THE INDUSTRIAL HERITAGE OF HOBART

Volume 1

Historical Study

Lindy Scripps

HOBART
CITY COUNCIL

May 1997

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[Volume 2 is the Site Database]

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Methodology

Objectives

This survey was set up to establish a context for industrial sites in the Hobart area and to identify pre-1915 manufacturing and processing sites from Humphrey's Rivulet in the north to Brown's River in the south. In particular, there was a perceived need to identify the existing stock of industrial sites. Industrial sites are particularly vulnerable to redevelopment because their history is generally not widely known, and the buildings themselves are either not readily adaptable to other purposes or they are not aesthetically pleasing or architecturally interesting.

Literature search

The study began with a literature search although it was apparent from previous work carried out by this researcher that there was little in the field of economic history in general or the development of manufacturing in Tasmania. The standard work by Hartwell refers only to a narrow range of manufacturing between 1820 and 1850, the emphasis being on broader economic issues such as trade and the development of the pastoral and agricultural industries. Rimmer's emphasis on the period up to 1821 is similar. Linge's geography of manufacturing in Australia up to 1890 includes a colony by colony analysis which although necessarily brief is useful, particularly for the statistical information.

Some contemporary sources were used in addition to directories and newspapers, although 19th century writers such as Ross and Widowson did not have much to say about manufacturing beyond generalities. W.E. Ford, who wrote as "The Captain" was occasionally useful for late nineteenth century anecdotal information.

Government statistical reports were collated and compiled as a series of tables which appear in the appendix. This was intended to act as a reference to the comparative growth of the different industries and as a check that a reasonable proportion of industries of any particular type were being identified. However, there are a number of factors that one must be aware of when referring to these tables. Unfortunately the statistics were not always helpful and as Hartwell also noted, the earlier reports are not always reliable. Problems were caused by the classification of industries - in some cases a factory seems to be listed under more than one heading. On the other hand if a soap and candle factory is listed only as a soap factory, there is one less candle maker in the statistics. It is not always clear which "Hobart" is being referred to - the town or the police district? If the town, some of the statistics seem to be a bit exaggerated.

There is a number of studies and reports on particular areas or establishments in Hobart, some of them completed by the present researcher either alone or with Audrey Hudspeth. John Button's thesis on the Hobart Rivulet and Tony Rayner's later work for the Hobart City Council were invaluable in helping to sort out some complicated sites. Studies of other areas while not concentrating on industrial development provided helpful reference material for identifying sites. Among these were Alison Alexander's work on Glenorchy, the Taroona Historical Group's essays on their suburb, *Down Wapping*, Amy Rowntree's work on Sandy Bay, Kim Pearce's study of North Hobart, and the 1976 National Estate study of Kingborough.

These studies and others like them were used as a starting point and to establish an idea of the patterns and nature of the development of manufacturing, and to begin to identify some of the sites.

A couple of basic industrial archaeology texts by Judy Birmingham and Ian Jack were used as references for the development of industrial technology.[1]

Parameters

Parameters of time and space were set by the initial grant application, but it soon became obvious that some other limitations had to be set in order to keep the project manageable and to give a reasonable chance of completing it within six months.

The Launceston work of Chris Tassell and Miranda Morris was useful in helping to establish a framework although there are some differences in coverage. For example the emphasis in this study is on manufacturing and processing and sites like livery stables are not included although they were included in the Launceston study.

Generally craft-scale enterprises are not included except when they are used to represent the establishment of an industry or technology. In the 1820s, for example workshops were typically small and not very sophisticated, relying on hand power and a minimum of tools. The test for "craft-scale" was based on the number of employees and the degree of technological sophistication. Similarly, businesses which appear only once in directories or advertisements and about which nothing other than the name is known are generally not included unless they demonstrate a sequence of operators at the same site or they illustrate general matters such as the high turnover in a particular industry.

Database

Following the literature search a method of recording site information was established. A database was set up using a Filemaker Pro program. This program had the advantage of being known to this researcher and being extremely flexible and user friendly. The layout of the data sheets can be changed or adapted at any time without losing information unless the fields are deliberately deleted and information can be retrieved by any word or combination of words entered. A blank data sheet appears in the appendix of this volumes while a print-out of the database is available in a separate volume. The layout was at first based on that used for a study of the Clarence Municipality but after a trial it was adapted to make it more relevant to industrial sites and to allow more options in sorting. Entry to the database was by industrial enterprise or company rather than by site so that for some sites there may be several entries. The industrial history of some sites is so complex that to attempt to accommodate it in one entry is not feasible.

The data sheets are not complete for every site. In some cases the relevant information could not be ascertained during the course of this study. However the database can be updated at any time as further information becomes available.

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[1]Refer to bibliography

Site identification

The database was built up principally from material collated from directories and newspapers. Where there are gaps in the sequence of directories. a closer newspaper search was carried out. Thus the early Hobart Town Gazettes were searched fairly thoroughly to establish details about the industries which were established before 1824 when the first directory was published.

In the absence of street numbers, the actual sites were pinpointed by their proximity to landmarks as noted in advertisements - "opposite Mr. Fisk's mill," "in Argyle Street next to the Bridge," or "next to the Britannia Tavern." Other sites can be identified by reference to the c.1828 plan "Hobart shewing locations" which names owners of the properties. The direction "at Mr. Presnell's" or the information that Mr. Whitehouse had moved to his own premises at the further end of Murray Street can then be interpreted and applied to an actual site by comparison with a modern plan.

Street numbering created something of a problem in the identification of sites. As large blocks were broken up into smaller lots the original numbering system became inadequate. There was wholesale re-numbering in 1886 and 1908 covering most of Hobart's streets. Some streets were also re-numbered at other times, street names were changed and changed back again - sometimes several streets had the same name. A disproportionate amount of time seems to have been spent sorting this out. Some sites in Hobart have had five different addresses. In the suburbs the problem is sometimes worse with no street numbering until this century.

After 1847 the gaps in the sequence of directories can be addressed by reference to the Hobart assessment rolls as published in the *Hobart Town Gazette* and its successors, as well as advertisements in the newspapers and almanacs.

From 1890 the Post Office directories simplify the task of identifying the locations and nature of industrial sites. The advent of illustrated newspapers was also a great help, not only for the illustrated advertisements which appeared from the 1870s but also for the photographs of business establishments and factories which began to appear from about 1894. The following report is illustrated with a number of images drawn from this source.

Apart from the physical details and location of the site, information was also collected about the activities taking place there, particularly where they demonstrated the level of technology, and about the type of goods that were being manufactured. Existing sites were photographed where possible and are included in the print-out of the database.

The database contains more than 400 sites. Although there are visible remains of the industrial history of the site in less than a third of them, information about the remaining sites may be useful not only from the contextual point of view but also in the event of any archaeological work being carried out during demolition or redevelopment.

The Historical Report

The historical summary which follows begins with a brief overview of industrial development and then traces the development of range of industries from the beginning of European settlement until 1914. It does this by describing a number of representative industries in each field, particularly where details of the products and processes involved are known, or if the businesses survived into the twentieth century.

Although the local newspapers often gave little space to "domestic intelligence," they did support local industry to the extent of publicising new enterprises in their news columns. There were extensive "advertorials" particularly in the 1870s as the colony began to pick itself up after a long depression. Some of these articles give great detail about the buildings, machinery and processes involved. Some sections of this report rely quite heavily on information provided in these and other articles appearing in the *Cyclopaedia of Tasmania* published in 1901.

Each section of the report finishes with a summary of the state of the industry in 1914-5 including if known, the subsequent fate of individual manufacturers, and a brief listing of the surviving buildings associated with the industry.

Further research

1. There is great scope for research in the individual industries, and for more analysis of the economic history. Research could be carried out by means of a more detailed newspaper search or by reference to similar industries elsewhere while any archaeological research could add to the existing knowledge.

2. Six months proved to be totally inadequate to complete the survey as I would have wished but it is the first time that the history of manufacturing has been looked at in any detail and will add to the body of work. In addition, this report and the database can be built upon. The database is flexible enough to be constantly updated and added to, and could prove be a useful reference tool.

3. The present survey covered only the period up to 1915. It will be apparent from the historical report that many of the industries of that period have not survived to the present. The industrial sector today is quite different to that existing before the First World War. Further work is needed to look at the fate of the nineteenth century industries and the pattern of development subsequent to 1915.

4. In travelling around the city and suburbs a number of post-1915 industrial sites were identified. These will probably be more vulnerable than nineteenth century sites which at least have the distinction in the public's mind of being "old."

5. In the light of points 3 and 4, a similar survey covering the period, say, 1915 to 1965 would be a valuable addition to the existing research and would cover such issues as the industrialisation of the northern suburbs, hydro-industrialisation, war production, the impact of industrial technology and improvements in transport. etc. etc.

Overview of industrial development

The first settlers bought with them a range of goods designed to meet their immediate needs although, when unpacked, they were found not be all they could be. The only solution for some commodities was to send for them. Collins, reporting that "we have neither Glue, Borax, Resin, or a Bar of Steel" asked for them to be sent by next ship.[1] In any case the urgency to erect permanent shelter and to establish food crops precluded the diversion of labour to manufacturing pursuits, even if there had been a large enough market to support them.

Flour mills were, of necessity, the first "factories" to be established. Water power was the preferred form of motive power and this dictated the location of the mills along Hobart's rivulets. By the early 1820s there were mills on the Hobart Rivulet, the New Town Rivulet and Humphrey's Rivulet. At this time other industries were beginning to develop and the rivulets were to provide the motive power for a range of other establishments particularly tanning and brewing (see plan on following page). The rivulets were used not only to turn the sometimes massive water wheels, but also as a source of water to be used in the various manufacturing processes and as a repository for the waste products of the factories.

There was little incentive for entrepreneurs to enter the manufacturing field - fortunes were to be made in selling meat and grain to the Commissariat and, until 1816, export opportunities were virtually non-existent due to the restrictive trade practices designed to protect the interests of British merchants, and the East India Company in particular. Merchant ships were prohibited from entering the Derwent unless in exceptional circumstances, and vessels trading between Australia and Great Britain were restricted to 350 tons.

At first all consumer goods were imported, paid for by earnings from trade with the Commissariat in the first instance, and later the export earnings of grain and then wool. The few manufacturing industries that sprang up were established primarily to meet the needs of the local market. These industries were typically small craft-based enterprises, requiring a low level of technology, little capital and the output of only one or two men. The manufacturers of this period seem to fall into three groups. There were the merchants who imported the raw materials and employed assigned men in their workshops. Then there were the free tradesmen who came to Van Diemen's Land, bringing with them the tools and materials of their trade - some of them bought a stock of their own manufacture for immediate sale in Hobart Town. Some of these spent only a brief time in their trade - a great many appear to have become publicans, others may have gone into the rural districts, perhaps as small land-holders. There is some scope for further research in this area. A third group were described by Rimmer, and themselves acted as a spur to industrial development:

> The faster increase in urban population was brought about by the emancipists and ticket-of-leave men who without land or prospects as small farmers gravitated to the town and formed the nucleus after 1818 of a cheaper, unskilled, urban work force. These people built houses, went fishing, made tools footwear, hats, candles, soap, harness and furniture, produced bricks, lime and timber, and worked in breweries by 1821. Once the population at the Derwent exceeded 5,000, the diversification involved in substituting home production for some imported goods could perhaps take

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[1]HRA III i p. 233, 4 March 1804

> place without retarding growth as much as it would have done at an earlier stage.[1]

Early entrepreneurs soon learnt to diversify to compensate for the small size of the market. In July 1822 Messrs Godwin & McDougall of Campbell Street announced that they now manufactured candles and starch and would soon be making soap which they trusted would be found equal if not superior to the imported product. They also made wirework articles, and sold books and ironmongery.[2] The smaller manufacturers, reliant on hand power rather than water power, could locate their businesses in the centre of Hobart Town, which was important for those who combined retail with manufacturing premises.

Despite the small size of the market, a wide range of goods was manufactured in Hobart from the early 1820s although some industries such as the metal industries had to rely in imported raw materials. The timber-based trades such as cabinet-making and boat-building and those in which locally grown materials could be substituted were soon able to dominate the local market:

> It will be readily inferred, that any attempt at arts or manufactures in an infant settlement, must be confined to such as most simple and indispensable. In such respects, therefore, the factories of Hobart Town are few, being chiefly confined to breweries, distilleries, and corn mills. Of the former, there are several doing good business, although from the want of adequate roads, and the little encouragement bestowed by the local legislature on agriculture, added to the easy and certain returns of the mere wool-grower, barley is generally at a high price. A considerable quantity of English hops are imported, but those grown in the island are of a superior quality, consequently, as the ingredients for brewing can be most prolifically raised, in a very few years Van Diemen's Land should not only cease to import English beer, but begin to export her own, There were two or three distilleries in operation, but these have been rendered illegal by recent local enactment - how justly, is a question, Of corn-mills, there is every variety, and by the several elements of wind, water, and steam. There is a sugar-bakery; a pottery; several tanneries; and two foundries ...
>
> There is every description of cabinet and other furniture makers, - the workmanship and material are generally very beautiful; in fact, the internal economy of household arrangements in Hobart Town, must be seen to be credited.[3]

The growth of larger manufacturing concerns came about from the export opportunities presented by the development of the other colonies, particularly Victoria and South Australia. During the 1830s Hobart Town experienced something of a boom, the trade with the new colonies coinciding with the height of the whaling industry. But as Victoria matured and began developing its own manufacturing sector, tariffs were introduced to protect its growing industries from the competition presented by the more established concerns of the other colonies.

Statistics collected by the government statistician relating to manufactories from 1831 have been collated in tables for reference and may be found following this overview of development.

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[1]Rimmer p. 343
[2]HTG 20 July 1822
[3]Burn p. 47-8

By 1840, the bubble had burst and Hobart began a period of depression. The witnesses to the Legislative Council Committee upon Immigration in 1841 presented familiar stories of economic stagnation. During the 1830s there had been shortages of labour but there was now unemployment in some trades.

The economic downturn affected a wide range of industries. Robert Robertson, the millwright and engineer, told how, twelve months previously, he had applied for some workmen on the bounty system, such had been the demand for machines. He was glad now that they hadn't come because there was so little demand for machines on the part of the settlers "due to the depression of the times." John Watson, the shipbuilder, had employed up to thirty men but in 1841 employed hardly any. The trade had stagnated, not only because of the decrease in trade to Port Phillip but also on account of a failure of the fisheries.[1] John Gray, the boat builder of Old Wharf, was just one of those who became insolvent at this period.

However, the net result of an enforced reduction in imports due to the depression at the same time that the population was steadily increasing, was an expansion in manufacturing.[2]:

> The manufacture of several articles which have hitherto been imported from England is on the increase. Every day adds some new article to the list. Glue is made at Launceston. The boiling establishments of the continent will, however, we fear, render competition in this hopeless, Oil casks of the best quality, in appearance, and we have no doubt in reality have been made by Mr. Johnson, the cooper, from the Huon pencil wood, which has been long known to possess the quality of not shrinking in drying, the great fault of the other woods in the colony. Mr. Mudie has got an extensive rope walk. Mr. Kirk manufactures soap of first rate quality. Messrs Cleburne, Watchorn and Ladds have long been known for their excellent candles. The former gentlemen and Mr. Murdoch make salt in abundance, which is not only fast superseding that from Liverpool, but prevents the extravagant alterations in price. Boots and shoes from colonial makers, and leather of colonial manufacture, have nearly driven the foreign from the market. We perceive that starch now, too, is to be added to the list. Mr Frederick Hull, of Tolosa, is about to commence the manufacture.[3]

The local press was patriotic in its support of local industries to the point of exaggeration:

> Not too favourable mention can be made of the enterprise of those, who, by their exertions and ingenuity, develop the resources of the colony. Mr Cleburne has entirely put a stop to the importation of soap and candles; Mr. Harte bids fair to do the like with glue and size; and Messrs Tibbs and Co., who have erected a new kiln on a large scale, export their pottery so extensively that although they have taken on a large number of extra hands. they cannot supply the demand.
>
> To those who have not seen the complete premises of Mr John Mezger, at New Town, an adequate idea cannot be formed. The brewery, malthouses, granaries, flour mill and bone mill are perfect; of the latter, the only one in the colony, the benefit to the farmers derived from it is self-evident; crushed bones as a manure is highly extolled in almost every agricultural work or

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[1]Report of the Committee of the Whole Council Upon Immigration p. 28 and 33

[2]Hartwell p. 147

[3]HTC 24 December 1844

> treatise on soils. An immense quantity of this valuable article has already been sent to some of the principle land-holders in the interior.[1]

However, these comments were written just before another short-lived boom which followed the discovery of gold in Victoria. The rush of people to the goldfields created a demand for a wide range of comestibles and equipment. Tasmanian suppliers also exported to the Californian goldfields, everything from jam to pre-fabricated houses. Unfortunately, the manufacturing sector did not benefit as much from this as it could have. Hobart's male population left for the goldfields in droves leading to a great shortage of labour and a corresponding decline in local demand.

In the late 1850s, a gas works was established at the lower end of Macquarie Street, confirming the perception of Wapping as a de facto noxious trades area. A number of industries had been established in the area as early as the 1820s including the government slaughterhouse, a soap factory and a fellmonger. Another industrial area was expanding at O'Brien's Bridge, with the further development of the Houghton and Murrayfield estates. Here were tanneries, soap factories and flour mills.

By the end of the 1850s the economy was again entering a period of stagnation which was to last throughout the 1860s and into the 1870s. The southern part of the state in particular declined and the population of Hobart remained static at 25,000 between 1861 and 1870.[2] The period was characterised by unemployment and destitution. They was very little building activity and in Hobart a large number of buildings were untenanted. Attempts to set up new industries in Hobart such as woollen manufacturing did not get off the ground.

The mineral discoveries of the 1870s may have done little directly to promote manufacturing[3] but some industries such as sawmilling did great business supplying pit props and other timber for the mining areas. If the local press can be taken as a guide there was also a degree of optimism.

In October 1872 the Mercury began publishing a series of articles on Tasmanian industries. These articles were essentially about industries in and around Hobart:

> For sometime past hundreds of persons in this Island, have either from platform or through the press, have been wailing most dismally over the utter stagnation of business and industry of every kind in Tasmania, and these pleasant individuals have also been fond of pointing out to us that we have nothing but inevitable ruin staring us in the face, Business is not as brisk as it might be, or as we would wish to see it, but at the same time the colony is not in nearly so bad a condition as represented, and by the statement of a few facts in connection with the various manufactories and industries in progress, we wish to set right these croakers, whose audacity and stupidity in crying down the colony are only equalled by their ignorance of the real condition, and their incapability of suggesting a remedy for the state of affairs, which they assert exists. We propose to start with the most extensive of our industries and manufactories, and then to proceed with a description of the smaller ones. [4]

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[1]Colonial Times 25 January 1850
[2]Linge p. 638
[3]Linge p. 649
[4]Mercury 2 October 1872

The series of articles dealt with breweries, the Murrayfield complex, tanneries, jam factories, hatters, flour mills, Edwards' machine shop, and Hood's lithography.

The economy continued to improve during the 1870s:

> At the present time abundant evidences are visible in Hobart Town of the prosperity of the colony, in the number of new buildings that are in the course of erection, and it is still more gratifying to find that trade has improved so much of recent years as to warrant the rehabilitation of manufactories that have as such been abandoned for some time past.[1]

One of the rehabilitated factories was the old soap factory in lower Macquarie Street, established by Roberts in the 1820s but in 1878 taken over by a Mr Simpson, formerly the foreman at Murrayfield. New machinery had been installed and a boiler made by Henry Clark of New Wharf.

Thomas Just reported that in 1881 there were 3,437 trades, manufactories and works in operation in Tasmania covering 67 different trades. Many of these, he said, were of small proportions but all had experienced brisk trading for some time past and were steadily improving. There had been a great increase in the manufacture of agricultural implements the previous two years and the foundries were doing very well as a result of the demand created by the mining industry. There was room for expansion in several industries notably in the manufacture of bone dust, soap and candle making, pottery and shipbuilding. Mechanisation in industries such as bootmaking and brickmaking had resulted in operations being carried out on a more businesslike scale, and basketmaking was a growing industry with Tasmanian willows found to be of excellent quality. Although the beer tax introduced in 1880 had resulted in the closure of some smaller breweries, the abolition of the carriage tax had provided an impetus to the trade and all 15 of the colony's coach factories were in full employment. The ad valorem duty imposed on hats had virtually shut out the imported product to the advantage of the local manufacturers of which there were five in Hobart. The jam factories were already a Tasmanian success story with over four million pounds of jam valued at £100,249 being exported the previous year. Just concluded all the evidence pointed to Tasmania making good progress. There had been no increase in imports due to the progress of the manufacturing sector:

> A few years back the colony was dependent upon the Mother Country and Australia for the supply of most articles of general utility and consumption. Owing to the industrial progress of the last few years, the colonists are now able to supply themselves with many articles, and even to find a small surplus for export.[2]

During the 1880s an important new industry was established in Hobart. There had been earlier attempts to establish a woollen industry in Hobart but this had either not got off the ground at all or had lasted a very short time. [see below]. In 1883, Johnstone Bros., who had formerly been in partnership in a woollen mill in Launceston, took over the old Artillery Brewery building in Gore Street and set up a woollen factory there. Three years later Aiken, Lennox & Co. established another woollen mill in the former Excelsior Carriage Works at the lower end of Macquarie Street, opposite the soap works. These enterprises were extremely successful until the end of the First World War and beyond but had both closed down by the late 1930s. The eighties also saw the establishment of large-scale confectionery and bakery businesses.

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[1]TM 27 July 1878 p. 14

[2]Just pp 11-17

The 1890s saw the worst depression that Tasmania had yet seen with widespread unemployment. The Tasmanian International Exhibition of 1894-5 was a showcase of Tasmanian manufactures. It was not a financial success but:

> it gave an impulse to the employment situation in Hobart at a time of great need, tending to bridge the gap towards the better times from 1895 onwards. It did not greatly improve the local economy as had been expected: local influences did that, but it did greatly improve local morale.[1]

Certainly the local press played its part, the *Mercury* reporting fulsomely on the products of Tasmanian industry which were, it was at pains to point out, as good as the imported articles.

The 1890s saw a decline in some industries (see statistical tables) notably in the building trades with, for example, a number of the smaller brick makers going out of business. The decade also saw the beginning of the Jones & Co. empire as Henry Jones formed a partnership to take over the ailing Peacock jam factory. The late 1890s also saw a number of other industries expand with new premises and factory extensions being built. New enterprises included Eric Lewis's knitting factory and the bicycle factories which reflected the growth in popularity of this form of transport.

With federation came the removal of the tariffs which had protected some of the local industries. Some of those industries which had expanded in the late 1890s were caught out. Inevitably some of Hobart's factories were put out of business, unable to cope with the competition and the cost of up-grading - among these were the confectionery works and the shot tower at Taroona.

Despite this, the first decade of the new century saw a building boom in Hobart, at first boosted by the construction of buildings for federal purposes. Among the new industrial sites was the *Mercury* printery in Macquarie Street, the Adams brewery in Elizabeth Street, the Websters building in Liverpool Street, and cool stores and ice works in Hunter Street. These all necessitated the demolition of earlier industrial sites. During 1908 and 1912 many of the business premises in the city were revamped or extended in the interests of modernisation - "progress is the order of the day."[2]

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[1]Mercer p. 36
[2]Mercury 15 April 1912

Summary of of official returns of manufactories and trades 1831-1915

Collated from blue books and Parliamentary papers

MFY OR TRADE	1831	1835	1840	1845	1850	1855	1860	1865	1870		MFY OR TRADE
									Hobt	Glen	
Aerated water mfrs	-	-	-	-	-	-	-	-			
Agric. Imp. Makers	7	10[1]	-	-	-	-	4	7	3	2	Agric. Imp. Makers
Bakers	-	1[2]	-	-	-	-	40	28	23	1	Bakers
Bark mills	-	-	-	-	-	-	-	-	2	-	Bark mills
Basket makers	-	-	-	-	-	-	6	3	3	1	Basket makers
Blacksmiths	-	-	-	-	-	-	25	16	19	3	Blacksmiths
Blanket factory			1[3]	-	-	-	-	-	-	-	Blanket factory
Bone dust mfrs	-	-	-	-	1	2	3	1	1	-	Bone dust mfrs
Boot & shoe makers	-	-	-	-	-	-	60	23	25	8	Boot & shoe makers
Brass founders	-	-	2	-	-	4	5	6	5	-	Brass founders
Brewers	8[4]	10	10[5]	13	-	6	6	6	5	-	Brewers
Brick makers	-	-	-	-	-	7	-	-	3	1	Brick makers
Builders	-	-	-	-	-	-	18	16	12	3	Builders
Cabinet makers	-	-	-	-	-	-	16	9	6	2	Cabinet makers
Candle mfrs	3	2	-	7	-	8	6	5	2	1	Candle mfrs
Carpenters	-	-	-	-	-	-	32	14	12	4	Carpenters
Cheesemakers	-	-	-	-	-	-	-	-	-	-	Cheesemakers
Chemists	-	-	-	-	-	-	9	9	7	-	Chemists
Cider makers	-	-	-	-	-	-	-	-	-	-	Cider makers
Clothing factories											Clothing factories
Coach makers	3	2	-	3	-	-	4	4	4	-	Coach makers
Comb makers	-	1	-	-	-	-	-	-	-	-	Comb makers
Coopers	2	3	-	-	-	-	7	5	4	1	Coopers
Distilleries	1	1	-	-	-	-	-	-	-	-	Distilleries
Dyers	1	3	-	-	-	-	1	3	1	-	Dyers
Engineers	-	3[6]	4[7]	-	-	-	6	4	4	-	Engineers
Fellmongers	4[8]	3	-	-	-	-	8	6	13	3	Fellmongers
Foundries (Iron)	1	-	2	-	-	3	3	3	7	-	Foundries (Iron)
Fulling mill	-	-	1[9]	-	-	-	-	-	-	-	Fulling mill
Furriers	-	2	-	-	-	-	2	-	3	-	Furriers
Glue and size mfrs	-	-	-	-	1	6	6	1	-	-	Glue and size mfrs
Gunsmiths	-	-	-	-	-	-	3	2	3	-	Gunsmiths
Hat factories	1	-	1	1	-	-	-	-	-	-	Hat factories
Iron smelting wks											
Jam factories	-	-	-	-	-	-	-	-	10	-	Jam factories
Lime Kilns	2[10]	-	-	2	2	2	-	-	-	-	Lime Kilns
Malsters	-	-	-	-	2	6	6	-	2	1	Malsters
Mast & Block mkrs	-	1[11]	1	-	-	-	7	2	-	-	Mast & Block mkrs
Mills flour - wind	-	-	3	)	)	2	3	1	1	-	Mills flour - wind
water	10[12]	10	12[13]	)15	)12	8	7	3	1	3	water
steam	-	1	1	6	2	7	7	3	5	1	steam
hydraulic	-	-	-	-	-	1	1	-	-	-	hydraulic
horse	-	-	-	-	-	-	-	-	-	-	horse
Millwrights	-	-	-	-	-	-	-	-		-	Millwrights
Parchment Makers	2	-	1[14]	-	-	-	-	-		-	Parchment Makers
Pastry cooks	-	-	-	-	-	-	17	8	3	-	Pastry cooks
Pianoforte makers	-	-	-	1	1	-	4	2	2	-	Pianoforte makers
Pipe mfy	1	-	-	-	-	-	-	-	-	-	Pipe mfy
Potteries	1[15]	1	-	-	2	3	1	1	1	-	Potteries
Printing offices	-	3	1	-	-	-	5	6	10	-	Printing offices
Rope makers	1	1	-	-	-	-	1	-	-	-	Rope makers
Saddle &c makers	-	-	-	-	-	-	-	-	5	1	Saddle &c maker
Sail makers	-	3	-	-	-	-	5	5	3	-	Sail makers
Salt manufacturers	-	-	-	1	-	-	-	-	-	-	Salt manufacturers
Saw mills	2	2	1	1	-	4	5	5	3	-	Saw mills
Shipwrights etc.	-	4	-	.16	-	-	11	7	9	-	Shipwrights etc.
Snuff mfrs	-	1	-	1	-	-	-	-	-	-	Snuff mfrs
Soap boilers	1	1	-	1	1	3	3	1	2	1	Soap boilers
Starch mfrs	-	-	-	1	2	1	1	-	-	-	Starch mfrs
Stone masons	-	-	-	-	-	-	25	9	10	2	Stone masons
Tailors	-	9	-	-	-	-	22	17	24	-	Tailors
Tanners	14[17]	-	10[18]	7	7	7	8	30	13	3	Tanners
Tin smelting works	-	-	-	-	-	-	-	-	-	-	Tin smelting works
Tin workers	-	-	-	-	-	-	7	9	7	-	Tin workers
Turners	-	-	-	-	-	-	6	4	4	-	Turners
Vinegar mfrs	-	-	-	-	-	-	1	-	-	-	Vinegar mfrs
Watchmakers	-	-	-	-	-	-	13	12	11	-	Watchmakers
Wheelwrights	-	-	-	-	-	-	17	7	6	2	Wheelwrights
Wool staplers	-	-	-	-	-	-	4	2	2	4	Wool staplers
Woollen/cloth mfy	-	-	-	1	1	-	-		-	-	Woollen/cloth mfy

MFY OR TRADE	1875			1880			1885			MFY OR TRADE
	Glen	Hobt	King	Glen	Hobt	King	Glen	Hobt	King	
Aerated water mfrs	-	8	-	1	4	-	-	4	-	Aerated water mfrs
Agric. Imp. Makers	2	2	-	3	2	-	-	2	-	Agric. Imp. Makers
Bakers	2	31	2	-	5	-	2	23	1	Bakers
Bark mills				-	2	-	-	-	-	Bark mills
Basket makers	-	2	-	-	4	-	-	4	-	Basket makers
Blacksmiths	5	19	6	2	20	3	3	11	3	Blacksmiths
Blanket factory	-	-	-	-	-	-	-	-	-	Blanket factory
Bone dust mfrs	1	-	-	1	-	-	-	-	-	Bone dust mfrs
Boot & shoe makers	5	61	6	4	86	3	3	70	4	Boot & shoe makers
Brass founders	-	4	-	-	2	-	-	2	-	Brass founders
Brewers	-	6	-	-	4	-	-	2	-	Brewers
Brick makers	2	4	-	2	4	1	3	9	2	Brick makers
Builders	2	10	1	-	8	-	-	10	-	Builders
Cabinet makers	-	8	-	-	16	-	-	13	-	Cabinet makers
Candle mfrs	1	2	-	4	2	-	1	1	-	Candle mfrs
Carpenters	2	18	4	-	12	-	2	17	3	Carpenters
Cheesemakers	2	-	-	-	-	-	-	-	-	Cheesemakers
Chemists	-	7	-	-	7	-	-	9	-	Chemists
Cider makers	-	-	-	-	-	-	-	-	-	Cider makers
Clothing factory	-	-	-	-	6	-	-	2	-	Clothing factories
Coach makers	-	5	-	-	6	-	-	6	-	Coach makers
Comb makers	-	-	-	-	-	-	-	-	-	Comb makers
Coopers	-	5	-	-	4	-	-	2	-	Coopers
Distilleries	-	-	-	-	-	-	-	-	-	Distilleries
Dyers	-	1	-	-	2	-	-	1	-	Dyers
Engineers	-	3	3	-	3	-	-	4	-	Engineers
Fellmongers	3	6	-	3	26	-	2	1	-	Fellmongers
Foundries (Iron)	-	2	-	-	3	-	-	3	-	Foundries (Iron)
Fulling mill	-	-	-	-	-	-	-	-	-	Fulling mill
Furriers	-	3	-	-	5	-	1	3	-	Furriers
Glue and size mfrs	-	-	-	-	-	-	-	-	-	Glue and size mfrs
Gunsmiths	-	2	-	-	2	-	-	3	-	Gunsmiths
Hat factories	-	2	-	1	4	-	1	3	-	Hat factories
Iron Smelting wks	-	1	-	-	-	-	-	-	-	Iron smelting wks
Jam factories	-	5	-	1	4	-	-	7	-	Jam factories
Lime Kilns	-	-	-	2	-	-	2	-	-	Lime Kilns
Malsters	1	6	-	-	4	-	-	-	-	Malsters
Mast & Block mkrs	-	-	-	-	-	-	-	-	-	Mast & Block mkrs
Mills flour - wind	-	1	-	-	-	-	-	-	-	Mills flour - wind
water	-	1	-	)			-	-	-	water
steam	1	3	-	) 1	4	-	1	5	-	steam
hydraulic	-	-	-	-	-	-	-	-	-	hydraulic
horse	-	-	-	-	-	-	-	-	-	horse
Millwrights	-	5	-	1	-	-	-	-	-	Millwrights
Parchment Makers	-	-	-	-	-	-	-	-	-	Parchment Makers
Pastry cooks	-	9	-	-	12	-	-	8	-	Pastry cooks
Pianoforte makers	-	1	-	-	1	-	-	2	-	Pianoforte makers
Pipe mfy	-	-	-	-	-	-	-	-	-	Pipe mfy
Potteries	-	1	-	-	2	-	-	-	-	Potteries
Printing offices	-	6	-	-	6	-	-	5	-	Printing offices
Rope makers	-	1	-	-	-	-	-	1	-	Rope makers
Saddle &c makers	1	5	-	1	4	-	-	2	-	Saddle &c makers
Sail makers	-	4	-	-	2	-	-	2	-	Sail makers
Salt manufacturers	-	-	-	-	-	-	-	-	-	Salt manufacturers
Saw mills	-	2	3	-	3	2	-	4	-	Saw mills
Shipwrights etc.	-	9	2	-	8	-	-	10	-	Shipwrights etc.
Snuff mfrs	-	-	-	-	-	-	-	-	-	Snuff mfrs
Soap boilers	1	2	-	-	2	-	1	1	-	Soap boilers
Starch mfrs	-	-	-	-	-	-	-	-	-	Starch mfrs
Stone masons	1	10	1	1	6	-	1	9	-	Stone masons
Tailors	-	24	-	1	14	-	-	12	-	Tailors
Tanners	3	25	-	3	5	-	2	7	-	Tanners
Tin smelting works	-	-	-	-	1	-	-	-	-	Tin smelting works
Tin workers	-	6	-	-	7	-	-	4	-	Tin workers
Turners	-	3	-	-	3	-	-	3	-	Turners
Vinegar mfrs	-	-	-	-	-	-	-	-	-	Vinegar mfrs
Watchmakers	-	7	-	-	8	-	-	7	-	Watchmakers
Wheelwrights	2	9	1	2	6	-	2	7	-	Wheelwrights
Wool staplers	-	7	-	-	2	-	-	2	-	Wool staplers
Woollen mfy	-	1	-	-	-	-	-	1	-	Woollen mfy

MFY OR TRADE	1890			1895			1900			MFY OR TRADE
	Glen	Hobt	King	Glen	Hobt	King	Glen	Hobt	King	
Aerated water mfrs	-	4-	-	-	3	-	-	3	-	Aerated water mfrs
Agric. Imp. Makers	-	2	-	-	1	-	-	1	-	Agric. Imp. Makers
Bakers	2	31	1	3	33	2	2	36	2	Bakers
Bark mills	2	3	-	1	2	-	-	2	-	Bark mills
Basket makers	-	3	-	-	3	-	-	3	-	Basket makers
Blacksmiths	3	14	4	3	14	5	2	14	2	Blacksmiths
Blanket factory	-	-	-	-	-	-	-	-	-	Blanket factory
Bone dust mfrs	1	-	-	1	-	-	-	-	-	Bone dust mfrs
Boot & shoe makers	1	72	2	2	78	2	2	72	3	Boot & shoe makers
Brass founders	-	2	-	-	1	-	-	1	-	Brass founders
Brewers	-	-	-	-	4	-	-	4	-	Brewers
Brick makers	4	10	3	1	5	-	-	1	1	Brick makers
Builders	-	13	1	4	17	-	2	13	-	Builders
Cabinet makers	-	17	-	-	14	-	1	12	-	Cabinet makers
Candle mfrs	1	1	-	1	1	-	-	1	-	Candle mfrs
Carpenters	3	23	7			-	1	18	3	Carpenters
Cheesemakers	-	-	-	-	-	-	-	-	--	Cheesemakers
Chemists	-	12	-	-	12	-	-	11	-	Chemists
Cider makers	1	3	-	2	2	-	1	1	-	Cider makers
Clothing factories	-	2	-	-	2	-	-	2	-	Clothing factories
Coach makers	-	4	-	-	4	-	-	6		Coach makers
Comb makers	-	-	-	-	-	-	-	-	-	Comb makers
Coopers	-	2	-	-	3	-	-	2	-	Coopers
Distilleries	-	-	-	-	-	-	-	-	-	Distilleries
Dyers	-	1	-	-	1	-	-	2	-	Dyers
Engineers	-	5	-	-	5	-	-	4	-	Engineers
Fellmongers	2	2	-	1	3	-	-	4	-	Fellmongers
Foundries (Iron)	-	2	-	3	2	-	-	2	-	Foundries (Iron)
Fulling mill	-	-	-	-	-	-	-	-	-	Fulling mill
Furriers	1	2	-	-	2	-	-	2	-	Furriers
Glue and size mfrs	-	-	-	-	-	-	-	-	-	Glue and size mfrs
Gunsmiths	-	2	-	-	2	-	-	2	-	Gunsmiths
Hat factories	-	3	-	-	2	-	-	2	-	Hat factories
Iron smelting wks	-	-	-	-	-	-	-	-	-	Iron smelting wks
Jam factories	1	7	-	1	6	-	-	4	-	Jam factories
Lime Kilns	2	-	-	2	1	-	1	-	-	Lime Kilns
Malsters	-	-	-	-	1	-	-	-	-	Malsters
Mast & Block mkrs	-	-	-	-	-	-	-	-	-	Mast & Block mkrs
Mills flour - wind	-	-	-	-	-	-	-	-	-	Mills flour - wind
water	-	-	-	-	1	-	-	-	-	water
steam	-	3	-	-	3	-	-	3	-	steam
hydraulic	-	-	-	-	-	-	-	-	-	hydraulic
horse	-	-	-	-	-	-	-	-	-	horse
Millwrights	-	-	-	-	-	-	-	-	-	Millwrights
Parchment Makers	-	-	-	-	-	-	-	-	-	Parchment Makers
Pastry cooks	-	11	-	-	12	-	-	14	-	Pastry cooks
Pianoforte makers	-	1	-	-	1	-	-	1	-	Pianoforte makers
Pipe mfy	-	-	-	-	-	-	-	-	-	Pipe mfy
Potteries	-	-	-	-	-	-	-	-	-	Potteries
Printing offices	-	5	-	-	5	-	-	6	-	Printing offices
Rope makers	-	-	-	-	-	-	-	-	-	Rope makers
Saddle &c makers	-	3	-	1	4	-	-	5	-	Saddle &c makers
Sail makers	-	2	-	-	2	-	-	2	-	Sail makers
Salt manufacturers	-	-	-	-	-		-	-	-	Salt manufacturers
Saw mills	-	6	2	1	4	2	-	5	2	Saw mills
Shipwrights etc.	-	5	-	-	6	-	-	8	-	Shipwrights etc.
Snuff mfrs	-	-	-	-	-	-	-	-	-	Snuff mfrs
Soap boilers	1	-	-	1	1	-	-	1	-	Soap boilers
Starch mfrs	-	-	-	-	-	-	-	-	-	Starch mfrs
Stone masons	1	8	-	-	6	-	-	8	-	Stone masons
Tailors	-	14	-	-	16	-	-	17	-	Tailors
Tanners	2	4	-	-	6	-	1	7	-	Tanners
Tin smelting works	-	1	-	-	1	-	-	-	-	Tin smelting works
Tin workers	1	5	-	-	3	-	-	5	-	Tin/whitesmith
Turners	-	3	-	-	3	-	-	4	-	Turners
Vinegar mfrs	-	-	-	-	-	-	-	-	-	Vinegar mfrs
Watchmakers	-	10	-	-	14	-	-	16	-	Watchmakers
Wheelwrights	1	6	-	1	6	1	1	3		Wheelwrights
Wool staplers	2	2	-	-	2	-	-	2		Wool staplers
Woollen/cloth mfy	-	2	-	-	2	-	-	2		Woollen/cloth mfy

MFY OR TRADE	1905			1910			1915			MFY OR TRADE
	Glen	Hobt	King	Glen	Hobt	King	Glen	Hobt	King	
Aerated water mfrs	-	3	-	-	3	-	-	5	-	Aerated water mfrs
Agric. Imp. Makers	-	1	-	-	3	-	-	3	-	Agric. Imp. Makers
*Bacon factory	-	-	-	-	2	-	-	1	-	Bacon factory
Bakers	2	40	5	1	29	3	-	32	1	Bakers
Bark mills	-	1	-	1	1	-	-	1	10	Bark mills
Basket makers	-	3	-	-	3	-	-	4	-	Basket makers
Blacksmiths	3	16	6	4	17	-	5	20	-	Blacksmiths
Blanket factory	-	-	-	-	-	-	-	-	-	Blanket factory
Bone dust mfrs	-	-	-	1	4	-	1	4	-	Bone dust mfrs
Boot & shoe makers	2	73	2	4	57	-	3	55	-	Boot & shoe makers
Brass founders	-	1	-	-	1	-	-	1	-	Brass founders
Brewers	-	5	-	-	3	-	-	4	-	Brewers
Brick makers	-	4	1	1	1	-	-	1	-	Brick makers
Brushmakers*	-	-	-	-	2	-	-	4	-	Brush Makers
Builders	2	27	3	-	25	5	-	25	-	Builders
Cabinet makers	-	12	-	-	18	-	1	27	-	Cabinet makers
Candle mfrs	-	1	-	-	-	-	-	1	-	Candle mfrs
Carpenters	2	32	6	-	31	5	2	15	4	Carpenters
Cheese/butter factory*	-	-	-	—	2	-	—	1-	-	Cheese/butter factory
Chemists	-	15	-	-	14	-	-	14	-	Chemists
*Chlorination works	-	-	-	-	1	-	-	-	-	Chlorination works
Cider makers	1	1	-	1	1	-	-	2	-	Cider makers
Clothing factories[19]	-	3	-	-	5	-	-	2	-	Clothing factories
Coach makers	-	8	-	-	8	-	-	9	-	Coach makers
Comb makers	-	-	-	-	-	-	-	-	-	Comb makers
Coopers	-	-	-	-	-	-	-	-	-	Coopers
Distilleries	-	-	-	-	-	-	-	-	-	Distilleries
Dyers	-	3	-	-	3	-	-	3	-	Dyers
Engineers	1	8	-	-	9	-	-	13	-	Engineers
Fellmongers	-	2	-	-	2	-	1	2	-	Fellmongers
*Flock factory	-	1	-	-	1	-	-	-	-	Flock factory
Foundries (Iron)	-	3	-	-	10		-	1	-	Foundries (Iron)
Fulling mill	-	-	-	-	-		-	-	-	Fulling mill
Furriers	-	3	-	-	3		-	3	-	Furriers
Glue and size mfrs	-	-	-	-	-		-	-	-	Glue and size mfrs
Gunsmiths	-	2	-	-	-		-	2	-	Gunsmiths
Hat factories	-	2	-	-	1		-	2	-	Hat factories
Iron smelting wks	-	-	-	-	-		-	-	-	Iron smelting wks
Jam factories	-	4	-	-	3		-	5	-	Jam factories
Lime Kilns	3	-	-	2	-		2	-	-	Lime Kilns
Malsters	-	1	-	-	3		-	-	-	Malsters
Mast & Block mkrs	-	-	-	-	-		-	-	-	Mast & Block mkrs
Mills flour - wind	-	-	-	-	-		-	-	-	Mills flour - wind
water	-	-	-	-	—		-	-	-	water
steam	-	3	-	-	2		-	2	-	steam
hydraulic	-	-	-	-	-		-	-	-	hydraulic
horse	-	-	-	-	-		-	-	-	horse
Millwrights	-	-	-	-	-		-	-	-	Millwrights
*Motor/Cycle factories	-	10	-	-	13	-	-	16	-	Motor/Cycle factories
Parchment Makers	-	-	-	-	-	-	-	-	-	Parchment Makers
Pastry cooks	-	17	-	-	33	-	-	39	-	Pastry cooks
Pianoforte makers	-	-	-	-	-	-	-	-	-	Pianoforte makers
Pipe mfy	-	-	-	-	-	-	-	-	-	Pipe mfy
Potteries	-	-	-	-	-	-	-	-	-	Potteries
Printing offices	-	6	-	-	9	-	-	13	-	Printing offices
Rope makers	-	-	-	-	-	-	-	-	-	Rope makers
Saddle &c makers	-	7	-	1	7	-	-	3	-	Saddle &c makers
Sail makers	-	2	-	-	2	-	-	3	-	Sail makers
Salt manufacturers	-	-	-	-	-	-	-	-	-	Salt manufacturers
Saw mills	1	6	2	-	4	1	1	5	-	Saw mills
Shipwrights etc.	-	10	-	-	5	-	-	4	-	Shipwrights etc.
Snuff mfrs	-	-	-	-	-	-	-	-	-	Snuff mfrs
Soap boilers	-	1	-	-	2	-	-	1	-	Soap boilers
Starch mfrs	-		-		-	-	-	-	-	Starch mfrs
Stone masons	-	12	-	-	7	-	-	6	-	Stone masons
Tailors	-	19	-	-	25	-	-	22	-	Tailors
Tanners	1	6	-	1	4	-	1	1	-	Tanners
Tin smelting works	-	-		-	-	-	-	-	-	Tin smelting works
Tin /whitesmiths	-	7	-	-	6	-	-	6	-	Tin workers
Turners	-	4	-	-	2	-	-	2	-	Turners
Vinegar mfrs	-	-	-	-	-	-	-	-	-	Vinegar mfrs
Watchmakers	-	16	-	-	15	-	-	15	-	Watchmakers
Wheelwrights	-	3	-	1	2	-	1	2	-	Wheelwrights
Wool staplers	-	2	-	-	-	-	-	-	-	Wool staplers
Woollen/cloth mfy	-	4	-	-	3	-	-	3	-	Woollen/cloth mfy

[1]including 9 described as cart and plough mfrs
[2]Described as sugar baker
[3]At Cascade
[4]Including one at New Town
[5]8 in Hobart, 1 at Cascades, 1 at New Town
[6]Engineers and foundries
[7]Including one at New Town
[8]Including one at New Town
[9]At Cascades
[10]Including one at Tolosa
[11]And pump maker
[12]Including one at New Town
[13]5 in Hobart, 2 Cascade Road, 1 New Town, 2 O'Brien's Bridge, 2 Cascades
[14]At New Town
[15]At New Town
[16]Only four ships built in colony
[17]Including 2 at New Town
[18]8 in Hobart, 2 at O'Brien's Bridge
[19]Includes knitting and weaving factories

Food

Flour milling

Bread was the staple of the early colonial diet and early entrepreneurs made their fortunes selling wheat to the Commissariat. For several years, however, there was no means for the wheat to be ground into flour. In December 1805, Collins sent home an order for the makings of a mill:

> Two pairs of French Stones, 4 1/2 feet in Diameter, made complete. with Boxes, Spindles, Step, Brass, etc, so as to be complete for work. Half a Ton of plaster of Paris to repair the Stones in case of Accident; 2 Cwt of Brass; Six dozen of Cast Steel Mill; Bills, etc. [1]

However, the materials were some time in arriving and, in the meantime, wheat had to be shipped to Sydney for grinding or processed in portable hand mills.

The town's first mill was finally built in about 1810 and operated by Edward Lord and William Collins. It was situated beside the Hobart Rivulet near to the present Ellison Hawker's bookshop. It was fed by a mill race which was carried over Murray Street and which appears on Meehan's 1811 survey of the town. There may have been another mill operating at this time. Robert Nash was granted an allotment of ten acres beside the Hobart Rivulet, in compensation for the loss of his property on Norfolk Island as a consequence of the 1808 evacuation. When he erected the mill, which was situated across the Rivulet opposite the end of Denison Lane, is unknown - it was in operation prior to 1816 and in 1818 was owned by Arnold Fisk. By that time Nash was operating a wind flour mill at Sorell.

In 1817 Arnold Fisk built a new mill "contiguous to Wellington Bridge" presumably on the site formerly occupied by the 1810 mill. Fisk was praised for his "indefatigable exertion, at an enormous expence, in getting up his flour mill ... for the more immediate accommodation of the public."[2] . The new mill apparently utilised the existing water race which was carried via elevated "trunks" from a point just below Harrington Street until 1822 when "large tubes" were laid under the street. [3]. Fisk's Mill was later known as the Waterloo Mill and the earlier Nash Mill as "the Old Mill."

Fisk's was for a short time the only mill operating in the town and he was able to name his price until the Government built its own mill in Collins Street in 1818. Edward Yates, a convict who built the mill under the direction of Captain Nairn, the Inspector of Public Works, was later granted his freedom in recognition of his exertions[4].

Assistant Commissary Hull soon found that the Government Mill could not supply enough flour for the Government Store because the Superintendent was negligent. The Superintendent's allowance of rum was stopped and the mill was restricted to milling for Government purposes only. The mill ground about 100 bushels each 24 hours. Flour was issued to the convicts who in turn gave their ration to the bakers for baking, receiving 8 lbs of bread for each 7 lbs of flour.[5]

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[1]HRA III i p.344.
[2]HTG 8 March 1817
[3]HTG 6 April 1822
[4]HTG 30 May 1818 and 9 January 1819
[5]HRA III iii p. 293

The Bigge inquiry was told in March 1820 that there were three flour mills on the Hobart Rivulet - The Government Mill, Mr. Fisk's, and Mr. Tadder's [sic] in the course of erection.[1] There was already a mill, operated by William Bowden, on Humphrey's Rivulet.[2]

James Tedder, in partnership, with Edward Yates, the ex-convict who had built the Government Mill, built their new mill on the Rivulet above Harrington Street, commencing grinding in September 1820. The mill stones had been obtained from a quarry "a few miles from town," the first such stones to be used in the colony and found to be equal to the French product.[3] Yates left the partnership the following year

Australia's first steam flour mill was built in Sydney in 1815. Although plans for Hobart's first steam flour mill were announced in 1828, grinding did not begin until October 1830. The mill was built by John Walker on land reclaimed off the Old Wharf and the beginning of construction had been delayed until the weather made it possible for the workmen to work in the water. The site was chosen to allow wheat and flour to be load and unloaded at all times of the tide. When the steam engine was first set in motion *The Tasmanian* reported that it performed in a most admirable manner.[4]

In 1830 George Carr Clark, who had taken over Fisk's mill in Liverpool Street, built a new flour mill in Collins Street - this became known as the New Waterloo Mill and was soon in the hands of James Luckman.

According to the Government's statistics there were, in 1831, nine flour mills in Hobart and another one at New Town. However this must refer to the wider district since only six can be accounted in the directories for in Hobart Town:

- Rayner's Upper Mill in Macquarie Street, near the present All Saint's Church, built in 1822.
- Mannington's Flour Mill in Liverpool Street, built by Tedder & Yates in 1820
- the old Waterloo Mill in Liverpool Street built by Fisk in 1817
- the Government Mill built at the corner of Barrack and Collins Street in 1818, then operated by William Rayner, jun.
- Luckman's New Waterloo Mill, in Collins Street built in 1830
- Walker's steam mill on the wharf completed in 1830

There was another flour mill, operated by a treadmill, at the prisoner's barracks in Campbell Street. At New Town, George Gatehouse operated a flour mill and a brewery beside the bridge over the New Town Rivulet, and Bowden's Mill had been operating at Humphrey's Rivulet since before 1820.

The 1830s saw the introduction of milling technologies new to Hobart. Walkers steam mill began operating in 1830, and at the Cascades, Peter Degraves was beginning to diversify his operations, building a brewery and a flour mill near the site of his saw mill. This flour mill was powered by an hydraulic engine powered by a flow of water from a reservoir 85 meters above the mill. The engine which developed eight atmospheres, was almost as efficient as Walker's steam mill.

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[1]HRA III iii p. 323
[2]Alexander p. 15
[3]HTG 2 and 23 September 1820
[4]Tasmanian 8 October 1830

However, during the 1840s it was replaced by a new flour mill driven by a huge water wheel was erected just below the saw mill site.[1]

In 1831, John Walker quietly negotiated a deal to buy the Government Mill, much to the consternation of the other mill owners in the town. He now dominated the milling industry in Hobart but when Degraves established the hydraulic engine-powered flour mill at Cascades in 1836, Walker faced real competition. Perhaps in answer to this he began to expand his enterprise on the old Government Mill site. He established a brewery on the site and moved his steam engine from the wharf to the Collins Street mill, erecting a chimney 110 feet high for the furnace. The Old Wharf mill became a soap works.

There had been windmills elsewhere in the district much earlier, the availability of land near the Rivulet encouraging the use of water power in Hobart. Windmills had been begun by Robert Nash at Sorell and Daniel Stanfield jun. at Rokeby in 1816 although they did not start operating until February 1817 and March 1818 respectively.[2] However, by 1836, there were three windmills in Hobart Town - McRobie's in Campbell Street, Mann's in Davey Street and Luckman's in Battery Point.

These three mills operated on slightly different principles although built at about the same time. The differences in construction may have been dictated by the varying locations. McRobie's Mill in Campbell Street, close to the site of the present Primary School, was built in the manner "usual in England, by which the entire mill, and vanes move by means of a tail piece or lever." Mann's Mill in Davey Street was of a horizontal construction "the wind being admitted by vertical orifices into a cylindrical chamber in which the sails attached to the ends of horizontal levers are placed."[3] During the 1850s, and perhaps earlier, McRobie's Mill was owned and operated by William Searle but by 1858 it was described in valuation rolls as a dilapidated mill, occupied by John Turner (who later ran the "Ols Mill" as the Somerset Mill). It was probably demolished in the late 1860s when references to the mill disappear from the valuation rolls and George Arnold's biscuit factory is listed at that address. The mill in Davey Street may have had an even shorter life - it does not appear as an operating mill in directories of the 1840s and 1850s, and by 1865, when owned by Luckman and Harbottle, it was described in valuation rolls as an empty "old mill."

The third windmill, at Battery Point became a landmark for nearly fifty years:

> a very handsome brick circular building or round turret ... of that perfect kind common round London, in which the circular roof and sails balance and adjust themselves to the wind by means of a fan wheel on the opposite side. It is about 50 or 55 feet high , and forms a striking object to vessels coming up the river.[4]

During the depression of the 1840s Luckman fell on hard times and was obliged to advertise for sale or lease both his Waterloo Mill in Collins Street and the windmill. The latter passed into the hands of James Cowgill who owned it until 1866.[5]

In 1841, another water-powered flour mill was built on the New Town Rivulet, by Alexander Calder:

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[1]Rayner p. 35
[2]HTG 8 June 1816; 8 February 1817; 7 March 1818
[3]HT Courier 18 March 1836
[4]H.T. Courier 18 March 1836
[5]Hudspeth and Scripps, Battery Point, p. 46-7

> on a piece of ground adjoining the New Town Rivulet, situate between Regan's tannery and the main road, which was intended for a flour mill. To supply the mill-wheel with the requisite force of water a dam was constructed across the rivulet, from which a short channel or mill-race was cut, conveying the water to the mill-wheel over which it flowed, again into the rivulet.

Calder's dam was a little above the dam supplying Richard Jacomb's brewery further downstream. Jacomb brought a court case against the former alleging that the upper dam was polluted by run-off from the tannery which subsequently spoiled his brewing. He lost the case but in the meantime the Churchwardens of St. Johns Church had successfully applied to the Governor to have both the dam and a bridge built by Calder pulled down.[1]

With the new reliance on steam power, mills could be sited away from the Rivulets which were the traditional locations for Hobart's mills. The new mills were located near the wharves and the source of transport - grain could be brought to the mills by ship and re-loaded as flour after processing. The geographer Linge has calculated that of the 9,950,000 bushels of wheat produced in Tasmania between 1839 and 1850, 25% of the local crop was exported as wheat, 17% exported as flour and 48% consumed locally (allowing for 10% wastage and seed use).[2]

In about 1846, a new steam mill was established by W.P. Green on Old Wharf - John Walker's steam flour mill had by this time been converted into a soap factory. Another new player on the waterfront was William Gibson who took over Abraham Rheuben's mill in Morrison Street in 1858.

By the 1860s, the number of mills in Hobart had dropped markedly, the market becoming dominated by steam mills. In some cases the old mills were converted to steam but many of the old mill buildings were re-cycled - as tanneries, breweries and other industrial purposes.

In 1873 the mills which were then still operating were described in a series of articles published by *The Mercury*. The oldest establishment still operating was the Old Mill then known as the Somerset Mill, and in the hands of Henry Turner for the previous fifteen years. Immediately prior to his occupation, the property had been in the hands of John Walker and known as the Ellinthorpe Vale Mill. The mill had been converted to steam, a 20 h.p. engine driving the four pairs of stones, and could turn out about 30 tons of flour a week when in full work. The premises were described as not very extensive but compact and convenient.[3]

The windmill at Battery Point was then in the hands of S.H. Grueber and operated in conjunction with a steam mill which had been built next door - the two mills were connected by a small passage. Both mills were somewhat old fashioned. The dressers were of wire and there were no elevators - the bags of grain had to be hoisted by hand to the bins on the upper floors. The steam mill ran on an old Cornish boiler and the *Mercury* report recommended the whole establishment as something of a curiosity. The two mills together turned out 60 tons of flour a week.[4] During the 1870s, however, the export market flour collapsed and the smaller mills could not compete. The mill appears to have closed down for a few years and is claimed to have functioned briefly as a boot factory. The owner of the

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[1]*Hobart Town Courier* 13 and 25 March 1842

[2]Linge p. 128-9

[3]Mercury 28 May 1873

[4]Mercury 28 May 1873

mill was F.J. Pike, a boot manufacturer, so this is a possibility. However, in 1878, a new firm of millers, Millhouse and Howard, took over the site and set about restoring the buildings and re-building the machinery, at great expense:

> all kinds of mill-work will be done, and the mill, as it is at present, is considered capable of turning out from three to four tons of flour per day. The mills are now in full working order, and with their new silk dressing machinery, they are able to produce a superior quality of flour.[1]

All the machinery including the silk dressers and riddlers were made by Millhouse and Howard. The firm planned to restore the wind machinery as a supplementary power source if the expense was warranted but despite the rejuvenation the mill lasted only a few years longer. In 1885 the windmill and most of the associated buildings were demolished.

The other two mills in Hobart operated on quite a different scale, with a degree of mechanisation that reduced the amount of handling and the number of hands needed. At the Commercial Flour Mill on the Old Wharf, a tank 140 feet long and 12 feet wide supplied the water for the patent vertical boiler made by Clark's foundry on New Wharf. This drove a 70 h.p. engine which operated the machinery. There were seven pairs of stones each four feet in diameter and each provided with a powerful exhaust to extract the dust. The mill turned out 120 tons of flour per week. The Commercial Flour Mill was taken over by D. R. Dosseter in the late 1870s and had a narrow escape in the great 1890 fire on Old Wharf. But within a decade it was in ruins and was demolished shortly after the turn of the century, perhaps a casualty of the introduction of roller mills [see below].

In 1872, the City Steam Flour Mill in Morrison Street was owned by W.G. Gibson, the son of William who had died a couple of years previously. There were three pairs of stones:

> When the meal leaves the stones it falls into a wooden trough, and is conveyed to the elevators by means of a right and left handed worm. The elevators take it to the silk dresser above, On its way to the dresser the meal is conducted by means of a worm, or "conveyor," as the millers call it, along a wooden trough, and from this, if necessary, twenty two bags can be filled with meal at one time, from a similar number of sleeves hanging below the trough, The silk-dresser at the City Mill is exactly the same as other silk-dressers in construction and working, only that it is of extra size, being about thirty feet in length. from the dresser the flour sharps, pollard and bran descend in different sleeves into the bags which are suspended below for their reception. There is no lifting of the bags of grain once they are deposited inside the mill, for all this labour is saved by a very good hoisting apparatus of Mr. Gibson's own invention.[2]

Despite the compactness of the premises and the small labour force, "a very large business is done at the City Mill, and the noise of the machinery can be heard constantly day and night." During the 1870s Gibson extended his premises, erecting a new warehouse at the corner of Brooke and Despard Streets which backed on to his existing building.

Although steam had overtaken water power in the city, there were still water mills in rural districts. The Houghton Flour Mill was part of a small industrial complex on Humphrey's Rivulet, owned by William Murray who owned a similar complex at Murrayfield. At Houghton there was also a tannery and a bark mill. The

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[1]TM 9 March 1878

[2]M 9 December 1872

mill at Houghton had a steam engine by 1872 but also relied for power on the 17 ft overshot water wheel. The engine and wheel were each capable of generating 12 h.p. giving a combined capacity of 24 h.p, to drive the two pairs of stones and the bark mill. There appear to have been no elevators or silk-dressers installed. The Kensington Flour Mill was established in the 1840s but in 1872 had been owned by W.E. Morrisby for twelve months. This mill relied solely on the power generated by a 35 ft overshot water wheel to drive the two pairs of stones.[1] In 1876 the Kensington Mill was converted into a hat factory by Benjamin Dunkerley.

During the 1870s another flour mill was established on the Hobart waterfront. The new entrepreneur was James Peet who had previously spent 16 years as manager at Murray's mill at Houghton, O'Brien's Bridge. He took over a large brick building near the bottom of Gladstone Street and converted it into a steam flour mill. No expense was spared in fitting up the mill with the best and most modern equipment:

> Arrangements are being made by means of which the corn will be shot into a well on the ground floor, whence it will be carried by elevator to the smutting machine on the first floor, where it will be cleaned. It will then pass from the smutting machine to a well, from which it will be carried by another elevator to the grinding bin, capable of holding 150 bags of wheat from the grinding bin, it will pass by a spout to the hoppers over the mill-stones. Having been ground, the meal will be carried by spouts into another well, from which a screw conveys it into a box, whence it will be raised by an elevator to the dressing machine, from which is to separate it into flour, sharps and bran. From the time the wheat will be shot out of the bags on the ground floor, it will not again need to be handled until it is deposited in the bags as flour. The store house, on the ground floor, will contain three pairs of French burr stones, each three feet six inches in diameter, mounted on a strong framework of Macquarie pine, underneath which is the gear for driving. The whole of the machinery will be driven by a new horizontal engine (made by Robinson brothers, Melbourne), now being fixed in a yard at the rear of the building, capable of being worked up to twenty horse power. Steam will be supplied by a multi-tubular boiler, by McCall, Anderson, & Co., also of Melbourne; and the square chimney stack, which is in the course of erection by Mr Reynolds of Bathurst Street, will be fifty feet in height.[2]

Despite the optimism, the mill, which was projected to turn out five tons of flour per day, operated for only a few years. The building continued to be used for industrial purposes, however, operating as a steam laundry during the 1890s, and then as a foundry for some thirty years.

The 1890s saw the introduction of roller mills to Hobart. The technology had been developed in the 1870s and first used commercially in Australia c.1879 but it was not until 1888 that the Affleck Mill in Launceston introduced it to Tasmania. Flour produced by roller mills was both whiter and finer than that produced from the traditional grindstones and soon captured the market.[3] Gibson's new roller mill was built in about 1898, following the acquisition of the two neighbouring blocks in Morrison Street - it was a brick building with steel girders and iron corner posts, and an acre of floor space.[4]

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[1]Mercury 26 October 1872
[2]TM 6 October 1877
[3]Birmingham p. 49
[4]Hudspeth and Scripps CC pp 44-6

Another mill was established on Old Wharf in the early 1890s when the Murdoch brothers built a new storey on part of the old Australian Company Store [now 19, Hunter Street] and installed the necessary machinery. In 1915 the Murdochs went into partnership with Gibsons Limited and within a few years the business operated solely from the City Mill in Morrison Street. Both these mills survive - Murdoch's as the Drunken Admiral restaurant, and Gibsons's as the City Mill retail and office block, and Dear Friends restaurant. Peet's Mill in Gladstone Street is the only other pre-1915 mill where the main building survives - it is now used as offices. The mill house formerly connected with the Battery Point windmill survives, as does one of the buildings connected with the windmill in Davey Street - both these buildings are now private residences. Remnants such as mill-races can still be seen at some other sites.

Baking

Flour was issued to the convicts who in turn gave their ration to bakers for baking, receiving 8 lbs of bread for each 7 lbs of flour.[1] . This provided, in effect, a captive market and the commercial baking of bread and cakes was probably established soon after settlement.

One of the earliest bakers to establish himself in Hobart was Richard Coleman. When he died in 1818 he was said to have carried on his business in Collins Street for nearly fifteen years. In 1816 he advertised wheaten bread at ten pence a loaf, hot rolls at 8 o'clock in the morning if ordered the previous night, and biscuits and sweet cakes.[2]

Baking was one of the earliest industries to be regulated. From July 1816, as a result of "divers Frauds and Impositions in the Weight and Quality of the Bread made and exposed for Public Sale," and the apparent impunity of anonymous operators, bakers were required to be licensed. The bakers' business premises were to be identified as such with his name in letters at least two inches high; his name or initials were also to be stamped on every loaf of bread; a beam and scales with proper weights had to be kept in the shop and any customer dubious about a loaf could insist on its being weighed; the hours for baking on Sundays were strictly limited; bread could not be sold for more than the price set by the Magistrates; and only pure ingredients were to be used. A scale of fines was also established, with prison sentences in default, but bakers had the right of appeal.[3]

In 1818 there were 19 bakers licences, in 1819 there were 14.[4]

There were numerous bakers in Hobart Town from an early period. It was an industry that required little capital beyond the erection of the bakehouse or ovens, and the work of the bakery could be carried out by one person. Although some bakers were in business only a few years, it was not uncommon for a bakehouse to survive many years under a succession of different operators. Following Richard Coleman's death, his bakehouse was taken over by William Butcher. Butcher advertised "Household and Fine Bread, fine and coarse biscuits, and fancy tea bread... hot rolls every morning at 8 am, dinner baked during the usual hours on Sundays."[5] The following year Butcher moved to a "very

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[1]HRA III iii p. 293
[2]HTG 21 December 1816 and 28 November 1818
[3]HTG 6 July 1816
[4]HRA III iii p. 540
[5]HTG19 December 1818

commodious" house in Argyle Street formerly licensed as the Sign of the Plough."[1] These are presumably the premises at 2 Argyle Street "adjoining Mrs Kearney's" that were offered for sale a couple of years later and described as comprising a weatherboard house and warehouse and a large oven and bakehouse.[2] It is not clear if Butcher was still operating from the premises at this time but by January 1823 he had left the industry claiming it did not agree with his health. His business was taken over by a Mr Brown while Butcher sought a job as a clerk.[3]

Another long-time bakehouse at this early period was in Macquarie Street. Antonie Martin and John Fawkner, jun., were in partnership as bakers and publicans "opposite the King's Store" - presumably next to the Hope Tavern. The partnership was dissolved in June 1818 but Fawkner continued at the bakehouse - in January the following year he was convicted of selling underweight bread and having illegal weights.[4] In 1820 the bakehouse was taken over by John Manning who moved there from his previous premises in Argyle Street.[5]

There was already a degree of specialisation. The market could apparently support confectioners as well as bakers. Daniel Kelly of Bathurst Street who described himself as a confectioner was making and selling sweet cakes and biscuits "of every sort" in 1818.[6]

The directories[7] of the mid 1820s list eight bakers but there may well have been more than this. Of those listed only two were still in business ten years later - John Dean, a baker and ship's biscuit maker and William Lear, both then of Elizabeth Street. Dean had started out in October 1822 in Liverpool Street "opposite A.W.H. Humphrey." James Brown had moved from that address to Elizabeth Street where he promised fancy bread, pastry and ship's biscuit on the shortest notice.[8] Those who did not continue in the baking business had a variety of options. In common with many others who started out following their trade, some of them went into the public house business. Evan Henry Thomas attracted attention by his advertisement of September 1823, a complicated conceit which appears to be a dig at his competitors:

> At a period when winds are so boisterous, breezes so fresh, and the popularity of puffs so general, the man who manufactures pastry, at once elegant in form and luxurious in flavour, has little occasion to praise his puffs, in order to obtain the pudding he puffs for.

Thomas' premises were in Liverpool Street and he advertised for "a good hand at crumpets." Three years later he is listed as a publican at Wellington Bridge.[9] Another pastry cook was T. Campbell of Elizabeth Street who was in business at least from 1830 to 1835 when the shop was taken over by P. Gaylor. Gaylor supplied hot mutton and veal pies from 11 in the morning until 10 at night and made wedding cakes and confectionery. He also advertised jellies, jams, lemonade,

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[1]HTG 23 October 1819
[2]HTG 26 May 1821
[3]HTG 25 January and 31 May 1823
[4]HTG 16 January 1819
[5]HTG 18 July 1818 and 26 February 1820]
[6]HTG 12 September 1818
[7]Directories have not been cited individually throughout this report - a full list of those referred to is in the bibliography.
[8]HTG 5 October 1822
[9]HTG 6 September 1823

raspberry vinegar and imperial constantly on hand. Whether he actually made these articles on the premises can not be ascertained.[1]

It is probable that bakers generally made their own yeast but in 1823 they could have bought it from John Sharp at sixpence a quart. His premises were in Collins Street directly opposite the Government Garden.[2] In 1831 a yeast maker named Ogleman was listed in Goulburn Street.

Throughout the period there were women running bakeries although they tended to be the exception rather than the rule. Of the 16 bakers listed in Ross's almanac of 1831, for example, two were women. Maria Sargeant's bakehouse was at the corner of Campbell and Liverpool Streets and Mrs Palmers in Bathurst Street. Mrs Palmer is not listed again but Mrs Sargeant appears again in the 1834 directory as a baker.

Although there was a relatively high turnover amongst bakers in the first half of the century, some were in business for a considerable period. William Rayner, sen. had a bakery at 9 Barrack Street throughout the 1830s and possibly longer. In 1831 a baker named Ferguson is listed in Goulburn Street and is apparently still there in 1854.

Almost next door to Fawkner's bakehouse in Macquarie Street, another bakery was built by Henry Brock in about 1830. Brock gristed his own flour and his business was such that he was said to have retired with a fortune in the 1850s. The bakery passed through a number of hands until in 1890 it was taken over by Robert Spencer, formerly a storekeeper at Hamilton. The bakery must have enjoyed some prestige since it supplied the HMS Ophir and the escort fleet during the 1901 visit of the Duke and Duchess of York. In 1912, when George Miller became the manager, a new up-to-date bakehouse was built and the latest electrical dough-mixer was installed. A large trade was built up as another bread business was bought out, and fourteen hands were employed. The firm also did considerable business during the war, supplying both the Claremont and Mona Vale camps. As Spencers Pty Ltd, the firm was still in business in 1930 when it was described as one of the largest and one of the oldest businesses of its kind in the State.[3]

Bakers were also well-established in the suburbs and country areas. Snow's bakery at 18, Antill Street was apparently well-known. His bread, according to William Robertson[4] was "highly esteemed" in the 1840s. The bakery seems to have been highly successful. Even after Snow left, a bakehouse remained in operation at this address, first under William Speakman and then under Samuel Sargison, until the 1880s. In Sandy Bay Owen Coyle's bakery became a "Mecca for those wanting first class bread or other bakehouse goodies" in the 1860s. His shop was on the corner of Sandy Bay Road and Queen Street, the bakehouse being the former Queenborough Arms building in the yard behind.[5] During the 1890s the bakery was being run by Eugene Coyle but after this the premises are listed only as a grocer's shop.

George Arnold established his bakery business in 1854 at 110 Liverpool Street and it grew to become one of the largest in Hobart. In the early 1870s he took over the old mill and shop at the end of Campbell Street and established a biscuit factory

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[1]Colinal Times 31 March 1831
[2]HTG 8 March 1823
[3]CT 1931 p. 228
[4]Robertson, "Hobart Streets," Unpublished ms c. 1919 in AOT.
[5]Rowntree, Sandy Bay, pp 53-4

there. When he built his new factory in Liverpool Street in 1877 he pulled down these old buildings and built the house "Glenora" on the site.

Until 1877 the market was still dominated by the imported article. Prior to the establishment of the colonial industry biscuits had been imported from England and then from the "very successful biscuit works" of Melbourne. Biscuits had become far more popular than pastries and "vast" quantities were consumed. In 1877, Arnold built new premises in part to accommodate his new biscuit works - these had a frontage of only 28 feet but went back a depth of 150 feet to a laneway leading off Murray Street. The building was three stories high and had a basement where most of the work was done. By 1900 the works were lighted by electricity but the appliances were all driven by a steam engine, "one of Tangye's best." These appliances included a flour sifter, dough kneader, vertical biscuit mixer, biscuit cutter, brake fruit cleaner, egg beater, sugar mill, bun dough dividing machine etc.:

> Mr Arnold does a large wholesale business, and he also has one of the best domestic connections in the city. Malt bread is a specialty turned out in the most tempting form, and greatly appreciated by all who have hard brain or manual work to do on a weak digestion. The factory is celebrated for all the delicacies of the breakfast and tea table, rolls, scones, tea cakes, and muffins and crumpets being produced of a quality not to be surpassed.... A great specialty of the establishment is the manufacture of biscuits, of which all descriptions are made, from the hard tack in which the true British tar indulges, to the delicate paper-like wafers which are so exquisite an accompaniment to a glass of good old port ... An extended retail trade is done in plain and fancy biscuits of every description, which are neatly packed in square tins, attractively labelled, and find an extensive sale, alike in town and country establishments.[1]

At this time Arnold employed twenty five hands in the works.

A contemporary of Arnold's was John Roberts who established a bakery and confectionery business at 188 Elizabeth Street in the 1850s - in 1900 the company was claimed to have been founded "about fifty years ago." By the mid 1890s he had founded the Tasmanian Steam Confectionery Works at 36 Liverpool Street. By 1900 the business was owned by Ada McGuiness who continued to trade as Roberts & Co. and was claimed to be the oldest of its kind as well as one of the largest in Tasmania. Unfortunately there is little information about the products of these works - the *Cyclopaedia of Tasmania* says merely that every description of confectionery was made using all the most modern machinery.[2] The factory continued in operation for a few years although by 1905 it was in the hands of Kirwood & Horne. In 1908 the factory was demolished to make way for the new Websters building.

At almost the same time that Arnold was building his biscuit works, another local baker and caterer, Charles Duncan Haywood, was extending his premises to accommodate a biscuit factory. His shop was in Elizabeth Street and the factory was built behind, having a frontage on Melville Street:

> Mr. Haywood's machinery has recently been imported from England, and is of the very latest and improved description. Mr. Rowntree, jun. has had the task of fitting it up and putting it in working order ... The machinery can be worked by hand, water or steam power, and is quite capable of turning out

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[1]CT 1900 p. 359
[2]CT 1900 p. 160

biscuits in sufficient quantities to supply any demand likely to arise in Hobart Town. [1]

When Websters bought the old Bird in Hand Hotel in Argyle Street to extend their warehouse, Haywood bought it from them and had it dismantled. He then had the building re-erected in Melville Street next to the biscuit factory. Haywood's business was so successful that he eventually disposed of his other interests to concentrate on biscuit-making.[2]

During the 1880s W. Cripps established a bakery at 123 Elizabeth Street. Despite the depressed times of the 1890s the business did well and by 1900 Cripps had a branch in Melbourne and a new up-to-date Hygienic Bakery at 91 Elizabeth Street. His old bakehouse was taken over by Stephen McGann who remained in business there until about 1910. Cripps had erected a new building for the latest machinery from England and it was described as "one of the most noteworthy establishments of its kind in the colonies." The machinery did almost all the mixing and handling and the greatest cleanliness was observed. Both bread and confectionery were made.[3] The bakery survived at this address until about 1950.

William Cripps also built a shop and bakery at 57 Hampden Road in 1886 but this was run by other members of the family - H. & J. Cripps. The bakery was at the rear and fronted on to Kelly Street. The Cripps family operated this bakery until the 1970s when they moved to new premises at Glenorchy. The bakery continued under new management until recent times.[4]

Another large bakery of the period was the Federal Bread Manufactory at 9-11 Murray Street. This bakery begun as part of the Federal Coffee Palace established in 1891 by Thomas Woods. In 1898 he had given up the coffee place and developed the bakery side of the business. He had added extensions to the original building to accommodate two bakehouses and three large ovens. By 1900 he employed fourteen hands and the bakery was described as "the most extensive of its kind in the district." As well as the domestic market he supplied the ships of H.M. fleet when in port and the Union S. S. Co.'s steamers. Wood also established the Australian Manufacturing Company for the production of cordials. essences. sauces etc.[5] [see below]. Although a bakery continued on the site for some years, by 1915 it was being operated by Samuel Braithwaite.

A number of pre-1915 bakeries survive, notably that of H.& J. Cripps which had a continuous history as a bakery from 1886 until quite recently. The Federal Bread Manufactory building is now a restaurant. Newman Arnold's Tasmanian Bread and Biscuit Works at 110 Liverpool Street had a new facade built in 1924 and the chimney has been demolished but most of the building is intact - it is currently Fletcher Jones clothing shop.

Confectioners

Although dozens of "confectioners" are listed in directories of the period, it is probably safe to assume that there were mostly only selling, not making the product. A number of individuals are described as bakers and confectioners but their output was likely to have been cakes rather than sweets or lollies. Moses

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[1]TM 1 September 1877
[2]The Captain pp 39-40
[3]CT 1900 p. 359-60
[4]Hudspeth & Scipps, Battery Point, p.35
[5]CT 1900 p. 260

Moses at Mr R. Wallis's brick house at the corner of Wellington Bridge sold "all kinds of confectionery goods, candied bread and sweetmeats - orange and lemon peel candied or preserved on the shortest notice."[1]

C.D. Haywood started the manufacture of "colonial lollies of all designs" at his bakery in Elizabeth Street in 1877 at the same time that he began making biscuits.[2]

In 1884 a confectionery factory was established by J.W. Syme & Co. in an old store on the site of the former Walker's brewery in Collins Street. It was described as "the first confectionery manufactory in Tasmania on anything like a complete scale." James Syme had been at the head of the syndicate who formed the Cascade Brewery Company and bought out Hobart's other major breweries. The same firm had also established the Victorian Confectionery Company in Melbourne in about 1874. Syme and Co leased the store from the Cascade Brewery Company, renovating it and setting up their plant to begin production in April 1884.

Twelve hands were employed in the first instance although that number was expected to double when full production was achieved. Although not a large factory it was thought that it would be ample for Tasmania's needs for many years to come; the consumption of confectionery in Tasmania averaged about 25 tons a month, most of it imported. The machinery was driven by a 6 h.p. horizontal engine formerly in the Seymour coal mine, the steam supplied by a 10 h.p. boiler.

The sugar used in the factory was bought from local merchants who imported it from Mauritius. For most of the processes the sugar was ground very finely. In the making of lozenges, whether peppermint, cinnamon or "conversations," the sugar was mixed with a preparation of gum, water and the necessary essences - it was claimed that the gum was perfectly harmless. The mixture was kneaded and rolled out and then the shapes punched out. In the case of the conversations the mottos were impressed by a rubber stamp. The lozenges were then placed on trays on shelves in the drying room and left there for four days at a constant temperature of 180°F. The heat was maintained by waste steam from the engine. When ready the lozenges were packed into tins.

Jujubes were prepared using unground sugar. This was boiled in large double pans at a pressure of 40 lbs per square inch and then mixed with the gum which was the main ingredient. Sometimes flavouring was added. The mixture was poured into a series of little wooden moulds fitted into a tray filled with starch. After three or four days in the drying room the starch was sifted from the jujubes which were then placed in 28 lb tins with a weak syrup and returned to the drying room. Exposure to considerable heat evaporated the liquid and the sugar crystallised on the jujubes. Chocolate creams began in much the same way except that instead of being coated with sugar, they were dipped in melted chocolate using a small piece of bent wire and then left in a cool place to set. "Boiled goods" began with the boiling of sugar in a number of large pans over coal and charcoal fires up to a heat of over 400°F. The mass was then poured on to an iron slab, kept cold by water underneath it, and worked with the desired colours and flavours. It was then pressed between brass cylinders bearing the dies of the various shapes. When completely cold the sweets could be broken apart. Rock was made by drawing the cooled mass over a hook. As it was twisted and drawn the mass changed in colour and doubled in size. The factory also made French liqueurs which were made in a similar fashion to the jujubes but in cooling the sugar formed a shell, leaving a centre of flavoured liquid. Sugar coated almonds, "Scotch mixtures," hundreds and thousands, and sugar candy were also made. The latter were made by an ingenious

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[1]HTG 15 June 1822

[2]TM 1 September 1877

process whereby the sugar was crystallised on a network of darning cotton threaded through numerous holes pierced in the sides of a large copper pan. When ready the hinged sides of the pan were let down and the threads cut leaving bars of candy. The sweets were packed into tins made on the premises and labelled by boys and girls.

The *Tasmanian Mail* considered the enterprise worthy of encouragement. Although it could not be said to be fulfilling a need, the Tasmanian Confectionery Company would at least provide employment and keep money in the colony. The 10% duty of imported confectionery should make the industry competitive.[1]

The Company's premises expanded considerably during the 1890s but by 1905 it had closed down, presumably a victim of the removal of inter-colonial tariffs following Federation.

Smallgoods

Manufactured meat products were apparently not made locally until the 1880s when Hugo Scholz established his business in Elizabeth Street next to the Black Prince Hotel. According to "The Captain" the product was immediately popular with a "rush of people" patronising the shop.[2] The *Tasmanian Mail* in its Christmas 1895 advertorial suggested that the establishment was so well known for its judicious advertising and excellence of its wares that it needed no further recommendation. Scholz claimed to possess the most complete working plant in Australasia and offered a standing challenge of £50 to anyone who could prove his smallgoods to contain any dyes or colourings. The machinery was all up to date and worked by steam. It included a Robson 6 h.p. engine, a German dicing machine used in the manufacture of black pudding and an American drawcut which had a "neat combination of horizontal and rotary motions." In the vaults were hundreds of hams and strings of sausages ready for the Christmas trade.[3]

Within a couple of years of starting out Scholz had a competitor. H. Higgins, perhaps spurred by Scholz's success, established a smallgoods factory a little further down Elizabeth Street. Higgins was also hugely successful, winning Vice-Regal patronage and by 1900 over 200 prizes at various exhibitions. He built new premises at 110 Elizabeth Street just before the turn of the century. These were described as being of "first class style" with splendid cool cellars. The premises were lighted by electricity from Higgins' own dynamo which was driven by steam power. Steam was also used in the manufacture of the small goods. The *Launceston Examiner* referred to the excellence of Higgins' German sausage " a line in which our local men have been unable to approach him."[4]

Despite the success of these smallgoods manufacturers and the esteem in which their products were apparently held, both had vacated their Elizabeth Street premises by 1910. Higgins shop and factory, which were later the site of a bicycle manufacturer and plating works, still exists. Scholz's premises have also survived although extensive modifications have made it almost unrecognisable.

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[1]TM 5 January and 3 May 1884
[2]The Captain p.40
[3]TM 21 December 1895
[4]CT 1900 p. 361

Jam making

Jam making as a commercial undertaking did not really get going in Hobart until the 1850s, although it was no doubt carried on as a cottage industry long before. A major impetus to the industry was the demand created for all types of foodstuffs by the gold rush to Victoria. A number of local manufacturers shipped jam and preserves to the goldfields. Although some of these businesses did not last long - perhaps the young industrialists themselves joined the gold rush - two firms established in the late 1850s lasted more than thirty years . These were the firms of George Peacock and H.C. Peak.

Peak claimed his to have been the "first large jam manufactory in Hobart Town." It was established in 1858 in a building behind Peak's residence "Ranelagh," now 49 Davey Street. In 1873, when the factory was briefly described in a Mercury article, fifty men and boys were employed. The fruit was boiled in four or five copper pans over a charcoal fire, producing five to six tons of jam a day. The jam was packaged into tins made by Millhouse and West, then soldered down, washed polished and labelled. The labels which were made in Melbourne were said to be "very prettily designed." Peak continued in business until the late 1890s at the same address.

Another large jam manufacturer in competition with Peak was Charles Eagle Knight who established his factory about 1870 in a large stone building near the foot of Campbell Street. Some of the company's operations were carried out at the old market building [formerly on the site of the present City hall]. The fruit was delivered to the market building and then carted up to Campbell Street, where it was stripped of leaves and stalks or "topped and tailed." The fruit was then boiled in copper pans over charcoal fires, and when the jam was ready it was poured into wooden tubs which were carried into the filling room. This room contained a number of tables covered with empty tins which were filled by spouted cans. Some of the jam was packed in earthenware jars with capacities varying from half a pound to eight pounds, the rest being put into one-pound tins. The jam in the tins was left to set for a day before being carted down to the market where the tops were soldered on. Knight had produced about 300 tons of jam a year for the previous three years, some of which was exported to the other Australian colonies. It was C. E. Knight's brother, formerly a jam manufacturer in Launceston, who was said to have introduced the use of tins to the Tasmanian industry. The tins used by Knight in Hobart were made by Richard Wilcox, whose workshop was on the Old Wharf.[1]

There was a number of smaller manufacturers in Hobart in the early 1870s including W. Wilson in Liverpool Street and C.F. Cresswell in Murray Street but in these two cases jam making was not their sole enterprise. According to official returns the number of jam factories in Hobart declined during this period - from 10 in 1870 to 5 in 1875. However, by this time Tasmanian jam had a good reputation in the other colonies - so good that unscrupulous mainland manufacturers tried to pass off their inferior product as Tasmanian jam, thereby "injuring the trade, and the stomachs of those who are deceived by a label." During the 1870s, too the Tasmanian jam industry became dominated by Hobart-based firms. George Peacock was the man who had the most conspicuous success over the next decade or so.

Peacock began making jam in a small way during the 1850s, later being described as "one of the pioneers of the fruit-preserving industry in Tasmania, if not in the Australian colonies." The success of his business necessitated the move from his original premises in Watchorn Street to increasingly more commodious premises in Warwick Street and then at 9 Murray Street. His Murray Street factory, which

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[1]Mercury 17 January 1873

he occupied during most of the 1860s, survives and now operates as a restaurant. In 1869 he bought two warehouses in Hunter Street. His operations here were a little more sophisticated than those of most of his competitors who still relied on charcoal stoves for heating the jam pans. Peacock and Johnson Brothers, whose factory was in Salamanca Place, both used the steam-jacket pans. For stirring the jam, each of the seven boiling pans was fitted with a revolving rake driven by a donkey engine, thereby saving a great deal of labour. Two large boilers supplied the steam for the boiling pans, for heating the tins of preserved fruit, and even for the domestic cooking needs of Peacock's residence which was next door. Each of the pans could produce one ton of jam a day when the works were in full operation but if the employees worked overtime, up to ten tons a day could be produced. Most of the jam was packed into tins which were made at the works but some was packed in stone jars. Gooseberries, currants and stone fruits were preserved whole, packed in tins with water purified by the condensation of steam. The tops were soldered prior to heating, the last operations being labelling and packing. The labels were about the only thing not made by Peacock's - they came from Hood's printing works in Elizabeth Street [qv].[1] Peacock's year-round work force then numbered fifty men and boys although more were put on during the season. The employment of women had not yet become a feature of the jam industry.

Johnson Brothers, whose factory was at 53 Salamanca Place, was the other large firm of the time that had embraced some modern technology. There were six steam-jacketed jam pans in the factory with a combined capacity of 2,276 lbs but stirring was the constant task of the younger employees. In January 1873 there were 130 men and boys employed in the factory. Preserves as well as jam were made and the demand for preserves far exceeded the supply.

By the 1880s Peacock had bought up the adjoining properties in Hunter Street and employed about sixty hands. Peacock's operation took advantage of the "most improved appliances". The plant was driven by a 16 h.p. horizontal steam engine and as well as the five boiling pans he also had a vacuum pan, said to be the only one in the colony. Whereas the capacity of the boiling pans was 2 cwt, the vacuum pan, which resembled a huge retort, could hold one and three-quarter tons at a time. This huge pan required a great deal of water, which was pumped from the river but, it was explicitly pointed out, this water could in no way come into contact with the jam. As well as the advantage of its huge capacity, the vacuum pan could also produce the jam very much more quickly than the ordinary boiling pans.

Only a small part of the factory's operations was devoted to the production of jam. Most of the fruit going into the factory was processed into pulp which was then exported to be made into jam at Peacock's factories in the other Australian colonies. Peacock had opened branches in Sydney, Melbourne and Dunedin, largely to get round the export duty which had been imposed on jam in about 1868. The factory occupied three floors which were connected by an hydraulic lift. The jam was boiled and the pulp reduced on the ground floor of the factory while on the second floor was an "immense" sugar hopper and the storage and packing departments. On the third floor the tins were made. Again the process was considerably mechanised with the use of a variety of American-made presses and an "ingenious contrivance" for soldering the tops and bottoms:

> The molten solder is placed in a trough about 4 ft in length, heated beneath, and the tins are placed upon a tray at the end of the machine and carried by means of a running chain along the trough, in such a manner that one end at a time is thoroughly soldered. Between 60 and 70 tins can in this manner

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[1]TM 13 January 1873

be soldered per minute. When in full working order about 1,000 cases, or 60,000 tins can be turned out of the establishment per week.[1]

In 1883, the factory had produced 5-600 tons of jam.

In 1878, C.E. Knight and Johnson Brothers sent a trial shipment of 200 cases to England, and two years later Peacock exported 500 cases to England but these and further shipments of jam and fruit pulp initially met with little success.[2]

In June 1884, a deputation of jam manufacturers met the Treasurer, Mr. Dodds, with regard to the promotion of the jam industry in Tasmania. They asked that the provision of the Customs Act requiring the sealing of cases of jam, be dispensed with; that the drawback, or rebate, granted on imported sugar be equal to the duty paid; and that the landing waiter's certificate should be received in lieu of the certificates that had to be obtained from the other colonies. The rebate was only paid on exported jam and the customs regulations were designed to ensure that the jam was truly exported and not used to fraudulently claim the drawback. The manufacturers alleged that the regulations were making the Tasmanian product uncompetitive on the mainland where, in addition, they were penalised by tariffs designed to protect the jam producers in the other colonies. It was stated that the seven large jam manufacturers employed on average 320 hands, producing 4,455,981 pounds of jam in 1882 of which 4,368,341 pounds was exported. One Tasmanian manufacturer [Peacock] had already made plans to leave Tasmania and had set up factories in the other colonies. It was pointed out that if the factories were to close "it would be a very serious matter indeed to hundreds of families of small fruit growers who were at present just able to obtain a living on their small homesteads whilst clearing their land."[3]

The manufacture of jam outside the city is hard to establish. It is said that a jam factory was established near "Undine" at Rosetta as early as 1860 but little further is known about this enterprise.[4] In 1880 someone named O. Hickman exhibited jam at the Melbourne Exhibition. In the 1890s a W. Hickman and Herbert Hickman appear as jam manufacturers in Augusta Road. In 1886, a public meeting chaired by C. Ball was held at Glenorchy for those interested in forming the Glenorchy Fruit Preserving Company. Several hundred shares were taken up.[5] However, the only jam manufacturer listed at Glenorchy in the 1890s was Albert Fremlin.

Jam exports dropped markedly during the 1880s, principally due to the success of the Victorian producers. Sugar and fruit could all be bought cheaper in Victoria and the Tasmanian manufacturers could not compete. Although the number of factories did not decrease, the amount of jam produced fell as did the number of people employed. In contrast to the figures stated by the manufacturer's deputation above, in 1883 Government Statistics put the total output of the seven factories employing 213 hands at 2,543,240 lbs. This fell still further until by 1890 eight factories employing 160 hands produced only 1,449,320 lbs of jam. However, during the 1890s, despite the depressed times, the industry staged a revival and both local consumption and exports increased more than three-fold by 1900. By 1900 there were only 5 Hobart-based factories listed in the official returns. These factories employed around 500 hands and produced nearly five and a half million pounds of jam and fruit pulp, of which about two-thirds was exported. There was by this time a new player in the field - Henry Jones.

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[1]Mercury 16 February 1884

[2]Mercury 14 August 1880 and 16 February 1884

[3]TM 28 June 1884

[4]e.g. Alexander p. 38 and Morrison p. 119

[5]TM 12 June 1886

Henry Jones had begun working for George Peacock in 1874 at the age of thirteen but soon worked his way up from pasting labels on jam tins. When George's nephew and foreman, W.D. Peacock left the firm to establish a new factory on the New Wharf in 1885, Jones became factory manager. W.D. Peacock was now not only in competition but, it seems, also presented a contrast in operations that was unfavourable to the old established firm [see below]. The 1890s saw George Peacock in serious financial trouble, in danger of becoming uncompetitive with his outdated machinery, and heavily in debt with the Commercial Bank. He was bailed out by the partnership of Henry Jones, Ernest A. Peacock and Achalen Williscroft Palfreyman who managed to raise the capital necessary to prevent foreclosure. The new regime soon made its mark. In 1895 the output was double what it had been the previous year and equal to the production of all the other jam factories put together. The plant had not yet been up-dated:

> There is no extensive machinery plant to be seen at the IXL works. The secret of economical working rests rather in the full employment of what little machinery there is than in having many appliances at hand. Still there is a 10 horse power engine for heavy work, and a 3 horse power engine for lighter tasks, worked in one corner of the lower chambers, while in the centre of the hall a compact little donkey engine works merrily away connecting by means of half-a-dozen or so belts with as many labour saving appliances of various types ... As for the jam-making, pure and simple, it is so free from technicality that therein lies its principle virtue. There is no adulteration, and no chemical treatment; there are no dodges of any kind to make something look like jam which really bears no relation to it.[1]

Despite this brave attempt to make a virtue of technical backwardness, the renovation of the factory was not far away. In 1898 the firm became known as Henry Jones & Co., the factory was extended by the erection of new brick buildings behind the original warehouses and refitted with new machinery. The entire premises were of three stories with a frontage of 300 feet on Hunter Street extending back 290 feet towards the Rivulet behind.

> A new 50 h.p. boiler was erected by Kennedy and Sons, of Hobart, and there is another boiler of 30 h.p., the two supplying the motive power for driving all the machinery, including that employed in the manufacture of packing cases, tins etc.... In the boiling room are seventeen large copper boilers in which the jam is made. ... It is something to be able to say that the factories [including a branch factory at Franklin] are not only the largest in Tasmania but that during the present year their output will double that of all the other jam makers put together.... Fruit preserving and the manufacture of pulp for export have also reached great dimensions, not less than 600 tons of fruit being used each season. In the fruit canning the colour and appearance of the fruit are maintained, and the fruit is turned out exactly as it went into the covering. : The tin is imported in sheets from England, cut and stamped in the factory itself by light machinery, soldered into the required shape, and made thoroughly air-tight by machinery, at very small cost to the proprietors, and, lo! there is the handy little receptacle ready for use. Apricots, plums, and, indeed, all the stone fruits are thus preserved for cooking purposes. The Tasmanian apricot is specially prized for keeping in this way, both for its size and rich flavour, the American fruit taking a very back seat when compared with it. ... The firm also can tomatoes; and tomato sauce is another feature of their products.[2]

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[1]TM 13 April 1895

[2]CT 1900 p.357-8

Jones & Co. used 2,000,000 tins a year, made in their own factory. They also made cases, not only for their own business but sending up to 60,000 cases to others in the fruit trade. The company had timber and hop-growing and marketing interests as well as being the largest exporters of green fruit, and exported its products to Africa and India as well as the mainland of Australia.

Jones & Co, continued to expand its premises on Old Wharf in both directions. The warehouses at 23 and 25 Hunter Street were purchased in 1900 and converted into office accommodation. At the other end of Hunter Street a number of old warehouses were demolished and a large reinforced concrete building erected in 1911.

In 1903 the partnership was dissolved and a new company formed with additional partners who had expertise in negotiating the new Federal tariff regulations. At this time the factories which had been established by George Peacock in the mainland states also became part of the Jones company. In 1910 Henry Jones Co-operative Ltd was floated as a public company of which Henry Jones & Co was a major subsidiary. The Jones empire continued to grow throughout the war when the company was a major supplier to the armed forces.[1]

W.D. Peacock remained an independent manufacturer until the 1920s when that enterprise was also taken over by Jones & Co. A reporter visiting this factory in 1896 emphasised the cleanliness and brightness of this factory where "no one could fail to notice the entire freedom from the messiness to be seen in less carefully managed jam factories." This distinction was also pointed out by the Royal Commission into Wages and Wage-Earners in 1907 which found that in Peacocks factory the manufacture of jam was carried out "under the most favourable conditions, the premises being scrupulously clean," the implication being that Jones' factory was not.

W.D. Peacock & Co. occupied two 3-storey warehouses in Salamanca Place. The preparation of the fruit and boiling was carried out on the third floor. Here also the jam was ladled into the tins and hermetically sealed. On the floor below the tins were inspected for leakages, labelled and packed into cases. In another room on the same floor the tins were made. The boxes and packing cases were made on the ground floor.

The factory produced up to 15 tons of jam a day, raspberry and apricot being the most popular followed by strawberry and blackcurrant. The firm also made syruped fruits, fruit pulp, tomato sauce and "sulphured fruit."

The description of the process and the product also hinted at some of the problems that faced the Tasmanian industry in gaining acceptance in the other colonies.

> "First, we use fresh fruit only; secondly that we guarantee that each of these 1 lb tins contains 1 lb of jam. Only fresh fruit and the best white sugar are used. No cheap pulp or chemical colouring is introduced, as is so frequently the case in the making of low-priced jam." For years this firm has steadily been earning a good name as the makers of the best and purest jams that can be produced. They have no second quality, believing that what is worth doing at all is worth doing well, and evidently spare no pains nor expense to that end. And not only is this the wisest policy in carrying on a sound business but it is the best means of ensuring its gradual expansion whilst at the same time it is an advantage to the colony at large in helping to gain for its fruits a good reputation. Undoubtedly a great deal of rubbish is sold in the other

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[1]Hudspeth & Scripps HS pp 53-8

colonies and abroad as Tasmanian jams, much to the detriment of the industry.[1]

However the Tasmanian industry was helped in 1896 by a drought which had caused failures in the fruit crops in some of the other colonies.

Around the turn of the century there were more than half a dozen jam manufacturers in Hobart. These were all scattered about the waterfront, reflecting the transhipment of both fruit and jam through the port. Jones & Co already dominated Hunter Street but in addition to Peacock in Salamanca Place, there was Johnson Brothers, F.W. Moore & Co. (who also had a factory in Sydney), and Taylor Brothers while on Castray Esplanade jam was also made at Weedon's Fruit and Vegetable Preserving Works. Wilson, Williams & Co.'s jam factory was in Market Place. In Park Street Wright Bros Preserving Works processed, among other things, fruit grown on the family's orchards at Glenorchy. Around the turn of the century the premises became a cider factory operated by Thomas Ball.

A number of other industries also depended on the jam factories. Traditionally jam had been sold and shipped in earthenware jars, some of them possibly made in the Hobart potteries of Sherwin and Tibbs [qv] but after the introduction of tins by the Launceston jam manufacturer L.E. Knight in about 1859, tins became almost universally used in the Tasmanian jam industry. Firms such as Holroyd's [qv] became large enterprises supplying tins and packing cases to Hobart's jam manufacturers. A number of printers made a speciality of printing jam labels. The fruit industries of the Huon and Channel grew side-by-side with the jam and preserve industries, and, for a time at least, fishermen could earn more shipping the casks of fruit up the river to Hobart than they could by fishing.

By 1915 there were still five jam manufacturers listed in Government statistical returns but only Jones & Co survived the 1920s. A number of jam factories survive partly due to their location in historic waterfront warehouses, including Jones & Co.'s in Hunter Street, George Peacock's in Murray Street, and W.D. Peacock's and Johnson Bros. in Salamanca Place. Away from the waterfront, fewer survive.

Pickles and Condiments

Keen's Curry, a nationally known brand today, survived as a Tasmanian enterprise for more than 100 years. It was established by Joseph Keen who came to Tasmania in the 1840s with a secret curry recipe. He and his wife established a business manufacturing curry powder at Kingston. They regularly exhibited at shows and exhibitions where their products were well received - they made pickles as well as curry powder. In 1866 the judges at the Inter-Colonial Exhibition thought the curry powder was so good that they awarded Keen a special plaque. Keen's first premises at Kingston were on the site of the present BP Service Station but he later [c.1880?] moved to another shop on the site currently occupied by the Coles Supermarket. Keen kept the recipe to himself, only divulging it to his wife Annie on his deathbed. She continued the manufacturing business and the shop at Kingston, passing the recipe on to her son-in-law, Horace Watson, shortly before her own death. By 1916, Watson was making the curry in the back room of his house at the corner of Sandy Bay Road and Ashfield Street [formerly 268 Sandy Bay Road - this building was demolished in 1993]. In 1954 the firm was taken over by Reckitt & Colman which already made an unconnected product called Keen's Mustard.[2]

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[1]TM 14 March 1896

[2]Edwards pp 36-8 and John Thompson pers. comm.

Vinegar was manufactured at Murrayfield at least by 1872 and probably earlier. The vinegar was made from sugar, molasses, small fruit such as cherries, plums, gooseberries, and apples, and sugar beet and white cabbage, all of which were grown at Murrayfield. The apples were pulped, and the small fruit and sugar beet crushed before being put into a boiler with the cabbage. The boiler could hold 400 gallons of liquid and had a strainer a foot from the top to prevent the pipes being blocked when it was emptied. After boiling the liquid was passed through chutes to a tank and then into a wooden cooler. When cooled it was put into the fermentation vats which comprised a large square wooden tank and two casks. After fermentation the liquid was taken to a little brick building kept at a constant temperature of 80°F to be acetified, or made sour. Once the vinegar was matured it was taken to the vinegar shed where 15,000 gallons at a time were kept in a number of puncheons before being sold. Another 15,000 gallons would be going through the various processes at any one time.[1]

John Erp & Sons, vinegar manufacturers, seem to have established the business in about 1890 at 285 Elizabeth Street [then no. 283]. The firm exhibited at the Tasmanian Exhibition at Launceston in 1891-2 and at Hobart's International Exhibition of 1894-5. By 1900 they had moved to 89 Park Street where they remained at least until 1915.

In 1898 Thomas Wood of the Federal Bread Manufactory established the Australian Manufacturing Company in Murray Street, producing cordials, coffee essences, sauces, vinegar, pickles, and self raising flour. He employed twelve men in this branch of the business.[2] The company advertised consistently in the local press. In August 1906, for example, a display advertisement for Woods Australasian Self Raising Flour was accompanied by a recipe and the promise of a further recipe every week in the same space.[3] Later in the year the headline "Two good things" drew the reader's attention to the company's cordials and tomato sauce. Woods remained in business for another five years or so but by 1915 it had been taken over by Samuel Braithwaite, who continued the bakery only.

Preserving

During the first months of 1882 25 men were employed on the construction of "vast galvanised iron buildings" at Glenorchy for the Tasmanian Preserving and Trading Company. Also under construction was a jetty from which lighters could convey the company's produce down the river to Hobart. The company had been established by Allan McCall, formerly of London but about to become the General Manager of the new works. The works were set up for the canning of rabbits and McCall advertised for a regular supply of trapped rabbits during the season.[4] These works are thought to have been associated with an earlier jam factory.[5]

The Austral Fruit Preserving Company was established in 1894 at Castray Esplanade. The premises were described as a large fruit and vegetable preserving factory, and the firm exhibited dried peas and apples at the Tasmanian International Exhibition of 1894-5. However the enterprise only lasted a couple of years.[6]

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[1]Mercury 22 October 1872
[2]CT 1900 p. 360
[3]TM 25 August 1906
[4]TM 4 March 1882 and 9 June 1883
[5]Morrison p. 119
[6]Mercury 14 December 1894

John Weedon had come to Tasmania from Queensland in 1895 and the following year established his business in the former premises of the Austral Fruit Preserving Company. The firm's speciality was evaporated apples which were packed into one-pound cardboard boxes and exported all over Australia. Another product for which there was said to be in great demand was a forerunner of modern convenience foods - a vegetable soup mixture made from evaporated vegetables, herbs and flavouring and intended to be combined with stock for making soup. Weedon's also made jam, jellies and marmalade. Most of the operations were carried out in the main building but the kiln and furnace were detached. Despite predictions of a "steadily increasing output," the factory was taken over by Taylor Brothers in 1902.[1]

Freezing Works and Cool Stores

Domestically ice could be manufactured using small hand-operated machines. Otherwise, the manufacture of ice was dependent on the suitability of climate and/or altitude. In Hobart, ice-houses were set up on Mount Wellington as early as 1849-50. This first ice-house measured 9.1m by 5.3m and was 3.5 m deep. of which 2.5m was below ground level. It was made of stone with a timber roof insulated with sod, During the winter it was filled with compacted snow, and in the summer the ice was cut into blocks, wrapped in blankets for insulation, and carried into town on horses. Eventually, there were several houses in the area around the springs. This method of obtaining ice was used until the 1890s.[2]

The development of refrigeration techniques extended the life of comestibles, making products available far beyond the growing season and opening up opportunities for export. Refrigerated ships operated on the Australia-England run from 1880 and regularly carried cargoes of Tasmanian fruit. Seasonal gluts need no longer be the disaster they once were - the supply could be spread over the whole year.

Although descriptions of 19th century breweries in Hobart refer to refrigeration this seems to refer to cooling rather than freezing devices. The refrigerator at the Cascade Brewery in 1872, for example consisted of a number of copper pipes set horizontally and one above the other in a frame. Cold water was continually passed through these pipes to cool down the worts at it was run over them. The cooling process was also aided by the design of the room. The refrigerator was manufactured by Robison & Co. of Melbourne and was typical of those described in other local breweries of the period.[3]

Refrigeration using compressed ether was first used in Victoria in the 1850s but it seems not to have been used on any scale in Hobart until 1897 when the city's first freezing works were established by Frederick Pender in the old market buildings in lower Macquarie Street (now the site of the City Hall). The Hobart Freezing Company's premises were then the only freezing works in southern Tasmania and occupied a floor area 300 feet by 60 feet. The freezing works operated on the "ammonia compression, direct expansion" principle. Pender had begun the business in the interests of furthering the export of fish, principally to the neighbouring colonies but in 1898 the first shipment of frozen trout was sent to England. Ice was manufactured for general consumption as well as for packing

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[1]CT 1900 pp 358-9

[2]de Quincey p. 68-9

[3]Mercury 1 October 1871

fish, and there were cool chambers for the storage of meat and dairy goods.[1] Pender's premises were destroyed in the fire of 1909 that burnt the old market building to the ground. Pender was not insured and did not re-establish his business.[2]

Further refrigeration facilities were built in Hunter Street in 1903. An icehouse and cool store were erected at Nos. 35 and 37 Hunter Street by a New Zealand consortium who were the largest exporters of rabbits from that country. The architect was William Panton who also supervised the construction of the freezing works in Launceston:

> At the back of the main building is a large compartment, 42 x 40 feet, where the rabbits will be graded and packed ready for export. Immediately adjoining is the engine-room and boiler house, the condenser house being in the vicinity. The boiler is one of Babcock and Wilcox's, on the water tube principle, and possessing sufficient power to work double the capacity of the present buildings. The engine is of the Hercules type, driven by a high pressure Corliss engine, with a capacity of 28 tons ice melting. The machinery, which is of the most modern and approved type, is furnished by the well known firms of Messrs C.A. MacDonald & Co. Pitt Street, Sydney, who have supplied the greater portion of the freezing plants of Australia and New Zealand ....The building is very substantially constructed, the whole being of brick with walls 3 ft 6 in. in thickness. The produce will be conveyed to the upper storeys by an electric lift, and the whole of the premises will be lighted by electricity. The system of refrigerating utilised will be that known as direct expansion of anhydrous ammonia, and the temperature of the freezing rooms will be kept at about zero.[3]

The N.Z. firm did not attend to the actual freezing operations but let the premises, in the first instance to Messrs Rudden and Tonkin who undertook to deal with beef, mutton, poultry and fish although rabbits were their major line. The works had the capacity to treat up to 50,000 rabbits a week but there was initially some objection by landowners who did not "favour the idea of treating bunny as a commercial product, fearing that it may lead the trappers to work on the system of keeping up the supply."

The cool store built in 1903 survives in Hunter although only the facade of the ice works remains. When the ice works were closed down it appeared that only ice was holding the building together and once it was thawed out most of it had to be demolished.

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[1]TM 27 August 1898
[2]TM 13 November 1909
[3]TM 2 May 1903

Beverages

Brewing

In 1816 the Hobart Town Gazette pointed out that the colony's climate would be favourable to allow brewing to be undertaken almost throughout the year and recommended that farmers take up the growing of hops: "let us therefore use our exertions to procure ... good Beer, which would find a ready sale, not only in our sister colony New South Wales; but in much more extended Markets."[1]

In November 1819, A.F. Kemp suggested to the Bigge inquiry brewing and distilling as a way to use up surplus wheat. Export of wheat to Sydney was not a viable option because prices there were so low that the cost of freight could not be covered. On the other hand, he said, there was no-one competent in brewing and distilling in the colony.[2]

A Mr. Austin of Glenorchy had already been brewing porter for a considerable time and had "met with a rapid sale."

George Gatehouse had recently bought property a New Town after retiring from a successful partnership with Anthony Fenn Kemp with capital of £8000. He had earlier served a term of transportation of seven years in NSW before returning to England to acquire enough capital to enable him to come to Van Diemen's Land as a free settler. In March 1820 he was examined by the Bigge inquiry as to his situation and prospects:

> Q. You are at present making some considerable buildings on your estate at New Town?
> A. Yes. I am putting up a dwelling house of three stories. a three Storey Malt House, and a Brewery.
> Q. How many convict labourers have you in your employ?
> A. Thirty eight in the whole.
> Q. Are they mechanics or common labourers?
> A. I have two mechanics and the rest are labourers.
> Q. Have you had any assistance rendered you by Government affording you mechanics or Government prisoners?
> A. Since commencing my Malt House, I have received a Stone Mason and a Carpenter off the Stores.
> ...Q. You have been engaged in a Mercantile House for some time in the Colony?
> A. I have for four years past; which I have now quitted and direct all my attention to the establishment of a Brewery.
> Q. When do you expect to begin malting?
> A. About June next.
> Q. Do you intend to Malt with barley or wheat?
> A. With wheat this year as I have not been able to procure barley.
> Q. Is this the first experiment made in this settlement?
> A. Austin a settler at the Ferry has tried brewing on a small scale and sells it.
> Q. Have you observed a great demand for English beer on arriving in this colony?
> A. Yes always.
> Q. From your observation of the crops of barley do you think the settlers will be able to grow it to perfection here?

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[1]HTG 18 May 1816
[2]HRA III iii p. 222

A I have no doubt of it.
Q. From whence do you expect to obtain Hops?
A. I have now by me about Three Tons of English Hops and having contracted with others for a supply I have no doubt that in two years there will be a sufficiency.
Q. What is the importing price of English beer and porter at this place?
A. Usually from £10 to £12 per Hogshead
Q. Do you think you will be able to brew it here cheaper?
A. Yes I do.[1]

In April 1821 George Gatehouse advertised that he had begun malting and would begin brewing in June. He called for settlers to supply him with English Barley. In June Gatehouse advertised that he would shortly have for sale a supply of strong beer at 4s a gallon and table ale at 1s 6d per gallon. He offered a discount of 25% to licensed retailers. He also sold yeast at 1 shilling per quart.[2] Another New Town brewer of the period was John Bonney who had a 50-acre estate adjoining Gatehouses's. In November 1822 he offered this property for sale - as well as the good brick dwelling house, a malt-house, brewery, copper etc. complete were included.[3]

The locally brewed product found ready acceptance and the industry grew, producing a degree of competition which must have been welcomed by the consumer. Mr. Wood of the Hobart Town Brewery at the corner of Davey Street announced a price reduction as early as April 1822, his draught beer in future to cost 9 pence a quart and bottled brew to cost 1 shilling a bottle. He also recommended "this wholesome beverage as some of the best in flavour and strength that has been brewed from Malt and Hops in Van Diemen's Land."[4]

By the end of 1823, the Hobart Town Gazette could list six breweries operating in the county of Buckingham: The Hobart Town Brewery in Liverpool Street, the New Town Brewery of George Gatehouse, Tasman's Brewery in Liverpool Street above Harrington Street, the Derwent Brewery in Collins Street next to the Government Mill, Presnell's Brewery in Argyle Street beside the Rivulet, and Gorringe's Brewery.

An extensive advertising campaign in 1823 promoted the virtues of "Tasman's Stingo" which was brewed from the best English barley malt and hops by J. Whyte at the Tasman Brewery in Liverpool Street. The landlord of the nearby Britannia Inn announced that he always had a plentiful supply of this "very wholesome and pleasant Beverage.[5] This brewery was later taken over by Stallard and Coombs. In 1833 when it was to let the brewery was described as well-established and comprising a brewing house, cooling lofts, fermenting house, malting floors more than 100 feet long, a steeping house, two beer cellars, two grain stores, and a malt kiln, as well as the dwelling and outbuildings.[6] Coombs had moved to a new brewery in Liverpool Street, confusingly called the Britannia Brewery.

As well as this establishment the old-established breweries of Mr Roberts [formerly Presnell's in Argyle Street], Mr. Wilson [in Elizabeth Street], and Mr Condell [at the Beuley Bank Brewery on the New Town Road] were still operating.

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[1]HRA III iii pp 350-1
[2]*Hobart Town Gazette* 28 April 1821 and 23 June 1821
[3]HTG 23 November 1823
[4]HTG 13 April 1822
[5]HTG 14 and 28 June 1823
[6]HTG 8 February 1833

The latter was in Condell Place and during the 1850s and 1860s was run by Joseph Clark and listed in the assessment rolls as "old malt house."[1] In addition the "very complete premises" originally erected by Mr. Dudgeon in Collins Street - presumably the Derwent Brewery - had been fitted up by Mr. Brodribb and were again in full operation.[2] Peter Degraves had begun brewing at the Cascades only the year before in an effort to diversify his interests as the timber supply on Mount Wellington began to diminish. The brewery comprised two buildings beside each other and close to the site of the present Cascade Brewery.[3]

Although most of the breweries listed in 1833 were separate establishments, it was not unusual for brewing to be carried out in association with a public house. In 1835, for example, John Wise of the Waterloo Tavern introduced his Improved Imperial and Ginger Beer, claiming this "delicious article" to be superior to the "common manufacture of the Colony."[4] John Mills brewed XX Ale at the Old Bell Inn in Elizabeth Street, selling it in bottles and small casks.[5] In Melville Street William Champion had begun brewing at the Jolly Hatters.

When Henry Widowson cast his jaundiced eye around the colony in the late 1820s, he found only two breweries in Hobart worth mentioning:

> The Breweries of Messrs Dudgeon and Bell, and of Mr George Gatehouse, are deserving of attention; the former (where most excellent ale is brewed), is in Macquarie Street[6]. Mr Gatehouse's concern is carried on at New Town; the porter brewed by this gentleman bids fair to rival, and eventually to render unnecessary, the importation into the Colony of London porter, which is selling retail at two shillings per quart, while Mr. Gatehouse's beer, if bought in small casks adapted to the use of families, will not cost more than that sum per gallon. There are several other breweries, but none of sufficient magnitude to require particular notice.[7]

By 1833 Gatehouse had laid out a racecourse on his property but sold it off in 1836. This sale may have been necessary to recoup some of the losses occasioned by the brewing business which was not a financial success due to the need to import hops from England. Following Gatehouse's death in 1838 the property was rented to Richard Jacomb who continued malting and brewing at the site. In 1845 Gatehouse's property was auctioned by Messrs Lowes and Macmichael. It was advertised as a:

> splendid estate and extensive premises at New Town, including the residence, water-mill, steam engine, malting and brewing establishments, &c lately in the occupation of R. Jacomb Esq.

The sale realised £3,800[8], John Mezger purchasing the lot containing the malt house and brewery. The property was the subject of an article in The *Colonial Times* in March 1849, which suggests that Mezger did not carry on with the brewing side of the business:

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[1]Pearce p. 92
[2]HTG 22 February 1833 and 1 March 1833
[3]Rayner p. 35
[4]Colonial Times 31 March 1835
[5]Colonial Times 19 May 1835
[6]Widowson is not correct here - the brewery was in Collins Street next to the Government Mill.
[7]Widowson p. 28
[8]ADB

> ...John Mezger ... now resides here with his family, varying on the united business of maltster and miller, upon a large and liberal scale. ... The malt-house is large and well-ventilated, and in every way adapted to the purpose to which it is so beneficially applied ... in his malting establishment at New Town, the process is conducted regardless of cost, and under the charge of a careful and experience maltster, so that both brewer and private individual will find there such quantities of the article as his need may require...
>
> We must not omit a stroll though the garden which Mr Mezger found in a most ill-conditioned state, but which he had transformed into a most delightful promenade, abounding in fruits and flowers, and ornamented with what pleases us above all other things, sundry thriving saplings of British forest trees, to be transplanted we presume at a fitting time to a spot convenient for a pleasant grove.[1]

By the 1860s John Mezger was advertising the products of a bone mill at the site of the old brewery.

By 1845 there were thirteen breweries in the Hobart district, according to Government statistics. In 1847 Mr. Paterson erected spacious additions to the old Coombs brewery. The Britannia and Trades Advocate in praising Paterson's enterprise and reputation expressed the hope that "good wholesome beer will shut out wretched thin Cape wine from the market.[2] In 1850 the old Derwent Brewery in Collins Street was bought by John Walker who already had a brewery next door on the Government Mill site which he had purchased in 1831. In 1852 he replaced the old buildings erected by Dudgeon & Bell with the present stone buildings. From the 1850s to the 1870s there were typically six breweries operating in Hobart, some of them exporting to the other colonies although protective tariffs restricted access to the Victorian market:

> One of the chief industries of Hobart Town is brewing, and the excellence of the ale brewed here is well recognised in the other colonies, and particularly in Victoria, where we should soon expect to see an extensive market opened up were it not for the absurd prohibitory duties of the colony. We have a climate unequalled by that of any of the other colonies for carrying out this industry, for here malting can be done all year round, or nearly so, and it is only lately that one of the Sydney brewers has discontinued sending his barley here to be malted and then sent back to him. A sensitive minded total abstainer might not wish to see Tasmania noted as a malt liquor producing colony, but apart from commercial considerations, it is rather a matter for congratulation that here our brewers can sell a wholesome and palatable beverage, when from the published result of the analyses made by chemists, of some of the ale brewed in the other colonies. "robbing a poor man of his beer," almost universally accounted a sin of the deepest dye, would be an act of charity.[3]

These comments preceded a series of detailed articles on Hobart industries, of which the breweries were a major feature. First to be visited was the Cascade Brewery, then undergoing a major reconstruction - the brewer was then William Gracie. A new "not unhandsome" four-storey building of freestone had been erected and the old buildings were being demolished. The top floor was reached by an hydraulic lift worked by water from the company's private reservoir:

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[1] *Colonial Times* 25 March 1849

[2] BTA 7 October 1847

[3] Mercury 2 October 1872

> This room is 80 ft by 40 ft, and in it is the hot liquor back, in which the water is boiled by steam. From this back it passes into the mash tub, through the mashing machine, a contrivance by which the malt and liquor are mixed as they run into the tub, in which the "grains" or refuse of the malt is left, while the liquor is conducted to a copper which holds 70 hogsheads[1]. The copper is fixed in an iron jacket, and the liquor is boiled again by the steam passing between the copper and the jacket. The hops, after coming out of the copper, is placed in gunny bags and squeezed in a hop-pressing machine... on the third floor, part of the room is partitioned off as a sugar store. After boiling in the copper, the wort runs into the hop back on the second floor and through a passage in the floor of the hop back, the worts is conducted to the refrigerator in the room below... On this floor is the hop store, in which large quantities of English and Tasmanian hops are stored ready for use. The worts, after it has been cooled by the refrigerator, runs into the working rounds. Two of these vats will hold 70 hogsheads, the other one 50 hogsheads, There are other small vats holding 30 hogsheads each too on the premises but these are seldom used. On descending to the first floor, which is just above the level of the ground, the lower portions of these vats can be seen , and from these the ale or beer is conveyed by means of a hose to the puncheons[2] which are arranged round the sides of the room with troughs under them. There are holes in the floor by which the liquor can be conveyed by the house to the cellar below. The first floor is called the working beer cellar ... Under the first floor of the main building is the working ale cellar, which will contain one hundred puncheons, all at work.

This building was intended to be used only for the brewing of ale once other new building was completed. This building was not yet finished but would comprise two storeys over the basement with a tower in which the coppers would be housed. There were three malt houses then in operation, two which had been part of the original brewery and a new building 160 feet by 36 feet. The barley was first steeped in cisterns measuring 36 feet by 8 feet wide and 8 feet deep. In the two old malt houses the malt was dried on a wire floor over furnaces ten feet below. In the new malt house the same type of furnaces were used but the malt was spread on perforated tiles which were considered by maltsters to be superior to the wire.

> The grain, after it has been converted into malt, is screened and then crushed. This process is conducted in another wooden building which was formerly used only as a flour mill. here is one of Ransome and Sims' patent malt crushers, which is worked by an overshot water wheel, 45 ft in diameter. This is probably about the largest water wheel in the colonies, and ... works four pairs of stones for the flour mill, besides the malt crusher.

At this time there were six brewings a week, each of 40 hogsheads. giving a total output of 240 hogsheads a week. When the new buildings were completed output was expected to be up to 600 hogsheads a week.[3]

Walker & Son's brewery was still in operation in the 1852 buildings in Collins Street. On the Collins Street frontage was a malt house with a floor 200 feet long and 40 feet wide with 1,100 bushels of barley working on it at any one time. At each end was a kiln 24 feet square, one with a wire floor and the other with perforated tiles. There was another malt house on the Macquarie Street frontage

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[1] A hogshead was a unit of measurement equal to 52 gallons or 236.4 litres approx.

[2] A puncheon was a large cask with a capacity of about 500 litres.

[3] Mercury 1 October 1872

with a single kiln, the same size as the other two. Walker & Son also had the malt-house and kiln in Hampden Road originally built by Messrs Tooth in about 1847. The firm did not use the all the malt they produced but exported a large amount to Sydney where it was often too warm for successful malting. In two years they exported 13,000 bushels of malt to Sydney.

The brewery building was four storeys high. The storage cellar could hold 40,000 hogsheads of ale:

> Then there is the working ale cellar, and another working cellar 35 feet high. Over the store cellar is the bottling department, in which the machines will bottle one hogshead of ale per hour with very little trouble. There are two coppers for boiling the liquor, one heated by steam and the other by fire, although if necessary steam can be applied to both. One of these will boil 50 hogsheads and the other 25. The hops when it comes from the copper is placed in an ordinary screw press. The liquor runs from the copper to the hop back, and then forced up by steam power on to a flat wooden cooler of small size, and a fan which makes 15,000 revolutions in a minute sends a blast of cold air to blow the steam off the worts as it leaves the copper. The worts runs from the flat cooler and is then sent over the refrigerator... The hot water tank is twelve feet square, and four feet deep, and the water is heated by steam before it goes into the mash tub, which is 17 feet in diameter and 6 ft deep. The water passes through a washing machine at the same time as the malt, on its way to the tub and is thus thoroughly mixed before it gets there. This machine consists of an iron cylinder 5 ft long, with a revolving shaft, armed with teeth in the centre. The worts after having passed over the refrigerator, runs into the fermenting gyles, and is then conveyed by means of a hose to the casks in the working cellars, where the froth oozes and runs out at the bung holes until the ale or beer is fit for the storage cellar and for sale.

All the machinery in the brewery, including the cask-washing apparatus was worked by a 22 ft overshot iron water wheel made in Scotland under John Walker's personal supervision. A new boiler had recently been installed to supply the steam for boiling the ale, steaming the casks etc, replacing the a less efficient one. Only ten hands were employed in the brewery at this time.[1]

Walker continued to operate the brewery and mill profitably until his death in 1874, after which it was run by his widow for several years.

A number of other early breweries were still in business At the corner of Warwick and Elizabeth Streets was James' Tasmanian Pale Ale Brewery. This was described in 1872 as being one of the oldest in Hobart Town and may have established by the 1830s. The brewery was in a dilapidated condition before James took it over in the early 1860s. The brewery was a long range of wooden and brick buildings extending back one hundred feet from the Elizabeth Street frontage.

> Entering by the back door, we first observe a 1,200 gallon tank, with a vertical boiler for boiling, and for driving a 10 h.p. engine. Below this is the mash tub, in which 22 hogsheads can be mashed at a time. A sparge is used for adding any extra water to the mash. From this the liquor runs to the worts copper, which will hold 23 hogsheads, and here the boiling is done by either fire or steam. In the same part of the building is a powerful hop press made by A.J. Clark of Hobart, and a malt crusher by the same maker. Going down further we pass the furnace under the copper, and come to a room in which there is a very large flat cooler. This is not used now but is kept filled with

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[1]Mercury 2 October 1872

> lime and water. This room is cool and airy, and in the centre is one of Robinson's patent refrigerators, over which the liquor passes, after it leaves the hop-back on its way to the working gyles, of which there are two holding 22 hogsheads each. A temperator consisting of a pipe running round and round until it forms a circle, the size of the gyle, is used to keep the liquor at the proper temperature. This is done by the running of cold water through the pipes.

The liquor was then taken to the working cellar which could hold up to 100 puncheons. Although the old malt house and kiln were still on the site, a new stone malt house had been built.[1]

In Melville Street the Jolly Hatters Brewery was now operated by William Cowburn. The brewery was a brick and wood building attached to the Jolly Hatters Hotel, and described by the Mercury reporter as "not elegant." The hot water tank, with a capacity of 400 gallons, and the mash-tub were on the first floor. The mashing was described as being done "by oars." The liquor from the mash tub ran into a vat on the ground floor and was then pumped up back up to the worts copper on the first floor. This copper had a capacity of eight hogsheads and could be heated by fire or steam. The liquor from the copper was cooled by being passed over two refrigerators which were usually sufficient but in very hot weather "it receives blasts of cold air from a fan worked by a belt connected with the engine." The fermenting gyles were two square wooden tanks which would hold up to 20 hogsheads each although they were rarely used to capacity. The working cellars were cool but small. The malt house was the stone building behind the brewery and on the first floor was the bottling department where up to 1,000 bottles of ale and porter had been produced in 1871. All the malting necessary was done on the premises.[2]

The new brewery built by Stephen Coombs in 1833 in Liverpool Street was still operating, under the ownership of Messrs Wood & Spencer. The main building was of stone and, including the basement, had five storeys. Adjoining this was a range of brick buildings including a malt house. On the top or fourth storey of the main building was the hopper, for crushed malt which was brought up from the mill below by elevators, and the hot water copper. On the floor below was the mash-tub with a capacity of 80-90 bushels. The worts copper on the second storey could hold twenty hogsheads, and like the hot water copper was heated by fire. The process then continued back on the third floor where the hops were squeezed in the Gregory's patent double-action hop press. There was no hop-back in this brewery - instead there was a strainer in the worts copper. There was a Robinson's patent refrigerator as in most of the other breweries. A 7 h.p. vertical engine on the first floor worked the malt grinding machine. The working cellar was 142 feet long and at one end there was a well 70 feet deep from which water was raised by pump. The bottling machine was also in this cellar. The malting house and kiln, which had a perforated tile floor, were put out of action by severe flooding in the winter of 1872 and the firm had transferred all the malting operations to their other malt house at New Town, formerly Mezger's.[3] By 1883 the brewery had been taken over by J. Dillon and re-named the Anchor Brewery.

At about this time William Gracie, the former brewer at the Cascade Brewery, bought the old Artillery Brewery formerly carried on by Thomas Pascoe. The brewery had originally been built by R.W. Loane who laid the foundation stone of

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[1]Mercury 14 October 1872
[2]Mercury 14 October 1872
[3]Mercury 10 October 1872

an extensive building in January 1820.[1] In the event, it was not used as a brewery for some time - in May 1822 the premises were advertised to let with the information that it would hold 50,000 bushels of wheat.[2] Within twelve months Loane had decided to go into the distilling business and called for 5-7,000 bushels of English barley for the Derwent Distillery. The distillery began to distil the following December.[3] The distillery had as much, or as little, success as the other colonial distilleries [see below]. Pascoe took over the site some time in the 1850s, and established the Artillery Brewery.

When Gracie took over the brewery, it had not been used for some time and many of the buildings had fallen into ruin. He pulled down the old brewery building and built a new one of brick and stone. The brewery, malt houses and other buildings then formed a square. The new building had five floors which were arranged very much as the breweries described above, although at the time of a Mercury report of June 1873 brewing had not yet begun. The working cellar was 120 feet long and 24 feet wide and up to 200 hogsheads of ale or beer could be worked each week. The malt crusher and other appliances were powered by a Scottish-made 8 h.p. vertical engine with an 8-ft fly-wheel. There were two malt houses, one over the working cellar which had a kiln with a wire floor, and another, forming one side of the square, which had a kiln with a tiled drying floor.[4]

By 1880 there were only four breweries listed in Government statistics. Then in 1882, a Victorian company, Syme & Co. bought the Cascade Brewery from the Degraves Estate, and within a few months had established a virtual monopoly. Symes amalgamated with James's Brewery and together they bought out the other two major breweries - Walker's Brewery in Collins Street and the Artillery Brewery in Gore Street - and formed the Cascade Brewery Company. The Cascade Brewery Company's bottling department was then in the former Walker brewery and the building on the Collins Street frontage of Walker's brewery was converted by Symes into a confectionery factory [see above]. In June 1883 the former Artillery Brewery was leased by A.D. Johnstone for a woollen mill [see below]. At about the same time, J. Dillon of the Anchor Brewery was trying to establish a co-operative brewery but by 1886 there was a boot upper factory on the site.[5]

The number of breweries officially increased again within a very short time, principally because of a reclassification of dandelion ale. For some time dandelion ale had been promoted as a temperance beverage and by 1885 there were five manufacturers of the article operating in Hobart - Weaver, Nicholls, Marsden, Kelly and McLean. Except for Nicholls, these men were essentially cordial and aerated waters manufacturers and their operations are described below. However, in 1885, perhaps because the beverage had become so popular, some samples of dandelion ale were analysed and found to contain one and a half to 4% of alcohol - ordinary beer of the time was only 4-5%. As a result of the analysis, the beer duty became applicable to dandelion ale and restrictions were placed on its sale. The manufacturers protested that the enforcement of the law was causing them hardship, and argued that the alcoholic content was necessary for the keeping quality. Marsden and McLean left off producing dandelion ale but licences were taken out by Weaver and Kelly. Nicholls did not need a licence since he already had one as a licensed victualler.[6]

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[1]HTG 22 January 1820
[2]HTG 11 May 1822
[3]HTG 10 May and 20 December 1823
[4]Mercury 6 June 1873
[5]TM 10 March,7 April and 30 June 1883, and 5 January 1884
[6]TM 13 June and 20 June 1885

Nicholls was the licensee of the Globe Hotel at the corner of Antill and Davey Streets. He had begun brewing in a small way in 1881 but his business became so successful that he opened an extension to his premises at the end of 1885. The Tasmanian Dandelion Ale Brewery was at the rear of the Hotel and was designed by Nicholls himself:

> the new building, which is open to the top of the roof, skeleton staircases giving access to the various stages of the brewing process, is 40 ft in height, the walls being 14 in brick up to nearly the ceiling, when wood is substituted, The copper refrigerator and vats are the work of a local craftsman, Mr. Macalister ... Every improvement that could be thought of has been adopted, even to having two flues to the copper, one of which only will require to be used when the quantity to be brewed is but small.

Nicholls hoped that output would increase from 40 hogsheads a month to 120. He was already shipping dandelion ale to Melbourne in bottles and was intending to begin exporting it in casks.[1]

In the early 1890s the brewery was taken over by Launceston brewer Boags, who continued to operate it until at least 1915.

At the turn of the century there were four breweries - Cascade, Boags, the Jolly Hatters and the former James' brewery in Elizabeth Street. The latter was re-built by George Adams in 1904, but in 1911 the new buildings were purchased by a W. Coogan & Co. and converted into a furniture factory.

There are several breweries and malt houses remaining from the pre-1915 period. The Cascade Brewery, in a somewhat altered form, remains in production. Adams' 1904 brewery on the corner of Warwick and Elizabeth Street remains the property of Coogans and is used as an antique and piano showroom. The malt house and kilns built by John Walker in Collins in 1852, and the 1840s Tooth malt house in Hampden Road have been converted into offices. Stewart's brewery in Davey Street has been used by the Royal Tennis Club for well over a hundred years.

Distilling

The first distillery in the colony was built at the Cascades in 1822 by Towers & Co., at what is now the end of Macfarlane Street. Their product was said to have met with general approbation for its quality and flavour.[2] Shortly after this it became known as Midwood's Sorell Distillery. By the end of 1824 there were three more: Lowes distillery at Cascade Grove - which also sold superior peppermint, carraway and aniseed cordials, the Derwent Distillery at the bottom of Gore Street, and the Constantia Distillery on the New Town Rivulet. There was also some illegal distilling, In October 1824 a still containing 20 gallons of spirit and three mash tubs were found near Browns River by a party of soldiers.[3]

Lowes distillery comprised a yard 200 feet long by 142 feet wide surrounded by a high stone wall partly formed by the walls of the distillery building which was 142 feet long and 20 feet wide. There were also outbuildings contained within the yard.[4] Lowes distillery failed for much the same reasons as the other colonial

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[1]TM 26 December 1885
[2]HTG 21 December 1822
[3]HTG 8 October 1824
[4]Rayner, HSFFC, p. 2

distilleries and, when Governor Arthur sought a new building for a female factory, he was offered the distillery at Cascades. The distillery was converted into a female factory and first occupied in December 1828.[1]

William de Gillern built the Constantia Distillery on the New Town Rivulet in 1824 following Governor Macquarie's proclamation encouraging qualified people to engage in the distillation of grain. De Gillern spent his entire capital of £3000 on setting up the distillery and started distilling in September 1824. The product was said to very much resemble the "fern-tosh in Scotland."[2] However, only a few months later, Governor Brisbane announced that the duty on imported spirits would be reduced and that the excise on locally produced spirit would be increased. This action forced the closure of the Constantia Distillery and most of the other colonial distilleries. By way of compensation de Gillern was allowed to buy substantial property elsewhere in the colony by paying by instalment.[3] In the meantime, the distillery building housed "Messrs Hume and Peet's extract of bark manufactory."

In 1829, the distillery was converted into an orphanage for the orphan boys. The building was never suitable for the purpose and was soon overcrowded. The harsh conditions were not made any easier by the brutal behaviour of the headmaster, Giblin, who was dismissed in 1831 for beating the children.[4] In October 1833 the boys vacated the distillery and moved into the new Orphan School. The 1860 valuation rolls lists at Roseway a 2 acre property with a distillery and garden belonging to Dr. Bedford and with an assessed annual value of only £20. But there is no evidence that the building was actually being used as a distillery at this time.

The only distillery which survived into the 1830s appears to be the original Towers & Co. establishment, which became known as the Dynnyrne Distillery. It was run by James Hackett through most of the 1830s.

There are remnants of the early distilleries along the Hobart Rivulet.

Cider Factories

Cider was widely promoted as a drink suitable for the most ardent teetotaller as well as for its medicinal properties. It was recommended by doctors for rheumatism, gout, and kidney troubles.[5]

Cider was first produced commercially in Tasmania at the Murrayfield Estate at Glenorchy in 1883. The product was a huge success:

> Its close imitation to champagne, both in taste and appearance, has earned for it a reputation envied by others less skilful, and is unequalled as an appetising thirst-quencher.[6]

There was a good market for it on the mainland, particularly in Queensland and New South wales, as well as in Tasmania. Leslie Murdoch, who inherited Murrayfield when William Murray died, became the largest producer of cider in

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[1]op cit. .pp. 4-6
[2]HTG 17 Septmeber 1824
[3]ADB
[4]Brown p. 30
[5]TM 14 November 1908
[6]CT 1900 p. 329

Australia. He used not only apples from his own orchards but also bought large quantities from other growers. In 1900 he erected a new plant imported from England to assist him in keeping up with the demand. In 1898, 4,000 gallons of cider were produced at Murrayfield. In 1901 when a *Weekly Courier* reporter visited the estate, there were 25,000 gallons of cider, some of it three years old, maturing in wood.[1] In 1909, the need for more extensive premises and a desire to reduce transport costs induced Murdoch to move to Hobart.

Murdoch's major competitors were probably Thomas Ball and Hart & Co. Ball had taken over Wright Bros. jam factory in Park Street in about 1900. He claimed in advertisements to be the manufacturer of the celebrated champagne and still cider. He was also a fruit merchant and case maker and when he ceased making cider just before the First World War, he concentrated on these two aspects of his business.

Hart & Co. had been involved on the cider business since 1894, perhaps at the Old Commodore Hotel at the bottom of Brisbane Street, where Henry Hart was the licensee. By 1905 he was making cider at the Royal Navy Hotel, a little further up the street at what is now 19 Brisbane Street. Such was the success of the business - he claimed that his was the most popular brand in all the major centres of the Commonwealth - that in 1908 he built a new factory at 17A Brisbane Street. He had formed a company with an individual from the Great Western Vineyards and engaged a French manager formerly of the same vineyard. The new premises were claimed to have the most up-to-date appliances available and the company were in a position to take as many apples as they could obtain.[2]

In 1909, Henry Hart died, and Leslie Murdoch who had been considering a move to Hobart formed a company in association Sydney Chancellor and a Monsieur Peirlot, took over the Brisbane Street factory. Peirlot was a noted French vigneron and champagne maker who had settled in Melbourne. The Tasmanian Cider Company established the "Mercury" brand and was so successful that within three years the working capital was increased to £10,000, and the Company moved to new works in Salamanca Place in 1912.[3] The former Hart & Co. cider factory became Abbott & Co.'s Cordial Works. By this time too, the Cascade Brewery Company had begun producing cider in the old malthouse in Collins Street.

The Tasmanian Cider Company later became part of the Port Huon Fruitgrowers Co-operative Association Limited and this in turn became a subsidiary of Tasmanian Breweries which continue to market cider under the "Apple Isle" and "Mercury" brands.

Of the pre-World War One cider factories, only the one built by Henry Hart in 1908, and the Cascade cider factory in Collins Street have survived.

Cordial and aerated water factories

The manufacture of cordials in Hobart seems to have begun with the introduction of distilleries in the early 1820s. Lowes Distillery at Cascade Grove produced peppermint, carraway, aniseed and other cordials.[4] At that time cordials were distilled from herbs and taken for their medicinal qualities. The 1826 almanac lists a George Wise at a spruce and ginger beer warehouse in Elizabeth Street but it is

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[1]CT 1900 p. 329 and WC 27 July 1901

[2]TM 14 November 1908

[3]Industrial Tasmania p. 51

[4]HTG 24 September 1824

possible that he was also manufacturing the drinks. A few years later John Wise was manufacturing ginger beer and imperial at the Waterloo Tavern.

The manufacture of cordials was continued during the 1830s at the Dynnyrne Distillery in Macfarlane Street. In 1835, ginger beer and imperial was available from the manufactory, the Waterloo Tavern, and at Gaylor's bakehouse you could get imperial as well as lemonade and raspberry vinegar.[1]

In 1847 Esther Dixon had a ginger beer factory in Bathurst Street. The directory also lists C. Philips as a ginger beer brewer in Bathurst Street and James Tapsell in Murray Street. but these may have been their places of residence rather than references to factories as such. The trades directory of 1854 lists nine soda water manufacturers, only one of whom - S. Monday, a cordial manufacturer of Harrington Street - had been in business two years earlier. There was still a soft drink manufacturer in Bathurst Street - perhaps G. Eady had taken over Esther Dixon's ginger beer factory. One of the 1854 manufacturers was still in business in the 1870s. He was J.T. Robertson who, in 1854 had been in partnership with a man named Armstrong in Melville Street. In the 1860s there were other factories owned by Thomas Spencer in Liverpool Street, James Emmett in Argyle Street, and in Brisbane Street by H. Arbery. The latter two factories also survived until the mid seventies.

It is impossible to get any idea of the size of the industry prior to the 1870s. Some of the earlier cordial and ginger beer factories may have operated on pretty much a cottage industry level. However, in 1872, the Mercury surveyed a number of these establishments.

James T. Robertson was by this time in a factory behind the Criterion Hotel in Liverpool Street. He had been in the business for 19 years but had only moved to the Liverpool Street premises in 1868. The business was said to be one of the largest in Tasmania and he supplied towns throughout the island. The factory was "very" compact and consisted of three rooms. One was the ginger beer room where the beer was brewed and fermented in vats and bottled from a tap. In another room the cordials were made. Here the syrups and other ingredients to make lemonade, lemon syrup, cloves, sarsaparilla, peppermint, ginger wine, and raspberry vinegar were store in casks. The third room was where the lemonade and soda water was made:

> The gas is made in the generator by the mixture of sulphuric acid and whitening, and it then passes into a large copper gasometer which will hold gas enough for 50 or 60 dozen bottles of lemonade or soda water, without the necessity of raising gas again. The water coming from the casks, which are arranged near the wall, passes into the globe into the centre of the machine [a Hayward, Tyler & Co.'s No. 1 machine], at the same time as the gas from the gasometer, and the two are mixed, after which they pass on to the bottling apparatus connected with the soda water and lemonade engine. The bottles having first been wired, and having had the requisite quantity of syrup put into them are placed on a small stand under the tap, the lemonade or soda water is allowed to run in, and as soon as there is enough in the bottle the cork which has previously been put into a place made for its reception above the neck of the bottle is driven down by means of a lever. The bottle is then removed and the wire fastened down. All this is the work of an instant, and the machine which is worked with a fly wheel and handle, will bottle about 40 dozen per hour.

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[1]HTC 31 March 1835

The water used in the above process was brought from a spring "some distance away."[1]

Thomas Marsden's factory was a neat little brick building at 138 Collins Street, the site now occupied by the Imperial Hotel. All the cordials and aerated waters were made in the same room. Marsden produced clove and peppermint cordials, ginger wine, raspberry vinegar, sarsaparilla and bitters as well as ginger beer, lemonade, and soda water. The ginger beer was allowed to stand in the wood for several months before bottling. A single brewing of ginger beer contained 82 dozen bottles which could be bottled in four hours. Bottling ginger beer here was a manual process - "one man takes the bottles from the box behind him, and holds them under the tap until they are filled, another drives in the corks with a wooden mallet, while a third ties them down with twine." The lemonade and soda water was made in an identical process to that at Robertson's but at Marsden's they had a problem with exploding bottles and the man corking the bottles wore a wire mask to protect himself from flying glass. Their machine would bottle 52 dozen bottles an hour.[2]

Cordials and aerated waters were also made at the Jolly Hatters by William Cowburn. The ginger beer was made in a tub next to the worts copper in the brewery itself but the other products were manufactured in separate parts of the premises. The bottling apparatus attached to the soda water and lemonade machine could bottle up to 120 dozen bottles an hour but this required half a dozen men to be kept hard at work. The speed of the machine could be regulated to produce only 40 dozen bottles an hour, a rate with which a single man could keep pace. In 1872 Cowburn built a new house 20 ft by 40 ft for this side of his operations, the existing premises not being very convenient.[3]

Weaver & Co., described themselves as pharmaceutical chemists but also manufactured fluid magnesia, aerated waters, and cordials in their factory up Elizabeth Lane [Cat & Fiddle Lane]. Their re-carbonated fluid magnesia was prepared using apparatus imported "at great expense" to allow them to produce large quantities of great purity and uniform strength. In their advertisements they suggested a refreshing drink for the summer made by mixing the magnesia with acidulated raspberry syrup [raspberry vinegar?]: "the degree of cold thus formed by citrate of magnesia is nearly equal to an iced beverage."[4] Weaver & Co. later branched out into dandelion ale and crystal ice and exhibited successfully at a number of International Exhibitions. The firm survived until about 1905.

A smaller firm operating at the time was that of H. Arbery who had established a ginger beer and cordial manufactory at 81 Brisbane St in 1860. In 1876 his nephew, George Kelly went into the business, taking over the business on his uncle's death twelve months later, in partnership with a Mr. Gordon.

There were eight manufacturers of aerated waters listed in the official statistics of 1875 but for the rest of the period under study the number was more typically three or four. Of the above manufacturers, Weaver, Kelly and Marsden were the survivors. During the 1880s they branched out into the manufacture of dandelion ale, touted as a temperance beverage but as alcoholic as ordinary beer. [see above].

During the early 1880s these three were joined by R.H. McLean whose factory was initially at what is now 176 Macquarie Street. By 1890 the factory was at 309

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[1]Mercury 14 October 1872

[2]Ibid

[3]Ibid

[4]Walch's Almanac 1872

Liverpool Street but McLean had gone out of business by 1900. Marsden appears to have left the industry by 1890.

George Kelly had bought out Gordon's share of the business in 1885 and continued as Kelly & Co. The firm used a "Mondollot" plant imported from France for the manufacture of aerated waters. The main building was a large brick structure of two storeys. On the ground floor was the dandelion ale plant, said to be of the most modern kind producing a product with excellent keeping properties. Ginger beer was made on the same floor using two large copper boilers with capacities of 200 gallons and 50 gallons respectively. The ginger beer was packaged in stone bottles made in Tasmania. On the upper floor of the building syrups, cordials and bitters were manufactured, The company produced ginger wine, raspberry vinegar, sarsaparilla, clove, peppermint and all kinds of bitters. Kelly personally supervised every aspect of the business in which six hands were constantly employed.[1]

In 1886 the Cascade Brewery Company opened their Aerated Water Department in the old Government Mill building in Collins Street described in 1900 as a three storey stone building with iron frame windows. New machinery had been bought in 1889 including new cylinders for aerating waters. The plant consisted of the latest machinery including Ferguson's patent bottling machine made by Hayward, Tyler & Co. The plant could produce 150 dozen bottles of aerated waters an hour. The company also produced dandelion ale and ginger beer, soda water, seltzer and other waters, lemonade, and a variety of cordials.[2]

In 1915 the Cascade cordial factory and Kelly & Co were still in business. A couple of years earlier Abbott's Cordial Works had been established at 17A Brisbane Street in the former cider factory. Few of the cordial factories remain from the 19th century. Abbott's Cordial Works can just be seen in Brisbane Street hemmed in all sides by other structures. The Cascade cordial factory has recently been converted into offices.

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[1]CT 1900 p. 364
[2]CT 1900 p. 363

Pharmaceuticals

The manufacture of proprietary medicines was a traditional part of the pharmacist's business and an important part of establishing customer loyalty.

In 1831 J. Wilkinson went into business as a chemist and druggist at 108 Elizabeth Street. He made a variety of proprietary medicines but was best known for his veterinary medicines which could treat "every known ailment of horses, cattle, and dogs."[1] The business continued as F.B. Wilkinson & Co for over a hundred years.

Towards the end of the 19th century a number of Hobart chemists became well-known for their proprietary medicines, some of which were exported. One of these was H.T. Gould who had been brought to Tasmania by Dr. Benjafield to establish a homoeopathic pharmacy in keeping with the doctor's own principles. Benjafield set up a eucalyptus oil distillery at Albert Park, Moonah, the product of which was sold under the "Platypus" brand. Gould's also made a range of proprietary medicines including "Gould's Phospherine"- a "vitalising" tonic - and Gould's Liquid Stopping which was claimed to cure toothache. These and other medicines were said to be known all over the colonies and "their reputation stands high in public estimation." Gould was then at 92 Elizabeth Street but moved to Liverpool Street shortly before the First World War.[2]

W.G. Weaver whose principal business was the manufacture of aerated waters [see above] also made lavender water for a period during the 1870s, using lavender he grew at Sandy Bay. However he was hampered by a lack of water and the excessive cost of small bottles due to the "absurd" tariff regulations, and gave up both the manufacture of lavender water and growing lavender.[3]

A. P. Miller, the chemist at the corner of Liverpool and Murray Street, also sold its own "Windmill" brand of eucalyptus oil made initially at the firm's McArthurdale distillery at Sorell Creek and later at a number of sites including Brown Mountain. Much was made in advertisements of the alleged purity of the product which was unadulterated by oils from lesser species. The oil was used by Millers in a variety of preparations - eucalyptus cream; ointment for the treatment of burns; dentrifice "preservative of the Ivory Whiteness of the Teeth in the very Highest Degree"; jujubes for sore throats; and eucalyptus soap "an excellent shaving soap."[4] By 1900 Miller was exporting the oil in "great quantities" to Europe, South Africa, India and the U.S.A.

At the Murray Street premises, Miller distilled a "fragrant and refreshing" perfume from a combination of exotic and Tasmanian flowers. Known as "Tasma" the perfume was said to be very popular. It was sold in bottles of several sizes and in "Tasma caskets" made from Tasmanian woods containing the perfume packaged in "chaste cut-glass bottles." Thirteen hands were employed at the city premises at the turn of the century and another twelve to fifteen at the distilleries.[5]

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[1]TM 29 October 1930
[2]TM 15 December 1900 Supp. p. xxiii
[3]Mercury 17 January 1873]
[4]Mercury 1 December 1894.
[5]CT 1900 pp 351-2

At the corner of Murray and Collins Streets [the T & G corner], Drake and Co, manufactured "Carragheen" which enjoyed the "largest sale of any proprietary medicine in Tasmania."

Gould's premises survive, the homeopathic pharmacy at 73 Liverpool street still operating under the old name, and the earlier premises at 92 Bathurst Street as a sewing machine retailer. Wilkinson's pharmacy survives at 108 Elizabeth Street as the Tasmania Shop.

Shelter

For the new settler on the Derwent the needs of food and shelter were paramount. For the short term, they had the provisions they brought with them and, for shelter, tents. The construction of buildings began almost immediately using local materials. The availability of timber and stone in the immediate vicinity had been among the major attractions of the site. Lime was obtained from shells collected at local beaches while rushes and grasses were collected for thatch and plaster. The first house was a wattle and daub hut built in Macquarie Street, the mortar made from clay and loam mixed with grass and the roof thatched with flag grass.

A breakdown of the employment of 279 prisoners employed at Hobart Town in July 1804 shows that more than a quarter of them were employed directly on the erection of buildings in the settlement.

Buildings	
Stone cutters & masons	3
Sawyers & timber measurer	11
Carpenters & labourers	11
Blacksmiths, armourer, tinmen and file cutter	8
Lath and pale splitters	2
Bricklayers, plasterers, & labourers	10
Lime and charcoal burners	5
Timber carriage	26
Total	76

Saw mills, timber merchants etc.

Timber was one of the earliest exports from the colony although of course a great deal of it was utilised locally in the construction of houses, for furniture and casks for the storage and export of other commodities. The suitability of native timbers for particular purposes was soon identified and in 1820 the Overseer of Sawyers, J. Riddell, identified 18 species of Tasmanian timber together with their availability, usual dimensions and usefulness.[1] This may be the same John Read Riddel, carpenter of Goulburn Street, who was later noted for his boxes and frames made from different specimens of Tasmanian timber.[2]

A degree of mechanisation was introduced into the industry in the 1820s. In June 1823, the Hobart Town Gazette reported that a new sawing mill or machine had just arrived from England and would reduce the price of sawn timber. The machine could also cut shingles. A year later the paper reported that a sawing machine was already in operation at North West Bay while another was nearly erected beyond the Cascade and hopes were again expressed that building materials would become cheaper.[3] However, traditional methods continued to be widely used. In 1835 a large timberyard extending from Macquarie Street to Davey Street was offered for sale, its features including a carpenters shop, timber racks and saw-pit.[4] Risby's timber yard established in about 1852 was the first to have steam-driven saws.

Timber merchants sold not only imported and local timbers but also sold house fittings made on the premises by carpenters and joiners. However, carpenters and joiners were also engaged in the manufacture of such articles on their own

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[1]HRA III iii p. 563
[2]HTG 1 October 1824
[3]HTG 9 July 1824
[4]Colonial Times 28 April 1835

account. In 1822, W.J. Overell of Providence farm, Glenorchy, a recently arrived settler, advertised that he was able to supply, "wooden buildings of any description, ready framed" on the shortest notice and on the most reasonable terms.[1]. A carpenter by the same name is listed in Argyle Street in 1831.

In 1822 Messrs Chapman & Hiddlestone arrived in Hobart having considerable experience in London in a variety of trades. They described themselves as carpenters, joiners, plumbers, painters and glaziers. Although initially in Harrington Street they moved to their own premises in Brisbane Street the following year and announced that would make doors, shutters and sashes to order. They also wanted one or two free carpenters who would meet with encouragement and constant employment. The following year they extended their repertoire to include parlour roller blinds and venetian shades. Later on, Chapman was in business by himself as a builder and then as a surveyor, Mr. Hiddlestone being listed in the directory of 1831 as accountant of the Commercial Bank.[2]

The oldest timber firm in Australia is Risby's which was established by J.E. Risby in 1844. The firm began as ship-builders in Trumpeter Street, Battery Point but within a few years had established a saw mill and timber yard at the corner in Elizabeth Street between Davey Street and Franklin Wharf.

The mill occupied over an acre and had the first steam-driven saws to be used in the colony. Following a devastating fire in 1874 the mill was re-built and enlarged:

> The saws were again driven by steam, the power being supplied by two large Cornish boilers. These were kept filled by an elevated egg ended boiler which was supplied with water by a donkey pump. Inside the saw mill was an array of sawmilling equipment. A large breaking down frame rendered the larger logs to a more manageable size and four steam-driven circular saws produced the final sawn timber. Two planing machines were employed in manufacturing high quality dressed timber. Fuel was provided from the waste wood and a firewood bench, a wood chopping machine and two bark choppers were installed for this purpose.[3]

The new plant resulted in an increase in production and a shortage of space for seasoning timber. A new drying yard was set up at Castray Esplanade and Risby's also built a jetty there to accommodate their vessels bringing timber from the Huon and Channel.

Risby's business extended to the West Coast and a number of their pre-cut "kit" houses were transported to Strahan for erection at the rapidly growing mining towns. However, an attempt to establish a branch at Strahan was not successful due to the dominance of the local saw mills.

Risby Brothers were still in business at their Elizabeth Street address in 1915 but shortly afterwards the firm purchased Henry Clark & Co.'s long-established sawmill and timber yard in Collins Street. When another fire destroyed much of the Elizabeth Street mill in 1920, Risby's moved most of the operations to Collins Street.

From the listings that appear in the directories from time to time it seems that builders yards were more than just storage places but also places where fittings

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[1]HTG 19 January 1822

[2]HTG 14 September 1822; 14 June 1823; 27 February 1824

[3]Brownlow p. 2

were manufactured. Charles Chapman Giles was a builder whose yard was at 175 Harrington Street from the 1870s until the turn of the century. During the 1880s his workshop is listed as a sash factory. From about 1905 it again reverted to a builder's yard when it was occupied by T.W. Cuthbertson. For a long period a builders yard was attached to the Ocean Child Hotel in Argyle Street. In 1846 Thomas Richardson advertised that he had for sale at his timber yard there cedar in the log or the plank, pine, and seasoned stringy bark.[1] During the 1860s and 1870s there was an "engine house" on the site and it was occupied at various times by Thomas McDowall and Michael Evans. But during the 1880s it was occupied by R.B. Wiggins who was not only in business as a builder but also the landlord of the Ocean Child.

In 1848, George Crisp began a timber business at the foot of Campbell Street and founded what was to become something of a dynasty in the industry. Although beginning in a small way, he built up his business and extended his property until he had frontages on both Campbell and Macquarie Streets.

In 1888 Crisp made extensive improvements to his timber yard in Macquarie Street. A large shed was erected to house a portable boiler and engine, a vertical and a circular saw, a saw sharpener, and a planing and moulding machine. Except for the boiler and the engine, all the machines were made in the colony. The planing and moulding machine was claimed to be the first of its kind made in the colony and was invented and made by Mr. Pye, formerly of the Tasmanian Main Line Railway Company's workshops. He also made several similar machines for Victorian firms: The machine turned out "splendidly finished" architraves, mouldings, skirtings, tongued and grooved boards of all descriptions, and prepared timber from half an inch to twelve inches wide, and up to four inches in thickness.[2]

By this time George Crisp's second son, Fred H. Crisp, had gone into business on his own account, having set up a timber yard in Melville Street in 1886. By 1900 his Central Saw and Planing Mills occupied a site the full width of the block between Elizabeth and Murray Streets with a frontage of 250 feet on Melville Street and 180 feet on Brisbane Street. Crisp's mill worked a great deal of imported timber but he also had a saw mill at Ida Bay which employed seventeen hands. Twenty men were employed constantly at the city mill but additional men were engaged according to the fluctuations of the trade. Ten carts carried out deliveries throughout the city, not only of timber but also firewood and coal. Weatherboards, flooring, skirting and mouldings were all run and prepared on the premises, "Mr. Fred H. Crisp having the reputation of running the best mouldings in the city."[3]

W.H. Cheverton's Derwent Saw and Moulding Mills were at what is now 58 Collins Street. Cheverton had come to the colony in 1851 with William Andrews and they were in partnership for several years as builders and contractors before the former joined the Public Works Department. He left the Department in 1874 after a disagreement, setting up the Derwent Mills in Collins Street, brickworks at Knocklofty and a general building and contracting business. The mill site occupied a frontage of 160 feet extending back 230 feet. At the front of the block were the offices and warehouse:

> The mill buildings are in the rear, and are well supplied with all the most improved wood working machinery of modern date; and about forty five hands are always employed, the weekly wages sheet being from £100 to £120.

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[1]BTA 2 April 1846
[2]TM 22 April 1882
[3]CT 1900 p.347

> The motive power is steam, supplied by a 30 h.p. engine and boiler. There are three circular saw benches, a breaking down frame for logs, and two deal frames, and these are capable of cutting up 30,000 feet of timber weekly. Connected with the mill is a large joiners' shop, 80 feet by 50 feet, well supplied with all the most modern tools and implements, and capable of turning out all descriptions of wood work required in Tasmania.[1]

Three of Cheverton's sons were also involved in the business in 1900 but soon afterwards it was taken over by J. & T. Gunn, Pty Ltd, builders and sawmillers who had been established in Launceston since 1875.[2]

In 1900, George Crisp's timber yard was being run by one of his other sons, Ernest T. Crisp. Within a couple of years Fred and Ernest were in partnership as F. & E. Crisp. In 1908 F. &. E. Crisp amalgamated with J.& T. Gunn, who had a timber mill and yard in Collins Street and a brickworks at Knocklofty (both formerly W.H. Cheverton's), to form Crisp & Gunn.[3] By 1915 Crisp and Gunn had left the Macquarie Street site to make way for the new Tramways offices but had already established another timber yard at 121 Campbell Street, taking over and extending an existing builders yard previously occupied by John Crow. The firm also retained the Collins Street and Melville/Brisbane Street sites.

In 1892 the Launceston firm of G. and R. Dudley moved to Hobart to establish their Wood Bending, Nave, Spoke and Handle Works in Campbell Street:

> There one sees the native timbers of the island turned from square blocks into spokes, axe, pick, broom, hammer and shovel handles, timber bent into every conceivable shape and form, and utilised in many and various ways. The chief timbers used are blackwood, blue gum, leatherwood, tea tree, and swamp gum for broom handles. These latter are manufactured on a machine specially imported to meet the requirements of a growing trade. Simplicity is the object aimed at in the manufacture of broom handles, as one machine working serves to produce the completed article. Not so however with spokes, which require no less than five machine workings before they can leave the establishment. The bending plant is also very complete; in fact Messrs Dudley Brothers possess the only machine of the kind this side of the colony ...[4]

George Dudley was still in business at 11 Campbell Street, next to St David's Mission Church, in 1915.

By this time Kemp & Denning, timber, joinery, brick and iron merchants had been established for a few years at 101 Melville Street, with timber yards at the corner of Harrington and Bathurst Streets. The firm still occupies this site although it now occupies almost the entire block. None of the other pre-1915 sawmills or timber merchants have survived at their original sites. Risby's Timber City is in Campbell Street and there is nothing left at their former sites to suggest that thy were once timber yards and saw mills. A McNaughted beam engine once used at the saw mill in Collins Street belonging to Henry Clark and then Risby Bros., has been re-erected outside the Hobart Institute of TAFE - the original site is now occupied by a cinema complex.

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[1]CT 1900 p. 348
[2]Morris-Nunn and Tassell pp 99-102
[3]TM 18 April 1908
[4]CT 1900 p. 373

Brick making

Some bricks and tiles were sent from Port Phillip for the use of the new settlement but only a few months after his party's arrival, Collins was able to report

> I have the satisfaction of Stating that no where can better or more durable Bricks be found than what are made from the Clay of this Country. I have just had a Kiln containing about 30,000 burnt off, in which I had some Tiles placed as an experiment, and find them turn out as well as the Bricks. By this means we shall have a safer and more expeditious Covering for our Buildings than Thatch, which we have hitherto had to bring to the Settlement from a distance by Water.[1]

Although the location of the first brickfields is unknown, bricks were being made at a site in Liverpool Street in 1813 but this site proved unsuitable on account of the slop created and the people walking through the area. Within three years the Government Brickfields were in North Hobart.[2]

An area to the north of the settlement was set aside as a "reserve for bricks" - this was later the site of the Brickfields Depot and now the North Hobart Oval. In 1819 there were generally six stools at work at the Government Brickfield, each stool of six men producing 1000 bricks per day. Work was suspended during winter months.[3]

Problems with the quality of bricks were revealed during the Bigge inquiry. According to George Read, the Superintendent of Carpenters, the bad brickwork at the church and hospital was due to the quality of the bricks, the Overseer of Bricklayers not examining the work as it went along. Formerly the bricks produced at the Brickfields were of different sizes but were now equalised. Some bad bricks were the result of the clay of which they were made not being sufficiently tempered, The skill of the brickmaker was also significant. The overseer was reported to make better bricks than did the members of the gang.[4]

The establishment of private brick yards is hard to establish - early advertisements for allotments in Hobart Town often mention that timber and the necessary bricks were already on the ground. Some of these may have been made virtually in situ as was the case in rural areas. The traditional methods of making bricks did not require sophisticated equipment:

> ... it was invariably cheaper to open a yard and burn bricks near to a new source of demand than to haul them long distances by horse and dray (four horses to 1000 bricks)...
>
> Many early bricks were clamp-burnt i.e. in stacks of green bricks with fire-holes into which firewood and ashes (breeze) was packed - no kiln. Breeze often added to bricks in Britain. Open kilns also used - comprised two permanent side walls and temporary roof of bricks or tiles. Research suggests the prevalence of clamp-burning in non-government brick-making establishments.[5]

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[1]HRA III iii p. 287 10 November 1804
[2]Pearce p. 35
[3]HRA III iii p. 242
[4]HRA III iii p. 333
[5]Birmingham p. 63

These comments by archaeologist Judy Birmingham relate principally to New South Wales. She also points out that there is not much evidence of pre-1830s brickfields in Australia and recommends that "Hobart brickworks will need close attention during demolition and development programmes."

However, in 1834, 70 men working in the brick-making trade petitioned the government over its selling of bricks on the open market. The men alleged unfair competition was preventing them from making a living . The government responded that the trade only wanted to keep the prices high and the quality low. Brick production at the Government Brickfields in North Hobart continued at least until 1838, by which time an alternative supply from Port Arthur had been available for several years. The North Hobart Brickfields then became the site of the Brickfields Female Hiring Depot but there is some evidence that brickmaking continued in the area until the 1850s. [1]

Brickmakers are not listed in Government statistics until 1855 at which time seven brick yards are enumerated:

Name and location of brickworks	Output p.a.	Value
Brickfields	120,000	£360
Large's Brick Kiln, Cascade Road	60,000	£210
Warrior's Brick Kiln, Cascade Road	200,000	£700
Deaton & Giblin's Patent Brick Works, New Town	39,000	£117
Baxter's Brick Kiln, New Town	480,000	£1440
Howard's Brick Kiln, New Town	240,000	£720
Sims' Brick Kiln, Argyle Street	150,000	£525
	1,289,000	

At least one of these brickyards - that of Robert Warrior - continued almost until the end of the century, Thomas Dillon and others carrying it on after Warrior's death.

In 1878 the *Tasmanian Mail* reported a shortage of good cottages for the working classes at reasonable rents. It was claimed that the problem was in part due to the shortage of bricks, there then being no brickyard of any importance in or near the city. The only source of bricks, it was alleged, was from the demolition of old buildings. Government statistics, however, suggest that there were up to half a dozen brick works in operation at the time. It appears that the existing yards operated on a low-key and primitive basis, with few of the innovations then available to the industry. Most of the work was still done by hand. The *Mail* suggested that the industry would bring good returns to those with the enterprise to acquire a patent brick machine.[2]

The idea apparently did not immediately appeal to Hobart's entrepreneurs. Five years later the situation seems hardly to have improved. The *Mercury* in January 1883 noted that the demand for bricks was outstripping supply, leading to high prices, and that "several large works have been temporarily abandoned" due to the shortage. Mr Waller was about to open a new brickfield at New Town while at Knocklofty Mr. Shield was also making bricks. The *Mercury* regretted that the want of machinery had hitherto prevented any large quantity of bricks being turned out in this part of the colony. There were a few puddling machines but more were required. It was hoped that some of the improved appliances would soon be introduced [3]

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[1]Pearce p. 36
[2]TM 31 August 1878 p. 12
[3]Mercury 6 January 1883

Later that year the *Tasmanian Mail* reported on four brickyards close to the city. These four concerns employed more than 60 men and were able to produce 100,000 bricks a week - a vast improvement over the production of 1855. Waller and Shields were said to be innovators - 12 months earlier pug mills were unknown to the industry in Hobart, leading to a great deal of waste.

Rippon Shields had operated a stone quarry at Knocklofty for some years - stone from this site was used in the construction of St. Mary's Cathedral and various bank buildings. The shortage of bricks induced Shields to carry out an idea he had had for some time and, despite the detractors, he established a brick works at Knocklofty in 1882. The reason for the disbelief in the scheme may have been related to the nature of the material - there was little brick-making clay as such but a seam of iron-grey schist had been discovered. This rock was reduced by pulverising and soaking in pits of water, prior to being worked in the roller and pugging mills to produce an even textured clay said to produce excellent bricks. Within 12 months Shields had introduced not only the roller and pugging mills, driven by horse power, but intended to introduce a steam engine and acquire a brick moulding apparatus and a grinding mill. In 1883 there were three kilns, cut from the solid rock and capable of holding 26,000, 35,000 or 60,000 bricks respectively. This arrangement resulted in a considerable saving in fuel. [TM 15 December 1883]. In 1885 Shields was reported to have introduced "a complete revolution" in the local manufacture of bricks by importing a mechanical brick moulder from London. The machine made 8 bricks in each moulding and was driven by a steam engine which had been made by F.R. Rowntree of Hobart. It was anticipated that the new appliance would double the output of the brickworks.[1]

At New Town, C.A. Waller, at the New Town Brick and Pottery Company, had already introduced the colony's first brick moulding machine as well as a range of other brickwork machinery imported from Ireland. Both steam power and horse power were used. A screw press for turning out specially moulded bricks for arches, culverts etc. was in use and the company were already turning out tiles and flowerpots. There were two kilns on the brickyard - one a "large covered kiln" the other an improved "Hoffnung" type based on a brick-lined trench 50-60 feet long and 6-7 feet deep.[2] Waller was a Civil Engineer and also advertised that at the brickworks Waller's Patent Stump Extractor could be bought or hired.[3]

There were 2 other brickworks in New Town at this time - one in Clare Street opposite the present sportsground and the other in Augusta Road, near Shawfield Street. The *Mail* mentions only Mr. R.P. Brooke who had been making bricks at Colebrook, New Town for seven years.[4]

There were two brick yards in Cascade Road opposite the old Female Factory - one a very small affair operated by Thomas Cheeseman where three men had been making bricks for about three months in a very "primitive" manner. Behind Cheeseman's was Warrior's yard, then owned by Thomas Dillon and churning out 30-40,000 bricks a week. Only 15 men were employed and most of the work was done by hand but, pressed by the new competition, Dillon had invested in a pug-mill.[5]

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[1]TM 28 August 1886 p.9
[2]TM 15 December 1883
[3]TM 18 June 1887 p.4
[4]Krause "Geological sketch map of country around New Town." in JPPT 1883
[5]TM 15 December 1883

In 1885, a new clay deposit was discovered at Sandy Bay and Roberts Bros. began making bricks "about 500 yards below the Traveller's Rest." Because of the large amount of material available on the 11 acre site, Roberts Bros invested in a range of machinery which was fitted by Clark's. A patent brick cutter was capable of turning out 36 bricks a minute. Only four men and a boy were needed to operate the plant and the bricks were taken by tramway to the kilns. The kilns were soon upgraded and two new box kilns "on the English principle" were constructed to hold 100,00 and 50,000 bricks respectively.[1] This brickworks had only a short life - probably the deposit was found to be unsuitable or not as extensive as first thought - certainly the site is quite remote from the major brickmaking areas in Hobart i.e. South Hobart, Knocklofty and New Town.

In 1885 there were 60 brick works operating in the colony, producing over ten million bricks a year. Of the 45 that provided information to the Government Statistician, only seven used steam power. At 29 works, the operations were carried out completely by hand - another eight relied on horse power.

During the 1880s the number of brickworks increased markedly. In 1880, seven concerns in the study area had been listed in Government statistics; by 1885 this number had doubled - there were three listed at Glenorchy, nine in the outer city and two in Kingborough. After the peak in 1890 when 17 were listed, the numbers began to decline. This decline was reflected on a colony-wide basis - 19 brickworks operating in 1900 compared with 50 ten years earlier. However, the number of hands employed and the number of bricks made did not decrease correspondingly. This suggests that the introduction of mechanisation and the depressed economic conditions of the 1890s made it no longer viable for the smaller yards to operate. In some of the yards the exhaustion of the clay deposits may also have been a factor. One of the smaller yards during the 1890s was that of R. Duff & Co. at New Town. Duff was a building contractor who erected a number of lighthouses including that at Maatsuyker Island. His exhibit at the Tasmanian International Exhibition in 1894 included a number of fancy pressed bricks which were made "so that instead of an ornamental wall requiring to be subsequently worked in plaster, the whole can be built at the first operation."[2] Duff's yard was later taken over by the Hobart Brick Company, [see below].

By 1900, Government statistics list only two brickworks - one at New Town and the other in Kingborough. However the Knocklofty brickyard, then in the hands of the building contractor, W.H. Cheverton, was also still operating.

In 1902, a new brick works was established near Warrior's old field. The Hobart Brick, Tile and Pottery Company Limited opened up a new ground in Wentworth Street, South Hobart and built the appropriate plant - boiler, engine and machine houses, stables and sheds, blacksmith's shop and kilns - the chimney was built from some of the first bricks the company produced. Tram lines were laid and roads constructed for the cartage of firewood. Both wire-cut and pressed bricks were made as well as pipes and tiles. All was proceeding satisfactorily in July 1902, when the Company's first ordinary general meeting was held, but the works remained in production only a few years.[3]

Although this Company and a few other brickmakers operated briefly prior to the First World War, by 1915 the market was in the hands of only two firms - the Hobart Brick Company in Forster Street New Town and Crisp & Gunn's Brick Works at Knocklofty. In 1905, the Hobart Brick Company had taken over the small

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[1]TM 23 May 1885

[2]Mercury 1 December 1894 supp p. 1

[3]TM 2 August 1902 p. 27

brickworking plant owned by Robert Duff, and continues in business as Kemp and Denning although the clay deposit at New Town is now exhausted. The building firm of J. & T. Gunn had taken over the Knocklofty brickworks by this time and in 1908 amalgamated with F. &. E. Crisp to form Crisp & Gunn. By 1914 up to date electric machinery had been installed and 200,000 bricks were being produced each week. Operations at the site continued until 1965 when the deposit was exhausted.

By 1915 there were only eleven brickyards operating in the entire state from a peak number of 60 in 1885.

Lime-burning

In the first instance, lime for mortar and other building purposes was obtained from shells, gathered from beaches around the Derwent estuary by convicts and burnt in situ. In 1819, the Bigge inquiry was told that Ralph's Bay was the source for shell lime but by this time, there was also a source of limestone. The quarry had been discovered in 1813, in what is now West Hobart, by two convicts, who were later rewarded with a conditional pardon. Shell lime was still preferred for plasterers' work, but the stone lime was said to be "extremely good for mason's Work."[1]

The traditional method of lime-burning was simple and usually involved a pair of intermittent kilns - one cooling and being drawn while the other was being charged and burnt:

> The limestone was mixed with fuel, layer by layer, the lowest area being built into an arch of larger lumps to allow passage of the draught up through the grate. After three days burning a about 1000°C, the kiln was allowed to cool ready for the drawing of the lime, the total cycle being six to seven days for each kiln in alternation.

Late in 19th century the continuous-firing or pot kiln developed by which lime was continuously charged from the top and drawn from the bottom.[2]

The lime quarry at West Hobart was a valuable resource, and remained in the hands of the Government, managed directly by the Surveyor-General's department until the early 1830s. From then until its closure, in about 1860, the lime quarry and kilns were leased to private individuals. One of these, Richard Shoobridge, made a great success of the business during the 1840s and 1850s. He also built his own kilns near the corner of Elizabeth Street and Commercial Road, the lime being transported via a tunnel from the quarry.[3] Building contracts of the time specified either "Shoobridge" lime or "Bridgewater" lime.

During the 1820s and 1830s there was another source of lime at the Tolosa property of Hugh Munro Hull - this later gave the area the name Limekiln Gully. During the 1840s and 1850s, another source of lime is shown at O'Brien's Bridge.

There is a photograph of 1912 captioned "The old lime kiln at Cascades, Hobart." Although there is no definite history attached to this kiln, it may be the same as that appearing on a plan of 1916. Described as an "old brick lime kiln" it is situated on the Sandy Bay Rivulet about 700 metres from "Jackson's Bend." Its remoteness

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[1]HTG 15 June 1816
[2]Birmingham p. 75-7
[3]Brammall p. 10

from any settlement suggests that it is more likely to have been associated with the construction of the Hobart Waterworks. The plan shows a track from Hall's Saddle and a tramway which could have carried the finished product to points along the pipeline route. In 1878-9 the original wooden troughing which carried the water between Hall's Saddle and the reservoirs were replaced by stone troughing. Lime would have been used not only for mortaring the masonry components but also for the thick lining of cement necessary for waterproofing and described in specifications. It is not known whether anything of the kiln has survived since the site is now virtually inaccessible.[1]

Pottery

There is unfortunately only sketchy information about Hobart's first pottery. It was in existence some time before 1816 when a foot race to New Town started "from the top of the hill where the Pottery is."[2] The rise now known as Trinity Hill was for a long time called Pottery Hill or Potter's Hill. The pottery was operated by a man named James Brammer or Bremner who appears to have given up the pottery business on becoming Overseer of Brickmakers in 1818. In April 1819 he advertised for sale his two houses on Potters Hill together with "the remains of the last kiln of earthenware." His location, as shown on the 1828 plan, was at the corner of Brisbane and Argyle Street.

In 1822 the Gazette announced that "pipes, similar to, and equally as good as those brought to this country, are also made in this town."[3] This presumably refers to tobacco pipes rather than water pipes [see below]. Later the same year E. Greenland, who lived in Elizabeth Street next to the Coach and Horses, advertised that

> after many fruitless attempts and being at considerable expence [sic], he is at length enabled to manufacture Tobacco Pipes, equal in every respect to those made in England.[4]

Somebody had, however, taken over Brammer's pottery and was making pipes there. In January 1824 the property was offered for sale again - it was then described as

> a small house containing 2 rooms and Pottery Kiln on half an acre of ground on Potter's Hill - also a warehouse to mould the various articles belonging to the business and to receive them when burnt.
>
> NB Two English Pipe Moulds, at work on the premises of different dimensions, and which can be let to advantage immediately, may he had by the purchaser if required. Apply to Mr C. Connelly at the London Tavern.[5]

The pottery does not seem to have operated after this and the colony depended on imported earthenware for the next few years.

In 1830 James Sherwin arrived in Hobart from Russia. He was a potter by trade, having acquired the necessary skills in his home county of Staffordshire. He had had a pottery in St. Petersburg but after his premises were destroyed by a flood in

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[1]Lindy Scripps, *The Pipeline Track Resource Document*, 1993.
[2]HTG 8 June 1816
[3]HTG 9 February 1822
[4]HTG 21 December 1822
[5]HTG 16 January 1824

1824 he decided to try his luck in Van Diemen's Land where his brother was already settled.

He applied to Governor Arthur for assistance, pointing out the benefits to be derived from having a local pottery. In March 1831, Sherwin announced that "the manufacture of earthenware had commenced on the border of the Newtown Rivulet, above Roseway." This is a somewhat ambiguous description and a plan of 1832[1] shows Sherwin's property to have been on the southern side of Pottery Creek with a number of buildings along the creek itself. Sherwin had been granted 100 acres "in trust" on which to establish his pottery and this was formally granted to him in 1834 together with a further 80 acres.

Sherwin's pottery was such a success that he was able to open a branch in Hobart Town. Much of his output found its way to Victoria in the form of storage jars of foodstuffs imported from Hobart. It was one of Australia's first commercially successful pottery works.[2]

For many years Sherwin's was the only pottery in the district but in about 1849, another pottery was set up by Charles Tibbs in Goulburn Street. This appears to have been a successful venture initially:

> Messrs Tibbs and Co., who have erected a new kiln on a large scale, export their pottery so extensively that although they have taken on a large number of extra hands, they cannot supply the demand.[3]

This pottery lasted only a few years, however. In 1855 there were three potteries listed in official returns for the Hobart district - Tibbs, and one other in Hobart -possibly Sherwin's branch pottery, and Sherwin's pottery at Kangaroo Bottom as Lenah Valley was then called.

Following James Sherwin's death in 1864, the pottery was taken over by his son, Henry, but the value of the business declined markedly. In 1868 Henry was forced to subdivide the property and the cottages, farm and pottery works were sold to Stephen Bell. It is not known if Bell operated the pottery but Alec Worbey produced pots there in the 1880s. Worbey made teapots, jugs, basins and jars but they were coarser than those produced in Launceston at Campbell's pottery where the former went to work in 1889.[4]

The kiln at Lenah Valley was dismantled in 1907 and its bricks used in the construction of chimneys in a nearby house.[5]

Drainage pipes were probably not made in Tasmania before the late 1870s. The decision by the Launceston Council to upgrade the sewerage system provided the impetus for the establishment of the industry in that city in abut 1876.[6] In the south of the state the pioneer was David Chapman at Port Esperance:

> Mr David Chapman has recently begun the manufacture of agricultural drain pipes for draining land, The kiln was opened last week and we are informed that the pipes were found to be of excellent quality, and when

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[1]DELM plan Buckingham 17A
[2]Hoystead passim
[3]Colonial Times 25 January 1850
[4]Morris-Nunn and Tassell p. 88
[5]Hoystead passim
[6]Morris-Nunn and Tassell p. 84

> tested by striking then, rang like a bell - an unmistakable proof of their soundness. Mr Chapman is entitled to very great credit for this attempt to establish a new industry, and we hope he will meet with a profitable reward. A shipment of the pipes is expected in town shortly, when they will no doubt receive attention.[1]

Chapman continued to advertise for a couple of years but difficulties of freight and the establishment of Hobart-based competition may have forced him out of business.

Another pottery operated at New Town from the early 1880s in conjunction with George Waller's brickworks. Only twelve months after the works were opened it was reported that the New Town Brick and Pottery Company intended to

> make a speciality of the coarser kinds of glazed pottery, the importation of which is heavily handicapped by cost of freight and liability to breakage. Preparations are therefore being made to enter upon this branch of the industry, and on a large scale. A specially designed kiln, on what is known as the "beehive" principle, is being erected, in which such goods may be treated. A few flower pots, etc., turned upon an ordinary potter's wheel, are already on view.[2]

The company also made plain flooring and oven tiles, glazed and socketed stoneware pipes, chimney tops, ridge capping, glazed damp course and gutter bricks, ornamental garden edging and agricultural field drain pipes.[3]

After the 1880s potteries are not listed separately from brickworks, and in fact only one concern in the state operated solely as a pottery. In 1902 when the Hobart Brick, Tile and Pipe Company began operations, it was intended that pipes, tiles, and fancy goods would also be made but it is not certain that this eventuated given the Company's very brief life. [4]

Furniture

The earliest reference to furniture being made in Van Diemen's Land is in 1806 in Robert Knopwood's diaries where he refers to "my man Earl ... using some of my seasoned wood &c for bedsteads and tables" and there are several early references to furniture made of Huon pine. Colonel Geils had some made shortly after his arrival in 1812 and in 1820 T.W. Birch recommended the use of Huon Pine for both building and boat-building, remarking to the Bigge inquiry that it resisted insect attack. He also stated that he had tried the timber "in bedsteads and drawers."[5]

Many early settlers had brought furniture with them from England but the writers of handbooks for emigrants advised against this: The cost of freight outweighed the benefits and good quality items could be had in the colony.

A great deal of furniture was made by convict tradesmen at the Kings Yard. By 1820 there was sufficient knowledge of the properties of native timbers for the

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[1]TM 12 October 1878
[2]TM 5 December 1883
[3]TM 1 August 1885
[4]TM 2 August 1902
[5]Fahey p. 122 and HRA III iii *29 March 1820*

Overseer of Sawyers to identify 18 species of timber and the uses to which each could be put.[1]

There seems to have been no furniture-making businesses as such prior to the early 1820s. In December 1821 Thomas Nichols, describing himself as an upholsterer from London, announced that he was now in business and would make and repair beds, mattresses, sofas and cushions "upon the most improved style of fashion" In 1823 he advertised that he would soon "follow the Cabinet Business," having had experience in one of the first houses in London. His premises were then in Liverpool Street "opposite Mr. Fisk's mill. A couple of years later he moved to Argyle Street, listed in the directory only as an upholsterer and mattress maker. He stayed at this address for a few years but by 1834 was no longer following his trade.

During the 1820s a number of cabinet makers came to Van Diemen's Land. The first of these was probably G. Owen who is not listed in the standard works on 19th century furniture but who commenced business in February 1822. He began by selling a cargo of furniture which he had apparently brought with him and which was possibly of his own manufacture. By the following month he announced that he was carrying on his business as a cabinet maker, upholsterer and mattress maker at his premises on the corner of Collins and Elizabeth Streets [now the AMP site]. He undertook to make mattresses, bedsteads, Grecian couches, sofas, tables, wash-hand stands etc to order. He also advertised for an apprentice. Perhaps cabinet making did not pay - by October 1823 Owen had become a publican and one of his employees, S. Whitaker went into the business on his own account, apparently at the same premises. He advertised his services as a cabinet maker, upholsterer, mattress maker and undertaker.[2] Whitaker later moved to the corner of Davey and Harrington Streets where he had a grant and by 1834 he also had established a public house - the Freemasons Arms. John Lepine was another contemporary cabinet maker who turned to the public house business after some five years as a cabinet maker in Campbell Street.

Apart from a tendency to change premises frequently, another feature of early colonial firms was the short life of business partnerships. In February 1823, Robert Household commenced business as a bedstead, cabinet and chair maker, upholsterer, coffin maker and undertaker. He had recently arrived from London, where he had been in the business for many years and had brought with him furniture of his own manufacture which he now offered for sale.[3] In June he went into partnership with Joseph Baronet Bridekirk but in March the following year the partnership was dissolved by mutual consent. Bridekirk continued the business at the same address but moved to Murray Street in May, advertising also that he had "lately engaged some superior workmen." Both men had disappeared from the directories by the early 1830s.

Joseph William Woolley, had arrived on the same ship as John Lepine but in contrast he was to become the "most important figure" in the industry at this time.[4] He began business in 1823 at the corner of Liverpool and Harrington streets. In 1835, when his factory was in Macquarie Street he begged his customers for an extension of time to complete his orders - his men had formed a combination and "refuse to work, except at the most exorbitant rate of wages." Later in the month he advertised for 6 good cabinet makers, promising them

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[1]HRA III iii p. 563
[2]HTG 4 October 1823
[3]HTG 22 February 1823
[4]Fahey p. 123

constant employment at the highest piece prices in the colony.[1] By 1841, when he gave evidence to the Committee on Immigration, he stated that he employed ten men and two apprentices. He operated from a succession of addresses until in 1855 he moved to new premises at the corner of Macquarie and Harrington Streets.

Other important colonial furniture manufacturers were James Whitesides, Leonard Pearson, William Hamilton and the McLoughlins. Whitesides, Hamilton and John McLoughlin all arrived in Hobart in 1832 and although at times working together in various partnerships, they established leading Hobart furniture workshops. McLoughlin and Hamilton were in business together until 1840 when the partnership was dissolved. McLoughlin continued in business at the old firm's premises in Argyle Street while Hamilton moved to premises near the foot of Elizabeth Street. McLoughlin and the sons who followed him into the business were at a number of addresses in Argyle and Liverpool Street until John senior's death in 1886. Kevin Fahey describes his most important work as a "circular cedar table, elaborately carved, with a Florentine marble top measuring 5 feet 6 inches in diameter and stamped 'John McLoughlin and Sons, Argyle St., Hobart Town'" which was sold in Launceston in 1976.[2]

In 1847, Hamilton built a spacious new showroom at the rear of his premises in Elizabeth Street and advertised for an upholsterer, a French polisher and cabinet turner and two good cabinet-makers who will find "constant employment and highest wages."[3] William Hamilton & Sons appear to have left off the manufacture of furniture for a while since in 1864 their advertisement in *Walchs Almanac* stated that since the new tariffs had virtually prohibited the import of large articles of furniture they had decided upon "recommencing the manufacture of Colonial furniture." Hamilton's work is known from the surviving examples and from the descriptions of pieces he displayed at the various exhibitions. At the London Exhibition of 1851, for example, he showed a blackwood hall chair incorporating a raised shield with carved kangaroo and emu supporters, and a small round table featuring several Tasmanian timbers.[4] Hamilton retired in 1878.

James Whitesides was first in business with Hamilton and McLoughlin and after a period on his own he again briefly went into business with Hamilton in 1853. In 1857 the business became Whitesides & Sons. In 1856 he was commissioned to make the State Chair for the Tasmanian Parliament. It was declared by the *Hobart Town Courier* to be "the best specimen of colonial workmanship ever turned out in the colony."[5] James Whitesides died in 1890 but the firm continued to win accolades. At the 1894-5 Tasmanian International Exhibition they had five bays of furniture, each arranged to

> represent a room of the household, and in their appropriately and luxuriously furnished dining, drawing, smoking and bedrooms will be found some of the choicest specimens of colonial workmanship, in the manufacture of which have been utilised many different Tasmanian timbers.[6]

J. Whitesides & Sons were still in business at 66-8 Liverpool Street in 1915

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[1]HTG 20 and 27 January 1835
[2]Fahey p.124-5
[3]BTA 4 February 1847 (also quoted Fahey p. 125)
[4]Fahey p. 126
[5]Quoted in Fahey p. 128
[6]Mercury 25 December 1894

Leonard Pearson arrived in Hobart Town in 1833 and was in business as a cabinet maker first in Murray Street and then in Elizabeth Street. In 1847 some of his furniture was noticed by the *Colonial Times*:

> At Mr. Pearson's also, we have seen some excellent articles of colonial manufacture, and of colonial wood - the Huon pine, cedar and more particularly the light wood, which very closely resembles rosewood, with this superiority that it is a harder and therefore a more durable material. Mr Pearson has some couches, chairs, &c., made from this wood, which are suited to the drawing room of any gentleman, not only in this colony, but anywhere else.[1]

Pearson exhibited at the 1851 Exhibition in London. He retired in 1875 and his shop and workshop in Elizabeth Street, which were later occupied by the saddler James Robb, are still in existence.

Although a Samuel Smith appears in the trade in 1854, it does not seem likely that he is the same Samuel Smith who appeared as an upholsterer in directories from the 1870s. In 1878, he imported a labour-saving device known as Alexander Geiger's Patent Horsehair Carding and Picking Machine to facilitate the picking and carding of horsehair, oakum and flock which would be used to manufacture mattresses. Smith was said to turn out a "large number" of ship and other mattresses.[2] In 1883, and perhaps before, he did all the upholstery of the railway carriages built at the Railway Workshops in Macquarie Street.[3] His own premises were then in Campbell Street. Smith was still in business in 1915 at 101 Collins Street. Another specialist upholsterer was William Mangan who had a mattress factory in Argyle Street from the 1880s until about 1910.

W.J. Lloyd had a furniture factory at 110 Elizabeth Street during the 1880s. A number of items made by Lloyd were described in the *Tasmanian Mail* at various times. In April 1880, they were greatly taken with a jewel chest of drawers made of birds-eye Huon pine to a German design.[4] By 1885. Lloyd had moved to 82 Elizabeth Street, the new factory being known as Lloyd's Steam Cabinet Works - the *Tasmanian Mail* described a dining room suite made at the new works of solid blackwood, richly carved and covered in morocco.[5]

William Williams was listed as a piano manufacturer from the 1840s until 1865. Although he assembled imported pianos, he also manufactured his own pianofortes which were said to stand the climate better.[6] In the 1880s his sons George and Ernest went into business as the furniture manufacturers Williams Brothers. The firm had a "grand furnishing arcade" which comprised a showroom in Elizabeth Street which extended back to form L-shaped premises with the manufacturing department in Bathurst Street.[7] The original factory in Bathurst Street burnt down in 1908 but was re-built by Williams Bros.[8] The firm advertised a range of furniture:

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[1]Colonial Times 17 Decemeber 1847 quoted in Fahey p. 129
[2]TM 23 November 1878
[3]TM 22 December 1883
[4]TM 24 April 1880 Supplement
[5]TM 25 July 1885
[6]Fahey p. 129
[7]TM 20 August 1904
[8]TM 5 December 1908

> surprising in design, quality, and assortment, accurate reproductions of all the best models in Queen Anne, Sheraton, Hepplewhite, Chippendale, and Colonial designs, which Williams Bros, are noted for, and have made a study of for over 30 years.... No middle man's profits. We are manufacturers.[1]

The L-shaped premises are still in use as a furniture showroom by the present occupants, Loughrans, although there is no longer a manufacturing department. Williams Bros. also had a workshop at 119 Harrington Street until at least 1915.

James Keating appeared in the 1886-7 directory as a furniture dealer but in the 1890-1 Post Office directory he is listed in a number of categories - as a carpenter and joiner, cabinet maker, upholsterer and as the manufacturer of church furniture and school furniture. He was still at 113 Harrington Street in 1915, described as a furniture and venetian blind maker.

In April 1893, the Tasmanian Mail alleged that the furniture and cabinet making industry in Hobart was "completely paralysed." It was a time of severe economic depression and high unemployment but the newspaper laid the blame at the door of the Chinese cabinet makers who had "elbowed out" the colonial workmen. Not only were the Chinese prepared to work long hours for pitifully low wages, but it was alleged, they turned out a shoddy product.

> A leading tradesman informed our representative that a few day's ago a chest of drawers made by a Chinaman in his own little hovel, was sold for 15s, which was not 1d more than the materials would have cost if honestly obtained ...

The master tradesmen who had once employed 20 or 30 English or Colonial workmen were reduced to retailing while the Chinese ruined the trade. It was thought that a poll tax should be introduced to safeguard against the increase of these undesirable people.[2] The directories show that in fact very few of the Chinese cabinet makers remained in business for more than a couple of years. However, the anti-Chinese feeling in the furniture trade lingered well into this century and furniture made by "colonial" craftsmen carried a sticker confirming that no "foreign" labour had been used in its production.

In 1911 W. Coogan & Co., a Launceston-based furniture manufacturer opened retail premises and a factory in Hobart. The firm was already one of the largest in the Commonwealth and employed over 200 people. The shop was in Collins Street and the factory at the corner of Warwick and Elizabeth Streets in the building formerly operated as Adams' brewery. The firm made a specialty of Tasmanian timbers and exported Tasmanian blackwood and oak furniture to every state in the Commonwealth.[3]

The firm exhibited impressive displays at the Hobart Show and enjoyed the support of the press:

> The secret of this firm's phenomenal success may be summed up in a very few words - the best of workmanship applied to the very best of materials. That Tasmania should be able to supply both these things is very gratifying to all those interested in the progress and welfare of the State....The great expansion of this Tasmanian industry must be a source of satisfaction to all those who are anxious to see this State become a leading manufacturing

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[1]TM 17 August 1911

[2]TM 15 April 1893

[3]TM 26 October and 7 December 1911

> centre of the Commonwealth and there seems little doubt that the industry will continue to expand, and that the firm's already enormous circle of customers in various parts of Australia will continue to grow as long as it continues to turn out such excellent work as that of which specimens were to be seen at the show ground.[1]

W. Coogan & Co. is still in business but as retailers rather than manufacturers although they have retained their former factory as a piano and antique showroom.

A number of furniture factories and workshops remain from the pre-1915 period including Pearson's, Keating's, Williams Bros.', and Coogans'.

Basket and wicker ware

Basket weavers not only made containers but also wicker furniture. Although this had long been seen as a stand-by, by the 1890s "wicker chairs and sofas had ousted upholstered seat furniture from many Australian parlours and sitting rooms."[2] Little is known of the early basket makers of Hobart. None are listed in directories before about 1847 when Joshua Jennings is listed as a basket maker in Liverpool Street. During the 1850s the craft was practised by E. Simmonds of Elizabeth Street, and J. Whiting of Liverpool Street. It is likely that these operated on only a small scale. In 1883, Thomas Just commented in the *Official handbook*, that basket making was just coming into notice with nine such establishments in the colony. Tasmanian willows had been found to be of excellent quality and suitable for every kind of plain and ornamental work.[3]

By this time, the industry in Hobart was dominated by two manufacturers - Bridges Brothers and Benjamin Wignall. At one period during the 1880s both firms grew willows in the city. Referring to an area just below Warwick Street, "The Captain" wrote:

> In the eighties this was the scene of great activity at a certain period of the year. There was a rivulet running down here, and Bridges Bros. grew willows there. When the time came for the proper operations of this sort of forestry in Elizabeth Street, a number of people were engaged, young and old, male and female, to strip the bark of the willows. They went by the name of the Withey Skinners. The canes were dried for basket making and such purposes. [4]

Bridges Bros. premises were a couple of blocks below the willows at 146 Elizabeth Street. They successfully exhibited at shows &c winning their first prizes in 1878 and 1879, and enjoyed vice-regal patronage. The *Mercury* described the firm's display at the Tasmanian International Exhibition as "admirable":

> The furniture is upholstered in *recherche* style. Tables and chairs, comfortable couches, pretty flower holders, book cases, wall brackets, are on view. There is a particularly handsome mantelpiece with a mirrored background.

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[1]TM 24 October 1912 p. 32
[2]Lane & Searle p. 330
[3]Just p.10
[4]The Captain p. 46

Bridges Bros' exhibit also included a selection of fishing tackle, which had already become a speciality of the firm.[1]

Benjamin Wignall, who founded the rival firm, was initially in business as a basketmaker and a cooper. The Wignalls had a property at Brighton where ten acres was devoted to growing willows and rushes. Bundles of green willows were taken to another Wignall property in Campbell Street where they were stripped of their bark by the Withey Skinners and laid out to dry.[2] It seems that the manufacture of the wicker work was also carried out here. He built his new shop known as "Wignall's Arcade" and house at 96 Harrington Street in 1879 [3]- much later on, he moved to the other side of the street.

By 1895 Wignall had made further additions to his premises in Harrington Street which now extended over 150 feet to Melbourne Street. Wignall made chairs, tables, perambulators, go-carts and basketware from willow and sold imported bamboo furniture also:

> The beauty of all the Wignall work is undeniable, and its strength can be seen by the long strips of cane of various kinds used. The lengths are bent by fire in the same way as the Austrian bentwood furniture now so popular in our houses, and distinguish the local work from that imported from abroad with its short pieces of wood, held together by nails or sticky substances of various kinds, which come apart so disastrously, generally when you most want them to hold together....[4]

Another speciality of the firm was mechanical toys operated by steam. It is not clear whether these were actually made by Wignall although it is possible as he was also a practical mechanical engineer.

W. Coogan & Co., the Launceston-based company which set up a factory in Hobart in 1911, also made an extensive range of wicker and cane furniture and perambulators.

All three major wicker ware manufacturers were still in business in 1915. Even when wicker furniture went out of fashion or the local manufacturers could no longer compete with the imported article, all of them managed to continue in business. Wignall's factory and shop has not survived although the firm remained in business as toy retailers until recent times. Bridges Bros developed the sporting goods side of their business and remain at their old premises. Coogans still have their furniture factory at the corner of Warwick Street although it is now used as a piano and antique showroom .

Glue

Glue was usually made as a sideline at tanneries. Both John Blackwell and his successor at the New Town Tannery, James Slee, made glue:

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[1]Mercury 14 December 1894
[2]TM 21 December 1895 and The Captain p. 134
[3]Mercury 29 April 1879
[4]TM 21 December 1895

> J.S. can with confidence recommend his glue to cabinet makers &c as a far superior article to any imported from England; (the sea voyage depriving it of its glutinous nature) and at a much lower price.[1]

However by 1844 it seems that no glue was being made in Hobart. An item in the Courier of that year refers to glue being made only at Launceston but "the boiling establishments of the continent will, however, we fear, render competition in this hopeless."[2] An attempt to revive the industry in Hobart was made in 1849. E. Harte established a glue and size factory in Argyle Street:

> he particularly recommends his SIZE to those who may wish to obtain a pure article - it will be transparent - perfectly free from any unpleasant smell, and engaged to keep good for THREE WEEKS in warm weather. The GLUE shall be equal to the best in London.[3]

The *Colonial Times* expressed the wish that the importation of glue and size would cease. In 1855 Government statistics listed six glue and size manufacturers - five in Hobart and one at New Town. It seems more than likely, however, that this actually doubled up on the tannery figures - there were then five tanneries in Hobart and two at New Town. A glue manufacturer who was in business during this period was Richard Cleburne, whose works were at 319 Argyle Street. After the 1860s, there are no establishments devoted solely to the manufacture of glue and size. Samuel Burrows made glue at his tannery in Risdon Road which operated from 1869 to 1902.

Soap, candle and starch works

Although soap and candles were imported, there may have been some manufacture of these commodities on a domestic scale long before the commercial manufactories were established. In July 1821, tenders were called for the supply of candles to the Government to be delivered on a weekly or monthly basis. The candles were to be made of mutton fat with cotton wicks.[4] It is not clear whether the Government expected these candles to be of colonial manufacture but there is no evidence of large-scale candle-making in Hobart at this time.

In July 1822, Messrs Godwin & McDougall announced that they were already manufacturing candles and starch, and would shortly begin to make soap "which they trust will be found to be of equal (if not superior) quality to any imported." Their factory was in Bridge Street, later known as Campbell Street. They were a versatile pair - they also manufactured wirework, and sold books and ironmongery.[5] A few months later John McDougall thanked the public for their support and announced that he was setting up a soap and candle-making business in Liverpool Street adjoining Vinegar Cottage. He was also selling starch "of colonial manufacture," probably also made by himself.[6]

In March 1823 Messrs Monds and Faber, recently arrived from England, completed their Manufactory for Tallow Melting and Candle Making at the corner of Barrack and Macquarie Streets. They promised "candles superior in quality to any yet

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[1]HTC 21 September 1832
[2]HTC 24 Decmeber 1844
[3]Colonial Times 25 January 1850
[4]HTG 14 July 1821
[5]HTG 20 July 1822
[6]HTG 16 November 1822

manufactured in this settlement."[1] A similar business of this period was operated by Aylwin & Lake. In August 1823, G. Aylwin moved the candle factory to Murray Street.[2] In December 1824 an advertisement appeared for C. Glovers wholesale and retail candle manufactory in Murray Street. Glover made dipped and moulded candles of all sizes, and night lights, as well as "greaves for dogs."[3] This last item is presumably "graves" which was a waste product of the candle making process - see below.

Many of these early candle factories survived only a short time. Of those listed above, the 1826 directory lists only C. Glover, still in Murray Street - Faber was in business at the Barrack street corner as a builder. But in addition there were Mannington & Co. of Liverpool Street and A.F. Roberts, whose soap factory was in upper Liverpool Street beside the rivulet and possibly next door to Mannington's: In 1831 Roberts' soap factory is listed next to Mannington's flour mill. In 1831 Glover was running a livery stable in Argyle Street.

By 1830, W. Watchorn had established his candle factory on the right hand side of Liverpool Street presumably on the corner of Barrack Street, the site of his location. He remained in the business at least until the 1840s. In 1844, the Courier remarked on the excellent quality of the candles produced by Messrs Cleburne, Watchorn and Ladd. These three individuals and Mr. Murdoch also manufactured salt. None of them made starch but Frederick Hull of Glenorchy was about to go into its manufacture.[4] By 1850 both Hull at Tolosa, and a man named Loughran in Campbell Street were making starch but neither enterprise survived much past 1860.

Richard Cleburne's candle works were then in Liverpool Street but in October 1846 he took over Kirk's soap factory on Old Wharf and formed the Hobart Town Soap, Salt and Candle Manufactory. His salt works were at North West Bay.[5] Kirk's factory had been established some years earlier in the building originally built for John Walker's steam flour mill. Walker had moved his steam plant to the former Government Mill in Collins Street in 1836. By 1858, Cleburne had moved to a warehouse on the main frontage of Hunter Street. He appears to have remained in business as a soap and candle manufacturer until his death in the early 1860s, but after that the building was left virtually empty for many years and fell into ruin.

Robert Arthur Roberts established a soap factory in lower Macquarie Street in the late 1820s. The directories suggest that there was a soap factory on the site almost continuously from this time - under various ownerships. At some time prior to 1890 when the factory was owned by Millers and also manufactured candles and brooms, the premises were extended to the adjoining allotment in Macquarie Street. In 1900, the factory employed 30 hands and turned out 25,000 candles a day:

> Through their wonderful "magic" soap the name of this firm has become proverbial, and some of the other productions, such as "OK," "Gold Medal," "Crown," and "Blue Marble" soaps are well known and highly appreciated in every corner of Tasmania. A large quantity of medicated, fancy, and toilet soaps are made by them, which for appearance, perfume, and admirable quality are quite equal, if not superior, to any imported. Messrs Miller have secured the soap contract for all the Government supplies, their soap being

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[1]HTG 15 March 1823
[2]HTG 9 August 1823
[3]HTG 24 December 1824
[4]HTC 24 December 1844
[5]BTA 22 October 1846

> chosen from quite a number of samples. The manufacture of candles of various kinds is one of the chief branches of the business carried o by this very enterprising firm, and they have a very complete and perfect plant, ... A great quantity of these go to lighten the darkness of the men who night and day are digging ad delving for the gold, the silver, and the tin which are gradually transforming Tasmania into a great country ... That is where most of the candles go, but, of course, there is a very large domestic trade throughout the country besides. Amongst many different brands and varieties of candles produced, the famous O.K. brand stands pre-eminent amongst Tasmanian wax candles, whilst in the "Victoria" brand is to be found a mining candle, made of stearine equal to anything that can be imported.[1]

It was further extended in the 1920s with the addition of a new brick office building on the Macquarie Street frontage - the current building on the site - probably after 1925 when the factory was taken over by a national soap manufacturer, Kitchen & Sons. In 1941, most of the old part of the factory was destroyed by fire necessitating an extensive re-build.

Another large soap and candle works was established by William Murray at Murrayfield in Tolosa Street, Glenorchy, in 1844. At the Great Exhibition in London in 1851 the firms products were awarded honorary mentions. In 1872 the works were described in an article appearing in the Mercury:

> At the soap manufactory at Murrayfield eighteen tons of soap per fortnight can be turned out with the appliances available. The building in which this branch of the business is carried on is a wooden one, two stories high. On the upper floor are the two pans now in use, one capable of holding 10 tons, and the other 8 tons. . These pans are set in brick, and are heated by means of fires underneath. Into these pans the tallow is shovelled from the casks. The caustic soda used in the manufacture of soap is placed on a tank on the ground floor and there diluted with water, the alkaline solution being pumped up into the pans as required, and pumped out again when it has become exhausted or when it is reduced to the condition known amongst soap-makers as "spent lees." When the lees was made with soda ash instead of caustic soda it was boiled in a tank. When the tallow, lees, resin, soda and other ingredients used have been sufficiently boiled. everything is made ready for putting the liquid soap into the frames. Fifteen of these frames, when fitted together, form a box, into which the soap is poured from buckets. The buckets are suspended from the rafters and are filled with large ladles. When the soap has become cool and set, the frames are taken off, one at a time, and the slab of soap exposed is cut off by means of a wire. The slabs are then placed upon the cutting table, five at a time, and each slab is cut into 24 bars of soap by means of wires which are passed through divisions made in the table.

The soap was then stamped with the makers name and the grade before being packed into wooden boxes. The tallow used at Murrayfield came from both local and interstate sources but mostly from Victoria.[2]

By 1900, the size of the operation had increased with the use of pots of "unusual" size capable of holding 18 tons. However the tallow was still melted in the "the old-fashioned style," that is, by fire and not steam. Leslie Murdoch who ran Murrayfield at that time claimed that these pots were unique in Australia, if not the world, but that they turned out the very best soap. Murdoch had invented an appliance for cutting soap, consisting of "a platform of the size and shape of a bar

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[1]CT 1900 p. 337

[2]Mercury 22 October 1872

of soap. Several layers are placed on it, which are cut into 400 bars at once by means of piano wires, which stand an enormous strain." The Murrayfield brands were popular, particularly in southern Tasmania. The best selling soap on the market was the "Jubilee" brand first made in 1887, the other grades being "Murray's No. 1," "Carbolic," Murray's No. 2" and "Household." [1]

The candle works were separate from the soap factory. There were two candle houses each with its own set of appliances. In the winter when both were working the factory could turn out up to three tons of candles every week. The process began in the fat loft where the fat was cut up by hand before being sent by chutes into a large iron copper to be rendered:

> After being rendered it is placed in a wooden vat with water. This vat is called the "settler" and all the impurity in the tallow sinks to the bottom of the water. The tallow is then melted once more preparatory to its being poured into the moulds, or frames as the candle-makers call them. These moulds consist of a number of metal pipes the size of a candle, fitted together, with a trough at the top for the reception of the tallow ... The wicks, which are made of cotton, are imported from England in balls, and are cut into the proper lengths by women and children employed at Murrayfield for the purpose. The wicks are stretched through .the moulds, over wires, and when all is ready, the melted tallow is dipped from the boiler into a large can from which the operator fills the frames, two at a time. Each frame contains 18 candles, or three pounds weight, and there are 300 frames in the two houses. The cooling of the tallow in the frames depends a good deal on the weather, and sometimes water is thrown over them to hasten the setting. When the tallow has set, the frames are lifted up, and the wires over which the wicks are stretched are drawn out. With an instrument made or the purpose all the tallow is scraped from the trough, and after this the ends of the wicks are clipped off, and the candles pulled from the moulds.

The candles were then ready to be packed in cases. The waste from the rendering copper was put into a press to squeeze out the last of the tallow, leaving behind a substance called "graves." This was sold in blocks 5-6 inches thick to feed pigs, dogs and poultry.[2]

In 1883, Thomas Just listed 6 candle makers and 4 soap boiling establishments in the colony. These almost supplied the colonial demand but stearine and sperm candles were then still being imported for use in the mines. Just suggested that here was an opportunity for expansion.[3] The challenge seems to have been met by Miller's as mentioned above. A short-lived attempt was made by a Mr. Usher, formerly of Adelaide, to establish a wax candle factory in Argyle Street in 1887. Although the *Tasmanian Mail* reported encouragingly of his product "to all appearances equal to the imported" the enterprise seems not to have lasted very long.[4]

According to Government statistics only one candle manufacturer remained in Hobart in 1915. Miller's continued in business for some time after this, eventually concentrating on the production of soap. Their building, somewhat altered, remains at 15 Macquarie Street.

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[1]CT 1900 p. 329 and Weekly Courier 27 July 1901
[2]Mercury 22 October 1872
[3]Just p. 13
[4]TM 18 June 1887

Brush making

There is a reference to the craft as early as 1826 when Jocelyn Thomas applied to the Colonial Secretary for land at New Town next to the 30 acre grant of the "poor old broom cutter."[1] Broom makers also appear occasionally in the town directories - for example, in 1831 a man named Rowlands was making brooms in Goulburn Street while Arnold and Hewitt were broom makers in Bathurst Street - but it was not until the 1890s that brush making was carried out on more than a small scale.

In the 1890s Millers, the soap and candle manufacturers of lower Macquarie Street branched out:

> Messrs R. Miller have recently made a new departure by the addition of brush-making to their already busy factory, and this is proving a very successful branch under the control of a skilled manager ... The firm have taken up, amongst others, certain special lines, always in requisition, but sometimes difficult to obtain if wanted in a hurry - that is, brushes for various descriptions of machinery, such as spice mills, jam factories, breweries, printing offices etc. all of which are now produced of first class finish and quality at very moderate prices, whereas they were hitherto imported from the other colonies or England.[2]

By this time the Tasmanian Institution for the Blind, Deaf and Dumb were also producing brushes and a range of other items at their workshop in Moore Street, New Town. The Society for the Benefit of the Tasmanian Blind was formed in 1887 and in 1898 the workshop was opened for the "industrial training" of suitable people - the motto of the Institution was "Help the Blind to help themselves." In the first year 536 brushes, 127 mats and 147 halters were made at the workshop and sold through the shop in Bathurst Street, while 84 chairs were re-caned, mostly by blind women in their own homes. Although the Institution's new headquarters in Argyle Street opened in 1898, the existing workshops were retained for some years. In 1899, the five men and four women at the workshop produced 4,044 brushes, 152 mats, and 256 halters, as well as re-caning 113 chairs and two couches. That year was the first that the Institution received the annual contact for the supply of brooms and brushware to the Hobart Corporation and the Mount Lyell Mining and Railway Company.[3] In 1902, a new factory was built at the Argyle Street site and continued to be the centre of industry until 1959 when a new sheltered workshop was built. Machinery for the brush making trade was bought from Miller & Co.[4]

According to Government statistics, there were four brush makers in Hobart by 1915. As well as the Blind Institution and Millers, there was a recently established factory in Criterion Street., listed in 1910 as J. Crane & Co., broom manufacturers 8 Market Street (the former name of Criterion Street) - in 1915 it was the Tasmanian Carpet Broom Factory and W.R.C. Jarvis was the proprietor. Another brush manufacturer of the period was Charles F. Quist of 162 Collins Street.

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[1]LSD 1/103/495
[2]CT 1900 p. 337
[3]Annual reports of the Tasmanian Institution for the Blind, Deaf and Dumb
[4]Pearce pp. 48-9

Clothing and footwear industries

Textiles

Sent out with Collins' party was a supply of clothing sufficient for two years. By December 1805 this clothing had all been issued and Collins expressed the hope that a new shipment was not far away.[1] "Slop clothing" was issued to convicts and those employed by the Crown. Importers supplied the wants of the free population, dealing in both ready-made clothing and cloth.

In February 1820, an advertisement appeared in the Hobart Town Gazette notifying the inhabitants that Thomas Kent had established a warehouse in Liverpool Street for the inspection and sale of colonially manufactured cloth and clothing:

> The Advertiser trusts the inhabitants of this settlement, and the farmers in particular, will duly appreciate the establishment of this Manufacture, not only as connected with the interest of the Colony, by bringing into use a valuable commodity (wool) which for years has been suffered to lay waste, but in the employment of a very considerable number of those unfortunate men sent from Great Britain, who from their childhood have been brought up in the Woollen Manufactories, and are unaccustomed and unfit for other employ: and ... the following Colonial Raw Produce will be received in payment viz. - wool, hides, tallow and kangaroo, seal and sheep skins.[2]

However, no further references could be found to this enterprise. The previous year Thomas Kent had addressed the Bigge inquiry on the subject of developing the tanning bark industry with a view to an export market.[3]

Wool was exported to Parramatta to be made into coarse cloth and to England for years before it was put to similar use in Tasmania. The first cloth factory to be set up in Hobart was at the Cascade Female Factory. The blanket factory was established in 1835 in a building especially constructed for the purpose just outside the Female Factory proper. The factory comprised a workshop in which a number of looms were set up for weaving blankets and coarse tweeds. The looms were operated by free men, the women in the Factory spinning the wool and making the cloth up into blankets. A little way above the Factory was the fulling mill where the grease and dirt was stripped from the wool. Production continued at the site until the 1850s.

The 1860s was a period of depression with trade falling markedly after the heady days of the early 1850s when business was briefly but artificially boosted by supplying the Victorian goldfields. That period also saw the departure of a large proportion of Hobart's adult male population. As Victoria's economy grew, Tasmania's languished. The mineral discoveries on the early 1870s provided a much needed boost to business confidence. Following the example of the success of similar industries in Victoria, two woollen factories were established in the colony - one in Launceston and one in Hobart. The Hobart Town Woollen Manufacturing Company was formed in 1874 by Mr. Overell the draper of Liverpool Street after he went to Huddersfield and arranged for an English woollen manufacturer, Mr Gledhill, to come to Tasmania with all his machinery and set up a woollen factory

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[1]HRA III iii p. 344 18 December 1805

[2]HTG 5 February 1820

[3]HRA III iii pp255-7

here. The Company obtained a 14 year lease on a property in Macfarlane Street which had been formerly operated by James Peet as a flour mill.

The factory was basically a water mill supplemented by a steam engine. It utilised the old flour mill's 20 feet diameter overshot waterwheel but a new stone two-storey building was erected to house the machinery. Eleven power looms were set up for the production of blankets.

> The wool is first put into a machine technically called "the devil" from which it is blown out and opened. It is then weighed and put into the scribbler, from whence it goes into the feeding machine, and comes out spread in a thin layer, after which it is made into large rolls, At this stage the wool is quite loose and soft. It then goes into the carding machine, and then into another machine called the condenser where it is split into threads about an eighth of an inch thick, and wound onto bobbins, or reels about two feet in length. These processes have been performed on the ground floor, but the bobbins are now taken upstairs to the mule loft, where there is a pair of Platt Bros self-acting mules, At present only one mule is erected, but as soon as both are fitted, there will be 760 spindles in working order; the bobbins are placed on the mule, and with the aid of some very complicated machinery, the condensed yarn is spun to the requisite thinness, the necessary twist is given, and the warp or weft, as it is called is wound on to coppins, sticks about six inches in length. When in full work, one of the bobbins will be used for spinning warp, and the other for spinning weft... From the mules the warp is wound on a warping mill, in long lengths as required; and it is then taken downstairs, where it is put on the beams and prepared for weaving.... In a short time... a weaver who thoroughly understands the work ought to be able to weave from ten to twelve blankets a day. The blanket, as it comes from the loom, is somewhat thin, although strong, and is dirty and permeated with oil, so that it has to go through a finishing process : The oil is first taken out; the blanket is then scoured, passed through the wetter, rough dried, the burrs taken off, passed through a milling machine, washed a second time, stoved, dried, and then gigged, or a nap put on it. After these various processes, the long length of blanketing is cut up into pairs, and they are ready for use by anyone who desires to purchase them.[1]

This venture was not a success and within a few years the premises were being used as a flock factory. The operator A.K. Guilline rented the machinery and premises from the owner George Smith. In 1886 the flock factory was badly damaged by a fire.[2] For a few years after this Mrs Sarah Guilline had a rag factory producing flock in Darcy Street.

Flock was used in the upholstery trade and there was presumably some demand it for it, given the number of upholsterers and mattress makers in Hobart. In 1878 another flock factory, albeit perhaps on a smaller scale, was established on the Old Wharf. A shoddy machine was imported by Mr. Morling who set it up in an iron store at the rear of A.G. Webster's premises. The machine could produce flock as well as shoddy. Shoddy was made by shredding tailors' cuttings and old woollen clothes, the resulting product being mixed with new wool to make woollen cloth. Morling's 6 h.p. machine turned out one ton of shoddy every day and employed an engineer and two men. The *Tasmanian Mail* reporter who visited the factory found the atmosphere to be dense with dust and fibres and recommended that steps should be taken to protect the health of the workers. However, he considered the factory to be generally beneficial, providing a use for material previously wasted

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[1]Mercury 22 May 1874
[2]TM 8 May 1886

and giving the poorer classes a way of disposing of their worn-out clothing.[1] Despite the perceived benefits, the enterprise did not last long and a few years later the factory had burnt down.

Notwithstanding the failure of the Hobart Town Woollen Manufacturing Company, two new woollen mills were established in the 1880s. In June 1883, the former Artillery Brewery building in Gore Street was leased to A. & D. Johnstone, formerly partners in Bulman, Johnstone & Co., operators of the Waverley Woollen Mills at Launceston, but now establishing the Tasmanian Woollen Manufacturing Company to manufacture tweeds, shawls, blankets and all descriptions of woollen goods at the Derwent Mills. The machinery arrived the following November per the *ss Cape Clear* and included a patent vat to manufacture blue cloth and serge. The ship also brought nine immigrants, seven of whom were skilled hands, to work in the factory. By the following February the new woollen mill was taking orders which could be selected from samples of 200 different patterns of all-wool tweeds made from Tasmanian wool. The firm had early success, exporting blankets to Sydney where they were in great demand. By March 1886 thirty hands were employed turning out 1100 yards of cloth a week. Johnstone Bros. had also introduced new weaving machines from Huddersfield and made a feature of their patent indigo vats which were not widely used in the Australian colonies but which, with the new dyes, could produce a great diversity of patterns.[2]

In late 1886 Messrs Aiken, Lennox & Co. took over the former London Carriage Works in lower Macquarie Street and unpacked their 171 cases of machinery.[3]

Both woollen factories exhibited at the 1894-5 Tasmanian International Exhibition. Such was the cultural cringe regarding Tasmanian products that the Mercury was obliged to point out several times that the local product was equal to that produced elsewhere.

> In addition to tweed materials there are shown some very handsome rugs and cloths of various of various kinds, showing that there is no real need to go out of the colony for such materials. The goods are all manufactured from the best Tasmanian wool, and the opinion is often expressed that visitors had no idea that such goods could be manufactured in the colony ... The best proof of the quality of Messrs Johnstone & Co.'s tweeds is to be found in the fact that there is now so great a demand for them all over the colony that the firm can scarcely get the orders completed to the times stipulated for delivery. On the stand facing the avenue there is a fine display of ladies' dress tweeds and knitting wools; the dress tweeds are all in stylish patterns for the coming season, and the knitting wools are a fine combination of fancy colours, which are made up on the premises into the finest classes of hosiery. Many have admired the French blankets which the firm is so famous for manufacturing, and for which Messrs Johnstone Bros. have carried off the highest awards wherever they have exhibited them. They state that they have received orders for over 700 pairs of these blankets for the coming winter, which is very cheering news.[4]

Of Aiken's display:

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[1]TM 29 June 1878
[2]TM 30 June 1883; 10 November 1883; 23 February 1884; 21 March 1885; 13 March 1886
[3]TM 1 January 1887
[4]Mercury 5 December 1894 Supplement

> The chief impression conveyed is the advance of local manufactures of this kind. There are cloths fresh from the looms as neat in pattern and as high finish and style as anything imported: good enough in every respect to meet the most fastidious requirements of the most fashionable people in Australia. Why the gentler sex resorts to "butchers blue" when they can have pure Tasmanian wool woven into the most aesthetic patterns at a necessarily lower figure can only be attributed to one of those inexplicable vagaries of the female mind that nobody understands. No Tasmanian ought to sleep soundly without a home-made blanket on the bed ... as to the tweeds, serges and dress materials, it would not be surprising if they induced every patriotic visitor to promptly go in for a new suit of clothes or a new dress.[1]

In the late 1890s the operations of the woollen mills increased markedly. The table below records the combined figures of the three woollen mills then operating - one in Launceston and two in Hobart.[2]

	1890	1895	1898	1900	
Number of persons employed		76	78	162	177
Quantity of wool used (lbs)		168,600		634,000	727,000
Value of products (£)		17,600	15,000	26,700	31,800

As a consequence of the great success and increased output, a new factory was built for Johnstone Bros. in Molle Street in 1898, while Aiken's extended and remodelled their premises the same year, effectively doubling the size of the plant.[3]

By this time, Samuel Wilson was operating the flock factory in South Hobart, now with an Apsley Street address, and remained in business for some twenty years. Both Hobart woollen mills were still in business in 1915 and the war was to see them flourish still further - "Tasmanian flannel and blankets achieved a wonderful name with the A.I.F"[4] - but both closed down in the late 1930s. Johnstone's mills in Gore Street and Molle Street have substantially survived. Aiken's mill was demolished in the 1940s. The Hobart Town Woollen Factory and later flock mill was not demolished until the 1970s and Button was able to identify some features as late as 1978.

Garment factories

The garment industry is probably as old as European settlement in Tasmania. Tailors were employed in the Government service from the earliest times and convict tailors also worked as assigned servants in other establishments. Merchants who imported quantities of cloth often employed such servants to make up garments to order. Among the free population dressmakers and tailors were among those tradesmen and women who could set themselves up in business with very little capital, with barely a need for a workshop and only the most basic materials beyond the fabric itself. However the competition from convict tradesmen was keenly felt in this area.

As the retail trade developed in Hobart, many of the town's clothing retailers and drapers had tailoring departments. Some of the workshops appear to have been quite extensive particularly around the turn of the century. This study is

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[1]Mercury 1 December 1894 Supplement
[2]JPPT 1895 and 1900 Tasmanian Statistics
[3]Ct 1900 p. 338
[4]Industrial Tasmania p. 24

concerned principally with those establishments where a large number of people were employed in the manufacture of clothing.

John Thomas had a tailoring workshop as early as 1821. In March of that year he advertised from his premises in Liverpool Street opposite Fisk's Mill "Gentlemen's Clothes, Ladies Pelisses, Habits etc etc made on the Shortest Notice, in the newest Fashion, by the Best Workmen."[1] The same year, Thomas Jarvis, James Mayhew and William Houghton went into partnership in premises in Collins Street to make clothes "equal to any in London in neatness of workmanship and nicety of fitting.[2] However, none of these people appear to have stayed in the industry for very long, or indeed in Hobart Town.

In 1834 J. McGregor went into business as a tailor in Elizabeth Street. By the time he died in 1846, the business was a substantial one and included a retail department for the sale of ready made clothes and a military outfitting department. In 1841 he had given evidence to the Legislative Council committee on Immigrations in which he stated that he employed 18-20 men in his business. They were all free or ticket-of-leave men but he had difficulty getting good tradesmen. Except for four or five, most of his employees had learned their trade at Port Arthur.[3] Following McGregor's death, his wife briefly continued the business. In January 1847 she engaged a competent person as a cutter but the following month she lost her foreman H. Cook who went into business on his own account as a naval and military tailor, clothier and habit maker further down Elizabeth Street.[4] Mrs McGregor retired from the business in September 1847 and recommended to her customers John Greig, naval and military tailor of Murray Street.[5].

H. Cook & Sons remained at 11-13 Elizabeth Street until 1912 when "Cook's Chambers" were demolished to make way for the new Commonwealth Bank and H. Cook & Sons moved to new premises just built next to the Imperial Hotel. The firm were still in business in 1915 and this building remains at 136 Collins Street.

The degree of mechanisation in the industry is not easy to ascertain. In 1865 Mrs Clarke of Elizabeth Street advertised in *Walch's Almanac* that she did needlework of all descriptions and "the lock-stitch machine being used, the work is guaranteed to last." By 1870 tailors had the option of Tasmanian machines made by George Edwards. [see below]. In 1883 Thomas Just in the *Official handbook* stated that there were six clothing factories in the colony but they were all more or less combined with the drapery business: "They employ a good many machines, but turn out chiefly the rougher kinds of clothing." A great deal of clothing was still imported from Europe or Victoria.[6]

During the 1860s and 1870s mail order tailoring was advertised in *Walch's Almanac*. Firms like J.B. Mather & Son, advised customers with the aid of diagrams, how to take the correct measurements - as well as being tailors, clothiers and hatters, the firm also had a "manufactory for white shirts." Mather's were at 117 Liverpool Street. Evan Jones, tailor and habit-maker, also offered "paper patterns cut and sent by post to any part of the Colony for a nominal remuneration."[7]

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[1]HTG 31 March 1821
[2]HTG 15 September 1821
[3]Report of the Committee ... upon Immigration p. 30
[4]BTA 21 January 1847; 4 February 1847
[5]BTA 16 and 30 September 1847
[6]Just p. 13
[7]Walch's Almanac 1872 p. 30

During this period there were 24 tailoring establishments listed in official returns.

In addition to the specialist tailoring and dressmaking businesses, department stores typically had their own tailoring workshops. Fitzgerald's which had been established as a wholesale business in 1882 had become a retail department store by 1892. The firm had an extensive mail order business and their tailor-made costumes were said to be preferred by ladies all over Australia to anything available in Adelaide, Sydney, Brisbane or Melbourne.[1]

During the early years of this century there was a succession of shirtmakers at 53 or 55 Liverpool Street. W.E. Forder & Co were there in 1901 to be followed by Hannah Jackson and Mary Rafton. However nothing else could be discovered about the extent of these businesses. A certain amount of this class of work may have been performed as outwork.

There were two knitting factories listed in directories around the turn of the century. Miss E. Culf's knitting factory was at 203 Elizabeth Street and Eric Lewis's at 36 Argyle Street. Miss Culf was still in business in 1915 but nothing else could be found out about her business. Only one knitting factory is mentioned in the 1907 Royal Commission into Wages and Wage Earners - the Hobart Knitting Factory but neither of the factories is listed by this name in the directories.

Eric Lewis established his factory in 1898 and manufactured hosiery from Tasmanian wool - hose and half hose as well as shirts and pants. At the 1901 Tasmanian Industrial and Manufactures Exhibition the firm won a first prize and honorable mention. In 1913 the firm was taken over by P.O. Fysh and Co. of Launceston and traded as the Elco Hosiery and Manufacturing Company.

Although not listed separately as a knitting or clothing factory, Aiken's woollen mill which produced cloth also made up a variety of garments including hosiery.

In 1918 the Elco factory was moved to Murray Street and the Argyle Street factory has since been demolished. Miss Culf's factory remains. In 1915, Government Statistics show two clothing factories in Hobart plus 22 tailors, a remarkable similarity to the figures of 1880.

Hats

Tradesmen and manufacturers hoping to establish themselves in business in Hobart Town in colonial times stressed their experience in the finest houses in London and their knowledge of the latest fashion. This was particularly so in the clothing and furnishing trades. Possibly the first hat manufacturer to set up in Hobart was J. Clarke who went into partnership as Isaacs and Clarke, Hatters and opened premises in Bathurst Street in September 1821.:

> J. Clarke has recently arrived from England, and has a perfect knowledge of manufacturing hats, having lived for some years in the House of Messrs Oliphant & Co., Cockspur Street, London, Hatters to their Majesties.[2]

A few months later, one E. Hubbard "from London" commenced business in Argyle Street, describing himself as a "Real Hat Manufacturer."[3] The output of these

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[1]TM 22 December 1906
[2]HTG 29 September 1821
[3]HTG 1 December 1821

establishments is hard to judge but neither firm lasted more than a couple of years. In 1824, G. Monro established a hat factory, on an apparently larger scale, in Bathurst Street. His enterprise, relying as it did on locally produced materials, received the support of the press. In October 1824 Monro advertised for "a few makers and a finisher - none need apply but good workmen and who have regularly served their apprenticeship in England."[1] Despite the encouragement from the press, this enterprise was also short-lived. Monro appears in directories for the next couple of years but not thereafter.

In 1831 when Government statistics listed local industries for the first time, there was only one hat factory, presumably that of W. Champion in Melville Street. Champion had begun in business in Hobart at the Derwent Distillery in Macquarie Street but moved to Melville Street where he was listed as a hatter until 1834 when he was listed as a hatter and licensed victualler. In 1835 he appears solely as the landlord of the Jolly Hatters.

One of the longest surviving operators in the field was Mrs Gee who started out in Collins Street next to the Ship Inn as a straw bonnet maker. By 1834, she had moved to Murray Street, three doors from St. David's Church and was advertising in the Van Diemen's Land Annual. In 1847, an Edward Gee was listed as a straw bonnet maker in Brisbane Street.

Government Statistics do not list hat factories at all during the 1850s and 60s but there were several men trading as hat makers during the period. Once again the size of these enterprises is impossible to gauge. Few made more than a couple of appearances in the directories. Others combined the business of making hats with tailoring. One of those to survive was Patrick Cahill who began manufacturing hats at his premises in Liverpool Street in December 1855. He worked through the depression of the 1860s and remained in business for more than thirty years.

In 1873, the *Mercury* published a series of articles on Hobart's industries, describing the operations of three hat factories - "hat making is an industry that is growing in Tasmania, and one that is likely to give employment to a large number of men and women." At the time, Patrick Cahill claimed to be the oldest hatter in Hobart Town, having been in business more than 17 years. He had brought all the tools of his trade, including the hat blocks, with him from England, In 1873, he was making black Paris hats, drab "pull-overs," drab "shells," "stalkers," and soft hats with stiff brims. He imported no felt but made his own on a small scale from sheeps wool and possum fur - he claimed to use no rabbit fur, the possum fur being "far superior in felt making." The description of his method of manufacture suggests that he may have had several people working for him. However, his trade was confined to the city and district.[2]

Cahill had two competitors. One of these was W. Wallworth, who went into business for himself only in 1872, and employed four to five girls in his factory. He made a similar range of hats to Cahill but also made soft caps. Wallworth also had a contract with J.B. Mather to supply the uniform caps for the city police - these were made from calico and shellac, and covered with blue cloth.

The most important figure in the industry at the time was J.Z. Bidencope who had been established as a naval and military tailor and habit maker for a decade at his premises in Murray Street.

His hat factory was also at Murray Street in the first instance. The Mercury praised his enterprise and energy in establishing the factory, noting that

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[1]HTG 28 October and 17 December 1824

[2]M 25 January 1873

Bidencope was already exporting hats to Sydney. He was also sending rabbit skins to England to be made into felt but intended to set up his own machinery for making felt. The firm made a wide range of hats including felt helmets" particularly adapted for hot climates." Apart from the felt which was imported from England, Bidencope imported silk plush, used to make bell toppers, from France, and shellac from India. The manufacturing process began by dipping a type of calico known as "mull" into "coddle," a mixture of shellac, liquid ammonia and water, and pressing it over an appropriately shaped block to form the body of the hat. The body was then waterproofed with varnish and covered with felt or, in the case of toppers, silk plush. The covering material was pressed onto the body with a hot iron thus melting the varnish which acted as an adhesive. In the case of the toppers the various components had to be sewn together before being attached to the body. This was a skilled process since no seams were to be visible. After trimming, the hat was shaped by the employment of different shaped irons. The hat boxes were also made on the premises, from imported scale-board. Bidencope employed 8-9 hands in the factory at Murray Street.[1] Later in the 1870s, Bidencope occupied Walker's old malthouse in Hampden Road as a hat factory.

In 1876, a hat factory was established by Benjamin Dunkerley at Glenorchy. From the description of the site, this would appear to be the former premises of the Kensington Flour Mill. The main building was a three storey brick structure and the power was supplied by an overshot waterwheel some 30 feet in diameter. The manufacturing process was somewhat different to that described above. On the ground floor of the building the wool was washed and carded before being formed into cones. These cones were hardened by being rolled between two platens and then the felt made more dense in a planking machine. After dyeing, the still wet cones were pressed over blocks to form the shape of the hat. Where the finished article was to be a hard hat, it was put into a powerful hydraulic press. The various finishing stages were carried out on the first floor. Here the hats were "pounced" to remove the coarse nap, steamed into shape and veloured to produce a smooth shiny finish. There were separate departments for drab [grey] and black hats since the two could not be made in the same room. The hats were trimmed, bands and linings added, on the second floor.

In 1878 Dunkerley's factory employed thirty hands and was producing 60-70 dozen hats a week with the expectation of 300 dozen a week when the rest of the machinery was in place. Several shipments had been exported to the other colonies "but the excessive protective tariff of Victoria militates against exportation there."[2] Tariffs worked both ways, however, and the local industry was protected by a 10% *ad valorem* duty. By 1883 there were five hat factories in Hobart and imports were virtually shut out from the market.

In 1880 there were four factories in Hobart and one at Glenorchy but only two survived until the First World War. Dunkerley's factory survived twenty years but closed during the late 1890s. Bidencope's shop and workshops survive at 90-2 Murray Street and the old malthouse has been re-furbished as architect's offices.

Dyers and cleaners

The first large-scale laundry was probably that at the female factory established at the Cascades in 1829. However the work was all done by hand:

> One of the great yards of the Factory was devoted to laundress work. Squads of women were up to their elbows in suds - carrying on the cruel process of

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[1]Mercury 20 January 1873

[2]TM 31 August 1878

> wringing,- or displaying their thick ankles as they spread the linen over the drying lines. The townsfolk may have their washing done here as 1s 6d per dozen, the money going towards the expenses of the institution.[1]

During most of the period under study, Hobart supported only one dyer although occasionally up to three were reported in Government statistics. It was not until the early years of this century that three are regularly listed. Dyers carried out a number of functions besides dyeing clothes for mourning etc. They were also typically cleaners of specialist fabrics.

In 1831, a man named Fraser is listed as a dyer in Barrack Street but he does not appear in any other directories in this trade. During the 1840s and 50s no dyers are listed in official returns or in directories under that heading. During the 1860s William Paris's dyeing establishment was at 190 Macquarie Street next to St. John's Church. He also made harness blacking and ink.

During the 1880s two dyers regularly advertised in the *Tasmanian Mail*. George Parrant whose premises were at the corner of Liverpool and Harrington Streets described himself as a dyer and scourer and promised "no canvassers." W. & A. Park were in business at the Glasgow Dyeworks and were dyers, scourers, glove and feather cleaners. Not an advertiser at this period but in business in Harrington Street was Ellen Alexander who was listed in the 1886-7 directory as a feather cleaner. She later moved to Liverpool Street, perhaps expanding her operations since in the 1890s she was listed as a dyer and cleaner. However, in 1883 it was noted that the trade was a neglected one with only five small dyeing establishments in the colony. The work done was generally inferior and much was sent to Melbourne.[2]

The two woollen mills had their own cleaning establishments. At the 1894-5 International Exhibition Johnstone Bros. included a display of their laundry work and showed how "old linen is made to look like new again."[3] When the new mill was built at Molle Street in 1898, the laundry was in the basement: "It was a real sweat shop. They wore high white hats and overalls and the place was always full of steam from the rollers used for ironing." [4]

The Tasmanian Steam Laundry was established by Lennox and Aiken, the operators of the Tasmanian Woollen Mills in about 1890. The former Peet's mill in Gladstone Street was adapted for the purpose where Lennox and Aiken were

> prepared to execute laundry work in all its Branches on the Shortest Notice. Also Dye, Clean, and Repair Ladies and Gentlemen's Clothing in a manner which will compare with anything in the Colonies. Gloves cleaned. Feathers dyed, cleaned and curled. Wool mats dyed or cleaned. Curtains of all kinds a speciality.[5]

The laundry served the "principal hotels and boarding establishments' in the city and encouraged visitors to tour the factory. However the works had closed by 1901 when F.W. Moore, fruit merchants and jam manufacturers took over the building.

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[1]Mundy writing in 1851, quoted in Rayner, Historical Survey of the Female Factory, p.21

[2]Just pp13-4

[3]Mercury 5 December 1894 Supplement

[4]Those were the days p. 66

[5]The Hobart Coffee Place Visiors Guide to Hobart p. 63

The longest surviving business of this kind is doubtless the Mt. St. Canice laundry. This was established in 1893 in conjunction with the Magdalen Home, both to provide employment for the girls taken in and an income to support the institution. A photographic spread of the laundry appeared in the *Tasmanian Mail*[1] in 1905 showing extensive drying grounds and machinery including a steam mangle. The laundry operated as the Bayview Laundry until 1996.

During the 1890s a number of Chinese established laundries in Hobart, among them Kwong Wing & Co who was in business by 1905 and still at 113 Campbell Street in 1915. At this time all the laundries in Hobart, except for the Johnstone Bros. laundry and the institutional ones, were operated by Chinese.

Boot and shoe trade

Out of necessity, the footwear industry was one of the first to develop. Soon after arriving Collins was to complain to his superiors in London that "the Shoes are of a bad Quality, and to add to this Grievance, they have been sent all of a Size."[2] A source of leather had also to be found, the few cattle brought with the party of settlers being too valuable for the purpose:

> Finding that the bark of the Trees, called the Blue Gum and Black Wattle of this Country, can be used successfully in tanning, I have employed some Prisoners conversant in that Business; and we get some very good Upper Leathers from the skins of the Kangaroos [sic], but we are not so well furnished with material for Sole Leather, the skins of such as the Bengal Cattle as have died being found not to have sufficient substance for that purpose.[3]

The Government's own shoemakers were apparently not sufficient to keep up with the demands of the Commissariat. In 1819 Major Bell told the Bigge inquiry that Anthony Fenn Kemp had charged the Government 7 shillings a pair for 80 pairs of English and 12 pairs of country made shoes.[4]

Hobart seems to have always been well-supplied with shoemakers. It was, however, essentially a craft rather than an industry and shoes were made entirely by hand. There were of course associated industries to supply the bootmakers - tanneries, grinderies and boot upper factories and there seems to have been considerable overlapping between these various enterprises. Evidence from directories and advertisements suggests that shoemakers typically were in business by themselves.

There were some exceptions, even in the 1820s. One of these was Samuel Wintle who arrived in the colony in August 1823. He described himself as a boot and shoemaker with the "experience of many years in one of the first houses in London. He brought with him the tools of his trade, including boot trees and lasts of the latest fashion, and a stock of English-manufactured calf skin and sole leather. On first going into business he advertised for an apprentice and a boot-closer, The following year he went into tanning, first with Thomas Scott and later on his own account.[5] In 1835 he advertised for a "few" shoemakers, emphasising that only the best workmen need apply and promising constant work for those

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[1]TM 12 August 1905
[2]HRA III i 4 March 1804 p. 233
[3]HRA III i 18 December 1805 p. 344
[4]HRA III iii p 243
[5]HTG 23 August 1823

"who will work only for him." He was by this time well-established in Elizabeth Street in premises near Brisbane Street.[1] Another individual who combined a tannery with shoemaking was William Sherwin, whose premises were in Liverpool Street above Harrington Street next to the mill originally built by Tedder & Yates [see above]. In 1831 he was listed in Ross's directory as a green grocer and tanner, a less likely combination although further down the street was one P. Smith who was described as a shoemaker and glazier.

In July 1833 the *Hobart Town Courier* carried two advertisements for William Sherwin - one to announce that he was selling grindery and tools at the top of Liverpool Street, the other to report that he had taken a lease of the Cascade Tannery lately belonging to Mr Hodgson. Two years later he was advertising from the Bermondsey Tannery in Goulburn Street.[2] In January 1835 Sherwin advertised his stock of ready-made boots and shoes particularly his stock-keepers' boots which he recommended to settlers in the interior "as well adapted to farming men." He also announced that he would curry hides as usual and that he wanted " a good steady tradesmen to click for and supervise six men.[3] "Clicking" is the leather-workers term for cutting out. Asessment rolls as late as 1877 list a William Sherwin as the owner/occupier of a house and tannery in Liverpool Street but it hardly seems likely that it is the same man. In the 1886-7 directory it is William Sherwin junior who is listed as the proprietor of a leather warehouse and grindery at the top of Liverpool Street.

W.H. Addison who arrived in 1835 advertised that he manufactured "every description of goods" in the boot and shoe line and had previously carried on business in the West End of London "on a much larger scale." He also had a grindery to supply the trade with both upper and sole leather. At the time of advertising he was seeking a good binder and a "woman's man."[4] Despite going into business in a fairly big way from the beginning, he seems not to have remained in Hobart very long.

However, there were many shoemakers who remained in business for twenty years or more. For example, four of the shoemakers listed in the directory of 1834 were still in business in 1854 - P. Macbeth of Elizabeth Street; John Sheehey of Harrington Street; William Sherwin of Liverpool Street; and William Short of Argyle Street.

By 1837, James Sly was in business as a bootmaker in Macquarie Street. In 1841, when he gave evidence to the Committee upon Immigration he employed three assigned men and two free men. He stated that there was a great shortage of free tradesmen in the industry. There were plenty of inferior workmen but the industry could support another 50 good steady men - "there is but one really good closer in Hobart Town." In particular there was a shortage of ladies' shoemakers and binders. He thought he could employ another six to eight tradesmen.[5] Although not listed continuously in the directories, the Sly family appear to have maintained a connection with the trade. In the 1870s and 1880s Ben Sly made uppers at James H. Vickery's grindery in Collins Street[6] and as late as 1910 F. Rolfe Sly, trading as Sly & Co., were fancy leather workers in Bathurst Street. At about

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[1]HTG 6 January 1835
[2]Colonial Times 16 June 1835
[3]HTG 6 January 1835
[4]Colonial Times 10 March 1835
[5]Report of the Committee ...upin Immigration p. 31
[6]TM 3 January 1880

the same time George Sly was running a leather factory for Burrows & Meek. [see below].

In 1844 the Courier reported that "boots and shoes from colonial makers, and leather of colonial manufacture, have nearly driven the foreign from the market."[1]

There was strong competition in the boot trade, some of it apparently from unqualified people. On 1847, David McCoy, a boot and shoe maker with premises in Collins Street nearly opposite the Ship Inn, warned against:

> various persons unconnected with the trade, manufacturing things which they call BOOTS and SHOES (not only imposing on the public, but injuring every mechanic in the trade).[2]

Boot and shoe makers were first listed in official statistical reports in 1860 when no less than sixty were listed in the Hobart district. However, the official returns do not seem to be very reliable - the numbers fluctuate widely [see tables following overview]. This may be explained by changes to the area surveyed and perhaps also to the classification of shoemakers - were shoemakers employed in factories, for example, counted separately or was the factory counted only as one manufacturer? This classification is not made clear until the 1890s, at which time 70-80 separate shoemaking establishments were listed.

The degree of mechanisation in the Hobart industry is difficult to determine. Sewing machines were generally imported from England and America although in 1870, George Edwards of Goulburn Street began manufacturing sewing machines which were based upon "the principle of the Thomas machine, and are specially suitable for bootmakers' and tailors' work." Several bootmakers in Hobart Town were said to have the machines by 1873.[3]

In 1880 the Mercury reported that new machinery had been imported by Miles & Co, boot manufacturers of Elizabeth Street. One of these was a sewing machine worked by hand. On this machine the wax on the thread was kept moist and warm for added pliability by a "horn." The other two machines were for warming the wax and winding the thread onto the barrel for the main machine, and for channelling the surface of the leather.[4] The advent of thread already waxed came much later and made such machines redundant. Miles & Co. had started out in the business in 1870 in Collins Street but moved the factory shortly afterwards to a large building in Liverpool Street once known as the Trades Hall. At the same time the company had a retail store also in Liverpool Street and another in Launceston. A few years later shortage of space necessitated the lease of a warehouse in Elizabeth Street, in addition to their other premises.[5]

By this time the manufacture of boots and shoes in factories was well established. A few months before Miles imported his new machinery, F.J. Pike had moved his factory to re-modelled premises at 134 Liverpool Street. a few doors from his earlier address. The building had previously been a butcher's shop but after the remodelling it had a new facade with plate glass windows which gave it a "light, ornamental appearance." The showrooms were on the ground and first floors, with the boot upper department on the second floor. At the rear of the premises a

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[1]HTC 24 December 1844
[2]BTA 9 September 1847
[3]Mercury 28 May 1873
[4]TM 14 August 1880 Supplement
[5]CT 1900 p. 330

new workshop was built by the contractor C.C. Giles. The ground floor of the workshop was for the machinery and machinists, and there was accommodation for 100 workmen on the upper floor.[1]

John Blundstone had also begun manufacturing boots in Hobart. He had arrived in 1855 but did not go into the footwear business until 1870. His first factory was at 93 Liverpool Street. Here he made heavy work boots which found a ready market in the mining areas which were then opening up on the West Coast. In about 1886 Blundstone moved his factory to [the rear of?] 150 Collins Street but the Liverpool Street premises were retained for the retail side of the business. The business continued to be a success and within a few years Blundstone extended into neighbouring premises in Collins Street. The firms' exhibit at the Tasmanian International Exhibition of 1894-5 suggests that the factory was then producing a range of footwear - a photograph of the main display case shows dress boots and ladies' footwear as well as work boots.[2]

In 1909 Blundstone's moved to a new factory in Campbell Street. The premises were owned by Henry Cane, who had bought the site the previous year and demolished the existing buildings on the block. The new building was apparently designed by the architect. D.G. Salier and built by Alfred Gregory.[3] It occupied only half the area it finally covered after extensions in about 1912. This appears to have been a period not only of growth but of optimism and confidence in the company. The *Tasmanian Mail* Christmas Number for 1912 carried a full-page advertisement for Blundstone's Boots emphasising "Quality, Beauty and Popular Price.":

> And the best of these is Quality. If you desire to have the three combined, purchase a pair of BLUNDSTONE BOOTS. They are Tasmanian made, and everyone who buys them insures their feet against discomfort for many months.
>
> Ever notice. That the more comfortable the shoe the better it will wear - the strain is properly distributed. That's one reason the BLUNDSTONE BOOT wears. It fits well, wears where it's meant to wear, and so wears well.[4]

The accompanying photographs show many of the features familiar to employees of the 1940s and 1950s. The belt-driven machines and the wooden racks used to transport the orders from one part of the factory to another are well in evidence. The belt-drives suggest the beginnings of mechanisation which enabled Blundstone's to fill important defence contracts during the First World War.

Henry Cane was already involved in the footwear industry and sat on the first Boot Industry Wages Board in 1911. By 1918 Cane had taken over the old family firm but, perhaps because of the standing of its product, retained the name Blundstone Proprietary Limited. The Campbell Street remained in operation until 1982 when the firm moved to the present premises in Gormanston Road.

At the turn of the century the footwear industry was well-established:

> The business of boot and shoe manufacturing has progressed by leaps and bounds in all the colonies and in this respect Tasmania has kept well abreast of her rivals, considering the limited population of the island. At one time it

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[1]TM 24 January 1880

[2]Photograph in the possession of Blundstone's

[3]Information on proposed plan of Blundstone's new factory 1908 - in the possession of Blundstone's

[4]TM 5 December 1912

> was considered the correct thing to scoff at everything made in the colonies, and especially at the boots and shoes, the result being that the pioneers of their manufacture had a difficult time to pass through. They persevered, however, and the undoubted excellence and cheapness of the home-made goods, especially of the heavier sorts, has almost driven the imported out of the market.[1]

Several of the factories were described in the 1900 *Cyclopaedia of Tasmania*. Miles & Co had by this time moved to a new factory in Fraser Street New Town. The building was designed by the Hobart firm of Huckson and Hutchison and completed by June 1895:

> The factory is of attractive design, and built and fitted throughout so as to compare with the best establishments of the kind in the colonies. All the latest descriptions of labour-saving machinery are to be found in the various departments, and the whole of the interior arrangements are as nearly perfect as possible. Prominence has been given to the lighting of the building, the position and number of the windows being carefully thought out in the drawing of the plans, plenty of light being a saving of expense, especially during the winter months. ... The business has reached its present dimensions owing to the knowledge and energy of the principle Mr. A.R. Miles, and it is safe to say that under his skilful direction it will continue to progress as it has done in the past.[2]

Miles & Co had begun supplying the West Coast in the 1880s, opening shops at Zeehan in 1891 and at Queenstown in 1898. Despite the continual expansion and the optimistic forecasts for its future the Company remained less than ten years at its New Town factory. It is not listed as a factory in the 1905 Post Office Directory but in 1910 the premises appear as a leather factory operated by George Sly, apparently for Burrows and Meek whose warehouse was in Elizabeth Street. Burrows and Meek made boot and shoe uppers, ladies' belts, infants shoes, bags, leggings etc.[3]

Arthur Frederick Ray's Excelsior Boot Factory was at 69 Liverpool Street, up the laneway next to the Brunswick Hotel. Ray had begun the business in the mid 1880s at 211 Liverpool Street next to the Working Men's Club. After Ray left these premises in the late 1890s, it was briefly a disinfectant factory. The new premises were in a more central position:

> the business has increased so rapidly that, although the original edifice has been added to and there is a large extent of accommodation, it is not now adequate for the demands made upon it. The first department the visitor enters is that devoted to "clicking," where eight sewing machines are kept constantly going, and the scene presented, with the girls and men as busy as bees as their different tasks is decidedly cheering and attractive. One of the machines a Yankee "National" is the latest of its kind, with all improvements, and it turns out work far better and quicker than even the old "Union" could do; Twenty hands are employed in this department including twelve girls. The packing room is next visited. ... From the packing department the visitor next passes into the "stuff-cutting" department, where nearly forty hands are employed in the various branches, and the machines used are among the best of their kind. The work done is mostly peg, but a quantity of sewn boots are also turned out: The factory is lighted with gas throughout. Mr. Ray

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[1]CT 1900 p.331

[2]CT 1900 p. 330

[3]Advertisement in 1910 Post OfficeDirectory p. 87

> exercises a constant and watchful supervision over the business generally, and is assisted by his two brothers, Mr Albert and Mr F. Ray, who have charge of the stuff-cutting and putting-up departments respectively.[1]

The factory used mostly locally-produced leather but imported some from England and America. In common with some of the other boot manufacturers, Ray did considerable business on the West Coast particularly with his waterproof boot. He also supplied Hobart shops, but did not have his own retail premises.

J.N. Pool was the proprietor of "The Boot Palace," a retail store at 107 Liverpool Street and a boot factory at 196 Liverpool Street. Pool employed forty hands in the factory but did all the retailing himself.[2] Both Pool and Pike [see above] were still in business in 1915. Next to Blundstone's shop in Liverpool Street was the shop and factory of G. Leitch & Co. The business had been established by R.C. Hutchinson in 1886, but following his death Mrs Leitch had bought it as a going concern for her sons in 1893:

> The trade from the start has been cosmopolitan, the object of the firm being to keep goods that satisfy the most humble on the one hand and those fastidiously inclined on the other. Cheapness. combined with superiority and a desire to sell at small profits, are the cardinal points of the firm, and account for the success which has attended their labours.[3]

Unlike the principals of most of the other bootmaking firms, the Leitch brothers had no training in the industry. The elder brother has a general business training but the younger brother joined the firm after engineering studies. By 1910 G. Leitch & Co.'s premises had been taken over by James McKean. McKean was one of the biggest footwear retailers in the city in 1900, carrying a wide stock of English and American brands as well as footwear of colonial manufacture. He also had "a large business ... in ordered work and repairing" which was done on the premises at 65 Elizabeth Street. By 1915 McKean had a number of retail premises around the main shopping centre but the firm continued to be associated with the Elizabeth Street premises until relatively recently.

In 1908 a new factory was built at 112 Harrington Street for boot manufacturers J. Cuthbertson & Sons.[4] Cuthbertson's continued in business until 1934 when they took over the ailing Blundstone & Son and moved all their plant to the latter's Campbell Street factory.

A number of boot factories remain including buildings constructed rather than adpated for the purpose. Among these are Blundstone's former factory in Campbell Street and Miles factory in Fraser Street, New Town. The former is currently being developed as offices for Tasmania Police and the latter has been re-vamped as a block of flats named "Kensington."

Tanning

Within a couple of years of white settlement, there were experiments with tanning using local materials:

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[1]CT 1900 p 331-2
[2]CT 1900 p. 325
[3]CT 1900 p. 325
[4]TM 15 August 1908

> Finding that the bark of the Trees, called the Blue Gum and Black Wattle of this Country, can be used successfully in tanning, I have employed some Prisoners conversant in that Business; and we get some very good Upper Leathers from the skins of the Kangaroos, but we are not so well furnished with material for Sole Leather, the skins of such as the Bengal Cattle as have died being found not to have sufficient substance for that purpose.[1]

However tanning seems not to have proceeded much beyond this for another sixteen years. The use of mimosa bark for tanning was presented to the Bigge inquiry almost as an innovation. During the 1820s and 1830s several tanneries were established in Hobart. These were all situated close to the Hobart, Humphrey's or New Town Rivulets - a great quantity of water was required in the processing. The streams also provided a useful receptacle for flushing away the waste.

John Blackwell's Tannery at New Town is generally credited with being the first in Hobart. The tannery occupied a site beside the New Town Rivulet close to the present Gerrard Street bridge.

John Blackwell first arrived in Hobart from England on the *Regalia* in December 1819 on his way to Port Jackson.[2] He later returned to Van Diemen's Land and by 1821 had received a land grant at New Town. In April 1822, John Blackwell, proprietor of the leather, parchment and glue manufactory at New Town, advertised his intention to attend the market every Saturday to sell "Best tann'd Crop Hides: Dressing ditto; tann'd Sheep and Kangaroo Skins; White Leather fit for Aprons; Parchment; Glue, &c, &c" He stated that his goods would be found to be equal to any quality imported from England. He also advertised that he would buy or exchange raw hides, skins and wool.[3]

Blackwell operated the tannery himself for only a few years. In September 1832 J. Slee advertised that he had taken over Blackwell's Tanyard and premises and commenced business as a tanner, fellmonger and glue maker:

> J.S. having served his Apprenticeship with one of the largest tanners in London, feels convinced from his knowledge of the trade in all its branches, that he will be able to produce leather far superior to any hitherto offered for sale in the colony...[4]

In 1842 when allegations were made by brewer Richard Jacomb that run-off from the tannery was spoiling his beer, the tan-yard was in the hands of a Mr. Regan. The problem was caused by the erection of a dam for a mill further down stream. The dam had the effect of raising the water "nearly up to Regan's bridge' and backing it up against "Regan's wall." It was suggested that the polluting material had either percolated through this wall or from the lime-vat "which discharges itself below the level of the dam, with which it has direct communication." Jacomb lost his court case against the builder of the dam, the judgement apparently depending more on faults in the malting technique than the effects of the pollution.[5]

Another early tanner may have been Mr. Raine of Macquarie Point. He arrived in the colony in December 1819 on the same ship as John Blackwell and called for wool, hides, horns, tallow etc, hoping to establish a trade in these commodities

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[1]HRA III i 18 December 1805 p. 344
[2]HTG 4 and 25 December 1819
[3]HTG 20 April 1822
[4]HTC 21 September 1832
[5]HTC 25 March 1842

with Port Jackson and England.[1] In January 1821 he advertised well tanned leather "of this country" to shoemakers in quantities of not less than £20- he offered, among other things, calf skins of 22-40 lbs at 22-24 pence and sheep skins at 24-30s a dozen, considerably more than the market price of John Blackwell's skins offered by Curr & Mason in Bathurst Street. Two months later Raine was trying to sell his effects prior to leaving the colony, including "the complete utensils of Tanning; a wool press."[2]

Government Statistics for 1831 list fourteen tanneries in Hobart. of which two were at New Town. Although these statistics formed official returns to the Colonial Office, they are frequently not reliable. Those identified from the directories of that year include:

* Hodgson's tannery on the Hobart Rivulet in South Hobart
* Wintle's tannery, possibly in Elizabeth Street
* William Sherwin's tannery on the Rivulet in upper Liverpool Street
* William Presnell junior's tannery in Collins Street on the Rivulet next to the Waterloo Mill
* Hollister's tannery in Murray Street
* Raines' tannery in Collins Street
* McKenna's tannery in Bathurst Street
* Palmer's tannery in Warwick Street

It seems likely that some of these tanners operated on a very limited scale.

In January 1833, William Presnell took over the tannery formerly occupied by a Mr Dexter and next to the Green Gate public house in Collins Street.[3] This must have been approximately where Fitzgerald's department store is now. There is no tannery as this site listed in 1831

In July 1833 William Sherwin announced that he had taken the lease of the Cascade Tannery lately belonging to Mr. Hodgson. He advertised "strong sole leather, kip, calf skins, kangaroo and sheep skins and size for plasterers and painters."[4] Hodgson's Tannery was established "on a very extensive scale" in 1827 but there is considerable confusion as to its location. A contemporary description refers to its being on "Birch's Farm, above the new Female Factory." Ross, in his 1831 Almanack lists the buildings beyond the end of Macquarie Street in order of "Mr Hackett's Distillery and ship yard, Mr Rayner's upper flour mill, Dynnyrne, the Female House of Correction, the Saw Mills and Tannery" but this is obviously not correct. Rayner suggests that either of the later tanneries in South Hobart could have been the site of Hodgson's Tannery.[5]

Two tanneries on the Rivulet in South Hobart continued in business well into this century. As outlined above, their early history is somewhat confused and it is not until 1858 that there is definite information identifying the tannery at the foot of Anglesea Street. In 1850, only one tannery in South Hobart is listed in Government returns - Reeve's Tannery in Cascade Road. From 1858 into the 1870s, the Anglesea Street tannery was operated by Henry Elliott but by the 1890s it was in the hands of the Frederick Holmes who had the tannery in Wapping for many years. The tannery was still in business in 1915 but then being run by Edward Hore.

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[1]HTG 4 and 25 December 1819
[2]HTG 6 January and 3 March 1821
[3]HTC 5 July 1833
[4]HTC 25 January 1833
[5]Rayner pp24-6

The Elphinstone Tannery in Weld Street was operating by 1865 and perhaps considerably earlier. The assessment rolls for that year record Thomas Kirby as the owner/occupier. From 1886 to about 1905 it was run by James Johnson but from then to at least 1915 the tannery was operated by David Johnston. Later it was acquired by the bootmakers J. Cuthbertson & Son whose factory was in Harrington Street. The family still owns the tannery which supplies Blundstone's factory in Gormanston Road with heavy leather for their work boots.

During the 1860s and 1870s but perhaps earlier, there was also a tannery in Wynyard Street. At that time the street was known as Lord Street. In 1865 the tannery is listed in assessment rolls as owned by John Regan and occupied by Charles Miller - Regan had earlier operated tanneries at New Town and in Park Street. During the 1870s, the Wynyard Street tannery was owned and occupied by Nicholas Ray, whose son Arthur Frederick Ray later established the Excelsior Boot Factory in Liverpool Street. It seems likely that at some stage, perhaps in the 1880s the Weld and Wynyard tanneries were combined - the present Cuthbertson Tannery extends from Weld Street to Wynyard Street.

In 1833 Henry Baynton opened the Kensington Tanneries at O'Brien's Bridge. Comment by the *Colonial Times* on Baynton's enterprise suggests that the state of the industry was not healthy. After pointing out the absurdity of sending hides and skins to England to be processed when the work could be done locally, the *Times* remarked:

> We should all follow the example of Mr. Baynton whose very complete tan yards which we visited had everything from liming pits to machines for the cutting out of top boots.[1]

In 1850 the business was bought by Isaac Wright for £4,100. Wright still owned the Kensington Tannery when it was visited by a Mercury reporter in 1872.

> The premises, which abut on the main road, consist of a range of large wooden and brick building ... There are half-a-dozen "soaks" or fresh water pits into which the skins are first placed. When the skins are removed from these they are "broken over" or softened by manipulation with the hands, and after this they go to the lime pits of which there are twelve. Here they remain for about three weeks, when they go to the hands of a beamsman who places them over a rounded block of wood and takes off the hair and what particles of flesh may have been left adhering to the hide, with a peculiarly shaped two-handled knife. When the hides leave the hands of the beamsman, they are ready for the tanning process, and are placed in the first of the tanpits of which there are about one hundred, some being under a large shed and others in the open air. The liquors in these pits are of different strengths, and the hides go from one to the other until they have lain for some time in the strongest of all the liquors contained in the pits called layers. ... The hides when they are taken from the tan pits are partly dried on bars placed there for the purpose, and then the sole leather is taken to a loft overhead called the rolling room. Here there is a smooth wooden roller, upon which the large hides are placed, and then a brass roller , which weighs between 1,400 and 1,500 lbs is pulled over them. After this the leather is dried, and it is ready for sale, ... In the currier's shop, which is close at hand, all the harness leather, kip, calf, kangaroo, and basils or sheepskins, are prepared for the market by being dressed in various ways.[2]

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[1]quoted in Rowntree p. 25

[2]Mercury 11 November 1872

The loft where the skins were dried would contain up to 1,500 bullock hides and 100 dozen kangaroo skins at one time. A separate building housed the horse-powered bark mill. There was little use made of waste products, most of it being sold for manure. Sheep's trotters were boiled to make "neats foot" oil for use in the currier's shop and the cattle feet and horns were sent to England.

Sheepskins were treated somewhat differently, being soaked in water for 14-16 hours before being painted with lime and left to "sweat" in a covered stack. The skins were then washed and "pulled" to remove the wool - this is the process called fellmongering - and then sent to the lime pits to be tanned and made into leather. The wool was packed and pressed at Wright's premises on New Wharf. Wright exported the leather to all parts of Australasia, the chief market for kangaroo skins being New Zealand.

During the 1890s, the Kensington Tannery was taken over by J. Cook and Sons. Joseph Cook established the business in about 1860, occupying the fellmongery established by the Facy family in the 1830s near the corner of Collins and Park Streets. They later moved to another established tannery, previously operated by Henry Doyle, at the end of Argyle Street. By the 1880s Cook & Sons were in Liverpool Street. This steam tannery was up the laneway beside the Carlton Club Hotel and backed on to the Hobart Rivulet - it employed seven hands in the production of sole leather. There was a 10 h.p. portable engine to run the bark mill etc. The offices remained at the Liverpool Street address until the buildings were demolished in 1908 to make way for the new Websters building.

Forty to fifty hands were employed at the Kensington Tannery and the plant was said to be "of the most modern style." There was one 25 h.p. boiler and two 10 h.p. engines driving a bark mill, leather roller, band knife, American Union splitting machine, drums, stuffing drums, agitators, wool press, drying fan, pumps etc. Cook & Sons also had a fellmongery at Invermay. In 1894, when the firm exhibited at the Tasmanian International Exhibition, their turnover was £150,000 a year. Their exhibit featured a rug containing 2-3,000 possum tails and included black harness leather, bridle, saddle, rein, kangaroo, kip, calf, tweed and belting leathers as well as range of fancy leathers such as "ooze" calf and stained basils.[1]

Around the turn of the century, the firm tanned 10-12,000 hides a year, tanned and finished 20,000 kangaroo skins, and fellmongered and tanned 50-60,000 sheepskins. Most of the tanned goods were sold in Tasmania but some was exported - to London, Sydney, and New Zealand.[2]

Not far away from the Kensington Tannery was the Houghton Tannery owned by William Murray and established in the 1850s. It was somewhat smaller than the Kensington Tannery, having only sixty tan pits. The Houghton Tannery produced a range of leathers - sole leather from bullock hides, harness leather from bullock and horse hides, kip leather from calf skins, leather for lining boots and other purposes from sheepskins, and kangaroo leather. The pits were nearly all situated in a room measuring 100 feet by 50 feet and were filled with water from the race supplying the nearby flour mill - "by a very good arrangement of shoots the water can be easily conducted to all the different pits." The pits were emptied by means of pumps, probably back into Humphrey's Rivulet:

> On the floor above the pits there is the currier's shop, where all the leather except the sole leather is curried, some being blackened, and some left the natural colour it is when it comes from the tan pits. Here the leather is finished and made fit for the market. Near the currier's shop there is a store

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[1]Mercury 14 December 1894 Supplement

[2]CT 1900 pp. 350-1

> room, in which there are samples of most of the descriptions of leather made on the premises. We were also shown three or four tanned dog skins, and some mats made of sheepskins tanned without the wool having been taken off. In the other part of this floor, which is altogether about 100 feet by 504, the wool taken from the sheepskins is dried, some of it on the wire tables running the whole length of the room ... There are two other drying rooms ... and when necessary, some of the wool is dried upon the roof of the outbuildings. ... The bark used in this tannery is all black wattle bark, and it is ground in a powerful mill situated in the flour mill.[1]

In 1869, Samuel H. Burrows established a tannery at 56 Risdon Road, after gaining experience in both local and Victorian tanneries. He started off in a small way but by 1900 there were 40 hands employed at the tannery and he had just installed new drying sheds, one of them 200 feet long. The output included "kip, crop, chrome, tanned goods, glacie kangaroo, russia satin, kangaroo, Wallaby, glove hide, box calf, ooze, tan hide, and all the fancy leathers in use in the boot trade."[2] Burrows exhibited at the 1894-5 Tasmanian International Exhibition in Hobart:

> The exhibition of rugs and mats from Tasmanian opossum and other furs is large and attractive. Some of the rugs are very handsome and valuable. The range of leathers is wide, comprising all the tannings in general use. A specialty is made of Dundee leather mill belting. Tasmanian glue is a manufacture that Mr. Burrows appears to have successfully established. A prominent feature in this bay is a collection of polished bones and horns, the work of P. O'Brien, an employee of the tannery.[3]

Burrows was awarded gold medals for his exhibit of sole leathers and for the best exhibit of fancy and other leathers. At the Sydney Exhibition three years later he won a bronze medal for an exhibit of furs and rugs.

Ironically, at the same time that Burrows was winning praise for his exhibit at the Hobart Exhibition, he was also in the public eye in "The New Town Tannery Case." His neighbour, James Whyte of New Town Park, applied for a restraint order to prevent Burrows from operating a tannery, on the grounds that it created a nuisance. The court case involved the cream of the legal profession, the Attorney-General, Andrew Inglis Clark appearing for the plaintiff and the Solicitor General, Alfred Dobson, for the defendant. Despite an on-site inspection by the court, the bill failed.[4]

Burrows also engaged extensively in business as a leather and bark merchant - he was one of the largest buyers and exporters of bark in the colony. The leather and grindery warehouse was at 93 Elizabeth Street. When he died his son Arthur P. Burrows closed the tannery and concentrated on the retail trade side of the business, going into partnership in 1902 as A.P. Burrows & Meek. A few years later the firm took over the former Miles boot factory in Fraser Street, New Town and established a "leather factory." Here they made boot and shoe uppers, ladies' belts, infants' shoes, bags, leggings etc., presumably from imported leathers [5] Burrows & Meek continued in business at the Elizabeth Street address until recent times.

From the beginning of the century the number of tanneries and fellmongers declined. In 1915 one tannery and two fellmongers are listed as Glenorchy, with

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[1]Mercury 26 October 1872
[2]CT 1900 348-9
[3]Mercury Supplement 1 December 1894
[4]Mercury Supplement 8 December 1894
[5]Post Office Directory 1910 p. 67

one of each in Hobart. Only one of the pre-1915 tanneries survives, Cuthbertsons still operating the tannery between Weld and Wynyard Streets. There are also said to be remnants of Burrows' tannery at 56 Risdon Road.

Metal Industries

Metal workers

The earliest metal workers were, of necessity, employed about the camp at Sullivan's Cove erecting buildings. In July 1804, six men were employed as either blacksmiths or tinmen and there was an armourer and a file cutter also working on buildings.[1] For some items, however, the settlement remained dependent on imported items. The Bigge inquiry was told in February 1819 that while iron pots, frying pans etc. for public works were still acquired from Sydney, tools were now principally made at the works. Tools and ironwork made for Government use were all marked with the broad arrow although furniture made at the Kings Yard was not.[2] The nailers employed at the Yard produced 30 x 40d nails, 400 batten nails, 500 shingle nails, or 150 6-inch spikes each day.[3]

Outside the Government workshops, metal working seems to have been undertaken on a relatively small scale before the 1820s, the work being carried out in blacksmith's shops. One of the earliest references to a blacksmith's shop refers to that formerly belonging to Edward Guest who died in 1817. The premises, near Wellington bridge comprised two apartments and the blacksmith's shop. These premises were later taken over by John Presnell who undertook to execute all forms of blacksmith's work and farriery "with the greatest dispatch and at moderate prices."[4] In April 1819 when Anthony Lowe died his "well-known" blacksmith's shop was offered for sale. There were two forges as well as a quantity of the "most excellent and valuable Blacksmith's tools of every description." Lowe's property was L-shaped and extended into Bathurst Street.[5] Such workshops may have been operated by a single man but in January 1821 a blacksmith's shop in Bathurst Street collapsed and injured the three men who were working there.[6]

Several wire-workers made attempts to establish businesses in Hobart but none of the early enterprises seem to have lasted very long. Perhaps the earliest was Daniel Mendes who advertised his services as a bird cage and venetian blind maker from his premises on Pottery Hill. He also made black lead pencils but his versatility proved to be no recommendation and there are no further references either to him or his business.[7] A few years later, Jones and Coulton of Liverpool Street ("opposite Mr Fisk's Mill") advertised a long list of articles of their own manufacture - screens and sieves of various kinds, wire blinds, meat safes, fire guards, fruit baskets, wire dish covers, cages and traps etc.[8] The partnership was dissolved by mutual consent the following September and G. Coulton continued in business as a wire-weaver and machine maker. He had made a loom for weaving wire while in partnership with Jones, "the first loom put up in Van Diemen's Land," and offered woven wire at 2s a foot or 2s 6d if worked into safes. This business does not appear in later directories - Coulton was by this time at least middle aged, having had 40 years experience in Birmingham and London.[9]

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[1]HRA III 1 p. 258
[2]HRA III iii p. 240-1
[3]HRA III iii p. 329
[4]HTG 12 April 1817 and 23 February 1822
[5]HTG 3 April 1819
[6]HTG 6 January 1821
[7]HTG 2 October 1816
[8]HTG 1 June 1822
[9]HTG 23 November 1822

The Van Diemen's Land economy was largely a rural one and the manufacture of agricultural implements became an important area of the metal working industry. A great deal of work in this area would have been carried out by blacksmiths but some specialists in the area established themselves in the early 1820s.

In March 1823 two such men announced the commencement of their business. George Stokell began making a range of agricultural implements including winnowing machines at £25 each, turnip drills "with a roller to go before" at £12 and threshing machines of 2-4 h.p. He also made washing machines and mangles at his temporary premises in Humphrey Street. He later moved to Macquarie Street next to the Hope & Anchor Inn and then to the corner of Market Place. It is not clear how long he continued in the manufacturing business - he is listed variously as a timber merchant, merchant or ironmonger in the directories.[1]

The same month that Stokell opened for business. Mr. Hume of Bathurst Street announced that he "had got up for sale a winnowing machine after the construction so highly approved of by the East Lothian Farming Society." He also made carts of Scottish design, suitable for either horse or bullocks.[2] It was quite usual for the machines and carts to be made by the same person - in 1835 of the ten agricultural implement makers of Hobart listed in official returns, nine were described as cart and plough manufacturers. This was also the highest number of such businesses ever listed in Government statistical reports. Hume's business was taken over by A. Fergusson in September 1824 by which time it was in Elizabeth Street. Fergusson undertook "thrashing, winnowing and sowing machines made on the most improved plans - waggons, carts, ploughs, grubbers, harrows, and ... all sorts of smith's work."[3] He is later listed in directories as a wheelwright and blacksmith.

Tinsmiths and coppersmiths were also among the early tradesmen who set up shop in Hobart Town. James Sky the tinman of Campbell Street appears in Ross's directory of 1831 and throughout the 1830s - in 1854 an S. Sky of the same trade is listed in Collins Street. The range of goods manufactured by these tradesmen is illustrated by the advertisement of John McNeely who arrived from England in 1833 with a stock of materials to enable him to manufacture:

> spirit, beer, water, oil and air pumps of every description. coppers and boilers, coal boxes and coal scuttles, fire buckets, house buckets, round, oval and oblong tea kettles with hexagon pipes and stands for heaters on charcoal, stew pans, sauce pans, frying pans, coffee and chocolate pots, patent measures, copper pipe &c &c.

McNeely also manufactured an improved Dutch oven and his own patent portable kitchen.[4]

David & Semple began in the same trade in a small way from their premises in Bathurst Street in 1847. The business moved to Elizabeth Street in 1862 and about ten years later Charles Davis bought out his partner. By 1900 the business had "reached an enormous size" and carried stock worth £60,000. On the Elizabeth Street frontage were the retail premises and display area. Then there were the open bulk stores and at the rear was a bulk warehouse, an iron yard for the storage of "black ironmongery," a paint and oil store, a plumbing store where

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[1]HTG 23 March 1823
[2]HTG 29 March 1823
[3]HTG 17 September 1824
[4]HTC 18 January 1833

tanks etc. were manufactured and a tinsmith's shop. In another department baths and lamps were manufactured and further to the rear was yet another warehouse where bulk hardware was stored including registered grates, patent kitcheners, pumps, baths, mantles and bedsteads. In 1900 Charles Davis was the oldest ironmongery in the city.[1]

At the top of Argyle Street in the 1860s and 1870s was a factory described in the city's assessment rolls as a blacksmith's shop occupied by Benjamin Holroyd. But for a period, at least, it was a large manufacturing concern, Holroyd's Jam Tin Manufactory. When the *Tasmanian Mail*'s reporter visited the premises in 1873, Holroyd had been in business for seven years, his operations increasing as the jam industry grew. That year, he employed 82 men and boys who turned out 19,000 cases during the season, each case containing 60 tins, making a grand total of 1,140,000 tins. Tin used in the factory was mostly imported from England:

> The first operation is to cut the square sheets of tin into strips of the size required for making the bodies, tops and bottoms of the jam tins. This is done by placing the sheets on a table provided with shears, and the table is so constructed that the width of the strips of tin can be easily regulated. In another part of the premises the strips are cut into the requisite lengths with a guillotine knife. Those pieces that are meant for bodies are then bent into a cylindrical form by being passed through a little machine provided with three rollers, and the boy who works this machine by hand, turns out the bodies with great swiftness. When this has been done, the bodies are ready for the solderers hands. Different rollers are used for making the bodies of different sized tins. There are seven screw presses of different sizes, for stamping the circular pieces used for tops and bottoms, out of the strips of tin, and the stamps which are of great power, will cut through a great many sheets of tin at one stroke. Then there are other stamping machines which put an edge to the tops and bottoms. This process finishes the bottoms, which are then ready to be affixed to the bodies, but the tops are yet to be completed. Another machine stamps out a small piece, varying in size with the tin intended to be made, from the top, which is then stamped again in order that a groove or depression may be made round the hole that has been stamped out, so that when the completed tin is full of jam the small piece of tin forming the cover may be the more easily soldered down. ... When the bodies go into the soldering room they are fitted on an iron block the exact size of the tin to be made, and are kept there by a brass cap which holds the edges firmly together until they are soldered. There are four of these blocks always in use. The bottoms are then fitted on the bodies, and then the tins are passed through a set of rollers which fix the bottoms tightly on the bodies before they are soldered. There are four of these rolling machines. The tops with the circular holes in the centre are then soldered on, and if the tin is a perfect one it is ready to go out after it has been washed and polished, ... Two boys are kept constantly at work repairing the rejected tins.

The factory produced jam tins of one pound and two pounds capacity and three-pound tins for preserved fruit, as well as a range of tins for preserved fish. The wooden cases were also made on the premises. Holroyd supplied only two jam-makers in Hobart - Johnson Brothers of New Wharf and W. Wilson of Liverpool Street - as well as Mr Hawkins of Shipwright's Point and Mr. Cane of Franklin.[2] Tins and cases used by Peak's Jam Factory were made by Millhouse and West while and those used by C.E. Knight were manufactured by Richard Wilcox at his workshop on the Old Wharf. At Peacock's Jam Factory, already one of the largest in the city, the tins were made on the premises.

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[1]CT 1900 p. 318

[2]Mercury 15 January 1873

In about 1870, George Edwards began manufacturing sewing machines at his workshop in Goulburn Street. At the time it was thought to be the only such business in the Australian colonies. Sewing machines had been imported to Tasmania from England and America for many years, and at first there was some resistance to the locally made product. The machines were made "upon the principle of the Thomas machine" and particularly suitable for bootmakers and tailors. By 1873 Edwards' machines were in use by several of Hobart's bootmakers and by Mr. Tibballs of New Norfolk. The machines were a joint effort of several Hobart tradesmen: Mr. Burgess cast the brass mouldings; Mr. Swain of the Derwent Foundry made the castings for the treadles etc.; Mr Gellie made the tables of colonial cedar and did the pattern making. One of Edwards' machines is in the collection of the Tasmanian Museum and Art Gallery. The machine was priced competitively with imported machines but his output was probably quite small. The workshop was said to be so full of machinery that there was scarcely room to swing a cat - he had a powerful machine for planing and shaping metal, a large lathe, a drilling machine and all the other appliances of his trade. Among Edwards' other work was the engine for the steam launch *Resolution.*[1]

A.G. Webster & Sons were principally retailers of imported agricultural machinery but they had extensive blacksmith's shops on their premises in Liverpool and Argyle Streets for repairs and fitting out. Occasionally they manufactured items of their own devising. In August 1910, for example, their "Conqueror." motor spraying machine was successfully demonstrated to a group of orchardists.[2]

Foundries

Although Hartwell[3] says that the colony's first real foundry was not established until 1828-30 when Harris and Tilley went into partnership, there were a couple of earlier enterprises described as foundries. In March 1822 Edward Whitehouse, brass and iron founder, in announcing his removal to new premises at the top of Argyle Street, thanked the public for their patronage since his arrival from Port Jackson. He stated his intention to

> carry on a Cast Iron Manufactory in addition to Brass-work Business in all its various branches. Cast iron cart-wheel boxes made to any size; and any kind of brass, composition metal, or cast iron work, from 1 ounce to 200 lbs, executed with dispatch ... best price given for old brass and cast iron.[4]

At the end of the same year Whitehouse moved to his own premises in Murray Street and advertised his ability to make "brass coach and gig harness, patent brass cocks and candlesticks, brass weights from one ounce upwards, mill work of every description, either in iron, brass, copper or composition metal ... bells cast from 1 to 200 lbs." Whitehouse remained in business for some 10 years

Tilley and Harris were still in business in 1841 when they employed eight men - a smith, four engineers, a plumber, an iron moulder and a brass moulder. Business had stagnated since the growth of the 1830s when they were the only such firm in business. In their first year they had had £545 on the books, £1500 in the second,

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[1]Mercury 28 May 1873
[2]TM 11 August 1910
[3]Hartwell p. 152
[4]HTG 30 March 1822

£2400 in the third, and £3000 in the fourth. With the establishment of another iron foundry, Tilley and Harris began to specialise in brass work.[1]

By the 1840s the Albion Foundry of Easby & Robertson was established in Market Place. James Robertson was originally in business with his brother - perhaps the William Robertson who appears in directories of the 1830s as a blacksmith in Brisbane Street. James Robertson was an engineer and ship smith by trade and later claimed to have built the first engine ever made in Tasmania.[2] This may refer to the steamship engine mentioned by David Burn when referring to Hobart's two foundries:

> The one (Harris's) in Macquarie Street, the other at the back of Campbell Street. In this last the boilers and engines of the steamer, Governor Arthur were manufactured, and in a manner highly creditable to the artificer. Castings are about double the cost of English prices.[3]

The foundry continued to operate until the early 1870s although Robertson retired in 1856.

Alexander Russell Clark settled in Tasmania in 1833 and undertook a number of major contracts including the mill at Port Arthur, works at the Coal Mines and the water works at Launceston before establishing the Derwent Iron Works in Salamanca Place in 1860. The premises comprised a foundry, engineering shop and boiler shop. The firm made machinery of various kinds for a large number of Hobart industries; the engine and multi-tubular boiler used by Holroyd's Jam Tin Manufactory were both made by Clark, as was the hop press at James's brewery, the malt crusher at the Artillery Brewery, and the patent vertical boiler at the Commercial Flour Mill.[4] As well as building boilers &c, Clark also fitted up imported machinery. In 1873, for example, the trial of a steam threshing machine fitted up by Clark for a Clarence Plains farmer, attracted a number of spectators to the foundry.[5]

John Swain's Derwent Foundry was established in the early 1850's at 8 Barrack Street. His business was apparently substantial because in 1858 he acquired a property at the corner of Argyle and Davey Streets where he built an "engine factory" as an annexe to his original establishment. He worked in both brass and iron and dealt with "shipwork in general." He also made stoves and palisading to order.[6] Among his work were the iron castings for the new Government House in 1857 and the treadles and other cast iron parts for Edwards's sewing machines [see above]. After his death in about 1874, the foundry passed through the hands of a number of operators in succession - Robert Hunter, Davidson & Judd, Davies and Brown, and Richard Brown. In 1915 the site was listed as Pace and Vout's smithy.

During the 1870s and 1880s there were two attempts to capitalise on the products of the mines of northern Tasmania by establishing tin smelters in Hobart. In the late 1870s the Hobart Town Smelting Company began operations in Gladstone Street and was optimistic enough to send an exhibit of tin to the Sydney International Exhibition in 1879.[7] However, the enterprise failed soon afterwards due to a lack of

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[1]Hartwell p. 152 and Report of the Committee upon Immigration p. 34
[2]CT 1900 p. 382
[3]Burn p. 48
[4]Mercury 15 January, 1873; 10 October 1973; 6 June 1873; 9 December 1872
[5]Mmercury 17 January 1873
[6]Hobart Town Direcetory 1859.
[7]TM 19 April 1879

support from the mining companies who found it cheaper to send their tin to Victoria than to Hobart. In July 1883 the smelting works were bought out by another company. The plant consisted of two furnaces of similar capacity, one of which had been reconstructed and the other strengthened. Between them they could process about 40 tons of ore each week. There was also a crushing battery that could crush 17 tons a week. The operation was thought to be so efficient that at little expense 2% ore could be made to pay. The smelting manager and assayer was a Mr. J. Webber. The smelter was praised by the *Tasmanian Mail* as a great boon to the mining industry and "it is to be hoped that the furnaces will be kept in full blast."[1] In November 1885, however, the *Mail* reported that the works had been closed for some time due to a lack of support and that the site had been taken over by Frank Bond who had pulled down the furnaces and was re-fitting the premises for a bark mill.[2] An iron smelter was established a few years later by Kennedy and Sons [see below].

By 1883 there were 29 "tolerably good" engineering establishments and foundries in the colony. The trade had benefited greatly from the development of the mining industry and the consequent demand for machinery.[3]

In 1883, Clark's foundry was taken over by Kennedy & Sons who had moved from Melbourne where the firm had an iron-founding and ship-building business. Kennedy & Sons were able to undertake new classes of work. In 1886 the foundry cast an iron staircase for the Eddystone Point lighthouse and the following year built the first and only iron vessel built in Tasmania - the dredge *Agnew*. By 1888, the engineering shop was the best equipped in Hobart. It had the latest "Tweedles" hydraulic riveting machine, capable of securing rivets up to one and a half inches, two cupolas capable of casting up to seven tons, and a full complement of lathes, planing, boring, drilling, slotting, screwing and chasing machines. Prior to this time, casting for boilers had to be imported from Melbourne or Sydney, but with the new equipment all kinds of work could be just as well be done locally. The Company also briefly went into smelting and although initially well received this had no more success than the earlier Hobart smelters. Kennedy & Sons became renowned for their mining machinery, and played a prominent role in the development of modern dredging equipment. The bucket dredge constructed for the Dorset Bucket Dredging Company was the largest in Australia, if not the largest in the world.[4]

There were other foundries near the waterfront besides Kennedy's. Burgess, who had made the brass castings for Edwards' sewing machines was at 4 Montpelier Retreat in the 1890s. Further up the road at Nos. 22-6 was another foundry operated by William Pitfield who sold out to Andrew Buyers in the early 1890s. Buyers had served his apprenticeship with a shipbuilding firm in Aberdeen before going to sea. Coming to Australia in 1888 he was briefly in the engineering business in Melbourne before coming to Hobart. In Hobart his business was concerned largely with repairing and refitting steamers although he had manufactured several large sawmill plants by 1900.[5] In Gladstone Street Francis Rowntree's engineering works and foundry was at No. 7 and by 1910 T.C. Johnson had established the Tyne Foundry at No. 2. However, by 1915 his new firm of Johnson & Wells had moved across the road into Rowntree's premises.

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[1]TM 14 July 1883
[2]TM 14 November 1885
[3]Just p. 14
[4]McShane, passim
[5]CT 1900 p. 371

Richard Foreman began his foundry in a small way in New Town Road in the late 1880s, soon after his arrival from England. However, within a few years, the success of his business compelled him to find large and more central premises. He bought a block at the corner of Harrington and Melville Streets and erected two buildings each 50 feet by 35 feet, one a blacksmith's and fitting shop, the other a foundry. His workshop was described in 1900 as a model of it kind - it included a "nice little four horse-power engine," a large lathe, two screw lathes, two drilling machines and a hydraulic punch. A steam hammer was to be added as soon as the premises were complete. Thee were also three forges, two of which were driven by blast, and two brass and iron furnaces. Among Foreman's work were the iron staircases for a number of lighthouses and ironwork for the wharves in Macquarie harbour.[1] By 1912, the nature of Foreman's work had changed:

> One of the features of the exhibit at the showground was the display of enamelware from Foreman's Foundry.... The enamelled baths are very distinctive, and one of these, although comparatively cheap, would add materially to the appearance of any home. They are made of cast iron and then enamelled in various delicate shades, giving a wide choice to those desirous of making a purchase. Some thousands of these baths have been sold, and many have been exported to other States, where there is an ever-ready market for them. the same applies to the hand-basins and sinks. The basins have every appearance of being china. and a close inspection only reveals the fact that they are constructed of much more solid and lasting material. They are extremely economical, inasmuch as they should, with ordinary care, last more than a lifetime. The flush cisterns manufactured in the same foundry are now in almost universal use, the exportations during the past year being very heavy. They are very largely used by the contractors of the Metropolitan Drainage Board, which fact alone should place the hallmark of quality on them.[2]

Government Statistics for this industry are not helpful - for example, the number of foundries in Hobart varies from three in 1905 to ten in 1910 and one in 1915. This is obviously not an accurate picture of the industry and is no doubt due to some establishments being listed as engineering firms rather than foundries. However a number of the firms listed above were still in business in 1915 including Kennedy & Sons, Richard Foreman, Andrew Buyers, Pace & Vout, and Johnson & Wells. The buildings that have remained from this class of manufacturing are those that continued to operate until comparatively recently. Both the Clark/Kennedy site and one of the Johnson & Wells sites have survived.

The Shot Tower

The Shot Tower at Taroona was the first to be built in Australia It was erected in 1870 by Joseph Moir to manufacture lead shot for use in smooth bore muzzle-loaders. Moir had learnt about the process of making lead shot while in England and Scotland in 1849-50 but he did not acquire the site at Taroona until 1855. He then set about building himself a house before starting on the Shot Tower.

The shot-making process began with lead being melted in cauldrons over wood-fires at the top of the tower. To every 100 pounds of lead, 2 pounds of arsenic and 14 pounds of antimony were added - this was done in a separate building with a tall chimney to aid the escape of the poisonous fumes. The function of the arsenic was to lower the surface tension of the lead and help it break into spheres when it was poured through the colander at the top of the tower. The antimony was to make

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[1]CT 1900 p. 336

[2]TM 24 October 1912 p. 32

the shot harder when fired at game. The larger size shot was dropped through a colander three feet above the top floor level, giving it a fall of 152 feet to the water tub at the base of the tower. On the top floor of the three-storey factory building next door lead was melted to be used in the production of small size lead on the corresponding level of the tower 30 feet above the base.

The shot was dried on steel trays and then sorted on glass tables to separate the perfectly round shot from the malformed. On the next floor down the perfect shot was graded, polished, weighed and packed into bags. Eighty tons of shot were produced each year.

Until Federation a tariff protected the Tasmanian shotmaking industry but after 1901 the Moir then operating the business found that he could not compete with the other three shotmakers in Australia. The cost of raw materials and cartage to Hobart made the operation uneconomic. Despite this, Moir's brother-in-law took over the business but it survived only a few more years and closed down in 1905.[1]

Watchmakers and jewellers

The extent of this industry is difficult to gauge, principally because of the vagueness of the terms - watchmakers and jewellers may merely be people who repair watches and sell jewellery rather than people who actually manufacture the articles.

By 1818 there was a silversmith operating in Hobart Town. John Simons, whose premises were at the upper end of Liverpool Street near the new mill, manufactured "all kinds of Silver, Jewellery, Ladies and Gentlemen's fashionable Shoe-buckles etc." He also did tin work.[2] By 1821 Simons had moved to the foot of Wellington Bridge and had been joined by E.M. Griffith, jeweller, goldsmith and silversmith, who had just arrived from England. Old gold and silver would be taken in exchange.[3] At J. & J. Solomon's in Argyle Street at the foot of the bridge it was possible to get a wedding ring made.[4] Later the same year A. Morrison, a watch and clock maker arrived and set up shop first in Liverpool Street[5] and then in Elizabeth Street.[6] He would both make and repair jewellery. In 1826 he was the only watchmaker and/or jeweller listed in the directory. By this time Simons, like so many other tradesmen of this period, had become a publican.

During the early 1830s David Barclay established his jewellery and watchmaking business in Elizabeth Street. He was succeeded by his son Thomas but in 1895 the business was taken over by Leo. H. Bibby. By this time the business was at 116 Liverpool Street in premises formerly occupied by another jeweller, William Golding, before the latter moved to the corner of Elizabeth Street. In 1900 Bibby was ranked "as the leading jeweller and silversmith of Tasmania" as well as being the oldest such establishment in the colonies.[7] Golding had been in business in Liverpool Street at least by 1883 when he gained the attention of the press by his manufacture of a silver mounted vase made of an emu egg. It was thought to be the

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[1]Richard Lord "The Shot Tower" in Taroona 1808-1986 pp 61-71
[2]HTG 15 August 1818
[3]HTG 31 March 1821
[4]HTG 10 February 1821 Supplement
[5]HTG 29 December 1821
[6]HTG 30 March 1822
[7]CT 1900 p. 353

first of its kind in the colony and was made to be presented to the retiring head mistress of the Ladies College, Miss Knott.[1]

In 1846, C. Jones, silversmith of Liverpool Street was described by the *Britannia and Trades Advocate* as a practical master of his trade and supposed he could not be excelled in the colonies. This fulsome praise was occasioned by Jones' manufacture of the Regatta trophy.[2] One of Jones' colleagues was William Cole who had the largest business as a jeweller and watchmaker in Hobart Town. During the early 1850s, he was an extensive purchaser of gold from miners returning from Victoria.[3]

Another old established firm was that of P.C. Abbott which originated as Abbot & Sons in Murray Street in 1848. By the 1890s the business had passed to the third generation.[4] P.C. Abbott exhibited at the 1894-5 Exhibition:

> Here special attention has been given to illustrate the adaptability of Tasmanian precious metals and shells for the manufacture of many of the dainty articles that go to make nineteenth century life bearable to some people. No prettier souvenirs of the Exhibition could well be obtained than the shell silver-mounted spoons made by Mr. Abbott ... the "Exhibition" watch sells at 15s and carries a guarantee. Mr. Abbott works in the glare of Vice-Regal patronage.[5]

Another feature of Abbott's work were Tasmanian views mounted in gold as bangle charms and souvenirs.

Taylor and Sharp described themselves as manufacturing jewellers, engravers and watchmakers. They had shops in Murray Street and Elizabeth Street and a workshop on the second floor of Miller's Building on the corner of Murray and Liverpool Streets. Their speciality was Tasmanian souvenirs and the firm claimed to be the "originators of the Tasmanian idea in all things applicable to jewellery and souvenirs." Their souvenir lines typically carried motifs in the shape of the island of Tasmania.[6]

In 1915 Golding was still in business at 78 Liverpool Street; Bibby's business had been taken over by Flint & Co. manufacturing jeweller, Taylor and Sharp were only at the Elizabeth Street premises, and Abbott was still at 82 Murray Street. Only Golding's premises remain, Golding & Son having recently moved back to the corner.

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[1]TM 17 March 1883
[2]BTA 10 December 1846.
[3]TM 4 September 1880
[4]CT 1900 p.353-4
[5]Mercury 8 December 1894
[6]Mercury 19 December 1903 Supplement

Transport Industries

Coach builders

In the first instance, as with every other consumer durable, carriages were imported. Carts, with fewer pretensions to fashion and comfort, were manufactured as part of the agricultural implement makers repertoire.

In December 1823 C. Hopkinson and H. Connelly, "from London" and therefore suitably up-to-date, announced that they were manufacturing gigs at their premises in Liverpool Street and also repairing and painting the vehicles.[1]

In the early 1830s Alexander Fraser established a coach factory at what was then 9 Elizabeth Street. If David Burn's comments of 1840 can be taken as a guide Fraser quickly established his reputation"

> There are also several coachmakers, one in especial, Mr. Alexander Fraser, from a house in Long Acre, whose equipages would do honour to the celebrated locale from which he emigrated. For strength, elegance and finish, Mr. Fraser's vehicles far transcend those in general exported, and are, consequently, not only in higher colonial estimation, but have made their way to India, where they have been found to wear well.[2]

During the 1840s Fraser moved to Collins Street where he stayed until 1852 when he went to Victoria. He retained ownership of the property for several years during which time it continued to be run as a coach works operated first by Fowler & Yeoman and then by James McPherson. Prior to this McPherson had been in Melville Street. In the mid 1870s McPherson moved from Collin Street to new premises in lower Macquarie Street and established the London Carriage Works. By 1886 this factory was in the hands of a Mr Humby. Humby was unable to complete a contract to supply rolling stock to the Tasmanian Main Line Railway, suggesting that he may have been in some financial difficulties. Later the same year the buildings were bought by Aiken, Lennox & Co. and converted into a woollen factory.[3]

James Burdon & Son was established in the late 1840s in Argyle Street between Macquarie and Collins Streets. In 1894 they exhibited at the International Exhibition on the Domain:

> There is a polo dog cart, a stylish looking tap, painted chocolate with carmine lines, fitted with movable polished cedar panels, and its chief feature is a sliding seat that obviates the inconvenience attaching to the old hole and pin arrangement. A single seated doctor's buggy is of very light structure, weighing only a shade over 4 cwt, the body is painted in black relieved with light brown, and the wheels and undergear a similar colour with light brown lines, and edged with lemon chrome; silver mountings and brown leather trimmings are the other noticeable features. The Parisian phaeton is a showy vehicle with rounded backs, trimmed in blue cloth, and painted dark blue, picked out with lighter blue. Each of these vehicles took first honours at the last S.T.A. and P. Show. Messrs Burdon are building a new stylish waggonette of the canoe pattern for adding to their exhibit.[4]

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[1]HTG 23 December 1823
[2]Burn p. 48
[3]TM 6 February 1886 and 1 January 1887
[4]Mercury 5 December 1894

When Burdon & Sons went out of business in the late 1890s, the premises were taken over by Vout & Chisholm. [see below].

In 1851, E.C.A. Nichols established his Excelsior Steam Carriage and Agricultural Implement Factory at the corner of Bathurst and Criterion Streets. The factory comprised a substantial stone building of three stories, which survives today, and large iron workshops at the rear. The factory was divided into a number of different departments:

> commencing at the back, and glancing into a room containing the most improved furnaces for heating wheel-tires, we come into the iron-worker's shop. Here are seven fires, all blown by Root's patent blower, which effects a considerable saving of time and trouble; and amongst the machinery and appliances deserving of special notice, are a 5 cwt steam hammer, striking a blow up to 25 tons, and an invaluable aid to the iron-worker; a patent block for turning plough shares, including those for double ploughs; a small vertical drilling machine, for light work, worked by steam; and a tire bender, which will bend a tire 6 in. broad by 1 in. in thickness to any curve desired. ... In this shop the manufacture of agricultural implements is principally carried on.

In July 1884, when the above report was written, the factory had turned out its 3,348th plough.

The factory seems to have been highly mechanised. There were screw and nut tapping machines, a patent plate cutting machine, a spoke lathe, a self-acting vertical drill, circular saws and band saws, a sandpapering machine, "a very useful little machine for tanging the spokes to fit with the felloe," and a huge grindstone, 5 feet in diameter and turned by steam. The various machines in the factory were powered by a Marshall's 8 h.p. horizontal engine. According to the *Tasmanian Mail* Nichols was "the proprietor of one of the most complete, if not the most complete, plant of its kind in the colony."

On the first floor of the main building was the body-making shop where the finer woodwork was made as well as the painters and trimmers shops. On the top floor was another paint shop and a show room:

> A number of vehicles were exhibited in the show rooms, including buggies, brakes, chaise-carts, a Parisian phaeton. One of the buggies, a very handsome one, had been made for Dr. Lovett of Swansea, who ought to be proud of his purchase. There are now in course of construction two brakes, two express waggons, three buggies, one extension-top do., two pagnels, three chaise-carts, one four-ton lorry, and three drays, beside plough, harrows, and various other articles.

A twenty-seater bus ordered by James Tyler for the Hobart-Sorell run was just about to be dispatched and there were plans on the drawing board for a four-horse brake ordered by Walter Webster of the British Hotel.[1] Nichols' foreman at this time was W.T. Cramp who later established his own coach-building business. [see below].

The Excelsior Works just survived into the 20th century at which time it was in the hands of Albert Nichols, one of E.C.A. Nichols' five sons who had been employed in the firm. The building appears to have had a later life as a broom factory.

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[1]TM 12 July 1884

In 1854, another long-time coachworks was established by John Monk at the corner of Collins and Barrack Streets. Their work was mainly in heavy vehicles - farm drays, waggons, farm implements, and business vehicles used by bakers, butchers etc. John Monk was succeeded in the business by his son and grandsons.[1]

During the 1870s a specialised type of coach works was established in the form of the Railway Workshops which built rolling stock for the Main Line Railway Company. The workshops were nearly all situated within the one building - a "lofty and commodious" stone building. In the first instance engineering workshops were set up for the repair of the imported rolling stock. New wheels could be fitted, brass work renewed and engines re-fitted. Replacement parts were all manufactured on the premises. In 1883, six forges were at work in the smith's shop with two more in the course of erection. There were brass and copper furnaces, the latter being the only one of its kind in Hobart, and a steam hammer. A speciality of the smith's shop was the manufacture of springs for the carriages.

It was not until 1883 that the actual carriage building shops were established - until this time only repairs to existing carriages were undertaken. The machinery was said to be the latest available, having been obtained from J.A. Fay & Co of Cincinnati, Ohio "one of the largest manufacturers of woodworking machinery in the world." In the carriage shop were a fine planing and matching machine, a large general joiner, and two patent treadle-operated morticing and boring machines. The latter were also used to construct the frames of the gatekeeper's cottages which were erected along the line. These machines and the carpenter's shop were on the ground floor. Upstairs was the cabinet-makers shop where the finer work was carried out. This shop too was fitted with an array of machines including a sandpapering machine which was used mainly on the doors, sashes and blinds. By the end of 1883, six second class carriages, twenty medium trucks, and eight horse boxes had been built. All the components except the wheels and axles had been made in the establishment:

> The timber employed in the construction of the carriages is almost entirely colonial. The under-frames are made of blackwood, obtained from Port Arthur or from ports on the North west Coast; the floors are of kauri , from the North Island of New Zealand, used in conjunction with American timber - Oregon pine etc; whilst the panels, etc., are constructed of Sydney cedar. Blue gum is used in parts where great strength is required.

The upholstering work was contracted out to Samuel Smith of Campbell Street. The carriages were finished in the painting and renovating workshop, an iron building 130 feet long by 30 feet wide across Macquarie Street from the main building.

Altogether, in 1883, there 103 men employed at the Railway Workshops in Hobart. A large number of these seem to have been apprentices.[2]

The firm of Vout, Chisholm & Co. was formed by John Vout and John Chisholm in 1891. Vout was a Tasmanian who had served his apprenticeship in Hobart spending several years on the mainland furthering his experience. On his return he worked for James Burdon. Chisholm had served his apprenticeship in Scotland but had worked in a number of establishments in England as well as Scotland. On coming to Tasmania in 1884 he had also worked for Burdon. Vout & Chisholm had originally established their business at what was then 155-7 Collins Street (now the site of the Village cinema complex). When Burdon's premises became available they took over these more extensive premises. They also took on a number of

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[1]CT 1931 p.220

[2]TM 15 and 22 December 1883

Burdon's former employees, some of whom had been with that firm for over forty years. At the turn of the century they employed twenty hands:

> The members of the firm themselves personally supervise each branch, and nothing but the very best material and workmanship are put into the various jobs that are executed. The work principally carried out by Vout, Chisholm and Co., is the English style, and light buggy work, in which they are unexcelled, some evidence of which is to be found in the fact that they are patronised by His Excellency the Governor and the elite of the city, as well as prominent country residents in various parts of the island.[1]

Cramp Brothers, Coach and Carriage Builders, was established in 1892 and according to the *Cyclopaedia of Tasmania* made rapid strides "converting an unpretentious shop into a hive of industry." The two brothers had both served apprenticeships with E.C.A. Nichols of the Excelsior Carriage Works. W.T. Cramp, the elder brother by fifteen years, worked at Excelsior for 27 years, eventually becoming Nichols' manager. R.J. Cramp worked for James Burdon, another Hobart coachbuilder, after his apprenticeship and a period in Victoria, as well as for the Tasmanian Main Line Railway Company. Four of the elder brother's sons also went into the business.

Cramp Bros. used local raw materials wherever possible but also used components imported from England and America in the interests of producing "a durable article at a minimum of cost." The firm manufactured a range of vehicles which were exhibited widely and successfully at agricultural shows. In 1902 Cramp Bros built a new coach for K.L. Webster & Co.'s Hobart to Huon service. It was described as strong and roomy, capable of carrying 21 passengers. The body of the vehicle was mounted on a three spring platform carriage, furnished with Mail patent axles and a double action brake. It was painted in Webster's colours - a black body with panels of olive brown, relieved with vermilion, gold letters and scrolls. The gear and wheels were also painted vermilion, picked out in black - "quite a smart appearance."[2]

The firm of Mathers & Grubb was founded in about 1903 . Their premises were in Liverpool Street near what was then the Rob Roy Hotel (now the Bavarian Tavern - the site of the coachworks is now an HCC car park). Mathers & Grubb made a speciality of sulkies and trade vehicles. Their successful exhibit at the 1912 Hobart Show included both classes of vehicles:

> Sulkies were a strong point in the display, a fine variety of those popular vehicles being shown. The sulkies to seat three, which have plenty of carrying capacity which can be made use of at a pinch, are works of art, finished and upholstered in the most sumptuous fashion. Mr Mathers stated that although nothing has been left out which could serve to make these vehicles both stylish and durable, the price is within the reach of everybody... The firm also showed several well-finished tradesmen's carts, admirable adapted to their respective uses. Very taking and effective was a bread waggon, built to the order of Mr. T.A. Moy, baker. This has a special fall lock wheel attachment, and is nicely coloured in dark green. It has an enormous carrying capacity, And is almost able, as a visitor observed, to carry a baker's shop full of bread in one load.

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[1]CT 1900 p. 355
[2]TM 21 June 1902

> Another trade vehicle was a milk float, designed with all the latest improvements to guard the purity of the milk carried in it, and altogether an excellent job.[1]

The *Tasmanian Mail*'s reporter noted that Mathers & Grubb had not met with any ill-effects from the competition of motor cars.

Official return show that the number of coach-building firms had actually increased from about 1900. For most of the 19th century the number of firms had been a fairly constant four to six but from 1900 to the First World War there were eight or nine coachbuilders in business in Hobart. Among these were:

Cramp Brothers at 152 Harrington Street (est'd 1892)
Vout & Chisholm at 22-4 Argyle Street (est'd 1891)
Mathers and Grubb at 275a Liverpool Street (est'd 1903)
Salter & Mason up the laneway next to Bridges Brothers (est'd early 1870s)
Langdon Bros. at 272 Elizabeth Street
A. & L. Gluschke at 242 Elizabeth Street
William Monks at 23 Barrack Street (est'd 1854)
Schwann Brothers at 30, High Street, Sandy Bay.
Frank Debnam at 127 Melville Street

Although the fate of these firms is beyond the scope of this survey, at least two of the firms embraced the developing motor trade: Cramp Brothers survives as Cramps Bodyworks - still at their original premises in Harrington Street. Monk Brothers were still in business in 1930 building motor bodies and the occasional horse-drawn turn-out, but their site is now occupied by a service station.

Perhaps because coach-building premises were largely close to the central business district or perhaps because they took up valuable space with workshops and yards, few have survived. Two important sites have survived, however - Cramp Bros in Harrington Street and the Excelsior Steam Carriage Works at the corner of Bathurst and Criterion Streets.

Saddle and Harness Makers

The use of working horses and bullocks depended on a number of support industries in addition to the cart and carriage builders. The making of saddles and harness required not only the skill of a leather worker but also metal fittings - E. Whitehouse, brass founder advertised brass coach and gig harness made at his premises in Murray Street.[2]

The number of saddlers at this time is hard to gauge. Henry Connelly had put up his shingle in March 1821 soon after his arrival from London, promising "charges as moderate as in England."[3] He stayed in business until at least 1830, by which time there were three other saddlers listed in the town's directories - Thomas Scott, Thomas Howman and J. Mezzer. Thomas Scott had arrived from Edinburgh in 1823, opening his saddlery in Elizabeth Street in May. In a little over a year he had branched out into leather manufacture and had taken Samuel Wintle "well-known as a superior boot and shoe maker" [see above] as a partner in the tannery in Liverpool Street.[4] In November 1824, Scott handed over the running of the

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[1]TM 24 October 1912
[2]HTG 25 January 1823
[3]HTG 24 March 1821
[4]HTG 20 August 1824

saddlery side of his business to Thomas Howman so that he could devote more time to the manufacture of leather.[1] However, by 1831 Wintle was in business as a shoemaker and tanner on his own account and Scott was back in the saddlery business. Howman also remained in business as a saddler in Argyle Street at least until 1831. In 1834 the only Thomas Scott listed is described as a hatter but he may not have been the same person. During the 1820s and 1830s there was a relatively high turnover in saddlery as in other industries.

The number of saddlers appear to have remained fairly constant at around half a dozen for most of the latter half of the 19th century and up to the First World War, except for a few years around 1890 when only two are listed in official returns. Most seem to have been in business for ten years or more including John McDonald of Murray Street, and Robert Wilson and John Wiseman, both of Elizabeth Street. These three saddlers were all established by 1847 and survived most of the 1850s. There were two firms which stood out - Campbell and Minchin, and James Robb.

The first of these was established in 1841 by James Campbell and John Minchin. When John Campbell died, the business continued under the management of his son Hugh who had served an apprenticeship with his father. Around the turn of the century the firm moved from their old-established premises at the corner of Melville and Elizabeth Streets [Now no. 124] to the Bathurst Street corner [now the site of the Downtowner] and later to the diagonally opposite corner formerly occupied by the George and Dragon Hotel where they remained until the 1980s. Long before this the firm had diversified into a broader range of leather goods.

Although Campbell & Minchin were the survivors, the largest business of the kind was that of James Robb. Robb had come to the colony in 1864 after serving an apprenticeship in saddlery in his native Scotland. He took up the position of manager to a Mr. Robinson who already had a large saddlery business in Hobart. Robb continued to run the business for two years after Robinson died in 1867 and then bought it out from the trustees. The business increased and in 1878 Robb moved to more extensive premises at what is now 17-19 Elizabeth Street. He had the distinction of Vice-Regal patronage, being saddler to each of the Governors from Gore-Brown onwards. In 1900 he employed twelve men in his workshops. [2]

Both Campbell & Minchin's and Robb's premises survive, the former as shops, the latter as a cafe, coffee shop, and art gallery.

Bicycle Manufacturers

One industry which did expand during the 1890s, despite the depression was the bicycle trade. By 1900 there were several manufacturers in business in Hobart. It would appear that in some cases the term "manufacturer" was applied somewhat loosely, the vehicles being assembled from imported parts. In 1899 the Modern Cycle Agency of Liverpool Street boasted of being "Tasmania's leading cycle factory, manufacturing the record-breaking "Derwent" bicycle. The manager at the time was Ernest Mays who was claimed to have been in the trade since 1882.[3] G.W. Tazewell and T.F. Hallam established a similar business in 1898, having bought out the bicycle department of Charles Davis. In 1909, when Hallam was in business as the Hallam Cycle and Motor Company he advertised that bicycles could be built

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[1]HTG 19 November 1824

[2]CT 1900 p. 356

[3]TM 16 December 1899 Supp. p. vi

to order at the factory.[1] Both Tazewell and Hallam had been champion racing cyclists before going into business and to this extent were typical of the men who went into manufacturing.

Some of the factories were more than places to assemble bicycles although located right in the middle of the central business district. James Bilyard established the Havelock Cycle, Motor and Plating Works at 137 Elizabeth Street before moving across the road to new premises at No. 110 in 1910. He claimed this to be the leading motor, cycle and plating works in Tasmania. They carried out both nickel and silver plating as well as coach builders ironwork. Competition in the industry must have been fierce. One of their competitors - Meadowcroft Bros trading as the Victor Cycle and Motor Works - moved into Bilyard's old premises from Bathurst Street and offered almost identical services. Both firms inserted fulsome full-page advertisements in the 1910 Christmas Number of the Tasmanian Mail. Cycle and motor factories were not listed in official statistical returns until 1905 when there were ten such firms listed in Hobart. This had increased to 13 by 1910 and to 16 by 1915 although the latter figure included motor and cycle dealers.

Support industries included King's Pneumatic Tyre factory which began at 28 Brisbane Street but moved to 125 Elizabeth Street in 1900. It was claimed in advertisements to be the only tyre factory in Tasmania.

Bilyard later went into partnership with King to form Bilyard & King which operated from 110 Elizabeth Street for many years as a general sporting goods store. The firm now operates in conjunction with Ray Appleby Cycles at 125 Elizabeth Street. Both buildings remain.

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[1]TM 11 December 1909 p. 44

Services

Water

[This section is largely adapted from this writer's earlier report *The Pipeline Track: Resource document*]

Until the 1940s, Hobart's water supply was drawn solely from the streams of Mount Wellington. There were early schemes based on the Hobart Rivulet and an abortive attempt in the 1830s to divert the water of the New Town Rivulet. From the 1830s water from the Springs was diverted into the Hobart Rivulet and fed to the city via the Cascade Reservoir. This system supplied only a few hundred households and was subject to frequent interruption through Peter Degraves prior rights to the water for his cascade brewery and mill.

However a new plan adopted in the 1860s was the basis for the subsequent water supply scheme. With the growth of the city and suburbs the pipeline was gradually extended further across the mountain watershed and more distant streams were brought on line.

In 1858, the Hobart Corporation, which by then had responsibility for the water supply, began planning improvements to the existing system and engaged engineer Joseph Gale to take charge of the new scheme. In the event, partly because of problems with Degraves, the 1860-1 water supply scheme by passed the existing system. It involved the restoration of the Springs water to its original course at the head of the Browns River Creek and the construction of a new pipeline. The new scheme involved:

* A dam at Fork Creek at 486m above sea level - this was the furthest point on the pipeline
* Water was brought from the dam at Fork creek by wooden troughing to a basin on the Browns River Creek at the Bower at Fern Tree.
* The Bower basin was also an intake for the water from the Browns River Creek.
* Water from the Bower basin was taken by wooden troughing across the Longhill Creek bridge and via a sluice house at Halls Saddle to a point 372 meters from the Receiving House.
* Masonry troughing took the water the rest of the way to the receiving house via a natural rock ledge later called Gentle Annie Falls.
* From the receiving house a 10-inch cast iron main cross the Regan's Gully bridge and continued to the distributing reservoir at Hill Street in West Hobart.
* Surplus water was fed into a storage reservoir constructed in the former valley of the Sandy Bay Rivulet, the rivulet being diverted through a storm channel around the reservoir.

In 1868-9, the water of Long Creek was added to the system:

* Water was conveyed from Long Creek to Fork Creek by a 6-inch cast iron pipe.
* The dam at Fork Creek was altered slightly to become a receiving basin for the water from Long Creek.
* Beyond Fork Creek the system remained unaltered

In 1873-5, the water of the Plains Rivulet and its tributaries was brought into the system:

* Three dams were built on the Plains Rivulet and its tributaries.

*Water was conveyed from the Plains Rivulet intakes to Fork Creek by earthenware pipes across a number of bridges.
* Two dams were built on the two branches of Long Creek.
* From Long Creek to Fork Creek the 6 inch cast iron pipe laid in 1868-9 was replaced by 9 inch earthenware pipes.

Extensive works were undertaken on the pipeline in 1881 at the same time that a new storage reservoir was built:

* St. Crispin's Well was replaced.
* A new cast iron pipes was laid from the Plains Rivulet intakes to Long Creek and from Long Creek to Fork Creek, replacing the old earthenware pipes.
* To facilitate the transport of the cast iron pipes to the furthest points of the pipeline, a wooden tramway was built between Neika and St. Crispin's Well.
* At Fork Creek, a new circular receiving basin was built below the dam. Later known as the Wishing Well, this took water from both the Fork Creek and the creeks beyond, turning them into the new pipeline to the Bower.
* Between Fork creek and the Bower new 16 inch cast iron pipes were laid to replace the existing timber troughing, originally laid in 1860-1.
* The timber troughing beyond the Bower was replaced with masonry troughing.
* The new masonry troughing followed a different route necessitating the construction of two stone bridges across the branches of Longhill Creek. The old stone and timber "trussel" bridge was abandoned.
* A new sluice house was built at Halls Saddle.
* A new storage reservoir was built above the existing reservoir. Associated works included the further diversion of the Sandy Bay Rivulet and laying a new main from the receiving house to the city.

In 1901, the water of the North West Bay River was brought into the system.

* A weir was built on the North West Bay River. The intake fed two mains (1) a 9-inch main to Kingborough and (2) a 9-inch main to St. Crispin's Well.
* A new 12-inch main was laid from St. Crispin's Well to Fork Creek to replace the old 8 1/2-9 1/2 inch-main,
A new tramway with steel rails was built to replace the old wooden tramway from Neika to St. Crispin's Well.

Between 1905 and 1917 a second pipeline from the North West Bay River was built. This fed the new Ridgeway Reservoir which in turn supplied the two old storage reservoirs. From Neika, the pipeline followed a similar route to the old one as far as a point just beyond Halls Saddle when it turned towards the Ridgeway Reservoir. A second receiving house was built between Ridgeway and the old reservoirs to direct water either into the city mains or to the reservoirs.

Structures from all phases of the development of the Mountaain Water Supply remain although many have been superseded and are not connected to the system.

Gas

The Hobart Gas Works was the third to be established in Australia, the first being in Sydney in 1841. The Hobart Gas Company was formed in June 1854 and later that year bought a site at Macquarie Point. In December 1855 the ship *John Bell* arrived from Scotland with a cargo of equipment for the new gas works as well as a number of skilled gasfitters. The same month William Falconer arrived from Canada to take over the management of the Gasworks and supervise their

construction. Within a couple of months the local contractors Anderson & Holmes began construction work.

The gas was first turned on on 7 March 1857, when the gas company had 53 customers. Most of these were shops and public buildings. However the most immediate impact of the gas was in lighting the streets. Previously a few whale oil lamps had been the only means to lighten the gloom.

Little remains of the original Gasworks, described below by a reporter in February 1857:

> The buildings ... are built of bluestone quarried on the spot... The front entrance faces the river...
>
> Entering the gates the first object which attracts the attention is the gasometer, a huge cylindrical iron vessel, open at the bottom and closed at the top. It is placed in a large stone tank filled with water, being kept in place by means of wheels working in an iron frame erected over the tank. The gasometer is twenty feet in height, sixty in diameter and weighs upwards of sixteen tons.
>
> On the left of the entrance is the Retort House. This building is 105 feet long by 60 feet wide and 25 feet in height. It is surmounted by a circular roof of corrugated iron, and it well lighted and ventilated. The Retort House contains forty [cast iron] retorts. Twenty of these are capable of holding as the usual charge, rather more than a hundredweight of coal each; the charge for the remaining twenty which are of a larger construction being about 2 1/2 cwt each. The Retort House ... is fitted up with the usual appliances, viz ascending pipes, the hydraulic main etc; and outside the building are placed the condenser and washer...
>
> The Purifying House, Metre House and Smith's Shops are contained in another building constructed in similar style and built of similar materials to the Retort House; and standing to the right of the entrance gate. Within the Purifying House are four purifiers of the newest construction and most approved principles.[1]

Within a year the Company had laid down more than 5,000 yards of mains and, besides running 220 street lights, were serving 279 shops, 120 public houses, 80 private dwellings, nine churches, five banks, nine public offices, the Gaol, one theatre, the General Hospital, five warehouses, four newspaper offices, an auction mart, three schools and the New Market.[2]

At about this time an office building was erected. This was constructed as a single storey building but in 1886 a second storey was added. This building and the workshops erected in 1862, with 1890 additions, are among the buildings that survive.

The Company used a combination of Newcastle coal and imported English Boghead coal in the production of gas. Experiments with Tasmanian coal from a number of different fields all proved unsuccessful. The proportion of Boghead Coal was small: To produce 3,116,200 cubic feet of gas in 1868 the Company used 329 tons of Sydney Coal, 8 tons of Boghead and 20 tons of mineral shale.[3]

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[1]Mercury 10 February 1857

[2]Hobart Gas Company Annual Report February 1858

[3]Hobart Gas Company Annual Report June 1868

Over the next ten years the consumption of gas increased more than seven fold and in 1879 an additional gas-holder was installed to help meet the demand. Demand continued to increase and in 1885 the supply was extended to New Town. That year a new retort house and a third gas holder were installed. Because of the rocky site, a wrought iron "telescopic" holder was acquired. In 1891. the Company acquired a site in Hunter Street, which had become available following a fire the previous year. On this site the fourth gas holder was built.

The 1890s depression affected the operations of the Company as customers sought to economise. Despite an increased number of customers, there was a decrease in consumption. In 1898 in a bid to keep up with changing technology, the Company built an electric light station. [see below].

The waste products of the gas-making process presented something of a dilemma to the Company. They sold coke, breeze and tar to customers without further processing. The City Council was a regular purchaser of the tar which was used in road works. However, in 1895, with tar stocks increasing, the Company decide to offer its own asphalt, a mixture of tar and ashes made at the works. At first the Company gave away lime and ammoniacal water (from the purifying process) to people who might be willing to test its qualities as a manure. Several proposals to establish an ammonia plant were discussed but nothing eventuated until 1905. [see below].

At the end of 1912 the contract for lighting the city by gas expired and since then the streets have been lighted with electricity. Demand for gas for domestic purposes was still increasing, however, and just prior to the First World War a site was acquired at Moonah. In 1923 a massive reconstruction of the works took place, leading to the replacement of nearly all the existing plant.

The distribution of gas through the reticulation system ended in 1978 and the works were taken over by CIG. The Gas Company's gas from coal plant was shut down but CIG built a new plant to convert oil into gas - this was then sold as bottled LP gas. The State Government acquired the site and most of the buildings were demolished.

The site has since been dissected by the Davey Street extension. None of the buildings actually used for the manufacture of gas have survived. In the last two years the remaining buildings - the electric light station, the offices, governor house, workshops and cart shed - have been bought by a private developer and turned into the "Gasworks Village," a complex including craft shops and a distillery.[1]

Electricity

Prior to 1898, consumers who required electricity made their own. The Hobart Electric Tramways Company had its own electric power station built in 1892. This

> consisted of four 60 h.p. Marshall multi-tubular loco type boilers working at 160 lbs per square inch, an iron smoke stack 90 feet high, and three generating sets each consisting of a Willans and Robinson vertical high-speed engine direct coupled to a Siemens generator giving as full load 250 amperes at 500 volts at 350 revolutions per minute.

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[1]Jacob Allom Wade and Stephenson EMF Hobart Gas Works Site Conservation Plan and Preliminary Environental Audit, Department of Environment and Planning, 1993

in 1902 an Act was passed by Parliament enabling the Tramway Company to supply electric light and power in the Hobart district, and this was made available to a number of consumers along the tram routes. In 1908 the power plant was improved by the addition of a 300-kilowatt engine and generator.[1]

In 1913 the whole tramways operation, including the power station was taken over by the Hobart City Council.

Among private individuals who had their own power supply was Henry Higgins, a butcher and smallgoods manufacturer of 110 Elizabeth Street. The power for lighting the shop came from a steam-driven dynamo. The steam was also used in making and cooking the smallgoods. At Newman Arnold's Bread and Biscuit Works, electricity was generated by a dynamo purchased from the Sydney branch of the Brush Electric Lighting Co. of America. It worked up to 80 volts, producing 70 amperes at an engine speed of 120 revolutions per minute and supplying 60 incandescent lamps.[2]

In 1896, the Gas Company had realised the potential of electric power and were granted the necessary authority by Parliament to supply electric lighting to the city and suburbs. The streets of Launceston had been lit by electricity since 1895. In 1897 work began on the building to house the electric light station to the design of Hobart architects, Ricards and Salier. The plant was powered by a gas engine capable of working up to 120 h.p. and said to be the largest and most powerful yet imported into the colonies. The electric light machinery was all imported from England and in November 1898, electric current was turned on in the city for the first time.

Complaints from the Board of Health about the noise of the gas engine exhaust led to the silencers being moved from the back wall of the building.

Although only one plant had been installed, the engine room was originally designed to hold four sets of machinery but since it was not practicable to run alternators in parallel from gas engines, a direct coupled 100 kW steam-driven plant was ordered from Siemens Bros. A 60 nominal HP Clark and Chapman steam boiler was ordered from the same source. A new boiler house and chimney were erected at the rear of the electric light station. These were also designed by Frank Ricards. Following advice from A.C. Parker, the chimney was extended 10 feet to 120 feet with the flue being made a foot longer at the narrowest part. The buff coloured bricks for the string courses of the chimney stack, which was erected by J. & R. Duff, were obtained from the Northcote Brick Company. Steam and exhaust pipes, and a steam separator were obtained from the Salisbury Foundry in Launceston. These improvements cost a total of £4000. The new machinery was first used on 15 June, 1901, "with entirely satisfactory results."

AC motors were hired out to customers who required electricity for motive power as well as for lighting. By September 1901, it was necessary to run the electrical machinery 24 hours a day to meet the demand.

By February 1902, a second steam plant was needed - if all the lights connected were turned on at once the existing system was at full capacity. The equipment for the this plant was obtained from Siemens Bros and included a new 100 kW alternator and Williams engine, a new switchboard panel and two Babcock and Wilcox boilers each of 150 HP.

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[1]Hobart Tramways Jubilee 1893-1943, p. 11

[2]CT 1900 pp. 361 and 359

The additional plant was put into use for the first time, satisfactorily, on 28 March 1903. In September 1902, a short length of rail had been laid from the gasworks to the electric light station to supply coke to the boilers, and in April 1903, a Weirs pump to feed the Babcock & Wilcox boilers was ordered from Siemens Bros.

In October 1905, a second main was laid to the corner of Elizabeth and Macquarie Streets to enable the gas plant to be used to supply a separate circuit. A year later a third steam plant was acquired from the Brush Electrical Engineering Company - this was a Bellis-Brush alternator set with an output of 100 kW at 2100 volts, 90 cycles, 450 rpm. In September 1907 an 80 BHP continuous current motor with an output of 500 volts was ordered from Siemens Bros. This was to be connected to the small alternator and powered by the Tramway Company's plant to take the motor load during peak times and to save labour.

In May 1909 it was decided to alter the frequency of the electrical plant from 90 to 50 cycles, requiring two new Siemens 50 cycle alternators with a capacity of 110 kilowatts each to take the place of the two 90 cycle alternators connected to the engines at present in use. By August the following year, the new machinery had been erected and was working smoothly.[1]

In the meantime, the Complex Ores Company of Melbourne was proposing to erect a hydro-electric station on a tributary of the Derwent, and approached the Gas Company in June 1909 to see if it would be willing to purchase electric current from them. The Gas Company was not then interested in this or another proposal for Complex Ores to acquire the Gas Company's electrical plant - the Complex Ores Company was competing for the Council's lighting contract. For a few years there were three electricity companies supplying Hobart - the Tramways Company (which was taken over by the City Council in 1913), the Hydro-Electric and Metallurgical Company (formerly Complex Ores and the State Hydro-Electric Department from 1914) and the Gas Company. There were three sets of mains and three sets of charges. In 1912 the Gas Company and the Hydro-Electric Company entered into an agreement whereby the Gas Company bought bulk power from the latter and retailed it to consumers.[2]

Bellerive and Lindisfarne were linked by submarine cable and these suburbs were lighted with electricity on 1st October 1914. During 1914 and 1915 further improvements were made to the power station. In 1914, new electrical machinery including a 500 kW turbo alternator were installed and other alterations to the plant were necessitated by a change from single phase to three phase generation. Early the following year two 500 kW transformers and two 35 kW automatic feeder regulators were ordered from the Australian General Electric Company.

On 7 December 1915, the electrical side of the Company's business was sold to the Government for £100,000 with the proviso that the station be used only as a sub-station or stand-by plant. The Hydro-Electric Department became liable for the plant ordered earlier in the year and, for a few months, operated from the existing station building, the Works Office and "a small building previously used by [the Gas] Company's electrical employees".[3]

In April 1916 the Gas Company asked the Hydro-Electric Department to consider moving the electric light plant and the following year it was moved to the Tramways site. The former gas Company plant and the Tramways own plant

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[1]Jacob Allom Wade, op. cit.

[2]JPPT 1915 No. 38

[3]Jacob Allom Wade, op. cit.

formed the stand-by emergency plant for Hobart until the power supply lines from Waddamanna were duplicated some years later.

The Gas Company's electric light plant of 1898 together with the boiler house and chimney erected in 1901 remains as part of the present "Gasworks Village" complex but have been considerably altered and now houses the Hogs Breath Cafe.

Printing and engraving

When Collins and his party settled at Sullivan's Cove in 1804 the problem of communicating orders and information was solved by the distribution of printed notices using the press which had accompanied the settlers:

> I have found the Printing Press of very great Utility, as you will see, sir, by the Copies of my General Orders, which accompany this for the Information of Lord Hobart. The Press would be more complete if the Type mentioned in the enclosed Paper were sent me out. I could also wish that such a Quantity of Paper for Printing as you should think proper might be forwarded with the Type.[1]

These notices were presumably posted up at various points around the camp. They were the fore-runner of the *Hobart Town Gazette* and the present *Tasmanian Government Gazette.*

In 1810 the Government printer, George Clark, produced the first newspaper - the *Derwent Star and Van Diemen's Land Intelligencer.* This lasted only a couple of years and the next attempt, the *Van Diemen's Land Gazette and General Advertiser,* was even more short-lived. By this time Clark had an assigned man named Andrew Bent who became Government printer following the former's dismissal in 1816. In May 1816 Bent produced the *Hobart Town Gazette and Southern Reporter.* The newspaper was under Government control and patronage but Bent owned most of the plant, having re-paid a Government loan for the purchase of a new font. The Gazette was only part of Bent's printing business and he also printed a variety of Government forms. In 1818 he printed and published a short "narrative" of the exploits of the bushranger Michael Howe. In 1821 he announced that he had begun copper plate printing and would print promissory notes "with any motto or other matter ... endorsed thereon so as to render them doubly the Hazard of Counterfeit." Surely not coincidentally, a news item on the same day referred to the forgery of copper plate notes issued by Kemp & Co. These were so defective that it was extraordinary that any one should have failed to observe the forgery.[2]

In 1823 Bent opened a new printery in Elizabeth Street near the corner of Melville Street. This incorporated the patent printing balls or rollers invented in England "a year or two ago" to accelerate long and heavy work.[3] Attempts by Lieut Governor Arthur to control the press resulted in Bent being imprisoned for libel and losing all the government printing work. A rival *Gazette* was published by at the new government printing office in Collins Street by Dr James Ross and Bent was eventually forced to change the title of his newspaper to the *Colonial Times.* He sold the newspaper to Henry Melville as a going concern in 1830 but may have stayed in the printing business. Bent did not leave Hobart until 1839 and in the directory of 1837 appears as a printer and grocer at 141 Elizabeth Street next to the Coach and Horses.

The *Colonial Times* printing office had become the printing office for the *Trumpeter* and *Tasmanian* and in in 1833 Henry Melville took over these newspapers also. Like Bent and Ross, Melville published a series of almanacs - he also printed books, including his own *History of the island of Van Diemen's Land* and Henry Savery's *Quintus Servinton,* the first Australian novel.

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[1]HRA III i 4 March 1804 Collins to Sullivan

[2]HTG 4 April 1821

[3]HTG 3 November 1823

A printer named J.M. Short is listed in the 1837 directory in Argyle Street but the nature of his work is not known and he appears to have survived only a brief time in the industry. The same directory lists two engravers. One of these was the artist Thomas Bock who carried on the business in Campbell Street until the 1850s. The other was Charles Bruce who is listed only as an engraver in 1837 but as an engraver and copper plate printer in 1847, by which time he had moved from Elizabeth Street to Argyle Street "next to Mr Lindsay."[1]

By the mid-185Os there were seven printers listed for Hobart Town. Many of these were associated with newspapers. James Burnett of Collins Street had begun the *Britannia and Trades Advocate* in 1846 and offered "every description of letterpress printing" including books and pamphlets. Jones & Brown had taken over a printing office in Macquarie Street, formerly occupied by John Moore who had published the *Hobart Town Guardian*. This was taken over in 1854 by John Davies, the printer and editor of *The Mercury*. Pratt & Son had taken over Bent's former printery in Elizabeth Street. J. and then M.A. McDougall had a printing office in Collins Street on the corner with Kemp Street where they produced the *Colonial Times* and *Trumpeter* newspapers that the former had taken over from Henry Melville.

Further down Collins Street Henry and Charles Best had a printing office. In the 1870s this was known as the "City Press" of Best, Gill & Allen. Wilson and Hall printed the *Hobart Town Advertiser* from 1839 to 1865 at the foot of Elizabeth Street.[2] William Fletcher of Elizabeth Street printed and published, among other things, the 1859 *Hobart Town Directory*.

Although the newspaper printeries dominated the industry there were a few small job-printers. In 1872 Henn & Co of 95 Elizabeth Street advertised in *Walch's Almanac* as letter press, lithographic and copper plate printers but also published the *Tasmanian Tribune*. Their specialty appears to have been labels - they promised "Jam and other labels cheaper than any other establishment in Tasmania." Henn & Co.'s competitors in this field included Jarman, an engraver and copper plate printer of Murray Street and R. L. Hood of Elizabeth Street. Hood had been in business since the 1850s. Although not listed as a printer or engraver in the directory for 1854, that year his father, R.V. Hood, had printed his "Plan of the City of Hobart Town compiled partly from Frankland's map & partly from recent surveys." His address on the plan is Liverpool Street. The growth of the jam industry had created a great demand for labels and by 1873 the the manufacture of these made up a large proportion of Hood's business. He also printed maps, visiting cards, bill heads and plans. On the ground floor of his establishment were the copper plate press and the lithographic press. Designs for lithographic printing were either engraved on copper first and then transferred to paper or drawn directly onto the special paper which was pressed onto the heated stone.

The electrotype printing was done upstairs. This process involved metal blocks which had been cast in the form of the design. On the same floor was a large Albion press and a small lithographic press for transferring designs from one stone to another. In another room was a patent ruling machine, for ruling paper and books, and an embossing press. In the yard was a stamping machine, invented by Hood to cut out circular labels for the tops and bottoms of jam tins - it resembled a small pile driver. Jam labels were varnished and some of them gummed on the back, before being tied into bundles of 500 for delivery.[3] Among Hood's customers

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[1]BTA 17 December 1846.

[2]Compiled from directries and "Historic Tasmanian newspapers" leaflet of the Archiives Office of Tasmania

[3]Mercury 12 June 1873

for jam tin labels was George Peacock, whose lithographed label bore his name and a drawing of the factory.[1]

Around 1870 the number of printing offices reached a peak with ten being recorded by Government statistics, but the average number from the 1860s until shortly before the First World War was about half a dozen.

The *Mercury* had taken over most of the early colonial newspapers by this time but during the 1870s and 1880s a number of short-lived newspapers appeared. The *Tasmanian Tribune* newspaper and printing office was established in the old "Labour-in-Vain Inn" in Elizabeth Street in 1872 by Louis Henn but lasted only until 1879 and the printery was taken over by Propsting & Robey. One of the longest surviving of the alternatives to the *Mercury* was the *Tasmanian News*. This was founded in 1882 by Henry Gill who had previously been in partnership with Best and Allen in Collin Street. Gill moved the printery to 73 Murray Street and when he became a Member of Parliament in 1887 his wife, Sarah Inez Gill, ran both the newspaper and the commercial printery. The printery could print the largest letters available in Tasmania and by 1890 had opened a branch in Launceston. Mrs Gill sold out to W.J. McWilliams in 1896 who transferred the business to Collins Street near the present AMP corner. The newspaper continued until 1911, the printery being demolished the following year.[2]

A new Mercury printery and offices built in 1902 next to the old premises. The new building, at 65 feet high, was then one of the tallest in Hobart. It really comprised two connected three-storey buildings. The front building housed the offices, part of the bookbinding department, and the photographic studio. The rear building contained three "flats" each 75 feet by 48 feet. On the ground floor was the machine and lithographic departments, on the second were the composing, job printing and linotype departments, and the third comprised a warehouse, the stereotype department and part of the bindery. The three floors were connected by an hydraulic lift and the whole building was lit by electricity. New machinery was installed including a Goss machine from America, which was the first rotary printing machine in Australia. It was capable of printing 20,000 copies of *The Mercury* every hour. The machine room also contained a variety of Wharfdale and Platen machines for job printing, a "Falcon" for printing envelopes, large and small lithographic presses, and a guillotine. All this machinery was driven by steam engine and a 16 h.p. electric motor. Repairs and alterations to the machinery could be carried out by the staff of the engineer's workshop. There were some 200 people working for the *Mercury* at this time. [3]

Just before the First World War there seems to have been an upsurge in the printing industry and by 1915 there were 13 printing offices in Hobart according to Government statistics. In 1913 the shops at 56-8 Liverpool Street were taken over and adapted as a printery by Monotone Art Printers. Another printery was established just before the war at 56 Collins Street, the former Primitive Methodist Chapel. Until June 1918 it was the Daily Post Job Printing Office and after that The World Job Printing Office. *The Daily Post* and *The World* were both Labor newspapers promoting social justice and the cause of unionism, and attacking the evils of capitalism. This printery closed in 1924 but the building survives.

In addition to the newspaper printers and the job-printers, manufacturing stationers also did printing. There were a number of such firms in Hobart. Among the most notable were Cox & Sons, Propsting & Robey and Walch and Sons. Walch

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[1]Mercury 13 January 1873
[2]Mercury 15 April 1912
[3]TM 7 Jun1902 pp 17-24

and Sons was established in 1846 by J.W.H. Walch who bought an existing business at the corner of Liverpool and Elizabeth Streets from S.A. Tegg. The firm was a great success and a new warehouse and manufactory was built at 130 Macquarie Street. This was originally a single storey building, the additional floor being added in 1891. Here they produced mercantile and law stationery and account books and undertook commercial and general printing and bookbinding. The retail premises continued to be at the corner of Elizabeth and Liverpool Streets although, in 1876, the old building was pulled down and replaced with a more substantial structure. Walch & Sons also had a wholesale paper warehouse at the rear with a frontage on Davey Street. Walch and Sons printed their famous Almanac known as "the Red Book" from 1862 to 1975[1].

A. J. Cox & Co took over the printing office of Calder, Bowden & Co. in Liverpool street next to the Shamrock Hotel in the late 1890s but had moved to 125 Collins Street by 1905. In 1912 they built a new printery across the road at 164-6 Collins Street, by which time the firm had become Cox Kay.[2] Their former premises were taken over by another printing firm the Newman, Hill and Brand Stationery Co.

A number of printeries survive from before 1915, notably the Mercury which had a new facade added in the 1930s; Walch's at 130 Macquarie Street; the old Monotone Art Printers at 56 Liverpool Street; Propsting & Robey's at 95 Elizabeth Street, which was a printery from the 1860s; and the Daily Post Job Printing Office at 56 Collins Street. The first two were purpose-built as printeries while the others adapted existing premises. The first three survive as businesses in one form or another - the Mercury job printing department and Walch's operating as Mercury-Walch at Moonah and Monotone Art Printers in Argyle Street.

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[1]CT 1900 p. 272-3

[2]Mercury 15 April 1912 p. 6

Maritime industries

Shipbuilding

As might be expected of an island colony with important whaling and sealing industries, and excellent timber resources, shipbuilding was the first large-scale industry to be practiced in Tasmania.[1] Between 1825 and 1872 313 vessels are said to have been built on the Derwent. In bays all over the colony ships were built close to the timber resource but eventually the ship-building industry around Hobart was confined to just a couple of sites.

Among the earlier Hobart boat builders was Thomas Kelly who built the schooner *Henrietta Packet* which traded to Port Dalrymple and Port Jackson. He drowned in April 1818 and was described having been a very industrious mechanic.[2]

During the 1820s Thomas Florence had a boat yard at Kangaroo Point, then called Canadian Point. In February 1823 four or five shipwrights were working on a schooner which was expected to be launched within a couple of weeks.[3] In December of the same year the schooner *Liberty* was launched from the yard.[4]New Town Bay was also the site of ship building activity. In November 1824 the 45-ton sloop Governor Arthur was launched by Robert Bostock and brought down to the harbour.[5] In 1839 Mr Petchey built the Sir George Arthur, a barque of 400 tons at Kangaroo Point but, it being impossible to sheathe the vessel in copper in Tasmania, it was sent to London to be completed.[6]

Even before the merchants began to build on Hunter Island and the new causeway, boat builders were active in the area. In October 1823 a 25-ton "corve built" ship of Huon pine with copper fastenings was launched from Harbour Master James Kelly's boat yard near the wharf. During the 1830s another boat builder, John Grey or Gray also had a yard at the Old Wharf. He was declared insolvent during the recession of 1840 and later went to work for Peter Degraves at the latter's Battery Point yards.[7]

Ships were also built at Macquarie Point and indeed when the *Maria Orr* of 289 tons was launched from this site in 1838, she was the largest vessel so far built in the colony. Until this very few ships exceeding 100 tons were built but the settlement of Port Phillip and Adelaide briefly provided a fresh impetus to the industry.[8] However, the recession which sent Grey broke affected the whole industry. In his evidence to the Committee upon Immigration in 1841, John Watson stated that although he had formerly employed 20-30 free men and apprentices he now employed very few shipwrights. The trade had stagnated due to the failure of the fisheries and a subsequent decline in the need for whaling vessels, and the decrease of the trade with Port Phillip. That settlement was now raising its own crops and was trading directly with England.[9] In 1845 only four ships were built.

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[1]Hartwell p. 156 and BLainey p. 117
[2]HTG 25 April 1818
[3]HTG 8 February 1823
[4]HTG 20 December 1823
[5]HTG 26 November 1824
[6]Burn p. 52
[7]Down Wapping p. 15
[8]Hartwell p. 137
[9]Report of the Committee ... upon Immigration p. 33

Thereafter, however, the industry picked up and in 1850 17 ships were built, of which seven were less than 40 tons.[1]

During the 1840s the shipbuilding industry came to be centred around Battery Point with the yards of John Watson, formerly Master Shipwright at Port Arthur, and the Risbys established by 1847 in Napoleon Street and those of Charles Williamson and John Ross at Secheron Bay. Williamson had earlier built ships at Macquarie Point, both on his own account and as a partner in the New Ship Building Company formed in 1839. He is said to have built at least 25 vessels at Secheron Bay but in 1847 he sold the yard in three lots before moving his business to Middleton.[2] One lot was bought by David Hoy, who had succeeded John Watson at Port Arthur, and the other two lots by Peter Degraves who had already established the Cascade Brewery and mills. Ross built his first patent slip off Castray Esplanade opposite the bottom of Findlay Street in the 1850s at about the same time that Captain Goldsmith was building his patent slip at Macquarie Point on the site now occupied by the Marine Board Slip. In October 1855 the Domain slip was sold to John McGregor and it passed through a series of hands before being taken over by the Marine Board in 1913. This slip was principally for the repair of ships. The centre of ship-building activity by the 1850s and 1860s was Battery Point although Ross remained at the Secheron site until 1866 when he moved around to Napoleon Street.

Studies of these yards have identified six major yards (see plan on following page):

Site A : This slip was originally laid down by Cullen & Mackay in 1857 and the following year the installation of a patent slip with a lifting capacity of 200 tons extended the yard's business in repair work. The barque *Nautilus* was built at this yard. In 1900 Mackay died and his nephew Henry Featherstone bought it in partnership with Tom Purdon. In 1910 the slip was re-laid and its lifting capacity increased to 300 tons. The ferry *Cartela* was built at Purdon & Featherstone's yard.

Site B: This site originally belonged to Risby's who acquired it in 1855 but between 1860 and 1890 Jacob Chandler had the slip and built a number of Derwent ferries on it as well as the ketch *Rachel Thompson*.. Between 1920 and 1936 it was owned by Tom Purdon and later by the Royal Yacht Club of Tasmania.

Site C: This slip is closely associated with the Abel family but until 1900 it was owned by J. Clinch. Albert Abel was known for his motor launches and clinker built dinghies.

Site D: The was the site to which Ross moved his patent slip in 1865-6. In re-laying the slip, Ross enlarged and improved it, requiring massive earthworks and the construction of a stone foundation extending hundreds of feet into the river to support the woodwork and iron rails. Ross used the slip mainly for repairs but he also built the barque *Acacia* there. However, the move and re-establishment of the slip had sent Ross broke and in 1870 the bank foreclosed. From then until 1883 the slip was operated by John Lucas who had the adjoining yard but in 1883 the engineering firm Kennedy Bros. acquired the site. In 1890 the Kennedys built the dredge *Agnew* here and later the *Amelia J* for Henry Jones. In 1903 the patent slip was dismantled and sent to Devonport. In 1920 the Kennedys sold the slip to Jones & Co.

Site E: This slip was established by John Watson who had been the Master Shipbuilder at Port Arthur until 1839. His first yard was at Old Wharf but within a couple of years he had moved to Napoleon Street. Behind the slipways he built the

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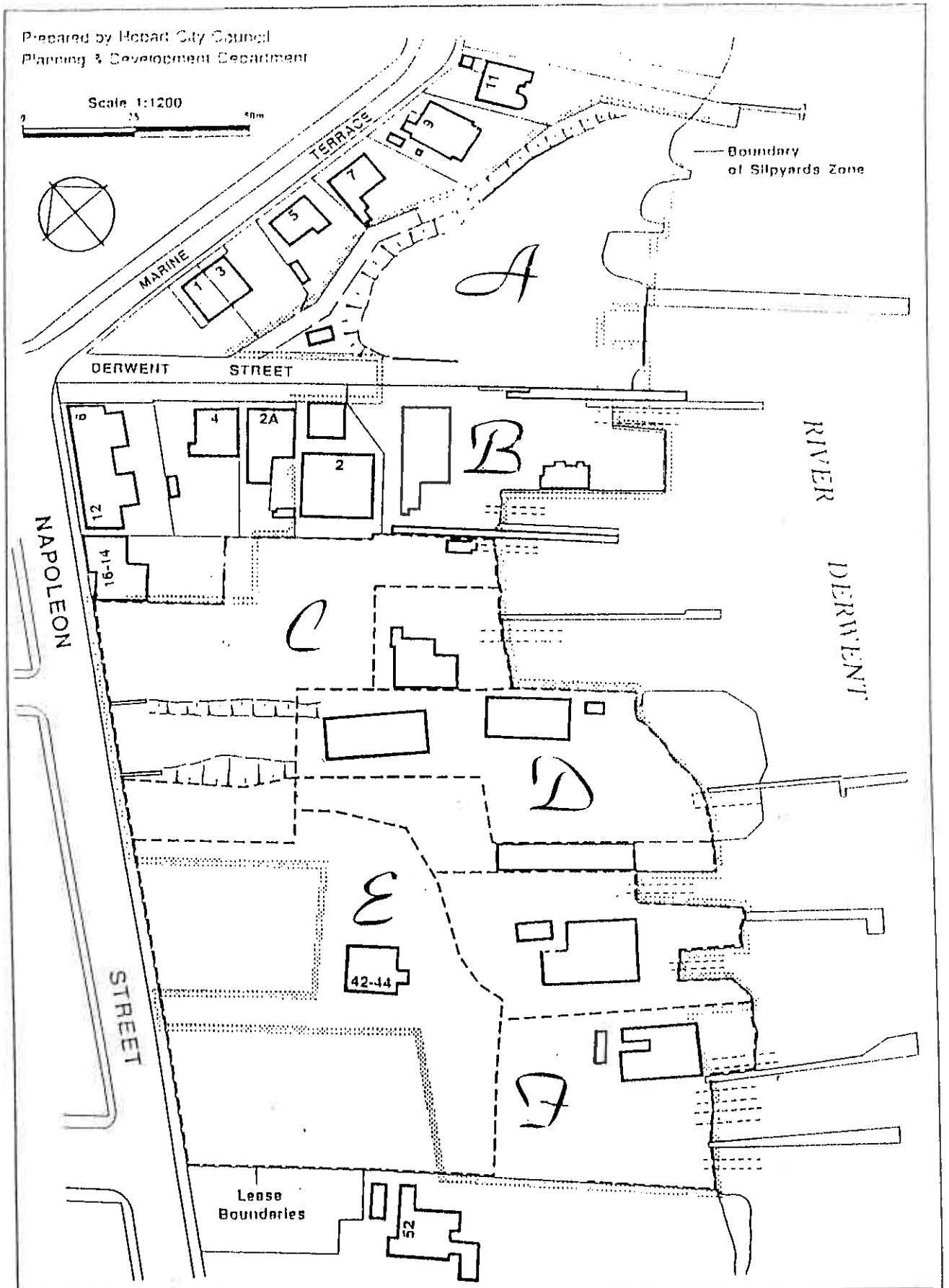
[1]CSO 50 Blue books 1840, 1845

[2]Lawson, Blue gum clippers



Corporation of the City of Hobart
Battery Point Planning Scheme 1979 - Review
SLIPYARDS ZONE
Figure
LAND USES

Key to historical description of sites

houses known as the Mariners' Cottages. In 1856 he sold the property at which time it was described as comprising "cottages, workshops, stores, jetty and wharf, etc." John Lucas and R.A. Jeffrey later occupied the slipyard.

Site F: This slip was established by Robert Inches in 1878 and was later owned by Charles Coverdale who had a national reputation as a builder of fine yachts, and Charles Lucas, famous for his racing craft.[1]

Nearly all of these slips were still operating in 1915 and, with the exception of Purdon & Featherstone's (Site A), which was demolished in 1976, most are still operating. They are now owned by the HCC and leased back to firms such as Muirs, Creese's Boatyard, and Taylor Bros.

Sailmaking

Neils Basstian, who described himself as late sailmaker of the *Surry* advertised in February 1823 that he would make sails, cots and bags at the shortest notice and had goods for sale at Mr. Dixon's, Kangaroo, Liverpool Street.[2] Perhaps there was not the population to support a specialist sail maker - in the 1826 directory he was listed as a baker as well as a sailmaker of Bathurst Street. By 1834, he was running the ferry at New Norfolk and was landlord of the Blue Anchor Inn in the town.

During the 1830s, this type of industry began to concentrate around the developing wharf area. By 1834 Clouder & Buckles and S. Dale are listed as sail makers on the Wharf (later Old Wharf/Hunter Street). Clouder appears to have been in business by himself by 1839 when a disastrous fire nearly put him out of business. The fire began with a boiling pitch kettle and, despite the efforts of some visiting French sailors and the men of the 51st Regiment barracked nearby, Clouder lost bills of exchange, sails, sail-cloth, and tools as well as suffering the consequences of the disruption to his business.[3]

David Ramsay was the government's master sailmaker until going into business on his own account. In the 1831 directory he was listed as a tent and sail maker but that same year he also went into the manufacture of rope from flax [see below].

In 1854 there were three sailmakers on Old Wharf - J. Martin, W. Mitson and J. Morling, and on New Wharf - L. Garnaud, G. Pryde and Robinson & Bain. On Franklin Wharf, Cleburne and Colvin were in the business. Some of these made a lifetime career in the industry. When Garnaud died in New Zealand in 1881, his death was reported in the *Tasmanian Mail* which referred to his thirty years as a sailmaker in Hobart.[4] Cleburne and Colvin were in business as ship chandlers for some twenty years. James Morling's house and sail loft are listed in assessment rolls from 1847 to the 1880s, but he seems to have retired by 1885 by which time he was living in Park Street. During the 1850s he had built a row of cottages behind the sail loft but these and his former business premises were burnt down in the great fire of November 1890.[5] In 1883 there were only five sailmakers in the

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[1]This section was compiled from research undertaken by Audrey Hudspeth for the BPHR document and other papers.

[2]HTG 1 February 1823

[3]Tasmanian 20 December 1839 quoted in Down Wapping p.15

[4]TM 19 November 1881

[5]Hudspeth & Scripps, SCHR:HS, p. 15

colony, according to Thomas Just, who stated that there was not much demand for the trade.[1]

By this time only two sailmakers as such are listed in government statistics and Hobart directories - Henry W. Dale, a tent and sailmaker of 8 Argyle Street, and Forsyth & Sons who had been on New Wharf since the 1870s. As well, Robert Rex had been in business as a ship chandler and sail maker since 1867, having taken over the business established the previous decade by John Austin. In 1896 Rex moved from the original premises in Morrison Street which were demolished to allow the extension of Gibson's Mill, to a building on Franklin Wharf.[2] In 1915 both R. Rex & Son and Forsyth & Son were still in business and both sites survive. There was still a sailmaker on the latter site in recent times until Hood sails moved to Regent Street, Sandy Bay.

Coopering

Coopering is not necessarily a maritime industry although the products of the trade was closely associated with the export of many commodities, most notably whale oil, and many of the coopering business were clustered around the wharves. In 1854, for example, seven of the ten coopers listed in the directory were on the wharves or in Battery Point near the slipyards. Casks and tubs were also used for a range of other purposes, particularly in the manufacture and storage of various beverages and the transport of soft fruit for the jam industry. Many of the breweries and some of the jam factories had their own coopers on the premises.

There were coopers working in the settlement from the earliest times - the first recorded was the cooper employed at the government stores in 1804.[3] However there is little information about the coopers who were self-employed during the early period. One of the first to advertise in the local press was J. Withers who, in December 1821, thanked the public for their support and announced that he was selling "all kinds of articles in his line ready made" at Mr. Stone's in Liverpool Street.[4]

During the 1830s, the directories regularly list only three or four coopers in Hobart Town. Of the four listed in 1831 only J. & W. Clark of Argyle Street were still in business in 1837. Joseph Withers is not listed yet he turns up again as a cooper in Argyle Street in 1847. Whether this represents a shortcoming of the directories, employment in another firm, or an absence from the town is hard to say.

One of the 1830s coopers was Luke Milward who advertised in 1835 that he had made filtering casks priced from 30s upwards for the health of the inhabitants - probably a very useful utensil given the state of Hobart's water supply- as well as bath tubs. He also made brewing, dairy and distilling utensils to order.[5]

Another individual a long time in the trade was Richard Brown who established his store and cooperage on the Old Wharf in about 1835 and remained in business for some twenty years. By the time that he retired J. & T. Johnston were already in business on the New Wharf. The business had been established in about 1842 when William Johnston moved into the store recently built by Charles McLachlan at 81

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[1]Just p. 15
[2]Hudspeth & Scripps, SCHR:CC, p. 40-41
[3]HRA III i p. 258
[4]HTG 29 December 1821
[5]Colonial Times 24 February 1835

Salamanca Place. The family association continued almost to the beginning of the First World War when Archibald Johnston died. However, Johnston left the cooperage to "Skipper" Batt, one of his former apprentices who continued to operate it until 1931.[1]

From the 1860s to the 1880s William Burgoyne also had a cooperage in Salamanca Place, occupying one of the "squares" which faced the warehouses and which were so contentious during that period. The art of making a cask was demonstrated to Leslie Norman in the 1880s:

> To this day it is a mystery to my way of thinking how anyone can cut each stave to the required shape, so that, when bound together with iron hoops, they will make a barrel wide in the waist and rounding off to a smaller top and bottom. But imagine all the staves required for a barrel ready and guaranteed, when bound together with the iron hoops, to be such a perfect fit that when filled with oil not a drop would seep through.
>
> The next step was to place the staves round a disc of wood on the top of a man high pole gauged to the size of the head of the cask to be constructed. When Mr Garde, who was Burgoyne's head man, and an artist at his work, was satisfied to the fit, which had to be to a millimetre, a wooden hoop covered with tarred rope was put around the staves which were grooved at the top to take the head (also cut to a millimetre tolerance).
>
> The head was placed on top of the wooden disc, and the wooden hoop beaten down with mallets until the staves and the head came together with surgical precision, leaving about two inches of the tops of the staves exposed to view, that is to say, about the corded wooden hoop.
>
> Mr. Garde's assistant then took a long piece of hoop iron and clamped it in the form of the top iron hoop of the cask. To give it the required bevel it was punched around the edge of one side with a copper's double handed hammer, one head being flat, the other like an extremely blunt chopper; the other was for bevelling the hoop.
>
> When Garde was quite satisfied that the hoop was of the correct size, it was riveted together and belted down on the top of the cask until it was flush with the edge. So that was that - the image the cask made at this stage being like a many legged object, the legs stretching out on the ground, well beyond the diameter of the head.
>
> As other hoops were put on and hammered down securely the staves came in more and more to what was to be the diameter at the bung, When no more hoops could be hammered on, the cask was lifted off the disc and placed on is completed end on the ground with the loose ends of the staves sticking up and yet to be drawn together, in a most ingenious manner as follows:-
>
> A corded hoop of wood of the largest size was put around the loosely sticking up stave. By belting it down on one side the staves were brought together to some extent enabling a somewhat smaller hoop to be put on, and so on until the second head could be inserted and a top iron belted on as before. It was an easy matter to hammer on the other hoops and, lo' the cask was complete, all except the bung hole, which was easily bored, and an appropriate bung made.[2]

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[1]Hudspeth & Scripps, BPHR, pp 52-3
[2]Norman pp 79-80

Burgoyne's operation coincided with a brief revival of the whaling industry during the 1860s and 1870s.

The directories of the 1890s list only two coopers - Johnson in Salamanca Place, and Lot Berry at 313 Elizabeth Street, next to the Dallas Arms Hotel. Berry had gone out of business by 1900, leaving Johnston as the last cooper still in business on his own account. Coopers were still employed at places like the Cascade Brewery, however. Johnston's building in Salamanca Place remains.

Rope making

The size of the rope making industry is hard to judge. The three manufacturers identified during the course of this study all practised the trade principally during the first half of the 19th century.

David Ramsay was a master sail maker in the service of the Government when he applied in 1829 for a 2nd class allotment in Brisbane Street on which to erect a two-storey stone house. The allotment he sought backed on to property he already owned at the corner of Brisbane and Melville Streets where he had built a weatherboard house and a stone skilling.[1] In 1831 he announced that he had established a rope walk in Melville Street:

> Ropemaking: The undersigned having purchased from 20 to 30 tons of New Zealand flax with which from arrangements made with Capt. Briggs he will now be regularly supplied has commenced business in the above line under the superintendence of first rate workmen, and respectfully begs to intimate to ship agents, merchants and the public generally that they will always be supplied with rope of all sizes and of a very superior quality at a moderate price ... David Ramsay.[2]

In April 1835 Ramsay's Rope Walk at the corner of Melville and Barrack Streets was offered for sale by auction.[3] The purchaser apparently did not carry on the business and Ramsay soon moved to Murray Street where he was listed as a pawnbroker.

The industry was continued, after an interlude, by James Moody or Mudie of Sandy Bay. Moody bought the property beside the Lipscombe Avenue stream in 1827 but his rope-making activities are not recorded until 1844. By that time he was said to have an "extensive rope walk"[4] and was experimenting with native hemp. He had

> directed his men to spin a small quantity of the native materials and an equal quantity of New Zealand flax, and brought the cords to Mr Knight's warehouse on the New Wharf, who had then tried them before himself and several other gentlemen, The New Zealand flax tested up to seventy pounds and the other to eighty-four pounds. We learn that Mr. Moody has put a considerable quantity of his discovered hemp into a state of preparation and he trusts in a short time to be able to produce native rope of a very superior description for his customers, and we hope that he meets the encouragement that he so richly deserves.[5]

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[1]ISD 1/109 p. 811
[2]HTC 29 January 1831
[3]Colonial Times 14 April 1835
[4]HTC 24 December 1844
[5]CC 13 December 1844 quoted in Rowntree p. 39-40.

In the 1854 trade directory a J. Murdock is listed as a rope manufacturer of Brisbane Street but this business does not appear to be related to Ramsay's rope walk.

Chemicals and Fertilisers

Organic fertilisers were made at a number of sites including Hyam's Tannery in South Hobart in the 1840s[1]; Mezger's Mill at New Town in the 1860s[2]; and Shag Bay between c.1896 and 1915.

it's not clear when operations first began at Shag Bay but there was a bone mill there as early as 1896 when Hobart's Medical Officer of Health proposed a noxious trades area at Shag Bay. In 1908 the Tasmanian Fertiliser Company, which had taken over the Anglo-Australian Guano Company the previous year, went into partnership with the Russell family, who operated the bone mill, to install a new modern plant for the processing of animal manures. The Company installed a Stamp & Powell patent combined cooker, tallow extractor and vacuum drier - this was the first such machine in the Commonwealth. Following the success of the plant in treating a variety of fish and animal matter, the Company extended the operations to include sanitary material and entered into a contract with the Hobart City Council to process sewage, buying the necessary machine from Stamp and Powell.

At one end of the works, the sanitary waste of New Town, Queenborough and Glenorchy was processed. The containers, brought in by boat, were conveyed on an endless chain carrier to a platform where the contents were tipped into a continuously revolving machine like a huge boiler and steam-dried. An outer drum, containing the waste, revolved around an inner steam jacket, and processed the waste for 12 hours. The product was then put through a disintegrator before being bagged. About 530 tons of waste were treated each year and there was a ready market among gardeners and farmers for the end product. At the other end of the plant, bones, blood and other offal, fish and fish bones, dead animals and general garbage were processed in another steaming machine to be turned into manure. Tallow with a rich yellowish tinge was also produced for export to Russia.

In 1915 a boiler exploded, resulting in the death of William Russell and the mill burned to the ground.[3]

For a period of seventeen years, sulphate of ammonia was produced at the gas works for use as a fertiliser. Ammoniacal liquor was a waste product of the gas making process at the works in Macquarie Street but at first it was considered too expensive to try to process the liquid further. However, ammoniacal liquor and lime were offered to farmers to experiment with as a fertiliser. As late as 1893 plans to erect a sulphate of ammonia plant at the works were abandoned due to the high price of sulphuric acid. It was not until 1905 that an ammonia concentrating plant was erected. The plant was supplied by the Standard Ammonia Company of Sydney and erected in a brick building built by contractors J. and R. Duff. The Standard Ammonia Co. was to run the plant and take the Gas Company's entire output of ammoniacal liquor. The steam for the ammonia still came from the electric station's boilers. The production of anhydrous ammonia rather than sulphate of ammonia had been advised by Charles Philip Holmes Hunt, a gas engineer from Melbourne the then high price of sulphuric acid making the production of sulphate of ammonia uneconomic.

Within only a few months, however, difficulties were experienced due to the age of the liquor being used in the process. A new tank was built to house the fresh liquor but later in 1906 Standard Ammonia withdrew from the contract and the Gas

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[1]BTA 13 August 1846

[2]Scripps, NTRHS, p. 43

[3]Hudspeth, Clarence Historic Site Survey p. 137-8 and WC 12 September 1912

Company took over the plant In 1912, Holmes Hunt was again consulted on a proposed sulphate of ammonia plant, and advised the enlargement of the plant so that either sulphate or a concentrated liquor could be manufactured. In 1922, the ammonia plant was shut down, Mr. Holmes Hunt having advised that it was no longer economical to produce sulphate[1].

By 1908, E. Bennett & Co. had established a chemical works at the foot of Macquarie Lane in South Hobart to manufacture sulphuric acid which was used for butter testing, carbonate of soda, muriatic acid, and sulphate of soda. The factory was a brick building apparently on the site of an earlier mill - a survey diagram of the area shows a mill race leading from the rivulet to the factory. The process was described thus:

> Sulphuric acid is made by burning sulphur, and leading the sulphur dioxide so produced into a large leaden chamber into which air, steam, and nitric acid vapours are also passing.... The diluted sulphuric so formed collects at the bottom of the leaden chamber. It is then strengthened by passing through a filter of coke which gets rid of the warm furnace gases, and most of the water. It is then collected in another leaden chamber, and is technically known as "chamber acid," being about 70 per cent sulphuric acid, the specific gravity being about 1.6. The "chamber acid" is further concentrated by heating it in open leaden pans until it reaches a specific gravity of 1.72 when it is called "brown acid." To convert this into "oil of vitriol," it is boiled in glass retorts until dense white fumes begin to escape. In this condition, it contains nearly 94 per cent sulphuric acid. The pure sulphuric acid is made by distilling "oil of vitriol," when the impurities remain behind, and a colourless liquid is obtained to a specific gravity of 1.845.

The alkali ash which was used in the production of the sodas was imported from England in 1908 but Bennett was about to erect a plant to manufacture it. The factory could produce five tons each of sulphuric acid and carbonate of soda every week, as well as two tons of muriatic acid, and four and a half tons of sulphate of soda.[2] Bennet was still in business in 1915 but nothing remains of his factory.

There are significant remains only at the Shag Bay site where some old boilers are still in situ. An archaeological survey of the area has been carried out by Ingrid Albion for National Parks and Wildlife.

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[1]Jacob Allom Wade and Stephenson EMF Hobart Gas Works Site Conservation Plan and Preliminary Environental Audit, Department of Environment and Planning, 1993.

[2]TM 10 June 1908

Appendix

The Filemaker Pro record sheet

HOBART INDUSTRIAL HERITAGE SURVEY

SITE NUMBER

ITEM NUMBER

NAME OF SITE

ADDRESS NO.

STREET

TOWN or SUBURB

DESCRIPTION OF SITE

INTEGRITY

PRESENT USE

DATE OF CONSTRUCTION

ARCHITECT

BUILDER

CLASS OF MANUFACTURE

PRODUCT

MANUFACTURER

DATES OF OPERATION

HISTORY

SOURCES

STATEMENT OF SIGNIFICANCE

OTHER HERITAGE LISTINGS

REMARKS RECOMMENDATIONS

PHOTOGRAPH

SITE VISITED

DATE OF RECORD

RECORDED BY

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