegate meetings, 1863-94, 1909-10; rule book, 1880; and Glasgow and district committee minute book, 1876-7.

The Union of Construction, Allied Trades and Technicians (UCATT) archive also contains some records of Glasgow woodworkers trade clubs. These early precursors of trade unionism were often as much friendly societies as they were unions. The records which have been preserved comprise the following: ***Protective Association of Joiners of Glasgow*** rules for tool insurance, membership lists and minutes of winding up meeting, 1847-61, (MSS.78/TC/Gla/7/1); ***United Joiners and House Carpenters of Glasgow*** rule book, 1849; ***(Glasgow) Joiners Sick Benefit Society*** bank pass book, 1859-62; ***United Joiners & House Carpenters of Glasgow*** membership card of William Campbell, nd (MSS.78/ASW/6/Gla/1-3).

The following British unions, now absorbed into UCATT, also have to be mentioned:

Amalgamated Society of Carpenters and Joiners (ASC&J) and Amalgamated Society of Woodworkers (ASW).

The Associated Carpenters and Joiners of Scotland merged with the ASC&J in 1911. The ASC&J was the principal constituent in an amalgamation by which the ASW was created in 1921. The ASC&J and ASW records include the following items: proceedings of a conference concerning the merging of the Clyde (i.e. shipbuilding) and West of Scotland (i.e. construction) District Management Committee, 1933; Oil Refining Industry Building Craftsmen's Local Committee for South East Scotland, duplicated minutes, 1954-63 (incomplete); National Federation of Building Trades Operatives, Scottish Council minutes, 1959-62; decennial re-registration of members, volumes listing whole membership as at 1911 and 1921; correspondence conerning local levies for benevolent, political and organising purposes, 1920-67; correspondence of National Organiser for Government Establishments concerning defence and industrial civil service depots in Scotland, 1959-64; file on unofficial strike at Lithgow's shipyard on the Clyde, 1963; report on the annual conference of the National Federation of Furniture Trade Union's Scottish Region, 1956; proceedings of annual delegate conference of Scottish Slaters etc. Union, 1948.

Amalgamated Union of Building Trade Workers (AUBTW)

The Building and Monumental Workers' Association of Scotland merged with AUBTW in 1942. The minutes of the negotiations preceding the merger, 1941-42, and of earlier unsuccessful amalgamation negotiations, 1921-22 and 1937-38, are the only specifically Scottish items in the AUBTW archive.

Association of Building Technicians

The archive contains Scottish Divisional Council secretary's reports and summaries of business transacted, 1920-22.

National Amalgamated Society of Operative House and Ship Painters and Decorators (NASOHSPD)

In 1963 the Scottish Painters Society (SPS) merged with NASOHSPD and some smaller unions to form the Amalgamated Society of Painters and Decorators. The income received by the new organisation from the Scottish Painters Society is recorded in a ledger. Otherwise the only Scottish item in this union's archive is

an agreement between NASOHSPD and the Scottish National Federation of Painters for mutual recognition of cards, 1894. The Board of Trade Library collection has Scottish Painters Society annual reports, 1905-09 and the archive of the National Union of Railwaymen contains an SPS rule book for 1912 (MSS.127/NU/5/5/6/98).

United Operative Plumbers Association of Scotland (UOPAS) (MSS.134)

The UOPAS membership registers, 1865-1920, are its principal surviving records. The UOPAS existed in competition with a predominantly English union, the United Operative Plumbers Association (UOPA). The efforts of the UOPA to establish itself north of the Border are reflected in its executive committee minutes, 1876-1920, particularly for the years 1877-78, when the union's administrative centre was located in Edinburgh. The two unions merged in 1920.

ENGINEERING, SHIPBUILDING AND METALWORKING

Amalgamated Society of Engineers (ASE) / Amalgamated Engineering Union (AEU) (MSS.259)

The ASE was formed in 1851 and the AEU in 1920, in both instances by a process of amalgamation. As the engineering union is one of Britain's largest and oldest, it is to be regretted that its archive is far from complete. It does, however, contain some items of particular relevance to Scottish labour history. These are: the records of the Greenock Branch of the Steam Engine Makers Society which consist of minute books, 1835-50, and a members registration book, 1851-63; and yearly reports from branches of the ASE, 1851-1920. The latter contain information about branch finance, changes in membership and branch officers.

Associated Blacksmiths, Forge and Smithy Workers' Society (MSS.192)

Founded in Glasgow in 1857 this union was an exclusively Scottish organisation until the 1880s. Although its English and Irish members became numerous its headquarters remained in

Glasgow until it was absorbed into the boilermakers' union in 1961. The records include the following: financial reports, 1857-1909, 1960-61; quarterly reports, 1873-80, 1927-60; monthly and annual reports, 1910-24; registration books, 1957-1919; rule books, 1857-1968; correspondence files concerning piecework earnings 1919-37 and 1957 centenary; file of J Jarvie as General Secretary; rules revision committee; papers, 1924, 1926, 1929, 1955; notebook on blacksmith's history by David Stewart, c.1957; Springburn branch entrance and registration book, 1882-1937.

Engineering Employers Federation (EEF) (MSS.237)

The EEF is one of Britain's largest and most important employers organisations. From the archive it is evident that the Federation has taken care to record its activities and to ensure the retrievability of its records. The records of the Statistical Department include the following: majority wage rates by district, 1862-1965; wage increases and reductions by district, 1898-1946; majority wage rates by occupation, 1938; workforce statistics, 1899-1950; wage data on other industries, including agriculture, mining and textiles, 1914-70; circulars dispatched containing enquiries relating to wages and conditions with summaries of replies received, 1942-50. The EEF also issued wage rates data relating to Federated firms in confidential printed format and the archive contains these for 1897-1925 and 1947-61. The published annual directories of Federated firms, indexed by product, are also extant for 1926-40.

The EEF's financial records include annual subscription ledgers, 1915-50. As subscriptions were based on the annual wages bill of a firm, this can be discovered from the subscription ledgers. The voluminous series of subject files (now on microfilm) contains a great many items of specifically Scottish interest. As the relevant index entries run to forty-seven pages, they cannot be detailed here. One file which has survived in hard copy, presumably because of the format of its contents, consists of drawings, plans and photographs of marine engines and boilers built in Glasgow and Troon in 1932 (MSS.237/3/11/11).

Federation of Engineering and Shipbuilding Trades, later Confederation of Shipbuilding and Engineering Unions (MSS.44)

Although this Federation was formed in 1880 it became a much more powerful body in 1946 when the Amalgamated Engineering Union decided to affiliate to it. The bulk of the records in the Centre relate to the period from 1946 to the late 1960s. The archive contains substantial quantities of material which deal in a general way with the railways and motor and shipbuilding industries and such matters as apprenticeship and working hours. Specifically Scottish material includes files concerning District Committees (Temporary Boxes TB 56, 99 and 134); industrial disputes (TB 18 and 19); companies and trade unions. The companies are Sturrock & Murray of Dundee (TB 23) and British Motor Corporation, Bathgate (TB 62). The unions are: Scottish Brass Turners (TB 146); Scottish Horse and Motormen's Association TB 65); Scottish Painters Society (TB 90); and Scottish Transport and General Workers' Union (TB 65). The only early record of the Federation preserved in the Centre is a letterbook of the Secretary for the years 1891-1903 (MSS.101/P/6/1).

Federation of Sail Makers (MSS.87)

The records of this small trade union include correspondence with branch secretaries in Dundee, Glasgow and Greenock, 1894-1922.

Foundry Trade Unions (MSS.41)

The Associated Iron Moulders of Scotland (AIMS), formed in 1831, amalgamated with its English counterpart in 1920 to form the National Union of Foundry Workers (NUFW). The NUFW was enlarged and renamed in 1946, being known thereafter as the Amalgamated Union of Foundry Workers (AUFW). In 1966 the AUFW was absorbed into the Amalgamated Engineering Union.

AIMS material in the archive consists almost entirely of printed matter (manuscript items having been transferred to the National Library of Scotland). These include: monthly reports, 1875-1920 (incomplete); minutes of meetings with the employers'

association, 1905-08 and 1911-13; and leaflets and other ephemera, 1917-20, including Central Emergency Committee leaflets concerning War Munition Volunteer Scheme and amalgamation (ref. MSS.41/NUFW/3/4/8-25).

Specifically Scottish items in the NUFW/AUFW archive include: reports of the Scottish Divisional Organiser, 1925-41; Scottish Divisional Secretary's correspondence and Divisional minutes and accounts, 1942-44; papers concerning amalgamation with Scottish Brass Moulders Union and Associated Iron, Steel and Brass Dressers of Scotland, 1943.

United Society of Boilermakers and Iron and Steel Shipbuilders (MSS.192)

The bulk of the archive of the boilermakers' union (the largest of the shipyard unions) is elsewhere. Material deposited at Warwick includes a record of the earnings of John Hill of Govan as a steel shipbuilder, 1897-1900, and printed monthly and annual reports, 1900-73 (incomplete series).

FLOOR COVERINGS

Linoleum (& Floorcloth) Manufacturers' Association (MSS.253)

This trade association had a very substantial Scottish membership and the concentration of production in and around Fife is reflected in the archive. The records consist principally of the minutes of general and committee meetings with related documents (e.g. agreements relating to standard contracts) 1907-67.

POST OFFICE

Council of Post Office Unions (COPOU) (MSS.89)

COPOU began its existence, shortly after the First World War, as the Staff Side of the Post Office Departmental Whitley Council. During the period covered by the records the operation of telegraph and telephone services formed part of the Post Office's business. The voluminous files of COPOU include some of a specifically Scottish nature dating from 1951 to 1970. Their

subjects include the division of the Aberdeen postal area and proposals for PO computer centres to be established in Edinburgh and Glasgow. There are other files, e.g. on the regionalisation of the GPO in the 1930s and 1940s and the mechanisation of postal sorting in the 1960s, which deal with Scottish matters as part of a wider subject.

Post Office Engineering Union (POEU) (MSS.135)

The POEU archive contains little of a specifically Scottish nature. It does, however, include the reminiscences of two union veterans. One of these was an ordinary member, E McBride, who served as a delegate to the Glasgow Trades Council. His seven page reminiscences cover the years 1896 to 1934. The second veteran was L S Summers from Edinburgh, one-time Deputy General Secretary of POEU and previously General Secretary of the Amalgamated Society of Telephone Employees (ASTE) (MSS.135/EU/3/4/31-2). The archive also contains a typescript history of ASTE by Summers, dated 1943.

Society of Civil and Public Servants (SCPS) (MSS.232)

The SCPS records include a file on the removal of the Post Office Savings Bank to Glasgow, 1963-5.

PRINTING

Printing and Kindred Trades Federation (PKTF) (MSS.43)

The PKTF was founded in 1890-92 and re-formed in 1901. The Federation was dissolved in 1974 when a large but incomplete archive was deposited in the Centre. Scottish materials in the archive include: Scottish Advisory Committee/Scottish Group minutes, conference proceedings and correspondence, 1947-73; signed minutes of meetings with the Scottish Daily Newspaper Society, 1944-5; and files concerning the Scottish Typographical Association, Scottish Daily Newspaper Society and particular employers from the 1940s onwards.

Scottish Typographical Association

Annual reports, 1888-1907, and delegate meeting reports, 1881

and 1907, are to be found in the Board of Trade Library.

STEEL

Iron and Steel Trades Confederation (ISTC) (MSS.36)
The ISTC was formed by amalgamation in 1917. The archive contains a number of files opened by the British Steel Smelters etc. Association and subsequently added to by the ISTC. The union's minute books and major series of publications have not been deposited in the Centre. Nevertheless, the accumulated files held at Warwick constitute a major source because of their breadth of subject coverage, bulk and long chronological span (from the 1890s to the 1960s). Their subjects include: particular plants and companies; particular branches of the union; wages and conditions for types of employment, e.g. blastfurnacemen, crane drivers, melters, etc.; conciliation boards; and employers' associations. Among the latter are the Scottish Iron Masters Association, Scottish Rivet Bolt and Nut Manufacturers Association, Scottish Steelmakers' Wages Association and Scottish Tubemakers' Wages Association.

W H Stokes, CBE, JP (MSS.289)
Stokes, a Coventry trade unionist, served on the board of the ill-fated Iron and Steel Corporation of Great Britain, the Attlee government's vehicle for the nationalisation of the steel industry. His detailed manuscript daily notes, 1951-3, include items of specifically Scottish interest, e.g. notes on a meeting concerning investment at Colville's on 16 April 1953.

TRANSPORT

Amalgamated Society of Railway Servants (ASRS)/National Union of Railwaymen (NUR) (MSS.127)
Records of particular interest to students of Scottish labour and railway history include: branch balance sheets, 1892-1913, which give names and addresses of branch officers and financial information, including repayments from members - the 1892 volume includes an abstract of the returns from former Scottish

ASRS branches including membership figures; conciliation and arbitration proceedings, 1909-19, which contain a substantial but incomplete set of conciliation board minutes and wages and hours arbitration papers in respect of the Caledonian Railway, Glasgow and South Western Railway, Great North of Scotland Railway, Highland Railway and North British Railway; files relating to the opening of new branches, amalgamation of existing branches and closure of branches, 1948-62; files relating to the closure and proposed closure of railway lines, stations and facilities and withdrawal of services, 1959-71; and a collection of other unions' rule books which include Operative Bakers (1915), Scotch Power-Loom Carpet Trades (1918), Scottish Busmen (1929), Scottish Painters (1912) and United Operative Masons (1915).

Amalgamated Society of Railway Servants for Scotland (ASRSS) (MSS.127)

Founded in 1872 the ASRSS was involved in a major strike in 1890-91 which dramatically weakened it. In 1892 it amalgamated with its English counterpart, the ASRS. The bulk of the ASRSS archive is in the Webb collection at the London School of Economics. The few items in the Modern Records Centre consist of an 1887 rule book (MS.127/NU/5/5/7/li); 2 pieces relating to rules, 1890-91 (MSS.127/ASRSS/4/1/1-2); and a financial report for January to June 1890 (MSS.127/ASRSS/4/2/1).

National Union of Seamen (NUS) (MSS.175)

The records of the NUS include the minutes of the Leith District Maritime Board, 1918-36, and of the following branches of the union: Ardrossan, 1919-64; Greenock, 1918-56 (on microfilm); and Leith, 1945-67.

Road Haulage Association (RHA) (MSS.234)

Over and above its main series of files concerning UK-wide wage negotiations, the RHA records include two files on specifically Scottish matters: the Scottish Commercial Motormen's Union pay claim, 1967-8; and the Scottish Hauliers Consortium, 1970.

Transport and General Workers' Union (TGWU) (MSS.126)
The TGWU is Britain's largest trade union. Several dozen previously independent unions have been absorbed into it. A substantial archive is in the custody of the Modern Records Centre, but it should be noted that a great deal, including the records of the union's Trade Groups, has not been transferred from Transport House. Specifically, Scottish items include: Scottish Horse and Motormen's Association financial reports, 1927 and 1934; Ernest Bevin's file on the proposed construction of a road bridge over the Tay, 1936-37; and a Paisley Branch membership register of the National Union of Vehicle Builders, 1896-1954.

Transport Development Group (MSS.272)
This business was built up by Philip Henman who operated by acquiring existing companies. The following Scottish companies were acquired and have records in the archive: ***A & J Clark***, haulage contractors, Glasgow, directors and annual general meeting minutes, 1933-71; ***Clydebank Haulage Company***, register of members, etc., 1954-72; ***James Fraser Transport Service***, Aberdeen, register of members, etc., 1937-70; *John* ***Jackson (Contractors) Ltd***, Lesmahagow, combined register and minute book, 1963-68; ***Leith Haulage Ltd***, originally Angus Hyslop Ltd, Glasgow, register of members, etc., 1948-70; ***Monkland Transport Ltd***, name changed from Russell of Bathgate Ltd in 1972, minute book, 1957-62, register of members etc., 1959-75; ***Pratts Road Transport Ltd***, Aberdeen, minute book 1936-42, register of members, etc., 1936-70; ***Quay Road Property Company***, Glasgow, minute book, 1970-1, register of members, etc., 1970-72; ***D Robertson & Sons (Haulage Contractors) Ltd***, Inverness, register of members and minutes, 1963-68; ***Union Transit Company***, Glasgow, minute books, 1948-68, register of directors' holdings, 1948-66.

Transport Salaried Staffs Association (TSSA) (MSS.55)
The records of the TSSA include a substantial series of circulars sent out to branches by the union, 1938-80. Circulars dispatched by the TSSA's Scottish office are included.

MISCELLANEOUS

Sir Joseph Hallsworth (MSS.70)

The papers of Sir Joseph Hallsworth, General Secretary of the Union of Shop, Distributive and Allied Workers, include two files on the employment of children and young people in Scotland, 1920s-40s, and one file concerning public health provisions for workplaces, 1915.

Institute of Personnel Management (MSS.97)

The Institute's records include: Scottish Branch, minutes 1921-43; correspondence with Dundee Branch, 1947-64; correspondence with South East Scotland Branch, 1945-65; Scottish Society of Welfare Supervisors minutes, 1918-24; and Scottish Association of Welfare Workers (Women) minutes, 1917-21.

Steven Jeffreys (MSS.244)

A full-time organiser for IS/SWP (International Socialism/Socialist Workers Party), Jeffreys was based in Scotland 1969-79. His papers reflect his activities in respect of various factories and Upper Clyde Shipbuilders. The papers include minutes of Glasgow North Branch, 1969-71.

TRADES COUNCILS

The Board of Trade Library contains the following annual reports: Aberdeen, 1900-06; Ayrshire, 1902-06; Clydebank, 1905-06; Dundee, 1894-1905; Dunfermline, 1894/5; Edinburgh, 1893/4-1906/07 (incomplete); Falkirk, 1892/3 and 1897/8-1906/07 (incomplete); Glasgow, 1899/1900-1906/07 (incomplete) and quarterly reports, 1900-03; Govan, 1904 and 1905; Greenock, 1893-9 and 1901-2 and 'Trade unions in Greenock', 1905; Inverness, 1894-5, 1900-01, 1903-04; Kilmarnock, 1895; Kirkcaldy, 1893; Leith, 1905-06; Montrose, 1892/3-1894/5; Motherwell, 1892, 1904/05-1905/06; Paisley, 1893/4 and 1900; Perth, 1899 and 1904-06; and Wishaw, 1903.

SUMMARY LISTS OF ARCHIVE SURVEYS AND DEPOSITS, 1986-89

1 National Register of Archives (Scotland)

Full details of the surveys are available from the National Register of Archives (Scotland). All enquires and requests for access should be addressed to the Secretary, The National Register of Archives (Scotland), Scottish Record Office, HM General Register House, Edinburgh, EH1 3YY.

AGRICULTURE, ESTATE, FORESTRY AND FISHING

771 **Macpherson-Grant of Ballindalloch.** Papers relating chiefly to Invereshie, Ballindalloch and Craigo estates 1862-1967, including, accounting records 1884-1969, correspondence 1927-63, letterbooks 1927-52, reports by overseers, gamekeepers and foresters 1913-66. Papers concerning Addison Committee on National Parks 1930-31; papers relating to Spey District and Northesk Fishery Boards 1928-68.

1246 **Orkney Library.** Sutherland-Graeme of Graemshall papers. Estate accounting papers 1792-1939, leases 1859-1904, Holm teind roll 1936, report of evidence before Crofters' Commission by Graemshall crofters 1888, sale particulars of Graemshall House 1858, plan of estate of Graemshall surveyed by Grainger & Miller 1828.

1300 **Aberdeen University Library.** Papers of Gordon of Buthlaw and Cairness 1760-1920. Legal and financial correspondence and related papers concerning family trusts and executries and Cairness estate 1849-1920, n.d. Leases of farms and crofts, rentals with related correspondence and papers 1868-1919. Papers relating to property in Edinburgh and Shrewsbury 1899-1908. Miscellaneous plans of esate and buildings 1760-c.1903.

2383 **Broun-Lindsay of Colstoun, Haddington.** Broun-Lindsay and Dalhousie papers 13-20th cents. Titles of lands in East Lothian, including Colstoun and Congalton, West Lothian, Ayrshire, Lanarkshire and Edinburgh 13-19th cents. Legal and estate 1520-1893, including, miscellaneous bonds, assignations and discharges 1599-1793, papers relating to lands of Cleghornie 1655-1704 and Colstoun entail 1779-1893, valuations and leases of Colstoun and other lands 1697-1889, personal and estate accounts, rentals and factory accounts relating to Colstoun and other lands c.1693-1837, including, accounts for building

work at Colstoun 1807-39, accounts and papers relating to roads and bridges in East Lothian 1636-1812, fiars' prices, Haddington 1682-89, papers relating to sale of wood 1724-74 and cattle 1804. Miscellaneous family correspondence and papers 17-20th cents., including personal and business papers of Robert Brown, stationer, Edinburgh 1655-77, letters from Andrew McDowall and Robert Dundas on political, military and agricultural affairs 1783-1884. Plans, including: Colstoun estate 18-19th cents., Colstoun bridge 1771 and house 1876, Cockpen glebe 1822. Photographs of Colstoun house and grounds 19th cent., family groups and scenes in India, including gardens and lighthouse, Madras 1890 and n.d.

2711 **Royal Highland and Agricultural Society of Scotland, Ingliston.** Copy memoranda, proposals and drafts of revised charter of Society 1784-1834, programmes relating to International Agricultural Congress at Paris 1878, letters and papers concerning experiments with potatoes, proposed industrial museum for Scotland, agricultural seed testing, and tuberculin testing c.1850-1902, letters and papers relating to re-adjustment of chemical department of the Society and appointment of chemist 1874, letters and paper concerning inquiry into grouse disease 1906, advertisements for agricultural publications, shows and patented devices c.1840-50, papers concerning Veterinary College for Scotland 1838-1911, presscuttings, letters and circulars about inquiry into railway rates 1888-90.

2792 **Orkney Library.** Sutherland-Graemeshall papers. Titles to lands in Orkney 1624-1786. Legal and estate papers 1638-1899, notes on size and layout of houses leased in Holm 1711-75, accounts, including kelp production, 1762-1836, accounts relating to building at Graemeshall 1786-1899, farm diary 1849-68. Factor's correspondence 1784-1849. Correspondence and miscellaneous papers of Patrick Graeme, Sheriff of Orkney 1774-86, including letters on fishing 1783-84, smuggling 1784-86 and linen 1786. (Replaces Survey No. 1246)

2835 **Strathclyde Regional Archives.** Lennox of Woodhead papers. Atlases, maps and estate plans 18-20th cents., including, mineral working at Craigends 1764, Woodhead and elsewhere 1845-1912, North British Railway Co line and station at Lennoxtown 1917, n.d., estates in parishes of Campsie and Kirkintilloch and in Stirlingshire 1805-1960, architectural, including proposed additions to Woodhead House by John Paterson early 19th cent., additions to Ballenderoch

House 1931-37, steading and farm buildings 1835-1960.

2847 **Burnett of Leys.** Tacks of various farms on Crathes estate 1652-1852, plans of farms 1775-1908, report and valuation of machinery at Mill of Crathes 1815; papers concerning Dee fishings 1799-1917; memorandum by William Douglas, advocate, about proposed new cleansing system for Edinburgh c.1700; letters from Great North of Scotland Railway Co concerning timetabling of trains through Crathes Station 1896-97.

2954 **Lumsden of Innergelly.** Titles of various lands at St Andrews 1474-1753, tacks, bonds and discharges relating to various members of the Lumsden family 1661-1813; account book of Rev David Wilson as to estate of Innergellie 1810-12; sketch plan of part of farm of Blaneme 1815.

3032 **Scottish Council of Missions to Seamen.** Minutes: Scottish Council 1947-88, Glasgow and Clyde station and local committees 1942-77; accounting and miscellaneous records 1940-88.

3034 **Glasgow University Archives.** Papers relating to the estate of Murdeston, Clackmannan 1475-1771, including, titles 1475-1709, vouchers and financial correspondence 1718-1834, correspondence concerning rentals 1749-71, reports relating to division of runrig lands of Bapendean 1768, list of Murdeston papers purchased by W Hamilton in 1889, n.d.

3062 **Strathclyde Regional Archives.** Legal and financial papers relating to Darwhilling estate, Ayrshire 1512-1889, including, titles 1512-94, state of multures of Raith miln 1814, measurement of Blackwood Farm 1817, agreement concerning opening of quarry at South Grassyards 1830. Papers relating to Dykehead estate, Lanarkshire 1770-1910, including, household accounts of John Craig of Dykehead 1777-1807; journals of mineral bores at Auchenheath and Lanrigg 1846-59.

3105 **Shetland Archives.** Tom Henderson collection. Papers and photographs relating to whales driven ashore at Hoswick, Sandwick 1888; log of smack *Naiad* at North Ferve fishery 1869-71; minutes: Shetland Islands Steam Trading Co 1904-07, Zetland North Sea Fishery Co 1863-71.

AUCTIONEERS

3047 **Robert Paterson & Son, auctioneers and valuators, Paisley.** Sale books 1923-33, letterbooks 1901-36, valuation and inventory books

1887-1957.

CHEMICALS

2817 **Glasgow University Archives**. J H Calder MacLeod collection. Minutes, reports, accounts, correspondence and legal business papers relating to Egyptian Phosphate Co Ltd 1910-67, Scottish Stamping and Engineering Co Ltd 1921-36, Grangemouth Iron Co 1898-1938, Federated Foundries Ltd 1934-36, J & J Kent Ltd, agricultural merchants, Glasgow 1943-64, Scottish Rural Gas Ltd, Perth 1941-59, W S Ferguson, agricultural chemical manufacturer, Perth and Glasgow 1932-74, and Jamaica Sugar Estate Ltd 1924-68.

2894 **Strathclyde Regional Archives**. Papers of E C C Stanford, chemist, Clydebank. Correspondence concerning the manufacture of alginate 1884-1951, advertisement for potassic manures manufactured by British Seaweed Co, Glasgow 1863, plans and notes relating to chemical plant at Tiree 1862, printed biographical sketch of E C C Stanford 1900.

2996 **Strathclyde Regional Archives**. British Dyewood Co Ltd. Order books 1939-73, shipping orders counterfoils 1978.

3102 **Nobel's Explosives Co Ltd, Ardeer, Ayrshire**. Notebook concerning gunpowder manufacture 1811, letters from Alfred Nobel to Colonel Majendie, HM Inspector of Explosives, 1883, agreements and production licences 1886-1900, ledger 1892-97, correspondence 1902-59, laboratory reports c.1905-date, accident reports 1907-20, photographs, negatives and lantern slides of plant c.1872-1965, publications concerning explosives 1879-1976, labels and leaflets 1899-1943. D Huddlestone & Co, Kendal: letterbook/cash book 1799-1829. Hall Co: accounting records 1841-99, general arrangement drawing of paddle-tug *George Brown* 1887. British Dynamite Trust Co Ltd: letterbooks 1874-76, accounting records 1875-76. Nobel Dynamite Trust Co Ltd: balance sheets 1886-96. Irvine Harbour Trust: cash books 1920-67. Papers concerning the history of Nobels 1798-1982.

CONSTRUCTION

2852 **Glasgow University Archives**. Papers relating to Professor Sir William Macewan, surgeon 1836-1971, including, papers concerning Allen & Mann, builders and brickmakers, Glasgow 1851-83.

2885 **Strathclyde Regional Archives.** Thomas Stewart Ltd, joiners and building contractors, Glasgow and Edinburgh. Accounting records 1932-77.

2890 **Strathclyde Regional Archives.** Willis Laing & Co, factors, Glasgow. Accounting records 1853-69, plans of proposed tenements in Apsley Street, Partick 1906, *The Property Magazine* 1927-28.

2919 **Strathclyde Regional Archives.** Accounts, agreements, valuations, measurements and reports relating to Possil Estate and Springburn Coal Co and Springburn Brickworks 1856-1930.

3050 **Hall & Tawse Scotland Ltd, building contractors, Aberdeen.** Alexander Hall & Son (Concrete) Ltd and subsidiary companies: minutes 1956-88, register of members 1954-86, annual reports and accounts 1959-65. William Tawse Ltd (Aberdeen): reports and accounts 1945-80. A E Stewart (Engineering) Ltd: minutes 1951-69, register of members 1950-63. Bon Accord Slate Merchant Co Ltd: minutes 1870-81, 1968-86, register of members 1870-1979, accounting records 1967-79. Potterton Sand Co Ltd: minutes 1963-77, register of members 1963-74. George W Bruce (Caithness) Ltd: minutes 1955-68, register of members 1955-67, accounting records 1956-65. John E Young & Co Ltd: minutes 1935-64, register of members 1964-71, correspondence, reports, accounting records 1964-70. Aberdeen Construction Group Ltd: minutes 1967-79, accounting records 1968-77. Queensgate Electrical Co Ltd: registers of shareholders 1956-72. Frew Stewart Ltd: registers of shareholders 1929-72. Rubislaw Granite Co Ltd: minutes 1966-68, accounting records 1965. Carpave Ltd: correspondence and accounting records 1958-75. Aberdeen Granite Quarries Ltd: minutes 1939-70, register of members 1939-59. Dalbeattie Precast Concrete Co Ltd: minutes 1969-74, register of members, 1969-74. George Duncan & Co (Inverness) Ltd: minutes 1959-88, register of members 1959-70, reports and accounts 1955-80. Reema (Scotland) Ltd: minutes 1963-79, accounting records 1963-80. Aberdeen Concrete Co: minutes 1946-67. R & J Reid Ltd: reports and accounts 1919-66. Heatmore House Ltd: minutes 1960-72, reports and accounts 1966, 1969-70. Coutts & Fraser Ltd: register of members 1959-72, accounting records 1966. W J Anderson Ltd: accounting records 1969, share certificate book 1959-67.

3111 **Glasgow University Archives**. Sir Robert McAlpine & Sons Ltd. Accounting records 1898-1971, staff records 1926-52, plant records 1916-49, contracts 1882-1946, agreements 1902-46, photographs, histories, brochures, research notes and other papers. Records of Sir Robert McAlpine & Sons (London) Ltd 1926-45, McAlpine Properties (Scotland) Ltd 1929-66. Papers of other subsidiary companies 1907-54, including New Zealand Crown Mines Co Ltd, Dorchester Hotel Ltd, Victoria Agency, BHB Patents Ltd, Leybourne Estate Co Ltd, Cambrian Quarrying Co Ltd.

ELECTRICAL

2777 **Holland House Electrical Co Ltd, Glasgow**. Minutes 1906-date, accounting records 1927-date.

ENGINEERING

2778 **Dundee University Archives**. Papers of Thomas C Keay Ltd, engineers and mill furnishers, Dundee, and associated companies. Thomas C Keay Ltd: minutes 1968-72, accounting records 1916-72, UK and overseas sales reports 1969-72, photographs of machinery, plant and staff 1920-68. Lawside Engineering & Foundry Co Ltd: accounting records 1947-71, machinery specifications 1953-71. Keay Turner Ltd: minutes 1969-72, sales reports 1972, technical inspection reports 1969-72. Knowles & Co: order book 1957-67, technical reports 1952-59, specifications and machinery prices 1966. Convertpak Machines Ltd: sales reports 1970-72, machinery brochures 1970. (Replaces Survey No. 1438)

2783 **Aberdeen University Library**. Aberdeen Trawlowners & Traders Engineering Co Ltd. Minutes 1900-71, accounting records 1901-68, printed instructions for operating 'Royce' driven cranes 1905.

2812 **Glasgow University Archives**. William Beardmore & Co. Memoranda, accounts and valuation relating to Parkhead Works 1871-86.

2840 **M MacDonald & Son Ltd, engineers and installers, Renfrew**. Minutes 1839-1973, accounting records 1922-70, engineering drawings index 1975-date. Glasgow and Londonderry Steam Packet Co: minutes 1879-85.

2873 **Cumnock and Doon Valley District Library**. Eglinton Iron Co accounting records 1859-86.

2874 **John Macdonald & Co (Pneumatic Tools) Ltd, East Kilbride.** Minutes 1926-86, accounting records and register of members 1926-77, correspondence 1909-74, plans of premises 1944-55.

2908 **Strathclyde Regional Archives.** Engineering drawings of locomotive boilers supplied to Glasgow Corporation Gas Works 1949-51.

2913 **Strathclyde Regional Archives.** Minutes, reports, accounts and miscellaneous records relating to Martin-Black plc, wire rope manufacturers, Coatbridge, and subsidiary wire rope manufacturing companies 1887-1982.

3033 **David Auld Valves Ltd, Glasgow.** Minutes 1911-76, register of members 1911-76, correspondence concerning sale of reducing valves in Australia 1956-68, sketches, calculations and tables of production output 1879-c.1917, patent specifications 1856-1940, photographs of valves and steam charts n.d.

3086 **Glasgow University Archives.** Papers of David Macleish Smith, FRS, mechanical engineer 1932-78, including turbine calculations for Metropolitan-Vickers 1938-52, papers relating to symposium on dynamics of rotors held in Lyngly, Denmark 1974.

3119 **Smith Mirrlees Ltd, Glasgow**, and associate companies, sugar machinery manufacturers. Smith & Co Ltd: minute books 1909-47, order books 1845-1965, photographs 1907-24, drawing registers 1859-1959, costing books 1906-1934, miscellaneous 1897-1955. Mirrlees Watson & Co: letterbooks 1923-24, job books 1899-1966, job schedule books 1922-66, order books 1860-1966, drawing index books 1841-1966. Potts, Cassels & Williamson: order books 1933-71, spares and parts drawing books 1933-63, drawings index 1893-1966. W & W McOnie: order books 1861-1930, catalogues 1851-1930, dimension and repair books 1851-1910, factory books 1928-38, letterbooks 1889-1911. John McNeil/Aitken McNeil & Co: order books 1883-1958, costing books 1905-52, drawing registers 1881-1959. Blairs Ltd: cost books 1931-46, schedules 1946-65. Glen & Ross Ltd: hammer costing books 1856-1935. *International Sugar Journal* 1922-61.

FINANCE

2235 **Institute of Chartered Accountants of Scotland.** Miscellaneous legal and financial papers 1635-1966, including, business and personal account books, including tailor's accounts 1635-49, minutes and accounts of dining club of Paul & Mackersy, accountants, 1826-56,

survey of lands in Somerset 1812, accounts of collections in Edinburgh churches 1767, photographs of librarian and accountant late 19th cent.

3089 **Glasgow University Archives.** Scottish Banking collection. Photocopies of original records and notes and articles compiled and collected by S G Checkland, including: extracts from minutes of Bank of Scotland, Royal Bank of Scotland, Clydesdale Bank and related banks 1696-1920; reports and accounts of Birmingham & Dudley District Banking Co, Lombard North Central Ltd, Martins Bank, British Overseas Bank Ltd and other non-Scottish banks 1875-1973; transcript of correspondence of J Gladstone and W Huskisson regarding Gloucester Banking Venture 1825; working papers and notes used by Professor Checkland in his book *Scottish Banking: A History 1695-1973*, 1970s.

3091 **Dundee City District Archives and Record Centre.** Dundee Joint Stock Co. Minutes 1824-1977, accounting records 1829-1979, shares register c.1869-1977, correspondence 1936-64, contract of copartnery 1827.

FOOD AND DRINK

2786 **John Walker & Sons Ltd, scotch whisky blenders and distillers, Kilmarnock.** John Walker & Sons Ltd: minutes 1886-1982, accounting records 1886-1983, letterbooks 1881-1958, blending records 1919-83, inventories of plant and machinery 1920-75, photographs of Kilmarnock plant 1890-1950. The Distillers Co Ltd: minutes 1925-35. Slater Roger & Co Ltd: accounting records 1922-50. George Cowie & Son Ltd: minutes 1923-86, accounting records 1933-78, registers of members 1965-86. Cardow Distillery: accounting records 1894-1911. W W & Sons Ltd: cash book 1903-06.

2789 **Scottish and Newcastle Breweries Ltd.** Records of constituent companies. T & J Bernard Ltd: minutes and accounting records 1890-1963. Alexander Berwick & Co: brewhouse book 1849-52. Collin Croft Brewery Co Ltd: accounts 1934-58. Robert Deuchar Ltd: minutes 1897-1965. William Lindsay & Son Ltd: minutes and accounting records 1923-77. William McEwan & Co Ltd: minutes 1889-1951, accounting records 1856-1966, correspondence with the Brewers Food Co Ltd 1905-73. McEwan Younger Ltd: minutes 1931-58, accounting and production records 1930-38. J & J Morison Ltd: minutes and correspondence 1888-1960, accounting records 1869-

1960, production records 1913-60. Scottish Brewers Ltd: accounting records 1931-67, correspondence 1924-68, production records 1944-60, public house records 1931-59, plans and reports on buildings and plant 1935-56. Scottish & Newcastle Breweries Ltd: accounts 1961-82. Robert Younger Ltd: minutes 1937-60, accounting records 1897-1961, including loans to public houses 1902-61, production records 1945-61, accident registers 1937-61. William Younger & Co Ltd: minutes 1849-1953, accounting records 1805-1976, including loans to public houses 1880-1957, correspondence 1884-1969, legal papers 1809-1936, diaries of visits to England 1843 and to a Copenhagen brewery 1881, production records, including brewing book c.1830-1960, reports and valuations of buildings and plant 1890-1948. (Replaces Survey No. 274)

2791 **Mrs J Ferguson, Dundee.** Letterbook of T E Elder, wine merchant in Edinburgh 1767-84.

2793 **Orkney Library.** Highland Park Distillery, Kirkwall. Accounting, production and stock records 1876-1983, rental 1901-35, letterbooks 1931-48, plan of distillery 1891. (Replaces Survey No. 1013)

2804 **Glasgow University Archives.** Scottish Temperance League. Minutes 1846-1935, press-cuttings 1893-1935, photographs of members of temperance movement n.d, temperance and American prohibition publications 1860-1922, chart showing alcohol consumption in Norway from 1851-1905, c.1905. International Order of Good Templars: register of lodges in Scotland c.1869-1900.

2843 **Ingram Bros (Glasgow) Ltd, bakers, Glasgow.** Minutes 1924-67, accounting records 1939-49.

2844 **Armadale Public House Society Ltd, Armadale.** Minutes 1924-83, accounting records 1901-79.

2877 **Mr M Stein, Edinburgh.** Drawing of Robert Stein's patent still 1830, plan and printed description of Andrew Stein's machine for charging the duty upon corn spirits 1848, press-cutting concerning Andrew Stein's rotary steam engine c.1840.

2891 **Strathclyde Regional Archives.** William Thomson (Glasgow) Ltd, grain merchants, Glasgow. Accounting records 1911-78, annual reports 1911-38.

2896 **Strathclyde Regional Archives.** Ferguson & Forrester, caterers, Glasgow. Accounting records 1853-88, inventories of dishes, silverware, cutlery 1861.

2898 **Strathclyde Regional Archives.** Scottish Band of Hope Union. Annual reports 1908-84, minutes 1900-71, accounting records 1914-77, record of lectures given in Scottish schools 1953-59, *The Temperance Penny Magazine* 1936-39, *The Rechabite Magazine* 1843-46. Glasgow and District Licensed Trade Defence Association: annual reports 1929-39.

3064 **Glasgow University Archives.** Correspondence, notes, press cuttings and other papers relating to Ross Wilson, author of books on Scotch whisky and other alcoholic drinks 1886-1987, including, notes and correspondence on stills 1962-68, press releases from the Scotch Whisky Association 1963-87, notes on Auchroisk Distillery, Banffshire 1974.

3100 **James Keiller & Son, Dundee.** Miscellaneous documents 1829-1981, including contracts of co-partnery and agreements 1868-1922, minute books 1910-59, shareholders' registers and returns 1893-1939, visitors' book 1897-1968, recipes 1894-1941, photographs, newscuttings and other papers 20th cent. (Partly replaces Survey No. 1743).

3104 **Glasgow University Archives.** Robertson & Baxter Ltd, blenders and Scotch whisky merchants, Glasgow. Accounting records 1923-82, letterbooks 1937-49.

3117 **W A Baxter & Son Ltd, Northern Preserve Works, Fochabers.** Min utes and reports 1945-84, accounting and other financial records 1957-78, sales and statistics records 1941-82, products and price lists 1951-88, presscuttings 1951-83 and photographs 1938-71, papers concerning product promotion and advertising, including product labels 1961-79, registers of members 1945-88, business and personal correspondence 1950-77, business and overseas development files 1950-77, papers concerning the life of W A Baxter, including volume on his 90th birthday 1967. Baxter's Scotch Whisky: records 1966-73.

3215 **Glasgow University Archives.** Creamola Food Products Ltd. Posters, house magazines, catalogues, photographs and advertising ephemera c.1920-66.

3152 **Glasgow University Archives.** Grosvenor Caterers (Glasgow) Ltd. Letter files 1929-38, 1957-69, functions bookings 1962.

3153 **William Teacher & Sons Ltd, whisky distillers, Glasgow.** Minutes 1897-1968, accounting records 1885-1980, letterbooks and correspondence 1906-76, shareholding records 1897-1983, order

books 1935-73, sample room books and other technical records 1893-1982, newspaper cuttings 1898-1980, label books 1931-79, architectural plans and photographs 1897-1982. Glendronach Distillery Co Ltd: accounting records 1920-57.

IRON and STEEL

3040 **Motherwell District Library.** The Etna Iron & Steel Co Ltd: order books 1938-62, accounting records 1952-75. Alexander Findlay & Co Ltd: accounting records 1888-1977, job and contract books 1894-1974, letterbooks 1909-12.

3148 **Anderson Foundry Co, Glasgow.** Minutes 1884-1951, accounting records 1854-1961, reports and returns 1901-59, correspondence 1885-1961.

MINING

2052 **Leadhills Miners' Library.** Personal correspondence of William Gibson, smelter at the Scots Mines Co, Leadhills, to his son Robert Gibson 1834-45; letters from John Hope, WS, Edinburgh, to Robert Ainslie, WS, Edinburgh, concerning litigation involving Earl of Hopetoun and Scots Mines Co 1857-58.

2774 **Prestongrange Historical Site.** Miscellaneous papers relating to mining in Mid and East Lothian 1837-1958. Includes copies of reports by Robert Bald, David Landale and others on coalfields and collieries 1837-99; reports by Andrew Burt on Fleet, Howden, Northfield, Glenesk and Melville collieries 1905-09 and correspondence relating to Melville minerals 1906-08; Niddrie and Benhar Coal Co records, including, wages sheets 1888-1942, accounts of coal and farm sales 1919-21 and workmen's compensation records, Benhar 1943-48; leases of Elphinstone Colliery and minerals 1889-99; notebook of weekly costs, output and pay, Prestongrange 1927-28; journal of bores at Gilmerton coalfield n.d.; lists of coalworking in Mid and East Lothian n.d.; engine drawings 1898-1920, n.d; papers relating to mining machinery 1873-1958, including notes by D Landale relating to roof supports 1873; working drawings, calculations, etc. relating to beam engine c.1903-05. Photographs of mines and mining equipment c.1900-54, including Morrison's Haven c.1900, Newbattle Colliery 1924 and beam and winding engines in various pits, n.d; specifications for miners' cottages 1907. (Partly replaces Survey No. 1946)

2901 **Strathclyde Regional Archives.** Records of John T Robertson & Co, solicitors, Hamilton 1800-1958, including accounting records and photographs concerning Lanarkshire District Miners Welfare Committee c.1900-58.

OIL

3085 **Glasgow University Archives.** Burmah Shareholders Action Group. Correspondence 1975-83, accounting records 1975-85, presscuttings 1975-80, minutes 1975-80.

PRINTING AND PUBLISHING

1751 **Glasgow University Archives.** Blackie & Son Ltd, publishers, Glasgow. Correspondence, photographs and legal papers 1804-1959, including diaries of trips to Canada and USA by Dr W G Blackie 1871 and also to Belgium, Germany and Switzerland 1843, presscuttings 1827-1906, articles and correspondence relating to Vere Foster's emigration schemes 1815-88, papers concerning The Glasgow Free Church Building Society 1839-43, photographs of offices and works 1897.

2845 **F Johnston & Co Ltd, printers and publishers, Edinburgh.** Minutes 1913-32, correspondence 1872-1932.

3040 **Glasgow University Archives.** William Collins Sons & Co Ltd, publishers, Glasgow and associated companies. Minutes 1865-1963, accounting records 1897-1984, lists of shareholders and directors 1943-69, correspondence and agreements with authors and related editorial papers 1951-86, authors include Arthur Bryant, David Butler, Malcolm Muggeridge, Lord Home and John Betjeman, photographs of staff and factory 1948-69.

QUARRYING

3036 **A & J Robertson (Granite) Ltd, Aberdeen.** Aberdeen Granite Association: minutes 1965-84, roll of members 1893-1950, register of adherents 1893-1951, register of apprentices 1938-83, bad debts book 1939-64, newspaper cuttings concerning strike at Aberdeen 1913-14, roll of members 1910-12, rules and regulations of association 1912. North of Scotland Quarryowners' Association: minutes 1918-50. Garden & Co (Aberdeen) Ltd: photograph album of works, late 19th cent.

RETAILING

2915 **Strathclyde Regional Archives.** Photographs of Scottish Co-operative Wholesale Society's buildings, staff and plant in Glasgow 1917-70.

SHIPBUILDING

2504 **Glasgow University Archives.** William Simons & Co, shipbuilders, Renfrew. General arrangement drawings of ships 1827-1950, chart of navigable access at Port Glasgow 1954.

2813 **Glasgow University Archives.** Robert Napier & Sons. Correspondence of Robert and James Napier and others with related reports concerning operation and sale of Lancefield Dock 1857-98, copy of plan by William Kyle 1821.

2818 **Glasgow University Archives.** Sir James Lithgow, shipbuilder. Correspondence and related papers 1914-51. Includes papers relating to merchant shipbuilding and output of W Hamilton & Co 1909-19, letters describing military service and shipping affairs 1914-17, correspondence with Winston Churchill concerning Finance Bill 1929, papers relating to Imperial Defence Committee 1934-38, papers concerning controllership of merchant shipping, wartime ship production, repair and salvage, including correspondence with Sir Amos Ayre 1939-46, correspondence with Sir Dennis Burney concerning naval inventions, including degaussing 1939-41, papers concerning refrigeration plant and freezing of fish 1941-48, Lithgows Ltd 1946-51 and British Employers' Federation 1940-48; personal, legal and financial papers 1891-1952; published speeches and articles by and concerning Lithgow 1921-54; family and personal photographs c.1910-18.

2916 **Strathclyde Regional Archives.** Alfred Mylne & Co, marine architects, Glasgow. Plans of yachts 1897-1937.

3505 **Glasgow University Archives.** Papers relating to Robert Napier, engineer (1791-1876) and various members of his family 1766-1955. Correspondence and war papers of Colonel Sir Andrew Ogilvie 1880-1921; printed papers concerning capture of the *Requin* (1814) 1822-23; accounts and correspondence to Sir Andrew Ogilvie relating to the Post Office and its telephone services 1898-1922; papers relating to the commercial treaty with France 1860-61; letters to James Ogilvie from the Shah of Persia c.1824. Personal, legal, financial and scientific

correspondence and papers relating to shipbuilding 1806-1972, including, brief history of Henry Bell's steamship *Comet* 1833, plan of I K Brunel's steamship *Great Eastern* 1857, correspondence on technical matters with Professor W J Macquorn Rankine, William Froude, James Prescott Joule, John Scott Russell, William Scoresby and Sir William Thomson 1853-76, description and price list of Napier's Glass Coffee apparatus 1856, trial books and specifications of ships 1843-79, newspaper cuttings relating to Clyde shipbuilding 1867-1900, diaries of trips to North America and South Africa 1884-1925, copy letterbook for Scottish Medical Plants Scheme 1942-46. Legal and personal papers of Patrick Mitchell and Andrew, James and Robert Muter 1766-1887, including published letters to Bennet Woodcroft regarding Patrick Miller's invention of steam navigation 1862. Photographs, drawings and miscellaneous publications relating to the Napiers and their various activities and shipbuilding and other interests 1770-1969.

3049 **Glasgow University Archives.** Papers collected by P Gifford relating to the Glasgow shipbuilding firms of Tod & MacGregor and David & William Henderson & Co Ltd 1834-1946. Includes list of steamers built 1834-91, plan of lands of South Partick 1880. Miscellaneous photographs and notes collected by P Gifford concerning the Firth of Clyde Drydock Co Ltd, Greenock 1964-67.

3081 **Glasgow University Archives.** Harland & Wolff Ltd, Belfast. Photocopies of accounting records 1864-1969, annual reports 1976-80, transcripts from minute books 1939-85.

3087 **Glasgow University Archives.** Working papers and reports by David Flint on Upper Clyde Shipbuilders Ltd 1968-78.

SHIPPING

2550 **Glasgow University Archives.** Clyde Shipping Co Ltd. Correspondence, newspaper cuttings, notes and other miscellaneous papers 1819-1950.

2788 **Miss C L Maclean of Ardgour.** Papers relating to the Cunard Steam Ship Co 1839-c.1906. Includes minutes of meetings of the Glasgow proprietary in the British and North American Royal Mail Steam Packet Co 1839-49, contract of co-partnership between James, John and George Burns, merchants in Glasgow, Charles MacIver, merchant in Liverpool, and Samuel Cunard, merchant in Halifax, Nova Scotia 1853,

printed history of the Cunard Company 1893. (Microfilm in SRO.)

2886 **Strathclyde Regional Archives.** The Clyde Sailing Ship Owners' Association minutes, reports, and balance sheets 1883-1925. The Clyde Steamship Owners' Association minutes 1884-1935. Glasgow and Clyde Ship Owners' Association minutes 1935-76. Clyde District Maritime Board minutes 1918-49.

2909 **Strathclyde Regional Archives.** John Hardie & Co, shipowners and ship managers, Glasgow. Ship log books 1849-74, charts 1849-1920, plans of vessels 1891-1909, photographs of vessels n.d. The Clutha Shipping Co: minutes 1876-90.

2912 **Strathclyde Regional Archives.** Hugh Hogarth & Co, shipowners, Ardrossan and Glasgow. Letterbooks 1845-1932, ship movement books 1923-71, share registers 1898-1930, sale contract books 1950-68.

3057 **Glasgow University Archives.** Anchor Line Ltd. Ship photographs 1862-1980, newspaper cuttings 1876-1967, employee records 1897-1979, minutes 1900-68, accounting records 1938-77, advertising and publicity material 1856-1977, vessel records 1854-1973. Walter Runciman & Co Ltd: minutes 1915-47, accounting records 1886-70, letterbooks 1886-93, newspaper cuttings 1894-1907, general arrangement plans of ships 1800-1914, staff magazine 1967-79, papers concerning Indian shipping conference 1955-72. Moor Line Ltd and associated companies: minutes 1889-1938, accounting records 1886-1964, photographs of ships, c.1910-61. Currie Line Ltd and Leith Hull & Hamburg Steam Packet Co Ltd: minutes 1841-1972, accounting records 1851-1970, correspondence concerning war risks and loss of ships 1936-46, staff service records 1866-1970, files concerning history of Currie Line and other companies c.1790-1964, photographs of ships 1862-1974, log books and crew agreements 1861-1913. The Forth and Clyde Shipping Co: minutes 1790-97. The Edinburgh and Dundee Steam Packet Co: minutes 1840-47. (Replaces Survey No. 2387).

3073 **Glasgow University Archives.**. Dan MacDonald collection. Photographs of various ships, including vessels built between 1560 and 1921, n.d; book on Clyde yacht racing with photographs by Maclure Macdonald & Co 1897.

3084 **Glasgow University Archives.** Graham Langmuir collection. Photograph of various paddle steamers built in the west of Scotland between 1816 and c.1900, n.d.

TEXTILES

1623 **John Lean & Sons, muslin manufacturers, Glasgow**. Accounting records 1853-1958, telegram code books 1879-83.

2814 **Glasgow University Archives**. New Lanark Mills. Microfilm of journal relating to New Lanark 1814-16.

2902 **Strathclyde Regional Archives**. C J Mason & Company, clothing manufacturers, Glasgow. Accounting records 1877-1959, newspaper cuttings books 1905-35, correspondence 1906-62; diary of visit to USA 1886, diary of activities of Glasgow VAD no.18 1928-33, photographs of civic functions 1926-29.

3035 **Glasgow University Archives**. Papers relating to Robert Napier, engineer (1791-1876) and various members of his family 1766-1955. Legal and personal papers of Patrick Mitchell and Andrew, James and Robert Muter 1766-1887; accounting and other records of cotton mill at Milton c.1780-1882. Lists of samples of textile fabrics (deposited with Glasgow Museums and Art Galleries) c.1800-59.

3948 **Glasgow University Archives**. William Peacock Ltd, ropemakers and cord manufacturers, Paisley. Accounting records 1894-1955, inventories of stock and buildings 1898-1915, report on inspection of work and workers 1938.

3059 **T & R Graham Ltd, cellulose film converters, Paisley**. Sample books of cotton reel labels supplied to J & P Coats and other firms 1889-1959.

3088 **Coats Patons plc, thread manufacturers, Kinning Park, Glasgow**. J & P Coats Ltd: minutes 1884-1979, letterbooks 1881-1911, correspondence 1848-1973, accounting records 1890-1972, patents and trade marks 1891-1981. The Central Agency Ltd: minutes 1889-1962, correspondence 1908-38, accounting records 1871-1959. Textile Pension Trust Ltd: minutes 1932-58, letterbook 1932-33, accounting records 1932-73. United Thread Mills Ltd: minutes 1931-62, annual returns 1938-48. George A Clark & Brothers/Clark Thread Co: minutes 1897-1940. Clark & Co Ltd: minutes 1937-63, accounting records 1880-1928. James Clark: letterbooks 1821-89, accounting records 1813-39. I P Clarke & Co Ltd: minutes 1907-62, accounting records 1907-48. The International Thread Co Ltd: minutes 1926-63. La Plata Reel Cotton Co Ltd: minutes 1900-62, accounting records 1900-64. Sewing Cotton Agency: minutes 1889. Fereneze Filling Factory Ltd: sederunt book 1940-47. Laigh Park

Electric Motors Ltd: minutes 1932-36. Plasco Ltd: minutes 1939-62, register of directors 1939-64. The British Trust Co Ltd: minutes 1890-1962, registers of directors and shareholders 1896-1964. Machine Cottons Ltd: minutes 1930-62, accounting records 1848-1960. Meltham Trust Co Ltd: minutes and accounting records 1896-1951. Jonas Brook & Bros Ltd: minutes 1896-1964. Associated Thread Sales Ltd: minutes 1934-63. Kerr & Co Ltd: minutes 1888-1962. Viscolax Ltd: minutes 1939-63. William Briggs & Co Ltd: minutes 1895-1959, accounting records 1895-1939. Needlewoman Ltd: minutes 1928-63. Walter Evans & Co Ltd: minutes 1905-62, accounting records 1905-58, inventory and valuation of Boa's Head Cotton Manufactory 1888. Joseph Warner & Sons Ltd: minutes 1909-63. James Chadwick & Brothers Ltd: minutes 1891-1963, accounting records 1898-1945, inventory and valuation of Bagley Mills 1891. The Hosier Needle Research & Development Co Ltd: minutes 1948-78. Main Electronics Ltd: register of members 1948-62. The National Arts Bureau Ltd: minutes 1947-68. Montgomery & Nicol Ltd: accounting records 1940-69. Miscellaneous notes and papers relating to history of Coats Patons plc 1837-c.1963, including, details of sporting trip by Major Andrew Coats to Barents Sea 1898, notes on experiment by Dr S Z de Ferranti into high speed cotton doubling and spinning c.1903-30, account of journey from Poland to Lithuania 1939.

3092 **Dundee City District Archive and Record Centre.** William Lawson & Sons, Tay Rope Works, Dundee. Letterbook 1875-77, lists of tenders and contracts 1877-1914, address book of customers c.1880-c.1900, photograph of horse-drawn cart loaded with ropes c.1910.

3116 **Pringle of Scotland Ltd, knitted garment manufacturers, Hawick.** Accounting records 1920-74, salary and personnel records 1942-73, photographs 1912-70. Robert Pringle Ltd: minutes 1922-71, ledgers 1918-85. Braemar Knitwear Ltd: miscellaneous business records 1946-74. Innes Henderson & Co: papers 1896-1952.

3151 **J & P Coats Ltd, thread manufacturers, Paisley.** Accounting records 1808-1971, employees' records 1833-1962, photographs 1878-c.1950, n.d, technical records 1898-1978, minutes 1890-1980. J & J Clark & Co: minutes 1896-1937, financial records 1896-1913, letterbooks 1880-1931, newspaper cuttings 1812-1980, publications 1861-1980, plans and machinery drawings 1891-1935.

TIMBER

2897 **Strathclyde Regional Archives**. James Brownlee & Co Ltd, timber merchants, Glasgow. Accounting records 1860-1948, specifications for railway sleepers 1880-87, tenders received for sawmills at Grangemouth 1885.

3045 **Garland & Roger Ltd, timber merchants and sawmillers, Dumfries**. Minutes 1924-81, register of members 1933-81, accounting records 1914-86, letterbooks 1930-39, papers concerning loading of wood on to ships at Palnackie 1970-71.

TRANSPORT

2865 **Glasgow University Archives**. Photographs, drawings, calculations and booklets concerning the Fraser railplane system of transport 1922-34.

3106 **Dundee City District Archive and Record Centre**. Papers relating to Montrose Bridge Commissioners 1795-1929. Includes register of borrowings 1795-1872, correspondence and reports relating to damage to bridge by the ship *Eliza of Perth* 1841, correspondence with Captain Sir Samuel Brown concerning repairs 1832-34, specifications for repairs by Thomas Telford and James Rendel 1834-35, valuation of ferry boats by D Birnie 1851, plans by George Buchanan, James Rendel, Thomas Telford and W D McLaren 1826-1929.

TRADE

3105 **Shetland Archives**. Tom Henderson collection. Mercantile letterbooks, memoranda books and journals of Gifford of Busta, Grierson of Quendale, and Archibald Greg 1744-1857, including voyage to Hamburg, Oporto and Norway. Letterbook of William Irvine as agent for Russian Vice-Consul in Lerwick 1847-77; journal of French Vice-Consul at Lerwick 1902-14.

WELFARE

2858 **Glasgow University Archives**. Govan Weavers Society. Minutes 1756-1950, accounting records 1751-1963, membership rolls 1760-1915, rules and regulations 1898-1944, correspondence concerning bi-centenary celebrations 1955.

2882 **Strathclyde Regional Archives** The Commercial Friendly Society of Scotland: minutes 1838-1972, rules 1838-1969, annual reports 1850-

1979, accounting records 1930-80, lists of members 1838-1980. Glasgow Sailors' Home: minutes 1870-1978, accounting records 1851-1978, annual reports 1858-1977, newspaper-cuttings 1861-1933.

2884 **Strathclyde Regional Archives.** Weavers' Society of Anderston, Glasgow. Minutes 1738-1942, accounting records 1832-1962, lists of members 1870-1949, declarations of pensioners' circumstances 1925-39.

MISCELLANEOUS

2312 **Strathclyde Regional Archives.** Papers of Sir John Stirling-Maxwell of Pollok 1878-1943. Correspondence relating to private and public affairs, subjects include: free trade and tariff reform 1903-11, tea estate, Java 1907-09, Scottish timber industry and Forestry Commission 1917-32, estate affairs, including water power scheme, 1917-25, Scottish Landowners' Co-operative Society 1918-20. Miscellaneous papers relating to finance, forestry and politics c.1858-1919.

2767 **Strathclyde Regional Archives.** Records of Anderson, Fyfe, Littlejohn & Co, solicitors, with constituent partnerships 1816-1954. Includes letterbooks 1844-1901, sederunt books of personal trusts of industrialists, merchants and business men, artisans, labourers, farmers, professional men, soldiers and others 1843-1937, including Hugh Hogarth, shipowner; Professor William Meikleham; Penman family, engineers; Scottish members of Iron and Steel Institute minutes 1872; photographs of Polytechnic Warehouse, Glasgow, n.d., (1921).

2855 **Glasgow University Archives.** Miscellaneous Scottish photographs 1901-02 and n.d., including the Glasgow Exhibition 1901, agricultural workers and builders on the estate of Cornhill 1902.

2881 **Strathclyde Regional Archives.** Papers relating to Thomas Brownlie, industrialist 1839-65, including, accounts for building work at Brodiec Castle 1844-65, lists of shareholders in the Glasgow & New York Steam Ship Co, n.d.

2903 **Strathclyde Regional Archives.** Moncrieff Warren Paterson & Co, solicitors, Glasgow. Sederunt books of personal trusts 1838-1970, including: Alexander Craig of Tradeston Mills; James T Bottomley of Netherhall; Lord Kelvin; Sir William Lorimer; David McBrayne; Lord Inverclyde; Henry L Graham, merchant in Chicago; James Dickie, merchant in London, Burma and India; and Walter Crum of

Thornliebank.

2904 **Strathclyde Regional Archives.** Papers compiled by Dr George Thomson on the industrial history of the Monklands 16-20th cents., c.1950-77; correspondence concerning the *Third Statistical Account of Lanarkshire* 1949-60; lease relating to Drumshangie Coal Company 1923.

2907 **Strathclyde Regional Archives.** Vista of Glasgow, photographers, Glasgow. Photographic negatives of scenes and personalities in Glasgow and Clyde area 1954-81.

3107 **Papers of Sir William Fettes.** Volumes of personal and business accounts 1809-33, inventories of goods, stock and household equipment 1769-1830, correspondence 1801-23.

3149 **Strathclyde Regional Archives.** Paterson & Ross, solicitors, Glasgow. Papers of various trusts 1872-1985, including, Stuart Anderson, painter and decorator 1936-75, John Cook Buchanan, superintendent engineer 1912-57, Captain William L Buchanan (Buchanan Steamers Ltd) 1914-74, William Hannay Raeburn, Bt, shipowner 1929-65.

2 National Register of Archives (Scotland): Register of Oral History Tapes

This Register provides a central body of information on tape material, based on data supplied by the custodians of the tapes and in most cases it also covers such matters as the quality of recordings, the type of equipment used and particulars of any published work based on the tapes concerned. The collections are listed under the name of their present custodians to whom requests of access should be directed. The presence of recordings in the Register must not be taken to imply any right of public access to them. Dates given in the entries refer to the date of recording or to the date to which the recordings relate.

60 **Workers Educational Association, 51 Church Street, Cromarty.** Interviews with various individuals concerning herring fishing, women's work and industrial history of Inverness, 1986.

62 **Dundee Oral History Project.** Interviews with working class Dundonians born in the period 1892-1921 concerning work, leisure and social conditions in Dundee, 1986.

63 **Kirkcaldy Central Library, War Memorial Gardens, Kirkcaldy, Fife.** Interviews with coalminers concerning work and life in coal mining communities, 1900-50.

64 **Dundee City District Archive and Record Centre, City Square, Dundee DD1 3BY.** Copy of Radio Tay programme broadcast on 25th anniversary of loss of Broughty Ferry lifeboat, 1984.

65 **Shetland Archives, 44 King Harald Street, Lerwick, Shetland ZE1 0EQ.** Interviews with various individuals concerning crofting, fishing, farming, education, religion, climatic conditions and social life in Shetland, 1900-88.

3 The Scottish Film Archive Acquisitions, 1988-90

Applications for access should be made to the Curator, Scottish Film Archive, 74 Victoria Crescent Road, Glasgow G12 9JN.

Anchor Line (via Glasgow University Archives). MV *Kirriemoor*, launched, 1959; *Courland* at Karlshamm, 1964; Currie Line Films, 1963.

Anderson Strathclyde plc (formerly Mavor & Coulson). Mining machinery manufacturers. Promotional and technical films 1950s-70s. 100 cans.

Bank of Scotland. Capital Garden, 1970s. A Bank for Scotland, c.1974; Business-Wise, c.1976; Moneywise, c.1973; A Job to Bank On, 1974; Sealing Wax and Wafers, 1966; Bright Future, 1970s.

British Coal (Scottish Division). Mining Reviews, 1947-1977, incomplete series; NCB Staff Bus Outing, 1955-1959; Lord Robens Interview, 1968.

Chrysler UK, Linwood. Building the New Chrysler, 1976.

William Denny & Sons, Dumbarton. shipbuilders. Closure of Denny's Yard - amateur film, 1963.

Liptons. Launch at Denny's, *Shamrock III*, 1903.

Macneill Tractors, Glasgow. Demonstration films, particularly of the David Brown tractor on display at agricultural and trade shows, made by the company director, J S Bauchop, 1940-45.

Redpath Dorman Long Limited. Iron and Steel, 1931; Fabrication, 1937; The New Tyne Bridge (construction) 1928; Government Offices, Calton Hill, Edinburgh (construction).

Renfrew Ferry. Amateur film of the last run of the Renfrew Ferry across the River Clyde.

Scott Lithgow Shipbuilders (via Glasgow University Archives). Launch of *Otter*, 1961; Launch of *Resource*, c.1965; *Clydeside*; Ram; Launch of *Kaldfonn*; The Scott Lithgow Group; Duke of Edinburgh Visits Scott Lithgow; Launch of HMS *Galatea*; Launch of *Iron Horse*; Launch of MV *Crystal Cube*, c.1974; Launch of Submarine *Walrus*, 1959; Launch of *Quiloa*; First British Free Piston Powered Ship; ESV *Iolair*; Test for Launch of Tanker in Two Halves; Systems Behaviour; River Clyde Story; Construction and Launch of *Naess Scotsman*, Ship No.1183.

University of Strathclyde. Beetling at Avonbank, 1981; Etna Brickworks, 1985; Steam Powered Weaving Mill, 1979; Wool Piecing Machine, 1979.

Miscellaneous. Great Bridge over the Forth, 1936; opening of Kincardine Bridge; An Empire Meets, 1938, amateur film of the Empire Exhibition in Glasgow's Bellahouston Park; Dundee's Screen Snapshots, c.1932-1935, composite reel of local news items; Benmore House and Estate/Forestry Techniques, 1930s; Benmore House and estate as a forestry and demonstration area; How To Make Your Own Templeton Carpets, 1960s; Hewers of Coal, 1939, career film; Aerials of the Clyde and Dumbarton, 1956-58.

Bridgend Picture House Limited. Minute book 1937-51, including construction and operating of Radio Cinema, Kilbirnie, and Viking Cinema, Largs.

George Green Limited. Cinema proprietors. Architect John Fairweather's drawings and plans for the circuit's cinemas, including Dundee, Glasgow, Ayr and Lockerbie, incomplete sets 1920s-40s.

Uddingston Picture House Limited. Minute book 1940-58, including construction and operating of Pavilion Cinema, Uddingston.

Reviews

JOHN HOOD et al, ***The History of Clydebank*** (Carnforth: Parthenon Publishing, 1988, pp. xviii + 243, 28 tables, 135 tables, graphs and illustrations, £10.00); J S MARSHALL, ***The Life and Times of Leith*** (Edinburgh: John Donald, 1986, pp. ix + 204, £5.95 paper, £12.00 cloth); E SIMPSON, ***The Auld Grey Toun: Dunfermline in the Time of Andrew Carnegie 1835-1919*** (Dunfermline: The Carnegie Dunfermline Trust, 1987, pp. 119, illustrations, £4.95); J STRAWHORN, ***The History of Irvine: Royal Burgh and New Town*** (Edinburgh: John Donald, pp. vii + 263, illustrations, maps, £15.00).

In a climate which perhaps parallels that of American cities of the 1960s, when concern for contemporary urban issues provoked a spate of city histories seeking to explain the historical antecedents of current events, the present British interest in inner cities prompted by housing renovation, racial and criminal activities, and infrastructural provisions heralds a higher profile for historians of the city. There are some signs in the titles currently under review that such a parallel may be emerging, though unlike the established North American tradition of city histories, the species still remains rare in Britain. Where it does exist, boosterism and civic pride remain the motive for many municipal histories, and their execution frequently relies upon an excruciating degree of antiquarian detail in which few developments beyond the town boundaries are accorded much significance. Too often the burgh is viewed as the accidental location of particular political and economic events; the town is presented as a temporary host, purely incidental to such events. More recently, arguably as a product of the expansion of the social sciences since the 1960s, greater credence has been attached to the interactive nature of social, economic and political processes in which the urban dimension has superimposed a dynamic of its own. Yet those authors who analyse the process of urban change, set it in a national or international context, and who address issues in a thematic, rather than purely descriptive or chronological manner, have remained exceptional. These four titles offer distinct sub-species of urban historiography; the multi-authored venture from 'professional' historians (Clydebank), detailed antiquarianism (Leith), a 'coffee-table' variant (Dunfermline), and a single-authored burgh from earliest times to the present (Irvine).

James Marshall, in his preface to ***The Life and Times of Leith***, observes that, 'There is no readily available history of Leith', a remarkable omission given its important mercantile and industrial interests, and, for much of the nineteenth century, seventh position in the population league table of Scottish burghs. To Leithers this somewhat affectionate account which concentrates mostly on the seventeenth to the nineteenth centuries, goes some way to redress the balance, and the keen price will assist local interest in the burgh. For those interested in the development of manufacturing, two early chapters provide an illuminating range of industries, most notably shipping and the related warehousing and dock-handling activities, but also shipbuilding, ropemaking, brewing, glass and soap, all of which had gained some significance by the end of the eighteenth century, and a not important lower industrial tier comprised of distilling, tanning, textile, milling and brickmaking. Other chapters cover the renowned Leith links and its leisure facilities, health and housing, and the 'Young Mind'. The emphasis is, as the title concedes, concerned with the 'Life and Times' and the methodology is essentially that of the antiquarian, since a series of episodes, significant events and local luminaries are the main focus of the chapters, and there is little explicit acknowledgment of broader trends in Scottish industrialization, extra-burghal developments, or of the underlying processes of change within Leith itself, for example, in relation to the changing composition of social and political elites. So while there is considerable vitality in the book, the biographical and local detail makes it difficult to assess Leith in relation to other burghs, and without contextual material this undermines the peculiarities of the place which Marshall claims for Leith. Two simple points serve to illustrate this. Firstly, and without wishing to extol quantification uncritically, there is ample available nineteenth century demographic data, as well as published statistics on the workforce, housing and health in Leith, and to overlook these is to forego crucial material on the pace of commercial change, overcrowding, mortality and related social and economic issues. Secondly, the absence of maps is a disappointment as this makes it impossible to assess the spatial significance of the industrial and social changes recounted. Lacking these, Leith is still in limbo.

Industrial history is at the heart of Simpson's account of nineteenth century Dunfermline. Though the linen and coalmining activities in and around the burgh are given due weight, as is evident from the title, it is Carnegie's own industrial successes, founded principally on the United States Steel Company, which provide an omnipresent element in this account of the ***Auld***

Grey Toun. The dislocation in the labour process caused by the transition from traditional, independent handicraft production to that of small workshops and factories in the first half of the nineteenth century provides both an informative basis for the subsequent chapters on the social conditions in the early Victorian burgh and a useful background to the Carnegie's decision to emigrate in 1848. Simpson uses Andrew Carnegie's return visit to Dunfermline in 1862 to challenge the magnate's personal view that nothing had changed, and notes how in relation to power looms, steam traction, the scale of enterprise and social fabric of the town, considerable changes had transpired in the quarter century since Carnegie's exile. That process of change was accelerated by subsequent benefactions from Carnegie, the most spectacular being the £0.75 million of bonds donated to Dunfermline in 1903 and 1911, which formed the recurrent income on which civic improvement projects - notably the parks, baths and library - were based. The boost to the quality of late Victorian urban life for Dunfermline workers owed much, therefore, to Carnegie's conviction that the rich were merely trustees of their wealth and were obliged to spend it for the improvement of mankind, though Simpson, perhaps conveniently, overlooks the fact that such a view was not uppermost in the acquisition of Carnegie's wealth which owed much to low wage and anti-labour practices. The synthesis of industrial history with social and political developments in the burgh is briefly but effectively presented, to which many maps, facsimile broadsheets and contemporary photographs add considerably, and this is achieved, if not with an examination, then an awareness of issues such as social control, municipal socialism and the role of the labour aristocracy.

Given the formidable difficulties of co-ordinating fifteen contributors, the outcome is an extremely well structured, cohesive account of urban change in **Clydebank** which avoids the complacency of so many centenary histories. The authors have produced a combination of concise text with informative illustrations and diagrams on almost every page. This format avoids the triteness of the coffee-table productions principally because of the established academic credentials of the contributors and their admirable sense of the significant, which lends credibility and coherence to the volume. Individually and collectively their explanatory powers provide ample proof of the socially useful function of the historians' craft. The volume is organised around four chronological spans. First, the period as the 'risingest burgh' when the pace of expansion between 1886 and 1914 reflected the buoyancy of its two principal industries - shipbuilding and sewing machine manufacture. The

second period, 1914 to 1945, sensibly embraces the impact of two world wars on a town heavily dependent upon naval orders and the demand for merchant tonnage. The third part deals with the town in transition, 1945 to 1980, focussing on the response to the blitz and urban reconstruction, and the final section offers a 1980s postscript and a view of the largest of the government's Enterprise Zones in action.

Essentially a Victorian new town, Clydebank was founded on the relocation of two expanding firms, the shipbuilding activities of J & G Thomson in 1871 (later absorbed by John Brown & Co Ltd) and the Singer Sewing Machine Company in 1881. The spectacular engineering achievements before 1914 are already recounted in the volume by Moss and Hume, *Beardmore* (1979) and these provide an essential underpinning to the interplay of social and economic forces in the burgh which was formed in 1886. Of perhaps greater interest are the accounts of social and cultural life before 1914. The spate of church building in the 1880s and 1890s was the visible evidence of religious activity, but emergent sabbatarian and temperance interests straddled the doctrinal differences in their attempts to buttress moral values, while simultaneously providing ethnic and religious identities for their adherents. In a newly formed burgh, the rapidity with which the organisational side of urban activities mushroomed was remarkable. The moral crusaders included such organisations as the Women's Guild, the Young Women's and Young Men's Christian Associations, the Order of Hibernians, and the Boys' Brigade, with leisure pursuits organised around Sunday Schools, Highland Associations, choral societies, and after 1900, municipal facilities such as parks, baths and libraries. Though none of these, or other cultural activities which included a rich theatrical and musical tradition, or the recreational pursuits associated with a variety of sports, was especially notable in the wider canvas of Victorian urban life, their pace of formation and expansion added an unusual dimension to the fabric of associational life in the burgh.

The connections between economic structure and urban social-political relations is never explicitly forged in the chapter dealing with shipbuilding after World War One. Though this perhaps needs little elaboration for Clydeside Scots, for others the interconnections are vital. It also means that some of the provocative issues are overlooked, for example, why in a climate of economic collapse the Clydebank Burgh Council should remain politically moderate until the 1930s, resisting the leftward lurch experienced in Glasgow City Council, and this despite the parallel existence of a rent strike in both burghs. Though there is a detailed account of rent strikes in Clydebank, regrettably it takes no

account of issues raised elsewhere by Melling in relation to the crucial female participation in organised resistance, and its longer term significance for Scottish politics. Indeed this treatment of housing is typical of most chapters which marginalise women in the burgh. This neglect of gender-related issues is an unnecessary blemish.

Optimism, returning to Clydebank in the mid 1930s as the burgh assumed the role of naval dockyard, was dashed in devastating air raids. Two raids in March 1941 demolished or irreparably damaged 35 per cent of the housing stock and so in forty-eight hours set back the efforts of twenty years. The centrifugal influence of the blitz on families, usually associated with London schoolchildren decamped to rural settings, and the impact of wartime disruption on the social bonding in the town, are sensitively handled by the contributors. The chronicle of urban difficulties continued after the war - the demise of the major employers, the switch to service industries and a resultant decline of male employment and the need to journey further to work - all of which redefined behavioural patterns in Clydebank, arguably more than elsewhere. The trauma of plant closures in the 1970s, such as those at Singers and Upper Clyde Shipbuilders, is part of local folklore and the authors respect the psychological impact of corporate accounting decisions. If the official agencies of reconstruction in the form of housing authorities and educational committees were active after 1945, the scale of deprivation brought ecumenical and political efforts which cut across narrow sectional interests.

Prehistoric times and paleogeographic research form the point of departure for Strawhorn's fine account of the ***The History of Irvine***. By stressing changes in sea-level and the location of the coastline over time, Strawhorn provides an explicitly topographical explanation of the early location of the settlement on an isthmus between coast and inland loch. This approach, combined with a succession of town maps at 100 year intervals from 1200 to the present, which owes much to Conzen's use of town plans in Alnwick, provides a convincing morphological dimension to urban change. Physical characteristics and locational advantages associated with the harbour were, therefore, the basis of early mercantile activities. As a royal burgh foreign trade could be conducted from Irvine, and the burgesses were sufficiently powerful to control the council and manage the burgh in their own interests. The success of the burgh in the late medieval period was reflected in the proliferation of burgage plots and the development of substantial buildings such as a tolbooth, priory, mill, church additions, a stone bridge, and castle,

as well as the 'palaces' of feuding noble families, the Eglintons and Glencairns. Growth and industrial expansion in eighteenth-century Irvine was based not only on harbour trade, markets and fairs within the burgh, but on agricultural improvement and mining development in the immediately surrounding area. By the mid eighteenth century, Irvine with a population of 3,000 was the largest of the Ayrshire burghs and ranked alongside Leith in numbers of ships registered. Coal and colonial products formed the bulk of their cargoes.

Though Strawhorn does not explicitly state geographical factors as the cause of the lull in Irvine's prosperity from about 1780 to 1860, it was the possibilities of deep water berths and quick turnarounds which rendered the Clyde ports as superior, and the associated warehousing and distribution, shipbuilding, repairing, and provisioning which formed the basis for the expansion in employment and urban development on Clydeside. The revival of the local economy in the last third of the nineteenth century owed much to the establishment of several important chemical works producing sulphuric acid, caustic soda, by-products such as naphtha and tar, and, just outside the burgh, explosives at Nobel's plant at Ardeer. Each of these generated considerable employment for Irvine residents. Strawhorn identifies expanding municipal functions and harbour investment as the basis for this industrial revival, though the complaints against noxious fumes and fear of explosions point more convincingly to a location distant from the main concentrations of population in the Clyde valley.

Three important contributions stem from Strawhorn's extensive scouring of local sources and documentary evidence. Firstly, there is a convincing attention to the social fabric of the burgh. Structures on the ground are matched by structures in society, and the identification of religious, educational, and cultural activities with council initiatives and individual efforts conveys a strong sense of place, and captures the character of the burgh of Irvine. The rich local detail - perhaps too microscopic in focus for the outsider - has the inestimable merit of returning history to local residents, since it assists their identification of, and with, places and personalities, and provides a context in which to locate and interpret them. Take the letter 'R' in the excellent index. Its range of entries conveys something of the coverage: Radical Association, Ramblers' Field Club, Ratepayers' Association, Ravenspark schools, reading rooms, various recreations, Regal and Rex cinemas and the Ritz ballroom, restaurants, riots, roads, Rockware Glass, Royal Ordnance Factory, and a host of personal and place names. Secondly,

a secure chronological sense of economic and political developments is given an outstanding physical dimension through a series of town plans and maps. It is the spatial dimension alongside the social fabric which captures much of the uniqueness of urban places and the reality of daily life.

Thirdly, the final chapters provide an insider's view of the tensions inherent in the modernization process, when historical reference points in the burgh are torn down and new landmarks constructed. The enduring tensions between heritage and 'progress' are only implicitly treated in the establishment of the New Town and its Development Corporation, but this touches a timeless issue as individuals experience the dislocating process associated with dismantling the existing urban apparatus and its replacement with the unknown and unfamiliar. Successively the industrial and commercial backbone to the Irvine economy has changed from a localised medieval market town, to Irish and colonial trade, then to coal, chemicals and finally, following a period of retrenchment in the first half of the twentieth century, to a mixture of light engineering and consumer-based products from the 1970s when the ancient burgh was superseded by an enlarged New Town designation. In a rush, shopping mall, feeder roads, bypass, and industrial estate have amended and engulfed the historic town. *The History of Irvine* is therefore a commendable commission from Cunninghame District Council as it seeks to establish both its own identify in the melee of restructured local government, and also to provide a sense of perspective and of historical continuity for younger generations who know nothing of town councils, burghs and long run urban processes.

The market for books on individual towns is inevitably local. Authors accordingly are compromised by the need to satisfy local interest in particular details while preserving the integrity of the specific urban place within the context of a wider urban system. The solution to these dual constraints is not easy; in fact, it is particularly difficult. In *The History of Clydebank* the problems of writing urban history at different levels simultaneously have been addressed mostly successfully, and together with the emphasis on spatial change adopted in *The History of Irvine*, useful prototypes have been established for the next generation of urban histories. But most importantly, Clydebank District Council and Cunninghame District Council have to take some of the laurels for their determination to sponsor a high quality publication fusing text and illustrations, to keep the price down, and to enhance local pride without endorsing blind allegiance. Such volumes speak volumes for these Councils' attempt to give history back to their inhabitants.

Done well, boosting an historical interest in the burghs may do more than anything else to revive local pride and identity, and consequently to reverse or withstand the homogenising trends associated with centralised government and large scale organisations. By encouraging a more thorough understanding of the vitality and rich texture of the urban periphery, Cunninghame and Clydebank District Councils have contributed to Scottish traditions of urban consciousness and cultural awareness in which public welfare considerations are not entirely submerged by private material gains. In so doing they have also signalled that at least some of the ideas which underpinned municipal socialism are not yet dead.

Richard Rodger *University of Leicester*

ROYAL COMMISSION ON HISTORICAL MANUSCRIPTS, ***Guide to Sources for British History - 8 - Records of British Business and Industry 1760-1914 - Textiles and Leather***, (London: Her Majesty's Stationary Office: 1990, pp. xiv + 130, PB £10.95)

This is the first volume in a series describing the records of British business and industry initiated many years ago by the Royal Commission on Historical Manuscripts. Since its inception, much has happened in the world of business archives with several path-breaking guides published by or in association with the Business Archives Council and its sister organization, the Business Archives Council of Scotland. This volume follows the principles of summarising collections established in such publications as *Modern British Shipbuilding: A Guide to Historical Records* (1980) and *Company Archives* (1986) which, in turn, owe much to the approach to surveying pioneered by the National Register of Archives (Scotland). The volume is divided into nine sections: wool; cotton; linen, flax and jute; silk; lace; textile finishing; other textile industries; clothing, hosiery and knitwear; and leather. Some of the contents are derivative, drawn from Pat Hudson's admirable, *The West Riding Wool Textile Industry: a Catalogue of Business Records from the Sixteenth to the Seventeenth Century* (1978), *The Ulster Textile Industry: a Catalogue of Business Records in the Public Record Office of Northern Ireland Relating Principally to the Linen Industry in Ulster* (1978) and *Company Archives* (1986). Others of the 1200 entries are new, culled from the lists and notes of deposits received daily by the Commission or the outcome of the

Commission's own surveying activities. The entries, not unexpectedly, contain names familiar not just to British schoolchildren but to those much further afield redolent of the industrial revolution: Sir Richard Arkwright & Co (331), Samuel Crompton (371), and R Greg & Co of Quarry Bank (402). In every section there are entries for household names such as Tootals (486) in cotton; Old Bleach Linen Co in linen (631); Courtaulds (710) in silk; United Turkey Red Co (852) in textile finishing; Christys (918), the hatters, Gieves (948) and Libertys (975) in clothing, hosiery and knitwear; Church & Co (1077), C J Clark (1078), and Freeman Hardy & Willis (1091) in leather. As in all such compilations, there are small and curious entries that capture the readers' imagination; like Herbert & Co (757), gold lacemen and army accoutrement makers and Ede & Ravenscroft Ltd (937), robe makers and wig makers.

It always seems churlish to criticize such guides, which quickly joined other much-thumbed publications on the archivist's bookshelf, but the volume does lack consistency. *Company Archives* on which it is partly modelled, adopted a structure to its summaries; corporate records came before accounting records, and ledgers were entered before journals, and so on. In the summaries in this volume, there is no such consistency, largely reflecting the haphazard nature of the lists from which they had been compiled. In addition, major groups of textile records found in the in the Scottish Record Office included Court of Session production series (CS96) have been included because a list has been published by the List and Index Society, whereas equivalent groups to be found in the Public Record Office amongst the Master in Chancery's exhibits and exhibits in the Supreme Court (J90) have been excluded. More seriously, buried items in the summaries have not been indexed, so, for example, papers for David Walters & Son, Norris & Co, Keith & Co, Cohens, and H Scott Richmond & Co, held by Warner & Sons Ltd (740), silk and furnishing textile manufacturers of London and Braintree are not included in the index. The only time buried items are indexed would seem to be when they refer to a main entry. This volume also lacks the feature that has become a standard component of other guides - a discursive introduction by an expert setting the contents in a wider historical context, drawing attention to other more general sources used by specialists in the field, and explaining any types of records unique to the industry. The termination date of 1914 seems somewhat arbitrary as much of the material included is of much more recent origin. It is to be hoped that some of these omissions will be corrected in later volumes of what promises to be a most useful series,

encouraging both professional and amateur historians to use often neglected series of records.

M S Moss *University of Glasgow*

T M DEVINE (ed.), ***Conflict and Stability in Scottish Society 1700-1850***, (Edinburgh: John Donald, 1990, pp. ix + 139, £20.00)

This collection of quite short but stimulating papers given in the Scottish Historical Studies Seminar at Strathclyde University in 1988-89 is a most welcome addition to recent work on a transitional period in Scottish history - a period during which industrialisation and accelerating urbanisation began fundamentally to change Scottish society. The authors in this volume seek to reassess the extent to which this change was achieved as smoothly and relatively peaceably as traditional interpretations have tended to suggest. Two of the contributors, T M Devine and R H Campbell, show that Scotland, like many continental countries, had a sufficiently resilient and adaptable socio-political framework to avoid the kind of upheaval experienced only in France in the 1790s. But the Scots were far from being passive. Christopher Whatley, concentrating on the decidedly old order which preceded the period of disturbances from 1780 illuminated a decade ago by John Logue, suggests that it is time we jettisoned our generalisations about 'tame' lowlanders. Using very different material, and throwing the gauntlet at a number of established assumptions, Callum Brown argues that religious protest even before the Disruption of 1843 is far too substantial and diversified to fit into some simple pigeonhole of Calvinist fundamentalism, being perhaps comparable to English and Welsh dissent in the significance and sophistication of its political message. On the other hand, John Brims shows how the Scottish Association of the Friends of the People damaged the prospect of reform by embracing continental ideas rather too uncritically - a lesson soon learnt by the demonstratively, orderly, middle-class protesters discussed by Stana Nenadic. By the time of the Scottish Chartist movement, which Tony Clarke examines here through the 1839 Conference of Scottish Chartist Delegates, the context of protest had changed considerably. But it is the great virtue of these papers that they stress both the striking continuities and the complexities of social relationships at a time when rapid economic change could have produced more violence than it did. It is testimony to the

success of the volume that it seems much too short: the papers, with their full end notes, are surely bound to succeed in their express aim of provoking new discussion and more detailed research.

Thomas Munck *University of Glasgow*

J ORBELL, ***A Guide to Tracing the History of a Business***, (Aldershot: Gower, 1987, pp.116. PB £14.00).

This volume, which is published in association with the Business Archives Council, is a sensible, well organised and well produced guide to tracing the history of a British business. As such its publication is timely for the growing popularity of business history amongst students, together with the increasing numbers of historians who are taking an interest in business history, have combined to create a demand for this type of publication. Those who are new to business history will save themselves hours of work if they begin their searches by reading this book. Older hands at the mill may be surprised to learn a thing or two. This reviewer certainly did.

The first section of the book contains a guide to finding basic information about a business from directories and registers. It then moves on to a discussion of business archives and questions whether access to archives is always necessary, at least for those whose enquiry is relatively simple. Where access is sought, the reader is given very sound advice about how to do this and what kind of response to expect. Somewhat surprisingly the need to establish the researchers own *bona fides* is not included in the list.

Part two describes how to locate business records by using record offices, registers and published guides. Part three, by far the longest section of the book, describes how to locate information outside the records of the business. Here Orbell details how to find information about a business from other businesses which supplied it with goods or services. In particular he deals with banks, insurance companies, lawyers, accountants and advertising agencies. Government records are also examined in this regard. Businesses might also be members of trade associations or chambers of commerce or have dealings with trade unions, all of whose records can be used to cast light on a history project. Printed material is another possible source and under this category Orbell includes published histories, trade catalogues, newspapers and house journals. In all of these cases he gives useful advice

about what to look for and what may be found. Finally, he covers personal papers, wills, interviews, photographs and ephemera. The book concludes with a useful bibliography and list of addresses.

Throughout the book Orbell is careful to avoid accusations of being London-centric or even Anglo-centric for there is much here on sources which are Scottish and Irish. However, did we manage without it?

Charles W Munn *The Institute of Bankers in Scotland*

THE CONTENTS OF *SCOTTISH INDUSTRIAL HISTORY* VOLUMES 1 - 13, 1977-1990

1. AUTHOR INDEX

J McBain	The Scottish Film Archive	8.2 (1985
	C McMaster, A Short History of Robert Meiklejohn & Sons, the Bass Crest Brewery, Alloa	7.2 (1984)
	The Scottish Brewery Archive	10.1/2(1987)
F Martin	The Prospects for Workers' Co-operatives: Lessons from Scotland's Co-operative Past and Present	7.2 (1984)
	A Profile of the Scottish Iron Foundry Industry, 1969-1984	9.1/2 (1986)
A A R Mattei	The Role of Scottish Sugar Machinery Manufacturers in the Puerto Rican Plantation System: 1842-1909	8.1 (1985)
R C Michie	The Formation of the Greenock Stock Exchange	4 (1981)
	Investment and Railways in Nineteenth Century Scotland	5.1 (1982)
R N Millar	Look Back at Singer	4 (1981)
N J Morgan	Some Brief Notes on the History of James Young Ltd, and James Young and Sons Ltd, Railway and Public Works Contractors	6.1 (1983)
M S Moss	Business Records in Scotland, 1970-1990	11-13 (1990)
S M Nisbet	Newmill: An Early Scottish Cotton Mill	11-13 (1990)
B D Osborne	Dumbarton Shipbuilders and Workers Housing, 1850-1900	3.1 (1980)
P L Payne	The Genesis and Infancy of the Business Archives of Scotland	7.1 (1984)
A Ritchie	John Turnbull and the Hercules Engine	3.1 (1980)
	The Companies Index of the National Register of Archives	10.1/2 (1987)
I Russell	Randolph Wemyss and the Development of Methil as a Coal Port	5.2 (1982)
	Some Notes on 'Concrete Bob' McAlpine	9.1/2 (1986)
J Shaw	An Introduction to the Technology of Meal Milling in Scotland	5.1 (1982)

2. SUBJECT INDEX

Banking

Mining

M Cotterill	The Scottish Mining Museum	7.1 (1984)
W S Harvey	A Glossary of the Coal of Gladsmuir	6.2 (1983)
B S Skillen	Aspects of Mining Technology in the Glasgow Region, 1700-1850	10.1/2 (1987)
G Wilson	Day-Level Drainage in Eighteenth Century Fife Coal Mines	2.1 (1978)
	'Contrary to Approved Practice of Collieries': The Drainage of Fife Pits by Hand	8.2 (1985)

Paper

P Lyon	Stoneywood Mill: A Glimpse of Industrial Paternalism	11-13 (1990)

Ports

E J Graham	Saltcoats - a Pre-Railway Port	2.1 (1978)
I Russell	Randolph Wemyss and the Development of Methil as a Coal Port	5.2 (1982)

Quarrying

T Donnelly	Markets and entrepreneurship in Granite Quarrying in North East Scotland, 1750-1830	6.1 (1983)

Salt

C A Whatley	The Ayrshire Salt Industry, c.1707-1879	1.3 (1977)
	Scottish Salt Making in the 18th Century: a Regional Survey	5.2 (1982)

Shipbuilding

I Bowman	The Grangemouth Dockyard Company	1.2 (1977)
W Lind	Archibald McMillan & Son Ltd, Shipbuilders, Dumbarton, 1834-1932	7.1 (1984)

Textiles

G G Doherty	The Growth and Decline of the Bleaching, Printing and Dyeing Industry in the Vale of Leven	8.2 (1985)

	& Sons, the Bass Crest Brewery, Alloa	
Dunbartonshire		
C G Doherty	The Growth and Decline of the Bleaching, Printing and Dyeing Industry in the Vale of Leven	8.2 (1985)
S Downie	From Milton to Madras: A Life of Patrick Mitchell, 1784-1848, Calico Printer	11-13 (1990)
D I Harvie	The Kosmoid Enigma	9.1/2 1986
	John Stewart MacArthur: Pioneer Gold and Radium Refiner	11-13 (1990)
W Lind	Archibald McMillan & Son Ltd, Shipbuilders, Dumbarton, 1834-1932	7.1 (1984)
R N Millar	Look Back at Singer	4 (1981)
B D Osborne	Dumbarton Shipbuilders and Workers Housing, 1850-1900	3.1 (1980)
East Lothian		
V Habib	An Eighteenth Century Cotton Manufactory in Scotland: Elizabeth Scott in Musselburgh	8.1 (1985)
W S Harvey	A Glossary of the Coal of Gladsmuir	6.2 (1983)
Fife		
J Frew	Robert Williamson, Plasterer and Builder of Cellargate, 1843-1911	11-13 (1990)
J Frew & D Adshead	Fisher Tenement Design in Cellardyke and the North East Fife Coastal Burghs, 1862-1905	9.1/2 (1986)
	Model Colliery Housing in Fife: Denbeath 'Garden' Village, 1904-1908	10.1/2 (1987)
T Gabra-Sanders	A Victorian Net Manufactory in Lower Largo, 1867-1886	11-13 (1990)
I Russell	Randolph Wemyss and the Development of Methil as a Coal Port	5.2 (1982)
G Wilson	Day-Level Drainage in Eighteenth Century Fife Coal Mines	2.1 (1978)
	'Contrary to Approved Practice of Collieries': The Drainage of Fife Pits by Hand	8.2 (1985)

Inverness-shire

E H L MacAskill	Holm Woollen Mills 1798-1984	7.2 (1984)

Lanarkshire

W S Harvey	The Library at Leadhills and its Archive Collection	9.1/2 (1986)
B Lambie	Biggar Museum Trust: A Country Museum Archive	11-13 (1990)
N J Morgan	Some Brief Notes on the History of James Young Ltd, and James Young and Sons Ltd, Railway and Public Works Contractors	6.1 (1983)
B S Skillen	Aspects of Mining Technology in the Glasgow Region, 1700-1850	10.1/2 (1987)
G Thomson	The Iron Industry of the Monklands: an Introduction:	5.2 (1982)
	The Individual Ironworks I	6.1 (1983)
	The Individual Ironworks II	6.2 (1984)
	The Individual Ironworks III	7.1 (1984)

Midlothian

M Clough	The Leith Glass Works: 1689-c.1708	5.1 (1982)
M Cotterill	The Scottish Mining Museum	7.1 (1984)
N J Morgan	Some Brief Notes on the History of James Young Ltd, and James Young and Sons Ltd, Railway and Public Works Contractors	6.1 (1983)

Renfrewshire

G Beveridge	Restoration at Pollok	5.1 (1982)
M Blackburn & S Clark	Cross Arthurlie Mill, Barrhead	5.1 (1982)
S Clark	A Survey of Early Paisley Engineers	6.2 (1984)
C C Johnston	Britain's First Motor Coach Disaster	3.1 (1980)
C C Lee	Silk Weaving in Lochwinnoch	8.2 (1985)
R C Michie	The Formation of the Greenock Stock Exchange	4 (1981)
S M Nisbet	Newmill: An Early Scottish Cotton Mill	11-13 (1990)

Stirlingshire

I Bowman	The Grangemouth Dockyard Company	1.2 (1977
J Sommerville	The Avon Steel Works	6.2 (1983

B. OVERSEAS

Puerto Rico

A A R Mattei	The Role of Scottish Sugar Machinery Manufacturers in the Puerto Rican Plantation System: 1842-1909	8.1 (1985)

South Africa

D I Harvie	John Stewart MacArthur: Pioneer Gold and Radium Refiner	11-13 (1990)

Turkey

A Cunningham	The Aubin Journal, Trade of Turkey	2.2/3 (1979)

West Indies

P C Denholm	Captain Troop and Mister Sharp. A Contrast in Eighteenth Century Entrepreneurial Trading Styles	11-13 (1990)

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60	18	45 and 50/9 "	12 to 13 "	2	2	0	1	17	0
60	18	43/9 "	14 "	2	3	0	1	18	0
60	18	40/9 "	14½ to 15 "	2	4	0	1	19	0
60	18	18/4 "	14 "	2	0	6	1	15	6
81	18	45 and 50/9 "	16 to 18 "	2	17	0	2	10	0
81	18	43/9 "	19 "	2	18	6	2	11	6
81	18	40/9 "	20 "	3	0	0	2	12	6
81	18	18/4 "	19 "	2	15	0	2	8	0
54	20	45 and 50/9 "	12 to 13 "	2	2	6	1	17	6
54	20	18/4 "	14 "	2	0	6	1	15	6
60	20	45 and 50/9 "	13 to 14 "	2	7	0	2	1	6
60	20	43/9 "	15 "	2	8	0	2	2	6
60	20	40/9 "	16 "	2	9	0	2	3	6
81	20	18/4 "	15½ "	2	5	0	1	19	6
81	20	45 and 50/9 "	18 to 20 "	3	4	0	2	16	6
81	20	43/9 "	21 "	3	5	6	2	18	0
81	20	40/9 "	22½ "	3	7	0	2	19	6
81	20	18/4 "	21 "	3	1	0	2	13	6

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