17 Lanarkshire Sasines, PR 37, 54.

18 Bell's Appeal Cases, 4, (1845), p. 344.

19 All the books at Calder Iron Woks were burned when the works were to be demolished, all except this one which was abstracted and of which I have a micro-film copy.

20 Copy in Carnegie Library, Coatbridge.

21 Bell's Appeal Cases, 2, (1843), pp. 63 et seq.

22 Bell's Appeal Cases, loc cit; Dunlop's Appeal Cases, 1, 474; Robinson's Appeal Cases, 2, (1840), 366.

23 James B. Neilson and others contra William Baird and Co: 'Hot Blast Trial', Edinburgh 1843, p. 275.

24 Ibid, p.160.

25 Ibid.

26 James B. Neilson contra Househill Coal and Iron Co., p. 139.

27 e.g. Mayer, Journal Iron and Steel Institute, 1872, ii, p. 32; Hamilton, Industrial Revolution in Scotland, p. 181; A. and N. Clow, The Chemical Revolution, p. 355.

28 British Patent 11411, 15 October 1846.

29 Hot Blast Trial, p. 163.

30 Mayer, loc cit., p. 35.
Percy, Metallurgy of Iron and Steel, (1864), p. 428.

31 Hot Blast Trial, p. 18.

32 George Mackintosh, Memoir of Charles Mackintosh, (1847), p. 108.

33 Hot Blast Trial, p. 160.

34 Edinburgh Gazette, 18 November 1842.

35 British Association Handbook, 1901.

36 Answers by School masters in Scotland to queries circulated in 1838.

37 Airdrie Advertiser inter alia, 3 October 1868; 12 November 1970.

GARTSHERRIE

For the early history of Gartsherrie works the source is 'The Bairds of Gartsherrie' by Andrew McGeorge, privately printed in 1875.

The Baird family, founders of Gartsherrie Iron Works, had been for some generations farmers in Old Monkland parish. After an early venture into coal mining in the Dalserf district, Alexander Baird, about 1816, leased the coal field of Rochsolloch and six years later that of Maryston. This latter lease was terminated four years later by the superior, Buchanan of Drumpellier. In May 1826 Alexander and his sons William, Alexander and James took a lease of the Gartsherrie coal field from Hamilton Colt of Gartsherrie from whom also they got a lease of the Gartgill field in 1827. About this time the Monkland Canal Company made a branch canal from Coatbridge up to the nos. 1 and 2 pits on Gartsherrie.

Their lease of land for the building of blast furnaces was taken in 1828 but was not signed until 1832. It was for 999 years at £38 15s.9d a year. Construction of the first furnace began early in the spring of 1828 and in December of that year they took a 40 year lease of ironstone in the lands of Cairnhill.

The first furnace went on blast on 4 May 1830. It had been a long time a-building. Furnace no. 2 went into commission on 11 September 1832 and no. 3 on 3 April 1834. Very soon afterwards they decided to add four more furnaces. No. 3 furnace was taken down and replaced by two new furnaces. Construction of the four additional furnaces also went ahead. By 1839 eight furnaces were in blast and William Baird had proposed the erection of a further eight furnaces on the opposite (west) side of the branch canal. The first four of the new furnaces went on blast on the same day in November 1840 and by December 1841 three more were in production. For the 'old' side of eight furnaces two blowing engines were in use. For the 'new' side, also of eight furnaces, a single engine was used; it was supplied by James Gray of Glasgow, was of 300 horse power and had an air cylinder 133 inches in diameter.

It was obvious that reserves of ironstone in the Monklands were dropping rapidly. According to James Baird the Airdrie House field of ironstone was not discovered until 1835. A scramble for leases followed. The largest portion of the field was secured by the Monkland Iron and Steel Co.; Calder, Gartsherrie, Dundyvan and Summerlee joined forces to work the rest of the field, taking equal shares. Between 1838 and 1852 they produced upwards of 305,000 tons of calcined ironstone (each ton of 22.5 cwt). The lordship varied between 5s. and 8s.6d. a ton but there was in addition a high fixed annual rent which, as Baird tells us, 'caused it to be wrought out with the greatest speed possible. There never was a field of ironstone so rapidly exhausted.'

In 1844 the Bairds began to take leases of ironstone in Ayrshire. Trading as the Englinton Iron Co. they built the Eglinton Works at Kilwinning which went into operation on Christmas Eve 1846. In 1848 this works had three furnaces; by 1854 there were five and by 1859 eight. They extended their interests in Ayrshire by purchasing works that had got into difficulties: Blair Iron Works near Dalry with

five furnaces was bought in March 1852; Muirkirk with its three furnaces and Lugar with four were both acquired in 1856 from the trustees of John Wilson of Dundyvan; finally Portland (near Kilmarnock) with five furnaces was bought in 1864. They now controlled no fewer than fortyone blast furnaces.

They began to go furth of Scotland in the search for supplies of ore. About 1870 they acquired mines in Spain from which thirty years later they were importing about 300,000 tons of ore a year. And in 1875 they leased large haematite ore workings in Cumberland.

Alexander Baird died in 1833 before his sons had developed their coal and iron empire but in 1830 he had given over all his coal and ironstone leases to his five sons William, Alexander, James, Douglas and George who thereupon began to trade as William Baird and Co. Two other brothers Robert and David were assumed as partners in 1840. It seemed that no venture on which the Bairds embarked could fail. No other Scottish ironmasters amassed such fortunes. Between 1853 and 1863 these seven brothers spent a total of £1,041,500 on the purchases of personal estates in Scotland, this over and above what they spent as a firm in acquiring estates for the furtherance of their business. And in 1873 James Baird made his famous bequest of £500,000 to the Church of Scotland, establishing the Baird Trust.

Twenty years later no Baird was a partner in William Baird and Co. The sole partners were William Weir, Robert Angus, Alexander Fleming, John Baird Thorneycroft, John Alexander, William Laird and Andrew Kirkwood McCosh. On 1 February 1893 they formed a private limited company William Baird and Co. Ltd. with a capital of £800,000 in £10 shares and having power to issue £500,000 of redeemable debenture stock. This firm took over both William Baird and Co. and the Eglinton Iron Co. for £1.1m. payable by the allotment of £700,000 in shares and £400,000 in debenture stock. By far the largest share was allotted to William Weir but he assigned part of it to William Baird of Elie and the partners' holdings were £200,200 in shares and £114,800 of debenture stock by William Weir, £30,000 in shares and £17,100 of debentures by William Baird, and £78,300 in shares and £44,700 in debentures by each of the other six. No shares or stock were to be sold to the public; ownership was restricted to the partners and their blood relations.

The capital was progressively increased, in 1898 to £1m. by issue of 20,000 new shares, in 1905 to £1.5m. by issue of a further 20,000 shares and 30,000 preference shares, and in 1914 to £1.7m. by issue of a further 20,000 ordinary shares. In 1927 the 30,000 preference shares were extinguished by repayment of £10 on each share, the ordinary shares were subdivided to give 1,400,000 ordinary £1 shares and 1,700,000 additional £1 shares were created bringing the capital up to £3.1m. By this time the firm had £2,161,600 at credit of their general reserve account and this was capitalised as 1,621,200 ordinary shares of £1 and £540,400 of 5 per cent debenture stock distributed to the holders of ordinary shares at the rate of six ordinary shares of £1 and £2 in debenture stock for every five ordinary shares held. Further changes were made in 1933 when 7s.6d. was repaid on each of the 2,972,200 ordinary shares that had been issued bringing the capital down to £1,985,425. It was then restored to £3.1m. by the creation of 1,114,425 ordinary shares of £1.

Bairds and Scottish Steel Ltd. was formed in 1938. William Baird and Co. Ltd. agreed on voluntary liquidation and authorised the liquidator to sell to the Scottish Iron and Steel Co. Ltd. (as at midnight on 31 December 1938 and on allotment to William Baird and Co. Ltd. of 750,000 preference shares of £1 and 1,200,000 ordinary shares of £1 in the capital of The Scottish Iron and Steel Co. Ltd.) 'that part of the undertaking which consists of the business of ironmasters, coalmasters and brick and cement manufacturers'. This was, of course, by now only part of the company's activities and the liquidator was instructed to sell, at the close of business on 30 June 1939, to a new company carrying the same name William Baird and Co. Ltd., the whole undertaking of the previous company at the price of £2,476,833 to be satisfied by the issue to members of the company of £1,857,625 shares of £1 each in the new company, all these shares to be treated as fully paid up at a premium of 6s.8d. a share.

After the first World War Gartsherrie was able to carry on by reverting to the use of coke instead of coal. The company owned fields of coking coal and coke ovens in the Bedlay-Kilsyth area. About the same time they set up a cement works beside their Gartsherrie Works and their production of cement rose to 1,000 tons a week. In 1933 they proposed to build a new battery of coke ovens at Gartsherrie and a modern blast furnace. For this scheme to be viable it was necessary to find a market for the enormous quantities of surplus coke-oven gas that would be generated. This gas was offered to Glasgow Corporation at about one-third of what it would have cost to produce in their own gas works. Glasgow turned down the offer and so developments at Gartsherrie hung fire. A fresh opportunity arose following the formation of Bairds and Scottish Steel Ltd. in 1938. It became possible to use some of the gas to fire the heating furnaces in the re-rolling works of the 'Combine' and in 1939 the new Gartsherrie coke ovens were built. Gas mains were laid to each of the works; the Coatbridge Gas Co. abandoned gas making and took supplies from the coke ovens; even Glasgow, faced with a shortage of gas, relented and took what gas was left. But their change of heart came too late: the coming of the second World War thrust aside any idea of building a new blast furnace.

There had been a steady reduction in the number of furnaces. The maximum number had been 16, reached in 1843. In 1880 there were 14, in 1901 twelve and by 1951 only five. This does not mean that the output of iron fell in parallel with the number of furnaces; production had risen greatly. But the furnaces were still hand-charged. The scheme for expansion at Gartsherrie was revived and in 1956 work started on the erection of a new up-to-date blast furnace (the first of two projected), on doubling the number of coke ovens and on construction of new ore stocking, screening and sintering plants. The estimated cost was £6m.

SUMMERLEE

These blast furnaces were situated by the side of the Gartsherrie branch canal. Their pig-casting beds were between the furnaces and that canal in full view of the North British railway lines from Airdrie to Glasgow and Coatbridge to Hamilton. At night the casting of the pig iron was a lurid and picturesque sight.

The founders were Wilsons and Company in which the partners were the brothers John Wilson Jr. and George Wilson, their cousin Alexander Wilson and John Neilson and his son Walter. John and George Wilson were sons of John Wilson of Hurlet Alum Works and cousins of John Tennant and Charles James Tennant, chemical manufacturers, of the famous St. Rollox works in Glasgow. Both John and George Wilson had attended Glasgow University, as had their brother William who was Snell Exhibitioner in 1805. John Neilson was the father of James Beaumont Neilson, the inventor of hot blast.

Their feu for the iron works was registered on 18 December 1835 following sasine on 17 December 1835. Andrew Miller says the works were erected in 1837 but in July 1836 Wilsons and Co. are descibed as iron manufacturers so presumably a blast furnace had been erected by then. By 1839 they had four furnaces in blast; in 1842 six were in operation and by 1868 the number had risen to eight. In 1870 waste gases were being drawn off from two furnaces. At that time they owned ten canal boats, four of them steam driven. A school had been provided for children of their workers.[1]

The land feued extended to eight acres, described as bounded on the south by the Monkland Canal, on the west by the lands of Maryston, on the north by the lands of Patonswalls and Hillneuck, and on the east by the feeder of the Monkland Canal on the east of the Coats Burn. Minerals were reserved under at least 2.5 acres measured off in a circle from the centre of the stance of the furnaces to be erected and were to be left as a stand for the furnaces in all time coming. There were some interesting prohibitions. The feuars were banned from erecting any grain mill or lint mill, from grinding any grain or steeping flax, from melting tallow or making soap or candles, from digging any pits or making any erections for tanning, from currying hides, from tanning or currying any leather, and from erecting or operating any dyeworks.

John Wilson died in 1856. A year later the copartnership agreement expired and the other two Wilsons left the company. Walter Neilson was then joined by his brother Hugh and the name of the firm was changed to the Summerlee Iron Company. From then onwards Summerlee was controlled by Neilsons. The copartnership agreement between Walter and Hugh Neilson was to end on 15 May 1886. Both, in fact, died before this and in May 1886 the sole partners were Walter's three sons John, William and George. It was at this time that there was a merger of the Neilson interests in Mossend Iron Works and in Summerlee.

A malleable iron works at Mossend had been founded in 1840 by William Neilson and John Fulton. By an agreement signed 28/29 April 1843 these works were transferred to a Mossend Iron Company in which the partners were John Neilson, engineer, Glasgow, Thomas Chalmers, merchant, Glasgow, William Neilson, iron manufacturer and coalmaster, Mossend, and John Fulton, founder, Glasgow. After the death of Thomas Chalmers (about 1847) the three others carried on until 16 October 1850 when by a minute of agreement Fulton retired and the two Neilsons took over the concern. As from 31 May 1851 the partners in the Mossend Iron Co. were William and Walter Neilson, each holding a nine-twentyfourths share, and Hugh Neilson with a six-twentyfourths share. Their copartnery agreement dated 22 September is in

Strathclyde Regional Archives.[2] The partnership was to obtain for ten years but after five years each partner had the option of retiral. In the books of the new company John Neilson was credited with £417 1s.5d. as his share of the former business and on this the new company was to pay 5 per cent interest annually. It seems a small capital sum. The 'operative' part of the business was to be conducted by William Neilson at a salary of £500 a year and the 'mercantile part of the business as heretofore' by Thomas McLimont and Matthew Cruickshank. William and Walter Neilson were to sign on behalf of the company.

Later William Neilson's son James and Hugh Neilson's son Hugh Jr. became partners. By 1886 James Neilson was the sole partner. Both Walter and Hugh had died and Hugh Jr. had retired and been paid his share.

As from 31 May 1886 the two undertakings were united under the name Summerlee and Mossend Iron and Steel Company. The contract of copartnery, which was not registered until 7 November 1887, shows that the capital was £400,000 in £1000 shares and that the partners and their holdings were:

	Shares
John Neilson, eldest son of the deceased Walter Neilson	80
William Neilson, second son of Walter Neilson	70
George Neilson, third son of Walter Neilson	65
Walter Neilson, fourth son of Walter Neilson	35
James Neilson, son of William Neilson	50
John Alexander Neilson, eldest son of deceased Hugh Neilson	25
Alexander Neilson, second son of Hugh Neilson	25
Hugh Neilson, third son of Hugh Neilson	25
Walter Neilson, fourth son of Hugh Neilson	25
	400

Profits and losses were to be shared in these proportions. The agreement was to run for ten years from 31 May 1886. Management was to be in the hands of John, William, George and James. Accounts were to be balanced to 31 May each year. It was provided that 'in the event of death, bankruptcy or declared insolvency of any partner his interest in the business shall cease and determine at the balance immediately preceding and his share in the copartnery assets and business shall belong to his copartners in proportion to their shares.' They were then to assume responsibility for his debts.[3]

On 13 June 1896 the firm became a public company. The Summerlee and Mossend Iron and Steel Co. Ltd. was registered with an authorised capital of £600,000 in £10 shares, half of them ordinary and half preference. The consideration payable to the Neilsons was £600,000 of which £200,000 was in cash; the balance was met by allotment of 30,000 fully paid up ordinary shares and 10,000 fully paid up preference shares, leaving 20,000 preference shares for subscription by the public. In consequence of a prolonged strike which started at Mossend works in 1899, these works were closed in 1900; they were

sold to William Beardmore and Co. Ltd. in 1906 and the Summerlee firm changed its designation to the Summerlee Iron Co. Ltd. Their interests were now in coal and pig iron to the exclusion of malleable iron and steel which had been produced at Mossend.

In November 1919 their capital was increased to £1.2m. by the creation and distribution of 60,000 paid up ordinary shares of £10 each. Resources had been carefully managed and in 1925 their investments, valued at current market values or less, stood at £480,984. Their ironworks, pits etc. were valued at £801,693. Trading was difficult in the lean years of the 1920s. In their accounts the balance at debit to profit and loss which stood at £95,180 at the end of the financial year ending 28 February 1929 had risen to £199,423 by 1933. By 1937 this had been converted into a credit of £35,155. In 1933 capital had been reduced by writing down the ordinary shares to 2s.6d. each and brought back to £1.2m. by the creation of 888,750 unclassified shares of £1 each. In 1935 the Court of Session refused permission to reduce the capital to £1.05m. by repaying to the holders of preference shares paid up capital to the extent of £5 a share and reducing the nominal value of each preference share to £5. But in 1937 consent was given to a scheme for consolidating the ordinary shares of the company in such a manner that every eight of the existing ordinary shares constituted one £1 ordinary share on which the sum of £1 was credited as having been paid up. The share capital was then £1.05m. made up of 90,000 ordinary shares of £1; 30,000 preference shares of £5; and 810,000 unclassified £1 shares.

On the eve of nationalisation of the coal industry capital was reduced in 1947 to £900,000 by paying off the 30,000 preference shares in full together with a premium of 10s. a share, on condition that the holders of these shares gave up any rights 'of adjustments in their favour that might be made under Section 25 of the Coal Industry Nationalisation Act 1946.' In 1949 a further reduction was made by repaying the holders of ordinary shares 8s. on each share and in 1950 a further 11s. was paid off in respect of each ordinary share. Voluntary liquidation was agreed upon on 9 August 1950 and on realisation of the assets each ordinary share holder got a return of 106s 10.25d on each £1 share.

REFERENCES

1 Andrew Miller, Coatbridge, p. 20; Airdrie Advertiser, 16 April 1870.

2 Strathclyde Regional Archives, TBK 177/1.

3 Ibid, TBK 177/2.

4 Information about the Limited companies is derived from their files SRO BT2/3221/1,2.

CARNBROE

The Carnbroe Iron Company came into existence in 1838. Initially its partners were Alexander Alison, a Leith merchant, and James Merry. James Merry was a remarkable character. Born in 1805 at Nettlehole farmhouse in New Monkland parish (where his father was a coalmaster in a small way) he attended the parish school at New Monkland until his family removed to Coatbridge where his father had taken a lease of the coal on the farms of Blaiklands and Gunny. James appears then to have become a pupil at Langloan School. In 1814 his family moved to Ingram Street in Glasgow and thereafter he attended Glasgow High School. He is said to have had one session at Glasgow University; his name, however, does not appear in the Matriculation Albums. Then he assisted his father in the management of his colliery until in 1833 he himself leased the coalfield of Old Carnbroe from Meiklam of Carnbroe (from whose trustees five years later land was feued for the eretion of Carnbroe Iron Works). From 1858 to 1874 he was Member of Parliament for the Falkirk District Burghs. He became widely known as a sportsman, especially for his involvement in horse racing. He was the first Scotsman to win the Derby, which he did twice, in 1860 with Thormanbly and in 1873 with Doncaster. In the latter year he won also the Oaks and the St. Leger. He died in London on 3 February 1877. His widow survived until February 1911.[1]

Erection of blast furnaces at Carnbroe began in 1838 and by 1839 two were on blast; in 1840 two more were building; by May 1841 five furnaces were in production and by December 1843 a sixth had been completed.[2] No addition was made to that number. The works were situated on the opposite side of the North Calder Water from Calder Iron Works and on the east side of the Wishaw and Coltness Railway, construction of which had started in 1838. Unlike Calder works, the furnaces were on the high ground above the Calder - on the level of the new railway - and unlike all the other Coatbridge blast furnace plants the works had no direct access to the Monkland Canal although by the Wishaw and Coltness railway a connection was available to the Dundyvan Basins. From the outset hot blast was used. Carnbroe did not play so important a part as Calder did in the development of the Scottish iron industry and relatively its history is less interesting.

Alexander Cunninghame of Craigends joined the Carnbroe Iron Co. in 1843. He was a brother-in-law of James Merry: they had married two sisters, daughters of James McHardie of Glenboig, a former Sheriff Clerk of Glasgow and proprietor of Cleddans estate, who built Cleddans mansion house.

At 27 December 1844 Alison retired from the partnership[3] leaving Merry and Cunninghame in a partnership that was to become a household word throughout the West of Scotland. By this time the firm's activities had spread into Ayrshire where in 1842 they had purchased the incomplete Glengarnock Iron Works with two unfinished blast furnaces.[4] By December of that year they had three furnaces on blast there and subsequently they brought the number up to ten. In 1852 they acquired a site at Ardeer on which they built four blast furnaces.[5]

The firm traded under three separate designations, in Lanarkshire both as the Carnbroe Iron Co. and as Alison, Merry and Cunninghame, coalmasters, in Ayrshire as the Glengarnock Iron Co.

By 1866 the partners were James Merry, Neil Robson, Alexander Cunninghame and his son John Cunninghame. In that year Alexander Cunninghame died. The contract of partnership had still thirteen years to run and Cunninghame's trustees left a considerable portion of his fortune in the coal and iron business. As the time for the termination of the partnership approached, measures had to be taken to replace the capital that would then be withdrawn from the business. Neither of James Merry's two sons had any inclination for commercial pursuits so he decided to withdraw gradually from the firm and offer shares to the public.

Accordingly in 1872 Merry and Cunninghame Ltd was registered with a capital of £1,000,000 in £10 shares of which £330,000 was retained as vendor's shares and £670,000 was offered to the public. There were debentures bearing 5 per cent interest: £200,000 of a total of £500,000 were redeemable by half-yearly payments within ten years with a bonus of 10 per cent; the balance of £300,000 was redeemable at par. The first board consisted of Governor: The Earl of Glasgow; Deputy Governor: The Earl of Eglinton and Winton; Chairman: James Merry M.P.; Vice-chairman: Sir Robert John Milliken-Napier Bart.; Directors: Alexander Ronaldson (Vice-chairman G.S.W.R.); Robert Salmond, Rankinston; John Stirling (Chairman N.B.R.); John Cunninghame, Managing Director.

According to the prospectus six furnaces were in full blast at Carnbroe and the whole works there, plant, machinery, locomotives, railways, waggons etc. were valued as a going concern at £184,039. Over the ten years preceding 1872 their average output of pig iron had been 43,337 tons a year and its average cost 46s.8d. a ton. Over that same period profit had averaged 9s.10d. a ton and in the present period of prosperity was running at the rate of £2 15s. a ton. The company held leases of Blackband ironstone estimated to be sufficient for 96 years and of furnace coal for 95 years. Supplies of Clayband ironstone were almost unlimited. At Glengarnock nine furnaces were in blast and output over the preceding ten years had averaged 85,625 tons a year at an average cost of 43s.6d. a ton. Profit over the same period had averaged 13s.1d. a ton and in 1872 was over £3 a ton. Most of their leases had seventy years to run. Ardeer had four furnaces in blast and one undergoing a complete repair. There the output over ten years had averaged 47,033 tons a year at an average cost of 44s.5d. a ton and profit was currently over £3 a ton. The company's leases of minerals in Ayrshire and Renfrewshire were estimated to be adequate to supply Glengarnock and Ardeer with Blackband ironstone for 50 years, Clayband ironstone for 68 years, and coal for 40 years.

It is surprising to find how many other ironmasters invested in this new company. The Houldsworths of Coltness, the Addies of Langloan, Thomas Ellis of the North British Works, John Spencer of the Phoenix, Robert Henderson of Drumpellier works, William Beardmore of Parkhead Forge, Thomas Baker of the Caledonian Tube Works and James Wilson, another Coatbridge tube maker, all took shares, anything from 10 to 600. Not all the shareholders were contented; some were

outspoken in their misgivings about the price that had been paid to the vendors. An Extraodinary General Meeting of the shareholders on 25 May 1875 agreed to sell the whole business and assets of Merry and Cunninghame Ltd. back to James Merry and Merry and Cunninghame Ltd. were wound up voluntarily. The final meeting was on 4 July 1876.[6]

Once again Merry and Cunninghame was a private company. James Merry died on 3 February 1877. By 1891 the partners were John Charles Cunninghame, John Cunninghame and Robert Main. In February 1891 they agreed to sell the whole Lanarkshire and Renfrewshire coal and iron interests to a new limited company which was to have the exclusive right to use the name Merry and Cunninghame or Merry and Cunninghame Ltd. as well as the iron brands or marks 'M&C' and 'Carnbroe' and all other brands or trade marks used by the firm except that of 'Glengarnock'. The new firm was to have a capital of £250,000 in £10 shares, half of them 7 per cent cumulative preference and half ordinary shares. As the price of their interests the vendors were to receive £350,000. Of this £125,000 was represented by the whole ordinary shares of the new company (regarded as fully paid up) and £150,000 was cash payable £50,000 seven days after the first allotment of preference shares to the public, a second £50,000 seven days after the first and the third £50,000 within three months of the first. The balance of the price, £75,000, was to be satisfied at the option of the company either by a further cash payment or by the allotment of £40,000 in debentures and £35,000 in Preference shares.[7]

On 15 June 1892 the Ayrshire interests of Merry and Cunninghame were taken over by the new Glengarnock Iron and Steel Co. Ltd. with a capital of £400,000 in £10 shares. Glengarnock works were leased in 1915 to David Colville and Sons Ltd. and sold to them in 1916.

Carnbroe furnaces were blown out in 1921 at the time of the miners' strike and were never re-lit.

By-products recovery at Carnbroe was the function of a separate company the Carnbroe Chemical Co. Ltd. to whose works the furnace gases were pumped for processing. As was usual in such cases the payments to the iron company were based on the quantity of coal used in the furnaces and on its analysis. These chemical works, erected in 1888 or 1889, produced light and heavy burning oils, creosote, tar, pitch and sulphate of ammonia. Merry and Cunninghame held 1000 shares in the chemical company. About 1925 the Carnbroe Chemical Co. sold their works to Merry and Cunninghame who, in turn, sold them together with the iron works to T. and W. Ward Ltd. for scrap. Voluntary winding up of the chemical company began in 1930.[8]

The 1921 strike was the beginning of the end of Merry and Cunninghame Ltd. Carnbroe Iron Works had been closed. They still had Ardeer iron works but soon they too closed and the company were left with little more than their pits at North Motherwell and Auchenraith and their Walkinshaw brick works. In 1931, on the petition of the Clydesdale Bank, the courts authorised compulsory winding up of the firm.

The case presented for the bank makes dismal reading. In 1915 the firm had made a mortgage debenture issue of £200,000 in 400 five per cent debentures of £500 each, and in 1926 a further debenture

issue of £100,000 in 200 six per cent second mortgage debentures. Both issues were repayable in 1939 or earlier at the option of the company. By 1926 £20,500 of the first issue had been redeemed but in the next five years no further repayments were made and the debentures outstanding in 1931 amounted to £279,500 in all. On these no interest had been paid since May 1928. No dividend had been declared on ordinary shares since 1920 or on preference shares since 1924. The balance sheet for the financial year ended 30 November 1929 showed a balance at debit of Profit and Loss account of £245,271 (against a capital of £250,000) and the accounts for the next financial year showed a further loss of £183,380. The whole share capital of the company had been lost. To the Clydesdale Bank they owed £89,000, exclusive of interest.

The trustees for the debenture holders had served notice on the company calling up the debentures, preparatory to entering into possession of the properties of the company, conveyed to them in security by the trust deeds under which the debenture issues were made, and this precipitated the action by the Clydesdale Bank in order to protect their interests.

By July 1936 the work of liquidation had been completed and unsecured creditors received dividends totalling 2s.5.5615d. in the £1. Some of the items in the liquidator's accounts are interesting. Pit ponies fetched £245 4s.10d and there are even two entries of monies received for dead ponies. Auchenraith colliery brought £10,531, North Motherwell £4,676 and Ardeer £2,462. Iron ore at Ardeer was purchased by Colvilles Ltd. who also bought the company's trade marks for £52 10s.[7]

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4 R.H. Campbell, Ayrshire Archaeological and Natural History Society Collections, 2nd Series, vol. 7, p. 94.

5 Glasgow Herald, 20 December 1852.

6 Information from the file of Merry and Cunninghame Ltd., SRO, BT2/444.

7 File of Merry and Cunninghame (1891) Ltd., SRO, BT2/2114/1,2,3.

8 Private communication, 22 December 1952, from Mr. Charles Dempster of R. and J. Dempster Ltd., Manchester, suppliers of the by-products plant. He had been a shareholder in the Carnbroe Chemical Co. Ltd.

LANGLOAN

The Langloan Iron Company was formed in 1841 by three men of farming stock who had turned to coal mining - Patrick Rankin, born at Mavisbank, Airdrie, in 1788; Robert Miller born at Glenmill in New Monkland parish in 1790; and Robert Addie born at Blantyre in 1799. Addie's father had been overseer on the Earnock estate and came to Airdrie in 1807 in a similar capacity on Airdrie estate. Here in 1822 he leased Gartlea farm on which his son assisted him until in 1829 he struck out on his own and took a lease of Whiterigg farm. Eight years later in company with Robert Miller he leased the minerals of Whiterigg and also of Rosehall estate.[1] Then in 1841 Patrick Rankin joined them in founding the Langloan Iron Company.

In that year the first two blast furnaces were built and a third followed in 1842. By 1854 they had six furnaces; by 1865 the number had risen to eight but as they followed the practice of building larger furnaces the number declined. In 1880 they numbered seven but five years later only six and with certain rebuildings the number remained at that. Aitken and Co. of Glasgow supplied the original blowing engines, two beam engines each of 150 horse power with 50 inch steam cylinders, 100 inch air cylinders and 11 feet stroke.[2] Later they were replaced by a turbo-blower. When the works were built there was no railway in the vicinity and they were served by a side cut from the Monkland Canal that passed along the east side of the Yeomanry Park (now the West End Park) under Bank Street and Buchanan Street and terminated in a small basin. The canal company did not provide any boats: they merely maintained a navigable waterway; and in 1870, although by that time the works were served by railways, Robert Addie and Sons still owned eleven boats on the canal, one of which was steam-propelled.

Robert Miller retired from the ironworks firm in 1853 but he remained a partner in Addie and Miller, coalmasters, until his death on 30 March 1857.[3] Following Patrick Rankin's retiral in 1860 the name of the firm was changed from the Langloan Iron Co. to Robert Addie and Sons, the sons being James and John who by 1895 had become sole partners.[4]

Despite the fact that the Addies had patented in 1882 a process known as the Addie or Langloan process for recovery of by-products[5] in 1885 two of their six furnaces were still open-topped with no provision for collecting furnaces gases and recovering by-products.[6]

In 1893 the Addie's colliery interests were taken over by Robert Addie and Sons' Collieries Ltd. a public company registered on 4 January 1893 with a capital of £250,000 in £10 shares of which 10,000 were 6 per cent preference and 15,000 ordinary. The consideration to the Addies in respect of the sale was £200,000 payable as on 31 May 1892. Of this amount £50,000 was in cash and £150,000 was represented by the issue of 15,000 fully paid up ordinary shares. The collieries were thus effectively removed from control by the iron works company.[7]

Two years later, in October 1895, the Addies entered into an agreement with R. and J. Dempster Ltd. of Newton Heath, Manchester, for the replacement of the Addie by-products recovery plant by one

constructed on Dempsters' patents. Nine months later on 22 July 1896 the Langloan Iron and Chemical Co. Ltd. was registered to purchase Langloan Iron Works and implement the agreement with Dempsters.[8] The agreed price of the properties was £80,000 payable on 1 August 1896 as £15,000 in cash, £25,000 in debentures and £40,000 in fully paid up shares. The authorised capital was £125,000 in £1 shares. John and James Addie were to be the first managing directors and they were to be paid a joint salary of £1500 a year to be apportioned as they themselves should agree. In 1900 Robert and John Dempster were appointed in their place and the board of directors became John Dempster, Robert Dempster, James Addie and Reuben Alfred Hepworth, an engineer from Manchester. The Dempsters each held 59,588 shares; Hepworth had 2236; and the sole Addie interest was 300 shares held by James Addie. Albert James Moore, who had been appointed manager of the works, held 646 shares to which in 1905 he added James Addie's 300. In 1912 Charles Dempster (son of John) and W.F. Perkins (son-in-law of Robert) were appointed directors. John Dempster died in 1916 and by 1917 the directors were Robert Dempster, R.A. Hepwroth, W.F. Perkins, A.J. Moore, and W.D. Heywood (son-in-law of John Dempster). About 1923 A.J. Moore died and in 1924 Robert Dempster died.

An explosion in no.1 furnace on 16 February 1919 demolished nearly two-thirds of that furnace and killed three men. This brought a temporary closure of the whole works for the remainder of that year but throughout the first nine months of 1920 three furnaces were on blast again; the other two were being rebuilt. By December 1920 all the furnaces were out again and they were never relit. The no.5 furnace was the first automatic-charging furnace in Scotland. As the barrow carrying the charge ascended the inclined runway the bell rotated a quarter of a turn; after every four such operations the bell was lowered mechanically, dropping the charge into the furnace.

Earlier a cement plant was erected but it did not get beyond running experimental tests and the closure of the blast furnaces put it finally out of action to the great relief of housewives in the Blairhill district of Coatbridge.

The floating in 1893 of Robert Addie and Sons' Collieries Ltd. had removed ownership of supplies of coal, limestone and ironstone from the iron works company. In later years it was contended that this imposed a severe handicap on the Langloan Iron and Chemical Co. Ltd. On 21 February 1934 that company decided on voluntary winding-up. All debts were paid in full.

In 1937 consent was given to registration of a company with a similar name, the Langloan Iron Cement and Chemical Co. Ltd. It had a nominal capital of £100 in 1000 shares of two shillings each. It was registered by John C.L. Anderson, a solicitor in Cupar. The total number of shares taken was seven, taken by Anderson and six others in the same legal office. The articles of association stated the objects as the taking over and operating the Langloan blast furnaces, cement works and associated plant. The promoters found it impossible to find the necessary capital; no prospectus was issued; no directors were appointed. In fact the company never functioned. No funds were available for the costs of dissolution. Indeed the promoter claimed that he had been unable to recover a single penny of

his fees and outlays in connection with the incorporation of the company which was removed from the register in 1939.[9]

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MARKETS AND ENTREPRENEURSHIP IN GRANITE QUARRYING IN NORTH EAST SCOTLAND 1750 - 1830

by

T. DONNELLY

The history of Scotland's metalliferous and mineral industries has been confined largely to that of its extensive coal and iron workings. Apart from occasional papers, the others in this category such as lead, slate and stone extraction have been relatively neglected by comparison. This exploratory paper concentrates on the reasons for the emergence of one sector of the stone industry, granite quarrying, in Aberdeenshire between 1750 and 1830 and focuses its attention particularly on the growth of markets, entrepreneurship and management.[1] Scotland is rich in granite deposits, but most are located deep in remote highland glens, distant from supplies of labour and, more importantly from either immediate sources of demand or from transport to more distant markets and are thus commercially unviable. This explains why only two of the granite-stone areas, Aberdeenshire and Kirkcudbrightshire, have been developed successfully over a long period and, in the case of the latter, this did not occur until almost the close of the nineteenth century.[2] Prior to 1850, therefore, the only granite deposits tapped were those in the North-East of the country in and around the City of Aberdeen and the fishing port of Peterhead. Being part of the wider building industry the emergence of granite quarrying in Aberdeenshire was partly the result of Aberdeen's commercial and industrial growth in the later eighteenth century and partly a response to the demand from other parts of Scotland and England for a hard durable stone for street, harbour, bridge and lighthouse construction to facilitate transport improvements as the industrial revolution gathered pace.

I

Almost fifty per cent of the surface mineral deposits in Aberdeenshire consist of granite, yet the most important factor influencing the location of a quarry is transport cost. Adam Smith's dictum that the 'value of a coal mine to the proprietor depends as much upon its location as upon its fertility' is equally applicable to granite quarries, an opinion confirmed by the Geological Survey of Great Britain's findings in 1939.[3] Because of this it is little wonder that the earliest workings were close to Aberdeen and Peterhead. In Aberdeen the first deposits tapped were those at Torry, Greyhope, Loanhead and Rubislaw, and to meet both rising and local and English demand after 1764 new workings were opened at Ferryhill, Pitmuxton, Craiglug, Auchlee, Kincorth, Greyhope and Nigg, all of which were within two miles of the burgh. When these inner workings could no longer satisfy demand in the 1780s the frontier line of quarrying shifted to Sclattie, Dyce, Hilton and Dancing Cairns on the city's northern outskirts. The most distant quarries before 1830 were at Tyrebagger almost eight miles away.[4] At Peterhead a similar pattern evolved. The first workings were on the cliff tops close to

the town and as these were worked out the boundaries of exploitation were extended northwards and westwards to the Stirlinghill, the Blackhill and Cairngall, all sights within seven miles of Peterhead harbour.

By 1830 rising demand had transformed granite quarrying from being merely ancillary to agricultural improvement to that of being an industry in its own right, but the absence of official statistics before 1895 makes it difficult to measure either the total output of stone or output per quarry during the years under review. For similar reasons no accurate tabulation of the number of quarries worked, the number of firms involved nor of the amounts of capital invested is possible. Regardless of these handicaps some assessment of output levels must be attempted. As will be discussed later, contemporary commentators were of the opinion that sales of stone to London accounted for fifty per cent of the total quantity of granite produced, and if the only known export figures are simply doubled, it appears that output grew threefold between 1797 and 1831.

Table 1

Estimated output of granite in Aberdeenshire 1797-1831

Year	Tons
1797	24,000
1821	44,000
1831	72,000

Source : Kennedy, op cit., p.212

How this increase in output was achieved is not easily explained, but as all the extracting, cutting and dressing of stone was carried out with the aid of hand tools, it is likely that rising output was met by an increase in the number of workings and also in the labour force rather than by significant gains in productivity. Indeed, the gradual expansion of quarrying away from the immediate vicinities of Aberdeen and Peterhead is perhaps indicative of this process.[6]

Basically the industry was characterised by small units of production, involving little in the way of fixed capital and small numbers of men. Workings were opened and abandoned, it seems, with an almost monotonous regularity. For example, there were many small quarries scattered between Hazelhead and the Cardenheugh on the Rubislaw estate and at Dancing Cairns the workings were dispersed over a distance of one and a half miles. The small size of unit is further emphasized by the numbers employed. In 1780, John McGrenours, a local merchant, had only sixteen men in his quarry at Rubislaw, and as late as 1829 there were only forty-two men working in all the quarries on the same estate. John Gibb had twelve, a Mr. Lyons had six and four other lessees shared the remaining twenty-four between them.[7] Similarly, the amount of capital invested appears to have been negligible. As the surface deposits often gave out rapidly entrepreneurs were unwilling to commit their funds to heavy investment programmes and preferred the option of starting afresh on an

alternative site where stone was more easily obtainable. From what has been said it is a relatively safe assumption that the output of stone per quarry was small. At the close of the eighteenth century one of the small workings at Rubislaw, for instance, was producing only a hundred tons of stone per annum.[8] Writing in the Old Statistical Account, the Reverend Dr. Brown of Newhills claimed that the four quarries on the Auchmull estate turned out 45,000 square feet of litter stones and 15,000 tons of causeway stone a year, but he offers no comparative figures for each individual quarry.[9] One must necessarily treat Brown's figures with a degree of caution. The use of the term 'four quarries' may be misleading for the word 'quarry' was used at that time to denote an area being worked, and a number of workings in an area constituted one quarry. Thus, though there were nominally four workings on the Auchmull estate there may have been a larger number of workings and so output per unit was probably lower than implied in Brown's assertion.[10]

Once the granite had been blasted from the master joints, it was then raised to the quarry head where it was cut and dressed by the masons and paving-sett makers using a combination of hammers, chisels and mauls before being transported from the workings. The difficulties in moving granite from the quarries probably differed little from those in shifting coal from the pits during the same period. Duckham has shown that to allow for ten round trips by cart a day a coal mine required to be situated within one mile of its immediate market or transport point.[11] Assuming that this argument is equally valid for granite quarries (although one suspects that shovelling coal off a hill was easier than handling granite), a similar number of trips should have been possible between the workings at Torry, Kincorth, Ferryhill, Pitmuxton and perhaps Midstocket. From Rubislaw and Nigg quarries which were approximately two miles from the city four to five round trips ought to have been possible in one day, while from Sclattie and Dancing Cairns which were four miles distant it is doubtful if more than two daily trips could have been made. Finally, from Dyce and Tyrebagger quarries only one round trip was feasible.[12]

How exactly the system of carting was organised is not entirely clear. To keep stone moving the quarrymasters probably relied on a combination of their own carts and those belonging to subcontractors. For example, when stone was being prepared for the Sheerness Dock contract between 1819 and 1825, professional carters were employed to ferry stone from the workings to Aberdeen harbour. Similarly, local farmers augmented their cash incomes by carting, but owing to the seasonal nature of agriculture it is likely that farmers would be prepared to cart only when their farming activities allowed; otherwise transport costs would have been likely to rise. Thus the quarrymasters probably built up a stock of stone between hay and harvest time, since it was probably after these peaks that farmers offered their services cheaply.[13] With the opening of the Inverurie canal in 1805 the difficulties in transporting agricultural produce and other bulk commodities between Aberdeen and its hinterland were eased considerably and in consequence proved of benefit to the granite quarries. It permitted not only the tapping of surface deposits of stone scattered along the canal banks, but also facilitated the moving of stone from quarries such as Auchmull, Dancing Cairns, Dyce and Sclattie which were all within two miles of the waterway.[14] In 1826

the Aberdeen Journal recorded that carters were taking stone from Dyce quarry either directly to the city or to 'the shipping place at the canal' whence it travelled to Aberdeen. How much stone was shipped in this way between 1805 and 1830 is not known, but it is unlikely to have been high. Nevertheless, when the canal was opened the rate for taking stone from the quarries to Aberdeen was one and one half penny per ton mile.[15]

II

By the end of the eighteenth century three markets for granite had emerged: an expanding local market, a London market which had arisen out of municipal improvements in the capital, and a national market for stone in the construction of bridges and harbours. Until the 1740s the main building material used in Aberdeen was wood. Most of the existing stone structures were of imported and easily worked free-stone from either Moray or Angus with only a few built of local stone. Granite was used, however, in 1721 to build the Town House in Old Aberdeen and in 1736, the granite foundation stone of the Broad St Waterhouse was laid. In 1730 James Emslie, a local merchant, opened a small quarry at Loanhead and stone from this working was used in the construction of the central block of Robert Gordon's College.[16]

The first major stimulus to the local use of granite came in 1741 when part of Aberdeen was badly damaged by fire. To avoid a repetition of this the Council ordered that all rebuilding of houses and warehouses was to be in stone. To meet the immediate demand for a durable building material that followed, the local masons turned towards the abundant deposits of granite lying close to the fishing village of Torry on the south side of the Dee and began to exploit them. A second and more long-lasting expansionary force was the upswing in the local economy after 1770 when merchants such as George More, the Haddens, the Leys, the Brebners and Youngs began to invest their capital in the woollen, linen and cotton industries within the city and its environs. With the growth of industry labour was attracted from the surrounding districts and combined with natural increase the population of the Burgh rose almost fourfold between 1755 and 1831:

Table 2

Population of Aberdeen 1755–1831

Year	Population
1755	15,730
1801	27,608
1811	35,370
1821	44,796
1831	58,019

Sources : J. Wilson, The Bon Accord Repository (Aberdeen, 1842), pp. 71-72; Decennial Census 1801-31.

As a result of this upsurge in population and economic activity, there was an increased demand for granite in the construction of houses, factories, warehouses and public buildings both in Aberdeen and in the surrounding area. In his Annals of Newhills and Woodside, Morgan points out that the 'whole of Stoneywood, factory and village was built of stone from the nearby Sclattie and Persley quarries'.[17] But how much granite was consumed in local construction work has proved impossible to calculate.

The advent of roadbuilding in the North-East at the close of the century presented yet another outlet for stone, but mainly of a poor quality. Until then Aberdeenshire's roads were reputed to have been amongst the worst in Scotland. The first Turnpike road in the county, the Alford Turnpike, was not opened until 1798 and in the following year was followed by the Ellon Turnpike. Progress was swift and between 1798 and 1855, 447 miles of new roadway were constructed in Aberdeenshire at a cost of £176,178 or £394 per mile, which was in fact below the Scottish average cost of roadbuilding during the same period. These figures, of course, give no indication of the quantities of granite used, but Diack, the industry's first historian, claims that the quarrymasters valued this end of the market as it brought an income from stone which otherwise would have ended up on the slag heap as it was unsuitable either for building work or for sett-making.[18]

Important though the immediate market may have been, the most valuable source of demand was the trade in paving setts and building stone to London. The first stones exported south were simply sea-washed boulders gathered from the beach or fields near Torry which were being cleared for agricultural improvement. Watt asserts that the cost of clearing a field for agricultural improvement in the 1750s was about £100, but of this £25 could be recouped from the sale of stone to London.[19] A vital source of long-term encouragement to the development of the London market came in 1764 when John Adam, the Scots architect, persuaded the London City Fathers to repave some of the main thoroughfares of the capital with Aberdeen paving setts as part of their drive to improve the public health of the City. Indeed, in 1824 Skene of Rubislaw commended that had it not been for Adam's successful recommendation he doubted if the sett trade would have developed as swiftly as it did.[20]. From the 1760s onwards paving setts and, to a lesser degree, building stone found a growing market in London which lasted well into the second half of the nineteenth century:

Table 3

Exports of Granite Stones to London 1797-1831

Year	Tons
1797	12,000
1821	24,687
1831	36,353

Source : Kennedy, op cit., p.212

Although Table 3 is of limited value because no continuous run of figures is available to confirm the impression it conveys, it seems reasonable to assume that the London market grew at least threefold between 1797 and 1831. What is of greater significance is that contemporary commentators and historians through the first half of that century claimed that London absorbed at least fifty per cent of the granite quarried in Aberdeenshire, an opinion shared by James Bremner in his Industries of Scotland.[21]

Throughout the Industrial Revolution transport development proved essential to the enhancement of the economy's infrastructure. The building of bridges and harbours to encourage lines of communication required a stone with sound weathering qualities, resistance to erosion and an ability to withstand great pressure. Granite was ideally suited to such heavy construction engineering and this explains why eminent engineers such as Thomas Telford, John Rennie and John Gibb became its strongest advocates.[22] By 1770 Aberdeen harbour had fallen into a bad state of disrepair and was proving inadequate for the increasing size and numbers of vessels wishing to use the port. In the following year the City Magistrates, at the instigation of the local merchants, invited John Smeaton to survey the harbour. After two extensive examinations, Smeaton recommended that a new pier, twelve hundred feet long, should be constructed on the north side of the Dee and that a new breast wall be erected on the south side. Moreover, because of its abdundance and qualities he also advised that both should be of local granite. Work was begun on the new pier in 1776 and was completed in 1781.[23] Six years later, Smeaton advised again on the harbour and suggested the building of additional jetties in the inner harbour using stone from the nearby Nigg and Greyhope quarries.[24] Further improvements to the port were carried out between 1797 and 1812 under the direction of John Rennie, William Jessup and latterly of Thomas Telford and John Gibb who, like Smeaton before them, also advocated granite as the main construction material.[25]

The use of granite in civil and marine engineering was by no means confined to the North-East of Scotland. Indeed, Aberdeen and Peterhead stone was used in many parts of Britain, but a few examples must suffice. After visiting many quarries both in Aberdeenshire and in the south of Scotland, John Rennie recommended that Rubislaw and Cairngall granite be used in the erection of the Bell Rock lighthouse in the Tay estuary between 1805 and 1811. Rennie was also the chief engineer engaged in the construction of the Southwark Bridge over the Thames and, on his advice, Aberdeen granite was used in the building of the main arches and superstructure. Commenting on it, Samuel Smiles wrote 'it may be affirmed that a more solid piece of masonry does not exist than Southwark Bridge'. Similarly, granite from various quarries was used to build New London Bridge, Sheerness Docks and the Broomielaw Bridge in Glasgow.[26]

Despite the importance of engineers and architects in advocating Scottish granite as a major construction material, it is very doubtful if the southern markets (both Scottish and English) would have developed so successfully had it not been for the proximity of the quarries to Aberdeen itself and to the excellent coastal shipping facilities linking the city to other parts of Britain, especially to ports on the east coast. Many ships clearing for southern ports

sailed in ballast and so were prepared to carry granite at preferentially low rates to gain a cargo. Writing in 1835, Knight pointed out that coal boats leaving for Sunderland, for instance, would carry stone to London first and then pick up their cargo of coal on the return journey, and that the effect of this was to reduce the cost of coal landed at Aberdeen by five per cent below what it would have been had there been no outwards cargo.[27] Thus it can be argued that the viability of the southern market and probably of many of the quarries too, given the high level of demand generating from England, depended as much on the general nature of Aberdeen's coastal shipping trade as upon the qualities of the granite itself; otherwise transport costs would probably have been high indeed or else the industry's overall growth and development would have been much slower as demand would probably have been confined to the local market.

III

The sources of capital in the industry were predominantly local and came from three sources, merchants and stonemasons and, to a much lesser degree, landowners, though the exact numbers of each and their respective contributions towards capital formation remains unanswered. The important role played by the landed classes in coal mining in central Scotland in the eighteenth century might lead one to expect that their counterparts in the North-East pursued an equally aggressive policy towards granite quarrying. This does not seem to have been the case. A few landlords such as John Thornburn of Murtie did work their mineral deposits on their own account, but most, whether they were traditional bonnet lairds or merchants of recent arrival, preferred to lease out their workings to others. The land on which quarries were worked was usually regarded as unfit for agricultural improvement and so by renting it out, landlords augmented their cash incomes from rents and possible royalties at little or no cost to themselves. For example, granite was quarried on Lord James Hay's estate at Auchmull, on Blairs and Pitfodels which were the properties of John Menzies whose family were long-established county gentry and also on the small estate of Raeden, which was owned by Provost George More, whose father had made his fortune in the colonial and stocking trades before investing in land. Others leasing out their mineral deposits included James Hadden of Persley, John Hutchinson of Cairngall, Alexander Duthie of Lovestone and Baillie Robertson of Boddam. Indeed, a tour of estates in the immediate vicinity of Aberdeen in the late eighteenth century would have revealed that granite was being quarried on the majority.[28]

The leases granted by landlords varied from three to nineteen years. At first rentals were low, especially during the industry's formative years, but as demand for stone increased they began to rise. In 1767, for example, Sir George Skene granted a nineteen year lease on part of Rubislaw to Thomas Sutherland, a mason from Gilcomston, at an annual tack of £5 stg. However, in 1798 when Alexander Smith negotiated the lease of a quarry near the Arnbog on the same estate for a period of seven years, the rental demanded stood at £90 stg a year.[29] Presumably low rentals and short leases were awarded when new ground was being broken in and when quarrying was essentially of an exploratory nature. The landowner was thereby saved the cost of testing the potential of the workings and, if the stone proved of

sufficient quality, he was at liberty to negotiate more favourable terms when the short lease fell in.

From 1800 to 1830 though the normal lease appears to have been from seven to ten years. It was at this time, of course, that granite became popular with civil engineers for dock, bridge and harbour construction work and as demand increased the more accessible deposits rose in value. In 1816, for example, John Gibb leased Tyrebagger quarries at an annual rental of £100 stg and in 1829 he secured all the workings at Rubislaw for a rent of £130 per annum. Six years later he leased part of Dancing Cairns quarries from Lord James Hay, but this time the rent required stood at £260 stg a year.[30] At Peterhead, however, rents seem to have been lower than those prevailing at Aberdeen; presumably this was because of its less favourable geographical position. In 1817 the ubiquitous Gibb leased a quarry from Baillie Robertson of Boddam for ten years at an annual tack of £60 stg and eighteen years later, he took up a tack of a quarry on the Erskine estate for £50 stg per annum.[31]

The conditions of leasehold normally laid down precise details on the exact area to be worked, the number of men employed and contained escape clauses to the benefit of both parties in the event of the stone giving out. In 1780, for instance, the agreement negotiated between Skene of Rubislaw and John McGrenours, an Aberdeen merchant, stipulated that quarrying activities were to be confined to the Den of Rubislaw and that no more than eight 'common labourers' and eight 'dressers of stone' were to be employed. Similarly, in 1829 when John Gibb took over the quarries it insisted that the total work force should not exceed thirty men.[32] The basic reason for these restrictions was that landowners were anxious to prevent their quarries from being overworked, and were equally keen to safeguard their future income in what was regarded as an expanding market. However, there were occasions when the enforcement of such regulations proved difficult as the quarrymasters frequently went outside the geographical terms of their lease or employed more than the agreed number of men. Indeed in 1829 Hugh Gordon, the factor on the Rubislaw estate, wrote to Skene protesting that he could not devise any effective plan for checking the overworking of the quarries. To try to exercise some degree of control Skene inserted a penalty clause in one of his leases which insisted tht the lessee would pay a fine of three shillings per day for every man employed over the agreed number, but considering his factor's repeated complaints it is unlikely that this met with any success.[33]

A second entrepreneurial group were local merchants who involved themselves in quarrying in three ways: they leased quarries on their own account, they entered into sleeping partnerships with stonemasons and quarrymasters or acted as middlemen and arranged the sale of stone in the London market. Thomas Bannerman and John Littlejohn, for example, leased a quarry on the Rubislaw estate in 1771 and employed two local masons, Stewart and Sutherland, to work it on their behalf on a sub-contractual basis. Similarly, in 1780 and 1783 John McGrenours and James Byres, both merchants took out leases to quarry on the estate. Apart from a desire to widen their economic base, some of the merchants investing in quarries may have been property speculators in the city with connections in the building industry and, therefore, viewed quarrying as a logical form of backwards integration

to gain control over supplies of building stone. Equally merchants trading with London may have moved in the same direction to get hold of outgoing cargoes, especially as the coastal trade was in London's favour. No doubt the merchants and traders who acted as middlemen may have been similarly motivated. Although no examples of the latter have survived, the correspondence between Skene of Rubislaw and his factor, Hugh Gordon, yields the essential infomation on how the system operated. Paving setts and building stones were sold by Aberdeen merchants in London simply as another commodity along with the burgh's traditional exports, stockings, pork and salmon, and when an order was received from the south the necessary granite was bought from the quarries and forwarded. In 1819, for instance, Gordon wrote to Skene to inform him that several Aberdeen merchants had failed to meet their London contracts because 'the quarrymasters were experiencing great difficulties in obtaining good stone'.[34]

That masons were actively involved in quarrying is evident from the activities of two in particular, the previously mentioned Stewart and Sutherland, who quarried at Rubislaw in the 1760s and 1770s both as subcontractors and in their own right. John Spalding who quarried on the same estate between 1820 and 1829 was almost certainly a mason as was John May who became a partner in the firm of Snell, Rennie and May at Auchmull in 1798; he had worked as a mason at Greyhope before joining the ranks of the entrepreneurs. Similarly, it is highly probable that other quarrymasters at Rubislaw during the 1820s, such as Smith, Forsyth and Low, who all worked independently of each other, were of similar origin. Finally, perhaps it is worth speculating that some of the masons who became quarrymasters may also have been builders and, possibly like some merchants, considered quarrying as a natural form of backwards integration.[35]

As a professional body, civil engineers were prominent in almost every sphere of industrial activity during the eighteenth and early nineteenth centuries. Their technical training offered easy access to upwards mobility and many joined the entrepreneurial class. One of these was John Gibb who became a recognised expert in quarrying. Born in 1776 near Falkirk, Gibb served in apprenticeship in a 'mechanical trade' before finding employment with his brother-in-law in the construction of the Preston Canal. More specifically from 1805 to 1809 he supervised the erection of new harbour works at Greenock where his ability attracted the attention of Thomas Telford who advised him to take up the then vacant post of resident engineer at Aberdeen Harbour. From then until 1840 Gibb was responsible for all the extensions and additions to the port of Aberdeen. Meanwhile in 1816 he turned to granite quarrying and began working at Dyce. By 1824 he had shifted his centre of operation to Rubislaw before ultimately expanding his activities to Dancing Cairns, Erskine, Boddam and the Stirlinghill, thereby becoming the largest quarrymaster in the North East.[36]

Granite quarrying has always been regarded as a speculative venture and it was this no doubt that encouraged partnerships and subcontracting in the industry. The advantages and disadvantages of subcontracting in the coal industry during this period are well known and it is possible that some of these are highly relevant to granite quarrying. One advantage was that the entrepreneur did not have to supervise every working, but could leave his sub-tenant in charge.

Moreover, this sytem allowed the sharing of financial risks while both parties benefited from the pooling of technical skills and expertise.[37] On Skene's estates subcontractors were paid according to a piece rate similar to that common in coal mining. In 1773, for example, John Gill, a sub-tenant, was paid 'in the usual way in terms of the tack agreed with Rubislaw'.[38] Such a method of payment probably saved complicated cost calculations and added an element of stability to the industry. On the debit side, subcontractors may have been interested primarily in short term profits and were none too careful in their methods of working. This may help to explain why parts of Rubislaw quarries were reported to be in such bad condition in 1805 and again in 1829 and, also, perhaps why Gordon always urged his master to ensure that his lessees were 'responsible people',[39]

As the industry matured slowly, the term 'quarrier' began to be used to designate the entrepreneur as well as the operative, suggesting that a professional or, at least, semi-professional group emerged in the industry. William Russell, for instance, who quarried at Auchmull in 1824 was referred to as a 'quarrier' as was James Small, a mason who set up on his own account near the Sclattie Burn in 1832. Perhaps more significantly, the Town and County Bank in 1828 granted a loan to one Andrew Youngson who was so described in the bank's cash credit account. Finally, John Gibb was often referred to both as an engineer and as a quarrymaster. By 1830 one could say with some justification that a group of men, probably small in number, had arisen and considered themselves quarrymasters by profession.[40]

Despite the growth of markets and of professionalisation within the industry, it is unlikely that, given the relatively small scale of production, that high profits were made. Of the known quarrymasters only John Gibb appears to have moved upwards significantly in social status, purchasing the small property of Willowbank on Aberdeen's western outskirts, but whether this was financed primarily from his earnings as an engineer or from profits gained in quarrying remains unknown.[41] This leads to the important question as to where firms raised their capital. As discussed earlier the amount of fixed capital invested in granite quarrying was negligible and so like many other industries in the early stages of Britain's industrialisation it is likely that the exploitation of granite deposits was more dependent upon supplies of circulating capital rather than upon fixed capital. In the eighteenth century Scottish banks were unwilling to overload their portfolios with loans to coal mining and as granite quarrying was considered equally speculative it is likely that similar criteria applied. A detailed study of the surviving records of the Aberdeen Banking Company and of the Town and County Bank down to 1830 reveals that only on one occasion was a loan granted for the express purpose of quarrying and this solely because the applicant, Andrew Youngson, had two shares in the bank which were accepted as security.[42] The raising of finance probably affected the masons more than the merchants so that the ability to secure capital would be the strength of a masons-merchant alliance, since the latter would have financial connections through their other business activities or else their credit-worthy reputations would stand them in good stead. For example, all the Aberdeen banks furnished businessmen with funds over the period and it is possible that some of these found their way into quarrying. In the absence of such support, though it is likely that the quarriers financed their operations on more traditional fashion by

ploughing back profits, by raising new capital from within the firm, by trying to obtain advance payments for orders or by approaching their friends.

Like most extractive industries quarries required careful management if they were to be profitable. Essentially the quarrymanager was responsible for locating the posts of granite, for ensuring that they were worked continuously and for disposing of the stone, all of which demanded a degree of technical competence and an ability to control and direct labour. Throughout the period as a whole though, the estate factors were responsible for supervising the overall workings of the quarries on behalf of their masters. In 1772 John Christie, Skene's factor was responsible for the smooth running of the quarries at Rubislaw and between 1800 and 1830 Hugh Gordon performed a similar task.[43] This was, however, a non-entrepreneurial function. Gordon's letters to Skene merely contain general information about what was happening at the quarries and supplied him with details as to whether the quarriers were observing the terms of their leases. In other words, the factor was there to look after his employer's interests. Gordon was responsible for ensuring that the quarries were not overworked, that the workings were properly drained and that dykes, gardens and roads were not disturbed.[44]

In the eighteenth century the distinction between entrepreneurial and managerial functions were blurred. Frequently entrepreneurs fulfilled both roles and firms thus generated their own source of management from within the partnership. Many of the masters at Rubislaw managed their own concerns, but others such as Gibb and no doubt the merchants who had alternative commercial and industrial interests had to delegate responsibility to subordinates. The paucity of trained engineers in eighteenth century Scotland over this period meant that often there was little alternative but to draw upon the labour force for managerial talent. The men so appointed were chosen because of the knowledge and technical expertise they had acquired through years of working in the quarries; moreover by picking from the ranks, the employers could select trustworthy men who could be relied upon to control the work force.[45] The absence of adequate business records makes it difficult to arrive at a considered judgement on the quality of management in the industry, but the essential features sought in a manager can be illustrated. These included literacy and numeracy as managers were required to submit regular reports on the state of their charges to their masters at regular intervals. The quality of education available in Scottish primary schools at the time was such that most pupils emerged with the ability to read and write so that they ought to have been able to master basic accounting techniques. Thus, there should not have been any serious educational barrier to managerial recruitment.[46]

An equally important quality was that of technical skill, reflected in an ability to extract the stone safely and to determine which stones were suitable for different ends of the market. Doubtless the necessary skills and accompanying rise of experts though took time and emerged only after a long period of trial and error. But the quality of management over the years probably varied very much between firms. In 1805, for example, Hugh Gordon called in experts to view the workings at Rubislaw and wrote pessimisticcally to Skene in consequence:

> I have been speaking to several gentlemen who are good judges and they agree that your quarries are exceedingly ill-managed in the working of them and that they are in a very bad condition at present; all pitted and patached here and there, rubbish laid down improperly and no proper plan to carry off the water.[47]

Besides being an outright condemnation of the then management at Rubislaw, Gordon's reference to 'good judges' is important in that it indicates that there was both an accepted code of conduct and possibly an arbitration procedure within the industry, both of which were reminiscent of contemporary coal mining practice. The letter continues:

> I have taken Mr. Gildacre who is a very sensible man and a good judge and he is to go over the quarry ground to settle the most proper way of working the quarries.[48]

How academically qualified these 'viewers' were is hard to determine. They might well have varied from interested amateurs to local civil engineers who developed an interest in quarrying since it provided an additional source of income. In 1829 some of the workings at Rubislaw were again being run badly and John Gibb wrote to Gordon protesting bitterly about the poverty of management displayed by some of his fellow quarrymasters who were in breach of the agreed rules on blasting and safety procedures. This appears to have provoked no immediate response but in the following year when Gibb secured the sole right to quarry on the estate, it was stipulated in his lease that the workings were subject to regular inspection by competent engineers.[49] Though the quality of management was clearly diverse, it is safe to assume that with the emergence of Gibb, the other professional quarrymasters and the 'good judges' a corpus of rules or guidelines on quarrying practice evolved gradually.

IV

The rise of granite quarrying in North East Scotland exhibits many of the features associated with small extractive industries in the early stages of industrialisation, both regionally and nationally. Little was involved by way of fixed capital and so early growth and development owed much to the proximity of the workings to Aberdeen which minimised transport problems. Local demand though was limited which explains the high degree of enthusiasm for developing the southern markets after 1764, but their growth too would have been much more difficult if not impossible had it not been for the existence of shipping services to and from Aberdeen; otherwise the success of many of the quarries, regardless of the quality of their product, would have been doubtful. Lastly, as expected the sources of capital and entrepreneurship were drawn almost entirely from the immediate area, though the relative contributions of each, landowners, merchants and

masons, remains largely unanswered. Nevertheless, it was from these that a high degree of expertise in granite quarrying and masonry was built up, gaining for Aberdeen a reputation that was to remain unique in Britain throughout the nineteenth century.

COVENTRY (LANCHESTER) POLYTECHNIC.

NOTES

1 H. Hamilton, 'The Granite Industry', in M. Fogarty, (ed) Further Studies in Industrial Organisation, (London, 1948), p. 181; W. Kennedy, Annals of Aberdeen, (Aberdeen, 1818), p. 212; W. Diack, The Rise and Progress of the Aberdeen Granite Industry, (Bradford-on-Avon, 1948), p. 27.

2 Hamilton, op cit., p. 181.

3 J. Anderson, A General View of the Agriculture of the Counties of Aberdeen and Kincardine, (Edinburgh, 1794), pp. 28-29; T.C. Smout, 'Lead Mining in Scotland', in P.L. Payne (ed) Studies in Scottish Business History, (London, 1967), p. 110; HMSO, The Granites of Scotland, (London, 1939), p. 25.

4 W. Knight, 'Granite Quarries of Aberdeenshire', Transactions of the Highland and Agricultural Society (Second Series) vol.11, 1835, pp. 58-62.

5 Diack, op cit., 58-59.

6 Ibid.; W. Watt, A History of Aberdeen and Banff, (Edinburgh, 1900), Map inside flap of book.

7 Scottish Records Office (SRO) GD 244, Box 5, Skene, Gerson and Edwards Collection, Tack between Skene of Rubislaw and John McGrenours 1780; King's College Library (KCL) Mss 2720/139, Skene of Rubislaw Collection, Letter from Hugh Gordon to Skene of Rubislaw 18 Apr. 1829.

8 SRO, GD 244, Box 5, Skene, Gerson and Edwards Collection, Tack between Skene of Rubislaw and John McGrenours 1780, ibid., Miscellaneous Account of a quarry on the Rubislaw estate 1797. It has not proved possible to identify the site.

9 Old Statistical Account of Scotland (OSA), Parish of Newhills, vol.VI, p. 34.

10 I have arrived at this conclusion after studying all the leases contained in both Skene Collections.

11 B. Duckham, A History of the Scottish Coal Industry 1700-1815, (Newton Abbot, 1970), pp. 203-217.

12 ibid.

13 Watt, op cit., p. 217; Report of the Select Committee on Statute Labour in Scotland, (PP vol.XVIII), 836), Evidence of John Gibb, p. 443.

14 J. Lindsay, The Canals of Scotland, (Newton Abbot, 1968), pp.99-112.

15 Aberdeen Journal, 15 Mar. 1826; Lindsay, op cit., p. 103.

16 Hamilton, op cit., p. 181; KCL, Mss 2655, Operative Masons' and Granite Cutters' Journal, vol.IX, 1909, p. 11.

17 Watt, op cit., p. 217; F. Wyness, Silver City by the Grey North Sea, (Aberdeen, 1967), p. 296; A. Munro, Memorials of the Lord Provosts and Aldermen of Aberdeen, (Aberdeen, 1896), pp. 197-262; V. Clark, The Port of Aberdeen, (Aberdeen, 1921), pp. 51-130; T. Donnelly, 'The Economic Activities of the Members of the Aberdeen Merchant Guild 1750-99', Scottish Social and Economic History, vol.1, no.1. 1981, pp. 25-41; P. Morgan, Annals of Newhills and Woodside, (Aberdeen, 1886), pp. 190-191.

18 Diack, op cit., pp. 16-25; M. Flinn, Origins of the Industrial Revolution, (Edinburgh, 1966), p. 41.

19 Watt, op cit., pp. 217-219.

20 Hamilton, op cit., p. 181; SRO, GD 244, Box 5, Skene, Gerson and Edwards Collection, Letter from Skene of Rubislaw to John Gibb, 7 Mar. 1824.

21 D. Bremner, The Industries of Scotland, (Edinburgh, 1869, reprinted Newton Abbot 1969), p. 407; 'Kemnay Quarries', The Builder, 2 Dec 1865, p. 852.

22 The following table gives an impression of the comparative position of granite as a building stone under pressure.

The Resistance of various types of stone to pressure per 1.5 cubic inches

Red Brick	1,817	lbs	per	1.5	cubic	inches
Fire Brick	3,684	"	"	"	"	"
Craigleigh Stone	14,560	"	"	"	"	"
White Veneered Marble	15,560	"	"	"	"	"
Purbeck Limestone	18,636	"	"	"	"	"
Cornish Granite	20,610	"	"	"	"	"
Aberdeen Granite	21,560	"	"	"	"	"
Peterhead Granite	24,535	"	"	"	"	"

23 Hamilton, op cit., pp. 181-182; J. Wilson, The Bon Accord Repository, (Aberdeen, 1842), p. 26; First Report of John Smeaton upon the Harbour of the City of Aberdeen, (Aberdeen, 1834), pp. 1-7; S. Smiles, Lives of the Engineers, vol.11 (London, 1862), pp. 70-71.

24 Report of John Smeaton upon the Inrush of the Seas into Aberdeen Harbour in Easterly Winds, (Aberdeen, 1834), pp. 1-5.

25 Report of John Rennie upon the Harbour of Aberdeen 1797, (Aberdeen, 1834), pp. 1-6; First Report of Thomas Telford upon the Harbour of Aberdeen 1802, (Aberdeen, 1834); Third Report of Thomas Telford upon the Harbour of Aberdeen 1809, (Aberdeen, 1834); Smiles, op cit., pp. 402-405; J. Milne, Aberdeen, (Aberdeen, 1911), pp. 378-379.

26 C.T. Boucher, John Rennie, (Manchester, 1963), pp. 52-62; Smiles, op cit., p. 227; A. Gibb, The Story of Telford, (London, 1935), pp. 260-262.

27 Knight, op cit., p. 64.

28 Ibid., pp. 58-59.

29 SRO, GD 244, Box 5, Skene, Gerson and Edwards Collection, Tack between Skene of Rubislaw and Thomas Sutherland 1767, Tack between Skene of Rubislaw and Bannerman and Littlejohn 1771, Tack between Skene of Rubislaw and Alexander Smith 1798.

30 Knight, op cit., pp. 58-62.

31 Ibid.

32 SRO, GD 244, Box 5, Skene, Gerson and Edwards Collection, Tack between Skene of Rubislaw and John McGrenours 1780; KCL, Mss 2720/139, Skene of Rubislaw Collection, Letter from Hugh Gordon to Skene of Rubislaw 18 Apr. 1829.

33 Ibid., Letter from Hugh Gordon to Skene of Rubislaw 5 Feb. 1829.

34 T. Donnelly, loc. cit., pp. 25-41; SRO, GD 244, Box 5, Skene, Gerson and Edwards Collection, Tack between Skene of Rubislaw and Bannerman and Littlejohn; Tack between Skene of Rubislaw and John McGrenours 1780, Tack between Skene of Rubislaw and James Byres 1783.

35 Knight, op cit., pp. 59-60; Morgan, op cit., p. 217.

36 Knight, op cit., pp. 59-60; The Weekly News, 17 Apr. 1884.

37 S. Pollard, The Genesis of Modern Management, (London, 1965), pp. 38-47.

38 SRO, GD 244, Box 5, Skene, Gerson and Edwards Collection, Memorial of Tacks granted by Skene of Rubislaw 1776.

39 KCL, Mss 2720/38, Letter fom Hugh Gordon to Skene of Rubislaw, 9th Feb. 1805; SRO, GD 244, Box 5, Skene, Gerson and Edwards Collection, Tack between Skene of Rubislaw and John Gibb 1829.

40 Duckham, op cit., pp. 170-199; Morgan, op cit., p. 217; Clydesdale Bank Records: Cash Credit Accounts of the Town and County Bank, Aberdeen, 25 Nov. 1828. I am grateful to Professor Max Gaskin of the Department of Political Economy, University of Aberdeen for allowing me to examine transcripts of the bank's records; The Weekly News 17 Apr. 1884.

41 Ibid.

42 Clydesdale Bank Records, Cash Credit Accounts of the Town and County Bank 1826-1830; Records of the Aberdeen Banking Company, 1769-99. Again I express my thanks to Professor Gaskin for allowing access to the last mentioned bank's records.

43 SRO, GD 244, Box 5, Skene, Gerson and Edwards Collection, Memorial of Tacks granted Skene of Rubislaw 1776.

44 This conclusion is based on Gordon's letters to Skene between 1800 and 1830.

45 Pollard, op cit., pp. 38-47.

46 Duckham, op cit., pp. 113-140; W. Grant, Reminiscences, (Bradford-on-Avon 1948), p. 24.

47 KCL, Mss 2720/39, Letter from Hugh Gordon to Skene of Rubislaw, 26 Feb. 1805.

48 Ibid.

49 SRO, GD 244, Box 5, Skene, Gerson and Edwards Collection, Tack between Skene of Rubislaw and John Gibb 1829.

SUMMARY LISTS OF ARCHIVE SURVEYS AND DEPOSITS

1 National Register of Archives (Scotland)

Full details of the surveys are available from the National Register of Archives (Scotland); all enquiries and requests for access should be addressed to The Secretary, The National Register of Archives (Scotland), P.O. Box 36, H.M. General Register House, Edinburgh, EH1 3YY.

Agriculture Estates, Land & Property

2088 John Guthrie Ltd., grain merchants, Forfar. Accounting records 1887-1959; correspondence 1903-9; notes on average grain prices, 1909-30.

2092 Riddoch of Rothiemay Ltd., timber merchants, Elgin. Minutes, 1967-9; accounting records, 1869-current; correspondence, 1942-67; lists of machinery and timber stock, 1952-66; photographs of loading and transporting cut timber, c. 1950s-60s. Wm. Fiddes & Son Ltd. Minutes, 1950-67. South Midlands Timber Ltd. Minutes, 1942-71; accounting records, 1954-63; stocktaking records, 1953-63.

2094 Walter Elliot, Esq. Titles to lands in County and town of Selkirk, 1633, 1669.

2095 Stirling University Library. Howietoun Fisheries, Stirling. Minutes, 1915-63; accounting records, 1914-73; order books, 1905-16; wages books, 1917-58; correspondence, 1944-57; papers concerning fish rearing, 1873-1959, including accounts of fish spawned, 1882-7, supply lists of ova and young trout, 1914-57, draft report and notes on pisciculture, 1873-82, essay on salmon disease, 1881, and notes on fish hatching, 1957-64.

2107 University of London Library. Fuller collection, writs of lands in Angus, 1457-1627.

2110 Dundee University Library. Papers of Charles Tennant, Blairgowrie. Plans of subjects in Angus and Perthshire, including proposed village of Washington, Perthshire, 1803-39.

2112 John Dun & Co. Ltd., seed and fertilizer merchants, Galashiels. Accounting records, 1844-1939; seed order books, 1897-9; wool order books, 1900-25; letter book, 1930-4.

2113 Kirkpatrick S. Dobie & Son Ltd., grain merchants, Dumfries. Accounting records, 1942-6; titles to land in Dumfries, 1753-1917.

2117 W. Smith & Son Ltd., seedsmen and landscape gardeners, Aberdeen. Minutes, 1901; accounting records, 1921-current; miscellaneous legal papers, 1874-1946; seed and plant catalogues of company, 1895-current, for Peter Lawson & Co., seedsmen, Edinburgh, c. 1740.

2123 Dundee University Library. Ogilvie, Cowan & Company, solicitors, Dundee. Papers concerning Duntrune estate, Dundee, and the Stirling, Graham, Stirling-Graham, and Lacon families, 1622-1929, including Baldoric rent roll, 1767, farm labour books, 1880-97. Plans of property in Dundee, Angus, Fife and Perthshire, 1771-1950, including Crail's mill lade, Fife, 1771; new street (Reform Street) Dundee, c. 1830; estate plans Easter Dalnabreck, Perthshire, 1854.

2133 Nicol, Mackenzie & Denholm, solicitors, Leven. Legal and estate papers relating to properties in Fife, 1871-1970, including Parkhill, 1891-1926, Durievale, 1894-1966. Durie and Kinninmont Property Company Ltd. Minutes, 1939-71; accounting records, 1939-46. Miscellaneous business records of W.B. Wardlaw and Sons Ltd., 1938-69, Buckhaven Property Company Ltd., 1939-49, G.W. Douglas Ltd., 1955-68.

2135 Patullo, Barr & Co. Ltd., seed potato growers and agricultural merchants, Dundee. Accounting records, 1930-7; miscellaneous legal and financial papers, c. 1910-50.

2136 David Ritchie (Implements) Ltd., farm equipment manufacturers, Forfar. Accounting records, 1933-41; photographs of premises, c. 1900-current.

2148 Major J.J. Graham of Fintry. Title deeds of lands in Angus and Dundee, 1423-1787, Kincardineshire, Perthshire, and Sirlingshire, 1460-1864, Edinburgh, 1657-1704. Estate papers relating to lands in Angus and Perthshire, 1622-1813, including rentals of Foulis Easter, 1783, and Fintry, 1757-76.

2153 Andrew Oliver & Son Ltd., auctioneers, Hawick. Minutes of Crookwelcome Club, 1821-31, including prices for cheviot wool and stock. Records of Teviotdale Farmers Club, 1859-1970; minutes, including valuations of Cheviot stocks, 1898-1970; transactions of club, 1859-1941; list of members, 1906-68; miscellaneous papers, 1859-1977, including list of stock sold at Hawick Auction Mart, 1869-1951; notes of prices paid at farm displenishing sales, 1896-1906.

2154 Frank Gysels, abattoir owners, Cupar. Accounting records, 1921-66; correspondence, 1940-60; photographs, c.1930-c.1965.

2160 Central Library, Dunfermline. Cunninghame of Balgowrie MSS. Writs and legal papers in burgh, parish and lordship of Culross, Fife, 1533-1937, including tack of teind salt from Culross salt pans, 1574. Titles, legal and financial papers concerning lands of Balgowrie and Balgowrie House, Fife, 1605-1942. Titles of lands in Stirlingshire, 1724-19 cent.

2177 Duke of Hamilton, Lennoxlove. Titles of Hamilton lands in sheriffdoms of Lanark, Linlithgow, Renfrew, Stirling and Arran, 14-19 cent. Estate and household papers relating to property in Lanarkshire, West Lothian, Arran, and Easton Park, Suffolk, including tacks, rentals, chamberlain's accounts and vouchers, 16-19 cent.

Accountancy and Insurance

2108 Dundee University Library. Jameson & Mackay, solicitors, Perth. Policy books, Northern Assurance Company, 1887-1934.

2235 Institute of Chartered Accountants of Scotland. Minutes of Council, 1951-76, and special committees, 1950-current; accounting records, 1953-73; papers relating to amalgamation of Scottish accountants' societies, 1947-51; photographs and press-cuttings, 1954-74. Society of Accountants of Edinburgh. Minutes of Council, 1853-1951, and specialist commitees, 1925-51; annual reports and accounts, 1902-50; other financial records, 1853-1952; correspondence, 1877-1903; register of members, 1855-1923; and apprentices, 1855-1941. Society of Accountants of Aberdeen. Minutes, 1867-1951; accounting records, 1929-51; register of indentures, 1908-50, and of examination candidates, 1922-52. Institute of Accountants and Actuaries of Glasgow. Minutes, 1853-1951; accounting records, 1853-1914; correspondence, 1893-1910; membership records, 1853-1920; notes on the Council's involvement in liquidation of Western Bank of Scotland, 1857-61; photographs of premises, 1935. Joint Committee of Chartered Accountants' Societies in Scotland. Minutes, 1915-51; accounting records, 1920-52; correspondence, 1950-1; examination records, 1873-1906. Accountants' Publishing Company. Minutes, 1912-75; accounting records, 1922-44, 1965-74.

To be deposited SRO.

2240 Associated Scottish Life Offices, Edinburgh. Minutes, 1837-1977.

2185 Forfar Public Library and Museum. Eastport Savings Association. Minutes and list of subscribers, 1829-33.

Associations and Societies Trade

1982 Aberdeen University Library. United Patternmakers' Association, Aberdeen Branch. Accounting records, 1926-57; correspondence, c.1930-57; printed circulars and official union papers, 1946-57.

2091 Incorporation of Weavers of Edinburgh. Minutes, 1780-1953; accounts, 1827-1963; membership lists, 1780, 1799.

2098 Incorporation of Hammermen of Perth. Minute books, 1871-1962.

2100 Dundee City District Archives and Records Centre. Dundee Productivity Association. Minutes, 1966-71; accounting records, 1953-71; correspondence, 1967-71; lists of members and subscribers, 1968-71.

2142 Dundee Institute of Engineers. Minutes, 1886-current; accounting records, 1892-1947; correspondence, 1907-11; membership lists, 1892-1948; institute programmes, 1903-current.

2157 Scottish Licensed Trade Association, Edinburgh. Minutes, 1880-1976.

2176 The Old Gala Club. Miscellaneous papers relating to Galashiels, Acts of Incorporation of Weavers (transcripts), 1666-1891; papers relating to Galashiels Textiles Factory Workers' Union, 1901-9.

2182 Brechin Public Library and Museum. Records of Brechin trade incorporations, 1600-1888, includes: Shoemakers' Incorporation Minutes, 1600-1818; accounting records, 1703-1867; Glovers' and Skinners' records, 1819-65; Tailors' Incorporation Minutes, 1769-1878; accounting records, 1685-1877; Bakers' Incorporation Minutes, 1755-1888; accounting records, 1676-1867; legal papers, 1782-1855; Hammermen's Incorporation Minutes, 1770-1884; Mechanics' Institute Minutes, 1835-1924.

2183 Arbroath Public Library. Records of Arbroath trade incorporations, 1592-1938, includes: convenery court acts and minutes, 1592-1938; Glover Incorporation acts, 1653-1778; Minutes, 1702-1938; Friendly Society Minutes, 1832-1937, lists of admissions, 1697-1927; Shoemakers' Friendly Incorporation Minutes, 1828-1937; Hammermen Incorporation Minutes and accounting records, 1844-1938.

Distillers and Brewers

2086 John Haig & Co. Ltd., whisky distillers, Markinch. Accounts, 1885-1951; correspondence, 1835-40.

2119 The Highland Distillers Company Ltd., Glasgow. Minutes, 1882-1958; accounting records, 1887-current; correspondence and legal papers, 1883-1974; production records, 1921-68; press-cuttings and advertising material, c. 1885-1970; photographs of distilleries, 20 cent. Glenrothes-Glenlivet Distillery, Rothes; accounting records, 1887-1968; production records, 1888-1973; papers concerning disposal of spent grain from malting, 1903-61; miscellaneous legal and financial papers, some concerning Ardcanny, Glenrothes and Brackhill farms, 1894-1967; plans of building and machinery, 1963-74; photographs of staff and premises, c. 1890-c.1965. Bunnahabhain Distillery, Islay; accounting records, 1882-1970; malt books, 1882-1964; production records, 1903-64; correspondence, 1909-64; papers

concerning peat production, 1885-1963; plans of premises and machinery, 1881-current. Glenglassaugh Distillery, Portsoy; accounting records, 1900-25; production records, 1891-current; correspondence, 1901-21. Tamdhu Distillers,Knockando; accounting records, 1896-1978; barley books, 1897-1972; production records, 1897-1977; correspondence, 1897-1977; plans of machinery and premises, 1896-1976.

2170 Laphroaig Distillery, Islay. Plans of distillery lands, 1840, 1854; engineers' drawings, 1870.

2188 Lorimer's Breweries Ltd., Edinburgh. Accounting records, 1834-1976; correspondence, 1868-95; stock books, 1930-63; accounting records of individual tied public houses mainly in Edinburgh and Perth, 1910-59. Steel Coulson and Co. Ltd.; Minutes, 1888-95; accounting records, 1837-1964. Devanha Brewery Ltd.; later Norseman Lager Co. Ltd.; share records, 1910-74. Marischal Hotels Ltd.; accounting records, 1937-59. Improved Public Houses (Scotland) Ltd.; accounting records, 1854-60.

Engineering

2065 Lamberton & Co. Ltd., general engineers, Coatbridge. Accounting records, 1874-1969; wage records, 1874-1962; correspondence, 1874-1960; job books, 1879-1961; specification books, 1879-1936; photographs of machinery, work sites and staff, 1890-1960.

2136 David Ritchie (Implements) Ltd., farm equipment manufacturers, Forfar. Accounting records, 1933-41; photographs of premises, c.1900-current.

2137 Hugh Sim, Esq., Birnam. J. & J. Sim, coachworks, Birnam; wage books, 1925-38.

2150 Hugh Smith (Glasgow) Ltd., machine tool manufacturers, Glasgow. Minutes, 1903-53; accounting records, 1892-1967, including wage books, 1896-1948; material books, 1880-1934; apprenticeship books, 1886-1967; inventories of buildings and machine tools, 1915-48; drawing office sketch books, 1894-1937; plans of machine tools, 1875-current; photographs of completed machines n.d. Replaces survey No. 304, recently deposited in Glasgow University Archives, to be relisted.

2151 The Border Textile and Engineering Supplies Company, textile machinery agents, Galashiels. Accounting records, 1921-70.

2162 John Ireland & Sons, mill and factory furnishers, Dundee. Accounting records, 1775-1906, including William Ireland's wage book, 1775-82.

Food, Retail and Commodities

2123 Dundee University Library. Miscellaneous financial papers of Miss Elizabeth Gibson, milliner, 1804-6, including roup rolls of shop goods, 1804.

2131 T. Wilkie & Son Ltd., bootmakers, Leven. Accounting records, 1855-63, including apprentice contracts, 1852-3.

2152 Peter Maclennan & Co. Ltd., merchants, Fort William. Accounting records, 1900-71.

2168 James Turnbull (Exports) Ltd., wine and spirit merchants, Hawick. Accounting records, 1891-1964; correspondence, 1919-25; stock books, 1889-1936.

2185 Forfar Public Library. Accounting records of Forfar businessmen, including Charles Gray, merchant, 1786-1811.

2192 Melroses Ltd., tea and coffee merchants, Leith. Accounting records, 1815-1968, including: wage books, 1815-1937; papers concerning tea shipments from Canton, 1834-55, with bills of lading, 1836-53, and insurance policies, 1850-2; ledger of tea imports, 1848-50; tea and coffee stocktaking books, 1850-1908; records of tea shipments with names of vessels involved, 1871-83; tea purchase registers, 1883-1966; shop sales books, 1886-1904; records of business in France, 1895-1914; export ledgers of tea to Russia, Europe, Africa, and Far East, 1910-39. Business and personal correspondence, 1845-79, including letters from William Melrose on journey to Far East, some relating to purchase and shipment of tea, 1845-56. Legal papers and corespondence about trade marks, 1883-1916. Mixture books giving details of teas blended, 1868-1968, and coffee roasted and mixed, 1956-64. Printed price lists and advertising material, 19-20 cent., including pamphlets on preparation and production of tea and coffee, 1832-78. Correspondence, press-cutings and printed matter concerning history of firm, 20 cent. Photographs of premises, machinery, staff, 19-20 cent. Documents relating to James Maclaren & Sons, Wholesale tea dealers, 1795-1950, including accounting records, 1823-1989, correspondence, 1835-1919, history of company, 1950.

Manufacturing: Chemicals, Rubber, Paper

2123 Dundee University Library. Ogilvie, Cowan & Company, solicitors, Dundee; letters from Earl of Elgin concerning limeworks (at Broomhall), 1811-38.

2130 Tullis Russel & Co. Ltd., paper manufacturers, Markinch. Papers relating to the formation of the company, 1900-6; accounting records, 1905-70; cashiers' notebook with details of employees' wage rates, 1918-41; papers relating to employees' savings fund, 1917-60; miscellaneous technical

material concerning paper making, 1896-c.1960, including notes on American paper mills and techniques, 1926-8. R. Tullis & Co. Minutes, 1804-1904; annual reports, 1896-1905; letter book, 1874-85. Papers concerning Auchmuty and Rothes mills, 1810-1918, including: memorandum book, 1810-70, with lists of employees, 1810-44; inventories of stock, 1846-57; accounting records, 1868-95; plans, 1917-18, n.d. Papers relating to Kirkland works, near Leven, 1822-91. Excerpts from Loch Leven Trust books, c.1800-c.1950, including valuation of mills and bleachfield. Papers of William Tullis, 1822-65, including: correspondence on contemporary political matters and descriptions of travel in France and Spain, 1842-65; critical description of workings of unnamed railway committee, 1853. Miscellaneous legal and financial papers and correspondence of Smith and Sharp families, 1695-1840, and Russel family, 1741-1922, including correspondence of David Russel concerning trust to assist St. Andrews University, 1881-7.

2167 Richard Smith Ltd., chemical manufacturers, Glasgow. Minutes, 1896; accounting records, 1879-1958, including statement of workers' wages, 1929; correspondence, 1896-1958; plans of premises, 1882-1929.

2176 The Old Gala Club. Drawings and patents for Robert Tweedie's incandesent gas lamp and for acetylene torches, 1904-7. Minute book and papers of Galashiels Gas Light Company, 1833-66.

Manufacturing: Shipbuilding

2102 Robb Caledon (Shipbuilders) Ltd., Leith division. Records, 1892-1962, 165 pieces. Ramage & Ferguson Ltd., Leith; board records, 1892-1929. Menzies & Co. Ltd., Leith; shareholding records and balance sheet, 1897-1962. Photographs, 1937-8. Deposited in SRO GD.339.

2123 Dundee University Library. Ogilvie, Cowan & Company, solicitors, Dundee. Business papers of Gourlay Brothers & Company (Dundee) Ltd., engineers and shipbuilders, including minutes, 1904-8; accounting records, 1903-4; miscellaneous legal and financial papers and correspondence, 1870-1910; inventories and valuations of machinery and tools, 1950-8; plan of Camperdown Shipyard, Dundee, 1908.

2190 Yarrow & Co. Ltd., shipbuilders and consultants, Poplar and Glasgow. (includes records of Yarrow (Shipbuilders) Ltd., Yarrow (Engineering) Ltd., Yarrow (Training) Ltd., Yarrow Admiralty Research Department, Yarrow Africa Maritime Consultancy Ltd., and Upper Clyde Shipbuilders Ltd.). Minutes of meetings, 1897-1977; board papers, including reports on visits abroad, 1899-1978; lists of directors, managers, and others, 1953-78; annual reports and accounts, 1964-78; other financial records, 1895-1976; legal papers, including agreements and licences, 1894-1931; contract particulars, 1872-1979; files on administration, contracts,

regulations, personnel and firm's history, 1894-1979; correspondence, 1960-78; publications and promotional material, 1883-1978; press cuttings and articles on firm, 1929-76; notes for speeches, 1925-77; photographs of ships, boilers, yard and personnel, 1865-1963; plans of boiler, 1887, premises and allocation of manpower, 1965-78, n.d.; technical data, 1896-1962.

Manufacturing: Textiles

2109 Dundee University Library. W.G. Grant & Company, linen manufacturers, Carnoustie. Plans and technical drawings of machinery and premises, Pansmure Works, Carnoustie, 1857-1960.

2111 J.A. Robertson & Sons (Dumfries) Ltd., knitwear manufacturers. Account book, 1873-7; wage records, 1931-70; newspaper articles relating to company, 1954-current; photographs of staff, premises and products, 1915-c.1969. Legal papers, notes and correspondence relating to history of Paterson and Robertson families, 1820-1973.

2125 Dundee University Library. Caird (Dundee) Ltd., jute manufacturers. Accounting records, 1915-34; directors' reports, 1934; weekly reports on firm's progress, with details of labour problems, 1918-20; work's engineer's notebook, c.1917; photographs of manufacturing processes and employees, c.1930. James Prain &Sons, spinners and manufacturers, Dundee. Private letter book, 1910-13.

2138 Dundee University Library. Baxter Brothers & Company Ltd., linen and jute manufacturers, Dundee. Minutes, 1873-1966; accounting records, 1806-1974, including Glamis spinning mill accounts, 1806-15, and private account book of Sir William Dalgleish, 1891-1904; correspondence, 1898-1929; contract and order books, 1898-1959; legal papers, 1851-1958; property valuations, 1866-1920, 1973-5; miscellaneous papers, incuding meteorogical register kept at Dens Works, 1891-1934, and notes on employment of disabled soldiers, 1919-25. Technical records, 1833-1957, including: notes and calculations concerning new buildings, technical processes, and machinery, 1850-65; chief engineer's book with reports, experiments, specifications and drawings, 1878-1915; plans and photographs of premises and machinery, 1833-1957. Papers concerning history of flax production and Baxter Brothers, 1795-1950, including: Charles Mackie's Reminiscences of Flax Spinning, 1806-66, with descriptions of economic and social conditions in Dundee; papers of Peter Carmichael, 1833-86, including diary with technical notes, 1833; and Jottings on the Growth and Preparation of Flax, 1886; notes on Baxter Brothers' trade with France, 1840-70; detailed description of linen production near Lille, 1886; short histories of Baxter Brothers, 1908, 1950. Photograph of Baxter's half-time school, n.d.

2151 The Border Textile and Engineering Supplies Company, textile machinery agents, Galashiels. Accounting records, 1921-70.

2158 Edward Macbean & Co. Ltd., waterproof clothing manufacturers, Kirkintilloch. Minutes, 1903-23; share register, 1903-47.

2159 J. & W. Stuart Ltd., net and twine manufacturers, Musselburgh. Accounting records, 1843-1913; including lists of net prices and stock, 1873-6; net production book, 1928-51; letter book, 1882-1913; legal papers, 1845-1922, including workers' employment contracts, 1845-91; papers relating to patents, 1859-1922. James Jack & Sons Ltd. Minute books, 1904-20; miscellaneous business papers, 1905-22, including correspondence about weavers' strike at Stonehaven, 1918.

2164 J. & D. McGeorge Ltd., knitwear manufacturers, Dumfries. Accounting records, 1903-72.

2165 Henry Widnell & Stewart Ltd., carpet manufacturers, Eskbank. Accounting records, 1868-1971; wages books, 1881-1916; list of employees, 1922-57; correspondence 1856-1951; production records, 1873-1959; legal papers, 1856-1954, including agreements on water supply to Eskbank factory and pollution of River Esk; minutes of weavers' conference for increased wages, 1907; notes on company history, 1873-95; plans of premises, 1867-95; photographs of staff and premises, c.1950-c.1960; carpet design cards, n.d. Now deposited with SRO.

Timber Merchants

2092 Riddoch of Rothiemay Ltd., timber merchants, Elgin. Minutes, 1967-9; accounting records, 1869-current; correspondence, 1942-67; lists of machinery and timber stock, 1952-66; photographs of loading and transporting cut timber, c.1950-60s. William Fiddes & Son Ltd. Minutes, 1950-67. South Midlands Timber Ltd. Minutes, 1942-71; accounting records, 1954-63; stocktaking records, 1953-63.

2143 James Donaldson & Sons Ltd., timber importers and sawmillers, Leven. Minutes, 1919-79; accounting records, 1877-94, 1920-33; correspondence, 1929-53.

2195 James Donaldson & Sons Ltd., timber importers and sawmillers, Leven. Minutes, 1919-56; accounting records, 1920-33; stock records, 1877-95; correspondence, 1887-1953; legal papers concerning purchase of land and property, 1887-1955; register of members and directors, 1919-73.

2229 James Walker (Leith) Ltd., timber merchants, Edinburgh. Letter books, 1863-1914.

Transport

2066 Mrs. S. Eurie, Kirkcaldy. Letters from Robert Humphrey describing life as a sailor on HMS Belloqueux, HMS Warrior and other ships, 1811-24; family correspondence with descriptions of Scottish riots and embarkation of emigrants for New Zealand, 1848.

2085 Broughty Castle Museum, Dundee. Journal of ship's carpenter on board Discovery on Scott's first voyage to Antarctica, 1902-3; letter from Scott to Baxter Bros., Dundee, concerning sailcloth used on Discovery, 1904.

2096 Arbroath Signal Tower Museum. Register of paybills of shipping, Arbroath Harbour, 1861-73.

2110 Dundee University Library. Papers of Mr. Charles Tennant, Blairgowrie. Miscellaneous plans of subjects in Angus and Pethshire, including Dundee Harbour, Strathmore and Dundee to Newtyle railways, 1803-39.

2114 Highland Regional Council, Inverness. Protocol book of Peter Keith, mainly concerned with wrecks around Thurso, 1887-1900.

2118 William Patrick Library, Kirkintilloch. Minutes of Kirkintilloch, Cumbernauld and Kilsyth Turnpike Tustees, 1822.

2123 Dundee University Library. Financial papers of Robert Ferrier, shipmaster, 1790s. Legal and financial papers relating to sloop Martha and her master, James Drummond, 1797-1800, including notes on seamen's wages, 1797.

2130 Tullis, Russell & Co. Ltd., paper manufacturers, Markinch. Papers of William Tullis, 1822-65, including critical description of workings of unnamed railway committee, 1853.

2137 Hugh Sim, Esq., Birnam. J. & J. Sim, coachworks, Birnam. Wage books, 1925-38.

2144 Charles Donaldson, Esq., Dundee. Book containing notes by Thomas Thomson on navigation techniques and journal of his voyage from England to Madeira, 1844.

2148 Major J.J. Graham of Fintry. Papers relating to Sir David Graham of Fintry's travels in France and Italy, 1571-90, including expenses of journey from Dieppe to Paris, 1571, and common place books, 1580.

2169 Andersons (Newton Mearns) Ltd., motor engineers and agents. Accounting records, 1870-1937; correspondence, 1898-1956; stock book, 1910; printed matter, mainly concerning Humber cars, 1911-78; plans and photographs of premises and cars, 1902-c.1960.

Deposited Glasgow University Archives.

2177 Duke of Hamilton, Lennoxlove. Report on Tyne, Edinburgh, and Glasgow Railway by Joshua Richardson, 1836; plans of Lancaster and Preston Junction Railway, 1836; other papers concerning railways, canals and road, 19 cent.

2183 Arbroath Public Library. Auchmithie Harbour cash books, 1888-1906.

2184 Arbroath Signal Tower Museum. Plan of proposed Arbroath to Forfar Railway, 1835.

2185 Forfar Public Library and Museum. Papers relating to local railways, 1892-1959, including correspondence concerning Caledonian Railway tickets and travel regulations, 1894-1936, and Caledonian L.M.S. and B.R. timetables and routing instructions, 1903-59.

2186 Montrose Public Library and Museum. Contract for employment of Montrose owned ship Potomack in slave trade, 1751; list of subscribers to Montrose and Brechin Railway, 1825. Ferryden Ferry Boat Company Ltd. Minutes, legal and financial papers, 1911-22.

2214 William Thomson &Co. (Ben Line), shipowners and managers, Edinburgh. Agreements and accounts of crews, 1860-1913; official log books, 1902-13; bridge log books, 1966-current; ship plans, 1954-70; photographs, c.1880-current.

2216 Brian Webb, Esq., Glasgow. Files of technical information, specifications and diagrams of Armstong Whitworth vehicles and locomotives, 20 cent.

Whaling

2085 Broughty Castle Museum, Dundee. Papers concerning whaling, 1791-1953, including printed list of ships on Greenland and Davis Straits whale fishing, 1791; accounts of whaling voyages, 1834-1906; letter from Lady Franklin to Captain of whaler Heroine which had assisted in search for Franklin's expedition, 1845.

2123 Dundee University Library. Miscellaneous financial papers and correspondence concerning Dorothy and Friendship Whale Fishing companies, Dundee, 1828-37.

2124 Dundee University Library. Tay Whale Fishing Company. Minutes, 1845-61, 1879-1920; annual statistics of whaling industry, including lists of ships operating in Greenland and Davis Straits fisheries, cargoes brought back and ships lost, 1791-1911; miscellaneous notes and press-cuttings on seal and whale fishing, 1873-1922; minute book of whaler Intrepid, 1865-6, with lists of captains of Dundee whalers and details of their cargoes, 1859-94. Microfilm.

2186 Montrose Public Library and Museum. Letters concerning capture of Montose whaler Eliza Swan, 1813; log of whaler Snowdrop from Dundee to Davis Straits, 1907.

2 Scottish Film Archive

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

Recent acquisitions

CASTLEBANK DYE WORKS (Bowie Castlebank Limited)

"THE SAVING OF A SHABBY COAT"
Laundry processes. 1930

CROUCH AND HOGG, Consultant Engineers.

"WATER DISPLAYS AT THE EMPIRE EXHIBITION"
Technical record of the Royal Fountain Display mechanism. 1938

BRITISH ALUMINIUM COMPANY

"OPENING OF NEW ALUMINIUM WORKS, FALKIRK 1944

SINGER SEWING MACHINE COMPANY

Technical record of casting and dressing operation of aluminium arm. c1959

ROOTES GROUP, LINWOOD

"YOUNG AT HEART"
The opening of the new factory at Linwood and the production line for the Hillman Imp motor car 1963

H. MORRISS & CO., Furniture Manufacturers

Wartime production lines for rifles, barrage balloon stabilisers and experimental aircraft components. c1939-1944

Manufacture of the Royal Suite, Glasgow's wedding gift to Princess Elizabeth 1949

BABCOCK & WILCOX (STEAM) LIMITED

Magazine series 'HOME AND AWAY"
Events concerned with working life and leisure and recreation activities at the firm's Renfrew works 1950s

3. Strathclyde Regional Archives

The following business, industrial and commercial records, have been received since the appearance of the last number.

Applications for access should be made to the Principal Archivist, Strathclyde Regional Archives, P.O. Box 27, City Chambers, Glasgow, G2 1DU, or, if calling at 30 John Street, Glasgow (Basement Office). Telephone (041) 221 9600, Ext. 2021.

Engineering: Shipbuilding

Kelvin Diesels Ltd., brochures, newscuttings, specifications, etc., 1906-1972.

Mackie & Baxter, marine engineers, Paisley: records of the Company including plans & photographs, 1897-1966.

Yardlist & notes on Barclay, Curle & Co., 1848-1885.

John G. Kincaid & Co. Ltd., marine engineers, Greenock (Listed as S.R.O. GD 375).

Shipowners

Hugh Hogarth & Co., Glasgow: records, 1845-1970.

John Hardie & Co., Glasgow: a few records including shipping movement books, 1876-1922.

Thomas Dunlop & Sons, Glasgow: additional records, 1870-1920.

Transport

Photographs of early private & SMT buses, c.1920: an open horse charabanc, c. 1890 and other early vehicles.

Journal of passengers on ship Largo Bay to Australia, c.1888.

Plan of proposed Mid-Scotland Canal, 1924.

Civil Aviation Authority: aircraft movement books, 1978.

Agricultural & Estate management

Ochiltree estate plans, 1797.

Kennedy of Kirkmichael: estate records, 1651 - c.1850.

Hall of Fulbar & Maxwell of Dargavel: titles etc. 16-18 cent.

Farming photographs: Carmunnock, 1906.

Miscellaneous

Glasgow Candle & Soapmakers Society: records 1795-1845.

Photograph of building squad, Govan Ironworks, 1935.

Photographs of models of Royal Carriages built by Charles Glasgow, Paisley. N.D.

Research papers of J.M. Davidson on prelustorie engineering, 1953-4.

Photographs of Glasgow Subway Cable at Bowie's Wire Works, 1935.

BOOK REVIEWS

Angus Martin, The Ring-Net Fishermen (Edinburgh: John Donald. 1981. pp.xi + 263, 62 ills, £12).

It might be argued that a history of fishing which does not place its chosen region in the national context, and says little of market forces, capital, total production, population and diet, is a poor affair not worth reviewing in a serious historical journal. This book has all these faults and more: and despite them all it is quite magnificent. Fascinating in detail, it is a pleasure to read.

To be fair, Martin does not set out to follow the pattern of Malcolm Gray's Fishing Industries of Scotland, or to write an economic history of ring-netting. This is an affectionate story of people, and if a background knowledge of Gray's work is assumed, it is probably the best account of a regional fishery yet published. A rich blend of official sources and oral history illuminates every aspect of the crofter fishing communities of Kintyre, especially their pioneering involvement in ring-netting. Working patterns are skilfully woven into the fabric of social life, and Martin brings to the whole a passionate concern for the oneness of man and nature which he detects in Kintyre and in the Gaelic culture he knows and loves so well. Indeed, this book might almost serve as a guide to fisherman's Gaelic.

Ring-netting began as an intrusion into traditional crofting life depending on drift-netted herring. Drift-netting was passive, expensive and inefficient; ring-netting, developed in Tarbert and Campbeltown from the 1830s, was active, cheap and efficient. Inevitably drift-netters objected to losing fish and merchants resented cheaper herring undermining profits, so ring-netting was prohibited in 1851. That year of industrial triumph elsewhere marks the beginning of government vessels attacking - and occasionally killing- fishermen to force them back to a less efficient mode of production. Nevertheless ring-netting won through, and Martin covers every detail of its growth down to the collapse of the 1970s: the evolution of the Lochfyne skiff and later motor boats; the techniques and working patterns inshore and mid-water; the 'natural lore' and superstitions of the fishery; the clothes, diets and habits of fishermen afloat and ashore; and alternative fish and fishing grounds as the old ones diminished.

Ring-netting, by ever-increasing efficiency, eventually killed the fishery and undermined the culture of Kintyre. Martin mourns their passing, and though he does not himself investigate the relationship between market pressures and the competitive exploitation of wasting resources, he provides much food for thought. Do fish 'belong' to adjacent communities? Is their traditional catching method the only 'moral' one? It is clear from this account that the herring was not fished out simply because men were greedy or wilful, but largely because they did not know how to balance production with stock replacement. Will they ever? To argue (as some conservationists seem to) that the herring should have been left to the crofters would be to put a stop to all progress. Not only would

there have been no 'horrors of capitalism',to use Martin's phrase: there would have been no ring-netters either, for they too used enterprise and capital to advance beyond an existing economic situation, and in so doing undermined the 'good old days' of Lochfyne. Does it matter? To the Gaelic enthusiast, obviously Yes! But the apparent inability of fishermen to cope with the complex economics of fishing would suggest that the decline of specific fisheries is not contrary to, but part of, the order of nature, which may be 'balanced' but is constantly changing. Martin's final pessimism about man's relationship with nature might, perhaps, be tempered by the reflection that there have been far greater changes than the demise of the Lochfyne herring. One might hope that man is resilient enough to build a new economy in Kintyre and in so doing to make a culture different from the old, but no less deserving of love and respect. In the meantime this book is a worthy tribute to the people and the ways of the old fishing communities of the Clyde.

UNIVERSITY OF STRATHCLYDE GORDON JACKSON

Michael Brander, The Emigrant Scots: Why They Left and Where They Went. (London: Constable. 1982. pp.xvi, +199, £8.95).

Numerous books have been written about Scottish migrants. Some of these books are academic, most are romantic. The Emigrant Scots is the latest and must be included in the latter category. This placement should not be considered as a condemnation of the book for it certainly serves a useful purpose. Indeed, Mr. Brander makes no claim to the book being anything other than a general survey and introduction to an extremely complex topic. In a sense he is successful in his mission, though his methodology consists of an unusual, and indeed frequently bordering on the naive, selection of material.

The book is divided into two parts. The first purports to provide a background of conditions in Scotland, explaining why the Scots migrated. The time period covered is from Roman days until 1975, all in 86 pages! A large task, and one which is all too frequently marred by anecdotes of Scottish migrants in their new country. These stories should have been relegated to latter chapters. Nonetheless, the reader does gain a general understanding of conditions within Scotland, which created the wanderlust nature of the Scot. The second part is the arrival and impact of the Scots on the United States, Canada, Australia, New Zealand, India and Africa. Again, Mr. Brander covers too much material in too short a space -- 100 pages in total for all six countries. The other major complaint is that for each country Mr. Brander mainly presents a chronological history of the country with a few Scottish personalities periodically thrown in. The chapter on the United States is illustrative. We learn about the various Presidents (some of Scottish descent), annexation of new lands, development of cities, and economic growth. Scattered amongst this are important details on the number of Scottish

migrants and the significant contributions of a few Scots; these should have formed the centrepoint of the chapter, which ends with a folksy description of a caber-tossing Scot descendent who studied medicine in Edinburgh and then moved on to New Zealand.

This is the first book to examine Scots in so many countries in modern times. Both Burton's The Scot Abroad and Donaldson's The Scot Overseas are concerned with pre-1850 activities. Thus, one must welcome the concept of Mr. Brander, even though the final product is not satisfactory for the serious student. Yet, the book, viewed in its proper context, is useful to the general reader. It does provide a feel, and some surprisingly detailed knowledge, for individuals wishing to appear to be expert dinner-party conversationalists.

UNIVERSITY OF NEW ENGLAND R.A. CAGE

John Kinross, Fifty Years in the City : Financing Small Business (John Murray. 1982. £12.50).

John Kinross was born in Edinburgh in 1904. At age 13, confined to the house convalescing after illness, he took to reading the financial columns of the press, and at age 15 when he had saved £10 he made a 3200 per cent profit in his first share deal. He went on to further striking gains (modestly attributing these to an element of luck) and to become Deputy Chairman of Industrial and Commercial Finance Corporation Ltd.; he is still working in the field of finance and 'finding every day fun'.

On leaving school Kinross went to Glasgow to work for the United Wire Works where he picked up the motto, 'Trust in the Lord - all others, ready cash'. This he carried with him, to his financial advantage, for in spite of natural Edinburgh caution he had a generous streak which needed tempering for the work he was to become engaged in, in the City of London. The 1920s found him rising rapidly in the firm Gresham Trust Ltd., an issuing house, such that by 1933 he was able to buy an ailing firm of "outside brokers", and a list of likely investors from the liquidator of Arthur Wheeler and Coy, his former employer at Gresham. In this way he began his own successful issuing house, always favouring the small firm and making decisions, in good part based on his assessment of the managers. He does not mention the "MacMillan gap" explicitly at this stage though it was here that he was making a contribution, while his first priority was of course profit.

His experience and success in the 1930s equipped him well to play a prominent role in the development of ICFC in the years after 1945. This time the primary objective was specifically to assist small firms, though ICFC did remain profitable. From 1948, as Assistant General Manager, John Kinross made a substantial contribution to the policy-making of ICFC and although he 'retired' in 1974 when Deputy Chairman, he can still be found there.

Kinross is clearly a man with a feel for, and deep knowledge of, the financial markets. (In the 1950s Harold Wincott invited him to write a regular column for the Investors' Chronicle called 'The Successful Investor'.). He gives some attention to the seamier side of City life and his story generally sheds interesting light on a range of topics and personalties that will interest students of the City, but others too, with an interest in the British economy in the twentieth century.

CITY UNIVERSITY, LONDON FORREST CAPIE

J. Kinloch and J. Butt, History of the Scottish Wholesale Society Limited, (Glasgow: Co-operative Wholesale Society. 1981. pp.xi + 416, ill, £10).

This centennial history of the SCWS fills an important gap not just in the development of Scottish consumerism, but also as the history of a unique institutional element in Scottish society. On the production and distribution activities of the Co-op Kinloch and Butt provide an overdue Scottish dimension to the long established accounts of the English CWS. At the same time they extend, up-date and integrate the diamond jubilee publications of the SCWS and various studies of individual branches.

The book is organised around sixteen chapters on a mainly chronological basis. Early excursions into wholesale co-operatives, including some late eighteenth century efforts, are examined. It is, however, the prevailing expansionary forces in the mid-Victorian Scottish economy which are seen as the seed-bed for more concerted efforts towards co-operation. These were concentrated in west central Scotland and culminated in the adoption of rules and the election of officials in 1968. Just why this particular wave of industrial expansion rather than others should stimulate co-operative societies is not investigated and Kinloch and Butt remain content to allow generalisations such as the expanding industrial base, rising savings bank deposits and increasing urbanisation as sufficient explanations. As co-operative antecedents had withered, why were these ventures of the late 1850s and 1860s successful?

The first eleven chapters - a little over 70% - of the book deal with the pre-1914 years and although there is much of interest especially in those chapters concerned with employee relationships, management policies and financial arrangements, a better overall balance would have been achieved with more attention devoted to the twentieth century. Balance might also have been improved if all but three pages in the chapter devoted to 'The Challenge of Private Enterprise, 1868-1914' were not concerned solely with the meat trade. Surely more attention to wider retailing patterns would have been worthwhile. What was the SCWS response to advertising, the multiples and 'the retailing revolution' at the end of the nineteenth century?

Did the SCWS press member societies to change their image - a problem for the SCWS in the inter-war period to which Kinloch and Butt do refer? Can the SCWS be accused of business conservatism alongside other elements of British industry after 1870? No doubt Kinloch and Butt have answers to these questions, but neither implicitly nor explicitly are they offered.

In the twentieth century section readers will find much to interest them. The SCWS contributions to war efforts, productivity improvements of the workforce, the proliferation of services and production lines - ranging from undertaking to laundrying to tomato production and this will, in conjunction with a large number of photographs, touch the nerve ends of nostalgia for many. Latterly reference to the Co-op Bank and to a belated retailing response to the aggressive marketing techniques of the multiples is interesting, and for some no doubt further examination of these post-1945 developments would be desirable.

Occasionally the presentation is infuriating. For example (p. 291), 'In 1934 Funeral Undertaking commenced and in 1935, with the take over of the Scottish Co-operative Laundry Association Ltd. at Barrhead, laundry services were instituted.' The connection, the explanation of the developments and the absence of evaluation in managerial decision-making tend to leave many questions unanswered.

This centennial history is one of the 'older' business histories. As with that genre generally, the history of the SCWS provides a wealth of new material, extensive statistical coverage previously unavailable, a quarry of co-operative information, and an indispensable account of the major milestones in SCWS activities. To Kinloch and Butt for these contributions the readership - local historians, academic researchers and co-operative members - are in their debt.

UNIVERSITY OF KANSAS R.G. RODGER

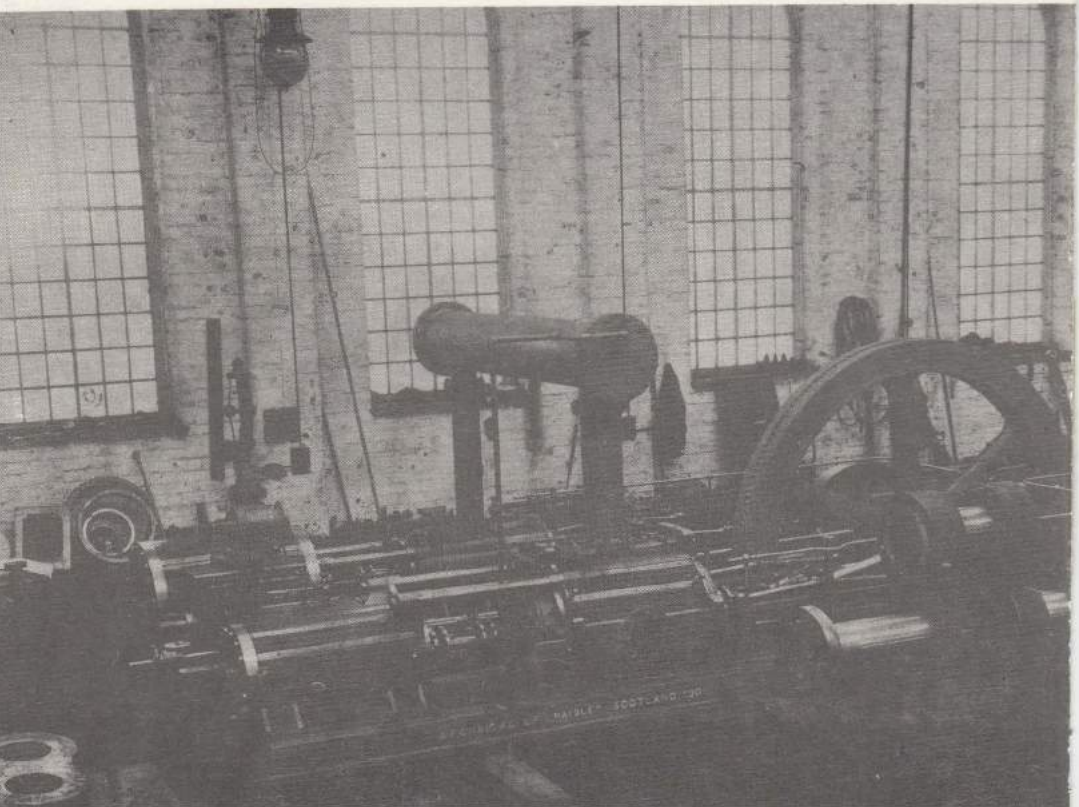
Corrigenda

The last issue of Scottish Industrial History (Volume 5.2, 1982), contained several typographical errors which we wish to bring to the attention of readers.

p.5 Bottom line, 'There is more reason...' should read, 'There is no reason...'

p.13 Third line from bottom, 'It was only its share...' should read, "It was not only its share..."

p.21 Note 2, '1562' should read '1550'.

p.24. Note 44, '(edd)' should read '(eds)'.

As the first two of these corrections concern matters of substance, readers may wish to correct their copies of the journal. All four errors appeared in the article Scottish Salt Making in the 18th Century: A Regional Survey, by Christopher A. Whatley. The editors (and proof-readers) extend their apologies to Dr. Whatley and to our readers in general.