TRADITION AND CHANGE: THE SHEFFIELD CUTLERY TRADES 1870-1914

Sally-Ann Taylor

Submitted for the Degree of PhD

in the Department of History

University of Sheffield

August 1988

VOL 2

Chapter 7 Health, Sanitation and Conditions of Employment.

The sanitation and healthiness of workplaces in Sheffield varied enormously. Conditions depended on whether the premises were classified as a factory or as a workshop, the status of the owner and the number of occupiers. Generally, however, their state was poor. This was partly the result of the basic and unavoidable unhealthiness and dirtiness of the cutlery trades and also the continuance of traditional modes of production which had been developed with very little regard for cleanliness or salutariness. The most important factor however, was the tenacity of the traditional employment structure in these trades, which respected and used the time-honoured independence of the small master and subcontractor, along-side the large firms. This necessitated the continuance of a diversity of work units: large 'respectable' factories, owned and run by major firms; tenements with one owner, but hundreds of occupiers; small domestic workshops.[1] In such bewilderingly diverse conditions, in which the Factory Acts applied to some premises, but not to others, where owners could easily pass the buck of enforcement onto small occupiers who could not afford to rectify faults, legislation had to be of an extremely specific and well-considered nature, if it was to be enforced and meaningful.

In the latter part of this period, considerable effort was made by the Home Office, medical personnel, the Factory Inspectorate, and local groups, to identify health and hygiene problems and then to frame acceptable legislation. By 1914, the cutlery trades were covered by quite rigorous regulations which went a considerable way to improving both health and sanitary conditions.

Improvements were also assisted by technological advances and modernization within the industry, particularly the building of new factories and introduction of more advanced machinery. In fact, it can be argued that technology was a far more significant spur to advancement than legislation. The enforcement of factory legislation encouraged many employers to give their work 'out' to unregulated outworkers, avoiding the cost of compliance with the new legislation. This in turn, assisted the movement of attention to the minimum wage as a solution to the plight of the outworkers.[2]

Overall, technology and legislation together forced a considerable improvement of conditions in these trades. Nevertheless, they would never be fully 'cleaned up' until their structure was more uniform.

1) Hours

The number of hours spent at work, were a crucial determinant of the health of workers, but they, like so many aspects of this industry, continued to be dominated by traditional patterns and beliefs. Whilst ever workers remained nominally 'independent' contractors, and the trade itself so seasonal and prone to fluctuation, it was extremely difficult to regulate or enforce what were considered to be 'healthy' hours.

Hours were, in principle, quite rigidly defined: in 1867 grinding wheels ran for approximately 60 hours per week, from 7a.m. to 6p.m. at the beginning of the week, and until 8p.m. at the end of the week, with a stop of one hour for lunch,[3] and from 6a.m. to 2 or 4p.m. on Saturday.[4] Factories were generally open from 6 or 7a.m. until 9p.m.[5] However, hours in the grinding wheel were in reality much longer, as men spent time after the wheel has stopped running, in clearing away and preparing for the next day.[6] Hours in the hundreds of small workshops were much longer and less regular.[7]

In all establishments, even the large factories, most men, being independent contractors, and paid by the piece, often chose to conform to the traditional observance of St. Monday, or at least to do very little work at the beginning of the week, and compensate with excessive hours at the end of the week. In an inquiry of 1867, it was constantly reiterated that "The men work by the piece, and come and go whenever they please. Some will come for only 5 or 6 hours at the beginning of the week, and for 15 hours at the end".[8] When good trade and income would allow it, many men would not arrive at work until 11a.m. Overlong hours were worked before national holidays, as workers attempted to earn sufficient to tide them over the days for which the works would be shut.[9] This was particularly common, at the beginning of this period, in the three weeks before Christmas. Calf week, the third week before Christmas would be a busy time, Cow week even busier, and by Bull week, one week before Christmas, work took place almost around the clock.[10] However, whilst hours remained long in the

busy pre-Christmas period, 'bulling' diminished, as factory legislation and better organised trade[11] put an end to "this most absurd and illogical custom which has long been complained of by all classes in Sheffield, and which is only one of the many faults in the system, or want of system hitherto in vogue in Sheffield".[12]

However, excessive overtime continued to be worked,[13] and despite legislation affecting the hours of women and children (see forward) men continued to work long hours, and moreover, kept their children with them - many were taken to court for employing children at illegal hours during the Christmas season of 1869.[14] The judge, like most outside observers, was shocked by the prevailing attitudes in the cutlery trades, which stressed that the industry was so unique that the law could not really be applied to it. He commented: "many people in Sheffield make laws themselves, which they think better than the laws of the land, and if the law of the land prohibits certain things, they think that their own laws are better and they follow their own inclinations until they are finally brought before the magistrates...and you must understand that 'Bull Week' is no more to be made an exception than any other week".[15] It was an exclusive attitude which, perhaps because it contained some truth, was slow to die out. In 1871, the factory inspector made a similar complaint, but he still failed to see "that the inhabitants of this town have any claim to be considered as a peculiar people, at all events, in the sense in which they deem themselves aggrieved by being included in the jurisdiction of the factory laws".[16] Even large, prestigious manufacturers were reluctant and recalcitrant about restrictions covering hours of work. Such regulations were believed to effect "more harm than good as far as Sheffield was concerned, as it had been a custom from time in memorial for workmen to make overtime in 'bull week' in order that they might have a holiday at Christmas".[17]

It was largely the irregular hours and habits of adult male workers, who dragged their female and young employees along with them, which necessitated the restrictions on female and juvenile hours of 1867. In its leader on the bills of 1867, The Times pointed out that "the worst result of the old system of unrestricted freedom was that it tempted men to indulge in alternate fits of idleness and excessive

labour. They would be drunk for two days at the beginning of the week and would then endeavour to recover their lost wages, not only by overworking themselves during the remainder of the week, but by compelling their wives and children to work unreasonable hours".[18]

The regulation of the employment of children in these trades followed closely on the report of J.E.White for the 1865 Children's Employment Commission, which had found that many manufacturers as well as "the thoughtful of the working classes", were opposed to the employment of children under the age of twelve in such unhealthy occupations.[19] The categoric conclusion of the report was that "there are probably few places or employments in the kingdom in which some proper legislative regulations as to the employment of the young, state of workplaces etc. could be applied with less derangement to the interests of the trade, or with greater benefit to the large numbers concerned, than in the staple manufacturing employments of the Sheffield district".[20]

However, attempts to deal with the problem were fraught with the difficulties which would dog all attempts to regulate these trades throughout this period: not only were there inadequacies at national level, in the vague and problematic distinctions between factories and workshops, distinctions which were vital to the application of legislation in Sheffield, there was also the maze of problems of enforcement in such diverse conditions. This legislation drew for the first time, the distinction between factories and workshops, albeit according to a random numerical standard, according to which premises with fifty or more workers were designated factories, whilst those with less than fifty were workshops,[21] although all premises in which machinery was used to grind metals were deemed to be factories.[22] In factories, a maximum of twelve hours, including one and a half hours for meals, could be worked by women and young persons (aged 14 to 18). Children (aged 8 to 13) could work six and a half hours per day with a compulsory half day of schooling, but no children under twelve could be employed in the grinding of metals. Hours were to be worked between 6a.m. and 6p.m.

The Workshops Act, also of 1867, covered premises in which under fifty people, including women, children and young persons, were employed, in any manufacturing process, even if it was not purely

manual, the employer was a parent, and no wages were paid. No children under eight were to be employed, and for those aged eight to thirteen, the half time system was also implemented, allowing for ten hours of school per week. As in factories, for all protected persons hours were limited to twelve, with one and a half hours for meals. In premises in which more than five people were employed, work was to finish at 2p.m. on Saturday. However, unlike factories, the hours within which work could take place were much longer: betweem 5a.m. and 9p.m. for young people and women, and between 6a.m. and 8p.m. for children, a proviso which made illegally long hours of employment very hard to detect.[23] Furthermore, many manufacturers were keen to extend this limit to 9p.m. for women working in warehouses, wiping, oiling and packing blades, because this was said to be "light and agreeable" but more importantly because blades would rust if they were not attended to immediately.[24] The unions and Factory Inspectorate, whilst recognising that work had to continue until 1p.m. on Saturday, were anxious to, and successful in preventing any extention of the hours in which women could work.[25]

Administrative difficulties were present from the inception of the legislation The Factory Act was to be reasonably effectively administered, by the Home Office Factory Inspectorate, but the Workshop Act was a piece of permissive legislation, which left decisions on enforcement to the local authorities. In Sheffield, the Town Council made no attempts to enforce the legislation.[26] Administration was not passed to the factory inspectors until 1871, and until this happened, the Workshop Regulations Act remained a dead letter,[27] and even after this, the Factory Inspectorate had no direct authority over sanitary regulations. Moreover, the factory inspectors in Sheffield were chronically understaffed. In 1876, the factory inspector stated that he needed a further two assistants for the Sheffield area of his authority alone, and preferably more junior officials to do the fact-finding work and investigation.[28]

Once enforcement began, the problems and discrepancies mulitplied. The Workshop Act failed to cover outworkers, although it covered domestic workers.[29] More important were the justified grievances of factory owners and the workshop workers who were technically classified as factory occupiers, and who were therefore subject to far more rigorous legislative demands and consequent costs than workshop

occupiers. As early as 1870, the factory inspector recognised that "nothing has been done in Sheffield to diminish the immense amount of discontent arising from the inequality of privileges accorded respectively to those who work in factories and workshops...In Sheffield alone, exclusive of the villages...there are roughly about 2300 workshops in which are employed variously from 49 down to 2 or 3 hands; and from the total absense of any supervision on the part of the local authorities, and the consequent facilities afforded for the employment of young hands, and working them any hours, the occupiers of these workshops are enabled to compete on a very great advantage with the occupiers of the factories..."[30]

All the witnesses before the 1876 Royal Commission stressed their belief that factories and workshops should be placed under the same conditions, mainly because of the detrimental effect of the division on the costs and competitiveness of large, respectable firms. Such firms were, in any case, the least needful of regulation,[31] and rarely employed any children.[32] Many workshops were classified as factories because they had rudimentary grinding machinery,[33] whilst in tenements, and large public wheels, in which a variety of occupiers rented space, half the shops could be treated as factories and the remainder as workshops.[34] Further complaints concerned workers who, having completed their maximum of hours in a factory would then go on to workshops, or completely unregulated premises to do futher hours.[35] In the words of J.A.Schmeichen, echoing what Beatrice Webb recognised at the time, "One of the chief lessons of the forty years of government factory and workshop reform was that uneven and disparate measures tended to generate growth in the least regulated sectors of the labour market, and to drive the trade into lower channels of production, and to stratify the working class".[36]

A further problem, more specific to Sheffield, was that of deciding who was responsible for the implementation of legislation: larger employers or the independent subcontractors whom they employed. In 1867, it was recognised that, "most of the boys are removed from the direct supervision of the manufacturers",[37] a problem which was heightened by the issue of who should be responsible for the provision of the child's medical certificate. Large employers complained that in making them responsible, such legislation paid inadequate attention

to the unusual industrial structure of the cutlery trades.[38] They stated that they were not directly responsible for the children, and often never even saw them. Thus the onus should be placed upon the children's direct employer, their subcontractors, who were often the children's own parents:[39]"the factory owner has neither a direct control nor personal knowledge of these matters".[40] The Commissioners in 1876 however, were quick to point out the practical difficulties of this: "it would be exceedingly difficult to get the law obeyed if the inspector had to deal with say, 50 or 100 men in your works",[41] and were thus adamant that control should continue to rest with the reluctant factory owner and " not be filtered through to those lower strata".[42]

Despite the protests of manufacturers and the owners of premises, this was the way in which all legislation of this period would move: as the 'independence' of the small master gradually diminished, and the financial demands involved in compliance with new legislation increased, so the state forced the larger capitalist to assume more and more of the responsibilities which the small employer could no longer realistically even attempt. Although this gradual transfer of power involved considerable conflict and compromise, as well as necessitating changes in the structure of the industry which forced it more into line with other less traditionally structured industries, this was the only way in which regulations could begin to be enacted and enforced.

After the 1867 Acts, few parties were as yet ready to acknowledge the need for any further limitation in hours of work, even for children. The trade unions favoured further restrictions on the employment of children: stronger branches already operated stringent restrictions,[43] although this was primarily a facet of their restrictive practices rather than concern for the moral and educational welfare of the children in the trade. However, most 'respectable' manufacturers turned a blind eye to the issue, stating that they employed very few children under thirteen anyway.[44] Even some notable workmen opposed any further restrictions: "if a girl was allowed better food, and was better dressed by the result of her labour, she would soon know that it was for her benefit as well as for her father's and mother's".[45]

There was a general consensus in Sheffield, as there was nationally, that there should be no further limitations of the hours of women workers: women were "quite as well able to take care of themselves as the men are".[46] The four female cutlery workers interviewed by the 1876 Royal Commission wanted no further legislation, believing that "public opinion" and "christian feeling " would be sufficient to stop any further abuses of female labour,[44] whilst they were quite capable of negotiating their own agreements with employers.[48] Their employers advanced both pragmatic and moral argements for no further interference with the hours of women workers: they had long holidays and frequent slack periods,[48] and moreover, "the best way of keeping [women] straight and virtuous in the world is to give them honest employment. I have always found that if a woman had a fair chance of getting a living, it is the best thing to keep her from doing worse things".[49]

The 1878 Factory Act had wide implications for the cutlery trades, as it changed the numerically based definition of a factory, to the much broader one of any place in which mechanical power was employed. However, directions that protected persons should only be employed between 6a.m. and 6p.m. were again waived for these trades.[50] Moreover, difficulties continued to surround the definition of the owners of the premises, who was again designated as being responsible for the implementation and enforcement of legislation. The issue was sufficiently unclear to warrant a visit by the Chief Factory Inspector, to the Chamber of Commerce, who explained that whether a man paid rent or not, if he was only employed on the work of the owner of the premises in which he was working, the owner was responsible for the enforcement of the Act.[51]

After this legislation, there was little further reduction of hours in the cutlery trades. In fact, it appears that the hours of adult males tended to increase, particularly in the sweated, poorly paid branches. In the unregulated workshops in which only men were employed without motive power, hours were often as long as 9a.m. to 8p.m. on Monday, 6.30a.m. to 9.30p.m. on Tuesday, 6a.m. to 10p.m. on Wednesday to Friday, and 5a.m. to 2p.m. on Saturday, for a wage of only fifteen shillings per week.[52] Hence the growing belief that for such trades, a compulsory maximum number of hours per week was the

only way to reduce the excessive competition, thus making the men fitter and healthier, and perhaps even increasing their piece rate wages. Thus, "a man, if he wishes then to compete with another, would have to compete by superior workmanship or work harder, but not by working longer hours".[53] In the late 1880s and early 1890s, the eight hour day was the dominant concern of the national labour movement.[54] In Sheffield, the various cutlery trade unions believed that such legislation would increase wages and were firmly in favour of its legal enactment,[55] whilst others felt that although piece wages made it broadly irrelevant to the cutlery trades, they would still support it by trade option in order to allow the trades that would benefit from an eight hour day to pursue that course.[56]

Throughout the rest of this period, hours remained roughly the same - between 54 and 60 hours per week, although the strongest trades for example the scissor grinders, had managed to shorten these to 50 by 1907.[57] Superficially, the appearance of flexible hours, favourable to the worker, was maintained; but the reality was very different. Although they still worked by the piece, the real distinctions between time, task and piece wages were diminishing as all came to involve criteria of time, output, exertion and pay.[58] Even in 1892 it was recognised that a worker must alwayshave " regard in all cases to the interests of his employer. If an employer wishes him to stay and finish an order, he must do so".[59] By 1907 "if a man stays away from his work, the employer wants to know why he has stayed away, and if the man persists in pleasing himself the result is that the employer will dispense with his services. While there is this system as to whether I shall go to work at 8 o'clock or 9 o'clock in the morning, there is always the employer's convenience to be considered, and the employer insists upon it".[60]

Whilst the men were constricted by some sort of factory discipline, they were also the victims of the continued traditional features of their industry. Many, because of their semi-independence, spent hours waiting for work or materials to be given out, and returning finished goods to the warehouses. It was increasingly acknowledged that 'St.Monday' was less a product of idleness, than of enforced inactivity. So little work was given out on Mondays and Tuesdays, that men were forced to work much harder at the end of the week when

orders became more plentiful.[61] "Take for instance, Thursday and Friday. A man would go at 6 o'clock in the morning and work until he was turned out at night. The simple reason for this, that he had to lose so much time at the commencement of the week in running about for his materials, that he is obliged at the latter end to put all the hours in that he possibly can".[62] Similarly, if men were still at work at 10 p.m., it was not because they worked systematic overtime, but because fetching and carrying materials all morning had forced them to delay the start of work until 3 p.m.[63]

Irregular hours were also necessitated by the fluctuating nature of the trade. Underemployment was virtually universal in the 1890s; in 1893 there was generally only two to four days work per week, and in December only 50% of cutlery workers were fully employed.[64] Under-employment was similarly underspread in 1907.[65] With such extensive and widespread periods of underemployment, the need to work excessive hours when trade finally improved, would have been all the greater. By the end of this period, cutlery workers believed their hours to be so long, and this to be the result of the traditional structure of the industry, that many were demanding a factory based datal wage instead. "If the employer will guarantee that a man going into work at a certain time in the morning shall be employed, and not idling his time away being a pieceworker...then I say, let the man get in at the proper time in the morning. The men would like it".[66] The employers however disagreed, pointing out that when experiments with fixed hours and wages had taken place, the men had been incapable of adjusting to such systems.[67] But many workers, in this sphere, as in many others, were by now fully aware of the Pyrrhic nature of their 'independence': their lengthening hours were the product of their traditional but now virtually meaningless 'flexibility', whilst the traditional structure of the industry made what legislation there was, extremely difficult to implement and enforce.

ii) Sanitary Conditions

The general construction of, and sanitary condition within factories and workshops, differed widely, ranging from the few well maintained and salubrious premises of the best firms, to the far more numerous and typical, dilapidated tenements and myriad of small

workshops. The bad conditions were largely the result of the divided responsibility which was central to this industry, and which made the application and enforcement of legislation extremely difficult. The only solution was to attempt to form a hard and fast definition of the 'owner' of the establishment, who could afford to put legislation into practice, supervise its continued application, and also be identified as responsible for its non-observance. Whilst this position was achieved only gradually and through much compromise, by 1914 it had not only brought about significant improvements in conditions, but had also helped in the psychological changes and realignments by which cutlers came to realise that they often had more to gain by abandoning their claims to be independent contractors.

Conditions were worst in the grinding wheels. The workrooms were called 'hulls', a term which had origially meant a sty, a definition which Dr.J.C.Hall, writing in 1865, found to be only too apt.[68] Many had been built in the earlier part of the 19th century, or were housed in converted dwelling houses, remaining completely unaltered until 1867.[69] Hulls were normally built back to back, floor above floor, with the lower floors frequently vaulted to support the weight of the machinery above.[70] They were generally ill-lit and gloomy, badly ventilated, with plaster falling off the ceilings and wet muddy floors caused by the wheel swarf of wet grinders, which also seeped through the ceilings. Most were dusty, with window panes broken to let in light and allow dust to escape.[71] Some wheels however, were in considerably better condition, such as that of Joseph Rodgers which was light and lofty,[72] and the largest public wheels, the Soho and the Union, in which conditions were a great improvement on those in the smaller private wheels.[73] Cutlery workshops, although not so obviously dirty as the grinding wheels, were still cramped and unhealthy,[74] but again conditions varied enormously from one establishment to the next. At J.Askham's works on Broad Lane, "The works are cramped, and in a neglected untidy state. In one small shop I counted ten panes broken, three stopped up with paper, and the remainder brown with the 'sauce', glue and emery thrown off in the course of work".[75] Joseph Rodgers however was a "a wellknown ...cutlery manufactory of high standing. The character of the buildings and the internal arrangements correspond".[76] Overall, the newer, and larger factories were much healthier and cleaner, but these were relatively few and far between.[77]

The problems were recognised to be the result not only of the dirty processes involved in the trades, but the absence of any one occcupier whose responsibility it was to keep the place clean - but for all this it was believed that the awful sanitary conditions could have been avoided.[78] The legislation of 1867, had little effect on conditions in these trades. It demanded only that dry grinders used fans to carry away their dust in factories and workshops, and that factories should be regularly swept.[79]

Thus in 1876 many workshops were still built on the top of houses, opening into filthy closed yards.[80] The factory inspector remarked that "In the town of Sheffield itself, the workshops...as a rule, are very bad indeed, very small, ill-ventilated, dirty places. That will also apply to a great many so-called factories".[81]

Even the 1878 Factory Act had little effect on the cutlery trades: workshops where women and young persons were employed, were brought under the same sanitary legislation as factories, supervised by the Factory Inspectorate; but workshops where just women were employed, and domestic workshops remained under the supervision of the local authorities. The former were therefore more rigorously supervised than the latter. Thus this legislation still showed an amicable, if oddly directed respect for the freedom of the 'small master' and the 'home industry',[82] which therefore meant few changes in Sheffield. Conditions in many factories deteriorated:due to the clause that those factories without glazed windows were exempt from white washing the windows of many were purposely broken, in order to comply with this escape clause, making them even colder and damper than before.[83] Moreover, legislation had, as yet, done nothing to transfer the responsibility from industrial occupiers to the owners of the premises. In 1887 "many of the workshops are clean and well ventilated; but...many, very many, are dirty and discreditable, this owing to a system...which bears out the saying that 'what is everymans business is no mans business'."[84]

The problem of divided supervision continued into the 1890s. The 1891 Factory Act, although it extended sanitary provisions to workshops in which adult men were employed,(but still not domestic workshops) left their administration to the local sanitary authorities who did very little to enforce them.[86] Cutlery outworkers were

exempted from the requirements that lists of outworkers be sent to the factory inspectors. Employers breathed a sigh of relief.[87]

Inadequate inspection made the already inadequate legislation even less effective. The district in which Sheffield was placed, covering 2,100 square miles was supervised by just one inspector and one sub-inspector.[88] The unions frequently complained about this lack of inspection, which even the factory inspector acknowledged was neither "systematic" nor "satisfactory".[89] Not surprisingly then, conditions remained as bad as before. Examples were cited of sewer water that passed under or through work rooms; driving bands that ran across doorways; a dearth of suitable privies; inadequate ventilation; and works which were still housed in converted dwellings which resembled rabbit warrens.[90]

Real improvement came in 1895, with the passing of a Factory Act which was in response, and paid careful attention to the specific and unique problems in Sheffield: it was recognised that "owing to exceptional conditions of labour, special legislation had become a necessity".[91] The changes were in response to the persistent demands of the local Factory Inspectorate combined with the pressure from the S.F.T.C.,[92] although the regulations, as they emerged were subject to scrutiny and alteration by local interested parties, which seemed the only method of ensuring their applicability and ultimate observance. Proposals affecting Sheffield were examined by the Cutlers' Company, the Chamber of Commerce and the S.F.T.C., the suggestions of which were taken into account by the legislators, so that the final draft of the clauses raised very few objections.[93]

The Factory Inspector realised that the success of the Act was founded upon its new departure in placing more responsibility on the owner of the premises, a precedent which would be gradually strengthened and extended throughout the rest of this period. "A tenement factory is let off to one or more tenents(in Sheffield there are about 170)in some as many as 70 or 80 separate rooms or grinding hulls, in others many less. There are approximately 2900 occupiers who are first tenants, many of these sub-letting part of their rooms. Many of these places are very old; they were constructed when little attention was given to sanitary matters, safety, health or comfort. They are often owned by persons who never see them, who recognise no obligations, who are represented locally by an agent who remits the rent, and an engine

tender. Till the passing of the Act of 1895, all responsibility rested on the 'occupier', but there were hundreds of these in one building, several in one shop, and responsibility could not be fixed upon anyone. The Act of 1895 fixed an equitable and divided responsibility between the owner and the occupier".[94] Under this Act, the owner was made responsible for the costly commoner parts of the premises, e.g. the structure, sanitary conveniences, the fixed pipes which carried away dust, fencing the engine, the mill gearing that transmitted power to the tenants, and the cleanliness and limewashing of areas in common use. The occupier had to take responsibility for the cleanliness of his own shop, fencing his machinery, fans to carry off his dust, and the hours of his workpeople.[95]

The legislation was quite speedily and effectively carried out,[96] but not without a great deal of complaint from employers, who felt that far too much responsibility had been thrown upon owners, and unsuccessfully attempted to alter the legislation in a variety of ways, which would have firmly reimposed burdens on the occupiers.[97] Even when it had become law, many owners felt that although technically accountable, they were certainly not morally responsible for the enforcement of the rulings.[98]

A further problem was the continued inequality of the treatment of factories and workshops, and their supervision by separate authorities. Under the 1901 Factory Act for example, factories had to be limewashed every fourteen months, as directed by the Factory Inspectorate, whilst workshops had to be limewashed when the local authorites who supervised them demanded it.[99] Moreover, much responsibility was still placed on the small master occupiers to fulfil regulations which they could normally ill-afford,[100] and which consequently involved the authorities in the reprimanding and prosecution of several men instead of just one who was held to be completely responsible.[101]

Workers were frequently and sometimes quite legitimately chastised by the authorities for paying far too little attention to the cleanliness of their work places. "In one place it was admitted in court that there was an accumulation of greasy dirt of thirty years on the work benches!"[102] Often this was a direct result of the continued division of such duties amongst so many men, who worked in such close proximity that the apathy and dirt of one would quickly convince the

rest that there was no point in them being assiduous and clean either. Even in 1905, the factory inspector felt that it was "impossible to persuade the tenants (particularly hafters and cutlers) to take proper steps to keep their shops in a cleanly state. Their highest ideal in this matter is to sweep the shop once a week, and in many cases if this sweeping is done at all, it is done in miserable fashion, the dirt being swept into heaps, and left there in heaps under the benches. If you urge upon a Sheffield cutler the need for more cleanliness, he tells you that you won't find a cleaner shop in Sheffield, and finally that the trade is a dirty one. The fact is that these places require thorough cleansing at the end of each day's work, and until someone is made responsible for each shop, dirt and dust will continue to be the rule and consumption I fear".[103]

The buildings themselves were often extremely old, and many grinding wheels in particular were owned by speculators who considered the rents to be too low to warrant the expense of the implementation of new legislation.[104] Thus,although conditions were much better by 1905, due largely to the provisions of the 1895 Act,"long strides"[105] were still felt to be necessary before the conditions in these trades would compare favourably with other local trades. Descriptions of grinding wheels in 1905 were still gruesome, and little changed from those in 1867: the equipment was "encrusted with a deposit of mud several inches in thickness. The floor is earthen and not capable of being properly cleaned, and pools of mud and water lie around the wet grinders. The general impression to a stranger is one of dirt, damp and gloom".[106] Cutlers shops too, were still confined and dusty with earthen floors and belt races that were reseptacles for dirt.[107]

The closing years of this period witnessed a marked growth in concern with conditions in workshops, which culminated in significant advances. However, factory legislation bore little responsibility for the changes. Of particular long-term significance was the gradual restructuring and modernization of these trades, which made the antiquated system of employment and consequent divided responsibility much less important. The increasingly widespread application of expensive machinery meant that "workers are necessarily direct employees of those they worked for, and a general adoption of these

methods, which would mean the gradual extinction of the tenement system, which at present so hampers the administration of the Act".[108] The substitution of electric motors for steam power had a similar effect as it allowed the conversion of "what was one tenement factory" into "six separate factories, with the beneficial result that the whole of the provisions of the Act can now be enforced in these premises".[109] By implication, once the peculiar employment structure and consequent peculiar factory and workshop provision had died out, all would be well with the enforcement of factory legislation. This was born out by the far superior conditions in the workshops for which the large and prestigious firms took complete responsibility. Joseph Rodgers boasted that their workshops were made "as pleasant and healthy as possible",[110] but even in such 'model' workshops, the extremely dirty nature of the trade still made conditions far from ideal.[111]

To prove that the traditional employment structure and the dirt generated in the cutlery trades were not a fatal handicap to any hopes of improved sanitary conditions, considerable time and attention were devoted to the observations of conditions in Germany, where although the trade was conducted on similar lines, conditions were considerably better than those in Sheffield. Crucial to this interest and valuable experience in Germany, was the group of experts who had already spent and were to spend much more time and effort in the study and amelioration of conditions in these trades. At the forefront were Dr. Scurfield, Sheffield's Medical Officer for Health, and Mr. C. Johnston, Sheffield's factory inspector. Along with a group of Home Office representitives, they visited Solingen in 1905,[112] where far-reaching legislation had been implemented in 1898.[113] Although it retained the division of responsibility between owners, occupiers and men,[114] this legislation transformed Solingen's factories and workshops into "marvels of order and cleanliness".[115] Detailed reports were compiled by the British observers which formed the basis of the legislation introduced in 1908 to regulate conditions in grinding wheels.[116] These regulations were primarily concerned with the health of the grinders, but over this period, medical experts in Sheffield were forming a clearer picture of the close relationship between dirty,

insanitary workplaces and occupational illnesses like grinders' asthma. It was stipulated that in future, floors were to be "firm and capable of being cleansed; and in the case of new buildings and extentions, shall be watertight",[117] floors and uncovered machinery were to be thoroughly cleaned by the men; walls were to be limewashed annually; and workmen were to clean their work areas of dust daily.[118]

Conditions in grinding wheels were greatly improved: walls were whitewashed and window panes, formerly broken in order to claim exemption, were reglazed. However, the complaints continued that some workers were extremely reluctant to conform to the rulings. It was acknowleded that cleaning was impeded by the ancient and haphazard construction of many floors and belt races,[119] but even when "owners and employers had been put to considerable expense, creating floors, putting in dust extractors etc.",[120] workers were still indifferent about their obligations and many were taken to court for non-compliance with sanitary legislation.[121] Years of habituation to and acceptance of squalid conditions evidently made many workers slow to recognise or conform to the new need for cleanliness.

The problems of hygiene then, particularly once they became associated with health and the appalling mortality rates in the industry, received considerable general and legislative attention, which by 1914 had resulted in considerable improvements. Yet even in the 1940s, the central difficulties which still faced sanitary legislators, were the differing standards of hygiene which were required in factories and tenements or workshops, and the inability of the small master to cope with the expense of implementing new legislation. "This preponderance of small establishments constitutes the central problem of the industry because most of them are obviously too small to meet the expense of such amenities, as would ensure a reasonable standard of welfare".[122] Furthermore, until the same standards were set for large factory based firms and small masters, the latter would always be at a cost advantage which would further discourage the large firms for spending more to further improve their amenities.[123]

iii) Health

The exceptionally injurious effects of the various occupational

illnesses and general ill health associated with the cutlery trades were well documented and researched both before and during this period. Whilst grinders were worse affected by lung diseases and injuries resulting from the breakage of their stones, lung diseases, eye infections, lead poisoning and general infirmity caused by damp, dusty, badly ventilated conditions and long hours of work in awkward postures, were common to all branches of the cutlery trades. Legislation had to be extremely detailed and specific to Sheffield, hence the legislators' use of local opinions and experience in its framing. Again, the structure of the industry was a major set back to the enforcement of effective controls, and once more, the burden of provision and maintenance was gradually imposed on larger owners or employers. The legislation in itself had important effects on the structure of the trades, forcing it into the more regular mould of large self-contained factories, as tenement and public wheel owners refused to pay for alterations, preferring to close these traditional homes of the small masters and independent contractors. Although there was the usual and often justified criticism of the worker's apathy and ignorance concerning measures intended to benefit their health, it was agreed that by 1914 far more was understood and being done to make the cutlery trades considerably safer than they had been in 1870.

By 1870, much research into the diseases associated with the Sheffield cutlery trades had already been undertaken, especially by local doctors Holland and Hall.[124] It was recognised that grinders faced the greatest dangers, particularly from respiratory and lung diseases caused by the inhalation of the various by-products of the grinding processes. Apart from the large amount of surplus metal that was removed in grinding, quantities of dust were also produced from the grindstones which, if quarried in the Sheffield region were composed of 70 to 95% silica.[125] An enormous amount of dust was also created when a new stone was 'raced', the process by which it was made round and true, by revolving it slowly whilst holding a steel bar to it.[126] After the initial grinding operations, the article would be passed to the glazers , who worked on wooden wheels covered with leather and dressed with glue and emery, from 4ins. to 4ft. in diameter. This process again produced much dust.[127] Finally the article was passed to the polisher, who was usually positioned at the back of the hull. He also used a wooden wheel which revolved slowly (so that it did not

generate heat sufficient to ruin the temper of the blade) and 'crocus' or iron oxide which polished the blade but produced clouds of dust.[128]

The results of such inhalation were fully, and fairly accurately diagnosed and recorded by Dr.'s Hall and Holland in the 1840s and 50s.[129] Initially dust settled on the mucous membranes of the air passages causing hoarseness, a tight chest and coughing. Dust then settled in the bronchial tubes and caused permanent thickening of the mucous tissues. These symptoms were often experienced by apprentices. Once this stage had been reached, it was observed that grinders usually fell into one of two categories: those that were delicate or entered the trade early; and those that where more robust or who had entered the trade later. The former usually developed rheumatic fever (stimulated by the grinders being permanently wet and wearing so few clothes) and died young, normally from tuberculosis. The latter often had the early symptoms for years without further deterioration. As the disease progressed, the cough and breathing difficulties became worse, and the grinder suffered acute chest pains and sometimes spat blood. In the final stages of the diseases, the body became permanently slumped, causing circulatory difficulties as well as breathing problems. The grinder would die of long continued suffering and general exhaustion. Whilst many suffered from this 'grinders' asthma , others contracted constitutional tuberculosis, but this was usually provoked by the wasting effects of the initial stages of grinders' asthma.

Post-mortems conducted by Holland in the 1850s and Dr. Burgess in 1902, revealed similar features: enlarged bronchial glands, full of gritty substances, sometimes as large as hazelnuts, and similar black gritty lumps in the lungs.[130] The severity of phthisis, or grinder's asthma, was related to the quantity of dust inhaled and therefore depended on whether the man used a fan to carry off the dust, and whether he was a wet or dry grinder. Although fork grinders were the only constant users of a dry stone, most grinders alternated between wet and dry, whilst glazing, polishing and racing all required dry stones.[131] Also some items gave off far more dust when ground than others: razor blades lost five oz. per dozen in shaping, and a further two to five oz. in wet grinding.[132] Dr.Hall, writing in 1865[133] found that mortality rates amongst grinders were little improved on those of

the 1840s. Amongst razor grinders, the average age of those alive was only 31 years, 32 years amongst scissor grinders and 35 amongst table blade grinders

Phthisis however, was not the sole cause of these horrifying mortality rates. Grinders were prone to general ill-health because of their contorted posture, sitting aside a broad , flat topped 'horsing' or seat with their bodies thrown forward almost horizontally, and also because of their constant exposure to wet floors, and damp clothes which could cause rheumatism.[134] Furthermore, grindstones sometimes broke and could maim or kill the user and anyone else in the room. The causes of these breakages varied: a fault within the stone, a fault in the way it was fixed to the axel; or running it at too great a speed. Many grinders still observed the old practice of fixing the stone by means of wooden wedges, driven through the centre of the stone, which were liable to swell with the moisture. The newer, safer technique was to use iron plates instead, which strengened the stone at the centre.[135] A further hazzard was the improper fencing of machinery in many cutlery works, particularly the leather 'bands' or straps which conveyed the power from the engine to the individual workers. These dangers were heightened in many works by the lack of light.[136]

Before 1867 then, attention was firmly concentrated on the plight of the grinders, and especially the dry grinders, with a variety of preventative measures receiving considerable dabate and publicity in Sheffield. Dr. Hall had put forward a far-reaching set of proposals in 1863 which included the provision of fans by the owners of the wheels, and the compulsory use of protective eye wear by grinders.[137] But whilst it was widely stated that "intelligent" and "thoughtful" workmen recognised the need for fans and other protective measures,[138] very few actually wore protective glasses in 1865,[139] and fans were seldom used, even in such lethal trades as fork grinding.[140] The maxim of most grinders was still believed to be "a short life and a merry one".[141] Closely packed into such close, confined spaces even if a 'thoughtful' grinder provided himself with a fan, "they may suffer from others who worked near them and will not use it".[142]

A similar division between 'respectable', 'thoughtful' workers and the rest, was drawn over the issue of allowing children to enter the

grinding trades. J.E.White, along with trade union officials (who were perhaps most concerned with apprenticeship as a facet of restrictive pracices) felt that no boys should enter such work until fourteen years of age.[143] However, in practice, children often started as young as seven years of age. It was widely believed by both parents and workmen, that if left until thirteen, their children's fingers would become too stiff, and they would never develop a proper 'feel' for their craft.[144]

Central to the whole issue of standards of hygiene and their satisfactory enforcement was the recurring problem of divided responsibility. "As regards the state of workplaces, the system of work in many places, especially in wheels, where a master's supervision is not required, is very unfavourable to improvement. If the owner of a wheel puts up fans, then men in some cases have to pay for it by extra rent. If the owner puts none, grinders often cannot or will not pay for one themselves, and if a careful man provides himself with one, he suffers from the others who do not. One grinder who had put up a fan for himself and others working with him, took it down because the others refused to pay a penny or two a week for it. Finding it gone, they offered to pay if it was put back, but neither would give way. The man said, 'I know that I shall live so many years the less, but if they will not pay me, they shall not profit by it'."[145]

The 1867 Factory Act made no attempt to deal with this anomalous problem. Whilst it prohibited children under the age of eleven from working in grinding wheels, and made the use of a fan compulsory for dry grinders, the grinders themselves remained responsible for their installation and maintenance.[146] However, some fans were installed and incidences of grinder's asthma were said to have been reduced accordingly.[147] But throughout the 1870s and 1880s, the emphasis and approach to this problem gradually changed until far greater attention was being given to the inability of grinders, dispite their wishes, to afford a fan. In 1889 a fan could cost 35s. to £3.10s., an enormous outlay to a man whose wage was often only 12s. per week.[148] Where the grinders were the direct employees of a large firm however, where all the equipment was provided, there were no such difficulties: "all the fans are down, and good fans they are in those cases".[149]

When discussing eye accidents, experts were more sceptical and

critical of the willingness of workers to adopt precautionary measures. P.Snell, writing in 1899, believed there to be more eye accidents in Sheffield than in any other part of Britain, and that these were most common amongst dry grinders.[150] He suggested a variety of simple precautions, including the wearing of glasses and the erection of simple screens to protect those working nearby, but concluded that "there is less difficulty in enlisting the support of the employers than the assent of the men to adopt precautionary measures".[151] Infact many firms already provided men who were recognised as skilled 'moat removers' or extractors of particles from the eyes of other workmen, with clean and suitable tools.

Considerable blame was apportioned to the grinders for the many accidents which occurred through the breakage of stones.[152] Although the Chief Factory Inspector, as early as 1876, was of the opinion that grindstones should be tested whilst still at the quarries,[153] he recognised that the majority of accidents were the result of some foreseeable cause, most of which originated in some careless or misguided action on the men's part. Particularly prevalent were incorrect methods of fixing the stone to the axel, and the running of the stones at excessive speeds. The factory inspector believed that nineteen out of every twenty grinders knew the cause of their accident beforehand.[154] In the numerous reports of accidents which appeared in the local papers, it was often stated that grinders had been running their stones too fast. A grinder who was killed by the breakage of his stone in 1876, was found to have been running it at 240 revolutions per minute, when the safe maximum speed was calculated to be 160 revolutions. The judge at his inquest was already concluding that "some security should be adopted against the alteration of the speed of grindstones without leave from the foreman."[155]

Similarly tentative were the initial moves to remove the dangers of inadequately protected machinery, particularly poorly fenced shafting and wheel bands in cutlery works.[156] The larger factories, in which one person was held to be responsible for the maintenance of such fencing, although often still in a poor state, were much better equipped than those in which it was harder to define or find the person ultimately responsible.[157] The 1880 Employers Liability Act went some small way to rectifying these problems when, in removing the

doctrine of common employment, it stated that a worker could claim for injury caused by a fault in the plant or machinery which was the cause of the negligence of his employer or of the staff entrusted with the responsibility to see to it.[158] Cutlery manufacturers were staunchly opposed to these clauses, stating that "superindendance" in their factories was impossible to define, as it went "down almost to the lowest workman."[159] They need not have worried themselves: whilst the legislation ensured the rectification of the most glaring negligence,[160] its major fault was a loophole which allowed employers to avoid liability by simply subcontracting work.[161] It was a loophole of which cutlery employers freely availed themselves.

The inadequacy of these measures is evidenced by the persistence of appalling mortality rates in these trades into the 1890s.[162] They remained much higher than those for all occupied males in Sheffield throughout this period.[163] Moreover, lung diseases, around which most legislation had, and would continue to focus, remained the major killer, not only of grinders, but of all cutlery workers.[164] The same alarming effects of occupational diseases are evident in statistics which illustrate the diseases of workers admitted to infirmaries and hospitals over this period,[165] and the fact that as many cutlery workers were admitted to the hospitals as to the workhouses.[166] The type and severity of the disease however, depended upon the branch of the trade. Phthisis was more common amongst grinders than cutlers, whilst scissor, fork and razor grinders suffered from it to a greater extent than table or spring knife grinders. Cutlers were more prone to respiratory diseases than grinders.[167] Phthisis tended to affect workers at a younger age than respiratory diseases, but with both diseases, the incidence became considerably worse once workers reached 35 years.[168]

The latter part of this period, witnessed far more concerted efforts to frame effective legislation to combat the intrinsically unhealthy nature of these trades, but attention was still focused on lung diseases. In the 1895 Factory Act further responsibilities were placed on the owners of works to supply "the pipes or other contrivances necessary for working the fan",[169] and in 1901, it was stipulated that factories and workshops had to be "ventilated in such a manner

as to render harmless, as far as practicable, all gases, vapours, dust or other impurities generated in the course of the manufacturing process or handicraft carried on therein which may be injurious to health".[170] Furthermore, an inspector could direct that a fan be installed in a workshop where grinding, glazing or polishing took place.[171]

The legislation obviously promoted changes: in 1899, the factory inspector believed that it had increased the life expectancy of grinders by as much as five to ten years.[172] Nevertheless, the effectiveness of these measures was dogged by the customary problems facing their application. The number of factory inspectors was totally inadequate for the purpose: they rarely had time to return and check if a fan had been fitted or repaired.[173] Again the grinders themselves created difficulties: it was frequently stated that they were unwilling to implement new legislation, or even to use the fans erected for them.[174] The men's own representatives could not deny this indifference, but they attributed it to the long-standing and necessary acceptance by the men of bad conditions, illness and death. In 1908, the secretary of a grinders' union stated that "Grinders don't care. First one and then another are stricken down by their side, and they become callous, as do soldiers on a battlefield. I have known ...men bet glasses on which would be the first to fall, not thinking at the moment that the number of glasses consumed, as much as anything perhaps, hastened on the fatal hour...all meet their fate as though it had to be and no power could decree it otherwise".[175] Their indifference was often the result of poverty, particularly amongst small masters, who were technically considered as employers and therefore responsible for providing equipment for themselves and their men.[176]

Moreover, fans were still far from perfection and were often constructed in a half-hearted way by employers, which made them virtually useless.[177] It was only the largest firms with the best designed premises who were really capable of implementing the legislation in an effective way. In 1904 for example, it was stated that[178] "In some of the larger works, the admirable plan has been adopted of concentrating all dust-producing machinery into one large room, and a single powerful fan blows the dust into a cyclone. One of the main advantages of this system is that the fan is then easily kept

in thorough working order..."

In tenement factories and firms which housed numerous subcontractors, the effects of divided responsibility remained a serious handicap to the success of new legislation. The factory inspectors bemoaned the fact that "the constant shifting about of these occupiers from one shop to another is exasperating. Only recently, a tenant had at length, after a long delay, installed a fan, but it was hardly fixed before he moved to another shop in the same premises and fresh notices had to be issued".[179]

As in the realm of sanitary reform however, knowledge of and conditions in the German cutlery industry, helped to keep attention focused on the health hazards of the trades, as well as to indicate possible solutions. Medical officials visited Solingen, as did representatives of the men, and all reported most favourably on the conditions enforced by the 1898 legislation.[180] In Germany, all grinding, glazing and polishing wheels had to have a secure casing of sheet metal, connected to efficient fans to carry away the dust, whilst there were rigorous restrictions on the racing of stones, and there was no distiction drawn in the application of the law to factories or workshops.[181] The death rate per 1000 grinders in Soligen was 12.82 during 1885-1889, but only 7.28 during 1904-5. In Sheffield there were still 14.2 and 18.7 deaths per 1000 in 1905 and 1906.[182]

Whilst medical officers experimented with various Solingen style methods, fresh impetus was given to the problem when, in October 1908 the Home Secretary, invoking the 1901 Factory Act, classified the grinding of metals as a dangerous trade, it being "injurious to health and a danger to life and limb".[183] Special draft regulations were drawn up by the Home Office in order to protect the health of the workers, and these closely resembled the legislation in existence in Germany. These plans stipulated that it was the duty of the occupier or supplier of power to provide and maintain the necessary equipment.[184] The Home Office had undertaken extremely rigorous and detailed research into local conditions and opinions, before framing these regulations,[185] and then further sought the opinion of the trade on these proposals and outline plans.

A joint committee of the Cutlers' Company and the Chamber of

Commerce, established to analyse these plans, considered them to be far too stringent: the men would not want or abide by such tight controls, but more importantly, it would involve the owners in enormous expense. Furthermore, the whole definition of grinding was too broad and should, the committee felt, only include items which were "appreciably altered in shape, and dust to an extent injurious to health is created".[186] By contrast, the representitives of the men felt that the legislation was not rigorous enough.[187] Discussions continued however, in what was said to be an "earnest" and "harmonious" tone (with only the details and extent of the legislation, and no longer any principles up for discussion) ending in a three day inquiry.[188]

The modifications which were finally agreed upon, were supported by both manufacturers and men, and in every case, involved a relaxation of the draft proposals, usually for pragmatic reasons of expediency. It was decided that cutlers should not be obliged to use a hood and a fan because it would need constant adjustment, and the consequent loss of earning time would mean the constant infringement of such regulations. Similarly crocus polishing did not require a fan because it would create a draught which would cool, and thus ruin the temper of the blade.[189] Such modifications recognised that the cutlers were mainly piece workers and would not abide by legislation that involved a time loss sufficient to significantly affect their earnings.

However, the legislation, with its stipulations that fans must always be effective and utilized, that dust should be properly disposed of, and stones only raced wet, or with the use of a respirator, or a cover to prevent the inhalation of dust, was sufficiently far-reaching to cause predictable difficulties in its application. Most important were the costs involved in bringing factories and tenements up to the required standards. These were sometimes so great that owners judged it wiser to shut them down, thus dealing a further blow to the system of small independent masters and subcontractors: it was realized that "The implementation of the new grinding regulations is going to be a more serious matter for the cutlery trade than people have imagined. As regards the large firms who possess their own grinding plants probably no difficulty will arise, but most of the outworkers follow their vocation in small 'wheels', the proprietors of which declare that they can see no possibility of obtaining any return

in the shape of increased rents for the capital outlay that would be entailed in providing fans, dust collectors and concrete floors. Moreover, much of the grinding is carried on in tumbledown buildings which could not be adapted for the new conditions. The owners of several wheels have already decided to close them, and it is to be feared that others will follow suit rather than expend more capital, in which event, hundreds of grinders will be without facilities for doing their work."[190]

The grinders themselves were still reluctant to appreciate the importance of, and to discharge their responsibilities, bearing out the suspicions of their leaders who anticipated that any legislation which involved a time loss or physical restrictions, would be ignored.[191] In 1912, the factory inspector reported that "the workmen themselves do not carry out their share of the duties to the full extent, and finds exhaust ducts stopped up owing to improper things being allowed to enter; hoods not properly adjusted; glass in the hoods broken; and sometimes grinding being done without the valve between the hood and the duct being closed. Again, in those places where respirators have to be used, men are frequenty found racing stones without them, and others working in the room at the same time".[192] By 1913, the hoods had been largely abandoned as a precaution against the hazards of racing stones: wet grinding or the use of respirators were preferred. Again these options were chosen because the use of a hood involved a loss of work time in fixing it in position, and the loss of freedom of action and a clear view of the racing tool.[193] Further problems concerned the continued technical inadequacies of the fans, which although being constantly improved, wore out extremely quickly and involved manufacturers in further captial depreciation.[194]

The marked improvement in the health of the workers which were noticable by the end of this period, were not however, due solely to these regulations. It can infact be argued that they focused attention incorrectly, giving inadequate attention to the dangers of wet grinding. Until the early 1920s, wet grinding was incorrectly diagnosed as the least dangerous form of grinding, because it involved the creation of less dust.[195] Moreover, technical developments played a crucial part in the improving health of the workers. Emery wheels and machine forging, which produced less dust, and left less

metal to be ground away, were considerably less injurious than the techniques which they replaced.[196]

Improved standards of health and hygiene were also promoted by the increasing awareness of and attention given to cleanliness in the workplace, and particularly in this context, the link between expectoration and the transmission of T.B. The debate provoked by the 1908 Grinding Regulations helped to stimulate great public interest in the problems on which it touched. Public meetings, lectures and conferences with prestigious guest speakers were held,[197] but the scientific, non-judgemetal approach which pointed at the link between lungs weakened by dust and susceptibility to T.B. infection, was still counteracted by moralistic verdicts which continued to criticise the 'thoughtlessness' of many grinders.[198] "The evils of drink",[199] which weakened the constitution, were said to be particularly prevalent amongst the grinders, and even the 'respectable' representatives of the workers "pleaded with the grinders to observe clean habits, live moral lives, and take at least one hours open excercise a day";[200]

That individual morality and degeneracy were still firmly incorporated into the understanding of these problems was also evident in condemnations of the disregard for hygiene displayed by many grinders who were suffering from phthisis,[201] and also by cutlers who were exposed to the dangers of lead poisoning. This poisoning was "not uncommon" amongst cutlers, many of whom had small furnaces for casting bolsters, made from lead and spelter, which were then ground on emery wheels, during which much lead laden dust would be produced and inhaled.[203] Although legislation in 1898 and 1901 forbade women and children to eat their meals in the proximity of such processes,[203] no such precautions were imposed on men, who were generally portrayed as being ignorant and indifferent to their welfare.[204] Even in 1946, it was still being stressed that in this industry "the worker needs educating in tidiness and cleanly methods of working".[205]

The final major occupational hazards, from which grinders in particular suffered, were the dangers associated with the

splitting of grindstones, dangers which also received considerable attention in the latter part of this period. In order to reduce the dangers of flying stones to fellow workmen, the 1895 Factory Act stipulated a minimum space between grinding troughs, and also stated that stones should not be run "before fireplaces", as grinders tended to congregate before fires to warm themselves and to dry their work.[206] Employers were fiercely opposed to this legislation, disputing evidence which suggested that the breaking grindstones were a major cause of injury, and managing in 1898, to persuade the Secretary of State to narrow the definition of "before a fireplace". The initial definition would have made many old premises, with small rooms and numerous fireplaces, virtually useless.[207] The issue was raised again however, with the appointment of the Dangerous Trades Committee in 1899. To their annoyance, the employers' bodies were hardly consulted, although the local trade unions presented considerable evidence and were given frequent opportunities to voice their opinions.[208] The 1901 Factory Act reimposed quite stringent rules governing the the necessary space allowed between hulls and before fireplaces, as well as stipulating that all necessary fencing must be maintained by the owners of the premises.[209]

At the same time, exhaustive research was being undertaken by Home Office Officials, medical officers and factory inspectors, into the causes of grindstone fractures.[210] The reasons suggested and examined were diverse, from faults in the structure of the stone, to running them too fast. Most attention however, was focused on the carelessness and neglience of the grinders themselves, who often failed to take simple precautions which could curb accidents, most of which were predictable and preventable. They were accused of still clinging to the traditional method of fixing their stones to the axles, storing their stones where they were exposed to wet and ice, (which damaged their structure) and above all, of running them too fast. The Committee made far-reaching recommendations which included the compulsory testing of stones, and the prohibition of the use of wedges to fix larger stones to their axels, but the 1901 Factory Act did very little to make these recommendations operative.[211] It was

recognised that although many grinders were likely to "chance a somewhat less dangerous looking stone",[212] their testing was totally impractical, because the choice had to be a matter for the discretion of the individual grinder.[213] However, having paid for a stone, and being a piece worker, he was unlikely to discard a stone in which faults appeared, or spend more than a minimum of time in fixing it to its spindle.

The problems of overspeeding grindstones became more obvious after the 1906 Notification of Accident Act, which required more accurate reportage of accidents and their causes.[214] Whilst in Solingen, stones could not be run at more than 2953 feet per minute, in Sheffield they were often run at over 4000 feet.[215] Partly to blame was the desire for these pieceworkers to complete their grinding faster and therefore to run the stones faster, but also "the blind acceptance of the Sheffield grinders' rule of thumb, viz that the pulley on the axel of the stone should be...half the diameter [of the stone]. When it is considered that driving-drums of equal diameter are run at speeds varying as much as from 126 to 240 revolutions per minute, the absurdity of following such a rule is obvious".[216] Although the factory inspector constantly reiterated that some limitation on speeds was desirable, the opposition of both employers and workers to the limitation of speeds which "have been arrived at from past experience", made such legislation impossible.[217] Fortunately, in this sphere too, the grinders were helped by the advent of new technology in the form of emery wheels which were far less susceptible to breakage.[218]

Thus during this period, considerable attention was devoted to occupational diseases in these trades, and significant advances made, both in terms of understanding their causes and implementing improvements. Nevertheless, it remained an unusually unhealthy industry, particularly in the grinding branches. Major obstacles to advances were the unwillingness of employers to sanction legislation which would involve them in great expense and alteration of their sometimes extremely antiquated premises, and the apathy of the workers, now accustomed to and accepting of their squalid surroundings, and being pieceworkers, unready to

abide by changes which involved them in time losses. Moreover, the debate was still influenced by moralistic definitions and judgements of the relative respectability or degeneracy of the worker, and the effects of this on his health and well-being.

iv) Welfare Legislation

The final factor which significantly affected the health and welfare of the workers in these trades, was the welfare legislation of the 1890s and 1900s, although its implication too, was hindered by the complicated structure of the trades and the blurring of status which frustrated the easy identification of an 'employer' or an 'owner'.

Typical were the problems associated with the application of the 1897 Workmen's Compensation Act, which ensured almost automatic compensation for industrial accidents in factories or workshops in which there was power driven machinery. This obliged the employer to insure and compensate the worker in the form of a lump sum in the event of death, or weekly sums equal to half the workers previous wage in the result of total incapacitation.[219] Although, as the S.F.T.C. complained, the Act had only limited application in the cutlery trades,[220] employers were nevertheless staunch in their opposition. They voiced fears of 'malingering', of men marrying on their death bed to secure an income for a "sweetheart or friend", and also concerns more particular to the cutlery trades, especially the issue of whether small masters would have to, and be able to afford to insure their workmen. " The manufacturers of Shefield, especially in the cutlery trade, found their greatest competition came from small employers, who were able to get men at lower wages than the richer firms, and if these men were not placed in the same position under the Act as the others, the difficulties of meeting the competition would be intensified. Some of these small employers were in no better position than the workmen, and in the case of accident, they might not be able to meet the liabilities of these workmen; and although the Act offered them ostensibly as much as the others, they would escape it by their own lack of capital..."[221] However, the Act covered relatively few cutlery

workers, and the premiums for cutlery employers, particularly if their works were without grinding wheels, were low.[222]

In 1906 when this legislation was extended to employers who had under five employees, it became a far more significant issue, although the blurred distinction between employer and employed still made its application extremely difficult. Two unions were forced to take employers to court in order to clarify liabilities, and gradually it was estabished that tool owners had to pay the insurance of their datal men, but manufacturers had to pay compensation to employees who had hired troughs or space from them, but not to sub-tenants.[223] The position was further elucidated by a court case of 1909, when a woman succeeded in winning compensation for the death of her husband in a grindstone breakage accident. His employer had claimed that he was an outworker, and an independent contracter. They had rented part of James McClory's works to the deceased's employer, provided all the other apparatus except the grindstone, and let out the troughs on a monthly basis. The employer was found liable because he was judged to have 'control' over the deceased, who could not take on new men without his employer's consent, and could be dismissed for failing to do enough work, which meant that he was not an independent contractor. Neither was he an outworker, as the employer had sufficient control of the premises on which he worked for him to be classified as an inworker.[224] The case well illustrates the intricacies and difficulties involved in claiming compensation in these trades.

The workers' position was worsened when the 1909 Grinding Regulations came into force, as many manufacturers, finding it inconvenient and expensive to comply with the regulations, told their men to find shops elsewhere, thereby becoming outworkers and not eligible for compensation.[225] Employees were still classified as outworkers, even if they worked for just one employer, took all their materials from that employer's shop, and the employer visited them in their new shop. Although this was especially harsh on home workers, employers believed it was only fair, as it was impossible to prove exactly whose goods a man had been working on when he was injured.[226]

Similar problems were involved in the application of Part I of the 1911 National Insurance Act. This legislation demanded contributions of 4d. per week from male employees, and 3d. from females aged between 16 and 65 and earning under £160 per year, plus 3d. from their employers, in return for sickness benefits of 10s. per week for men, and 7s.6d. for women for the first thirteen weeks of illness, and then 5s. per week for the following thirteen weeks.[227] Benefits were paid from January 1913. Although free hospital treatment was given for T.B.,[128] which was of major significance to the cutlery trades, 3d. per week was a large sum of money for many of the poorest cutlery workers, and it is probable that many did not insure themselves.[129]

However, the major debate concerned the inclusion of outworkers within the provisions of the Act. Their admission was favoured by the government, as a measure believed to reduce and regularize casual employment, and also by the cutlery trade unions; although the employers' Cutlery Council was quick to recognize the maze of the problems that such an inclusion would entail. The case of a workman who was a tenant, but engaged a few of his own men, was particularly problematic: although the tenant and his men worked for the same employer, the tenant would have to pay the contributions of his own men. "Thus, two workmen, employed by the same employer, at the same wages, are being treated differently; one, the inworker, being entitled to all the benefits provided by the Acts, the other, the outworker, being outside its benefits, and further liable for all his fellow workmen engaged under his control and working in his rented workshop".[230]

The exact solution to the question was left to the government's Advisory Committee, which included representatives of trade unions, friendly societies and employers.[231] Wilfred Hobson, representing Sheffield's cutlery employers believed that it would be impossible to apply the Act to outworkers for a variety of reasons which stemmed from the anomalous structure of these trades. Many outworkers were employed by between two and twelve firms in a week,[232] whilst those who worked for just one firm, accounted for only 7% of Hobson's sample of 2753 cutlery

workers.[233] Moreover, many workers fluctuated between being inworkers and outworkers.[234] The commissioners firmly believed that a system of employer contributions was quite practicable, payments varying with the amount of work the outworker had completed for them. However, Hobson felt that the sporadic nature of much outwork would make any such system extremely difficult to operate.[235] When it was an employer's turn to pay a whole week 's contribution, he was likely to think, "I am not going to pay the whole of this contribution for the sake of giving you a very small amount of work. I shall strike you out altogether".[236] This was particularly likely to be the case with elderly workers, who, because they were piece workers, had been kept on by many firms, but who would no longer be employed, as their small amount of work would not warrant the employer's contribution. This then would mean the end of this popular long-service reward of part-time employment in old age, which was so favoured by large cutlery firms.[237] A further problem was the recurring one of an outworker who was technically an employer of labour in his own right, but who would be completely incapable of bearing the financial burden of insurance, although he had to be made responsible for his men's contribution.[238]

Finally however, a system was hammered out by the various interested parties in Sheffield, which, although it corresponded closely with the commissioners' desire that all outworkers should carry a card which would be stamped by each of his employers, was to some extent unique, recognising the fact that "the outworker in the Sheffield trades is in a class of his own".[239] The "Sheffield Outworkers' Book", which was largely the work of Wilfred Hobson and Robert Holmshaw, contained a list of all employers from whom the outworker took work, who had to pay his insurance in strict rotation, regardless of whether the outworker had completed any work for them that week.[240]

The employers remained unsure about the system: they felt that it had been prepared too quickly, and that it would destroy (as the government wanted) the traditional system of employing large numbers of men for irregular periods, often to fulfil specific functions, or in short boom periods. Insurance contrib-

utions would make it "more economical to employ a smaller number of men on full time than a larger number on short time, and to employ in the prime of life rather than older or less efficient men. Hitherto employers have tried to spread employment as widely as possible, especially during bad trade".[241] Cutlery employers moreover, would bear an especially large burden because of the labour intensiveness of their industry. According to a circular prepared by the Chamber of Commerce, which illustrated the burden of sickness insurance on various Sheffield trades in terms of additional income tax in the pound, the increased costs involved for the 21 sample cutlery and silver plate manufacturers were indeed significant.[242]

A.J.Hobson, Lord Mayor in 1912, and a prominent cutlery manufacturer, expressed the fears of many such manufacturers in his Memorandum on the Increased Cost of Living as Affected by Recent Legislation,[243] in which he bemoaned the additional costs which would result from the 1906 and 1911 legislation.[244] These laws would stifle "the spirit of independence amongst the workers in Sheffield", who would be tempted to "malinger", as well as being forced to make a choice between being the direct employee of a large firm or an outworker, as they would no longer be able to afford the insurance costs of being small employers in their own right.

Cutlery manufacturers were then generally reluctant to accept state intervention and welfare legislation. Such schemes involved them in additional expenses and regularized the informal, flexible employment structure of independent subcontractors, to which they had grown accustomed. Furthermore, state provision disrupted their own informal welfare schemes which were by this time an acknowledged feature of employer paternalism within the industry, and accepted as being socially and economically effective. This feature was particularly well-illustrated in the debate over the fate of old workers, marginalized by the compensation and health insurance acts, and more particularly over the state provision of old age pensions. Piece rates allowed many firms to keep older and loyal workers in employment, although this was recognised as a gesture of gratitude by the employers,

which at the same time, preserved for them "the maximum degree of discrimination and control"[245] over their workforce. Firms were proud of their employment of 'old servants', seeing it also as a sign of loyalty and a public manifestation of the friendly relations between management and workers.[246] After 1892, Walker and Hall were providing company old age pensions. Although non-contributary, the payment of a pension was dependent upon 21 years of uninterrupted service with the firm. The scheme was heralded by the management as illustrative of the "unanimity of feeling and union of action amongst us",[247] and in 1902, it was amended to ensure progressively larger pensions for those who had served more than 21 years.[248] Thus, an offer of security in old age was an important devise used by large employers to ensure loyalty and a good public relations image. Government intervention was therefore unwelcome for less direct reasons of employer paternalism and control, as well as the more obvious worries about its cost and disruption of the traditional employment structure.

By 1914, the sanitary conditions of work places and the health of workers were greatly improved on their previously appalling state. The research and persistence of various experts, combined with unyielding trade union pressure, had been necessary to overcome the reluctance and apathy of both employers and sections of the workers. Many cutlers were now accustomed to the filth and unhealthiness of their trade, although the moralistic conclusions of middle class observers, as well as some of their own trade union officials, found their disinclination to be the result of 'bad habits', rather than the expense of the prescribed alterations. Employers were antipathetic and obstructive, demanding excessive exemptions from general factory legislation, with which they felt their trades to be far too unique and specialised to comply. However, after the unescapable filthiness and hazardousness of this industry, its complicated structure, in which no one person who could afford to implement legislation, was held responsible, was the fundamental cause of its uncleanliness and high mortality rates. Whilst technical developments assisted improvements, the most important factor in amelioration,

was the gradual transfer of liability for the implemention of factory legislation from individual independent contractors to overall owners of the premises or business, who had previously managed to avoid virtually all responsibilities. Undoubtedly, in the expense that compliance involved, factory legislation sustained the traditional structure of the trades, as work was handed out to contractors who operated in the remaining unregulated premises. However, its more significant results were the regularization of that part of the industry covered by its authority, and the further acknowledgement by the men, that 'independent' status, and the burdens it involved, were best avoided.

Footnotes

1. See chapter 4.
2. J.Schmeichen, 'State Reform and the Local Economy: An Aspect of Industrialisation in Late Victorian and Edwardian London', Economic History Review, XXVIII, 1975. See chapter 6 , pp.189-90 ; see also J.Harris, Women Workers and the Sweated Trades: the Origins of Minimum Wage Legislation, Aldershot, 1986.
3. P.P. 1867, XX, J.E.White's Report, cases 22-3, (p.16). 34 (p.19). 39 (p.20).
4. Ibid.
5. Ibid., cases 197,(p.43), 215,(p.47).
6. P.P. 1889, XIII, S.C. on Sweating, W.J.Davis, qs.25311-2, pocket blade grinders spent considerable extra time in "drying work, getting wheel-swarf out of the trough, arranging new stones for racing, and in many ways preparing for the next day's work".
7. P.P. 1867, XX, J.E.White's Report, case 215, (p.47).
8. Ibid., case 197, (p.43).
9. Ibid., case 215, (p.47).
10. Ibid, cases 190, (P.43), 203 (p.45), 210 (p.46); S.Pollard, History, p.64; Lloyd, p.101; H.Kirk-Smith, A History of the Manor and Parish of Wadsley, Sheffield, 1955, p.32, this period was also known as "candling".
11. See chapter 3, pp. 79.
12. P.P. 1871, XIV, Factory Inspector's Report, p.10, c.446.
13. P.P. 1876, XXX, R.C. on the Working of the Factory and Workshop Acts, c.1443, E.Gould, q.12228.
14. S.I., 31.1.1870.
15. Ibid.
16. P.P. 1871, XIV, Factory Inspector's Report, p.11.
17. S.I., 27.1.1871, 26.1.1880, as late as 1880, John Nowills, a highly respected firm, were charged after employing a woman at illegal hours in Bull week. In their defence, the firm stated that "It was a custom in Sheffield to keep the wheel running at a late hour on the Saturday before Christmas day ... as if it were a usual week day."
18. The Times, 4.3.1867.
19. P.P. 1865, XX, J.E.White's Report, para.117,(p.11).
20. Ibid., para.122,(p.11).
21. H.K.Ojang, Factory Inspection in Great Britain, London, 1942, p.40.

22. B.L.Hutchins and B.A.Harrison, A History of Factory Legislation, London, 2nd.edn. 1911, p.168; F.Tilleyard, The Worker and the State, London, 1936, p.101.
23. Hutchins and Harrison, p.169; Tilleyard, p.101.
24. P.P. 1876, XXX, R.C. on the Factory Acts, J.Nixon, qs.12033, 12039.
25. Ibid., J.Gale, q.12138, E.Gould, q.12201, J.Hobson, q.12464.
26. Hutchins and Harrison, p.227; P.P. 1876, XXX, R.C. on the Factory Acts, E.Gould, q.11208.
27. Hutchins and Harrison, p.227.
28. P.P. 1876, XXX, R.C. on the Factory Acts, E.Gould, qs.12277, 12289, 12222.
29. Hutchins and Harrison, p.169.
30. S.I., 26.4.1870.
31. P.P. 1876, XXX, R.C. on the Factory Acts, S.Arden, q.12078.
32. P.P. 1867, XX, J.E.White's Report, para.40, (p.20); P.P. 1876, XXX, R.C. on the Factory Acts, J.Gale, q.12121, J.Hobson, q.12450.
33. P.P. 1876, XXX, R.C. on the Factory Acts, E.Gould, q.12212.
34. Ibid., q.12292.
35. Ibid., M.Hunter, q.12184.
36. J.Schmeichen, 'State Reform', p.427.
37. P.P. 1865, XX, J.E.White's Report, para.114, (p.11), case 32 (P.19).
38. P.P. 1876, XXX, R.C. on the Factory Acts, J.Nixon, qs.12002-12.
39. Ibid.
40. Ibid., q.12028.
41. Ibid., q.12024.
42. Ibid., E.Gould, q.12282.
43. J.Gale, qs.12125-6, S.Arden, qs.12076, the scissor grinders passed a resolution in 1875 that no member of the trade should take an apprentice who was under 13 years old. See chapter 5.
44. Ibid., M.Hunter, q.12166, J.Hobson, q.12462.
45. Ibid., J.Hobson, q.12460. See also chapter 8, pp. 279.
46. Ibid., J.Hobson, q.12450, M.Hunter, q.12194; Hutchins and Harrison, p.187, this was the expression on a national level by Emma Patterson.
47. Ibid., Mrs Parker, qs.12353, 12392.
48. Ibid., J.Hobson, qs.12450-3, it was argued that the pace of women's work was set by that of the male workers, who took frequent breaks, and also by the fluctuating nature of the trade, which together ensured that women received far more than the statutory minimum of holidays. Also the women were "very much

their own masters", and usually took five days holiday in a three month period, of their own choosing.

49. Ibid., J.Hobson, q.12460.

50. Chamber of Commerce minutes, Jan.1879, L.D. 1986/2. wheels could also be run from 7a.m. to 7p.m., and 8a.m. to 8p.m., a measure favoured by A.J.Mundella as "it would be a great harassment and annoyance to these manufacturers and masters if the custom which has been in existance for years is changed".

51. Ibid.

52. P.P. 1889, XIII, S.C. on Sweating, W.F.Davis, qs.2526-8; P.P. 1886, XXI, R.C. on the Depression, S.Uttley, qs.1172-5.

53. P.P. 1889, XIII, S.C. on Sweating, W.F.Davis, qs.24508, 25375-8; G.Huskin, qs.24987, 24992-5.

54. J.Harris, Unemployment and Politics: A Study of English Social Policy, 1886-1914, Oxford, 1984, pp.51-102.

55. Webb Mss, pp.141, 203; S.I., 25.5.1889.

56. P.P. 1894, XXXVII, R.C. on Labour, W.F.Wardley, qs.19375-80, R.Holmshaw, qs.19353 -7, A.Fretwell, qs.19716-21.

57. Ibid., W.F.Wardley, q.19709, 19302-4, 19321, Appendix, Answers to Questions of Group A, pp. 13-15; P.P. 1908, III, Committee on the Truck Acts, 1907, R.Holmshaw q.12150; S.Pollard, History, pp.210-11.

58. D.F.Schloss, p.610, with a piece wage, "the question of time appears, on the surface, to be excluded from consideration, yet in all trades in which piecework prevails, the fact that piecework has a time basis comes into prominence upon every occasion upon which the piece price to be paid comes under dicussion."

59. P.P. 1894, XXXVI, R.C. on Labour, W.F.Wardley, q.19305.

60. P.P. 1908, III, Committee on the Truck Acts, 1907, R.Holmshaw, q.12150.

61. P.P. 1894, XXXVI, R.C. on Labour, A.Fretwell, q.19643.

62. Ibid., q.19710.

63. S.I., 11.1.1907, 9.12.1871; Labour Gazette, vol.XX, 1912, pp. 465,505; vol.XXI, 1913, p.15, systematic overtime was very rarely worked, except in the exceptional trade of 1871 and 1912-13.

64. Labour Gazette, vol I, 1893, pp.124,178; vol.II, 1894, p.198; vol.III, 1895, p.266, in July 1894, 80% of all fork grinders were only partially employed and in summer 1895, 25% of all table blade grinders were underemployed.

65. S.F.T.C., Annual Report, 1907-8, pp.4-5, of all the cutlery and file workers whose societies' completed an S.F.T.C. inquiry in 1907, 3 men were unemployed,

but 491 (22%) were on short time.

66. P.P. 1903, III, Committee on the Truck Acts, 1907, R.Holmshaw, q.12165.

67. Ibid., A.J.Hobson, q.12405.

68. J.C.Hall, The Trades of Sheffield, 1866, p.11; see also chapter 1, p.8.

69. S.Pollard, History, p.55; P.P. 1865, XX, J.E.White's Report, para.36-7, (p.4).

70. P.P. 1865, XX, J.E.White's Report, para.41, (p.4).

71. Ibid., para. 43 (p.4).

72. Ibid., case 31 (p.19).

73. Ibid., case 55 (p.23).

74. Ibid., para.45 (p.4).

75. Ibid., case 189 (p.41).

76. Ibid., case 205 (p.45).

77. Ibid., case 203 (p.45).

78. Ibid., para. 44 (p.4), "Owing to the system ... it is considered no-ones business to see it."

79. Hutchins and Harrison, pp.171-2; P.P. 1876, XXX, R.C. on the Factory Acts, E.Gould, q.12292, they were exempted from compulsory whitewashing.

80. P.P. 1876, XXX, R.C. on the Factory Acts, S.Arden, q.12079.

81. Ibid., E.Gould, q.12292.

82. Hutchins and Harrison, p.201.

83. P.P. 1899, XII, Home Office Departmental Committee on Dangerous Trades, 3rd Interim Report, c.9073, p.27.

84. P.P. 1888, XXVI, Factory Inspectors' Report, c.5328, pp.36-7.

85. Ibid.

86. P.P. 1894, XXI, Factory Inspectors' Report, c.7368, p.277; Hutchins and Harrison, pp.230-9; Djang, p.44.

87. Chamber of Commerce minutes, Jan.1892, Jan 1893, S.C.L., L.D. 1986/3; P.P. 1894, XXI, Factory Inspectors' Report, p.278.

88. P.P. 1892, XXXVI, R.C. on Labour, R.Holmshaw, qs.14437-8, 19441.

89. P.P. 1894, XXI, Factory Inspectors' Report, p.277, the men were in favour of the appointment of an inspector who would concentrate on the Sheffield area alone, who would preferably be a "practical", "intelligent workman"; they were still demanding this in 1908, P.P. 1892, XXXVI, R.C. on Labour, R.Holmshaw, qs. 19439-41, 19599-608, A.Fretwell, qs.19638, 19761-6; The Metal Worker, vol.III, no.24, Dec.1908, p.268.

90. P.P. 1892, XXXVI, R.C. on Labour, R.Holmshaw, q.19435, A.Fretwell, q.19637.

91. P.P. 1896, XIX, Factory Inspectors' Report, c.8067, p.24.
92. S.F.T.C., Annual Report, 1895, pp.3-4.
93. P.P. 1896, XIX, Factory Inspectors' Report, p.24.
94. P.P. 1897, XVII, Factory Inspectors' Report, p.41.
95. Ibid.
96. Ibid.
97. Chamber of Commerce minutes, 30 Jan. 1894, S.C.L., L.D. 1986.4, it was suggested that notices should be fixed by the occupier who commanded the entrance; fencing should be provided by occupiers; mill gearing and machinery should be kept in reapir by the occupiers; instant communication between the mills and the engine room was unnecessary as "the existing rough and ready system of shouting from the window on the occurence of an accident is quite adequate, and works well."
98. Ibid., 30 Jan 1896, S.C.L., L.D. 1986/4.
99. Tilleyard, pp.218-19.
100. P.P. 1907, X, Factory Inspectors' Report, cd.3586, p.77.
101. P.P. 1905, X, Factory Inspectors' Report, cd.2569, p.108.
102. P.P. 1908, XII, Factory Inspectors' Report, cd.4166, p.61.
103. P.P. 1906, XV, Factory Inspectors' Report, cd.3036, p.112; P.P. 1911, XXII, Factory Inspectors' Report, p.51, Workshops in tenements were still very inadequately cleaned and whitewashed in 1910.
104. P.P. 1908, XII, Factory Inspectors' Report, p.61; P.P. 1913, XXIX, Factory Inspectors' Report, cd.6852, p.53; S.I., 13.5.1908.
105. P.P. 1906, XV, Factory Inspectors' Report, p.112.
106. P.P. 1909, XXI, Report by A.H.Lush on the Draft Regulations for Factories in which Grinding of Metals and Racing of Grindstones is carried on, cd.4913, pp.3-4; the Metal Worker, no.23, Nov.1908, p.243, 267-8.
107. Ibid.
108. P.P. 1906, XV, Factory Inspectors' Report, p.111.
109. P.P. 1905, X, Factory Inspectors' Report, p.105.
110. J.Rodgers, Under Five Sovereigns, p.27.
111. Sheffield and Rotherham Up-To-Date, pp.124-5, 131-2, photographs of the workshops of various reputable firms evidence their poor condition.
112. The Metal Worker, vol.III, no.30, June 1909, p.128.
113. Ibid., pp.128-9, legislation included minimum height, air, floorspace and window space regulations, that floors had to be concreted, watertight, swept daily and damp wiped weekly, and that walls must be limewashed annually.

114. P.P. 1907, X, Factory Inspectors' Report, p.107.

115. Ibid.

116. Ibid., pp.108-9.

117. P.P. 1909, XXI, A.H.Lush, appendix A, p.12.

118. P.P. 1912, XXV, Factory Inspectors' Report, p.63; P.P. 1913, XXIII, Factory Inspectors' Report, p.72.

119. P.P. 1913, XXIII, Factory Inspectors' Report, p.72.

120. S.I., 23.12.1911.

121. Ibid.

122. Ministry of Labour and National Service, Report by the Cutlery Wages Council, pp. 2, 7. A.Vallance, The New Statesman, 24.5.1952, p.608, "If the provisions of the 1937 Factory Act were applied without fear or favour, half the "little mesters" would be swept out of existence in a single day."

123. Ibid., pp.2, 7; Working Party Reports, Cutlery, p.6.

124. See chapter 1, p.14.

125. E.L.Makin and E.L.Middleton, Report on the Grinding and Cleaning of Castings, with Special Reference to the Dust Inhalation of Workers, London, H.M.S.O., 1923, p.6.

126. J.C.Hall, On the Prevention, p.16 ; M.P.Johnson, 'The History of the Grinders Asthma in Sheffield', T.H.A.S., vol.11, 1981, p.68, dust was also created by the process known as "rodding", by which a flat iron rod was held against the revolving grindstone to remove ingrained particles of iron or dirt. "Rodding" took about ten minutes, and could be done 40 times a day.

127. M.P.Johnson, p.66; Lloyd, p.49.

128. Ibid.; P.P. 1865, XX, J.E.White's Report, para. 44-50, (p.5), case 38.

129. G.C.Holland, Diseases of the Lungs; J.C.Hall, On the Prevention; The Sheffield Trades.

130. M.P.Johnson, p.70.

131. P.P. 1867, XX, J.E.White's Report, case 40 (pp.21-2).

132. J.C.Hall, On the Prevention, p.16.

133. J.C.Hall, Trades of Sheffield, pp.14-17; P.P. 1867, XX J.E.White's Report, case 40 (p.72).

134. J.C.Hall, Trades of Sheffield, pp.14-17; P.P. 1865, XX, J.E.White's Report, case 39 (pp.20-21); see also fig. 1.

135. P.P. 1899, XII, S.C. on Dangerous Trades, pp.25-6.

136. P.P. 1867, XX, J.E.White's Report, para.91, (p.8).

137. J.C.Hall, The Sheffield Trades, pp.13, 18-19, it was also suggested that wet and dry grinding should take place in separate hulls, that floors should be so constructed that water would drain away, and that hours should be limited.
138. P.P. 1865, XX, J.E.White's Report, cases 38, 40 (pp.20-1).
139. J.C.Hall, Trades of Sheffield, p.13.
140. P.P. 1865, XX, J.E.White's Report, para.43 (p.4), case 55 (pp.23-4).
141. Ibid., case 40 (p.21).
142. Ibid., case 38,(p.20).
143. Ibid., para. (p.10), cases 15, (p.16), 38, 39 (p.20).
144. Ibid., cases 22 (p.16), 34 (p.19), 38 (p.20), 58 (p.23).
145. Ibid., para.119, (p.11).
146. S.Pollard, History, pp.151-2.
147. P.P. 1876, XXX, R.C. on the Factory Acts, S.Arden, q.12071, it was now exceptional to see a dry grinder without a fan: "we do not have half of what was called grinders disease" compared with ten or twelve years ago.

Mortality Rates of Cutlery Workers, 1869-85

Occupation	1869-1871		1867-1871		1885	
	No.of Deaths	% Caused by Lung Disease	No.of Deaths	% Caused by Lung Disease	No.of Deaths	% Caused by Lung Disease
Grinders	416	60	729	44	103	49
Haft Makers & Hafters	387	44	1008	49	115	37
Forgers	192	37	436	51	-	-

Source: S.Pollard, History, p.329.

148. P.P. 1889, XIII, S.C. on Sweating, W.F.Davis, q.25285; P.P. 1888, XXVI, Factory Inspectors' Report, p.38.
149. Ibid., W.F.Davis, q/25341.
150. S.Snell, The Prevention of Eye Accidents Occurring in Trades, Sheffield, 1899, pp.2, 8-9.
151. Ibid., p.27.
152. Many such accidents were reported in the local press, e.g., S.I., 27.11.1876,

21.5.1877; 3.3.1880.

153. P.P. 1876, XXX, S.C. on The Factory Acts, S.Arden, qs.12054-5.

154. Ibid., q.12132.

155. S.I., 27.11.1876.

156. Reports of such accidents in the local press were frequent; women and children were usually the victims, e.g. S.I., 21.9.1871, 11.11.1874, 5.3.1875.

157. P.P. 1883, XXVI, Factory Inspectors' Report, pp.36-7; P.P. 1876, XXX, R.C. on the Factory Acts, E.Gould, q.12307.

158. P.W.J.Bartrip and S.B.Burman, The Wounded Soldiers of Industry: Industrial Compensation Policy, 1833-1897, Oxford, 1983, p.156.

159. Chamber of Commerce minutes, June 1880, S.C.L., L.D. 1986/2.

160. P.P. 1882, XVIII, Factory Inspectors' Report, c.3183, p.14.

161. Bartrip and Burman, p.177.

162. Mean Death Rates, per 1000 Living in Sheffield, 1880-2 and 1890-2

	Aged 24-45		Aged 45-65	
	1880-2	1890-2	1880-2	1890-2
Cutler	12.3	14.2	34.9	44
All Occupied Males	9.7	9.5	24.6	26.7
Difference	+2.6	+4.7	+10.3	+17.3

Source: P.P. 1897. XVII, Factory Inspectors' Report, p.66.

163. City of Sheffield: Mortality in the Grinding and Cutlery Trades, 1901-1910

Trade		No.of Males 18+	Death Rate Per Annum Per 1000 Living		
			All Causes	Phthisis	Respiratory Diseases
Grinding	Forks & Steels	96	35.4	10.7	5.2
	Scissors	194	47.9	28.3	10.3
	Razors	413	32.7	14.3	5.6
	Table & Spring Knives	1518	28.9	13.8	5.3
	Cutlery	3089	29.4	5.8	6.8
	All Males, 20 yrs+	124000	16.4	2.7	3.4

Source: Annual Report on the Health of the County Borough of Sheffield, 1910, p.xvi.

164. Comparative Mortality From Specific Causes Amongst Males of Certain Industries 1890-92

	All Causes	Alcoholism	Rheumatic Fever	Gout	Phthisis	Diseases of Nervous System	Diseases of Circulatory System	Diseases of Respiratory System	Diseases of Digestive System	Diseases of Urinary System	Plumbism	Accident
Occupation												
Cutler	1516	18	7	-	302	91	167	518	58	56	3	32
All Occupied Males	953	13	7	2	158	82	126	221	55	41	1	56
Difference	+563	+5	-	+2	+224	+9	+41	+297	+3	+15	+2	-24

Source: P.P. 1897, XVII, Factory Inspectors' Report, p.66

Mortality of Cutlers, Grinders, Tool, Fork and Scissor Makers and Forgers, from the Four Diseases that Afflicted them most: Phthisis,(P), Diseases of the Respiratory System (R), Circulatory System (C), and Nervous System (S), 1886, 1895 and 1904

1886				1895				1904			
P	R	C	N	P	R	C	N	P	R	C	N
61	72	41	45	76	72	34	28	103	75	59	5

Source: Annual Reports on the Health of Sheffield, 1886, (p.41), 1895, (p.32), 1904, (p.62).

165. Occupations of Workers in Sheffield and Ecclesall Infirmaries, 20.1.1907, Suffering from Various Occupational Diseases

	Phthisis	Bronchitis	Other Respiratory Diseases	Rheumatic Gout	Heart Disease
Grinders	9	2	1	1	-
Cutlers	6	2	3	3	3
Total	86	26	18	10	28
Grinders & Cutlers as % of Total	17%	15%	22%	40%	11%

Source: P.P. 1909, XVI, R.C. on the Poor Laws, Report by A.D.Steel-Maitland, p.360.

166. Cutlery Workers Admitted to Workhouses and Hospitals in Sheffield, 1907,1910 and 1914

	1907		1910		1914	
Occupation	Hospital	Workhouse	Hospital	Workhouse	Hospital	Workhouse
Cutlers	59	49	49	65	42	40
Grinders	57	31	33	48	33	32
Hafters	2	6	2	14	4	5
Razor Makers	-	5	1	-	2	1
Scissor Makers	2	7	-	5	4	3
Total	120	98	85	132	85	81

Source: Statement of Accounts of the Guardians of the Sheffield Union, 1907, (pp.8-10), 1910, (pp.12-13), 1914, (pp.10-11).

167. Annual Reports on the Health of Sheffield, 1886, (p.47), 1895, (p.32), 1904, (p.62).

160. Ages at Death of Cutlers, Grinders, Tool, Fork, Scissor Makers and Forgers, Who died of Phthisis and Diseases of the Respiratory System, 1886, 1895 and 1904

Disease Causing	1886						1895					
Death	25	25-35	35-45	45-55	55-65	65+	25	25-35	35-45	45-55	55-65	65+
Respiratory System	1	9	9	12	21	20	1	3	12	12	21	12
Phthisis	8	13	16	15	6	3	8	17	23	17	9	2

Disease Causing	1904					
Death	25	25-35	35-45	45-55	55-65	65+
Respiratory System	5	3	9	13	18	27
Phthisis	3	17	23	34	22	4

Source: Annual report on the Health of Sheffield, 1886, 1895 and 1904.

See also, P.P. 1897, XVII, Factory Inspectors' Report, p.34.

169. P.P. 1899, XII, S.C. on Dangerous Trades, p.27.

170. Tilleyard, pp.218-19.

171. M.P.Johnson, p.73.

172. P.P. 1899, XII, S.C. on Dangerous Trades, appendix XIII, p.52.

173. P.P. 1892, XXXVI, R.C. on Labour, R.Holmshaw, qs.19475-80; S.I., 9.5.1908, 12.5.1908.

174. The Metal Worker, vol.II, no.19, July 1908, p.146, "For thirty years or more we have had fans in our grinding wheels; but we who are acquainted with Sheffield workshops know that very few use them."

175. The Metal Worker, vol.II, no.24, Dec.1908, p.267.

176. Ibid., p.268.

177. P.P. 1905, X, Factory Inspectors' Report, pp.107-8; P.P. 1907, X, Factory Inspectors' Report, p.77; P.P. 1909, XXI, A.H.Lush, p.4.

178. P.P. 1905, X, Factory Inspectors' Report, p.107.

179. P.P. 1907, X, Factory Inspectors' Report, p.77; P.P. 1905, X, Factory Inspectors' Report, p.10.

180. The Metal Worker, vol.I, no.11, Nov.1907, pp.241-3; Vol.II, no.17, May 1908; vol.III, no.30, June 1909, pp.127-132, Charles Hobson produced a series of articles on conditions of cutlery manufacture, after a visit to Solingen in 1907. See also S.I., 2.5.1908, 13.5.1908, 6.11.1908, 7.11.1908, 9.11.1908;

P.P. 1907, X, Factory Inspectors' Report, pp.107-9; P.P. 1908, XII, Factory Inspectors' Report, p.64.

181. Ibid.

182. P.P. 1908, XII, Factory Inspectors' Report, p.64; The Metal Worker, vol.II, no.15, March 1908, p.71.

183. Ibid., p.64; S.Pollard, History, p.215.

184. Tilleyard, pp.228-9; P.P. 1909, XXI, A.H.Lush, appendix A. p.12.

185. The Metal Worker, vol.III, no.30, June 1909, pp.127-8, investigations were made on the spot, and in two months of inquiries, 233 private factories, 155 tenement factories and 12 isolated shops were visited; Dr Collins, Sheffield's Medical Officer of Health, examined over 1000 people.

186. Chamber of Commerce minutes, April 1908, S.C.L., L.D. 1986/6.

187. The Metal Worker, vol.III, no.30, June 1909, pp.131-2; vol.II, no.19, July 1908, pp.145-9.

188. Chamber of Commerce minutes, 1908, Feb. 1910, S.C.L., L.D. 1986/6 and 7; P.P. 1909, XXI, A.H.Lush, pp.2,5; Table blade grinders' society, minutes, 27.2.1908, 8.4.1908, 30.4.1908; 14.5.1900, in 1907, the Chamber of Commerce discussed the proposed regulations with representatives of the Cutlery Council, whilst in 1909, representatives of the S.F.T.C. met and discussed the legislation with delegates from the Cutlers' Company, Chamber of Commerce, Cutlery Manufacturers Association, and the Sheffield Power Owners Association. Robert Holmshaw, whilst campaigning as Sharrow's Liberal candidate, stated that the grinding regulations "were compiled by both masters and men, working in conjunction, and the result of it was a better feeling existed between employers and employed today, than had ever existed before in the history of the cutlery trade in Sheffield", S.I., 29.10.1909.

189. P.P. 1909, XXI, A.H.Lush, p.6.

190. S.I., 31.7.1909.

191. The Metal Worker, vol.II, no.24, Dec.1908, p.268, this reluctance was anticipated by some union leaders.

192. P.P. 1913, XXIII, Factory Inspectors' Report, p.72.

193. P.P. 1914, XXIX, Factory Inspectors' Report, cd.7491, p.47.

194. P.P. 1913, XXIII, Factory Inspectors' Report, p.72; S.I., 17.10.1911

195. M.P.Johnson, pp.74-5.

196. P.P. 1907, X, Factory Inspectors' Report, p.77, six dozen hand forged razors lost 26lbs.1oz. of dust in grinding, whilst the same quantity of machine forged razors

lost only 11b.9oz.

197. S.I., 27.2.1908, a talk given by the workshop inspector at the Firth Hall, entitled, 'Factory and Workshop Conditions From a Public Health Point of View'; S.I., 1.8.1908, a talk given by a senior surgeon from Gt.Ormond St. Hospital entitled 'Dust and Disease'; S.I., 1.10.1913; P.P. 1914, XXIX, Factory Inspectors' Report, p.47, a major conference on the subject of T.B. and the cutlery trades, was attended by employers' and workers' representatives, doctors and Home Office experts.

198. Ibid.

199. S.I., 27.2.1908, it was stated by the workshop inspector that "In cases of consumption amongst grinders reported to him by one medical officer of health, over 40% were drunkards." It was common for grinders to "have a penn'orth of cake and a penn'orth of tinned chicago for dinner, so as he could spend the rest of his dinner money on ale."

200. S.I., 1.10.1913.

201. P.P. 1912, XXV, Factory Inspectors' Report, p.83.

202. P.P. 1908, XII, Factory Inspectors' Report, p.73.

203. Tilleyard, pp.227-8.

204. P.P. 1910, XXVIII, Factory Inspectors' Report, p.73, it was reported that two cutlers ate their lunch from a bowl which was resting on a pot of molten lead, although they had both suffered from numerous attackes of lead poisoning; see also S.I., 30.9.1910.

205. Ministry of Labour and National Service, Report by the Cutlery Wages Council, p.10.

206. P.P. 1899, XII, S.C. on Dangerous Trades, p.23; M.P.Johnson, p.73.

207. Chamber of Commerce minutes, 1894, Jan.1898, S.C.L., L.D. 1986/4; P.P. 1899, XII, S.C. on Dangerous Trades, p.23; P.P. 1897, XVII, Factory Inspectors' Report, p.20.

208. Chamber of Commerce minutes, 1900, S.C.L., L.D. 1986/5; P.P. 1899, XII, S.C. on Dangerous Trades, pp.23-9; S.F.T.C., Annual Report, 1898, p.9.

209. A.Redgrave, The Factory, Truck and Workshops Act, London, 12th edn., 1916, p.232.

210. There were two major reports: in 1897, P.P. 1897, XVII, Factory Inspectors' Report, pp.19-20; and in 1899, P.P. 1899, XII, S.C. on Dangerous Trades, pp.25-9; A.Redgrave, p.232.

212. P.P. 1897, XVII, Factory Inspectors' Report, pp.19-20.

213. P.P. 1899, XII, S.C. on Dangerous Trades, pp.51-2.

214. Tilleyard, pp.207-8; P.P. 1904, X, Factory Inspectors' Report, cd.2139, p.89; P.P. 1909, XXI, Factory Inspectors' Report, cd.4664, p.65; P.P. 1910, XXVIII, Factory Inspectors' Report, p.66; P.P. 1911, XXII, Factory Inspectors' Report, p.222, in 1903 there were only fourteen cases of broken grindstones reported in Sheffield, but in 1908 there were 46, 65 in 1909 and 69 in 1910.

215. P.P. 1907, X, Factory Inspectors' Report, pp.87-8; P.P. 1908, XII, Factory Inspectors' Report, p.67; P.P. 1909, XXI, Factory Inspectors' Report, p.65, of the grindstone breakages reported in 1907, all were running at speeds over 3000 feet per minute; whilst in 1900, only four of the 46 broken stones which were reported, were running at speeds below 3000 feet, and ten were running at speeds exceeding 4500 feet per minute.

216. P.P. 1908, XII, Factory Inspectors' Report, p.67.

217. P.P. 1913, XXIII, Factory Inspectors' Report, p.58; P.P. 1912, XXV, Factory Inspectors' Report, p.87; P.P. 1914, XXIX, Factory Inspectors' Report, p.30.

218. P.P. 1909, XXI, Factory Inspectors' Report, p.65; P.P. 1907, XII, Factory Inspectors' Report, p.76; P.P. 1912, XXV, Factory Inspectors' Report, p.68.

219. Bartrip and Burman, p.205; P.Thane, The Foundation of the Welfare State, London, 1983, p.44.

220. S.F.T.C., Annual Report, 1898, p.8, many cutlery workshops were still unmechanised.

221. Chamber of Commerce minutes, Jan.1898, Jan, July 1897, S.C.L., L.D. 1986/4.

222. Ibid., Jan.1899, S.C.L., L.D. 1906/5.

223. S.Pollard, History, p.207; table blade grinders minutes, 7.11.1907.

224. S.I., 19.6.1907, the woman and her five children, received £280 in compensation.

225. S.I., 29.7.1911.

226. P.P. 1910, VIII, R.C. on the Poor Laws, A.J.Hobson, qs.8045-8; S.I., 29.7.1911; Sheffield Local Register, 26.2.1908.

227. P.Thane, p.84-6.

228. Ibid., p.85.

229. Ibid., p.86.

230. S.I., 13.1.1912.

231. P.P. 1912, II, Report of the Committee Appointed to Consider and Advise on the Application of the National Insurance Act to Outworkers, cd.6179.

232. Ibid., H.Hobson, qs.4012, 4035.

233. Ibid., qs.4017-8, 4035.

234. Ibid., qs.4030, 4035.

235. Ibid., q.4059.

236. Ibid., qs.4040, 4038-9.

237. Ibid., qs.4094-9, Chamber of Commerce minutes, Feb.1912, Feb.1913, S.C.L., L.D. 1986/8.

238. Ibid., qs.4141-50, 4166-9.

239. S.I., 17.7.1912; P.P. 1912, II, Report of the Committee on Outworkers, W.Hobson, qs.4214-7.

240. S.I., 17.7.1912.

241. Chamber of Commerce minutes, Feb.1912, S.C.L., L.D. 1986/8; see N.Whiteside, 'Welfare Insurance and Casual Labour: A Study of Administrative Intervention, 1906-26', Economic History Review, 2nd Series, XXXII, 1979.

242. Chamber of Commerce minutes, Feb.1912, S.C.L., L.D. 1986/8, the returns were as follows:

1 manufacturer would pay under 3d. extra income tax in the £.
1 manufacturer would pay over 3d. and under 6d. extra income tax in the £.
2 manufacturers would pay over 6d. and under 9d. extra income tax in the £.
2 manufacturers would pay over 9d. and under 1s. extra income tax in the £.
4 manufacturers would pay over 1s. and under 1s.3d extra income tax in the £.
2 manufacturers would pay over 1s.3d. and under 1s.9d. extra income tax in the £.
1 manufacturer would pay over 1s.9d. and under 2s. extra income tax in the £.
3 manufacturers would pay over 2s. and under 2s.3d. extra income tax in the £.
2 manufacturers would pay over 2s.7d. extra income tax in the £.
1 manufacturer would pay over 2s.10p.extra income tax in the £.
1 manufacturer would pay over 3s.5d. extra income tax in the £.
1 manufacturer woul pay over 5s. extra income tax in the £.

243. Ibid., appendix A.

244. Ibid., at Thomas Turner and Co., where 20% of the workforce were women, and 12% were youths and apprentices, insurance under the Workmen's Compenation Act alone, was calculated by A.J.Hobson, to amount to an additional 3d. in the pound on the wages bill, plus the expense of a new clerk to supervise the insurance of the 800 workers.

245. J.R.Hay, 'Employers and Social Policy in Britain: the Evolution of Welfare Legislation, 1905-14,' Social History, IV, 1977, pp.238-9.

246. See chapter 6 , pp. 198-9.

247. C.Hurke, pp.141, 152-3.

248. Walker and Hall, Knife, Fork and "Plate", Sheffield, 1902, p.5, the scheme was

managed by a committee of eight, four of whom were appointed by the management, and four by the workforce. After 21 years of service a man received a pension of 8s.6d. per week, and a woman 4s.3d; after 25 years this was raised to 10s.5d; after 30 years, 15s; and after 40 years a man received 17s.6d per week.

Chapter 8 Community and Culture

The persistence of the skill-intensive and small-scale industrial structure of the light metal trades had significant effects on the wider social and cultural world of those who worked in them. The continued use of, and respect for handicraft excellence, for independent production and status, but equally the difficulty of amassing manufacturing fortunes, coloured the practicalities as well as the ideology and aspirations of both manufacturers and men.

Workers

For the British working classes the period of the 'Great Depression', marked by falling prices and static wages, was one of increased real earnings.[1] These trends were mirrored in Sheffield, where the residual wage index of the working classes rose significantly, peaking in 1871, 1882 and 1892.[2] After the mid-1890s, prices in Sheffield rose consistently,[3] although cheap coal and rents accounted for a retail price index of only 60 in 1905, compared with 100 in London.[4] Between 1905 and 1913, prices rose by a further 14%.[5]

In the cutlery trades, however, the standard of living, whilst fluctuating widely from one man, trade and year to the next, appears to have declined quite steadily over this period. Money wages peaked in the early 1870s, 1883, 1889-90, 1898-1900 and 1912-13.[6] Wages in the scissor trade never matched their early 1870s peak, but in other branches, this level was matched in 1890 and 1913, although rising prices significantly reduced the real value of earnings. Not only did wages fall in real terms, but the traditional ratio of wages in the light trades to those in the heavy trades, in which the light trades had always been better paid before the mid-1890s, was reversed. Pollard noted that "The most striking divergence between the light and heavy trades of Sheffield in the period 1851-1914, was the was the failure of the former to keep up the rate of increase of the latter after the mid-1890s. Taking the years 1896-1903 as pivot...the heavy trade earnings index was consistently

below the light trade figure before that period, and consistently above it afterwards".[7]

The standard of living of many cutlers was already low. In 1885, wages were said to be less than they had been in 1875;[8] cutlers were only managing because food prices had fallen so low.[9] By 1889, a cutler's standard of living was said to be lower than its level of twenty years ago,[10] whilst independent craftsmen who had to pay the increased costs of raw materials, were in a particularly bad position.[11] Just as the employing classes generally, felt that the working classes were not suffering any adverse consequences of the depression, so Sheffield's cutlery manufacturers believed that the "exceptional cheapness...of all the necessities of life "[12] prevented any suffering amongst their workers.

Within this broad framework of steadily declining prosperity which accelerated after 1890, the variations were endless, affected by trade cycles and general levels of demand,[13] but also the skills of the worker and status of the firm for which he worked.[14] Wages varied "à infini, suivant les aptitudes et la conduite de chacun d eux."[15] A Wadsley spring knife cutler, one of the poorest classes of workmen, in terms of skill, income and quality of item produced, earned 14s. per week in 1889, with which to support his wife and three children. He spent it as follows:[16]

House rent 3s.	Soap 2d.	Cheese 6d.
Lamp oil 2½d.	Bread & flour 2s.	Milk for baby 6d.
Boots 6d.	Meat 1s. 6d.	Others 4d.
Chemist 2d.	Groceries 1s. 6d.	
School fees 3d.	Vegetables 4d.	

The factory inspector concluded that "This man has no allowance for a glass of beer, or a bit of tobacco, or anything else, nor for amusements; he works full time the whole of the year round".[17] Cases of this kind were common: workers who lived close to Rowntree's primary poverty line; families who spent on necessities only, but still found it difficult to maintain "mere physical

health", and who had inadequate income to allow them any freedom of choice or action.[18] A major scandal erupted in 1889 when an elderly but hardworking and 'respectable' spring knife grinder died through starvation.[19]

However, the earnings and expenditure of another spring knife cutler in the same year, illustrate the amplitude of possible variations, even within the same trade. Although there were seven children, and only two members of the family at work, they managed to purchase semi-luxury goods such as cocoa, alchohol, newspapers and jam, to invest in friendly societies, and still save over £5 per year.[20] Such secure, prosperous workers were still to be found at the end of the 19th century. The family of the table knife hafter (again a generally poor trade) whose circumstances were detailed by C. Pagé, ate four meals a day, although their income was increased by their cultivation of an allotment, and the hafter's teetotalism.[21] The cultivation of an allotment, and the avoidance of drink were both character traits believed by contemporary observers to be important in marking out a 'respectable' worker, and in augmenting his standard of living.[22]

However, whilst the level and regularity of earnings has been pinpointed by some commentators as the critical criteria which separated a 'labour aristocrat' from other workers,[23] in these trades it would appear that only a small and declining minority of workers could be assured of such conditions. It has been generally recognised that skilled workers all over the U.K. were subject to the deskilling and subdivision of tasks which the increasing implementation of machinery involved, and the reduction in earnings, craft control and status which this entailed.[24] In the cutlery trades these tendencies were more pronounced, affected by the unhealthiness of the trades,[25] the sheer lowness of wages and the exceptionally fluctuating nature of trade.[26] Overall, earnings were just adequate to keep workers from complete poverty: very few were forced into the workhouse. However, as the table illustrates, far more workers from the deskilled, commoner branches of production were workhouse entrants than those from trades were skills and wages were better maintained.

Male Admissions to the Workhouse 1899-1906.[27]

Trade	1899	1900	1901	1902	1903	1904	1905	1906
Cutler	193	196	103	70	113	103	97	108
Grinder	162	126	67	58	70	63	59	67
Hafter	26	19	9	12	1	14	12	11
Razor maker	-	-	-	-	-	5	5	4
Total of all admissions	4453	4328	2308	2478	2623	2828	2355	2624
Cutlery workers as a % of all admissions	9	7	8	6	7	7	7	7

This same division is reflected in the significant variations in levels of income and consequent levels of social security, material possessions and ambitions. Although the number of men with high and reasonably regular earnings was declining, as was their wage differential,[28] they remained a crucial determinant of the social structure of these trades.

More pronounced were the differences in values and aspirations which separated the various sections of the workforce. Such "exclusive values, patterns of behaviour and social aspirations"[29] effectively distinguished the 'labour aristocracy' from other sections of society, and are estimated by some recent commentators to be more important than economic features or differentials, in marking out a working-class elite.[30]

However, the 'labour aristocracy' has rarely been seen as a totally 'new' social grouping, the product of bourgeois stabalization tactics.[31] Equally its ideology is acknowledged to be dependent, to a significant extent, on old craft traditions and values. Crossick has argued that the development of these values "proceeded not through indoctrination, not through capitulation to middle class ideals, but through the development out of working class traditions and the labour aristocrats social and economic experience..."[32]

Some commentators have disagreed and find 'respectability' in Sheffield to be "a system of values prescribed by the middle class for the working class, and acquiesced in by deferential elements within the working class".[33] Such an estimation will not however, explain the nature of the 'respectability' of the

'elite' of cutlery workers. For these men, whilst normally skilled, trades unionists, and higher earners, their 'respectable' values, although tinged by 'middle-class' aspirations, had their roots in their indigenous trade customs and morality: mutuality, pride in a skill and the respect and adequate payment for it by the rest of society, independence and freedom of action, a respected position in the local community, and cordial, close relations with employers. In contrast, the unskilled workers, because of their low wages and removal from craft understandings, were shunned by their skilled counterparts; their wages would not permit, and their aspirations were not attuned to such goals as better housing or friendly society membership.[34] Finally, and in many ways the clearest indication of the tenacity of past values in shaping cultural and ideological outlooks, were the group of relatively skilled and well paid workers, who clung to the old ways of 'St. Monday', vigorous independence and ritualised drinking, with little regard for any of the middle-class conventions adopted by their union leadership. Many of their 'unrespectable' ways, which were scorned by their leadership and middle-class observers, were a direct product of their craft customs.

It has been observed that the growth of deskilling, improved education, mass leisure pursuits, and expansion of the white-collar workforce, resulted in the formation of a more homogeneous working class at this time, in terms of both economic experiences, and also cultural and value systems.[35] In the cutlery trades, whilst wage differentials decreased slightly,[36] the upper echelons attempted, and were largely successful in efforts to maintain their distance. Perhaps it was the decline in their economic situation, the realization that their skills would no longer guarantee financial rewards, that necessitated the emphasis which they placed, on the cultural values associated with the possession of skill. The spokesmen of the trades experienced considerable difficulty in their efforts to improve their image, and rid them of their workers reputation for excessive independence and general recklessness and improvidence: idle, drunken, headstrong and scornful of the mores of contemparary society.[37]

These differing attitudes and their origin in traditional forms of behaviour, are clearly discernable in the realm of working class leisure pursuits. Although the amount of time devoted to leisure declined significantly, this was the result of falling real wages, and the need to hunt out jobs and work whenever possible, and not the symbol of a conversion to middle-class work ethics.

Drinking had always been firmly associated with the cutlery trades: it was dusty and thirsty work,and also traditionally well-paid: "The ease with which high wages are earnt, coupled with the power of working irregularly are thought to lead to some of the bad habits referred to ".[38] In earlier water-powered days, drinking had often provided a pastime when the water level fell too low to turn the wheel.[39] The disorganized structure of the industry, and particularly the giving out of work, which frequently involved the men in long and tedious waits, were still used by unionists as excuses for the frequent resort of the men to pubs.[40]

The craft unions had always been hard on drinkers, who were seen as 'unrespectable' men.[41] The need for drink money was viewed by some middle-and working-class observers as the reason for which some parents forced their children into work at a very young age,[42] and the wives of drunken husbands were forced into sweated work.[43] In an already unhealthy trade, drink further weakened the health of the men,[44] and moreover, weakened the unions. An S.F.T.C. representative told the spring knife cutlers in 1889, on the formation of their union that "If they were to be successful...let them be determined that for the next twelve months, they would not once get drunk - to be determined to give up gambling. Drink and gambling were the curse of working men and placed them in a worse position than slavery".[45]

The cause of temperance was furthered by the increased involvement of the Church: by 1870, two-thirds of all Sheffield's churches were associated with the movement.[46] It was advocated by a number of manufacturers,[47] and became the symbol and moral associate of the self-made man. However, as B.Harrison has pointed out, whilst temperance has been seen as an important

criteria in the division of the working class by contemporaries and historians, into 'rough' and 'respectable' elements, temperance being indicative of self-respect and elevation from the baseness of the 'rough' working class, associated with, and a symbol of self-help, thrift and education,[48] it was not necessarily a middle-class 'hand-out'. Many labour pioneers and members of the Social Democratic Federation were temperance workers.[49] Abstinence could be part of the ethos of social mobility which enabled a cutler to 'get on in the world' and start his own business, or to afford the trade society subscriptions which could protect his skills and wage rates.

Moreover, trade unionists opposed heavy drinking as it was often used by employers as a stick with which to beat the men: it was blamed for arrears in orders and delay in the completion of work.[50] Typically, the American consul in Sheffield considered excessive drinking to be fundamental to the "loss of power, time and skill" of the Sheffield razor grinders: "They all keep too faithfully to St.Monday and St. Tuesday at the beerhouses that tempt them on every corner. The process of razor grinding requires great care, a delicacy of touch and steady nerves. These are qualities which do not flourish with hard drink".[51]

Drunkenness did decline after the 1880s, and the greater temperance of the men was acknowledged.[52] The number of licenced premises in Sheffield fell from 55 per 10,000 inhabitants in 1893, to 35.4 in 1913.[53] However, the decline in the amount of money spent on alcohol was probably symptomatic of the national trend in this direction,[54] rather than the conversion of Sheffield's workers. Many cutlers continued to practise dual occupations as licensed vituallers or beerhouse keepers, as they had done in the past.[55] There were still a huge number of pubs situated in the immediate vicinity of the cutlery works as well as the homes of the cutlers who lived in central Sheffield.[56] The conviviality of the pub offered an escape from houses which were often cramped, providing a place to relax and eat.

Stemming perhaps from emasculated rural traditions, when the workers, and especially the grinders, were a group apart, only socializing amongst themselves, the pubs continued to be an

important meeting place, where the craft mystique and camaraderie would be cemented. Crossick and Gray found temperance to be similarly unpopular amongst the artisans of Kentish London and Edinburgh, particularly in those trades in which, like Sheffield's, there was traditionally no firm divide between work and leisure.[57] To continue to drink occasionally was, in many ways, felt to show greater control and judgement. Heavy drinking remained common on Mondays, although increasingly only when trade was good and the men were paid by the piece.[58] Trade unionists were forced to acknowledge that Sheffield cutlers consumed considerably more than their American counterparts.[59] Dry pubs and cafés which were established in predominantly working class areas, were quick to collapse.[60] The cutlery societies affiliated to the S.F.T.C., when asked in 1906, by the Temperance Movement, to find alternative venues to pubs for their meetings, although half were willing to consider this request, most found the alternatives too expensive, and perhaps not so pleasant.[61]

The 'irregular habits' of cutlery workers were a similar source of embarrassment to the union leadership, who once more, attributed them to the unusual structure of the industry. Although the incidence of these customary and often loutish pastimes did decline,[62] this was again the result of the drop in wages and available work which made it necessary to spend more hours at, or looking for work to ensure a decent living.

Periodic holidaying, in particular, was a hangover from the rural celebrations to which many cutlers remained attached. Fairs and other local events remained popular amongst those who could afford to observe them, and forced upon those who could not.[63] Manufacturers complained bitterly about their men's idleness and indolence in periods of good trade, particularly if good business coincided with a spell of good weather.[64] St. Monday's observance persisted, although it was gradually eroded and, moreover, internally transformed. Both unionists and middle-class observers came to regard it as idle folly, a time to shirk and get drunk.[65] Although some cutlers used the day constructively, to go "tripping",[66] the secretary of the scissor

grinders' union was expressing the views of most 'upright' men when he stated that "half the men in Sheffield keep St.Monday by their own folly".[67] In 1901 the president of the S.F.T.C. still felt it necessary to complain that even "the poorest man has his St.Monday and follows closely the football and cricket", although "the practice should be regulated so as not to interfere with legitimate leisure pursuits and sports, but to put it on a basis which would be a benefit to the community, which, I seriously think, is not so now".[68]

For leisure time pursuits, apart from drinking and gambling, sports were very popular: "Sheffield cutlers have always been keen sportsmen: when young playing the games, when older becoming enthusiastic followers of their clubs. One of our factory clubs, Lockwoods, went much further than a local reputation in the 1870s and 1880s...they attained a national reputation."[69] Fishing was also favoured and, "Down to about 1900, there were three packs of beagles kept by the workers of the locality...the membership of these hunts was mostly made up of the older sections of the Sheffield industry, cutlers etc. who being piece workers, could have a day off when they pleased."[70] Although sport was sometimes legitimized, when for example factory teams were formed, or Joseph Rodgers held their annual sportsday,[71] most of these activities remained firmly associated with a rural or pre-factory heritage, which was broadly 'unrespectable'. Whilst keeping an allotment remained a popular and worthy occupation,[72] less honourable and productive amusements, like cruel sports, were similarly slow to die out.[73] Overall, the union leadership was still of the opinion that too many cutlers spent too much time, which they could not afford, in amusements which were neither educational nor moral: "It is quite true that we have our weaknesses as a class. The curses of betting and drinking are in strong evidence, and the loose system of working into which we have drifted, tend to lose work and wages, and undue love of sports are all matters which must be overcome".[74]

The same variety of standards and understandings are evidenced by attitudes to, and participation in the typically

respectable areas of education, organized religion and savings institutions. Whilst approved of by a minority of workers, for the majority, the necessary financial means for participation - a good suit of clothes, money for long term investments - were often lacking. Moreover, alternative methods of saving, learning and general social interaction were often preferred, such as short term saving, or practical apprenticeship, which were expressions of more working-class, communal understandings of security and self-respect. It can be argued that aloofness from such organizations as churches was a display of independence and faith in alternative working-class institutions.

This disparity is clearly evidenced in attitudes towards thrift institutions. By the nature of these trades, income was frequently erratic, and furthermore at a generally low level, which made day-to-day economies a more practicable method of saving than investment in such institutions as saving banks. Even in 1843, when cutlery workers as a whole were more affluent than they were to be in the period under consideration, very few deposited money in the Sheffield Savings Bank.[75] Employers claimed that the cutlers had no desire to save, hence their refusal to work extra hours in good trade, but to shirk and drink instead.[76] In 1886, the Master Cutler considered the cutlers' lack of frugality to be an important factor in the declining competitiveness of the Sheffield industry.[77]

However, it appears that many workers did make considerable efforts to save, when good trade would allow this luxury. Even the poorest workers in the lowest paid trades joined the union and friendly society when they could; but these, like building society contributions, required wages which were both reasonable and regular, neither of which could be assured over long periods, in the cutlery industry.[78] It is now recognised that various groups of workers, particularly in the dangerous and unhealthy trades, who were once regarded as notably thriftless , did infact spend large sums on life and sickness insurance.[79] Skilled workers often possessed their own tools which, passed down from father to son, were a symbol of skill and independence, and also a financial asset.[80] Independent production, into

which so many cutlers ventured, necessitated the purchase of materials on Monday, with which to start the week's work. This too would impose some short term saving, as sufficient money had to be put aside from the previoius week's earnings, or "if he cannot do that, he has to borrow it off the master, or raise it in some more objectionable way".[81] As a last resort, pawnshops and other short-term reverse thrift institutions,like credit in local shops, would be used.[82] These thrived in the central, working-class areas in which most cutlers lived.[83]

Regular church or chapel attendance was another pursuit from which most cutlers distanced themselves: not just the poor who could not afford the clothes or comply with the etiquette, but educated, skilled men too. By 1881, only 30% of Sheffield's population attended a place of worship, a decline on the 1851 attendance, which was accounted for in terms of working-class desertion.[84] Nonetheless, the churches in the central areas strove to win over working-class souls. Rev. Odom, of St.Simeon's which was surrounded by cutlery works and workers, provided recreation and welfare facilities for his parishioners,[85] and when Bishop Goodwin attended a meeting of working men in Sheffield in 1875, his speech was specifically directed at these men: "You would scarcely believe it, but I think of Sheffield every day of my life. You don't know why? I will tell you. I shave every morning. I have a box which contains seven Sheffield razors - one for every day of the week...they were good English-men who made those razors and they did not skimp their work... the man who throws his whole heart and soul into the making of a razor, or into the managment of a diocese, that is the man who is worthy of being called a man, and who shall stand erect before God in the great day of account".[86]

By1917, most of the young cutlery workmen who were judged by contemporaries to be alert, intelligent, moral citizens were found to be indifferent to religion: of the churches one stated "I think they do more harm than good; the gaffers go to 'em".[87]

Those workers who did attend a place of worship were usually Nonconformists, and a significant minority of the prominent trade union leadership occupied positions in their

chapel hierarchies.[88] In these chapels, cutlers could mix with social groups which ranged from other respectable working men, to tradesmen, merchants and industrialists. Membership afforded opportunities to join and take up positions of responsibility in a whole range of social activities and sub-organizations.[89] Attendance offered positions of status and leadership which were an integral part of working-class social mobility and self-help.[90] Attendance involved the dissociation from 'rough' elements of the working-class, particularly in those city centre chapels where constant efforts were mounted to 'save' the dissolute and ignorant inhabitants of the surrounding slums.

The position of Sunday school teacher provided an ideal opportunity to exercise this status as moral and practical instructor, especially as for many working-class families, the presence of their children at Sunday school, was their only contact with organized religion.[91] After 1870, when the School Board provided children with basic education, Sunday school scholars were more likely to come from respectable, reverential backgrounds. Moreover, those working men who taught at Sunday schools[92] were members of an increasingly isolated minority.

The late 19th century saw the development of more confident and independent working-class cultural institutions and pastimes. Although the churches attempted to move with the spirit of the times, stressing their recreational activities and, significantly, the training they gave in useful industrial skills, they could not compete.[93] This growing independence was part of a national trend, but one which was particularly marked in Sheffield, where there had always been "a deep seated inhibition within the social structure of Sheffield against making the transition from social order whose primary foci of experience and identity were the encompassing and mutually reinforcing solidarities of the family, the tavern, the workshop and the parlour, to a social order in which men, women and children could move happily between different spheres, and enter without a disabling sense of insecurity into a wider range of social relations...such institutions were often perceived as alienating. They drew energies away from the primary solidarities which provided the

substance of local society!" [94]

Similarly, a cutler who was reasonably educated, would stand out as being diligent and learned: educational provision in Sheffield before 1870 was so poor, that any learning was notable. In 1867, it was reported of children in Sheffield that "the proportion who have never attended any day-schools, or done so to any apparent profit, is decidedly large, considering the comparative smallness of the demand for small children's work".[95] Children working in the cutlery trades were generally ignorant and illiterate,[96] a situation blamed on their parents for setting their children to work at such a young age.[97] Most commentators were extremely pessimistic about the level of education of the generation of cutlers which came to maturity immediately after 1870.[98]

However, circumstances differed according to the status of the worker. In broad samples, approximately a quarter of the workforce were illiterate.[99] At the Globe works in 1852, a reputable establishment, only 17% of the workers were illiterate, whilst at Joseph Rodgers, of the 80 men, only two could not read, and four could not write.[100] The secretary of the pen and pocket blade forgers' society kept the minutes in excellent handwriting, and entered his name in Pitman's shorthand.[101]

Cutlers had always made good use of the city's educational institutions, joining the Mechanics Institute, opened in 1832 and the College of Arts and Crafts, opened in 1843,[102] as well as the Surrey Street Institute, opened in 1872.[103] Undoubtedly, many showed considerable perseverance in educating themselves, through adult education, evening classes, and the study of newspapers and books at home.[104]

The major change came in 1870, with the passing of Foster's Education Act, which established the priciple of general compulsory elementary education for children under thirteen years. Expansion occurred between 1873 and 1892, when the total number of children on the registers increased from 35,000 to 65,000,[105] of whom 35,000 attended Board Schools. However, it seems likely that the children of many cutlery workers, themselves poor and ill-educated, still received very little tuition. Children were

still sent to work below the legal age limit, and many workers were opposed to the extension of factory and education legislation.[106] John Wilson for example, a typical 'labour aristocrat' in many ways, was opposed to the extension of legislation, preferring good apprenticeship supplemented by evening school, especially as "the addition of a child's wage to the family income will often enable his parents to feed, clothe and educate the rest of the family far better than they would without his assistance".[107]

However, the trade union leadership came to occupy an increasingly important role and take a great interest in educational issues. Cutlers served on the School Board,[108] and on evening school boards before they were taken over by the School Board.[109] The S.F.T.C. was particularly vocal on educational issues. It supported the University extension lectures, the political economy course of which, the scissor grinders' union purchased tickets for all its eighteen to twenty-one year old members.[110] On the visit of the Iron and Steel Institute to the University, in 1905, Robert Holmshaw was given the prestigious honour of welcoming the Institute.[111] The S.F.T.C. opposed the 1898 Education Act, not only because it curtailed popular — and therefore their control of local school boards, but also because they believed that education would suffer as a result, and "knowledge is power," for "if the people were educated they would not tolerate the fleecing of the masses by the privileged classes".[112] They consistently lobbied, with some success, for the free libraries to be opened on Sundays,[113] and in 1905 subscribed £12 to Ruskin College, Oxford, to enable a young member to study there.[114] When in 1906 the Sheffield branch of the Workers' Education Association was formed for the provision of liberal workingmen's education, the S.F.T.C. took up membership and an active interest in its affairs.[115]

Increasingly however, reflecting the general trend of concern, their attention came to focus on technical education. This was not only because manufacturers, faced with mounting foreign competition and propaganda over the efficiency of German technical education, came to favour this approach,[116] but because

it suited the traditional concerns of these craftsmen. Apprenticeship was fast declining in terms of both numbers of recruits and standards of training given.[117] Together with mechanization and deskilling, this caused an expansion in boy labour and the demise of real craftsmanship - the source of their status and values, and, they believed, Sheffield's supremacy in the production of cutlery.

Before the passing of the Technical Instruction Act in 1889,[118] workers were dependent on their employers to encourage such training. Cutlery manufacturers however, were accused of apathy and inattention: "where young men who are exceedingly pushing and intelligent placed themselves under the care of the master of the School of Art, and at very great sacrifice and expense, worked hard during the day and expended their earnings in paying for their tuition, and when they had attained a fair degree of proficiency, and ought to have received some little recognition in the form of a decent salary, they were driven away from the town, owing to the fact that they were not apprenticed...I am satisfied that our manufacturers are very much behind in this matter. We receive very little encouragement in the matter of technical education".[119]

Charles Hobson, president of the S.F.T.C. was a resolute campaigner for technical education, especially the German variety which placed emphasis on "the bench" rather than "the book".[120] He dwelt upon the 'artistic' and 'quality' concerns of cutlery craftsmen, which once assured by the Cutlers' Company, had been jeopardized by the abolition of apprenticeship regulations by "selfish employers".[121] His remedies included the better payment of teachers, but also, in Ruskinesque tone, which harped back to the old days of the rural craftsman, a freer curriculum which would allow the study of nature which was "the inspiration of all true art production".[122]

In most of their concerns, be it a broad education, or technical skills, it is clear that these union leaders were extremely distanced from the reality and ambitions of average cutlery workers, who would have little education and would send their children to work as soon as possible, to supplement the family income, or if possible apprentice them into the more

lucrative and secure heavier trades.

This distance between reality and aspirations of the elite and the majority of the workers is seen in practical terms in the realm of their housing. Most remained in the cramped, low status, insanitary central areas, in poor quality housing stock, near to the available work, but also to Irish and casual workers and general 'squalor'. A minority, managed to move to the cleanliness and respectability of the workingmen's suburbs. Perhaps more than anything else, housing and its location, involved status identification and a tangible demonstration of a family's distance from the 'rough' elements in the centre of town, its respect for stable family life and its thriftiness in affording such a house.[123]

Municipal horsedrawn trams began operation in 1873, and electric trams in 1899, but before this, it was necessary to walk to work.[124] Most workers lived near to the centre of town, within walking distance of their place of work, frequently returning home for meals.[125] The central housing stock was also the cheapest. During the inflation of the early 1870s, rents rose by as much as 50%, and continued to rise until 1893, although wages failed to increase accordingly. Rents in 1873 were approximately 2s. 6d. to 3s. for a 'back-to-back' house in a poor district, and 3s.6d. for a similar house in a better area; in 1893, these sums had risen to 3s.6d. to 5s.; and by 1905, a 'back-to-back' cost up to 4s.9d. per week, but a better class house, in the suburbs, inhabited by "foremen, better paid artisans, clerks and shop assistants" cost up to 9s.[126] The escape from the centre entailed a significant financial toll and commitment.

The central area offered the advantage of proximity to employment, which was particularly significant in these trades, where 'fetching and carrying' materials and finished goods, and waiting for or hunting out work, took up a considerable amount of time. But also, like the poor, casual workers who increasingly came to inhabit these zones, many cutlers would be tied to the locality for credit reasons, obtaining 'tick' from the local traders, to whom they were 'known'.[127]

Most cutlers lived in the Crofts, St.Paul's and St.George's areas of central Sheffield, (see Fig. 2). St. George's was fast becoming a multifunctional zone, where various civic buildings and shops were interspersed with cutlers' workshops and adjoining housing, which was overcrowded and run down (see Figs. 3 & 4). Although there were still some members of the professional and retail classes in this area in 1871, two-fifths of all household heads were cutlers, who shared the zone with a growing number of Irish and labourers' families.[128]

In St. Paul's, where workshops were once more interspersed between the buildings of a growing cultural and commercial centre, the overall number of households was declining and the housing stock was poor and deteriorating. The area was again inhabited by the families of cutlers, Irish and labourers [129] (see Fig.5).

The housing was similarly poor and the residents similarly 'unrespectable' in the Crofts areas (see Figs. 4 & 6). In Hollis Croft, much of the housing stock comprised "three storey buildings, suitable for subdivision or for accommidation of large numbers of 'lodgers' and visitors",[130] and smaller back-to-back court dwellings with low weekly rents. In the Garden Street area, the housing was largely eighteenth-century, and cutlers, although giving way to the various disreputable groups, still accounted for half of all household heads in 1871.[131] The housing was cheap - 78% of all houses had an estimated rent below 2s.8d. per week, and there was a low rate of owner occupation and residential persistence.[132]

Such areas were the subject of the sociological investigations and general public interest that followed such studies as Andrew Mearns's in London. They fuelled the fears and concerns of the middle classes at the habits and future of the 'residuum' in the central areas, and its influence on otherwise 'respectable' artisans who, for work reasons, were forced to share these areas - respectable cutlers for example.[133] Horror stories about these areas were printed by the local press: "No amount of description could paint the narrow, dirty streets and lanes; the swarming courts, as full of life as sewers of rats, nay more so, and quite so foul. Open yards and close yards, with

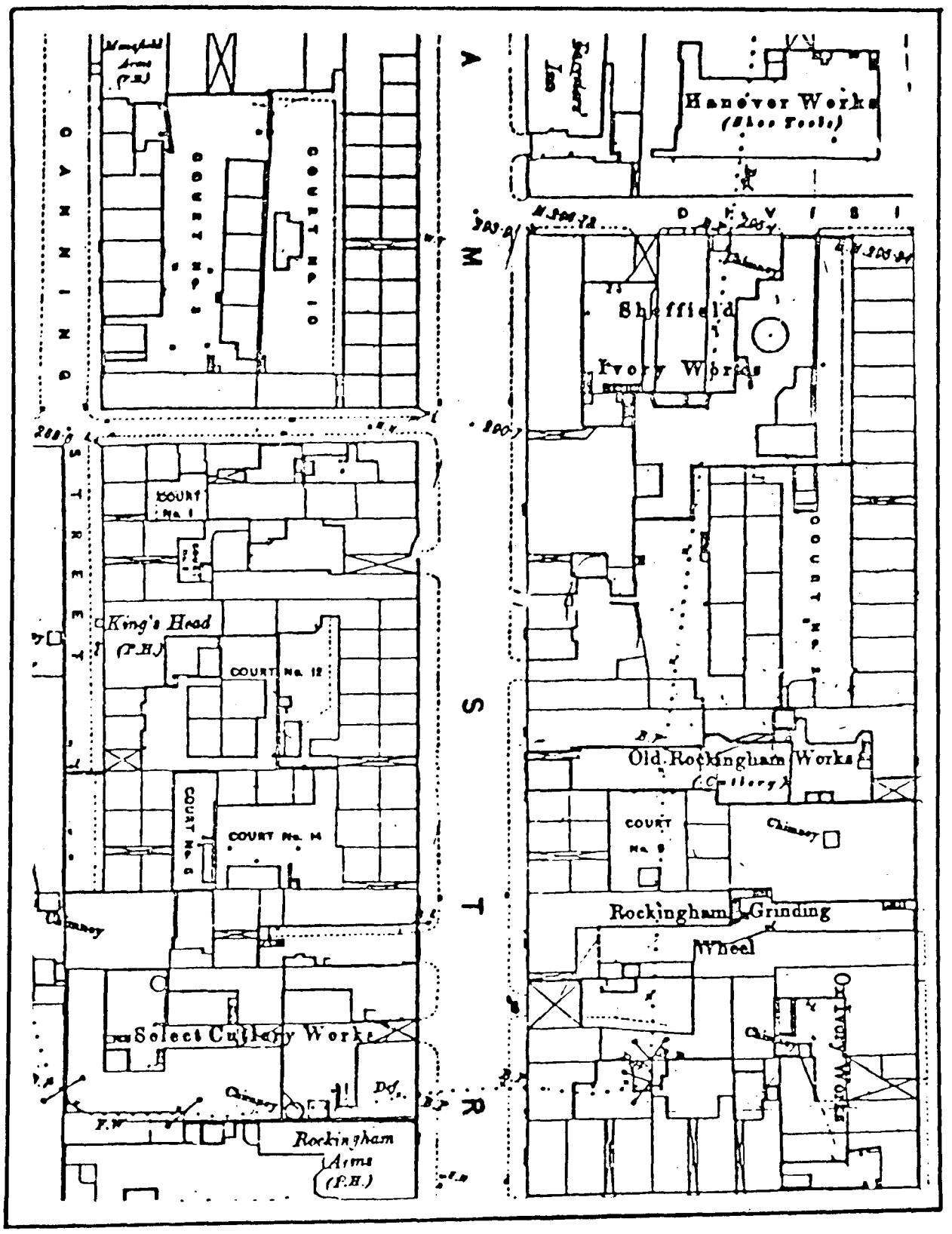


Fig.3

Rockingham Street, c.1890

Source: C.A.Turner, A Sheffield Heritage , p.8

Fig 5 Occupational Distribution of Household Heads

St. Paul's, 1871.

Source: R.S.Passmore,'The Mid-Victorian Urban Mosaic',following p.432.

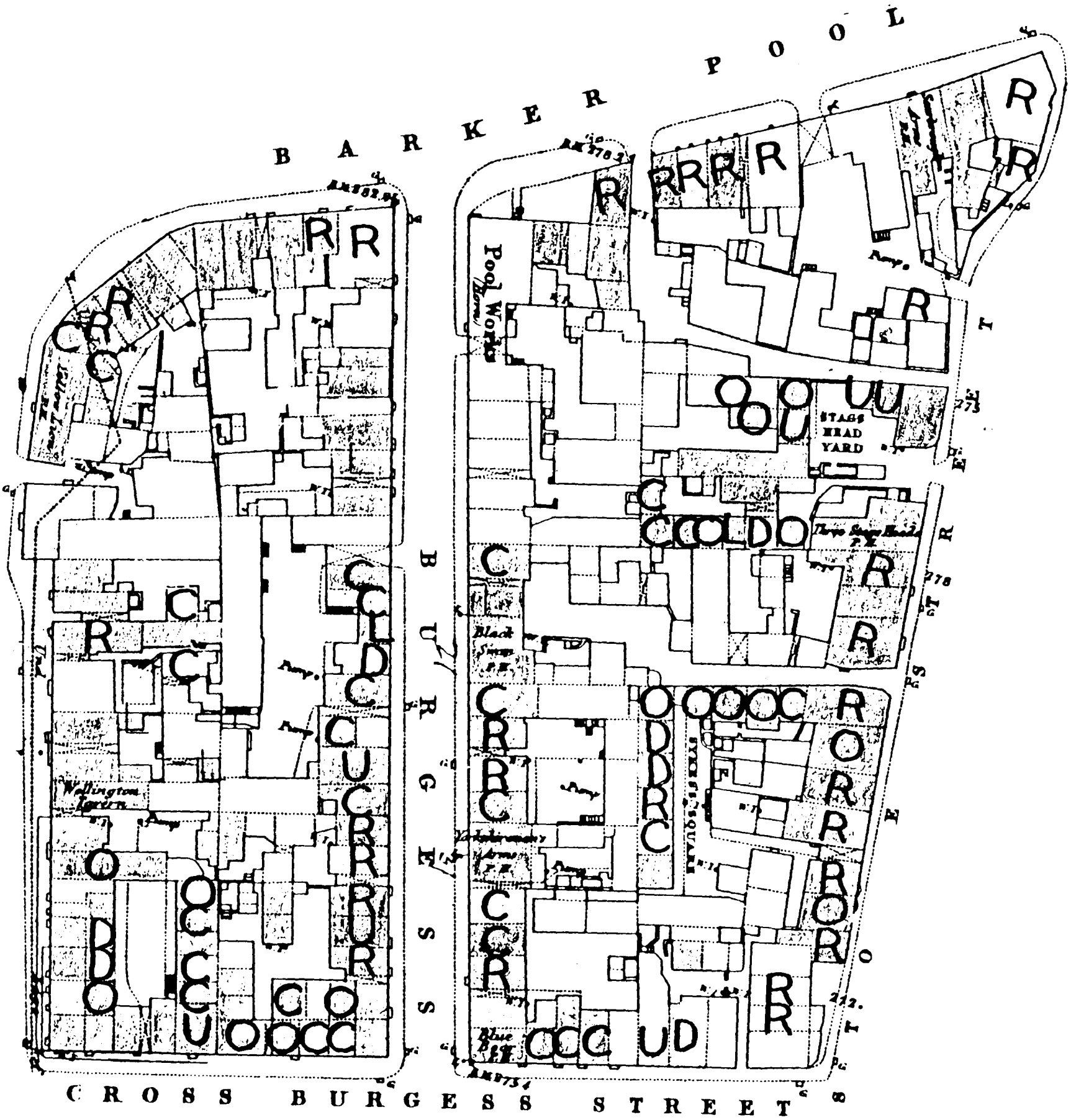
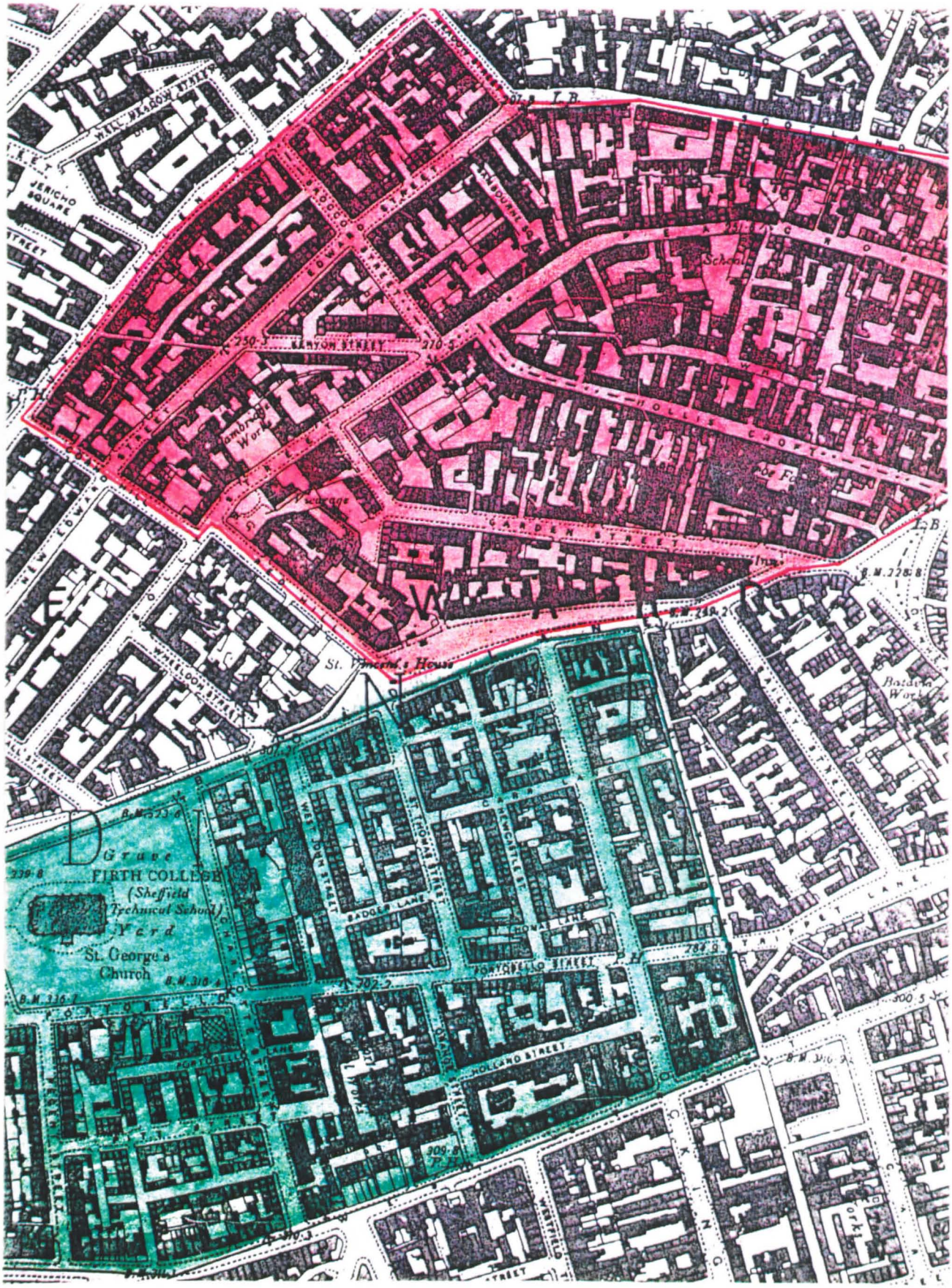


Fig. 4 Sections of Hollis Croft and St. George's, c.1890.

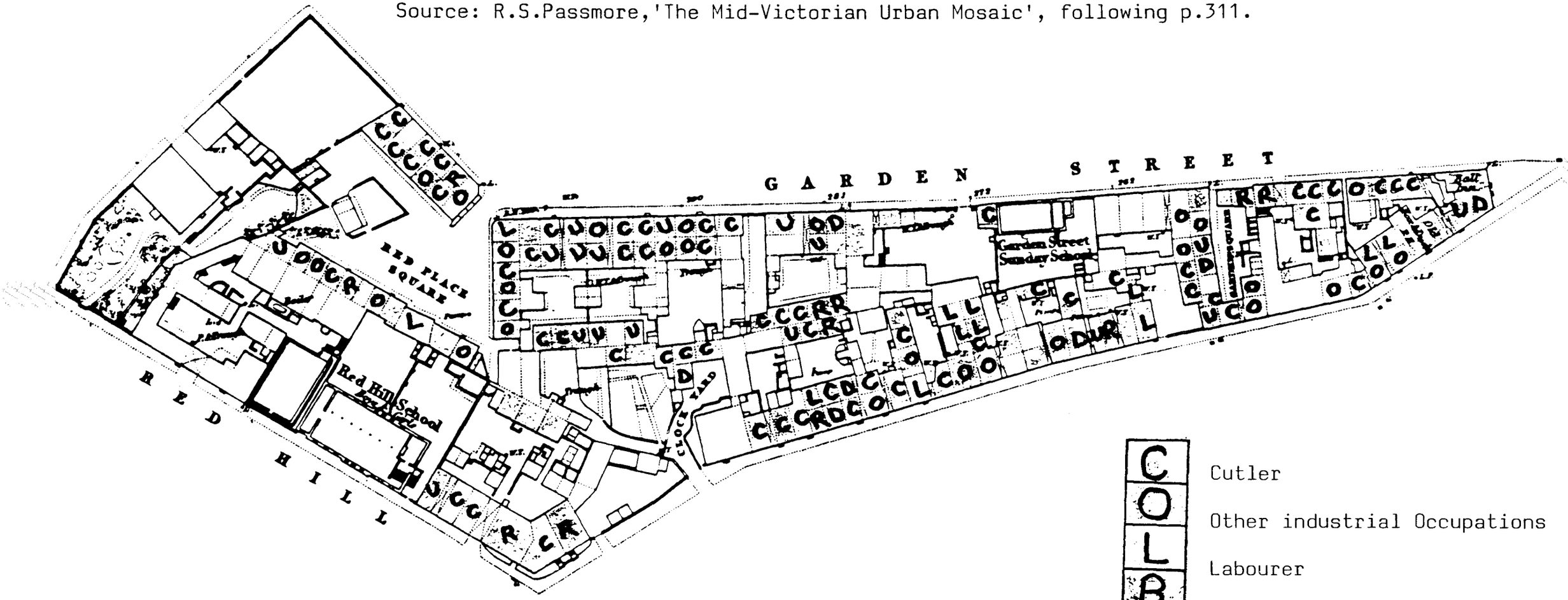


Green area is St. George's, Red area is Hollis Croft.

For areas in full, see fig. 2.

Fig. 6 Occupational Distribution of Household Heads, Hollis Croft, 1871.

Source: R.S.Passmore,'The Mid-Victorian Urban Mosaic', following p.311.



C Cutler

O Other industrial Occupations

L Labourer

R Retail

D Domestic Servant

U Unoccupied

teeming populations, barricaded by middens and ashpits...some parts of the locality are very hives of industry, where local trades are carried on up dark yards and tunnels, and human habitations are scarcely in better condition than the works".[134] Conditions had little improved by the late 1880s,[135] when a series of newspaper articles highlighted the dangers and problems of the cohabitation of poor but respectable workers — some of whom were cutlers—with the residuum.[136]

As a result of a ratepayers' petition, the Crofts area was the object of the corporation's first slum clearance project in 1894.[137] The slums of Hawley, Sims, Lee and School Crofts, which comprised the dwellings and workshops of many cutlers, had a density of 270 persons per square acre in 1893, whilst that of the city as a whole was only 16.5; its death rate was 31 persons per 1000, whilst that of the city as a whole was only 21, and the incidence of pulminary and tubercal diseases was especially large, perhaps reflecting the number of inhabitants who were cutlers.[138] Streets were cleared and widened, and 700 people rehoused in two storey flats, although the much higher rents, 4s.6d. to 6s. per week,[139] may have forced many into the very low rent areas. The expense of the scheme forced a similar plan for Scotland Street, another area inhabited by cutlers, to be abandoned.[140] Although the general sanitary condition of these areas would have been improved by the improvements and extension of better sewers and piped water, even at the end of this period, housing in these areas was still very poor.[141]

In contrast, many of the richer, more status conscious cutlers were disparaging about these workers and their surroundings: in 1885, a member of the S.F.T.C. noted the division, in terms of housing, between better off cutlers and the rest: housing conditions were generally acceptable, "except for the lower neighbourhoods where you come to the unskilled labour; we find that in these cases, there is a tendency to overcrowd, and for two or three families to get into one house, which is of course the natural outcome of their condition".[142]

The better paid had traditionally preferred and been able, in limited numbers, to afford the healthier cleaner suburbs,[143]

and escape the stigma of association with the poor. In the 1850s and 1860s workingmen's freehold land and building societies had flourished: in 1871 there were still 28 terminating societies with 3,570 members, and 12 permanent societies with 2,683 members, a considerable proportion of whom would have been wealthier cutlery workers.[144] Although after 1870, many societies collapsed and heavy financial losses were incurred, and building societies became the domain of the middle class,[145] workingmen were helped and encouraged to 'move out' by the extension of tramlines in the 1890s to the residential suburbs to the southwest and north of the city, and their electrification in 1902.[146] Workmen who moved to Walkley were described as the "little master and manager class", "the most industrious and respectable of the working classes".[147] In Heeley, leases were drawn up specifically to prevent workshops being erected in yards or on allotments,[148] which cutlers had traditionally combined with their housing. In Sharrow too, where skilled workers lived alongside clerks and managers, covenants and deeds were phrased "to keep Sharrow a purely residential area. The number of greatly or slightly offensive trades you cannot pursue in Sharrow is astonishing".[149]

Notable trade union leaders lived in such suburbs as Crookesmoor,[150] whilst as early as 1885, many skilled workers were already living outside the centre of Sheffield. This is illustrated by the addresses of the entrants to the Cutlers' Company Industrial Exhibition in 1885, most of whom were presumably skilled craftsmen, conscious enough of their abilities and desirous enough of prestige to enter such an exhibition.[151] Of the sample 281 workers, only 10% lived in the central areas of St.George's, St.Paul's and Hollis Croft, and very few lived in the areas to the east of the city centre, inhabited primarily by workers from the heavy trades. Most lived in the areas to the south and north east of the centre: reasonably respectable, decent housing and neighbourhoods, but within walking distance of the main cutlery working areas. A suprisingly large proportion managed to live in the suburbs of Crookesmoor, Heeley, Crookes and Walkley.

The concerns of this 'better class' of workmen, are also evidenced by the policies of their spokesmen through the S.F.T.C.

By the end of this period, its members were taking a keen interest in the town planning and garden city movements,[152] and significantly, they were demanding a reduction in tram fares to ½d. universal fare before 9a.m., a reform which would have given more workers the chance to commute from the suburbs.[153]

Finally, in their political allegiances too, the division between skilled, independent workers, conscious of their craft heritage, and the rest, is striking. The politics of cutlery workers have been closely associated with the structure of the trades.[154] Liberal sympathies were a product of skilled status, close relations with superiors, the possiblities and traditions of economic and social mobility, education and social respectability, and general integration into the existing structures of local organizations and politics. Working-class Conservatism was stronger in the city centre, amongst the less skilled, where jingoism, fair trade and 'drink' were decisive factors.

Whilst the 'labour aristocracy' were often at the forefront of the move to independent labour politics in the late 19th century,[155] the leaders of the cutlery trades remained firmly committed to, and active within the Liberal party. This can be accounted for partly in terms of their values and ideals: the local Liberal party effectively harnessed these when it placed such emphasis on temperance and general moral humaniterianism, always against a background of Nonconformism, which was its most striking feature.[156] Furthermore, the party stressed purely local issues, which appeased the often narrow-minded cutlers,[157] whilst its high-profile local leader, A.J.Mundella, preached the acceptable policies of education, industrial conciliation, responsible trade unionism, legislation to stop fraudulent marking, and the extension of factory and workshop regulations.[158]

Although the local Liberal party was poorly organized and working men, at least at the beginning of this period, were given only a small part in organization, they quickly won a decisive role in policy decisions and the selection of candidates.[159] The leaders of the S.F.T.C. had intimate connections with the Liberal party leadership. In 1885, W.F.Wardley and S. Uttley founded the 'Labour Association', for the election of working men within the

Liberal Party to public bodies, an organization which toed the middle-class line.[160] At the S.F.T.C. annual dinner in 1874, the guest speakers, A.J.Mundella and Joseph Chamberlain, had little to say about trade union or labour issues, but still, "the local trades unionists were evidently very much at home in the company of the two great Liberal-radical leaders, and some other lesser middle-class Liberals".[161]

Nevertheless, it was the workers of the heavy industries, to the East of Sheffield, who provided the firmest and large-scale working-class support for Liberalism in the earlier part of this period.[162] The central areas, in which many cutlers lived, returned Tory M.P.'s. This voting pattern can be explained not only by the presence of Irish voters and plural voting, but because, "the Conservative workingman was a reality here, more so than any other constituency in Yorkshire".[163] The Conservatives were a well-organized party, fronted by the protectionist campaigner and M.P., Sir Howard Vincent, whose message was broadcast through the bounce and swagger of the Sheffield Daily Telegraph.[164] Although not popular with all working men the Tories undoubtedly had some measure of success with their campaigns for 'drink' interests through their various workingmen's pubs and clubs,[165] and for Fair Trade.[166]

Until 1914, the leading cutlery trade unionists remained staunch Liberals. With the upsurge in union activity in 1889-91, the light trades delegates within the S.F.T.C. were swamped by those of the general and heavy trades, as were their members of the executive council.[167] The chief offices of the S.F.T.C. however, continued to be dominated by the same members of the light, and especially cutlery trades, which assured remarkable continuity of policy, aims and values.[168] "There seemed to be no reason to supplant such men...old respected trades unionists, experienced City Councillors and magistrates, having the ear of civic leaders and the attention of the local newspapers".[169] In all the local bodies in which they sat, these men stood as 'labour' Liberals, refusing Ramsay Macdonald's instructions, to make themselves municipally independent,[170] and abiding by the instructions of the local Liberal Party.[171]

Under pressure from its local left wing, the Trades Council affiliated to the L.R.C. in 1902, but few prominent lib-labs involved themselves in its activities.[172] The two bodies clashed and opposed each other in municipal elections and finally severed contacts in 1908, the L.C.R. forming an alternative Trades and Labour Council. In the ensuing quarrel, it was alleged that the S.F.T.C. had neglected its industrial work, ignoring disputes in which the cutlery trades were not involved:[173] its leaders found it difficult to deny such accusations. Resignations and affiliations occurred, but the S.F.T.C. retained the support of all the cutlery unions and its old guard of officials. It remained committed to its traditional goals: industrial peace and conciliation, housing reform, educational provision, the extension of factory legislation to small establishments, and the general appreciation of the legislation of the 1906 Liberal Government.[174] The level of integration of its leaders into the social life of Sheffield, is also illustrated by its committment to such projects as the 'Beautiful Sheffield League',[175] and moreover, the inclusion, in its annual reports after 1909 of an 'Honours' section, which listed the civic roles which had been recently bestowed on its members.[176]

Thus, it can be seen that in political affiliations, as in all cultural and social relations, there was a significant divide between the skilled and union leadership, and the less skilled sections of the workforce. Economic differentials may have been diminished, but there appears to have been no comparable narrowing in this cultural divide. The semi- and unskilled possessed few of the understandings and values which informed the conduct of their skilled counterparts: they did not feel, nor had they had the ability or chance to enjoy any level of independence or social mobility. They were incapable, both financially and socially, of appreciating the values of diciplined, close-knit craft unionism and cooperation; they were not 'respectable', nor were they respected by the civic powers. The gulf then, was based primarily on understandings rooted in the industry, and the role, experiences and opportunities it offered to the two sections of workers.

Athough 'independence' and 'respectability' were tinged with bourgeois ideals and interpretations, they still reflected the values of the traditionally proud artisans: their concern for their trade and its status, their belief that skill should merit and warrant a decent livlihood and standard of living, and their fundamental desire for self-regulation, social mobility and dignity. It was the degraded and deskilled worker, to whom such notions of pride in ones job or status as a craftsman meant nothing, from whom this group distanced itself, and this social gulf and associated pretentions helps to explain the difficulty and reluctance with which these craftsmen opened up their minds and trade societies to the less skilled . Although forced into recognition and association through economic necessity, the elite was still extremely reticent about such morally and socially compromising moves.

Manufacturers

In briefly examining the cultural concerns and ambitions of the manufacturers within this industry, the main purpose will be to illustrate the proximity of their view of life, influenced by their experiences as cutlery manufacturers, to that of sections of their workforce. This common ground was partly the result of traditional and long-standing experiences and understandings shared by both classes —the value of quality craftsmanship and a reputation for these — and equally, a product of the small-scale, labour intensive structure of these trades, which rarely permitted the elevation of manufacturers to a sufficiently wealthy or socially distanced plane, to enable the breakdown of these common understandings. A very small minority did make enormous profits, and incorporated themselves into positions of local and even limited national standing, but these men were both few and exceptional. Even if from cutlery manufacturing 'dynasties', few men ever became very wealthy. Most remained practical men, taking an interest in practical affairs, and in the running of their usually still quite small-scale businesses, where personal relations with the men remained the rule. The traditions of close workshop relations and of social mobility lived on.

Many were proud of their humble origins, Sunday school education and self-made success, and made little effort to distance themselves from their men, who often lived nearby, and were equally educated , temperate and ambitious.

The established picture of social and cultural relations between classes in Sheffield, stemming from the small-scale, small profits industrial structure, has been one of harmony, no great divide separating cutlery employers from their workers.[177] More recent criticisms of this view, which highlighted instances of a growing class-based divide and conflict, can be applied only with difficulty, and in fairly exceptional circumstances to the cutlery trades, being of more relevance to the heavier metal industries.[178]

Cutlery manufacturers, like their employees, tended to come from old-established cutlery producing families. Once a business had been established, great pride was taken in the association of the family name with the business, and it was extremely rare for subsequent family members not to enter it.[179] Most were Sheffield born and bred, and lived the whole of their life in the city. Few had concerns outside, or had access to national, cosmopolitan London-based life, the exceptions being A.J.Hobson, and F.T.Mappin. The extent of experiences outside Sheffield were normally limited to travels for the firm, and occasionally, in the case of richer families, education abroad.

They were generally practical men, as is plainly illustrated by their own education and by their attitudes towards the education of their families and their workers. No prominent manufacturer appears to have had any formal technical education, or a university education, preferring instead to take up apprenticeship with the family or another well-known firm.[180] Practical business appears to have been the most valued aspect of education.[181] A very small minority of the wealthiest manufacturers received a more colourful, upper-class education,[182] but it was more common to attend the Sheffield Collegiate School, followed by a spell in a finishing academy. The Collegiate School had considerable local prestige, and evidently sufficient status for most families.[183] For many a basic private education in Sheffield

followed by rapid entry into business, would suffice.[184] These attitudes were epitomised in a contemporary description of Herbert Crookes who, after attending a private academy, qualified for partnership in the family business "by acquiring a thorough practical knowledge of the trade in all its details".[185] Those members of cutlery families who did attend universities, tended to leave the trade, never to return.[186]

Manufacturers appear to have taken little interest in the formal educational affairs of the city, especially before 1890. Few assumed an active role on the School Board,[187] neither was much interest taken in adult education.[188] However, more time was spent in less formal activities, such as Sunday school teaching, with which many lesser cutlery manufacturers involved themselves. Usually they taught at their own churches, in areas in which they had their roots and often still lived, but also where they would have contact with the children of their employees.[189] It has been argued that such work was undertaken as a means of enhancing their social and philanthropic status and to exert a measure of 'social control' over their pupils: "these men had a vested interest in the creation of a sober and disciplined workforce".[190] Having frequently been educated themselves at such Sunday schools, they attributed much of their sucess to the values inculcated therein. Moreover, such schools did place increasing attention upon the the advancement and teaching of industrial skills.[191] However, it can also be argued that such involvement can be accounted for by the desires of manufacturers, especially as they were not very wealthy or notable, to move within their own community, and to retain a focal position within it, for social status as much as 'social control'.

The value of a general practical education for their workers was appreciated only belatedly and by a minority of cutlery manufacturers.[192] Concern for technical education was an aspect of the growing fears that British industry was beginning to lag behind foreign, and particularly German competitors, and that the excellence of German technical education was a principal reason for that nation's industrial advancement.[193] Those employers who advocated such education, were amongst the wealth-

iest and most distinguished in the trades, advocating it in the Chamber of Commerce,[194] and placing their money and status behind the city's practical schemes.[195]

These employers were agreed with their trade union counterparts, that the board schools' curriculum was too literary and unhelpful to would-be cutlery craftsmen: it encouraged them to become clerks, and even if they did enter the trades, they had ideas above their station and criticised the ignorance of the craftsmen to whom they were assigned as apprentices.[196] More "hand and eye training"[197] was needed, with the introduction of simple tools at the board schools, whilst compulsory technical classes at evening schools were advocated for all boys under sixteen years. Such education was also favoured as a means of weaning the men away from their traditional predilections and opening their minds to new working practices.[198]

Most employers however, were reluctant to contribute towards the cost of the technical school. Some were simply indifferent, others feared that their trade secrets would be made general knowledge.[199] It was surmised that technical education was broadly irrelevant to these trades, where 'on the job' training, was believed to be the only effective method of mastering the necessary skills.[200]

Thus, although not adventurous or far-sighted in their educational views, most employers were still practical men, having received a strictly practical education themselves, and desirous of the same for their men. Few were imbued with the gentrified, ethereal education which might have distanced them from their origins or from their men. They were anxious to retain their practical control of their business, and most did not expect great or novel results from education, either for their sons or their men.

Neither were the majority of these manufacturers the occupiers of positions of local influence: more store was set by commercial standing and distinction than by philanthropic or civic status. The office of Master Cutler, was a particularly desirable commercial and influential position, and despite the increasing domination of the Company by members of the heavy metal trades, it was occupied by several cutlery manufacturers.[201]

As the Cutlers' Feast became a more cosmopolitan and nationally significant affair, so the role of Master Cutler became correspondingly impressive, especially as the holder had to be sufficiently affluent to contribute his private wealth towards the financing of the feast.[202] A small clique of manufacturers were similarly vocal and prominent in the council of the Chamber of Commerce,[203] as freemasons,[204] and figures of general commercial rank and importance,[205] but very few had business interests far beyond the scope of Sheffield, or the cutlery trades.[206]

It was largely the same group of notable manufacturers who filled the leading civic roles of Lord Mayor, J.P.'s, savings bank trustees, officers in the Volunteer Regiments and trustees of the Board of Guardians.[207] However, perhaps because so few possessed the necessary wealth, but also because their relations with their workers were still close and friendly, manufacturers engaged only rarely in large-scale philanthropy. They occupied minor offices: members of the hospital and school boards, and benefactors to such institutions,[208] but only George Wostenholm and Frederick Mappin furnished major bequests of parks and buildings.[209] As yet, no gulf existed between employers and workers which philanthropic gestures, by activating cohesive forces, might bridge[210] or help achieve a consensus. Geographical and financial separation was rarely acute: in Stedman Jones's terms, no'gift'had been 'deformed!'[211]

The absence of any great divide, and infact the likelihood of considerable social interaction is also evidenced in the realms of church attendance and residential location. As in other areas of social life, a small elite of manufacturers did possess the means and desire to separate themselves from their workers: the Hobsons and Hunters, for example, worshipped at Upper St. Uniterian Chapel with a wealthy and influential congregation;[212] F.P.Rawson was a prominent Baptist, who attended another select and upper-middle-class chapel.[213]George Wostenholm gave huge sums to a variety of Anglican funds.[214] Manufacturers who could afford the move to the salubrious suburbs to the south and west of the city, worshipped at churches near their homes, which in the leafy suburbs of Ranmoor and Ecclesall would be very select, but in Crookes and Walkley, involved contact with working-

class residents, especially in Nonconformist places of worship.[215]

Undoubtedly a considerable number of employers also continued to live near their work or in the not too distant suburbs which they shared with workingmen, although again, a small but influential minority managed to move to the villas in the richer outlying suburbs of Fulwood and Ecclesall. Central Sheffield was already an unpleasant place to live in the 1820s, and by 1840, superior terraced housing had been completed on Glossop Road, Broomhall and Western Bank.[216] The mansions of Ranmoor, Endcliffe, Tapton and Fulwood, were built after 1860, and associated with the wealth from the heavier industries, although some cutlery manufacturers could afford to move to these areas.[217]

At the top of the housing status ladder were the exceptional manufacturers who had residences in London as well as Sheffield.[218] Beneath them were such men as George Wostenholm, who built his mansion 'Kenwood' on two acres of land bought in Sharrow in 1840, and gradually bought 150 acres around it, naming the roads he layed out after his friends and business, and playing an influential role in the Montgomery Land Society, which assured that potential residents were bound to keep the area smart and residential.[219] He was in effect 'lord of the manor' which he had created. Similarly the members of the firm of Harrison Bros. and Howson, all lived in the expensive suburb of Tapton,[220] surrounded by members of other cutlery famililies. However, if a broader sample of manufacturers is taken,[221] which includes not only those who occupied positions of civic status, and therefore not just the wealthiest, it will be seen that many lived at far more ordinary addresses, with quite ordinary neighbours. Most (45%), lived in the older middle-class suburbs of Broomhill and Broomhall. However 26% of the sample resided in the respectable 'workingmen's suburbs' of Crookes and Walkley, whilst 14% still lived on their manufacturing premises, and another 8% lived in the central area. Nevertheless, just as those workingmen who could afford the expenditure preferred to move out of central Sheffield, so those manufacturers who lived on the same premises as they worked were a dwindling minority.[222]

The workers were critical and resentful of the tendency of their employers to distance their residences from those of their men. It was symbolic of their growing obsession with profit at any price, and of their abandonment of the values which had always been at the heart of the cutlery trades, particularly the close relations between masters and men. They could complain about the depression and demand wage reductions, but their housing was indicative of their afflulence and the absence of real financial pressures. In 1886, a trade unionist believed that "the manufacturer has got better profits these last twenty years than they ever got before, and I have evidence of that from the position they are standing in now, compared with the position that they stood in at the former time. If I go back some forty or fifty years, every manufacturer I find lived on the premises where he carried on his manufacture, but now they do not do so, nor even do their clerks live on the premises. They generally have a caretaker to look after those premises, but the greater number of them live outside the town".[223] This bitterness was particularly marked in periods of general industrial conflict.[224] Housing became the touchstone by which perceived changes in employers' values and morality were measured, and found wanting. They were contrasted with the manufacturer of earlier periods, whose readiness to be close to his men and his works was seen as central to the character and success of these trades.[225]

If the employers blamed the growing uncompetitiveness of the industry on the thriftlessness and habits of their men, the cutlers were equally anxious to decry the expense and decadence entailed in the airs and elevated status which some manufacturers assumed or aspired to. In Solingen, manufacturers still lived on, or very near to their works, working the same hours as the men, without carriages or servant, but with a "simple and inexpensive" lifestyle.[226] They were contrasted with Sheffield's new breed of cutlery manufacturers, who were "commercial princes instead of being skilled workmen".[227] After a visit to Soligen in 1908, the president of the S.F.T.C. described its manufacturers thus: "nearly all the large manufacturers reside in the town, not in the suburbs as in Sheffield, and not only so, but in close

proximity to their own factory. These residences, or rather mansions, for many of them merit the name from their size and beauty, are similar to the residences at Broomhill and Ranmoor, leaving out the largest of them. I think this is one of the pleasantest features, which we in Sheffield would do to emulate, as the presence of the master and the fact that he chooses to reside amongst his workpeople can but work out beneficially".[228]

This same desire, amongst a minority of employers, for more gentrified status within the local community, is evidenced by the exclusive and 'aristocratic' pursuits in which some indulged. Membership of literary, agricultural and elitist sports societies,[229] precluded any possible contact with employees or the working classes in general, and were indicative of a will to leave the dirt and practicalities of their industry far behind.

Finally in their political commitments, whilst a small group of the wealthiest manufacturers distinguished themselves from the majority by their Conservative affiliations, most were Liberals. As nationally, the Gladstonian Liberal Party became more radical in its policies, so in Sheffield, its middle-class supporters gradually defected to the Conservatives, until by the late 1880s, this party included most of the men of wealth, status and influence: the principal employers and commercial figures in Sheffield.[230] However, whilst some notable cutlery manufacturers retained their Conservative connections[231] many of the most prominent were Liberals,[232] and by the domination of the Town Council by Liberal light trades manufacturers'[233] the same can be assumed of lesser cutlery manufacturers. The principles of Fair Trade, although applied to and directed at cutlery manufacturers by Conservative candidates in the hope of winning support,[234] were not popular with them: like their men, they generally retained their faith in Free Trade.[235]

Undoubtedly, manufacturers used their patronage as employers to influence the political persuasions of their men: acceptable candidates visited their works;[236] workers were expected to support their employers who stood as candidates,[237] whilst campaigns sometimes turned on trade prospects and the manufacturers opinions and outlook.[238]

Thus, the handicraft base of this industry, with its high ratio of skill to capital, is plainly reflected in its social structure. Particularly in the earlier period, this was evidenced in the close ties which usually bound employers and workers, and the absence of any impassable gulf. Most manufacturers had neither the financial means nor the elevated status or aspirations which would have permitted them to cut themselves off from their workforce. Equally this industrial structure is fundamental to the presence of a distinctive upper stratum of the workforce, whose separation and ideology were closely related to their experiences, albeit with some embourgeoisement, as independent artisans.

Moreover, it can be argued that — although this industrial structure was changing and 'modernizing' itself as some manufacturing familes were amassing fortunes and becoming gentrified in their ways — the economic differential which separated craftsmen from unskilled was declining. The long-established social structure helped to cement its industrial counterpart. Hence the reluctance to abandon the old ways of close, informal cooperation and conciliation; hence also the difficulty with which the better off sections of workers abandoned their claims to 'independent' status and stooped to combination with the less skilled.

Footnotes

1. J.B.Saul, The Myth of the Great Depression, London, 1969, pp.30-4; P.P. 1886, XXIII, Final Report of the Royal Commission of the Depression of Trade and Industry, p.x-xi, para.29; J.M.Keynes (ed.), Official Papers of Alfred Marshall, London, 1926, p.99.
2. S.Pollard, 'Real Earnings in Sheffield, 1851-1914,' Y.B.E.S.R., 1957, pp.52-62.
3. Ibid., table IV, p.60.
4. P.P. 1908, CVII, Cost of Living of the Working Classes, Report by the Board of Trade into Working Class Rents and Retail Prices, Together with the Rate of Wages in Certain Occupations in Industrial Towns in the U.K., 1905, cd.3864, p.413.
5. P.P. 1913, LXVI, Cost of Living of the Working Classes, Report of the Board of Trade into Working Class Rents and Retail Prices, Together with the Rates of Wages in Certain Occupations in Industrial Towns in the U.K., 1912, cd.6955.
6. S.Pollard, 'Wages and Earnings in the Sheffield Trades 1851-1914', Y.B.E.S.R., 1954, table IV, p.61; see also appendix 5.
7. Ibid., pp.56-7; S.Pollard, 'Real Earnings', p.57.
8. P.P. 1886, XXI, R.C. on the Depression, S.Uttley, q.1304.
9. Ibid., q.1323; P.P. 1889, XIII, S.C. on Sweating, S.Uttley, q.24949; S.I., 19.8.1885, 16.1.1878, "a great many are worse off than paupers".
10. P.P. 1889, XIII, S.C. on Sweating, S.Uttley, q.24949.
11. P.P. 1886, XXI, R.C. on the Depression, R.Holmshaw, qs.1301-2, stones had increased in price by as much as 100%, and rent by 50%.
12. Ibid., C.Belk, q.2659; P.P. 1889, XIII, S.C. on Sweating, C.Wilson, q.25199.
13. See chapter 3.
14. See chapters 5 and 6, and appendix 5.
15. C.Pagé, La Coutellerie, vol.VI, p.1496; see also E.Roberts, 'Working Class Standards of Living in Barrow and Lancaster, 1890-1914', Economic History Review, XXX, 1977, factors such as allotments, the availability of free food and general thriftiness, make working standards of living extremely difficult to quantify.
16. P.P. 1889, XIII, S.C. on Sweating, W.J.Davis, q.25300.
17. Ibid.
18. B.S.Rountree, Poverty: A Study of Town Life, London, 1901, pp.36-7.
19. P.P. 1889, XIII, S.C. on Sweating, W.J.Davis, q.25315; see chapter 4, p. 135,n.120.

20. P.P. 1889, XXXIV, Labour Statistics, Returns of Expenditure of Working Men, 1889, c.5961, p.25.

Rent	£ 14	10s.	4d.	per year
Education	£ 3	18s.	0d.	per year
Recreation	£ 5	0s.	0d.	per year
Boots & Clothes	£20	0s.	0d.	per year
Bedding, furniture, repairs	£ 2	0s.	0d.	per year
Friendly, trade & building societies	£ 4	6s.	8d.	per year
Medical attendance and drugs	£ 1	0s.	0d.	per year
Bread & flour		2s	6d.	per week
Oatmeal & rice			4d.	per week
Meat		6s.	6d.	per week
Bacon			0d.	per week
Fish			2d.	per week
Vegetables		1s.	3d.	per week
Cheese			9d.	per week
Milk		1s.	0d.	per week
Tea			9d.	per week
Coffee			2½d.	per week
Cocoa			3½d.	per week
Salt & seasoning			1d.	per week
Jam & treacle			2d.	per week
Beer & other beverages			10½d.	per week
Washing materials			4d.	per week
Books & papers			6d.	per week
Sugar		1s.	4d.	per week

21. C.Pagé, La Coutellerie, vol VI, pp.1495-7.

22. For the importance of savings made through the cultivation of an allotment, but lost on drink, see, B.S.Rountree, pp.142-4, n.72, pp. 301-2.

23. E.Hobsbaum, 'The Labour Aristocracy', pp.272-315.

24. H.Pelling, 'The Concept of the Labour Aristocracy', pp.37-61.

25. S.I., 16.1.1878, see chapter 7.

26. B.S.Rountree, pp.119-20, these causes accounted for 52% of all cases of primary poverty in York.

27. The Statement of Accounts of the Guardian of the Sheffield Union, 1899-1906.

28. See chapters 5 and 6 , and appendix 5.

29. G.Crossick, pp.10-19.

30. Ibid., R. Gray, p.7.

31. J.Foster, pp.224, 229; contradicted by G.Stedman Jones, in 'Class Struggle in the Industrial Revolution', New Left Review, 90, 1975.

32. G.Crossick, pp.20, 151-6, 15, "The labour aristocracy achieved its position through struggle and conflict, not through capitulation". R.Gray, concurs with this view, although he saw these values as being more the result of relations with other classes than their indigenous working-class experiences, pp.6, 91.

33. C.Reid, 'Middle Class Values' in S.Pollard and C.Holmes (eds.), p.281.

34. See chapter 5.

35. R.Gray, pp.117, 165-9; G.Stedman Jones, 'Working Class Culture and Working Class Politics in London, 1870-1920: Notes on the Remaking of a Working Class,' Journal of Social History, 7, 1974.

36. See chapter 5 and 6, and appendix 5.

37. Such passages as these were still regularly quoted or alluded to: "They are a rough, half-civilised class. Removed thus from the rest rictions of society, and the observation of all authority, they associate only with each other," or "they are too much their own masters to be under the restraint of others... they feel themselves in some measure separated from the world," S.Roberts, Tom and Charles: or The Grinders, London, 1837, pp.15,17.

38. P.P. 1865, XX, J.E.White's Report, para.108 (p.10).

39. See chapter 1, pp. 14 ; Report of the Committee Appointed by the Town Council to Inquire into the Apparent Excess of Drunkenness in the Borough of Sheffield and to Consider the Best Means for Ensuring its Decrease, Sheffield, 1853, p.7; P.P. 1908, III, Committee on the Truck Acts, R.Holmshaw, qs.12091-2, in the Sheffield trades, "the artisans are comparatively much more their own masters than the labouring classes in other towns... and therefore have more time on their hand and greater liberty for the enjoyment of recreation."

40. See chapter 6, pp. 193-4.

41. P.P. 1867, XXXII, Outrages Inquiry, R.Holmshaw, qs.2444-5; S.Pollard, 'Ethics', p.125; see chapter 5, p.152.

42. P.P. 1865, XX, J.E.White's Report, para. 25 (p.3), case 10 (p.15); P.P. 1876, XXX, R.C. on the Factory Acts, S.Arden, q.12094.

43. P.P. 1876, XXX, R.C. on the Factory Acts, Miss Whalley, qs.12315, 12380, A.J.Hobson, q.12451.

44. P.P. 1865, XX, J.E.White's Report, para.38, (p.20); S.I., 1.10.1913, see chapter

7, p.240.

45. S.I., 16.4.1889; The Hammer, 10.2.1894.

46. C.O.Reid, 'Middle-Class Values and Working-Class Culture' Ph.D., p.410.

47. See appendix 4, Isaac Milner; temperance missions were held at the Washington and Suffolk works, S.I., 20.3.1879.

48. B.Harrison, Drink and the Victorians, London, 1971, pp.23-6.

49. Ibid., pp.395-6, temperance was regarded as important in making the working classes analyse general economic, social and political problems.

50. The Hammer, 24.2.1894; S.I., 29.10.1908, First in a series of such accusations, followed by refutations from workers.

51. S.I., 25.1.1885, this was challenged by the secretary of the union, who claimed that most workers were both temperate and skilled. S.I., 2.2.1884; S.D.T., 2.2.1884.

52. In the English Illustrated Magazine, May 1885, p.666, the men were described as "cultivated and prosperous"; P.P. 1889, XIII, S.C. on Sweating, W.J.Davis, q.25304, the factory inspector claimed that "my evidence did not show that they were drinkers or idle, or that they were inferior workmen ... they are a very steady body of men... ready to talk on social questions, politics, or anything for a moment or two, and generally have an opinion ...comparing them in their habits with the habits of the workmen in other towns of which I have intimate knowledge, I think they compare very favourably indeed." This was even recognised by employers: P.P. 1877, X, S.C. on Intemperance, 1st Report, 1887, c.171, J.Jackson, q.3109; P.P. 1910, VIII, R.C. on the Poor Laws, A.J.Hobson, q.80415.

53. S.Pollard, History, p.197.

54. A.E.Dingle, 'Drink and Working Class Living Standards in Britain 1870-1914', Economic History Review, XXV, 1972.

55. S.I., 26.7.1887, 24.11.1883, 23.11.1886, 31.3.1887.

56. See fig. 1 ; C.A.Turner, A Sheffield Heritage, p.7.

57. R.Gray, pp.125-6,92; G.Grossick, p.152.

58. P.P., 1877, XI, S.C. on Intemperance, J.Jackson, qs.2940, 3111; J.E.Davis, q.1178.

59. S.I., 18.4.1903, Robert Holmshaw before the Moseley Industrial Commission; also American press comments on Sheffield cutlers who emigrated to the U.S., reported in S.I., 20.6.1879; C.Pagé, La Coutellerie, vol.VI, p.1494-5, Sheffield cutlers "ont des dispositions à l'alcoolisme".

60. C.Reid, Ph.D., p.433.

61. S.F.T.C., Annual Report, 1906, p.7; Pen and Pocket Blade Forgers' Minutes, 20.6.1905, 24.3.1906.

62. See chapter 7, p.214ff, 'Hours'.

63. P.P. 1908, XXVI, Factory Inspectors' Report, p.39; ibid, P.P. 1871, XIV, p.10; P.P. 1892, XXXVI, R.C. on Labour, Answers to Questions of Group A, pp.13-15; holidays included two annual fair days, the Rotherham Statute Fair, the occasion of the Band of Hope Gala, and quarterly rent day (long since abandoned as days of actual rent payment). P.P. 1888, XXVI, Factory Inspectors' Report, p.30. "Once I visited some large works at 2.30pm. The occupier said he would go through the works with me. We passed from shop to shop, but found no-one at work. This seemed to grieve my friend, who justly remarked that had the men said they were not coming, he could have stopped the engine and gone with his wife to the flower show, where he supposed they had taken theirs."

64. S.I., 25.5.1872, the cutlers were said to "make a week" out of a one day holiday, when trade was good; S.I., 25.6.1881, they "make hay while the sun shines... sure of work, they are showing all the old weaknesses for 'Saints' Days', and driving consumers into other markets with their orders." See also S.I., 13.9.1873, 8.6.1901; P.P. 1908, III, Committee on the Truck Acts, A.J.Hobson, q.12402.

65. D.Reid, 'St.Monday'; P.P. 1876, XXX, R.C. on the Factory Acts, J.Gale, qs.12145-6, S.Arden, q.12081, St.Monday was "general", and kept by half to three quarters of the men; P.P. 1908, III, Committee on the truck Acts, A.J.Hobson, q.12399.

66. P.P. 1876, XXX, R.C. on the factory Acts, S.Arden, qs.12103, 12146.

67. Ibid., J.Gale, q.12145.

68. S.I., 6.7.1901.

69. W.Crofts, 'The Sheffield Cutlery Trade, A Short Review of its History and Development', Junior Institution of Engineers Journal and Transactions, vol.52, 1941-2, pp.70-1.

70. Ibid.; C.Pagé, La Coutellerie, vol.VI, p.1494.

71. See chapter 6, p 198.

72. The Equipment of the Workers: An Enquiry by the St. Philip's Education and Economic Research Society, into the Adequacy of the Adult Manual Workers for the Discharge of their Responsiblities as Heads of Households, Producers and Citizens, London, 1919, pp. 71, 72, 74, most of the cutlers who were categorised as "well equipped", with moral and practical education, were walkers and gardeners; see also C.Pagé, La Coutellerie, vol.VI, p.1495-7, the

teetotal and relatively wealthy cutler, which he described, cultivated a quite extensive allotment on the banks of the River Sheaf. Helped by his wife and children, he sold a considerable amount of chicken and eggs.

73. S.Roberts, Tom and Charles, pp.18-9; S.I., 20.12.1988, "It is often said that 'a grinder is not a man'. Is it to be wondered at?"

74. Sheffield in 1902, S.Uttley, 'Sheffield Workmen Sixty Five Years Ago and Today', pp.21-3; S.F.T.C., Annual Report, 1893, p.3, The unions must resolve "to unite in one grand moral effort to raise the physical, moral and intellectual progress of their class." See also The Hammer, 10.2.1894, p.3.

75. G.C.Holland, Vital Statistics, pp.133-4, out of the 2716 "male depositors" in the Sheffield Savings Bank, 221 were cutlers, 28 razorsmiths, 30 fork makers, and 44 scissorsmiths, a total of 323, or 12% of all deposits - a very small number considering the numerical importance of the cutlery trades. Holland concluded "The various branches of cutlery manufacture are exceedingly vulnerable to fluctuations, and it perhaps questionable whether the demand for several consecutive months is ever fully equal to the ability to produce. The different branches of it are overstocked and except first rate workmen engaged in the making of fine or costly items are remunerated in such a manner as to enable to secure a provision for the future."

76. S.I., 4.5.1872, 30.3.1872; C.Pagé, La Coutelllerie, vol,VI, p.1495, "ils economisent generalement pas"; see also n.64, p.301.

77. P.P. 1886, XXI, R.C. on the Depression, C.Pelk, qs.2857-9; S.Uttley, qs.1291; P.P. 1865, XX, J.E.White's Report, case 15 9p.16); see chapter 3 ,pp.98-9.

78. See chapter 7, pp.243-8, and chapter 5.

79. J.Benson, 'The Thrift of English Coal Miners, 1860-1895', Economic History Review, XXXI, 1978, Illustrated that miners invested a very large proportion of their income on accident insurance, in recognition of the high risks which were involved in their trade.

80. E.J.Hobson, 'Artisan or Labour Aristocrat?', pp.363-4; B.Harrison, p.25, "The possession of capital - if only in the form of working tools," the respectable working man "attributed largely to his regular habits and personal rectitude."

81. P.P. 1865, XX, J.E.White's Report, case 201 (p.44).

82. P.Johnson, 'Credit and Thrift and the British Working Class, 1870-1939,' in J.Winter (ed.), The Working Class in Modern British History, Essays in Honour of Henry Pelling, London, 1983, pp.154-9, suggests that consumer goods

had the value of near money, as they were often and easily pawned, thereby offering far greater liquidity as assets, than savings bank accounts. However, the possession of such goods was determined not only by economic factors, but by social conventions: savings were related to an idea of respectability, which entailed the display of assets, epitomised in the value of the contents of the 'front room'.

83. See below, p . 281 ; P.Johnson, 'Credit and Thrift', pp. 154-5, in England in 1914, there was one pawnbroker to every 3500 town dwellers, and this ration would be much smaller in such poor central areas as the Crofts.

84. Sheffield Local Register, 20.11.1861, S.Earnshaw, The Church and the Artisan, Sheffield, 1861, p.4; E.R.Wickham, Church and People in an Industrial City, London, 1957, pp.153-8; P.P.1865, XX, J.E.White's Report, para.109 (p.10).

85. D.Smith, Conflict and Compromise, p.244.

86. W.Odom, Fifty Years of Sheffield Church Life, 1886-1916, Sheffield, 1917, p.21. William Odom, Samuel Earnshaw and Archdeacon Blakeney all took an interest in the working classes and increased the Church's influence amongst them. A meeting, held during the Church Congress of 1875, saw large numbers of working men listen to the speeches of the Bishops of Manchester and Carlisle, and the Archbishop of York: they were given a critical, but generally sympathetic hearing, S.Pollard, History, p.118.

87. The Equipment of the Workers, pp.68, 69, 71.

88. Ibid., pp.72, 74; E.R.Wickham, p.192; S.Pollard, History, p.117, of the twenty Sheffield working men who were raised to important Wesleyan preaching or missionary work by 1889, six had been artisans in the local staple trades, whilst prominent Primitive Methodists also included men from such backgrounds. See also appendix 4, J.Stacey, N.F.Wardley, C.Wilson.

89. G.Crossick, pp.139-43; S.Meacham, 'The Church in the Victorian City', Victorian Studies II, 1968, p.369.

90. C.O.Reid, Ph.D., p.107, 138, "They involved the ambitious member in a milieu in which literacy, articulateness and talents in administration and decision making were called upon in the public service of the chapel."

91. Ibid., pp.173-4; P.P. 1843, XIV, J.Symond's Report, p.17, because little other free education was available, parents sent children to Sunday Schools, even though they had no religious convictions; many were from poor, overcrowded households, where their parents were anxious to be rid of their children for a few hours; P.P. 1865, XX, J.E.White's Report, para.109 (p.10), case 201 (p.44),

there was generally a great neglect of Sunday Schools by working class families, often because they could not afford the necessary smart clothes for their children.

92. See biographical index, W.F.Wardley, John Wilson.

93. See p.290 ; S.Yeo, Religion and Voluntary Organisation in Crisis, London, 1976; H.Heller, Leisure and the Changing City, 1976, attempts were made, by the churches to combat and challenge the mass consumer leisure industry, by organising their own church football, cycling and athletics clubs, along with the Boys Brigade etc.

94. D.Smith, Conflict and Compromise, p.150.

95. P.P. 1865, XX, J.E.White's Report, para 109, (p.10). P.P. 1843, XIV, J.Symond's Report, pp.140-5, in 1843, there were only 8000 children on the books of Sheffield's day schools, and of these, 27% were continually absent, whilst 45% could not read fairly, and 63% could not write fairly. S.Pollard, History, p.113, in 1872, it was still estimated that 43% of children in Sheffield never attended a school. By the 1800s, there were fourteen National Society local day schools in Sheffield, catering for 5,500 children; a Lancastrian school for 750; a Boys and Girls Charity School for 170; and a Ragged School for 300 children of the destitute poor, S.Pollard, History, p.33, Sheffield and District Guide, Sheffield 1881, p.6.

96. P.P. 1865, XX, J.E.White's Report, case 202 (p.45) table blade grinders estimated that 113 of their number could neither read or write: a polisher, for example, aged 16, and working for the noted firm of Joseph Rodgers "cannot read a deal ... can do two or three sums. Glasgow is a state where the Indians live. Scotland is a place where strange people are. A Scotchman comes from Ireland. Do not know the Queen's name ... Never looked on a halfpenny," Case 33 (p.14).

97. J.C.Hall, The Trades of Sheffield, p.22, placed considerable blame on the parents "who seem only to regard their children as machines to add to their weekly income". Sending them to work at an early age "enfeebles them in the mind, renders them dwarfed, decrepit and often deformed of body. Prematurely used up", they were incapable from benefitting from a proper education, "without education, without moral or religious training, these children are compelled at ten or eleven years of age to work in the hulls... rocked by the cradle into a maturity of vice, and their education completed by the conversation of older boys and men, where every breath is an offensive expression and who appear to be suckled in sin, cradled in profligacy and catechised in blasphemy."

98. P.P. 1865, XX, J.E.White's Report, paras.108-11 (p.10), "I have found ignorance of simple facts of religion and secular life as great as I have found anywhere," ibid, case 40 (p.22).

99. At Ibbsterholms, 1870-84, of the approximately 800 men who pledged to pay back rent due, by weekly deductions from wages, approximately 250 were unable to sign their names, S.C.L., Ibs.R1, Undertakings, 1860-1884. Of the 54 cutlery workers who married at St.Philip's church, 1879-83, fifteen were unable to sign their names, St.Philip's Marriage Registers, S.C.L., P.R. 10/8.

100. Sheffield Local Register, 17.1.1852.

101. S.Pollard, History, p.34.

102. G.P.Jones, The Development of Adult Education in Sheffield, Sheffield, 1932, pp.13, 17.

103. S.C.L., N.R.73, Surrey St. Institute Registers; C.Reid, Ph.D., p.216, this was part of the Surrey St. Chapel, which offered evening classes to young men, but only in association with Bible classes. In 1867, a sick and friendly society was established by two cutlers with the aim of stopping scholars from attending the meetings held by secular societies, often in pubs, and to incorporate them further into the life of the institution.

104. See biographical index, W.F.Wardley, J.Wilson; The Equipment of the Workers, pp.68, 71-2, 148-53.

105. S.Pollard, History, pp.113,195-6, there were often however, forty children per class.

106. Court cases for non-observance of regulations, S.I., 27.5.1871, see chapter 7, pp. 214-5.

107. National Association for the Promotion of Socail Science Transactions, 1865, J.Wilson, 'The Extension of the Factory Acts to Other Industrial Occupations', London, 1866, pp.303-9.

108. J.H.Ringham, The Period of the Sheffield School Board, 1870-1903, Sheffield, 1949, pp.311-12, John Wilson represented 'eclectic' interests, 1876-87; and Robert Holmshaw, the labour interest, 1900-2.

109. S.F.T.C., Annual Report, 1912, p.11; 1913, p.8; 1914, p.11, W.F.Wardley stood on the voluntary committee in charge of the Springfield evening school and on the technical instruction committee; Charles Hobson was on the board of the University governors and the technical instruction committee; Stuart Uttley was also a University governor.

110. S.Pollard, History, p.115.

111. A report from The Times, quoted in the S.F.T.C. Annual Report, 1906,p.6.
112. S.F.T.C. Annual Report, 1898, p.5.
113. Ibid., p.11.
114. Ibid., 1905, p.8.
115. G.P.Jones, pp.29-30; S.F.T.C. Annual Report, 1912, p.6.
116. See below, pp.290-1.
117. See chapter 5,pp.156-60. See also Julia Wrigley, 'Technical Education and Industry in the Nineteenth Century', in B.Elbaum and W.Lazonick (eds.), 163-6.
118. S.Pollard, History, p.115, the Town Council was given as substantial grant, with which it increased the number of evening classes in technical subjects, and reduced fees.
119. P.P. 1889, XIII, S.C. on the Sweating System, S.Uttley, q.24879.
120. The Hammer, 18.11.1893, p.2, 10.2.1894, p.3; The Metal Worker, vol.I, no.2, Feb. 1907, pp.39-41; vol. I, no.3, March 1907, p.63; S.I., 3.4.1903, Robert Holmshaw, before the Ibseley Industrial Commissioin, found technical education in America to be far in advance of that in Sheffield: cutlers were encouraged to stay on after elementary education, and parents were generally convinced of the value of this.
121. The Metal Worker, printed a series of articles entitled 'How Trades Should be Taught and Who Should Teach Them'; vol.I, no.8, Aug. 1907, pp.185-6 (concerned with the previously helpful role of the Cutler's Company in enforcing adequate apprenticeship), vol.I, no.10, Oct.1907, pp.234-6.
122. Ibid.
123. See, for example, G.Crossick, p.108-10; R.Gray, pp.95-7, 130; S.Pollard, History, pp.5,125.
124. Sheffield Transport Department: A Brief History of the Progress of Municipal Transport in Sheffield, Since 1896, Sheffield 1946, p.9.
125. S.Pollard, History, p.102.
126. P.P. 1908, CVII, Cost of Living of the Working Classes, p.411; P.P. 1886, R.C. on the Depression, R.Holmshaw, q.1259.
127. G.Stedman Jones, Outcast London, pp.170-4,
128. R.S.Passmore, 'The Mid-Victorian Urban Mosaic: Studies in Functional Differentiation and Community Development in Three Urban Areas, 1841-71', Ph.D., Sheffield, 1976, p.90.
129. Ibid., p.96.

130. Ibid., p.91.

131. Ibid., pp.311-14.

132. Ibid., pp.315-18.

133. G.Stedman Jones, Outcast London, pp.218-30; J.Dyos, 'The Slums of Victorian London', Victorian Studies, XI, 1967; A.Mearns, The Bitter Cry of Outcast London: An Enquiry into the Condition of the Abject Poor, London, 1883.

134. S.I., 13.2.1872, a description of the Crofts area, quoted from the evidence of a special commission appointed to inquire into the sanitory condition of the Crofts.

135. P.P. 1889, LXV, Report on an Epidemic of Small-Pox in Sheffield During 1887-8, by Dr.Barry, c.5648, pp.218-19, Houses in the Crofts were "frequently damp, ill-ventialted and dark. Also they were crowded together, courts are found within courts, and streets are narrow, winding and often precipitous." More than 60% of houses had no through ventilation and many more were "old, badly built and hardly fit for human habitation."

136. 'The Squalid Houses of Sheffield', describing the Crofts, S.I., 1.1.1884, "truth to tell, it requires a little courage, and a great deal of camouflage to penetrate into the midst of this conglomeration of crooked streets." A home of a very poor, but clean and respectable 74 year old blade forger was described amidst the squalor, pointing out that "it is not merely the poor that live there, or the dissolute." Also, a follow up letter from the Rev.Shaw of the Crofts, explained that the article was misleading, in that it gave inadequate attention to the poor who were patient and respectable in their poverty and suffering, S.I., 4.1.1884.

137. Annual Report on the Health of Sheffield, 1892, p.62; P.P. 1908, CVII, Cost of Living of the Working Classes, p.411.

138. Ibid., 1892, pp.46-8, because of "the continual persistance of filth, and dirt of all sorts, in the houses and their surroundings, to want of drainage causing damp soil and damp houses, to absence of sufficient light and ventilation, the persons condemned to live under such conditions may show no other effect than a gradual and insidious deterioration of their constitution."

139. P.P. 1908, CVII, Standard of Living of the Working Classes, p.411; S.Pollard, History, p.188.

140. S.Pollard, History, p.188.

141. Lloyd, p.170.

142. P.P. 1886, XXI, R.C. on the Depression, S.Uttley, q.1289.

143. This is illustrated in statistics of death rates from all causes in the various areas of Sheffield, 1879-1887: 22.7, 21.9 and 22.6 per 1000 in the Northern, Western and Southern, and Central areas of Sheffield, compared with 17.8 in Nether Hallam (which included the 'working men's' suburbs of Crookes and Walkley), P.P. 1889, LXV, Report on the Small Pox Epedemic, p.249.

144. P.P. 1871, XXV, R.C. on Friendly and Benefit Building Societies, 1871, c.452, Allott, q.7696; J.H.Stainton, pp.80-97; S.M. Gaskell, 'Yorkshire Estate Development and the Freehold Land Societies in the 19th Century', Yorkshire Archeological Journal, 43, 1971, p.160.

145. S.Pollard, History, p.105.

146. Sheffield Transport Department, p.11-13.

147. C.Hobson, 'Walkley: A Fifty Year Old Workingmen's Garden Suburb', Town and Country Planning, no.2, 1912; S.Pollard, History, p.23, the inhabitants of such suburbs were described as "an elite of character if not of earnings".

148. S.M.Gaskell, p.162.

149. M.Walton, A History of the Parish of Sharrow, Sheffield, Sheffield, 1968, pp.30, 31-5.

150. See biographical appendix, R.Holmshaw (snr.), R.Holmshaw (jnr.), W.F.Wardley.

151. See appendix 6.

152. S.F.T.C., Annual Report, 1912, p.10; 1911, p.8, they gave their "hearty commendation" to the work of the Beautiful Sheffield League.

153. Ibid., 19141, p.4.

154. H.E.Mathers, 'Sheffield Municipal Politics, 1893-1926: Parties, Personalities and the Rise of Labour', Ph.D., Sheffield 1980, p.135; C.Burke, 'Working Class Politics in Sheffield 1900-1922: A Regional History of the Labour Party', Ph.D., Sheffield, 1983, p.5; C.O.Reid, 'Middle Class Values', in S.Pollard and C.Holmes, (eds.).

155. G.Crossick, pp.240-6; R.Gray, pp.7, 165-83.

156. D.E.Fletcher, 'Aspects of Liberalism in Sheffield, 1849-1886', Ph.D., Sheffield, 1972, pp.164, 192.

157. D,E.Fletcher, p.86, Mundella was opposed by some local trade unionists because he was believed to be "more representative of the London trades."

158. M.Higginbotham, 'The Career of A.J.Mundella, with Special Reference to his Sheffield connections', M.A., Sheffield, 1941, p.144.

159. D.E.Fletcher, p.160-70, 131-3, of the 106 nominations for candidates to sit for the council election of 1877, only 24 were working men: most were middle,

or lower middle class. However, the working men were a decisive force in the choice of Mundella as a Liberal parliamentary candidate in 1868, and in the substitution of Waddy by Coleridge in 1885.

160. D.E.Fletcher, p.167; J.Mendelson et al., p.38, in 1886, the association held a tea to celibrate the canditure of a working-class Liberal for the Hallam district election, and the appointment of Joseph Mallinson, the razor grinders union's secretary, as the first working class member of Sheffield's board of magistrates.

161. J.Mendelson et al., pp.37-8.

162. D.E.Fletcher, p.191; D.Smith, p.243, Brightside and Attercliffe were the safest seats for the Liberals.

163. H.Pelling, The Social Geography of British Elections, 1885-1910, London, 1967, p.233; H.E.Mathers, p.102.

164. H.E.Mathers, p.79; D.E.Fletcher, p.177, the Conservatives' "brash and bombastic appeals to British honour" were reasonably successful "amongst the workingmen in central Sheffield." S.I., 16.1.1906, expressed the opinion that the Conservatives were bound to have considerable success in Central Sheffield "when one considers the number of working cutlers and grinders, 'little mesters', who naturally wish for protection in the hope that it will relieve them of the fluctuations of trade which they have suffered in the past." The Sheffield Daily Telegraph's sensationalist coverage of Disraeli's foreign policy, and the display which surrounded the volunteer movement, were also said to be popular amongst Sheffield's working classes, D.E.Fletcher, p.163,149; H.E.Mathers, p.97.

165. H.E.Mathers, p.91.

166. D.E.Fletcher, p.176.

167. J.Mendelson et al., p.43, in 1891, 66 of the S.F.T.C.'s 135 delegates were from the light trades, 62 from the steel and engineering industries, and 37 from others; three years later, these proportions had changed to 77, 29 and 68 respectively.

168. S.F.T.C. Annual Reports, 1892-1914, the most prominent officials were Charles Hobson of the Britannia metalsmiths, William Wardley of the table blade forgers, Stuart Uttley of the file forgers, and Robert Holmshaw junior and senior of the scissor grinders.

169. J.Mendelson et al., p.47.

170. H.E.Mathers, p.164.

171. E.g., in 1894 they quarreled with the local I.L.P., when Charles Hobson was selected by the S.F.T.C. to stand "in the Labour interest" for the Attercliffe

by-election, but stood down when the Labour Party voiced its displeasure, forcing the I.L.P. to put up a candidate at the last minute. See Joyce Brown, 'Attercliffe 1844. How one Liberal Party failed to meet the Challenge of Labour', Journal of British Studies, vol.XIV, no.2, May 1975. The S.F.T.C. also refused to contribute to the Parliamentary fund of the T.U.C. for much the same reasons, J.Mendelson et al., p.45.

172. J.Mendelson et al., pp.49-51, only 2 of the 19 L.R.C. delegates represented the light metal trades.

173. Ibid., pp.56-7, e.g., the prolonged strikes at Edgar Allens, and amongst the tramwaymen.

174. S.F.T.C., Annual Report, 1907, p.3, 8, the Workmen's Compensation Act was described as legislation "which stands forth as one of the most comprehensive measures of its class on the statute book," whilst the National Insurance Act, "with all its far-reaching schemes for social betterment and wellbeing, its methods of helping the workers over hard times and caring for them in sickness and disease," was "perhaps the most democratic measure ever introduced into any country," ibid., 1912, p.11.

175. Ibid., 1912, p.10.

176. Ibid., 1909, p.7; 1913, p.8; 1914, p.11.

177. See, for example, J.Parker, p.18.; G.C.Holland, Vital Statistics, p.10; D.E.Fletcher, pp.2, 11, 34; C.Burke, pp.5-6; C.O.Reid, Ph.D., p.41, "The economic relationships in which the worker found himself was one of the prime determinants of political consciousness. The dominance of the craft industry and the labour aristocracy meant that the proletarianisation of the workforce was arrested."

178. See, for example, J.Baxter, p.99.

179. For these, and all other names given in the remaining footnotes in this chapter, see entries in appendix 4. H.J. and M.Hunter, J. and A.J.Hobson, F. and W.H.Harrison; Joseph Rodgers, Under Five Sovereigns, p.11; S.Pollard, Marsh Bros., pp.49-51.

180. E.g., A.J.Hobson, M.J.Hunter, F.T.Mappin, J.Veall.

181. This contradicts the thesis put forward by M.J.Wiener in English Culture and The Decline of the Industrial Spirit 1850-1980, Cambridge, 1981, pp.132-145, which argued that industrialists accepted traditional aristocratic values and inculcated their sons with the same, by sending them to old public schools and universities, with non-technical curricula. Aristocratic, gentrified life

styles were also adopted: country houses, hunting, fishing, etc.. Thus these men separated themselves "from the sources of dynamism in existing society" and strove to attach themselves "to an older way of life", p.43. In Sheffield, manufacturers were extremely traditionally minded and in some ways backward looking, but not in this sense; contact was never lost with the sources of prosperity. This evidence contradicts the opinion of J.Wrigley, 'Technical Education and Industry in the Nineteenth Century,' in B.Elbaum and W.Lazonick (eds.), which found that manufacturers avoided technical education because of its associations and links with the working class identity.

182. John Rodgers attended Wolsten and Malvern Colleges and then Neuweid in Germany. See also G.Howson, H.P.Marsh.

183. The Collegiate School was established in 1835, costing£10,000, and set in 3½ acres of land, "to provide a thoroughly solid education for youths of the upper classes, preparatory to a university course or commercial persuits," Pawson and Brailsford, 1862, p.78. H.P. and J.P. Marsh attended Clifton College, Bristol and Dresden after the Collegiate School, also E.Atkinson, N.Creswick, Willis Crookes, A.R.Ellis, S.G.Richardson, G.F.Lockwood, J.Veall, all went straight into business after attending the Collegiate School.

184. The Milk St.School was especially popular, founded in 1862-3 providing, "a Classical, Commercial, Philosophical and Mathematic" education, it was "one of the most famous schools of bygone days which did excellent work in forming the characters of some of our more prominent citizens," John Austen, 'Notes on the Milk St.Academy and its Founders', p.202, T.H.A.S., volv.7, 1951-7, attended by W.Tyzak, V.Veall, W.T.Wheatley.

185. Men of the Period, Sheffield, 1896, p.63.

186. E.g., Harry Hems, James Moorhouse.

187. J.H.Bingham, p.310-12, the only cutlery manufacturer members were William Parkin (C.of E.) 1885-94, F.P.Rawson (Unsectarian), 1891-3, 1897-1900, and S.G.Richardson, 1894-96.

188. C.O.Reid, Ph.D., pp.323-7.

189. E.g., John Marsden, at St.George's, in the city centre; W.T. Waterhouse, a manager at St.Mathias'; T.W.Waterhouse, superintendant of Queen St.Sunday School; W.H.Bingham taught at Hanover St.Methodist Sunday School as did W.F.Wardley; Isaac Milner was president of the Sheffield Sunday School Band of Hope for 30 years, and a teacher in the friend's, children's and adult's Sunday School for 50 years; T.R.Ellin was a figure of national importance

in the Y.M.C.A..

190. C.O.Reid, Ph.D., pp.174-5.

191. S.I., 12.4.1887, an art and industrial exhibition was held in 1887, "to encourage useful work amongst children, to promote habits of industry and skill, and to provide suitable employment on winter evenings;" C.O.Reid, Ph.D., p.188, it attracted 4000 entries but most were of a very low standard.

192. A.J.Hobson; G.Barnsley, S.G.Richardson and F.T.Mappin were three of the six technical School Governors in 1890, Sheffield and its Region, D.L.Linton, (ed.) , Sheffield, 1956, p.135; Charles Beck was also a keen supporter of technical education, Borough of Sheffield Technical Instruction Committee, 1895, S.C.L., C.A. 197 (28).

193. M.Sanderson, The Universities and British Industry, 1850-1970, London, 1972, P.8, "The real factors underlying this change in attitude from the anti-vocational position stemmed from the fears of the retardation of growth and the increasing intensity of foreign competition in the British economy before the First World War."

194. Chamber of Commerce Minutes, Jan,1889, 1890, 1892, Feb. 1912, S.C.L., L.D. 1936/383; Feb. 1889, a new Spanish master was appointed at the grammar school and the Chamber encouraged its members to learn commercial Spanish. However, "The bulk of the gentlemen who replied did not seem to see the necessity; but some of the larger houses did."

195. A.W.Chapman, The Story of a Modern University: A History of the University of Sheffield, London, 1955, p.36, of F.T.Mappin, it was said that " his enthusiasm and desire to give personal attention to every matter, however small, that he considered at all important, betrayed him sometimes into behaving as if the Technical School - and later the University - were a branch of his own works." See also D.Smith, p.223.

196. P.P. 1910, VIII, R.C. on the Poor Laws, A.J.Hobson, qs 88368, 88388, 88397-9, 88402.

197. Ibid., q.88403.

198. P.P. 1884, XXXI, R.C. on Technical Instruction, 2nd Report, 1884, c.3981, M.Hunter, q.7717 (p.552), G.Barnsley q.7754 (p.567), "We have so many trades where we work by rule-of-thumb and we find we are put about by our workmen, not knowing really what they are doing."

199. A.W.Chapman, p.59.

200. P.P. 1884, XXXI, R.C. on Technical Instruction, J.Hobson, p.557, manufacturers

paid little attention to the School of Art because this institution was concerned mainly with the teaching of design, but in the scissors and pen and pocket knife trades, "it is not so much that can be done in the way of art design."

201. R.E.Leader, Cutlers' Company, vol.II, p.34, Master Cutlers connected with the cutlery trades: 1852 M.Hunter; 1855 F.T.Mappin; 1856 G.Ibstenholm; 1860 M.Hunter; 1881 and 1884 J.E.Bingham; 1883 G.Barnsley; 1885 C.Belk; 1886 G.F.Lockwood; 1889 S.G.Richardson; 1891 R.Belfitt; 1892 J.F.Atkinson; 1893 G.Howson; 1897 M.G.Rodgers; 1901 A.R.Ellin; 1902 A.J.Hobson; 1903 M.J.Hunter.

202. L.Bilby, pp.67-77, see chapter 3, p. 104.

203. E.g. Chamber of Commerce minutes, Jan.1872, S.C.L., L.D. 1936/1, Committee included F.T.Mappin, J.Hobson, W.Parkin, G.Ibstenholm; ibid., Jan.1881, S.C.L., L.D. 1986/2, C.Belk, A.Brooksbank, R.Belfitt, G.F.Lockwood, F.T.Mappin; ibid., Jan.1896, S.C.L., L.D. 1986/4, C.Belk, M.Hunter, G.F.Lockwood, S.G.Ruchardson. Quality of Sheffield, vol.29, March/April 1982, p.25, presidents of the Chamber of Commerce included, J.Hobson 1879-80, J.W.Dixon 1884-5, C.Belk 1887, G.F.Lockwood 1889-90, H.P. Marsh 1899-1900, A.J.Hobson 1909-11.

204. E.g., E.Reuss, E. and F.T.Atkinson, L.Osbaldison.

205. E.g., W.T.Wheatley, A.J.Hobson, F.T.Atkinson.

206. Perhaps the only exceptions were A.J.Hobson and F.T. Mappin, both of whom had an enormous range of commercial interests and assets.

207. Lord Mayors included, F.T.Mappin 1877, M.Hunter 1882, and 2, H.P.Marsh 1907, A.J.Hobson 1911, W.Odom, Hallamshire Worthies, Sheffield, 1926, p.241. J.P.'s included C.Belk, A.R.Ellin, M.J.Hunter, G.F.Lockwood, S.G.Richardson. City Savings Bank trustees included G.Howson and I.Milner. Yorkshire Volunteers officers included N.Creswick, E.A.Bingham and J.W.Elliott. Trustees of the Board of Guardians included J.F.Atkinson, J.Copley, I.Milner.

208. E.G., W.W.Harrison, treasurer of Totley Orphanage; A.R.Ellin, member of the board of Jessop's Hospital and Treasurer of the Blind Institute; G.Howson, member of the Board of management of Sheffield Royal Hospital; G.F.Lockwood, member of the boards of the Royal and City Hospitals; A.J.Hobson, president of the Fisher Institution.

209. See appendix 4.

210. See, for example, H.Meller, pp.1-19.

211. G.Stedman Jones, Outcast London, pp.241-52.

212. J.E.Manning, History of Upper St.Chapel Sheffield, Sheffield, 1900, pp.162-3, 172. In 1870, the Congregation at Upper St.Chapel "consisted primarily of the

upper classes ... More than a fair proportion of Aldermen, Town Councillors, local 'literati', a number of highly educated individuals, and a sprinkling of miscellaneous orders of society."

213. E.R.Wickham, p.138, see appendix 4.

214. See appendix 4.

215. J.Copley, J.Hibbert, F.T.Mappin.

216. See fig.2; C.O.Reid, Ph.D., p.18; J.H.Stanton, pp.80-97.

217. E.g. of the manufacturers whose addresses were listed in the biographical appendix, (who constituted the wealthiest and most influential manufacturers), 20 lived in the Fulwood, Tapton, Ranmoor, Broomhill area; 14 lived in Sharrow, Broomhall, Nether Edge; 3 lived in Dore or Totley, and others lived in Ecclesall, Norton and Nether Green. Many had homes with impressive sounding titles such as 'Hall' and 'House'. See appendix 4 and fig.2.

218. A.J.Hobson, F.T.Mappin.

219. W.Odom, Hallamshire Worthies, p.179; J.H.Stanton, p.185, 215; M.Walton, p.30; see appendix 4.

220. Also living in this small area, were Wilfred Rodgers, Joseph Barnsley and Ernest Reuss.

221. See appendix 6 and Fig.2.

Type of Manufacturer	1852 % who lived at the Following Distances from their Works				1872 % who lived at the Following Distances from their Works			
	at work	½ mile	½m-1m	1 mile+	at work	½ mile	½m-1m	1 mile+
Fork	69	7	10	14	79	8	11	2
Pen & Pocket Knife	66	24	6	4	48	24	15	13
Razor	53	33	12	2	34	29	18	19
Scissor	54	30	7	9	47	26	19	13
Shoe & Butchers Knife	43	33	10	14	44	19	19	18
Silver Plated Knife	29	29	21	21	37	12	24	27
Table Knife	53	26	12	9	38	22	22	18

Source: R.S.Passmore, pp.126-7.

223. P.P. 1886, XXI, R.C. on the Depression, R.Holmshaw, q.1299.

224. S.D.T., 7.2.1872, at a meeting of the spring knife cutlers, the secretary of the union criticised manufacturers of poor quality goods, and "tyrannical merchants", "who were doing as much as they could to keep the trade down whilst they them-

selves were building mansions and driving their carriages, and who, if they ran over a poor man, would never look back and see if they had a broken leg or not.

225. S.I., 16.4.1889, speaking at a meeting of spring knife cutlers in 1889, W.F.Wardley declared that, "the time had gone by when the manufacturers lived on the place, and came into the workshop to talk with the men. Nowadays, a manufacturer would not live within two miles of the firm if he could help it, and a master must drive down, wet or fine."

226. The Hammer, 10.2.1894, p.3.

227. Ibid.

228. The Metal Worker, vol.II, June 1908, no.18, p.121.

229. E.g., J.Hobson, leading light in Literary and Philosophical Society; J.P.Marsh, founder of Hallamshire Tennis Club; W.Crookes, breeder of pedigree hackneys, member of Council of Ecclesfield Farmers Club and Hallam and Ecclesall Agricultural Societies, owner of a stud farm; T.F.Atkinson, president of Dore, Totley and Holmesfield Agricultural Society; J.W.Elliott, notable local art expert.

230. D.E.Fletcher, pp.92, 190-1, 164, e.g. Firths, Cammells, Jessops.

231. E.g., J.F.Atkinson, C.Belk, H.Chalmer, A.J.Hobson, W.W.Harrison; and some lesser manufacturers, e.g., R.Allen, G.Barnsley, J.Derby.

232. E.g., M.Hunter, F.T.Mappin, F.P.Rawson, G.Ibbsterholm, J.Blyde, T.Crookes.

233. H.E.Mathers, pp.17-21, 35-6.

"Light Trades Manufacturers" as a % of all Sheffield City Councillors

1843-53	1853-63	1863-73	1873-83	1883-92	1892-1901	1902-5	1906-13
23	20	14	22	23	17	15	12

Occupation and Party of Sheffield City Councillors, 1892-1919

Occupation and Party	% of the Total Membership of the Town Council		
	1892-1900	1891-1940	1911-1919
Light Trades Manufr. & Liberal Party Member	14	20	15
" Cons. "	22	11	6
Heavy Trades Manufr. & Liberal Party Member	2	6	2
" Cons. "	17	16	18

234. S.I., 3.1.1906, Samuel Roberts, the Conservative candidate for Ecclesall displayed two German knives during his speeches, to illustrate his belief that "a low scientific tariff on imports would provide the salvation of the cutlery trade, at present threatened ... and a duty of 10% would enable Sheffield cutlers to keep out such knives."

235. See n.233, also chapter 3, pp.82-3.

236. L.Bilby, pp.57-8, G.Ibsterholm and F.T.Mappin allowed the Liberal M.P., Samuel Roebuck to canvass at their cutlery works.

237. E.g., When H.P.Marsh stood as a candidate for the Park Ward, 1887, S.Pollard, Marsh Bros., p.50; see also the use that was made of government contracts, D.Smith, p.244.

238. S.I., 18.11.1889, 21.11.1889, 30.11.1889, A.J.Hobson was defeated as the Conservative candidate for Nether Hallam, largely because of his denunciation by Liberal working men as a "knob stick shop" employer, who refused to pay union rates.; his father's role in the 1876 scissors dispute was also dragged up. S.I., 30.10.1903, J.Nowill's commercial morality was also brought up as an issue during his campaign in Hallam.

CONCLUSION

A detailed, regional analysis of the Sheffield cutlery trades has revealed a number of characteristics which contradict the stereotypic images of British industry, its workforce and management between 1870 and 1914.

Foremost is the contention that practises which have been construed as archaic, unsophisticated and even irrational were founded on considered and informed decisions.[1] These trades experienced few marked or wholesale advances in the adoption of mechanized production, new product designs or raw materials. The failure of the British manufacturer to appreciate such developments has frequently been construed as evidence of the 'entrepreneurial failure' judged to be central to the retardation of the British economy in this period. However, cutlery manufacturers were fully aware of the new developments touching their industry. Although extremely cautious, they were prepared to welcome and to adopt changes when they were understood to be compatible with the industry's overall commercial policies. This strategy was clearly stated and widely accepted: a continued commitment to traditional principles and practices of high quality, specialized production, making use of Sheffield's abundant supply of cheap, skilled labour and of superior steels, aswell as the city's worldwide commercial reputation. Such production helped to insulate Sheffield from the scrummage with newer competitors for the standardized quality, cheap markets. Moreover, having been founded on high quality principles for generations, production techniques were firmly established and not free to change and develop along the paths taken by foreign competitors new to production.

Reliance on customary practices and values undoubtedly encouraged some retrogressive prejudices and sluggishness. However, unique assets were effectively utilized and marketed, and a specialized demand effectively served. Within the rigorous framework set by competitive capitalism, along with the constraints of 'first industrial nation' status, manufacturers policies were moderately rational and flexible.

In turn, this lends a different perspective to the contentions that this period saw the 'final', 'rational', 'necessary' and even

'inevitable' transformation of Britain's industrial structure, from handicraft to modern organization.[2] The structure of the Sheffield trades - the continued coexistence and linkage of large firms, sweated outworkers, independent craftsmen, merchants and factors - was partly a remnant of the industry's past, but also a response to its preferred commercial strategy. A huge range of quality, one-off goods could best be secured by reliance on a combination of basic mechanized production, cheap, highly skilled, hand-labour, and teams of sweated outworkers who performed highly subdivided operations. By a complex interlinkage of these various handicraft and modern production techniques, the necessary variety of goods was produced - high and lower quality, short and long runs - without enormous investment in plant and machinery. Such flexibility was necessary in an industry subject to such marked fluctuations in demand.

If its industrial structure failed to conform to generalized theories of 'modernization' so too the organization of work and industrial relations in the cutlery trades continued to reflect the dominance of traditional production techniques and values, and the pivotal role of the craftsman in production. Industrial relations did not show any marked move to more formal procedures, direct and real managerial control, or the formation of a reasonably cohesive, homogeneous labour movement. Cooperation, conciliation, paternalism, guild-like regulation and occasional small-scale, disorganized disputes continued to dominate bargaining procedures. This was the natural outcome of the chronic sectionalism and overcompetition affecting both employers and labour, but also based on traditional understandings, the similarity of outlook which bound together the 'respectable' sections of the trade, and the continued absence of any major gulf between most employers and their men.

This study demonstrates the inexactitude and even misapprehensions resulting from descriptions of industries as integral structures composed of united fronts of labour and capital. The outstanding characteristic of the cutlery industry was its extreme fragmentation.[3] No single product was manufactured, nor even a standard range. Neither workforce nor management possessed a collective consciousness which informed the outlook of all.

Sectionalism was related not simply to the fragmentation of the physical enviroment, or even to the differing sub-industries and sub-occupational groups, but also to a variety of skills and 'respectability' hierachies and gender divisions, which hardened when confronted by the problems and uncertainties of changing demand and technical developments. This sectionalism was rooted in traditional values and past experiences. For example, the old craft sectionalism and elitism of the independent craftsmen constantly hampered attempts to make trade societies more inclusive and accordant with their changing enviroment.

Finally, this research has attempted to illuminate further the importance of the relationship between the work experience and wider social and cultural relations. The omnipotence and omnipresence of the large factory in such single industry areas as the Lancashire cotton towns has been long recognised and accepted.[4] However, the relationship between a handicraft and the values of its members, particularly in larger towns with more varied industrial structures, has attracted far less attention. In the cutlery trades, work exercised as great an influence on the everyday life, mentality and aspirations of its members as it did in the Oldham cotton mills. The division between skilled and unskilled, union and non-union, 'respectable' and 'dishonourable' men was mirrored in their social standing. The gulf was rooted in work experiences. Equally, the small-scale of the industry, the intense competition and commensurate absence of large fortunes helped to ensure the proximity of most manufacturers to their men. Moreover, the common and long-standing respect of traditional values - quality, craftsmanship, commercial respectability - strengthened this shared ground. Industrial and communal identification were rooted in craft values to such an extent that social and cultural understanding reinforced their industrial counterparts.[5]

Central and recurring themes in this study have been the industry's pride in and respect for skilled craftsmanship and an esteemed commercial reputation. However, the steady shrinkage of the luxury cutlery market and the skilled labour force was difficult to deny or avoid. Neither was it possible to ignore the increasingly perfected mechanized production techniques, fully exploited by foreign competitors. Nonetheless, the resilience of traditional

values and forms of production ensured their survival, albeit in a diminished role, to the present day.

Between 1914 and 1960,[6] the high quality cutlery market contracted, whilst German and American producers saturated the demand for cheaper goods. By 1944, the labour force had declined to only 3,000, 50% of which was female.[7] Most workers were semi-skilled; few boys could be persuaded to enter into long and often unsystematic apprenticeship, in such dirty, unhealthy and poorly paid trades.[8] Unions remained small, craft jealous and parochial, wary of such federations as the N.U.G.M.U., in which their purely local concerns might be submerged.[9] Improved conditions and payment were secured only in periods of buoyant trade, or when national legislation, such as that effecting a minimum wage in 1934, stipulated and enforced such advances. Although production gravitated slowly towards larger factory units, large-scale mechanization remained rare, whilst interlinked networks of tenement factories and workshops, housing small masters and outworkers, were still commonplace.[10]

If the structure of the industry underwent only slight changes, the transformation of its ethos, or at least the public image it chose to present, was an even slower process. The value of a craftsman's 'know how' and hard won craft expertise inhibited the communication and implementation of technical developments.[11] Apprenticeship was publicly acclaimed and schemes devised to attract more trainee craftsmen.[12] Trading prospects continued to be evaluated in terms of demand orientated factors,[13] whilst it was still as a producer of high quality goods with detailed specifications, that Sheffield chose to market itself.[14]

By the late 1960s Sheffield faced enormous competition from the cutlery producers of Japan, Hong Kong and Korea, whose cheap and medium quality, well-packaged, stainless cutlery was flooding the European market. By the early 1980s, Far Eastern producers had taken over 90% of the Western European cutlery market.[15] Initial reactions were predictable. Import quotas were demanded by Sheffield's manufacturers, but internal feuding reduced the impact of the industry's plans.[16] The value of quality, highly specialized cutlery was reiterated,[17] whilst false marking by disreputable

Sheffield traders and Far Eastern manufacturers was once more described as a fundamental source of the industry's problems.[18]

Responses to these worsening circumstances entailed greater mechanization and the development of more rationalized, integrated, technologically advanced factories. One such firm chastised its traditionally minded counterparts: it was now necessary to produce a "good value-for-money product, on time and ahead of schedule. British industry has never learnt that lesson. It rested on its laurels - on its assumed quality."[19]

However, alongside such modern, aggressive companies, long-established, small-scale technically unsophisticated enterprises still survive. With a few skilled craftsmen and only very basic machinery such enterprises compete effectively for the highest quality market.[20] Although ever fewer in number, hand forgers and grinders are still advertised for in the local press; and in back streets around the city centre, ageing craftsmen still produce cutlery by techniques and in surroundings little different from those of 1880.

This thesis has taken only a cursory glance at the cutlery industry after 1914. It is hoped however, that it has illuminated many of the relevant themes and provided a background which will stimulate others to examine later developments or the lack of them. Similarly, the 'heavier' cutlery trades, and the silver plating industry, neither of which are covered in this study, are worthy of further research. There is room too for a comparative analysis of the industry abroad, particularly in Germany, France and America - Sheffield's strongest competitors over this period.[21] Finally this detailed new research should stimulate some revision of the traditional view of the relationship between 'light' and 'heavy' metal trades in Sheffield, in which the cutlery trades have been represented as the 'backwards looking' and 'declining' sector.

On a broader plane, this study is offered as a contribution to the continuing re-evaluation of the economic and social history of this period. In this respect, it is hoped that it will be relevant to and representative of the historical experiences of other industries in other towns. Like recent studies of the flint glass trade, the Staffordshire potteries and the London tailoring trades,[22]

this research should further redress the historical balance away from generalizations based on the experiences of British industry as a whole, or large-scale, national industries. Only in this way can full and just attention be given to such important themes as the extent of and reasons for the survival of traditional production techniques, without the prejudices which have automatically cast such developments as symptoms of 'backwardness' or 'entrepreneurial failure'.

Footnotes

1. See chapters 2 and 3.
2. See chapter 4.
3. See chapters 5 and 6.
4. See, for example, P. Joyce, Work, Society and Politics, J. Foster, Class Struggle and the Industrial Revolution.
5. See chapter 8.
6. For futher details, see S. Pollard, History, pp. 289-309; Industrial Conditions in the Cutlery Trades, 1946; Working Party Reports, Cutlery, G. P. Jones and H. Townsend, 'The Rise and Present Prospects of the Cutlery Trades', International Cutler, Feb. 1953, vol. 3, pp. 18-21; H. Townsend, 'Economic Theory and the Cutlery Trades', Economica, Aug. 1954, vol. 21, pp. 224-239.
7. Industrial Conditions in the Cutlery Trades, 1946, section 31.
8. Training usually comprised " a very slow acquisition of skill, after much brewing of tea", G.P. Jones and H. Townsend, 'The Rise and Present Prospects', p.20.
9. S. Pollard, History, pp. 297-302.
10. S. Tel, 5.1.1938; Industrial Conditions in the Cutlery Trades,1946, sections 23-4; Metal Industry, Feb 1920, p.105.
11. H. C. Baker and S. Mitchell, 'Factors Affecting Technical Progress in the Cutlery Industry', pp. 54-53.
12. British Steelmaker, Sept. 1946, p.462; Quality of Sheffield, Dec. 1960, p.37.
13. G.P. Jones and H. Townsend, 'The Rise and Present Prospects', p.21, the price of Australian wool and the success of commemorative coronation novelties were specified as central to the good trade of 1953/4.
14. Quality of SHeffield, Feb. 1937, vol. VIII, p. 196; ibid., March 1937, p.238; ibid., Nov. 1936, p.62; W.G. Ibberson, 'The Good Name of Sheffield', International Cutler, Feb. 1953, vol. 2, pp. 7-8; H. Townsend, 'World Trade in Cutlery 1920-1951', International Cutler, vol. 2, no. 4, 1952, pp. 10-12; no. 5, pp. 14-17.
15. The Guardian, 19.7.1986.
16. Quality of Sheffield, May/ June, 1978, p.43; Financial Times, 25.8.1970,

"It's costly , but more and more people want to live graciously." Ibid., 24.8.1976, 17.7.1973; the Guardian, 11.10.1972.

18. Financial Times, 20.2.1978, p.3; Hardware Trade Journal, 13.11.1980, p.3; the Star, 7.11.1986.

19. The Guardian, 19.7.1986.

20. Ibid. The Guardian visited two Sheffield firms: Richardsons, the 'high tech.' kitchen knife producers, and Walter Tricketts, a small family business established in 1876, " less than a mile from Richardsons, but light years away in approach and philosophy. Yet it too has survived."

21.See for example, Lloyd, pp. 351-395 ; C.Page, La Coutellerie; Martha Van H. Taber, A History of the Cutlery Industry in the Connecticut Valley, Northhampton Mass., 1955.

22. T.Matsumura, The Labour Aristocracy Revisited; R. Whipp, ' Work and Social Consciousness'; J.A.Schmeichen, Sweated Industry and Sweated Labour.

Appendix 1: Number, Age and Sex of Cutlery Workers 1870-1914

There are substantial difficulties in estimating the number of workers employed in these trades, not least the disparity between the various enumerations, particularly census data which implied a relatively stable and steady level of employment, and contemporary oral accounts (e.g. newspapers and evidence of witnesses before Royal Commissions) which implied a marked and continuous fall.

A problem with the census data is the unsuitability of the cutlery trades to such strict classification. Employment was rarely full-time, for one and the same firm, for long periods, some workers still practised dual occupations, outworkers and families of cutlery workers moved in and out of employment as the state of trade demanded. It was broadly for these reasons that the Chamber of Commerce felt the exact registration of the factories and workshops in Sheffield to be futile and even misleading.[1]

Equally, the precise definition of a 'cutlery worker' was subject to wide variations. Sometimes it included filemakers, sickle and scythe makers, saw makers, sometimes apprentices, sometimes only males over 20 years.

There is general agreement that in 1851, there were approximately 11,000 people employed in the trades, and virtually all were males.[2] In 1871, the census enumerated 11,749 "cutlers and scissor makers" over the age of twenty.[3] Lloyd, using a broader definition which included makers of shears, sickles and scythes, identified 15,109.[4] It would appear therefore, that in the trades with which this thesis is concerned, there was a relatively small increase in employment over this period. Statistics given in the Royal Commission on Employment of Children 1865 implied similar conclusions, but with a slight decline in employment in some trades.[5] A large decline in numbers was experienced by table and butchers blade makers between 1852 and 1872[6] which would again confirm this trend. By 1891,evidence becomes more contradictory. The 1891 census enumerated 14,555 cutlers and scissor makers, a similar number to that estimated by Pollard.[7] Lloyd,[8] using a broader definition estimated 16,355 workers, which allowing for the extra trades considered, would again imply about 14,000 workers - an increase of about 2,000 on the level of 1871. However, these figures appear to be contradicted by other statistical sources. The Webbs'data, and statistics given before the 1894 Royal Commission on Labour, correlate very closely with each other, but are significantly lower than other accounts.[9] Similarly, the table and butchers knife hafters stated that membership had fallen considerably over the previous 20 years,[10] as did the table blade forgers and strikers,[11] and the pen and pocket blade forgers.[12] However, this could be explained by the fact that it was not until the early 1890s, with the effects of the McKinley tariff and trade slump that there was any

major decline in employment. But in some trades, oral evidence suggests a significant decline in employment at an earlier date. In the scissor trades, for example, after the strikes of 1876 the number of men involved fell so sharply that these trades were experiencing labour shortages by 1890.[13] Similarly, it was reported in 1889 that there was no influx of labour into the trades, and infact, "the merest labour" would not "look to the cutlery trades, not in the lowest branches of it"[14] The early 1890s were years of chronically bad trade when the number employed experienced a large fall[15] but the 1901 and 1911 censuses still placed the number employed at over 14,000.[16] However, in view of the constant reports in the local newspapers and the Labour Gazette, it seems that apart from in boom years, the number of workers was undergoing a constant decline after 1875,[17] whilst Pollard, using a similar definition to that applied in this thesis, found there to be only 11,850 cutlery workers in 1911, compared with 14,000 in 1891.[18] With regard to the separate branches of the cutlery trades, the declining employment opportunities in certain branches was again more marked than in others. The decline was most marked in the steel fork, scissor and pen and pocket knife trades, but much less severe in the razor and table knife trades. Evidence of this decline is corroborated by the declining number of firms which were operating in each of the cutlery branches.[19] The number of spring knife workers, like the number of spring knife firms, declined most rapidly after 1900, but still remained the most important cutlery branch, whilst the number of workers and firms producing table knives fell less sharply, until in 1906 there were virtually as many firms producing spring knives as table knives. For the razor, scissor and fork trades, the correlation between the declining number of workers and the declining number of firms is less precise, but this can be explained by the fact that firms rarely produced these items alone, normally making them in conjunction with spring or table cutlery.

With regard to the sex distribution of cutlery workers, the number of females increased markedly, but was not a sizeable proportion of the work force until after 1890 although this could have been because they were usually found part-time, domestic worker and therefore more likely to escape the census net. Lloyd found the number of female cutlery workers, as a percentage of all cutlers, to be 7%, 11% and 14% in 1871, 1881 and 1891 respectively.[20] However, after 1890, as mechinization increased and alternative, more lucrative employment prospects in the heavier trades lured young men away from the cutlery trades, the number of women employed increased rapidly. In 1901, there were 2,423 women employed, 16% of the total workforce,[21] whilst in 1911 this had increased to 2,692, accounting for 18% of the total workforce.[22] However, women were very rarely employed in the heavier forging or grinding trades,

but in lighter, daintier, poorer paid domestic branches of the industry,[23] or else in warehousing or packaging.[24]

The age distribution of cutlery workers also varied according to their sex, and illustrates that the trades were becoming low paid, relatively undesirable occupations. Between 1871 and 1891, the number of women under 20 years increased from 40% to 47% of the female workforce; the number of males under 20 years remained at around 19%.[25] Whilst the number of children declared as employed remained static and negligible,[26] and the number of young persons under18 remained at around 18% of the total workforce, young women were increasing most rapidly, as a percentage of the workforce under 18 years, as a percentage of the female workforce, and as a percentage of the total workforce.[27]

The proportion of older men and women employed in the cutlery trades remained fairly stable between 1871 and 1891. 25% of the male workforce was over 25, and 12% of the female.[28] By 1901, whilst only 8% of female cutlery workers were aged over 45 years, 30% of male workers were over 45.[29] This can be partly explained by the persistence of piecework in the cutlery trades which reduced the need to dispense with elderly and slower workers, and also, low wages which meant that whilst young men were not entering the trades, older cutlers, who received such low wages experienced poverty which necessitated their continuation at work for as long as possible. The statistics suggest that cutlery work for females was, to a significant extent, limited to young women who wanted to earn before they married and 'settled down'. It was virtually universal practice amongst the larger cutlery houses to employ women straight from school but to dismiss them once they were married.[30]

The vast majority of cutlery workers in the U.K. were employed in Sheffield: in 1895, W.Yorkshire accounted for 97% of all cutlers in the U.K.[31]

Thus, the overall picture of the workforce engaged in the production of cutlery is of a declining number of workers, comprising an ever increasing proportion of low pay category producers, particularly older men and young women.

Footnotes

1. Chamber of Commerce Records, 1870, S.C.L.,L.D.1986/1, p.182. For a discussion of the difficulties presented by census data, see R.Lawson (ed.), The Census and Social Structure: An Interpretative Guide to Nineteenth Century Censuses for England and Wales, London, 1978, and E.A.Wrigley (ed.), Nineteenth Century Society: Essays in the Use of Quantitative Methods for the Study of Social Data, London, 1977.

2. S.Pollard, History,p.331; Lloyd,p.435.

3. P.P. 1873,LXXI, Census of England and Wales, 1871, c.872, p.484

Occupation	Number of Males over 20	Number of Females over 20
Cutler	10,296	389
Scissor maker	829	236
Total	11,124	625

4. Lloyd, p.435.

5.

Trade	Number Employed 1851[a]	Number Employed 1867[b]
Razor grinder	450	385
Table blade grinder	1,000	900
Table blade hafter	1,700	1,600
Spring knife cutler	2,800	2,700-3,100

a. S.Pollard,History, p.331

b. P.P. 1865,XX,J.E.White's Report, cases 38,39(p.20), 201(pp.43-4),203(p.45).

6. Webb Mss. p.139 : 1852, 1,700 employed; 1872, 1,100 employed.

7. S.Pollard, History, p.435.

8. Lloyd, p.435.

9.

Trade	Webbs 1891[a]	Pollard 1891[b]	R.C.on Labour 1892[c]
Table & Butchers Blade Hafter	650	1400	
Table Blace Grinder	1,050	1400	900-950
Table Blade Forger & Striker	1050	1400	900-950
Pen & Pocket Blade Forger	300	550	350
Razor Hafter	330	550	250
Razor Grinder	260	200	-
Scissor Grinder	420	450	-
Scissor Forger	230	400	200
Steel Fork Maker	130	200	220

a. Webb Mss. pp.138, 145, 176, 191, 196, 200, 204, 214, 256, 275, 312, 320, 335, 369.

b. S.Pollard, History, p.332.

c. P.P. 1892,XXXVI, R.C. on Labour, pp.13-16.

10.Webb Mss. p.139.

11.Ibid., p.275 : 1846, 768 employed; 1891, 330 employed.

12.Pen and Pocket Blade Forgers' minutes, p.7

1872 = 270 in the union

1893 = 234 in the union

1902 = 230 in the union

13.See chapter 2,p.40.

14.P.P.1889,XIII, S.C.on the Sweating System, W.J.Davis, q.25383.

15.P.P.1896,XIX, Factory Inspector's Report,(1895), p.319.

16.P.P.1902,X,Census of England and Wales,(1901),cd.1125,p.250; P.P.1913,LXXXIX,Census of England and Wales,(1911),cd.7019,p.681.

17.See chapter 2,p.53; chapter 5,p.156; P.P.1907,X,Factory Inspector's Report,(1906) p.75; S.Pollard,History, p.332.

18.

Trade	Number Employed 1908—1911					
	Forgers & Strikers	Grinders	Hafters	Others inc. Warehouse	Total	% of 1891
Spring Knife	550	700	3,100	350	4,700	81
Table Knife	750	900	2,400	450	4,500	93
Razor	250	450	250	350	1,300	90
Scissor	200	250	-	650	1,100	81
Steel Fork	100	150	-	-	250	45

Source: S.Pollard, History, p.333; The Metal Worker, vol.III,1909,p.126. P.P.1908,III,Committee on the Truck Acts,R.Holmshaw, q.12056; Lloyd,pp.450-451.

19.See appendix 2.

20. Lloyd, p.435.

21.P.P..1902,X,Census of England and Wales,(1901),p.250.

22.P.P.1913,X,Census of England and Wales,(1911),p.681.

23.

Occupation	Number of Women Employed in 1867
Razor Grinder	None
Table Blade Grinder	None
Table Blabe Hafter	150
Spring Knife Cutler	"few"

P.P.1865,XX, J.E.White's Report,cases 38,39(p.20), 198(p.43), 201(pp.43-4);P.P.1873,LXXI,Census of England and Wales,(1871),p.484,4% of cutlers were women, but 22% of scissor makers were women; P.P.1892,XXXVI, R.C. on Labour, W.Wardley, qs.19293,19299,19371-2; Lloyd, pp.450-1.

24.P.P.1910,VIII, R.C. on the Poor Laws, A.J.Hobson,q.88408; P.P.1892,XXXIV,R.C. on Labour, A.Fretwell,qs.19682-4; P.P.1908,XXXIV, Fair Wages Committee, G.H.Shaw,qs.2612-6.

25.Lloyd,pp.434-5.

26.P.P.1896,XIX, Factory Inspector's Report,(1895),p.319.

27.In1895,girls and boys under 18 years accounted for 16% of the total workforce in factories, and 21% in workshops. However,girls under 18 years accounted for 25% of the total female workforce, whilst boys under 18 comprised only 16% of the total male workforce,P.P.1896,XIX,Factory Inspector's Report,(1895),p.225

In 1907, 18% of the workforce was under 18 years of age, but girls accounted 7% of the total workforce and 32% of the female workforce. Boys comprised 14% of the male workforce and 11% of the total workforce, P.P.1912,CXI,Census of Production,(1907),p.202.

By 1911,18% of the total workforce was still under 18 years, but the proportion of girls was now 9% of the total and 47% of the female workforce, whilst boys comprised 15% of the total and 18% of the male workforce, P.P.1913,LXXXIX,Census of England and Wales, (1911), p.681.

28.Lloyd,pp.434-5.

29.Ibid., H.C.Baker and S.Mitchell,'Some Factors Affecting',p.45.

30. P.P.1912,II, Report of the Committee on Outworkers,W.Hobson, qs.4172-200.

31.P.P.1896,XIX,Factory Inspector's Report,(1895),pp.225-6 :

Number of Cutlers Employed in	
W. Yorkshire	13410
England and Wales	13727
Scotland	20
Ireland	11
United Kingdom	13756

Appendix 2: The Structure of the Industry

The following data is based on an examination of White's trade directories for the years 1871, 1884, 1896, and 1906. Manufacturers of cutlery products were classified, counted and analysed according to their type variety or specialization of production, and their rate of survival. Whilst Directories have generally been regarded as a quite accurate and precise source of information on the number of firms and their type of production,[1] their usefulness in the Sheffield cutlery trades is less reliable because of the rapid turn-over of little masters, many of whom would not have been large enough to afford or warrant an entry in a directory. Bearing these limitations in mind, it was found that the number of firms increased markedly between 1870 and the mid-1880s, and then declined back to its 1870 level by 1906, although the decline was much more pronounced in some branches than others. Specialization according to product type continued to be the rule throughout this period, although long established surviving firms were more likely to be producers of a wide variety of products. Firms were slow and reluctant to adopt limited liability status, or to establish offices elsewhere in the U.K. or abroad, such advances being largly limited to established producers of a wide range of cutlery.

The Number and Survival Rate of Cutlery Firms

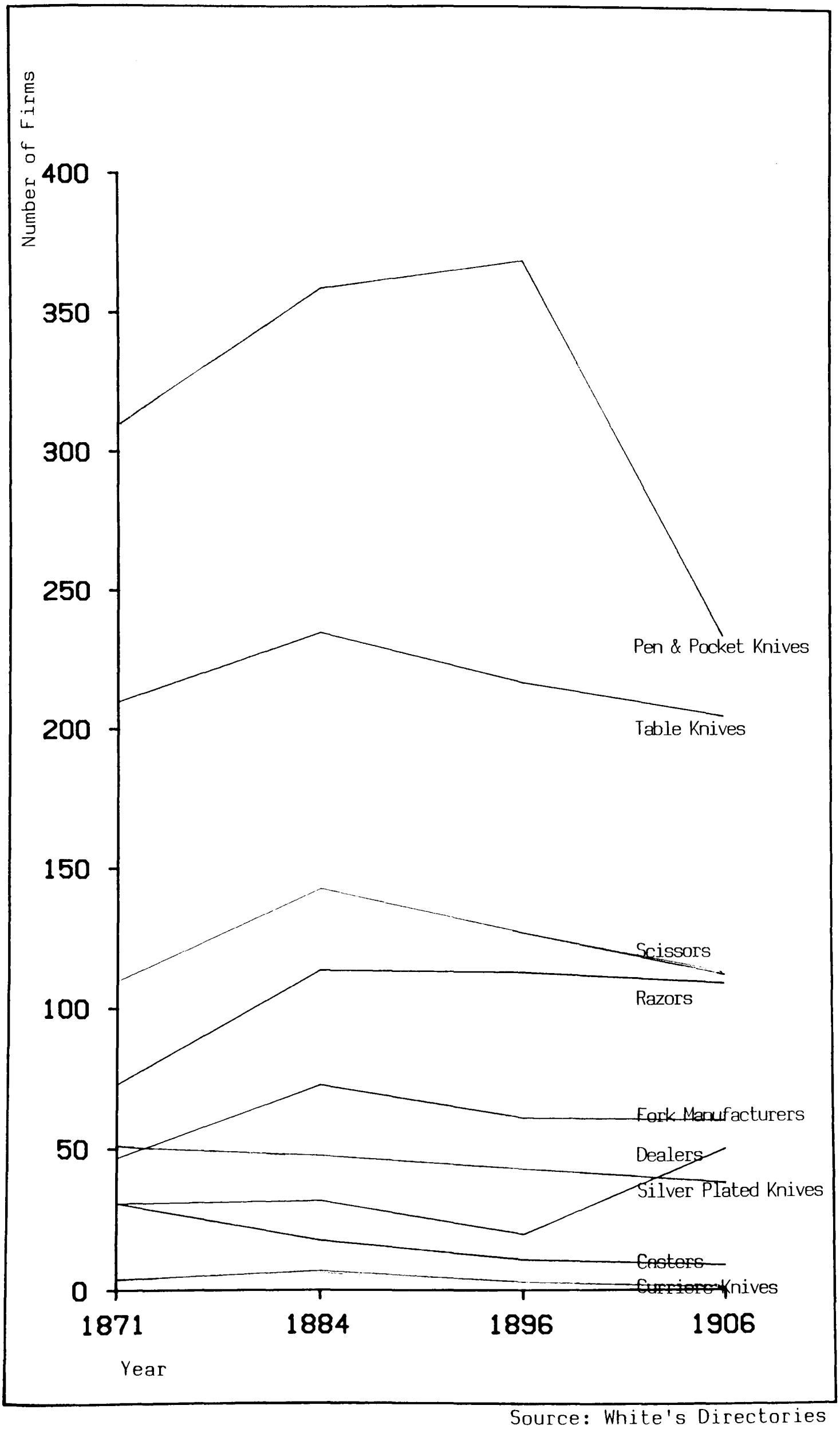
(See Graph 1 and Table 1.) The period 1871-84, under the stimulus of the exceptionally good trade of the early 1870s, witnessed a marked expansion in the number of firms producing most types of cutlery, and this was accompanied by reasonable rates of survival. Between 1884 and 1896, the number of firms declined slightly, as did survival rates, a trend which continued 1896-1906. By 1906 the total number of firms had virtually returned to its 1871 level. Survival rates were lowest in the 1880s, when the number of firms was at its largest. 42% of all cutlery firms survived from 1871-1884, 22% of these were still present in 1896, and 17% of these survived to 1906. Producers of spring and table cutlery were considerably more numerous than scissor or razor producers, whilst relatively, a very small number of firms produced the remaining more marginal products. The decline in the number of production units was most marked in the spring cutlery trade, (the largest of cutlery branches) and in the very specialized branches, but virtually all branches production experienced some decline over this period.

Specialization in the production of Cutlery, According to Product Types

(See tables 2 (i),(ii),(iii),(iv) and 3.)

Throughout this period, a majority of cutlery firms (60%+) produced only one type of cutlery, although more varied production was increasing. Between 1884 and 1896, a

Graph 1 The Number of Firms Producing Various Types of Cutlery 1871-1906.



Source: White's Directories

majority of table knife, scissor and razor producers began to manufacture more than one type of cutlery, but after 1896 there was little further increase in this trend. However, most firms which did produce a variety of types of cutlery produced only two types (40% of all the producers of two or more types of cutlery), very few produced three or four types (only half the number who manufactured two types) and at least five firms manufactured five or more types of cutlery. However, it seems likely that many firms which produced a variety of goods would buy them from a wide range of small specialized manufacturers and not actually manufacture them. (See chapter 4) Specialization was predictably more pronounced amongst producers of more marginal goods e.g. fork makers and casters, who often worked outside the city and used specialized production techniques. The manufacture of just one type of cutlery was especially common betweem 1871 and 1884, when improved trade encouraged many working cutlers to establish themselves as specialized producers. The most common form of combined cutlery production was that of spring cutlery with other branches, especially the other major branches - table knives, razors and scissors. (See tables 4 (i), (ii),(iii),(iv) and 5(i),(ii),(iii),(iv).) The combination of the production of spring and table cutlery was especially widespread, whilst combined production was virtually non-existent amongst manufacturers of the more specialized branches of cutlery.

The Survival Rate of Cutlery Producers

i) With Rerference to the Level of Specialization of Production. (See table 5.)

97 firms survived throughout the whole of this period. 55% of these manufactured just one type of cutlery throughout this period, 13% produced two types cutlery (always the same two throughout) and 6% of producers manufactured four types of cutlery or more - a much larger percentage than in the general sample of all cutlery producers. Most of the firms who produced a wide range of cutlery survived throughout this period. However, the general trend amongst firms that survived, was towards specialization: many reduced the range of goods they produced but very few increased their range. Firms which produced highly specialized goods (e.g. two fork manufacturers and a currier and tanners knife manufacturer) could still thrive throughout this period. As in the analysis of all cutlery producers, surviving firms that did not specialize were most likely to produce a combination of spring and table cutlery.

ii) With Reference to the Possession of Premises Abroad or Elsewhere in the U.K. (See table 6.)

Although this survey is inaccurate because of the failure of firms to give systematic details of all their offices to the compilers of trade directories,[2] it is still clear that only a very small number of firms invested in the running of branches

other than their Sheffield bases. Only two firms were listed as having offices outside Sheffield in 1871, and they were both long-established producers of a wide range of cutlery. This number had increased to 29 firms by 1884, half of which were survivors throughout the whole of the period under consideration, and 40% of which produced a variety of more than three types of cutlery. However, 1871-84 marked the peak of the establishment of branch offices, as by 1896 only a further 7 companies undertook such expansion, giving a very small maximum of only 30 firms with bases outside Sheffield.

iii) With Reference to the Incidence of Limited Liability Companies. (See table 7.)
The number of firms which took advantage of limited liability legislation was again very small, but the idea was even slower to gain popularity than that of establishing branch offices. There were no limited companies in 1871, and only four in 1884, all four being survivors throughout the period and producers of a wide variety of cutlery. Four more limited companies were established 1884-96, two surviving to 1906, and three producing more than two types of cutlery. Between 1896 and 1906 however, 23 new firms became limited companies, making 80% of all those in existance in 1906 established after 1896. Both survival rates and variety of production were considerably higher amongst limited companies than amongst the gerneral sample of all cutlery producers.

iv) With Reference to Firms who Designated their Premises 'Works'. (See table 7.)
On examining trade directories, it becomes clear that the term 'works' does not necessarily indicate a factory or other large establishment, owned and worked by one large company, in which a number of people were employed. 'Works' were often just a collection of workshops, rented out to a number of small and diverse producers: the Exchange works on Egerton St. were occupied by seven cutlery producers who were included in the 1871 trade directory. Several large firms which occupied works rented off much space to small producers. In 1884 George Butler & Co. occupied the Trinity works with four other firms which were included in the 1884 trade directory, including the prestigious and long-established firm of George Gill & Co. Moreover, many of the largest and most reputable firms with spacious and impressive premises, had sigularly unimpressive addresses, e.g. J. Nowill & Sons of Scotland St.

As the number of 'works'peaked markedly between 1871 and 1884, the styling of premises as such could have been partly a fashion associated with the general expansion and confidence of this period, especially as the term was later dropped by many producers. Moreover, if the term is correctly to be associated with increased capitalization and forward looking management,[3] it would be expected that there would

be a strong correlation between limited companies, firms who operated branch offices outside Sheffield, and the occupiers of 'works'. However, only 14 of the 23 limited companies in existance in 1906 operated from premises designated 'works'; and only seven of the twenty firms with premises outside Shefield in 1906 operated from premises designated 'works'.

Footnotes

1. R.Floud, The British Machine-Tool Industry 1850-1914, pp.7-8.
2. E.g. The Ironmonger, 31.1.1871, p.5. Joseph Rodgers had offices in London, New York, Montreal, Toronto, Calcutta, Bombay and Havanna. White's trade directory, 1871 mentions only London.
3. J.Baxter, 'The Origins of the Social War', p.397.

Table 1. The Number of Firms in Each Branch of Cutlery Production and their Survival Rates 1871-1906.

	Total Number of Firms				% Survival Rate of Firms					
Type of Cutlery Firm	1871	1884	1896	1906	1871-1884	1871-1896	1871-1906	1884-1896	1884-1906	1896-1906
Pen, Pocket & Sportsmen's Knives	310	359	369	234	43	24	15	41	27	42
Table Knives	210	235	217	205	49	26	18	45	32	57
Scissors	110	145	133	128	49	33	27	52	38	64
Razors	73	114	113	109	60	43	36	60	42	61
Forks	45	73	61	60	20	9	4	55	33	62
Casters	31	32	11	9	29	-	-	11	6	64
Dealers	31	32	20	50	13	6	6	13	6	20
Curriers' & Tanners' Knives	4	7	3	1	75	25	25	14	14	33
Silver Plated Dessert Knives	51	48	43	38	45	22	22	35	27	60

ables 2 (i),(ii),(iii),(iv) The Number and Percentage of Firms and Occupiers of 'Works' ho Produced Either One Class, or More than One Class of Cutlery, 1871-1906.

able 2 (i) 1871

ype of utlery	Total Firms	'Works'	Other Firms	Total Firms	As % of Total Firms	'Works'	Other Firms	Total Firms	As % of Total Firms
		Producing 1+ Class of Cutlery				Producing 1 Class of Cutlery			
P.P.	310	17	72	89	29	30	191	221	71
T.K.	210	14	65	79	38	20	111	131	62
Sci.	110	6	29	35	32	4	71	75	68
Raz.	73	12	42	54	74	1	18	19	26
Sil.	51	2	17	19	37	2	30	32	63
Deal.	31	-	-	-	-	-	31	31	100
C.& T.	4	1	-	1	25	-	3	3	75
C.C.	31	-	9	9	29	-	22	22	71
F.M.	47	1	7	8	17	1	39	40	83

able 2 (ii) 1884

Type of Cutlery	Total Firms	'Works'	Other Firms	Total Firms	As % of Total Firms	'Works'	Other Firms	Total Firms	As % of Total Firms
		Producing 1+ Class Cutlery				Producing 1 Class of Cutlery			
P.P.	359	77	65	142	40	54	163	217	60
T.K.	235	79	67	146	62	36	53	89	83
Sci.	143	51	31	82	57	8	53	61	43
Raz.	114	54	40	94	82	3	17	20	18
Sil.	48	6	11	17	35	9	22	31	65
Deal.	32	3	5	8	25	3	21	24	75
C.& T.	7	1	2	3	43	3	1	4	57
C.C.	18	-	1	1	6	-	17	17	94
F.M.	73	5	2	7	10	3	63	66	90

able 2 (iii) 1896

Type of Cutlery	Total Firms	'Works'	Other Firms	Total Firms	As %of Total Firms	'Works'	Other Firms	Total Firms	As %of Total Firms
		Producing 1+ Class of Cutlery				Producing 1 Class of Cutlery			
P.P.	369	50	93	143	39	24	202	226	61
T.K.	217	48	81	129	59	10	78	88	41
Sci.	127	26	56	82	65	5	40	45	35
Raz.	113	37	55	92	82	2	19	21	18
Sil.	43	8	11	19	44	2	22	44	56
Deal.	20	-	4	4	20	1	15	16	80
C.&T.	3	-	-	-	-	2	1	3	100
C.C.	11	-	-	-	-	1	10	11	100
F.M.	61	3	2	5	8	4	52	56	92

Table 2 (iv) 1906

Type of Cutlery	Total Firms	'Works'	Other Firms	Total Firms	As% of Total Firms	'Works'	Other Firms	Total Firms	As% of Total Firms
		Producing 1+ Class of Cutlery				Producing 1 Class of Cutlery			
P.P	234	48	66	114	49	29	91	120	51
T.K.	205	48	62	110	54	22	73	95	46
Sci.	112	27	37	64	57	4	44	48	43
Raz.	109	37	42	69	63	7	33	40	37
Sil.	38	6	11	17	45	3	18	21	55
Deal.	50	5	7	12	24	1	37	38	76
C.&T.	1	-	-	-	-	1	-	1	100
C.C.	9	-	-	-	-	-	9	9	100
F.M.	60	2	4	8	13	6	46	52	87

Table 3 The Number of Firms Making 2,3,4,5 and 6 Varieties of Cutlery 1871-1906.

Number of Types Made by Firms in 1871					Number of Types Made by Firms in 1884					Number of Types Made by Firms in 1896					Number of Types Made by Firms in 1906				
2	3	4	5	6^{+}	2	3	4	5	6^{+}	2	3	4	5	6^{+}	2	3	4	5	6^{+}
66	17	19	5	-	70	31	50	5	1	65	33	48	8	1	61	32	33	7	2

Tables 4 (i),(ii),(iii),(iv) The Number of Firms in Each Category of Cutlery Production, who also Made Goods of Another Category.

Table 4 (i) 1871

	P.P.	T.K.	Sci.	Raz.	Sil.	Deal.	C.&T.	C.C.	F.M.
P.P.		66	31	46	15	-	1	1	-
T.K.	66		23	37	15	-	1	1	1
Sci.	31	23		24	8	-	-	1	-
Raz.	46	37	24		10	-	-	-	-
Sil.	15	15	8	10		-	-	-	-
Deal.	-	-	-	-	-		-	-	-
C.&T.	1	1	-	-	-	-		-	-
C.C.	1	1	1	-	-	-	-		7
F.M.	-	1	-	-	-	-	-	7	

KEY

Manufacturer of

P.P. Pen & Pocket Knives

T.K. Table Knives

Sci. Scissors

Raz. Razors

Sil. Silver Plated Fruit and Dessert Knives

Deal. Dealers

C.&T. Curriers and Tanners Knives

C.C. Cutlery Casters

F.M. Forks

Table 4 (ii) 1884

	P.P.	T.K.	Sci.	Raz.	Sil.	Deal.	C.&T.	C.C.	F.M.
P.P.		128	71	85	9	5	2	-	1
T.K.	128		73	82	13	5	2	-	5
Sci.	71	73		66	8	2	1	1	1
Raz.	85	82	66		6	2	1	-	-
Sil.	9	13	8	8		-	1	-	2
Deal	5	5	2	2	-		1	-	-
C.&T.	2	2	1	1	1	1		-	-
C.C.	-	-	1	-	-	-	-		-
F.M.	1	5	1	-	2	-	-	-	

Table 4 (iii) 1896

	P.P.	T.K.	Sci.	Raz.	Sil.	Deal.	C.&T.	C.C.	F.M.
P.P.		118	76	85	10	3	-	-	3
T.K.	118		68	74	15	3	-	-	3
Sci.	76	68		64	8	2	-	-	2
Raz.	85	74	64		7	1	-	-	4
Sil.	10	15	8	7		-	-	-	5
Deal.	3	3	2	1	-		-	-	-
C.&T.	-	-	-	-	-	-		-	-
C.C.	-	-	-	-	-	-	-		-
F.M.	3	3	2	4	5	-	-	-	

Table 4 (iv) 1906

	P.P.	T.K.	Sci.	Raz	Sil.	Deal.	C.&T.	C.C.	F.M.
P.P		95	56	70	6	8	1	-	2
T.K.	95		48	62	14	8	1	-	5
Sci.	56	48		48	5	6	1	-	1
Raz.	69	62	48		5	5	1	-	4
Sil.	6	14	5	5		1	-	-	2
Deal.	8	8	6	5	1		-	-	2
C.&T.	1	1	1	1	-	-		-	1
C.C.	-	-	-	-	-	-	-		-
F.M.	2	5	1	4	2	2	1	-	

Table 5. The Types of Cutlery Produced by Firms that Survived 1871-1906

KEY

1. Pen & Pocket Knives
2. Table Knives
3. Razors
4. Scissors
5. Silver Plated Knives
6. Curriers & Tanners Knives
7. Dealers
8. Fork Manufacturers
9. Cutlery Casters

Name of Company	1884 Type of Cutlery									1896 Type of Cutlery									1906 Type of Cutlery								
	1	2	3	4	5	6	7	8	9	1	2	3	4	5	6	7	8	9	1	2	3	4	5	6	7	8	9
Allen, Jos.		x									x									x								
Atkin Bros.			x									x															
Barnascone & Son.					x									x										x			
Barnsley, G.				x									x										x				
Barber, J. & J.	x									x									x								
Barlow, James.		x	x	x							x	x								x	x						
Barton, S.	x	x								x									x								
Bateman, R.	x									x									x								
Beardshaw, G.		x									x									x							
Bell, J.					x									x										x			
Blyde, E.	x	x								x	x									x							
Brookes & Crookes.	x	x	x	x						x	x	x	x						x	x	x	x					
Brooksbank, A.		x									x									x							
Butcher, W. & S.	x		x							x		x							x		x						
Butler. Geo.	x	x	x	x							x	x	x							x	x	x					
Cadman, T.		x									x									x							
Cassons, T.	x									x									x								
Champion & Co.			x									x									x						
Clarke, J.	x	x	x	x						x	x	x	x						x	x	x	x					
Clegg, H.		x									x									x							
Coe, Jas.	x									x									x								
Copley, J & Sons.	x									x									x								
Cousins, J.			x									x									x						
Cowlishaw, J.				x									x									x					
Crookes, J & Sons.	x		x							x		x							x		x						

Table 5 (contd.)

Name of Company	1884 Type of Cutlery									1896 Type of Cutlery									1906 Type of Cutlery								
	1	2	3	4	5	6	7	8	9	1	2	3	4	5	6	7	8	9	1	2	3	4	5	6	7	8	9
Deakin & Ecroyd.	x	x								x	x								x	x							
Elliott, J.	x	x	x		x					x	x	x								x	x						
Ellis, I.		x									x									x							
Farr, Wm.	x									x									x								
Fenton, Jos.	x	x								x	x								x	x							
Gibbins, J.			x									x									x						
Gill, Geo.	x		x							x		x							x		x						
Gillott, G.	x									x									x								
Gorrill, G.			x									x									x						
Gray, T.			x									x									x						
Hancock, Henry.	x									x									x								
Hancock, S. & Sons.	x	x			x					x	x			x					x	x			x				
Handley Bros.			x									x									x						
Harrison Bros. & Howson.	x	x			x					x	x			x					x	x			x				
Hanson, J.						x									x												x
Hattersley, F.			x									x									x						
Heiffor, J.		x									x									x							
Horrabin, Wm.	x		x							x		x							x		x						
Hunter, M.	x	x	x							x	x	x							x	x							
Hutton, W.				x									x									x					
Jackson, W & Sons.	x	x		x						x		x							x		x						
Johnson, C.	x	x								x									x								
Kerk, J.		x									x									x							
Kitchin, S.	x	x	x							x	x	x							x	x	x						
Lilleyman, T.				x									x									x					
Lingard, R.	x									x									x								
Long & Hawksley.	x	x	x	x						x	x		x						x	x		x					
Mappin Bros.	x	x	x	x	x					x	x	x	x	x					x	x	x	x	x				
Marsh Bros.	x		x								x									x							
Middleton, J & T.				x									x									x					
Morton, J.		x									x									x							
Mosley, R.F.	x	x		x							x		x							x							
Needham Bros.	x									x									x								

Table 5 (contd.)

Name of Company	1884 Type of Cutlery									1896 Type of Cutlery									1906 Type of Cutlery								
	1	2	3	4	5	6	7	8	9	1	2	3	4	5	6	7	8	9	1	2	3	4	5	6	7	8	9
Newbould, J.		x									x									x							
Newton, F & Sons.	x	x	x	x						x	x	x	x						x		x	x					
Nixon & Winterbottom.		x									x									x							
Nowill, J.	x	x	x	x	x					x	x	x	x						x	x	x	x					
Oates, A.	x			x						x			x						x			x					
Parkin, E. & Sons.		x		x							x		x							x		x					
Parkin & Marshall.	x	x	x	x						x	x								x	x							
Pearson, S.	x	x	x							x	x								x	x							
Perigo, J.		x									x									x							
Pitchford, J.			x									x									x						
Platts, Geo.				x									x									x					
Rabjohn, T.				x									x									x					
Ragg, J. & W.	x			x	x					x			x	x								x	x				
Revitt, F.			x									x										x					
Roberts, E. & A.					x									x									x				
Rodgers, J.	x	x	x	x	x					x	x	x	x	x					x	x	x	x	x				
Rodgers, R.	x	x								x	x								x	x							
Round, J.					x									x									x				
Ryall, S.	x	x								x	x								x	x							
Sellars, J.	x		x							x		x							x		x						
Shaw, R.	x		x							x		x							x		x						
Slater Bros.	x									x									x								
South, E.		x									x									x							
Southern & Richardson.	x		x							x		x							x		x						
Stacey Bros.	x	x								x	x								x	x							
Staniforth, W. & T.	x	x								x	x								x	x							
Townsend, F.	x	x								x	x								x	x							
Turner, T.	x	x	x	x						x	x	x	x						x	x	x	x					
Unwin & Rogers.	x	x	x	x						x	x	x	x						x	x							
Walker & Hall.				x									x									x					
Wain, J.		x									x									x							
Wells, Chas.						x									x										x		
Whitley Wm.				x									x									x					
Wilkin, G.				x									x									x					
Winter, R.				x									x									x					
Woostenholm, G.	x	x	x	x							x	x	x	x						x	x	x	x					
																				x							

Tables 6 (i),(ii),(iii),(iv) Firms Occupying Premises Abroad or Elsewhere in the U.K., 1871-1906.

Table 6(i) 1871

Firm	Premises Outside Sheffield	Survivor 1871-1906	Non-Survivor to the Next Period	Occupier of a 'Works'	Non-Specialised Producer
Mappin & Webb	London	x		x	x
Rodgers Jos.	London	x			x

Table 6(ii) 1884

Firm	Premises Outside Sheffield	Survivor 1871-1906	Non-Survivor to the Next Period	Occupier of a 'Works'	Non-Specialised Producer
Atkin Bros.	London	x		x	
Barnascone, L.	Paris	x			
Bishop & Co.	London		x		
Favell, Elliott	London		x		
Gem, E. & Co.	Birmingham				x
Gregory, W.	Manchester		x	x	
Butler, G.	London	x		x	x
Harrison Bros.	London & New York	x		x	x
Haywood, J.	London			x	x
Hunt, G.	Derby		x		
Johnson, C.	London	x		x	
Light, E.	London		x		
Mappin & Webb	London	x		x	x
Moreton, J.	Wolverhampton & London	x			
Moulson, J.	New York		x		
Muller, H.L.	Birmingham		x		
Nowill, J.	London	x			x
Pearson, S.	Hamburg	x			x
Petersen, T.W.	Birmingham		x		

Table 6(ii) 1884 (contd.)

Firm	Premises Outside Sheffield	Survivor 1871-1906	Non-Survivor to the Next Period	Occupier of a 'Works'	Non-Specialised Producer
Rodgers, H.	Wolverhampton	x			
Rodgers, J.	London	x			x
Sellars, J.	New York	x			
Taylor, G.H.	London			x	x
Walker & Hall	London	x			
Ward, F.	New York		x		
Webster, W.	London & Glasgow		x		
Wilkinson, H.	London		x		
Wingfield RowBottam	London				x
Wostenholm, G.	New York, Sidney, Montreal, Cape Town				

Table 6(iii) 1896

Firm	Premises Outside Sheffield	Survivor 1871-1906	Non-Survivor to the Next Period	Occupier of a 'Works'	Non-Specialised Producer
Atkin Bros.	London	x		x	
Barnascone, L.	Paris	x			
Barnes,F.	London & Birmingham		x		
Butlet, G.	London & 'abroad'	x		x	x
Deakin & Sons.	Birmingham			x	
Elliott, J.	Australia, New Zealand, S. Africa, Canada	x			x
Fischer Bros.	Solingen		x		
Gem. E.	Birmingham		x		x
Harrison Bros. & Howson	London & New York	x		x	x
Haywood, J.	London			x	x
Hides, G.	London				x
Johnson, C.	London	x		x	
Mappin & Webb	London	x		x	x

Table 6(iii) 1896 (contd.)

Firm	Premises Outside Sheffield	Survivor 1871-1906	Non-Survivor to the Next Period	Occupier of a 'Works'	Non-Specialised Producer
Moreton, J.	London & Wolverhampton	x			
Nowill, J.	London	x			x
Pearson, S.	Hamburg	x			
Roberts & Belk	London	x		x	
Rodgers, H.	Wolverhampton, London, Liverpool				
Rodgers, J.	London, New York, Sidney, Cape Town, Melbourne, Durban	x			x
Sellars, J.	New York	x			
Singleton & Priestman	London		x		
Taylor, G.H.	London		x	x	x
Walker & Hall	London	x			
Wostenholm, G.	London & 5 'abroad'	x		x	x

Table 6(iv) 1906

Firm	Premises Outside Sheffield	Survivor 1871-1906	Non-Survivor to the Next Period	Occupier of a 'Works'	Non-Specialised Producer
Atkin Bros.	London	x		x	
Barnascone,L.	Paris	x			
Butler, G.	London & 'abroad'	x		x	
Deakin & sons	London & Birmingham			x	
Elliott, J.	Australia, New Zealand, S. Africa,Canada	x			x
Fischer Bros.	Solingen		x		
Harrison, Bros. & Howson	London & New York	x		x	x
Hides, G.	London				x
Johnson, C.	London	x		x	
Mappin & Webb	London	x		x	x
Marrian & Wells	London		x		
Moreton, J.	London & Wolverhampton	x			
Nowill, J.	London	x			x

Table 6(iv) 1906 (contd.)

Firm	Premises Outside Sheffield	Survivor 1871-1906	Non-Survivor to the Next Period	Occupier of a 'Works'	Non-Specialised Producer
Pearson,S.	London	x			x
Roberts & Belk	London	x			x
Rodgers, H.	Wolverhampton, London,Liverpool	x			x
Rodgers, J.	London & 'abroad'	x			x
Sellars, J.	New York	x			
Singleton & Priestman	London				x
Walker & Hall	London	x			
Wostenholm, G.	London & 'abroad'	x		x	x

Tables 7 (i),(ii),(iii) Characteristics of Limited Liability Companies, 1871-1906

1871 There were no limited liability companies.

Table 7(i) 1884

Firm	Occupier of a 'Works'	No. of Types of Cutlery Produced	Survived from this Date to 1906
Butler, G.	x	4	1871
Rodgers, J.		6	1871
Sheffield Industrial & Provident Co.		5	1871
Wostenholm, G.	x	4	1871

Table 7(ii) 1896

Firm	Occupier of a 'Works'	No. of Types of Cutlery Produced	Survived from this Date to 1906
Butler, G.	x	4	1871
Cooper Bros.	x	1	1896
Fenton Bros.		4	1871
Lockwood Bros.		2	
Rodgers, J.		6	1871
Sheffield Industrial & Provident Co.		5	1871
Westby, J.		2	
Wostenholm, G.	x	4	1871

Table 7(iii) 1906

Firm	Occupier of a 'Works'	No. of Types of Cutlery Produced	Survived from this Date to 1906
Allen, J.	x	1	1871
Atkinson Bros.	x	2	1884
Boswell, A.	x	1	
Boswell Hadfield	x	1	
Butler, G	x	4	1871
Clarke, J.	x	3	1871

Table 7 (contd.)

Firm	Occupier of a 'Works'	No. of Types of Cutlery Produced	Survived from this Date to 1906
Cooper Bros.	x	1	1896
Deakin, J.	x	4	1871
Dickinson, J.H.		1	1896
Fenton Bros.		4	1871
Federated Cutlers		5	1871
Green & Green	x	4	1896
Humphreys, W.R.	x	4	1884
Hunter, M.	x	2	1871
Lee & Wigfull		3	1896
Long, H.G.		3	1871
Mappin & Webb	x	4	1871
Maxfield, J.R.		1	
McClory, J.		2	1884
Mills,F.		2	1896
Mosley,R.F.	x	1	1871
Needham,Veall & Tyzack	x	5	1884
Newton, F.	x	4	1871
Nixon & Winterbottom	x	1	1871
Roberts & Belk		1	1896
Rodgers,J.		2	1871
Rodgers, R.		6	1871
Wilkinson Sword		1	1906
Wostenholm, G.	x	4	1871

Appendix 3: A year by Year Account of Trade Patterns in the Sheffield Cutlery Trades, as Described by Contemporary Observers.

Abbreviations

	Where only a date is given, the source of the preceeding information is the Sheffield Independent of that date.
CofC	Chamber of Commerce Minutes
LG	Board of Trade Labour Gazette

1870

The most important factor affecting the cutlery trades was the American demand, which provided an extremely powerful stimulus when it was good, but an equally strong source of depression and general pessimism when bad. (See graphs 4 &5.) The previous season's Christmas tade had been poor because of the dearth of orders affected by the American Civil War.(1.1; The Ironmonger,31.1 p.63) This market remained slack throughout Feb. (19.2) and became even worse in March. Customs officials, insisting that much British cutlery was undervalued, made numerous seizures which caused considerable delay and inconvenience.(26.3; 19.3) Trade was slack, and work closely stinted,(2.4) and even the home demand was poor, causing considerable underemployment, and even some unemployment. Even well-established houses with good reputations who could normally count on fair orders and employment opportunities, when smaller houses were struggling, were short of work. (21.5) Franco - Prussian War stopped the importation of competing German goods into Britain, but did not immediately increase foreign demand for British goods (27.8; The Ironmonger, 31.8 p.742) By Oct., when the Christmas demand was usually beginning to make itself felt, the dearth of American orders seemed as if the Christmas season would be a non-event. Only the best workmen were making a decent livelihood.(22.10) Thus already, the notable distinction between good and less skilled workmen, and equally between well-established and lesser houses was an important determination, the better houses, and better workmen, being assured of more constant employment, even in times of poor trade. The Christmas season started in early Dec.,(3.12) much later than it was to do by the later 19th C. Also in this year, the problem of exchange rates made itself felt, a theme which was to be of continued importance, with reference to Indian demand in particular. By Dec. 1870, the increased rate of exchange had significantly curtailed Indian orders. (3.12) The all importance of the American demand is illustrated by the sudden and unexpectedly heavy influx of orders in early Dec., especially mail orders, which caused the year to end with a remarkable spurt of activity. (10.12; 17.12) Due largely to this demand, many men were working overtime and the year ended with a more prosperous trade than for many years. (17.12) A noticeable feature was the way in which trade could change from bad to good, or vice versa very quickly, and also the conflicting

nature of reports, as the trade was very segregated. For example, houses catering for the home demand, well-established houses or table blade makers, could be well employed whilst poorer quality cutlery producers, sellling to America, could be experiencing a deep depression.

1871

The pressure of orders from the previous Christmas ensured adequate work in the New Year, (7.1) but at the end of Jan., travellers of the various houses began their journeys, (24.1) even though many orders were arriving by letter. By the end of Feb., the distinction between the different cutlery branches was making itself felt: trade was good in the table knives, but not in razors of spring knives. (18.12) This distinction was futher complicated in April, by a better demand for higher quality products than for cheaper ones(15.4; 29.4) but especially from the markets that could afford these luxuries: America and the home market. The problem was pinpointed by The Ironmonger: "Statements as to the condition of the cutlery trades are conflicting. The best established houses are doing a moderate trade, particularly in the better description of goods, but some of the houses producing cheaper qualities are barely able to keep their men going, and prices are very low".(The Ironmonger, 30.9 p.893) Employment in all the cutlery trades improved just before the Easter holidays in anticipation of the break. But by summer, the lack of animation in the American market was leading to widespread fears. America, it was said, was already mass-producing its own spring knives, and was starting to do the same with table knives. By mid-Oct. however, trade was so good that there was considerable impromptu holiday making by the men, (14.10; 21.10) even though late Oct. was between seasons in the American and Canadian markets and trade was usually slacker at this time. (The Ironmonger,30.9 p.893) An indication of the good trade was the numerous demands for higher wages in various trades by Nov.(4.11) A considerable amount of overtime was made in Dec.(9.12) although even at this quite early date,'bull week' was already thought to be a thing of the past. Although this was said to be one of the best 'bull weeks' for many years, fewer works were open all day and all night, and those that were, were chiefly those of little masters, not reputable firms. (The Ironmonger, 30.12 p.1136) Orders still peaked just before Christmas, and in periods of very good trade, many were left over to be completed after Christmas.

1872

Orders were so great that few firms allowed their stocktaking to extend into the second week after Christmas. (13.1) The American demand was again the factor behind this boom, with many American houses receiving orders sufficient to last for several weeks, and making overtime, (27.1) even at this usually slack time of year. The preference was

still for the manufacturer of high quality cutlery: when there was a general abundance of orders, many manufacturers returned orders for common cutlery. (2.3) By May however numerous problems were arising. The assembly of the militia reduced the number of hands available,(4.5) whilst increased wage rates forced price rises, which consequently rended invalid many letter orders quoting former lower prices. (4.5) The production of scissors and razors was kept down by a shortage of hands, and the good trade was believed to induce indolence amongst the mem (11.4) This was accentuated in the May holiday when high wages and an abundance of work encouraged many cutlers to "make a week of it"(25.5; The Ironmonger, 31.8) By June the inflated price of wages and materials caused increased disparity between production and selling prices, as many manufacturers were afraid to pass on price rises to the customer. The higher quality houses with a good reputation found this task easier than others. (1.6) Employment continued to be very good, despite increases in the price of cutlery (table knives increased in price by as much as 25%) even into the usually slack month of Aug. (24.8) Although orders did decrease towards the end of the year, and pressure was very much less, 1872 marked an exceptional high point in cutlery exports, a significant increase on the previous year, but also a high point that would never be realized again. (See graphs 2 and 5) The peak in American demand was equally marked, helped by a drop of 10% in their tariff at the end of the previous Congress (28.12) and was again crucial in the prosperity of the cutlery trades in 1872, their most prosperous year in the period under examination. A new telegraphic line to Australia, would , it was hoped help trade with that nation, even if only in allowing orders to flow more quickly and smoothly (4.12) Even when at the end of Nov. the American trade had become quite slack, the Sheffield Independent (23.11) felt no undue cause for concern: "Fortunately manufacturers have for some time been making themselves gradually less dependent than formerly on the American market. Ever since the Civil War, they have been pushing their way into other markets with so much success that it is now possible for a fair business to be done in Sheffield when trade with the States is languid." Whilst there may have been some truth in this, it does seem that America was still important to the trades, partly because of the confidence and hopefulness that its good trade seemed to inspire.

1873

1873 was again a remarkably busy year, with exports falling only slightly behind those of 1872. Factors hindering sales early in the year were the high price of cutlery and consequent holding back of orders, in the belief that prices had to fall(22.2); and the severe weather in America which caused great transit difficulties. Helping demand however, were the effects of the Franco-Prussian War which, whilst France and Germany were still recovering, made their cutlery industries effectively unable to compete. (1.2)

By April however, Germany had almost completed her recovery and was monopolizing many of Sheffield's markets for cheap cutlery. (26.4) This combined with financial difficulties and stringency in America (19.7) quickly depressed trade, and by the end of July the trade was as languid as it had been for two years. Just as, in periods of depression, firms shut down for lengthy stocktaking at Christmas, early July this year contained a stocktaking period, because many firms had too few orders to stay open. (5.7) Similarly many firms shut for a longer period than usual for the traditional holiday which was associated with Doncaster Races (13.9) The pre-Christmas period was not especially busy, largly because of the American financial difficulties. Worries that worse was in store made many firms unwilling to push orders there for fear of non-payment. (1.11) The demand at home however, was very good, especially as the bank rate fell from 9 to 6% in late Dec., which encouraged purchasing. (29.11) Sales of high quality cutlery were especially good, but table knives were not in demand.(4.10) Grinders were reasonably well employed, forgers were very short of work, (4.10) whilst razor and scissor cutlers were said to be leaving the trade because work was so slack. (The Ironmonger,1.10 p.1217) Therefore, it continued to be the case that "some cutlers will have a busy time of it up to Christmas, whilst others have scarcely any work." (9.11)

1874

1874 saw a further fall in the exports of cutlery, although they were still above those in 1871, and still considerably higher than they were ever to be again. Exports however, had fallen considerably from their peak in 1872. The trades were slack at the beginning of the year but, much work was turned out for stock, especially those items which were hard to obtain at busier times. (21.3) The usual pre-Whitsuntide rush did not materialize. The demand from the home 'watering places' gave its usual stimulus in late May,(30.5) but Sheffield was being increasingly undersold abroad by cheap German goods, and America was supplying its own demand. Whilst Sheffield used to supply 3/10 of all American table cutlery, this figure was now down to 1/20. To the reasons for this, the Sheffield Independent devoted much thought: "This cannot at any rate be attributed to higher duties, for it cost very nearly as much to import table cutlery before the war as it does now. It is owing to the cost of perfect machinery, low cost raw materials, freedom from a disproportionate wage list, and protection of course." (1.9.) Already it was recognised that tariffs were not the only problen facing Sheffield cutlery producers: cost cutting machinery which was far more readily adopted in America and Germany, was making 'cheap' Sheffield goods uncompetitively expensive.

1875

1875 was again quieter than the previous year, with a further drop in exports to America. Home orders too continued to be poor,as the belief prevailed amongst retailers, that

prices had to fall, so orders were held back in anticipation of this. (27.2) All holidays were extended because of slack trade, and by Christmas, manufacturers were beginning to fear that the American trade would never revive. (30.10; The Ironmonger, 1.11 p.388)

1876

Exports of hardware and cutlery declined again this year, falling well below the pre-boom level of 1870. The decline in exports to America was particularly large.(The Times, 12.1; 3.10) However, just as there were seasonal peaks and troughs in the overall demand for cutlery, so the American demand fluctuated considerably throughout each year. (See graph 5.) The quarter period ending in Sept. was practically always the busiest quarter, with a smaller peak in the quarter ending in March. The quarter ending in Dec. was quieter, whilst the quarter ending in June was the slackest of the year. The whole of 1876 was quite dull for foreign demand. Financial insecurity and lack of confidence in America continued to stifle demand, (6.5.) whilst the Eastern Question upset Continental demand. (21.10) The universality of the depression is illustrated by the fact that only exports to Spain increased in Aug., and this was only because it was replenishing stocks after a period of civil war. (9.9) Throughout the year however manufacturers who supplied the home demand, and especially those producing high quality goods, were resonably busy. For those with well-established reputations, even in such a wide spread depression, a market and business could still be found.

1877

In 1877, exports of cutlery continued to fall. The year opened with fears concerning the proposed change in the French tariff.(9.1) French manufacturers were protected by a 15% ad valorem duty, but wanted to charge firms to specific duties, which would inevitably entail significant increases. (CofC Jan. 1878) Trade remained bad throughout Feb. and March, especially in the scissor trade which, during the long strike in the previous year, had been ousted from many markets by German competition. (31.3) Although exports to America rose slightly this year, fears were frequently voiced in the press about the steady loss of this market. The tariff and general depression were recognised as being important, but mooted too were the unwillingness of Sheffield manufacturers to adapt themselves to customer requirements, the aversion of workers to machinery, and their wage rates which were considered to be exorbitantly high.(4.4) The Eastern Question further disrupted trade in May and June (28.4) until it was only those manufacturers who were catering for the home demand especially holiday resorts, and Australia who had adequate work. Even within this field however, razor and scissor manufacturers were extremely short of work, and only table knife manufacturers were really thriving.(7.4) The

Christmas demand was very slow to develop, only home and Colonial markets providing substantial orders.(3.11) The bad trade also rekindled the battle between A.J.Mundella and Fredrick Brittain over Free Trade versus Protection. A series of letters appeared in the local papers in Oct. and Nov. arguing the relative advantages of each postion with special reference to the Sheffield trades.(e.g 6.11;13.11;20.11;29.11) However, the year finished with a small scale and unexpected influx of orders in Dec.

1878

1878 again witnessed a decline in cutlery exports, for the sixth year in succession. Trade remained very slack until the influx of Christmas orders in late Nov. (30.11) Continental trade was paralysed because of war. (16.2) The American market was disrupted by continued financial failures and by the disorganization caused by discussion of the new tariff bill and the bill to make silver a legal currency.(16.2) By August the American trade was still so dull that many manufacturers who had accumulated large stocks were forced to auction them off at very low prices. (10.8) Despite this, the largest and best known houses still had adequate employment.(28.9) Christmas orders were plentiful for those engaged in supplying the home demand: some of the largest houses were fully employed, worked overtime during 'bull Week' and had orders left over for the New Year. (21.12) For those supplying other markets however, trade was dull. The spring knife and table knife trades were exeptionally languid whilst razor and scissor were also dull. (30.11)

1879

1879 was the seventh successive year that exports of hardware and cutlery declined, but this was their lowest point until the next trough in 1884-85. The year was only saved by a timely increase in American orders. (28.6;4.10) These increased in the Christmas season helped by the falling prices of cutlery resulting from falling wage rates and raw material costs. (18.10;6.12) Trade with Russia was good at the begining of the year, once the Turkish War had ended. (15.2) The end of a war was usually the signal for increased cutlery orders to compensate for all those put off during the hostilites. Another constantly recurring theme was the bad effects on the cutlery trade of fears of a poor harvest at home. When the weather was inhospitable in May and June, and a poor harvest anticipated, even if it did eventually prove to be a decent harvest, pessimism seriously affected orders from country areas. (28.6) By 1879 the general depression in the agricultural areas, as well as languor in cotton, wool and other important domestic industries was seriously depressing the home demand. (23.8) By Nov., all markets (including India and Australia) were depressed , except for America. (22.11) Although the usual partial Christmas revival took place, the scissor and razor trades remained slack. (29.11)

1880

1880 marked a noticeable improvement in the cutlery trades - the beginning of a minor boom that peaked in 1882, in which the export levels of 1875 were reached once more. The stimulus was the further improvement in American demand, illustrating the continued reliance of the cutlery trades on American buyers. (14.2) The autumn trade was galvanized by the good American harvest, (19.6) whilst the cheap razor trades was kept busy, more than any other trade, by the American fashion for clean shaven faces. (18.9;18.12) The home demand was again affected by fears for the harvest, which proved again to be unfounded as the harvest was quite good, and late summer orders from the country areas provided much employment. Political events however continued to disrupt the trades. The general election as always, at home and in America, was said to disrupt the purchasing of such luxury items as cutlery; whilst the continued rumbling of the Eastern Question, and the troubles in Ireland also held back the demand in these areas.(24.12) Moreover the commercial circles in Sheffield were becoming seriously worried about the proprosed changes in the French tariff: a sub-committee was appointed by the Chamber of Commerce to consider the matter. (CofC June 1880) A change from a 15% ad valorem duty on cutlery to specific duties ranging from 100 francs per 100 kilos on fine cutlery, to 125 francs on butchers' and kitchen knives, would it was felt, be disast rous for the Sheffield trades: " if the increased tariff comes into operation it will entirely destroy the cutlery trade with France."

1881

In 1881 trade again improved. Despite the severe Jan. weather which hindered retail trade (29.1) the year opened better than for many years. (22.1.) Trade with America remained very good, especially in razors. (18.6) For most of the year the leading houses were well employed but towards Christmas, although there was no 'bulling' even smaller firms who had previously been slack, became busy (19.11) and there was full employment. The razor trade remained the busiest, and the scissor trade, still suffering from German competition, the dullest trade. (18.6) Trade was, as usual, better in the finer quality goods than in cheaper products. (The Ironmonger, 3.12) The major fear however, continued to be the proposed French tariff: Atkinson Bros. complained in the Sheffield Independent about their efforts to learn and produce French styles in cutlery, all of which were to be put in jeopardy by the new tariff. (11.6) The Chamber of Commerce protested to the Foreign Office, (CofC 1881) whilst its president gave evidence before Royal Commissions on the French tariff both in England and France. The classification of cutlery was felt to be unclear, and relied upon the whim of customs officials. Like most protective tariffs, it was designed to keep out cheap and medium Sheffield cutlery in order to

encourage the development of such French production. Fine cutlery with expensive handles would hardly be touched by the new tariff. But it was the common classes which "form a very large proportion of the total exports from England to France, and the trade in them is prosperous, and shows a gratifying increase. The imposition of the duties of the new general tariff upon these knives would virtually destroy the trade in them."(CofC April 1881)

1882

1882 marked a peak of cutlery exports, a level not to be reached again until 1907. The problem of the French tariff was partly solved by Britain's attainment of 'most favoured nation' status from May 1883 (10.3) but Portugal and Spain also made similar treaties with France, which in consequence increased the likelihood that they would purchase their cutlery from France rather than from England. Fancy hardware from France would pay a uniform duty of 10d. per kilo, whilst English would pay a variable duty of 1/- and 2/- per kilo. (CofC Feb.1882) The American demand for cutlery proved to be disappointing , the result it was thought, of their bad weather and general overexpenditure on railways. (24.6) The continental trade was still imbalanced by the Eastern Question. As a result therefore, it was a question of balancing depressed with active markets. Fortunately this year, the home demand proved to be quite buoyant, stimulated particularly by the best harvest for six to eight years. (16.8)

1883

1883 was a quieter year, largly because of the decreased demand from America. In Jan. fears were voiced about the shortage of money in America, and its possible effects on the Sheffield trades. (6.1) Then a new tariff was introduced which raised the duties on razors from 35 to 50% ad valorem whilst pen and pocket knives would also pay 50% ad valorem and non-specifically enumerated cutlery 35%.(12.3) By May this was depressing the cutlery trades, especially the razor trade, whose previous boom was totally reliant upon American fashions.(19.5) The home market was dull as well, and as usual under these circumstances, the smaller firms suffered much more than large houses who had many contacts and a variety of interests. (8.8) Trade picked up at the end of Nov. but the Christmas season was still comparatively quiet. (17.11)

1884

By 1884, a general "want of confidence" was beginning to manifest itself in all the cutlery trades.(5.1) It was becoming increasingly difficult to make profits, whilst a succession of bad harvests, at home and abroad, political troubles in Europe and the Far East, and increasing German and American competition, made prospects seem very black. (5.1)

The Americam demand fell off enormously in this year, the economy suffering from the effects of floods and tornadoes in April (5.4) and a financial crisis in New York in May. (15.5) By June "the demand for cutlery is languid alike on home and foreign account. Business in these old staple trades has seldom been at a lower ebb, many of the best houses have comparatively little to do. Such demand as exists is largly for oddments to make up stock". (21.6) By late Oct., when trade normally began to pick up, things were getting worse. The American presidential election was disrupting trade there, just as British elections disrupted home orders, whilst a cholera epidemic had broken out on the continent. (18.10) Moreover, the deepening depression in domestic staple industries, was stifling the home demand. Even so, the table knife branch was quite busy until Christmas, unlike the rest of the cutlery trades. (22.11)

1885

In 1885 exports of cutlery to America were at the lowest level since 1876 whilst exports to all nations declined even further from their 1884 level. All markets other than the domestic ones were extremely dull all year. German competition in the realm of cheap goods was recognised as a serious problem, (20.6) but the most important drag on trade was felt to be the political disquiet which was virtually world-wide, and which very quickly and decisively curbed spending on such luxury items as cutlery. In April the struggle in the Sudan, poor relations with Russia, and French moves in China created a disquiet incondusive to trade, (4.4) and the Whitsuntide holiday was again particularly long because of a shortage of work. (30.5) The demand from English holiday resorts improved trade temporarily in Aug. but only at the expense of Spanish and French trade: cholera on the continent increased the number of holiday makers in British resorts. (22.7) The resorts were packed because although wages were low, the depression in prices increased working class spending power. (30.5) By the end of Sept. however, the languor had returned. This was always a dull time of the year, in-between seasons, but this year was made especially dull because of the general election, and the reopening of the Eastern Question. (3.10) As always, in such a diverse group of trades, there were exceptions to the depressed rule. As in 1884, the Christmas season was a boom time for the table knife trade, which had more orders than could be executed before the New Year. (21.11) The witnesses from the cutlery trades who appeared before the Royal Commission on the Depression in Trade and Industry felt that there had been a depression in their trades since 1880. (q.1157) The workmen placed the blame on the introduction of machinery into the trades. (q.1199) The Master Cutler, Charles Belk, felt the decline in demand to be the major cause of the depression: "There seems to be an utter want of vitality in the demand, not only from the home, but also from the colonial and foreign markets." (q.2659) "During the past year in particular, there has been a considerable want of employment for the workmen, and I believe that capital has been very inadequately remunerated" (q.2666)

In many ways, this depression was however, felt to be a natural reaction against the great inflation of 1870-74. (q.2671) Colonial markets were still quite secure and prosperous however, and there was as yet no competition in domestic markets from foreign cutlery. (q.2686)

1886

1886 was an equally dull year for the cutlery trades. The replies to the Royal Commission on the Depression, sent in by the Chamber of Commerce further verify the pattern of business already evidenced by newspaper reports and witnesses before the Commission: 1865-70 in Sheffield was a period of steady progress in business, except for the effects of the financial panic in 1866. 1870-75 witnessed a "great inflation", heightened in 1873. 1875-80 was a period of reaction to the inflation, heightened towards 1878. 1880-85 was compared as follows: "In its volume, its gross value, the amount of capital invested, and the quality of labour employed, it probably exceeded the period 1865--70, but undoubtedly its net profits were less than those which were obtained in the last mentioned period." 1880-85 was below1870-75 under all heads, except perhaps capital invested and volume. Normal trade was felt to have been experienced in 1868, '69, '70, '76, '77, '80, '81 and '82. Trade was below normal in 1866, '67, '79, '84, '85, and still was. Trade was above normal in the period 1871-75. The most prominent feature of the depression was "the unremunerative return on capital." Whilst all trades had been badly affected, the cutlery trades suffered particularly because all trades producing items broadly classified as luxuries were the first to suffer. Foriegn tariffs were felt to be a crucial cause of the depression, but improvements could be made by binding the Colonies closer, by opening up African markets, by stopping fraudulent marking of goods and by generally concentrating on high quality production and good workmanship. (CofC Jan.1886) For the whole of 1886, the papers and the public in Sheffield were obsessed by the role of fraudulently marked goods in creating the depression, and attention shifted from tariffs and political disquiet as causes of commercial inactivity. Trade continued very dull until Sept., with only those firms that produced a high quality item conducting a decent business. This only served to support the feeling that business in cheaper items was being ruined by the competition of fraudulently marked substitutes, from Germany in particular. (23.10)

1887

1887 was a slightly busier year, helped once more by an improved American demand. (21.5) This was especially true just before Christmas, when good orders were obtained for high quality cutlery, although it was recognised that the old common trade was all but dead. (19.11) Other markets were quiet, especially the U.K. The seasonal peak was poor and complaints about low prices and small profits were widespread. (26.11) The Chamber of

Commerce was outraged by the unfair treatment in Argentina and Uruguay of Joseph Rodgers' cutlery which, because of its famous name, was charged an especially high duty. (CofC Jan. 1887) However, it seems that these South American markets were still presumed to be 'natural' and permanent British markets. Thirty years later, the Sheffield Daily Telegraph pointed out that: "Sheffield... takes too much for granted. It claims a kind of natural or divine right to the markets of South America, though the value of its exports to that part of the world, even before the war, were very small indeed compared with twenty five years ago, despite the fact that the demand had greatly increased. It was Germany, and the U.S.A. who met the demand. Sheffield's share had been for years, a steadily decreasing quantity." (27.6.1917) However, concerted efforts were being made to at least find out about the possibilities of new markets, especially under the influence of the energetic fair trader and Sheffield M.P., Sir Howard Vincent. In Feb. 1887 the Foreign Office advised the council at Pakhoi to send samples of cutlery used in China for display in Sheffield.

1888

1888 saw increased cutlery exports, and a small increase in exports to America. The year opened with high expectations of a period of good trade; America, in particular was recovering from a period of economic uncertainty, whilst discoveries of gold in South Africa would, it was hoped, stimulate demand there. (7.1) Trade was however, dull until Aug., (18.8) both at home and abroad. The year was saved by an extremely busy Sept; trade was thought to be brisker than at any time since the depression had set in, although profits were still said to be too small. (15.12) Despite this busy trade, there was no 'bulling' as orders were by now put in, and given out earlier, a system which was considerably more organised than formally. (22.12)

1889

The main stimulus to the decent trade of this year was the prospective advances in the American tariff which caused a rush of orders to be placed in order that they would beat the forthcoming increase in duties. (18.2) Trade throughout the year was however, very uneven. Apart from the American houses, firms executing army and navy contracts profitted from large orders in Jan. for clasp knives and razors. (12.1) The home demand was good, especially in the summer, for both cheap and expensive cutlery for the holiday resorts. (22.6) But in foreign trade, whilst firms producing high quality cutlery were busy, (especially those dealing with Australia, S. America and the Levant) those producing commoner items were very quiet. (2.2) The Spanish trade in cheap cutlery was virtually dead, stolen, as usual by German competition. (2.2; 20.6) The Christmas trade was very

brisk, but competition in cheap cutlery remained much more severe than in the more expensive types. (9.11) The Chamber of Commerce continued its attempts to explore new markets, albeit half-heartedly. Goods were again sent from China, but it was decided that until Chinese tastes had become more sophisticated, westernised and expensive, the cutlery market there was not worth considering. (CofC Jan.1888) The major success story of the year was felt to be the effectiveness of 1887 Merchandise Marks Act which, it was hoped, would help to stop the traffic in fraudulently marked goods, and thereby, it was believed, enormously increase the demand for the real Sheffield item. This hope was encouraged by the the news that 110,000 packages were stopped in the first six months of the Act's operation. (CofC Jan. 1889) However, faults in the act were quickly spotted, namely its lack of provisions for prosecutions:the onus was placed not on the executive but on the individual to bring an action and to pay the legal costs, an expensive procedure which hardly facilitated convictions. However, the Chamber of Commerce obviously felt the good and prosperous trade of the cutlery industry to be closely bound up with this legislation.

1890

1890 marked the peak in exports to America, a level equal to the 1882 boom, but still not comparable with that of 1872.(See graph 5.) This level of exports, after the new tariff, was never even approached again for the rest of the period under examination. The year opened with a good trade, due according to many observers, to the effects of the Merchandise Marks Act. (11.1) Even the long depressed scissor trade was busy, helped particularly by the suppression of fraudulently marked German competition, but also by the decline in the number of men employed in this trade since the onset of bad trade in 1876.(18.1) After the dislocation caused by the collapse of the American market the decline in the number of cutlers became a major reason for the better employment of those that remained: the scissor trade was the precursor of a wider trend. From early in the year it was recognised that further American protectionism was likely. It was stated, indignantly, that American razor makers wanted more protection because of the British control of the market - American makers were few in number and poor craftsmen. (3.2) But panic amongst Sheffield manufacturers was already setting in. The American Exporter stated : "While Sheffield has a watchful eye on the world's market, old and new, she keeps a special eye on the American market. While she holds this, she holds the key to the world in her line."(The Sheffield Independent, 24.1) Trade was exeptionally busy in May and June, and as usual the workers took an extended Whitsuntide holiday and generally slowed their pace because of the ample work available, coupled with the unusually good weather. (17.5; 31.5) Wage disputes, the usual indicator of prosperity, were numerous, whilst the underhanded scissor branch now had three months orders in hand.

(26.7) The new American tariff, the McKinley tariff, introduced in 1890, was just as severe and prohibitive as anticipated. The Chamber of Commerce decided that "...where the avowed object of the state in proposing a new tariff is ...to place duties upon goods as to crush out as far as possible all importation, and thus rigidly to protect its domestic manufacturers, your council feel that it is useless to try and obtain modificat-ionsby negotiation, in as much as the pointing out of the grievance would only strengthen the hands of those attacking the trade of this country and enable them to make more effective the complete protection that they are seeking to obtain." (CofC Jan. 1981) It was hoped however that as the tariff was less severe on the highest quality items, there would be retained a reasonable trade for Sheffield. But, whilst American protection and domestic competition had provided constant difficulties for Sheffield manufacturers, this severing of trade created a wholly new and far less favourable set of circumstances, in which all their fears and insecurities were further heightened. "The Mckinley tariff gave the final blow to this trade, and caused most British manufacturers to abandon the American market for good....By the end of the century only the best quality of Sheffield goods were able to hold their place and the total trade was no greater than was formerly done by a single firm." (Lloyd p.344)

1891

Exports of cutlery fell further in 1891, but the year was not as dull as many had anticipated. The exports to America in the quaters ending July and Sept. were much higher than expected, but manufacturers found the main problem with this trade to be the continued uncertainty regarding tariffs: the belief that duties could be lowered was dislocating trade. The oft-quoted compensation however, was the knowledge that the tariff was hitting the Germans much harder, as they had exported to America almost exclusively cheap cutlery. (9.9) By Nov., many houses which used to cater for the American demand had found other markets, especially in Egypt and Turkey. (21.11) A contributor to The Ironmonger summed up the prevailing sentiments: "I certaintly don't think that the tariff will last long, and my advice is that merchants and manufacturers should cultivate the trade, whilst they have the chance,with our colonies, as the time will soon come, when the overproduction foistered by high tariffs will compel the Americans to alter their laws." (23.11) Another problem resulting from the tariff however, was increased German competition in cheap cutlery in the rest of the world, as they too were attempting to compensate for the loss of the American demand. (18.7) Consequently, whilst manufacturers of high quality goods were busy throughout this year, cheap producers were very slack. (5.9) Fears were rife that soon, even Britain's Colonial markets would be stolen from her by competitors. Sir Howard Vincent however, reported, after his visit to Canada, that whilst Britain sent approximately $311,897 of

cutlery to Canada in 1890, America sent only $27,900, and Germany $43,500, and this was despite the American advantages of lower export duties and geographical proximity. (CofC Jan.1892)

1892

1892 was a much more depressed year. Exports to America fell markedly, as did general exports of hardware and cutlery. The common branches were the most depressed but by April virtually every department was slack, with only three days a week being worked in many of the large firms and even less than this in the smaller firms. The American demand had by now fallen off completely, exacerbated further by presidential election. (2.4) The Whitsuntide holidays were unusually long; most firms told their men not to return for two weeks, (4.6) and some firms took longer holidays than ever before. Many commentators felt that the trades had never been as quiet as this.(11.6) The Christmas season started late, and even then the pen and pocket knife branch did not improve at all. (17.12) The Christmas holidays were also unusually long, lasting from two to three weeks. (23.12) The home demand had been dislocated by the general election, whilst the rate of exchange disturbed Eastern markets, (23.12) and Spanish and Portuguese trade declined markedly after the hostile tariff of the 30th June. (23.12)

1893

1893 was an extremely bad year for the cutlery trades. Exports reached an even lower level. However, trade was not uniformly bad in the opening months of the year. The scissor and razor trades remained quite busy, as did the higher quality table and spring knife producers.(25.2; 25.3) Business was also helped by the quite general enforcement of a 5% wage reduction by April. (22.4) But in the summer, firms trading with Australia were hit by the financial consequences of the drought, (6.5) whilst in India, the temporary collapse of the rupee also dislocated trade. Unusually, trade continued to decline in the autumn and winter, hit by enormous German competition and continued uncertainty regarding the American tariff.(30.9; 7.10) By 'bull week', the trades were felt to be about as dull as they could be, and employment was at best partial. However, in late Nov. it was clear that Sheffield manufacturers were not about to give up hope of the elusive American market.(29.11) Three large-scale manufacturers declared themselves to be fully stocked up and waiting for the decline in American duties and consequent boom.

1894

In 1894, exports of cutlery and hardware reached their lowest point of the whole period under consideration. From Jan. until July the cutlery trades were in an exceptional

state of depression. The home demand was dull, whilst the declining state of the rupee and numerous revolutions and wars further disrupted trade. (17.2) The main problem continued to be the difficulties created by the unpredictable American demand. Many houses were stocked up, but the prolonged debate and uncertainty about the tariff brought trade to a standstill until its settlement in Aug. (25.8) The effects of the changes were infact marginal, and by Sept. it was stated that many firms had now given up on American trade completely (1.9) which was not half of what had been anticipated.(22.8) Trade did improve towards Christmas, but because of the large stocks which had been built up, poor employment continued beyond this. (8.12) However, some men were still fully employed by mid-Nov. (24.11) Australia continued to be a busy and profitable market, but South America and the Cape were disappointing.(8.12)

1895

1895 was an equally bad year. The rupee declined to its lowest level ever, war broke out between China and Japan, Argentina was politically unstable, whilst political troubles disrupted numerous other markets. (26.1) By the end of April, the Sheffield Independent declared that: "It is almost impossible to exaggerate the depth of depression that has been experienced by the cutlery and allied trades during the last two months." Many workers were totally unemloyed; many were earning less than 10/- per week. But as always, producers of high quality goods, in which there was less competition within the labour force, and for markets abroad, were less affected. (20.4) The Whitsuntide holidays were predictably lengthy (8.6) but some improvements were underway by Aug. There was a spurt in the demand for cheap, xylonite handled cutlery for holiday resorts (31.8), and a demand for sets of cutlery from the Atlantic liners. (31.8) By Oct. the South African and Canadian markets were buying more freely, (5.10) but the table knife trade was, as was becoming usual, better employed than the spring knife trade. (5.10; 26.10) In Oct. 50% of those employed in the spring knife trade were on short time, although none were actually unemployed. (16.10) However, by late Nov. all markets were improving daily, so that the year ended with an unexpected but welcome burst of activity.

1896

1896 was a slightly better year. The New Year began in a much more encouraging way than in 1895, although the home demand was said to be curbed by a death in the royal family which quietened the London social scene. (18.2) By April the table and spring knife trades were both sufficiently busy to create a shortage of hands; many men had already changed occupation because of the effect of the Mckinley tariff. (8.1; 18.4) Improvements continued until by Oct., the Labour Gazette recorded employment in all trades as between "moderate" and "well employed". (LG Oct.p.298) Evidently much progress had been made in

finding alternatives to the American market because throughout this period of good trade, that market remained very dull. (15.2; 12.9) In Oct. the issue of tariff was again raised in the presidential election, but it was stated that this was of little importance to Sheffield cutlery manufacturers, because so few of them were still concerned with this market. (31.10) By Nov. only six firms were still dealing with America. (21.11) South Africa and Australia furnished exceptionally good orders, but the famine in India caused many customers to fall behind with payments. (12.12) The table knife trade was again the busiest: the Labour Gazette in Nov. found employment to be "plentiful" amongst forgers, grinders and cutlers, (LG Nov.p.330) and by Dec., employment continued "exceptionally good," (LG Dec.p.362) until by the Dec. boom, even the usually slack spring knife trades were better employed. (LG Dec. p.326) Only American trade remained dull:"but for this circumstance, it might be said that there was scarcely a cutler worth his salt unemployed." (19.12) Evidence of an increased confidence in attempts to find new markets with which to trade can be found in the dealings of the Chamber of Commerce. Joseph Chamberlain had helped to get samples of goods from the British West Indies, Victoria, Lagos and Cyprus, and the cutlery was exhibited in Sheffield for manufacturers to examine. (CofC Jan.1897)

1897

Whilst exports declined slightly on their 1896 level, 1897 was still quite a good year because of a buoyant home demand. Employment was exceptional in the early part of the year in all but the American houses (16.1; 13.2) and the Indian houses, where the slump was caused by the plague outbreak in Bombay. By March, the production of various cutlery novelties for the Diamond Jubilee was further increasing employment, (6.3) until it was declared that the cutlery trade had not been so busy since 1889, even though profits were said to be very low. (13.3) The announcement of further protective duties in America, caused a temporary increase in the production of goods for that market before the enforcement of the new tariff, as had been the case before the Mckinley Act. (20.3) The question of tariffs also dominated the exports of cutlery to Canada: little business was being transacted because the new tariff, which was to come into operation from Aug. 1898 would implement a significant drop in duties charged on British goods, and would favour England to 25% against competitors. (20.11) During the summer the home, South African and Australian markets kept the cutlery trades busy. But as usual, the table cutlery departments were the busiest, recorded as such by the Labour Gazette in Apil and July, (LG April p.112; July p.210) when most other departments were only "fairly" employed. Even The Times announced that, "At present, happily the cutlery trade in all its branches is more active than it has been for many years." (The Times, 23.6.1897)

1898

1898 witnessed a much worse year's trade; the revival of the previous year was not maintained. For the first time, exports of cutlery and hardware were recorded separately, and taking the period 1898 to 1914, exports 1898 were at their lowest point of the whole period, at only £57,000.(See graph 3 .) For virtually the whole of the year, trade was slack, except for late Dec. The exports of cutlery to America collapsed because of the new tariff: exports of cutlery from Sheffield fell from £159,000 in 1897 to only £61,000 in 1898, and this compared with peaks of £350,000 in 1872 and £246,000 in 1882. (See graphs 4 & 5 .) The Canadian market was also depressed because although duties had already been lowered by 12%, the prospective further reduction in August, caused orders to be held back further. (8.1) Employment was slack in all branches (LG Feb. p.52) and by March, table and spring knife cutlers and grinders had been working short time for more than a month. (LG March p.83) By May Canadian, South African and Australian orders were helping the trades, but these were the only busy markets. (14.5) Late May was the quietest time of the year yet, although May, like Jan. was always a quiet month. (14.5) Even the home summer trade was slack, the reason cited being a surprisingly 'modern' one: America's war in South America caused a dearth of American visitors to England. (25.6) Throughout the rest of the year, until late Dec. only the Canadian market provided good orders, helped by its huge wheat harvest and the decline in the tariff. Six firms had recently established agencies there, but caution was advised, as the whole population of Canada was only equivalent to that of Greater London, and therefore its demand had to have quite rigid limits (9.7) But attempts were being made to exploit new markets, albeit hindered by an increasing number of hostile tariffs, the consequence of which the Chamber of Commerce was only too aware. The imposition by the French of excessive differential duties in their West African Colonies, forced the Chamber to send a strongly worded plea for help to the Secretary of State for Foreign Affairs, urging "An amelioration of what cannot but be a disastrous tariff for British goods." (CofC Jan.1899) However, efforts were again made, under Howard Vincent's guidance, to find out more about trade prospects in Canada. A lecture was given by an ex-commissioner to China on the possibilities of exporting cutlery to that nation, and again the market recognised as an enormous and lucrative one, if only Chinese patterns and demands were followed, rather than English ones imposed. (CofC Jan. 1899) Despite these efforts, Nov. was a month of almost complete inactivity in the trades. To quote the Sheffield Independent "there appears to be a complete slump in cutlery. Several of the best firms state that the last six months have been the poorest in their recollection for a number of years, and others declare that they are carrying on business at a loss...one rather unusual feature of the depression is that much of it is due to the falling off in the demand for the best class of table cutlery. The American market is to some extent

responsible for this. The high tariffs practically killed off the export trade in Sheffield six years ago as regards the cheaper qualities, but the Americans continued to place fairly good orders for good class cutlery, but lately it seems that this branch has been declining. South America is also a poor market for cutlery compared with what it was ten years and more ago, and South Africa leaves much to be desired. The pen and pocket branch has been slack all the year, for which foreign competition alone is responsible. As regards the home trade, the season's orders have been of a moderate character, scarcely up to the average."(26.11) Dispite all this gloom however, as often happened, Christmas witnessed a sudden and unexpected upturn in demand. By mid-Dec., much overtime was being worked, with firms often open until 8 or 9pm. This could have been because orders had been held back so much during the year, and also because the Indian rate of exchange, at its highest point for years, caused a sudden surge of orders.(Dec.17)

1899

1899 was a slightly busier year for the cutlery trades, with the peak of activity again coming predictably late in the year. Exports to America never really pulled up again (they remained at about £55-70,000 annually) but overall the export of cutlery did improve to £600,000. Although all trades began the year quietly, by April they were busy as retailers began to replenish their depleted stocks. (22.4) The second quater of the year was as usual better than the first, but most manufacturers still declared that conditions were terrible compared with twenty years ago. Once more, table knife departments were the busiest, followed by the much improved conditions in the razor trade, helped by the good orders from China - perhaps the enquiries made by the Chamber of Commerce had been of some use. (27.5) The good orders, especially for the higher quality items, created a general upturn in confidence in the summer, with many manufacturers stating that demand was not, as was sometimes believed, dead, but only dormant. (24.6) For the remainder of the year, employment in all trades was fair to good, as the dominant theme became the shortage of labour. A spate of impromptu holiday making affected the execution of orders on and around the traditional holiday time of Doncaster Races week.(2.9) By Oct. a shortage of skilled labour was becoming felt, partly because many workers had left the trade in the previous depressions but also because of the manpower demands of the Boer War in terms of both loss of life, and the number of recruits called up. (11.11) Losses of life were not yet however, severely affecting Christmas celebrations, and therefore cutlery orders. By mid-Nov., there was also a shortage of female labour, "...arising from the fact that during the present good trade,women and girls are able to find pleasanter and lighter employment." (18.11)

1900

This year, the effects of the Boer War did seriously limit domestic purchasing power, but a still better export trade, this year amounting to £640,000, made the year reasonably prosperous, or at least not in such a depressed state as the late 1890s. (See graphs 3 & 4.) Whilst the domestic demand for cutlery fell, especially for high quality goods, firms executing government orders, were inundated with work. The demand for army knives could not be satisfied fast enough, because the long lull in this branch had caused much labour to leave it. (2.2) By late March, the home demand from the iron and steel producing towns was also very good as the war's demands caused these towns to prosper, (24.3) so whilst the general and especially high quality home markets languished, government suppliers were overworked. Perhaps because of the importance of government work, much attention was given at this time, to the issue of government contracts, the Federated Trades Council protesting that the government's obsession with competitive prices caused subletting of orders, sweating, and the production of a poor quality item. (15.9) Trade improved sharply in Oct. because of German labour disputes and strikes, which caused orders to be directed from Solingen to Sheffield. (27.10) Even the high quality branches became quite busy towards the end of the year, helped by the decline in the exorbitant price of ivory handles, by 10%. (10.11) However, the now major problem was the shortage of labour, both male and female, as the general boom in all the Sheffield trades allowed workers to leave the cutlery trade in increasing numbers to find more lucrative employment elsewhere. (15.9)

1901

1901 was not such a busy year. Exports fell, whilst imports of cutlery into Sheffield rose from £21,000 in 1900 to £35,000 in 1901. (See graphs 3, 4 & 7.) Government orders continued to be heavy, for example orders in Jan. amounted to 20,000 pairs of scissors, 60,000 razors, 47,000 pocket knifes, and 450,000 knives and 450,000 forks. There were however, numerous complaints that army patterns were dated and the patterns obsolete, so that dies cast and implements used could never be used again. (5.1) This may help to account for the small number of firms that undertook goverment work. Until June, there was virtually full employment, perhaps due more to a shortage of hands than enormous demands, but the death of the Queen and subsequent mourning, was said to have affected the London demand, especially for high quality goods. (2.2) The shortage of labour in the razor trade was particularly pronounced, because after the years of relative depression, the German strike caused a hugh unflux of orders, which the remaining workers could not hope to execute in time. This issue of labour shortage, was seen by The Times as a deliberate policy pursued by the trades unions, which would in time, kill the Sheffield cutlery trades. "In view of the shortage of labour deliber-

ately brought about by the trades unions in most of the 'light' Sheffield trades - and this too, not withstanding the severity of foreign competition - it would seem that the trades themselves must die with the present generation, from sheer lack of workers to carry them on." (The Times 21.12.1901) Government orders for forks were so far in arrears by June that "in order to expediate delivery at a time when the resourses of production are severely taxed, they have consented to adopt a new pattern table fork for the use of soldiers." But most importantly, the new fork was virtually all machine made. (29.6) As usual when trade was good and wages quite high, the numerous unauthorised holidays taken by the men, were bitterly condemned,(20.7) whilst the holidaying on Monday was still recorded as being common, (6.7) although it was believed by many to have been largely the result of the disorganization of the light trades, and the whole system of 'giving out' work. Despite the busy Christmas season however, 'bulling' before Christmas was now virtually unheard of. To quote the Sheffield Independent's "Voice of Labour": "I have heard it said repeatedly that overtime working before Christmas is dying out, and masters have a job to make work last to the end of the week, whereas in the old times when 'bulling' was the order of the day, men used to work all night during the week previous to Christmas, and often work up to the last minute, and often the hour of reckoning was delayed in order that the men might finish their work. But not so now!. (6.7)

1902

1902 was again a year of moderate trade, although the opening quarter was unusually bad Many travellers were withdrawn from their journeys in Feb. because they were not even covering their expenses, (22.2) and holidays covered the whole of Easter week, because there was so little employment. (12.4) Usually it was the table knife trade which was the slackest, whilst orders for spring knives, scissors and razors were improving. (17.4; 3.5) Despite the end of the war and the coronation, the home demand remained dull for the rest of the year because of a general shortage of spending money amongst the public. (28.6) Similarly, the increase in orders from South Africa created little effect, as goods had been stocked up in anticipation, as usually happened during a war, and were already waiting at the ports to be dispatched. (28.6) By Sept., table knife departments were on short time for the first time in many years. (13.8) But once more the year was partially saved by the Christmas demand. This year however, as in 1901, trade was falling far more exclusively into the hands of the larger and more mechanised firms. In 1901 it had been noticed that "The tendency of the trade is undoubtedly to gravitate more and more into the hands of the large, self contained firms, who by the extent of their resources can command resources to the exclusion of smaller competitors. Hence, during a quieter period of trade, there may be a limited number of firms well

off, and even pressed with orders." (20.7) A similar tendency of poorer trade to concentrate business was noted by Dec. "Cutlery houses are uneven in their output. Some, particularly those with the most modern machinery, are well booked with orders; others are working short-time." (6.12) Evidently the old distinction between large, prestigious, well-established houses, and the smaller lesser known firms, was taking on a further differentiation.

1903

Trade was worse in 1903. Although exports of cutlery again rose slightly, home demand was even worse than in 1902, because of a continued shortage of money caused by the war. In Jan, the Labour Gazette reported employment as being fair in the spring knife trade, but "quiet" in the other cutlery trades (LG Jan. p.22) and from here, business got much worse, with the table knife trade again being the worst hit. (18.4) However, as usual, experiences depended upon the market being served, and therefore, "no two reports are alike."(23.5) A manufacturer engaged in supplying the home market said that things were as bad as they had been for ten years, (2.5) although the colonies were furnishing good orders. But from May orders got worse, until the trade was positively bad from Oct. to Dec. Trade was hindered by the insecurity surrounding the Free Trade vs. Protection debate (5.8) and the general shortage of money. The Christmas season was a complete disaster; one large firm shut down for weeks, and another for an indefinate period. (12.12)

1904

The cutlery trade was little better in 1904, again due mainly to a dearth of home demand. Exports reached their highest point since they had been independently recorded in 1895, of £700,000, £150,000 more than in 1898. (See graphs 3 &4 .) The year began quite well, with large Admiralty orders for knives and forks to replace the old navy clasp knife, (12.12) and good orders from the colonies, especially Canada. By March however, business was quieter, and by Sept., the depression in trade was very deep, and the Labour Gazette recorded employment in all trades as "slack". (LG p.270) Further increases in the price of ivory made the high quality cutlery trade even more depressed. (29.10) Towards Christmas, there was a slight improvement with some good Australian and government orders, as well as high quality specialities for the American market, but overall trade remained dull. (5.11; 19.11; 26.11) The burning issue of the year with regard to trade, was the fiscal question. The Chamber of Commerce believed that if preferential treatment was given to the colonies, more cutlery could be exported, but a substantial number of its members also felt that this would have the negative effect of raising the price of labour, and causing aggressive foreign retalia-

ation. It was generally believed that foreign tariffs had adversely affected the industries in Sheffield and that the extent of the damage was both large-scale and increasing. It was also a "well known fact that the lower qualities of the various commodities are those which are most quickly and effectively excluded by a hostile tariff." (CofC Jan. 1905) Obviously false marking had now been replaced by hostile tariffs as the major grievance of Sheffield traders.

1905

Trade was slightly better in 1905, but again the year started very badly, and many travellers were again taken off the road. Even table blade forgers were on short-time, and many men were working only three days a week. (25.3) Foreign demand was also slack, and even the largest and most famous houses were beginning to complain. (13.5) By May, the Labour Gazette reported that employment in all trades was "bad".(LG May p.141) Manufacturers supplying the home trade said that they could never remember a time when trade was so bad, (27.5) and by late July, many manufacturers were saying that the cutlery trade had not been so slack for 40 years. (29.7) Reasons cited included the ridiculously high price of ivory which was now, as in 1895, fetching over £50 a cwt. (5.8) But also more obscure reasons: since ladies now devoted "so much time to motoring, golf, and other outdoor sports, they have had neither the time nor the inclination for sewing, embroidery work, and other old-fashioned occupations, and so, cases of scissors and other similar wares, have not been needed." (29.7) This year, for the first time, it became quite general practice for works to virtually shut down for a period in the summer, as all employees took their holidays at approximately the same time, instead of the old practice of taking them over months. (12.8) By Sept. a general improvement in trade was noticeable: like the previous year, there were good orders from South America and the Colonies, and better Christmas orders at home, as retailers replenished their stocks. (30.9) America continued to import high quality items, but these were in very small quantities compared with those of the pre-McKinley era. (30.9) Overall however, the Christmas orders were said to be the best for several years.

1906

Trade improved in 1906, both at home and abroad. Despite the busy Christmas season however, few orders were carried over and the year began quietly. (6.1) Most trades experienced only partial employment, but as usual business was much better in the speciality cutlery branches: "There are special lines of goods, the manufacturers of which are being kept fully occupied. These include butchers' knives and steels, shoemakers' knives, painters' palette knives, and large clasp knives , considerable

quantities of which are going to the American market." (2.10) The scissor branch was very depressed, the reason it was felt being the old issue of falsely marked German goods. (10.2) The home trade was still depressed in March, and a new reason was being mooted: the large drop in working class spending power had left many with debts, or at least incapable of buying semi-luxuries like cutlery. Manufacturers were experiencing great difficulties in collecting accounts, some only managing to obtain 5% of those due to them. (3.3) As often happened in depressed times, the smaller firms complained of being "squeezed out" by the larger firms, who were executing orders virtually at cost, to keep their men together and their contacts intact. (31.3) However, trade gradually improved in late summer, with hugh exports to Canada and Australia, as many manufacturers switched to these from the still depressed South African market. (6.6) By late Sept. trade was very brisk. Different reasons were given for the improved trade: the large government contracts, (27.10) the improvement in Japanese demand, (22.9) the continued improvement in the sales of specialities to America, and the Christmas demand for hugh quatities of case cutlery which were extremely fashionable. (8.12) This year however, there was increasing reference to the importance of machinery in the manufacture of cutlery. One manufacturer remembered , "...when he was apprenticed, he said , there were 122 forgers and strikers, with 62 hearths, and they were kept employed winter and summer. Now a machine will turn out a barrow full of blades whilst they are producing their dozen." (4.8)

1907

Exports of cutlery reached £770,000 in this year, their highest point since cutlery exports had been independently recorded in 1898. It was a good year for the trades, but still imports of cutlery into the U.K. continued to increase. (See graph 7.) In 1900 they had been insignificant, and only £35,000 in 1903, but by 1907 they had leapt to £154,000. Whilst the year was generally quite prosperous, its keynote, as often before, was the differing conditions in the trades. By April this was so marked, that more and more firms were attempting to establish a wider variety of markets, instead of the old practice of concentrating on one: "makers of cutlery...in Sheffield, are realising," said The Ironmonger, "probably more so than they have ever done so before, the unwisdom of placing the whole of ones eggs in a single basket. Those relying on the home market have suffered a long and severe spell of depression which gives no indication of passing away, whereas the foreign and colonial demand is quite brisk. The result is that those firms who have business connections with Canada, Australia, Russia, South America etc., are doing very well, but the remainder find it more difficult to cover expenses." (13.4) The Chamber of Commerce was also continually attempting to propagate information which would encourage sales to different markets. In 1907, there were

visits and talks from the commercial attaches of the British Government in such widely differing nations as Japan, Russia, Austria, Hungary, Italy and Greece. Also committees reported to the Board of Trade commercial intelligence department on tariffs and their effects in Portugal, Brazil, Australia, New Zealand and Argentina. (CofC Jan. 1908) A major drag on output was the high cost of raw materials, which forced up price lists, and therefore made retailers unwilling to build up stocks. (19.1) A noticeable feature however, was the speedy decline of German competition. This was caused by increases in German prices, which, caused by the increased unionization and militancy of the German cutlery workers, were by now close to those in Sheffield. (13.4) The ample work resulted in the usual reaction amongst the men: they took a longer Easter holiday - many "looked in" on Wednesday or Thursday, but realising that there was plenty of work, went away again. (6.4) The heaviest demand was for razors, but as so many men had left this trade, the supply of labour was completely inadequate to cope with the demand. For most of autumn and winter, trade continued to be quite good: the home market improved, stimulated particularly by government orders, (13.7) whilst the Australian demand was very good, (20.7) as was that in South America, but largely because of the increased tariffs that were to be imposed in South America from the following Jan., forcing retailers to stock up in advance. (12.10) By Nov., the common theme still remained: "The cutlery trade is like the curate's egg, good in parts. Some firms are fairly busy, whilst others seem slack." (2.11)

1908

Trade in 1908 was significantly worse: exports plummeted to £614,000, a low level not experienced since the depression of the late 1890s. All markets were slack for the first half of the year; the depression seemed to be universal. (15.2) In late Feb., the Labour Gazette reported that of 2233 men and women in the cutlery and file trades, 991 were on short time, although only 4 were completely unemployed. (15.2) By May many smaller houses were in financial difficulties, but it was stressed that "...it is absurd to class the leading houses with them."(2.5) The old distiction between large and small, respectable, old-established houses and the rest, was as strong as ever. By July however, trade was picking up, although it was mainly in cheap and medium quality goods, especially for South Africa. (15.7) Some goods were being sent to South America, but the problems that this involved were formidable, particularly the expense of freight charges, and the uncertainty of exchange rates. (1.8) In Sept. and Oct., trade fell off again, affected particularly by the lack of orders from Canada. The cutlery trades were again plunged into pessimism and doubt, a decline in demand made them increasingly prone to such panic. (10.10) However, orders picked up in early Dec.

although most were completed well before Christmas. (19.12) However, when examining exports to a sample of Sheffield's main markets, it is easy to see why manufacturers could vere from pessimism to optimism (See graphs 8,9,10,11 & 12.) so easily and so quickly. Taking America, South Africa, India, Australia and Canada, the only country where cutlery imports remained stable from 1908-1911, was America, but here they normally totalled only $380,000, which, at least compared with the pre-McKinley days, was a cause for concern and not congratulation . (See graph 8.) German exports of cutlery to America were far higher throughout this period, totalling between $1,300,000 & $1,500,000. In other markets, although British imports did increase with the general boom from 1909, exports varied widely each year. This was especially true of Canada, where imports of Sheffield cutlery veered from $327,000 in 1907 to $544,000 in 1908, and back to $346,000 in 1909. These exports did however stay approximately double those imported from America and Germany which rose and fell in the same years as exports from Sheffield, suggesting an instability in the Canadian market rather than faults in Sheffield's marketing ability, or purchasing from foreign competitors at the expense of Sheffield manufacturers. (See graph 9.) Very much the same is true of imports of cutlery into India: the British total was quite stable until 1909-10, when it increased rapidly to £74,000. The German and Belgians exported approximately half the amount that Sheffield sent, but their exports too, rose after 1909. (See graph 10.) The Australian market was dominated by British cutlery. Germany and America exported only approximately £25,000 each of cutlery per year, whilst British imports rose from £275,000 to £375,000 in 1910.(See graph 11.) The South African market, took some time to settle down after the Boer War and subsequent collapse of exports. However, British exports rose from £40,000 in 1908 to £69,000 in 1910, whilst German and American exports were again surprisingly small, less than a quarter from those of Britain. (See graph 12.) In most cases, demand was not constant, but did increase markedly after 1909. Competition from other producers was however, no longer making any significant inroads into Sheffield's exports to these nations between 1906 and 1911.

1909

The cutlery trades were in a better state this year, but the improvement was not noticeable until the late summer. In the earlier part of the year, good orders and employment were still patchy. The export trade improved, especially to South Africa, but the razor trade was badly supplied with work because of the increasing use of saftey razors made in America: even Sheffield was full of these new razors. (26.6) Even when trade was dull however, employment was not as badly hit as it had once been, because of the marked decline in the number of men involved in these trades. Orders

began to increase in July and by Dec., many firms were as busy as they had been for months.

1910

Trade continued to improve in 1910, when exports jumped to their highest point for many years, totalling £813,000.(See tables 3 & 4 .) Imports of foreign cutlery had now stabalized, remaining at around £160,000 between 1907 and 1912. As large orders continued to arrive through Jan., two important firms began to extend their premises. (15.1) The trades were helped by the decreasing cost of horns and scales, (12.2) and home sales which until now had been poor, began to increase, until in April the Labour Gazette found employment in most cutlery trades to be "moderate" to"f air" (LG March p.85) By the end of May, most houses were working full-time, helped by price lists that were considerably lower than for ten years previously, the main reason being the reduced cost of production brought about by the increased use of machinery. (28.5) Colonial trade had never been better, helped to a large extent by continued decline in German competition. (28.5) The combination of machine production and increased German prices, made it possible to produce cheap but reasonable pocket knives in Sheffield at prices even lower than those of German firms, a state of affairs inconceivable twenty years previously. (30.9) The Christmas season maintained itself well and the trades were as busy as they had been for many years. (17.12)

1911

The good trade became even better in 1911, so busy infact that widespread wage disputes broke out once more, just as they had done in the early 1870s and 1890s.(30.9; 4.11) By Sept. orders were very badly in arrears, (2.9) and there was insufficient labour, especially skilled labour, to execute them. (21.10) Stocks were completely cleared out and the usual two week holiday was was shortened to one week. (23.12)

1912

The good, infact exceptionally buoyant trade, was maintained in 1912. Work was carried over from before Christmas (6.1) and by May, more employers were extending their works. (4.5) The only drags on output were the coal dispute which forced many large firms to work short-time, (16.3) further demands for increased wages, (8.6) and the continued inadequate supply of labour. (28.9) By Oct., the still increasing pressure of orders was stimulating the installation of even more labour saving machinery, (26.10) but still the Christmas orders totally outran the means of supply. On Dec. 7th, the Sheffield Independent stated that "In the lighter trades, manufacturers are at their

wits end to deal with the work required of them. The pressure has increased as Christmas approaches, and many of the firms are almost entirely denuded of stock... The increased spending power of the public all over the country consequent upon the widespread good trade, has caused retailers to order very much larger quantities of cutlery and plate for the Christmas season than for many years past." (7.12) A nother reason for the very good trade was the belief in Sheffield's ability to come to terms with the demand for cheap goods and to produce these as well as the high quality items: "...the buying public still contains a sufficient minority of people who appreciate quality and durability to maintain a demand for the best cutlery, fully equal to the means of supply. Sheffield has not altogether ignored the market for cheap goods. There is a vast market for cutlery at low prices, and it is being adequately met."(the Sheffield Independent Industrial Supplement, Jan.19.)

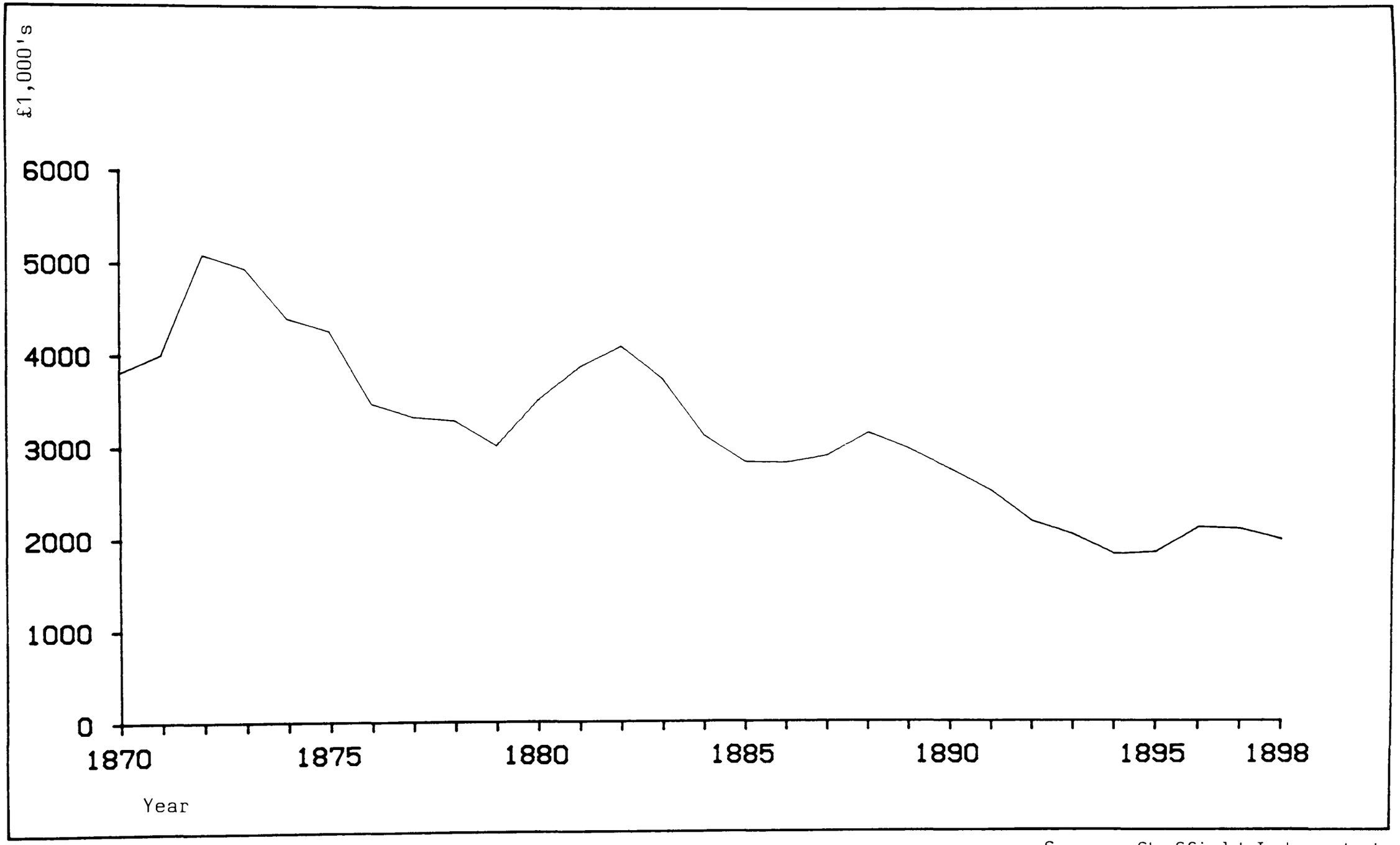
1913

1913, although not as busy as the previous year, was still a very active one for the cutlery trades. The New Year, unusually, was very busy, "...manufacturers find they have to exert all their business capacity to keep pace with requirements, both of the home and colonial markets." (18.1) There was still inadequate skilled labour, (15.3) and orders were so far in arrears that the Easter holidays were cut short. (20.3) Although trade returned to a normal level after the summer, once the Christmas season began, many manufacturers reported that they were having as busy a time as they had ever had, since trade "settled into a quieter pattern." Prices however were said to be so low that they hardly allowed for any profit. (2.8) The Christmas holidays at the large firms were quite short, just long enough for stocktaking and the overhaul of machinery. (19.12)

1914

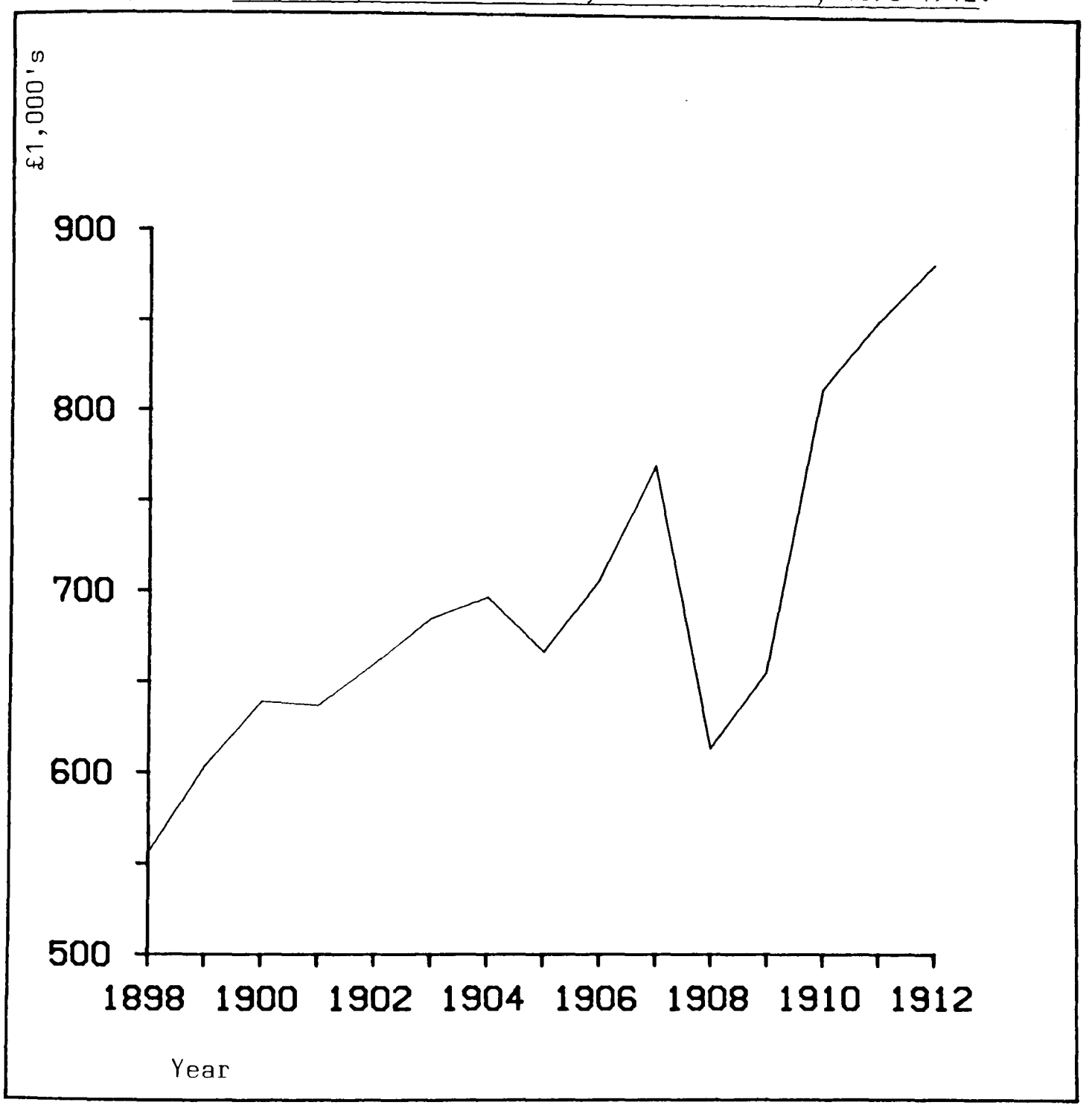
The period up to the First World War was, by contrast, a much quieter time. By April there were scarcely enough orders to provide full employment, although this was still a great improvement on the many previous years of far worse trade. (18.4) The increased spending power of the agricultural areas, which had been improving over several years, created better provincial orders and a good demand from holiday resorts. (23.5; 30.5) However, at this point, war broke out.

Graph 2 Total Exports of Hardware and Cutlery From the U.K.,1870-1906.



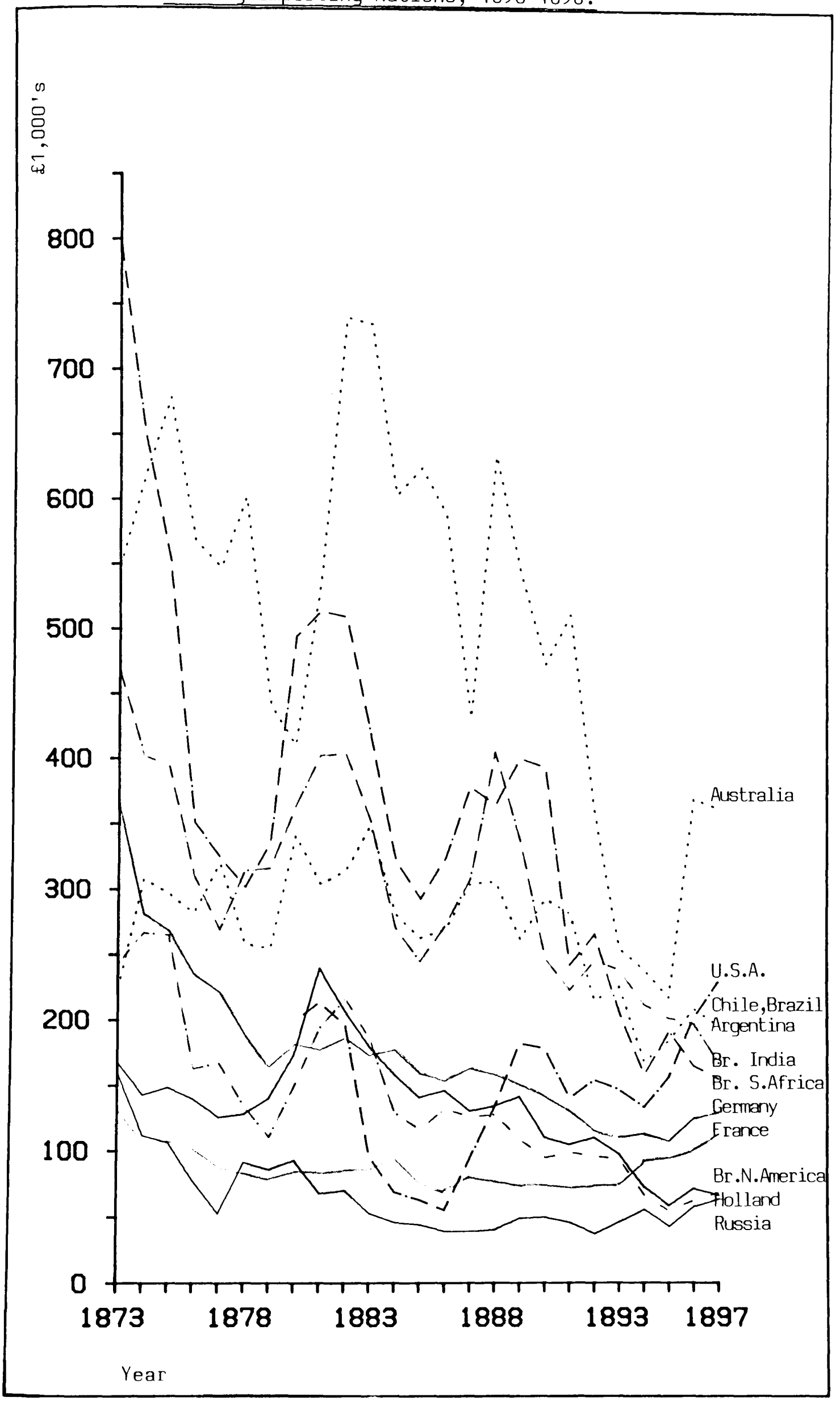
Source: Sheffield Independent

Graph 3 Total Exports of Cutlery From the U.K., 1898-1912.



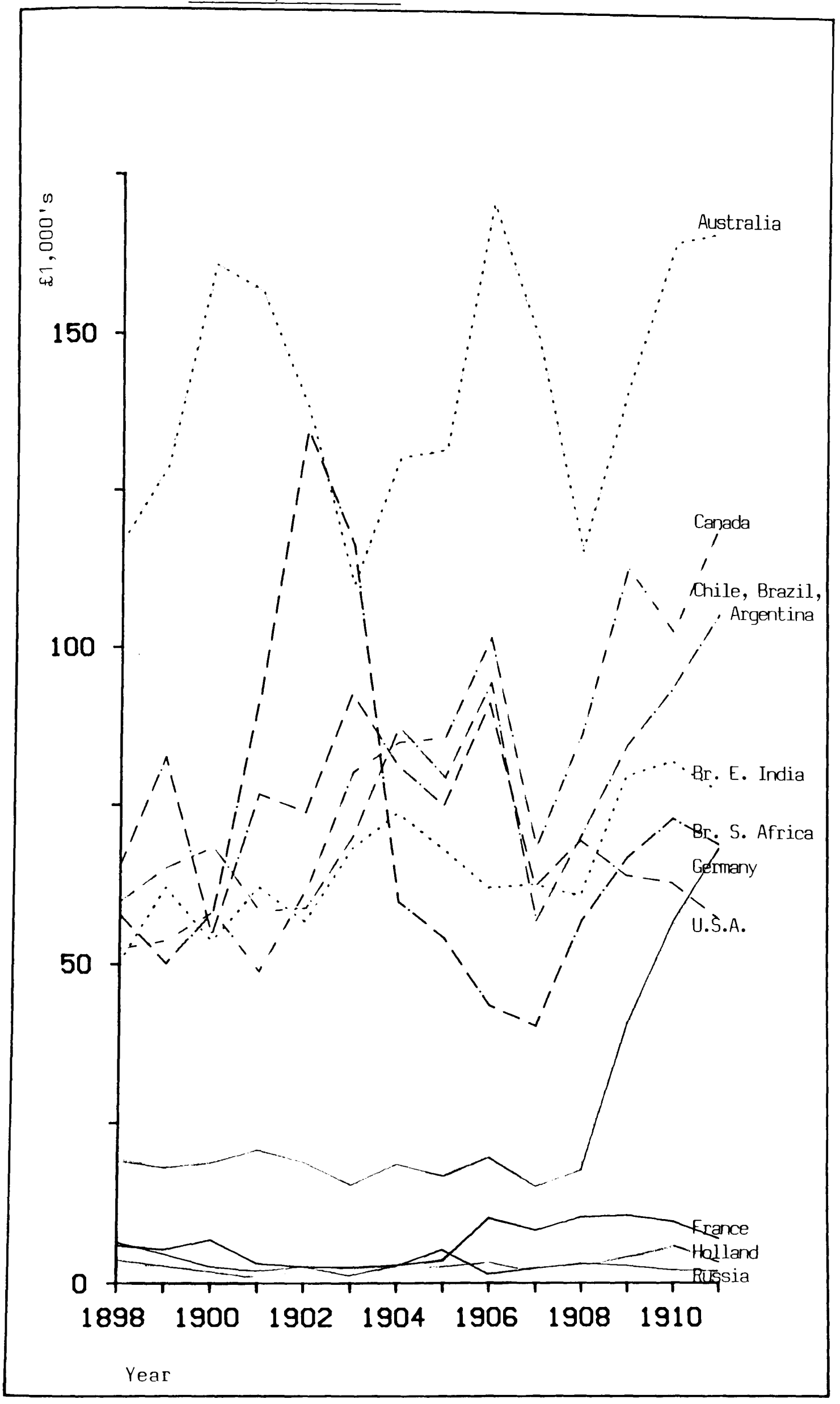
Source: Sheffield Independent

Graph 4(i) U.K. Exports of Hardware and Cutlery to the Ten Leading Importing Nations, 1890-1898.



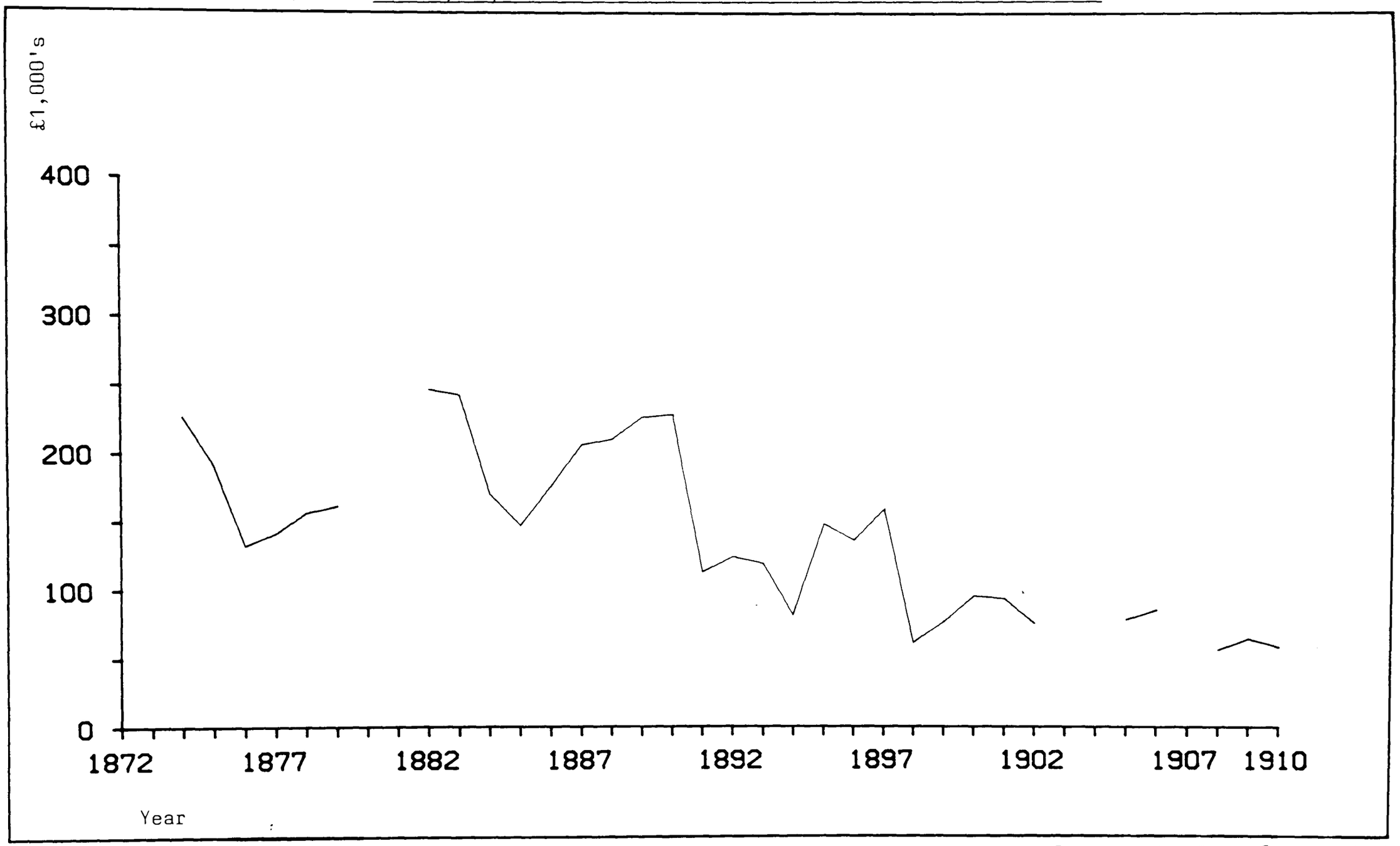
Source: Sheffield Independent

Graph 4(ii) U.K. Exports of Cutlery to the Ten Leading Importing Nations, 1898-1912.



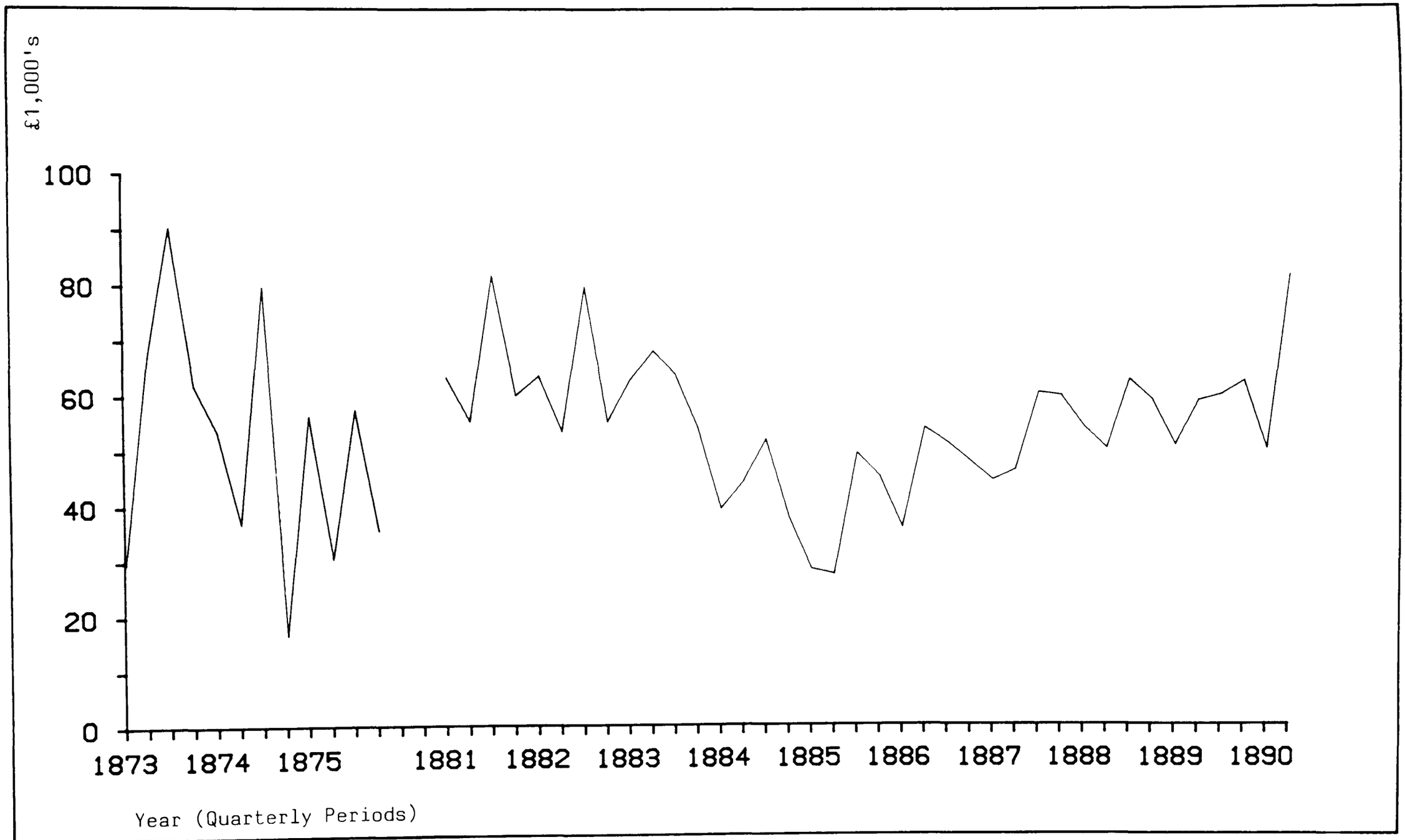
Source: Sheffield Independent

Graph 5 Cutlery Exports From Sheffield to the United States, 1870-1912.



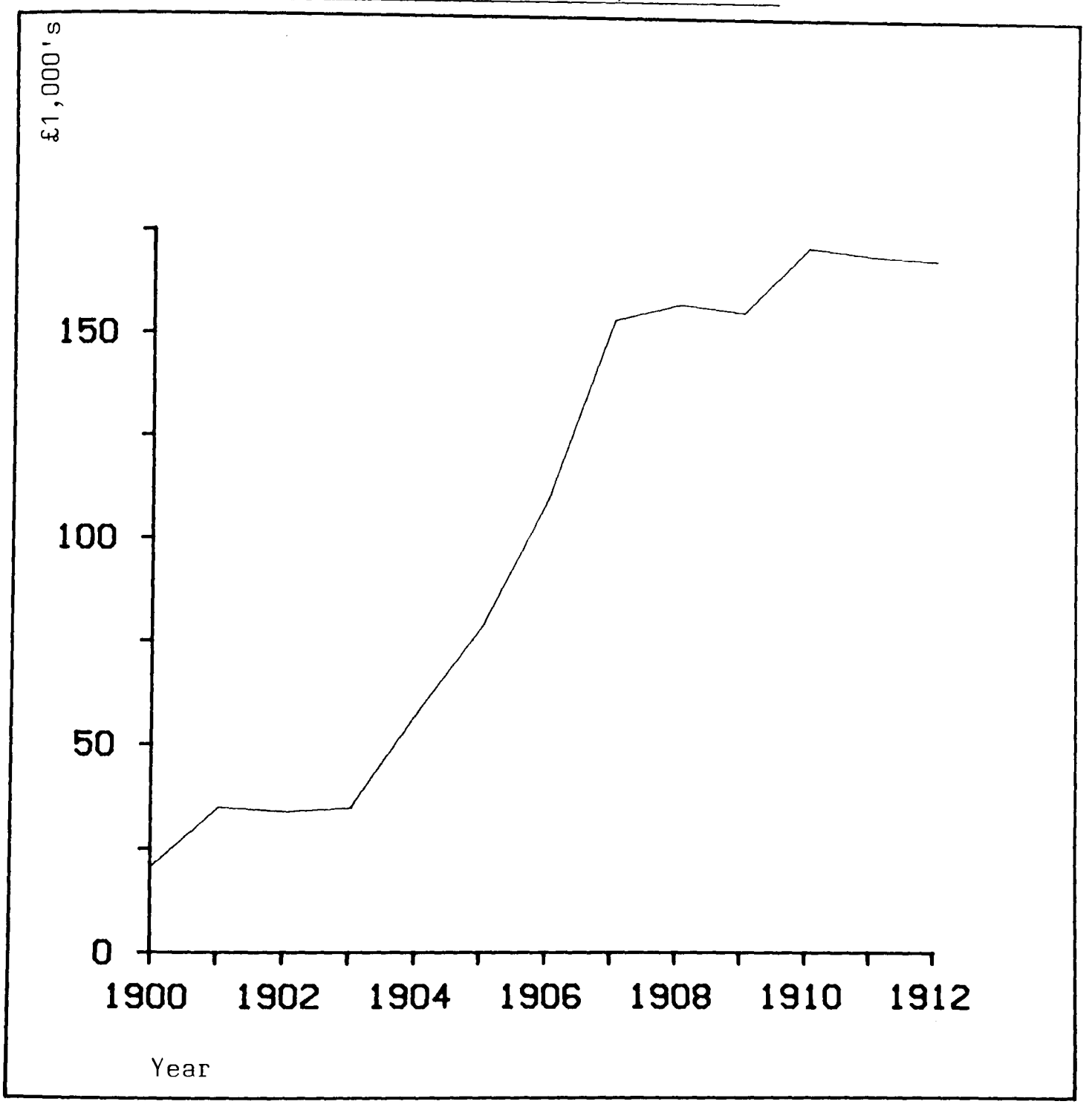
Source: Sheffield Independent

Graph 6 Quarterly Exports of Cutlery From Sheffield to the United States, 1873-1890.



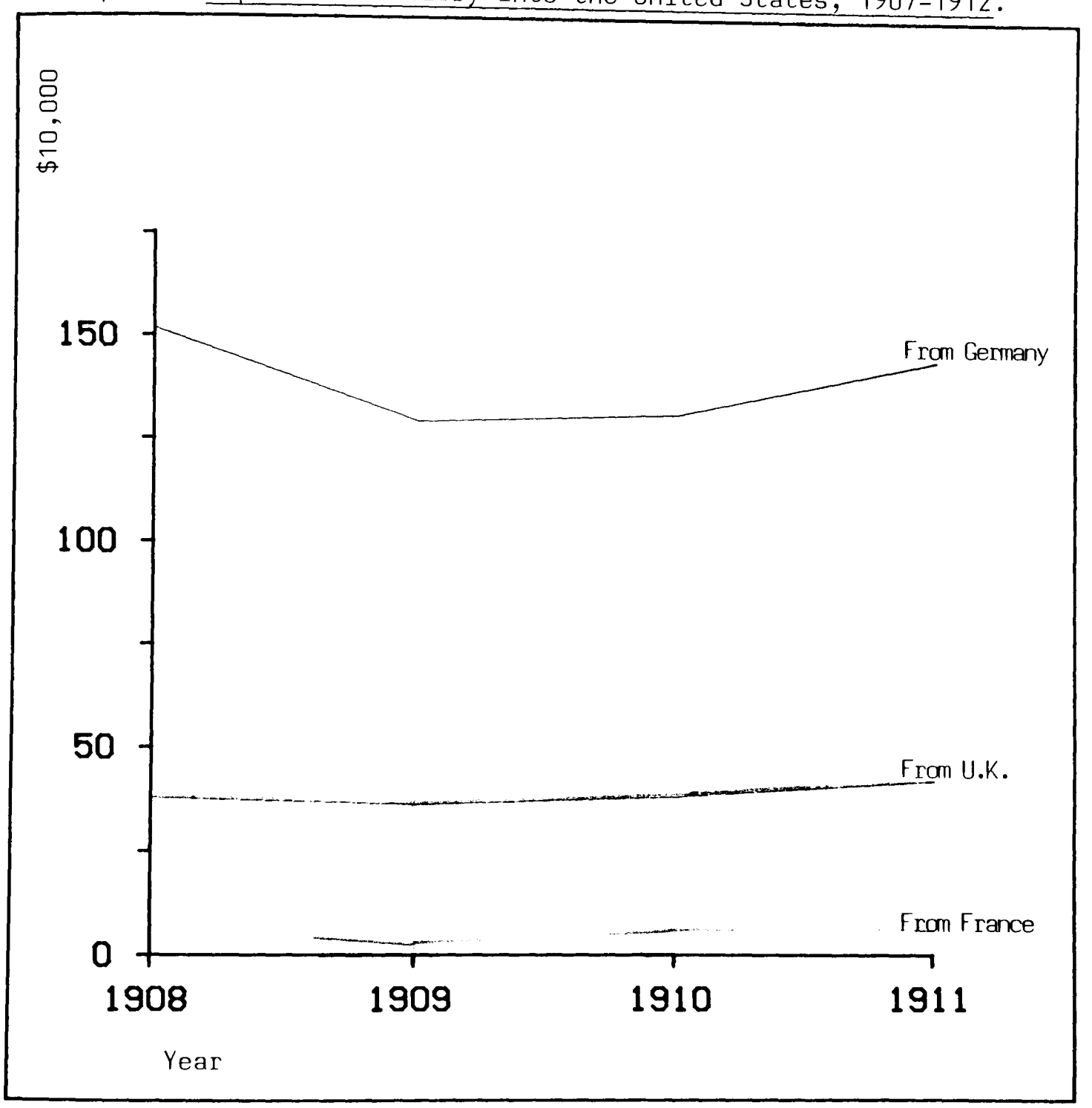
Source: Sheffield Independent

Graph 7 Imports of Cutlery to the U.K., 1898-1912.



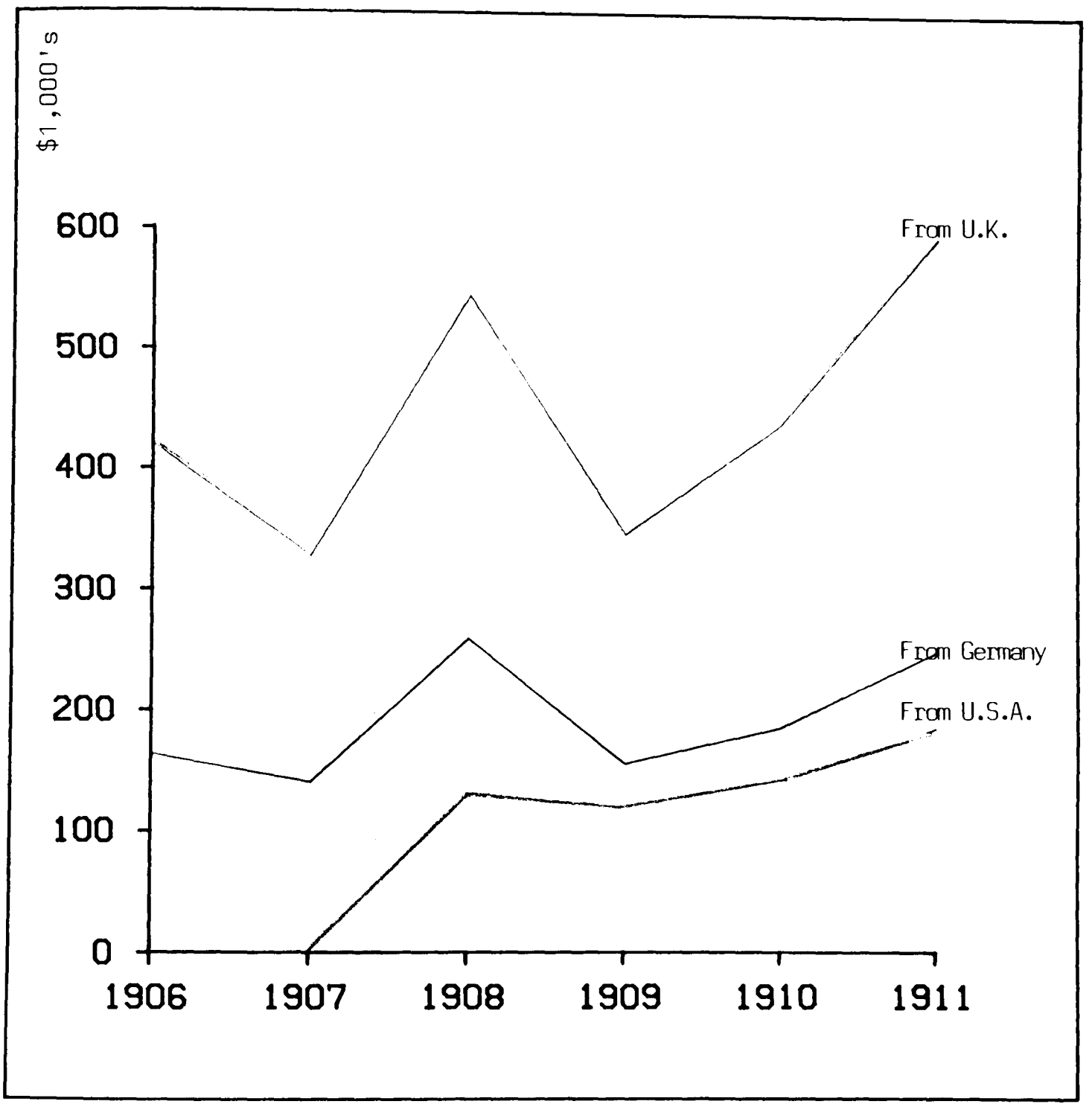
Source: Sheffield Independent

Graph 8 Imports of Cutlery into the United States, 1907-1912.



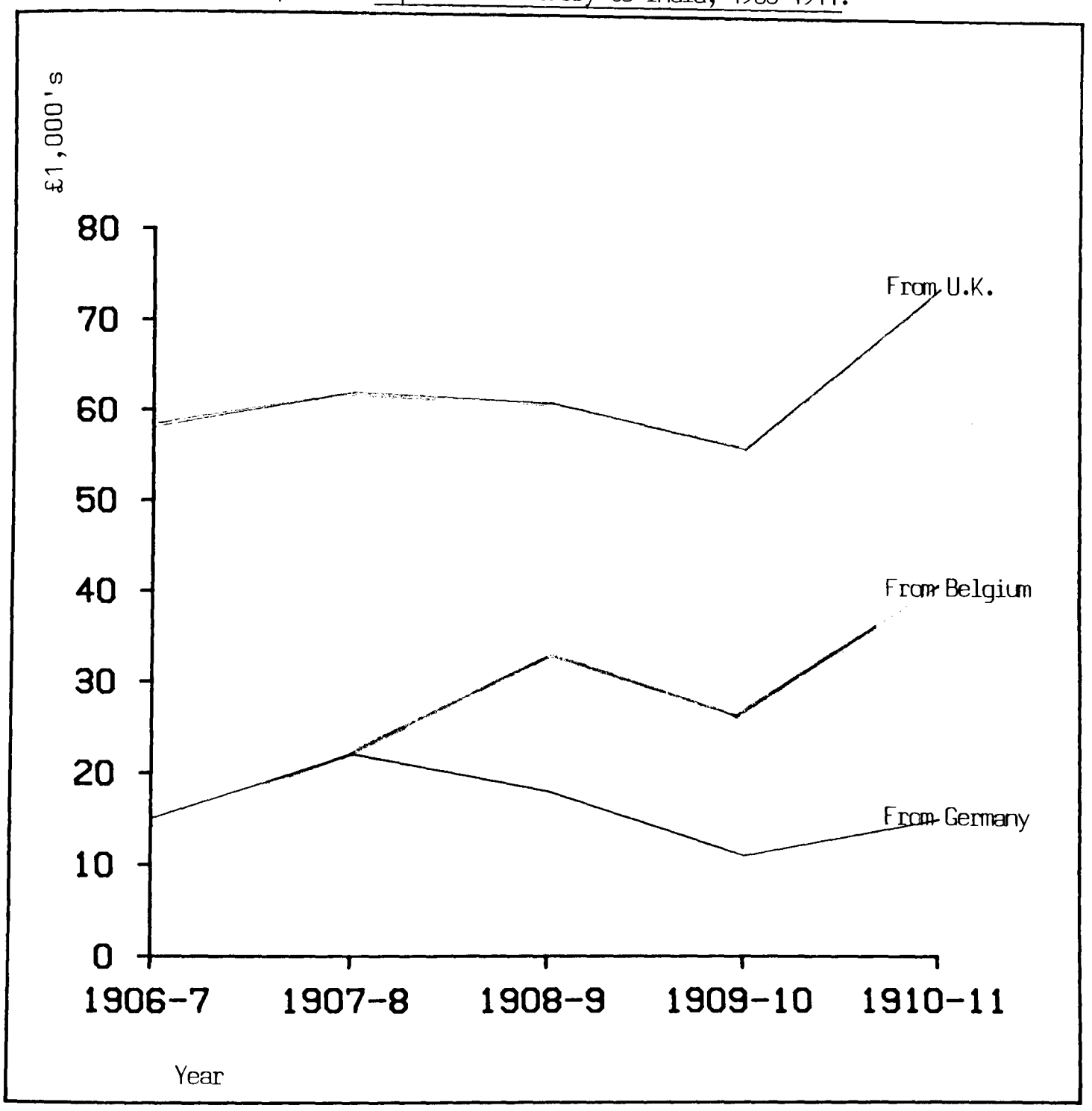
Source: Lloyd, p.485.

Graph 9 Imports of Cutlery to Canada, 1906-1911.



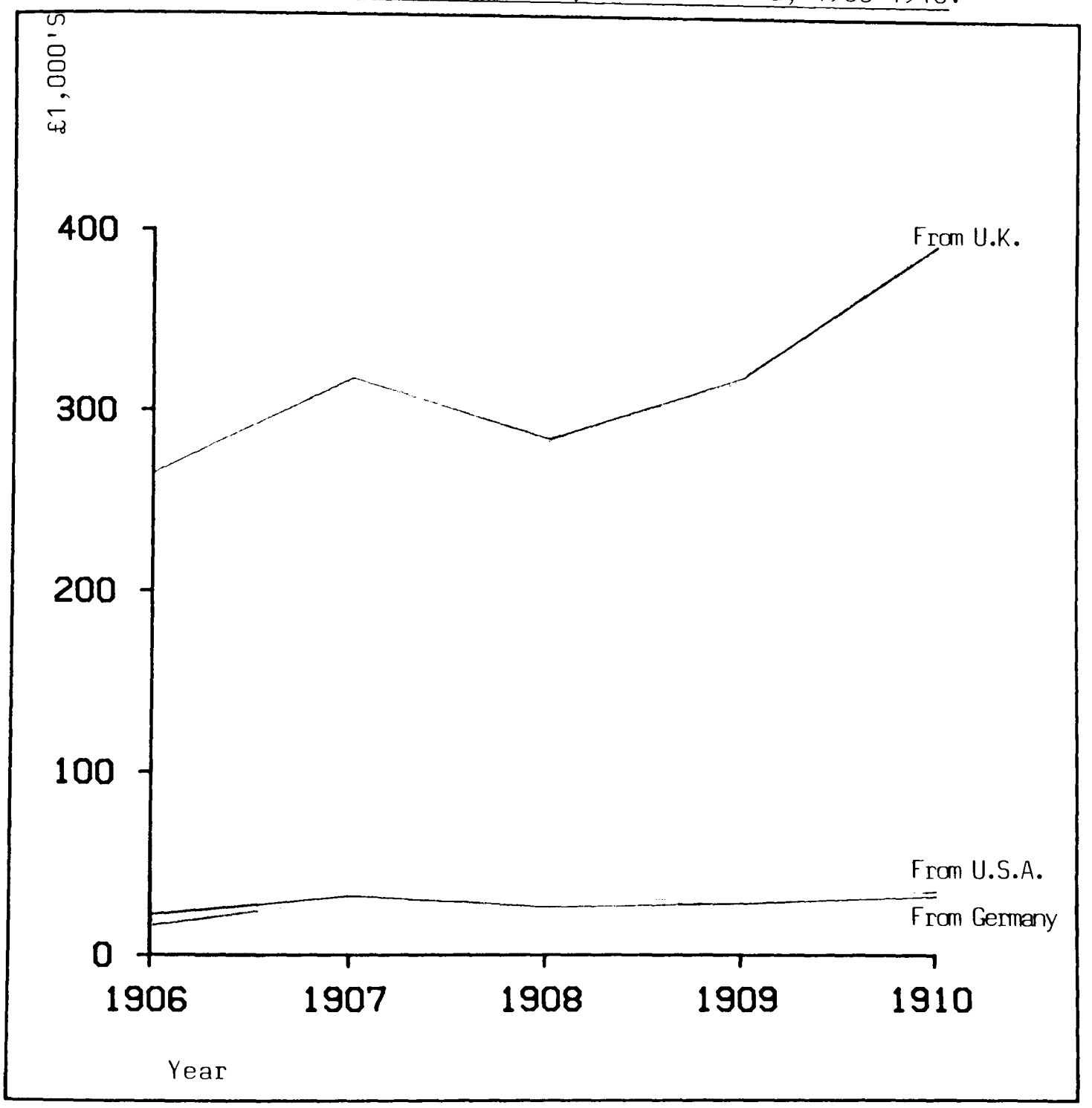
Source: Lloyd, p.486.

Graph 10 Imports of Cutlery to India, 1906-1911.



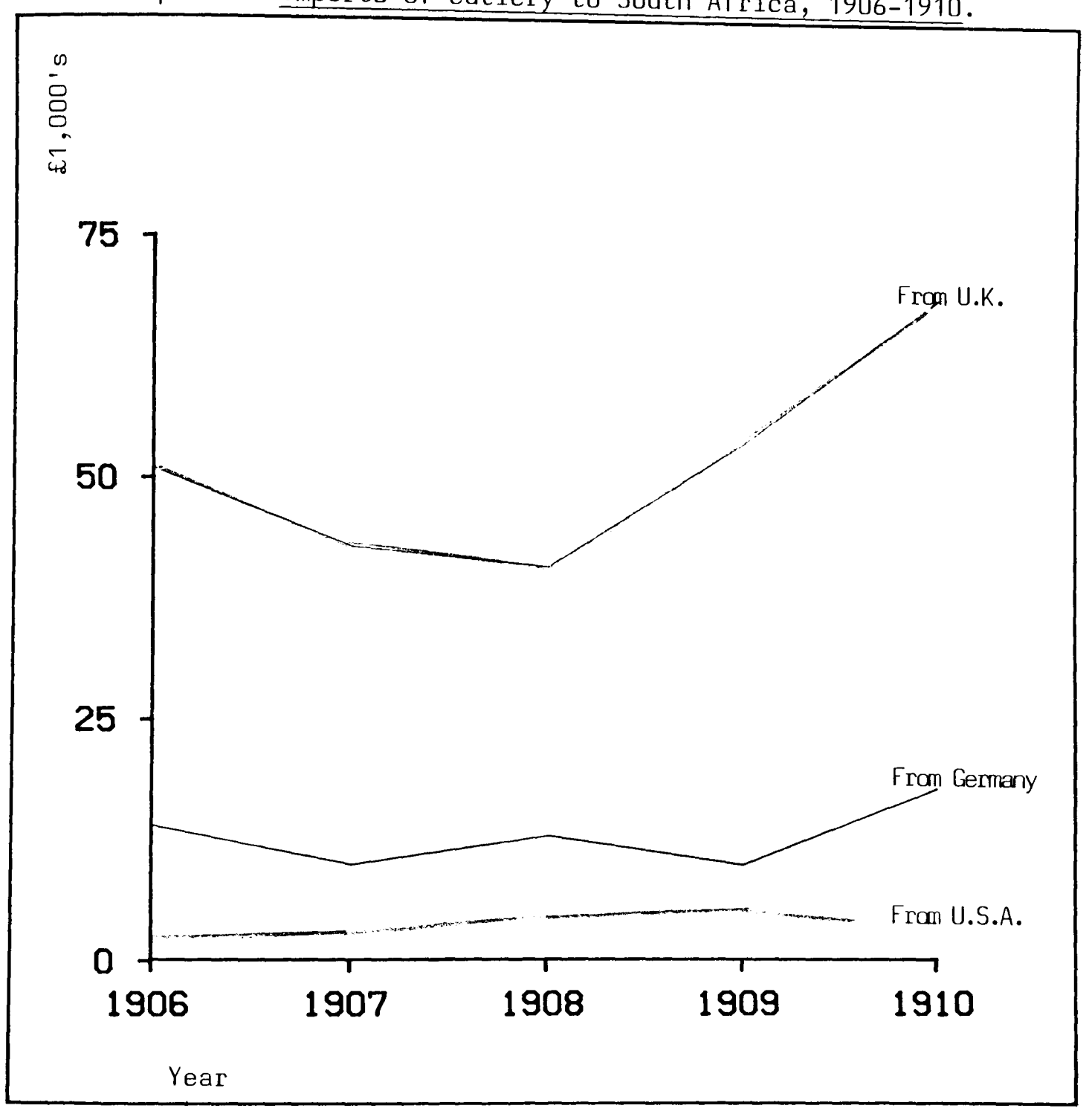
Source: Lloyd, p.487.

Graph 11 Imports of Cutlery to Australia, 1906-1910.



Source: Lloyd, p.486.

Graph 12 Imports of Cutlery to South Africa, 1906-1910.



Source: Lloyd, p.487.

Appendix 4: Biographical Notes

Abbreviations

HW	Odom William, Hallamshire Worthies: Characteristics and Work of Notable Sheffield Men and Women (Sheffield 1926)
MOP	Men of the Period (Sheffield 1896)
N&Q	Big and Little Guns of Sheffield: Re-issued from the Sheffield Weekly News 1890-1900 [n.d]
SI	Sheffield Independent
WW	Sheffield and District Who's Who (Sheffield, 1905)

ALLEN Robert, of "Rockfield" Brocco Bank, and the Granville works. The business was founded by his father in the 1830s. Strong Conservative and churchman at St. Mark's Broomhill. Married the daughter of a former Lord Mayor. (SI 4.6.1898)

ATKINSON John Furniss,b.1850, educated at Myrtle Spring Boarding School, descended from an old and respectable local family. His grandfather founded the Sheffield and Rotherham Independent in 1819. Co-partner with his brother, Edward, in Atkinson Bros., manufacturers of steel, cutlery, tools and plated goods of the Milton works. Leading representative and spokesman of the cutlery and silver trades. Important in the help he gave to Gladstone's Government in 1881, in the renegotiating of the French customs treaty, which helped in his conversion from Free to Fair Trade. He founded the first branch of the National Fair Trade League in Sheffield. Master Cutler in 1892, his feast being amongst the most brilliant with guests who included an Indian Prince and the Lord High Chancellor. "The fame of Atkinson's Year will assuredly live as long as the Cutlers' Hall itself". At the Chicago Columbian Exhibition and World Fair in 1892, he was the sole cutlery judge,and was invited by the American Government to tour its principle cities, where he aquired much trading information. Member of Sheffield Town Council from 1881-1887. Member of the District Council for Dore and Ecclesall Board of Guardians. For 13 years, president of Dore, Totley and Holmesfield Agricultural Society, which was one of the largest organisations of its kind in the country. He was a prominent Conservative, president of Dore Conservative and Constitutional Association and was approached by the party to become an M.P. for Sheffield. Consul in the N. of England for Uruguay, a country with which his firm did much business. In masonic circles, he was Provincial Grand Warder for Derbyshire, and a Royal-Arch Mason. Was a founder and Warder of Lodge Chantry, and for 20 years a member of Royal Brunswick Lodge. He was an accomplished linguist, and frequently visited the Continent. He had a residence at 11, King Edward Mansions, Bloomsbury. (MOP p.59)

ATKINSON Edward,b.1848, he was educated at the Collegiate School. Chairman of the Dore Parish Council, a churchwarden of Dore Parish Church, a member of Dore Conservative and Constitutional Association, and a prominent freemason. (MOP p.59)

BAILEY A.J. a prominent member of the S.F.T.C., and a forceful, able local organiser of the National Amalgamated Union of Labour.(N.A.U.L.) After 1911, he succeeded in persuading many of the small, moribund cutlery trade societies to join the N.A.U.L., and once members, he played an active part in settling disputes to which they were a party. He was a member of the Board of Guardians, the Distress Committee and later the Sheffield Insurance Committee. He was made a J.P. for the West Riding. (S.F.T.C. Annual Reports 1903-1914; SI 18.10.1907; 7.11.1907)

BARNSLEY Joseph, partner in G. Barnsley, spent most of his time travelling for the firm. A Conservative, and a member of Crookes Church. Lived at Oakwood House, Taptonville Crescent. d.1888 (SI 20.6.1888)

BELK Charles, a typical Yorkshireman "broad-shouldered and burly, shrewd, determined and decisive". Family were from Pontefract. He was born in Sheffield and apprenticed to Francis Newton and Sons, cutlery manufacturers. In 1863 he joined Mr. Samuel Roberts of Sharrow Mount, a manufacturer of silver, electro-plate and table cutlery at Furnival works. When Roberts retired in 1879, Belk became head. "Mr Belk abhors shoddy. He abominates the cheapness associated with inferior quality and poor workmanship, and will have none of it". Master Cutler in 1885, principal guest was Lord Randolph Churchill who was the Secretary of State for India. He was the historian of the Cutlers Co., studied it, lectured on it, and in 1894 he presented the Company with 2 brass tablets engraved with the names of past masters. In 1897 he presented it with a mace, which is still used on ceremonial occasions. He felt that the Co. should be allowed to confer honorary freedom on distinguished visitors. Prominent member of the Chamber of Commerce. As Master Cutler, because of his deep interest in matters affecting Sheffield, he attended the Rome Convention which accepted the Company's proposals on the false marking of goods. He was "thoroughly well-read, has all the cultivated tastes of an English gentleman. He devotes much of his time to the arts and sciences...". He was a magistrate, a churchman and a Conservative. (N&Q pp. 141)

BELFITT Robert, managing director of George Butler and Co. Ltd., cutlery manufacturers. He was apprenticed at Messrs.Longden & Co. of Phoenix foundry. Lived at Lawson Road.(WWp100) "He is good natured and genial in a Yorkshire sort of way and has plenty of homely common sense to his credit". (SI 8.8.1902) As was customary for in-coming Master Cutlers, he entertained over 400 guests at the Cutlers Hall, including all members of the staff, male and female, of the Trinity works, who presented him with gifts. (SI 29.8.1892)

BINGHAM A.E.,b. Sheffield 1868, educated at Blairlodge School, then entered Walker and Hall of which he became a partner. Keen sportsman. Became a member of the Royal Engineers Volunteers in 1885, when his father was in command, became a captain in 1891, and received the honorary rank of major in 1900. Lived at Ranmoor Grange. (WW p.125)

BINGHAM Wm., a founder of the cutlery firm of Bingham and Ogden. Well-known member of Brunswick Wesleyan Chapel and later of Hanover St. United Methodist Free Church, where he was a Sunday School teacher, and a trustee of the Chapel. Liberal in politics. Took no major part in public life. d.1907 (SI 13.10.1907.)

BLYDE J., of "Craymoor" Osborne Rd. Founder of the cutlery and surgical instrument firm at the Clintock works. Important member of Montgomery Wesleyan Chapel. Quiet and constant Liberal, but never active in politics. d.1899 (SI 15.12.1899) His son who carried on the business, was remembered as the first man in Sheffield to drive a motor car. (Henry Tatton's Heeley Notebook, p.7)

BROWN J. "A bridge between the old and new, from table knives to railway plant and armour plates..." He was born to a slater in 1816, and apprenticed to Earl Horton and Co., cutlery manufacturers in Orchard Place. His father and uncle guaranteed £500 to a local bank, and at his majority he began his own business as manufacturer of cutlery, files, joiners tools etc. (WW pp.161-2)

BUTCHER William and Samuel, both brothers were apprenticed to a local cutler, being sons of a working cutler of Charles St., but became small scale steel and tool makers. The business took off with the boom in American trade in the 1830s. William died in 1870 leaving £100,000, and two daughtes who married Colonel J. Cutler and Dr. A. Hall.(G. Tweedale, Giants of Sheffield Steel,pp.21-28)

CARR Geo., of 68, Countess Road, and H.S.Carr and Sons Ltd., India works, Clough Road, founded by his father in 1872. A committed member of Thomas St. Temperance Mission, and president of the Minstrel troupe attached to it. Past Grand Master of the Municipal Lodge of Oddfellows. d.1909 (SI 26.2.1909)

CHALMER Hamer, of Whitley Wood Hall, a son of a former vicar of Fulwood. Apprenticed to Francis Newton and Sons, becoming a traveller, a director, and finally chief partner. Conservative member of the City Council for Upper Hallam, Alderman in 1895, chairman of the watch committee. (N&Q p. 131)

CLEGG William Johnson, b.1826, son of a small cutlery manufacturer. Educated at the Calver St. National School and the Church of England Instruction Society. Left school at 12 to become a clerk with Mr. Henry Vickers, Solicitor. He later became a solicitor and founded the well known firm of W.J.Clegg & Sons. He was a teetotaller and a leading figure in the Temperance Movement. He became a town councillor for Hallam, and was a keen Liberal. He was a churchman and a J.P. His three sons all became solicitors and were well known in the city. (HW p.135)

COPLEY John, of "The Firs," Carr Rd., Walkley, and the firm of John Copley & Sons, cutlery manufacturers, Richmond Works, Walkley. The business was founded by his father, and later his own sons, and a son of his brother became involved. Their trade was mainly with India. He was a Tory, a member of Ecclesall Board of Guardians for Nether Hallam, and an overseer of Nether Hallam. He was a churchman and a warden of St. Mary's, Walkley, for 6 years. He was a member of the Hallamshire Proprietary Bowling Green and a former president of the club. d.1903 (SI 11.4.1903)

CRESWICK Nathaniel, b.1831, at Park Fields, son of a silver plate manufacturer. Educated at the Collegiate School. Chairman of Joseph Rodgers. A colonel and early member of the Hallamshire Rifles, he commanded the local Artillery Volunteers until 1897. Solicitor by profession, became a Companion of the Bath in 1896, and a J.P. for Derbyshire. Chairman of Sheffield Football Club from its foundation in 1857 until 1863. (WW p.127)

CROOKES Thomas, senior partner of Brookes and Crookes from 1858. Travelled widely for the firm. Ardent Liberal, founder of the Reform Club in Sheffield. Nonconformist and generous supporter of Loxley Congregational Chapel. (MOP p.63; SI 19.2.1912)

CROOKES Herbert, son of Thomas, b.1853, educated at a private academy and then entered his father's business. He qualified for partnership "by acquiring a thorough practical knowledge of the trade in all its details." He visited the S. of England for the firm. His sons entered the business: Henry a practical cutler, and Cyril in the commercial department. (MOP p.63)

CROOKES Willis, son of Thomas, b.1895, educated at the Collegiate School, and then joined the commercial department of his father's business. He travelled for the firm in Lancashire, Yorkshire and the North. He was a breeder and successful exhibitor of pedigree hackneys, member of the Ecclesfield Farmers Club, and the Hallam and Eccelsall Agricultural Societies. He had a stud farm at Loxley. (MOP p.63)

DEAKIN Joseph Tingle, of Ashford House, Endcliffe Avenue. Principal partner in the firm of Deakin and Son, cutlery manufacturers, Tiger works, West St. He was a native of Sheffield and worked as a boy at Messrs. Bury & Co., Penistone Rd., where he became Secretary of the Company. In 1860 he started his own business with Mr. Ecroyd and later took Mr. Reuss into partnership. The firm had considerable business with S. America, and he was regarded as an expert on that market. He was always an active worker in the Congregational Church, a deacon at Mount Zion for many years, and filled a similar position for 6 years at Broompark. Although he would take no part in public life, he was well known and respected as a staunch radical. His sons worked in the company. d. 1896 (SI 17.2.1896)

DERBY John, of 260, St. Philips Road, and head of the firm of John Derby & Sons, cutlery manufacturers. Apprenticed at Thomas Turner & Co. Although he never actually retired, the business was later managed by his son, Arthur. He was a keen horseman, a Conservative and a well-known local antiquarian. He was a churchman and a warden at St. Michael's, Neepsend. d.1912 (SI 18.5.1912)

DUNN Thomas, b.1801, both his father and grandfather were table knife cutlers. His father however, "was more than a mere cutler, he was a natural philosopher and the first in Sheffield to apply steam power for the moving of the cutler's grindstone". Thomas was Master Cutler in 1842. Having been educated at the Sheffield Grammar School, he became a partner in the Sheffield Coal Company. d.1871 (MOP pp.233-4)

ELLIN A.R., of Kingfield Road, Sharrow. b1841, son of a working Sheffield cutler in the firm established by his grandfather in 1784. Educated at the Collegiate School, and Gaines in France. Master Cutler in 1901, the third member of his family in direct succession to be chosen. His father, Thomas, was Master Cutler in 1841, and his grandfather, also Thomas, in 1833. He was a member of the board of Jessops Hospital, Treaurer of the Blind Institute, and a member of the committee of the Sheffield Scripture Readers Society, and the Church Pastoral Aid Society. He was a Conservative, a J.P., a Churchman, and a member of St. Andrews Church, Sharrow. d1909 (SI 25.2.1905; WW p.107:

ELLIN T.R., tool manufacturer of Rockingham St., and later Hollis Croft, but initially a working spring knife cutler. He studied at the Sheffield Technical School, and entered the cutlery business of his uncle A.T. Ellin. He was a very well known figure in local and national Y.M.C.A. He was also a prominent member of Ecclesall Church, the Diocesan committees, and the Pastoral Aid Society. (S.C.L.M.D. 1717/14; 1717/9)

ELLIOT J.W., of Brinkburn Grange, Dore. Head of the firm of Joseph Elliot & Sons cutlery manufacturers, of Hollis Croft. He was extremely knowledgeable on art, and had a fine collection of Pigott's works. Former captain of the Engine Volunteers. d.1904, aged 62. (SI 3.6.1904)

GIBBINS Thomas Henry, of Chantry House, Norton. He was a traveller until his father died. The extensive business on Moore St. was created by his grandfather. He took no active part in social or political affairs. d. 1908 (SI 8.11.1908)

GILCHRIST Thomas, b.1867 at Heeley, educated at Sheffield Grammar School. Served as an apprentice in the cutlery trade, but became a successful local novelist, writing mainly about his surroundings in Holmesfield. (HW p.5)

GRAVES Samuel Horrabin, of Palmerston Road, and Graves & Son, table knife manufacturers. d.1876 (SI 26.7.1876)

HALL Ebenezer, b.1820, in Derbyshire, educated at Arkwright School, Cromford, followed by private tuition and "self-culture". He came to Sheffield in 1835, and was apprenticed to John Roberts, silversmith, were he became a manager and traveller. He was given a partnership in 1846, and the business was amalgamated with Martin Bros. & Naylor, becoming Martin Hall & Co., silversmiths, electro-platers and cutlers. He was a director of the Sheffield and Rotherham Bank from 1867, and a director of the Sheffield Gas Co., Sanderson Bros.& Co., steelmakers, Samuel Newbould & Co., file and saw manufacturers, and of Carlton Colliery Co., from its formation. He was the owner of Abbeydale Park and Estate from 1876. He served as a Derbyshire magistrate. (WW p.243)

HARRISON Francis, of Endcliffe Grove. Became the youngest partner in Harrison Bros. & Howson,on the retirement of his father. He was in charge of the electro-plate department. Member of the West End Conservative Club, and a keen sportsman. His wife was the daughter of Alderman J.B.Jackson. d.1898 (SI 9.3.1998)

HARRISON William Wheatcroft, head of Harrison Brothers and Howson. Entered the City Council for Ecclesall in 1884, and undertook much committee work in health, water and electric light. Chairman for 6 years of the Ecclesall Conservative and Constitutional Association. Treasurer of Totley Orphanage. (N&Q pp.124-125)

HEMS Harry, b.1842 in London, where his father was an ironmonger, descended from a long line of cutlers. His parents moved to Sheffield, and he was for some time a clerk at Wostenholm 's Washington Works. His mother was the youngest sister of George Wostenholm of "Kenwood." Trained in art at the Sheffield School of Design, and was then apprenticed to a well-known Sheffield wood carver. He established the Ecclesiastical Art Works, undertaking much prestigious restoration and art work.d.1916(WW pp.161-2)

HIBBERD John, of 9, Westbourne Road, Broomhill, and, in association with John Marshall of the Westbourne Works, Portobello. Previously a partner in Christopher Johnson's - his uncle. Keen church worker, and for 16 years a warden at St. Paul's Church. d.1908 (SI 1.6.1908)

HIDES George, cutlery manufacturer whose son was apprenticed as a pawn broker. (SI 14.7.1886)

HOBSON John, of Tapton Elms. A scissor manufacturer in the firm established by his father. He was taken into partnership, and in 1884, handed the business over to his son, Albert John. For 30 Years he was on the board of the Sheffield Infirmary. He was treasurer and a prominent member of the Literary and Philisophical Society; an important member of the Chamber of Commerce; deputy chairman and one of the largest shareholders in the Sheffield Gas Company; a member of the Corporation for 10 years from 1877, and a chief magistrate of Sheffield. He was a generous supporter of the Unitarian Chapel, Norfolk St., as was his father. He was a very strong Conservative, and vice-president of Nether Hallam Conservative and Constitutional Society. In 1858 he married the daughter of Alderman John Carr. d.1889 (SI 21.2.1889)

HOBSON Albert John, b.1861, son of John Hobson. He was educated at home, and at an early age, entered his father's business. He then sold the business to Joseph Rodgers, and became a director of that company. In 1895, with his brother Wilfred, he bought the firm of Thos. Turner & Co., Suffolk works. He was director of the Birmingham Small Arms Co., chairman of William Jessop & Sons, and a director of other companies. He was a president of the Chamber of Commerce; Master Cutler in 1902; represented the Ecclesall Ward in the City Council, and was Lord Mayor in 1911. He was especially interested in the Royal

Infirmary, a Town Trustee and a chairman of the Finance Committee of the City Corporation. He had a keen interest in the University, and was a great traveller, having visited Canada and America on business. He was a member and treasurer of the Upper Chapel. (HW p.169) He was a member of the University College Council, chairman of the University College Finance Committee and on the committee of the Training College. He was president of the Fisher Institution, a charity which distributed annuities to needy women.(WWp.114) At the local election of 1889, Hobson was the subject of a widely publicised claim that he would only employ non-union workers at his scissor factory, and would not pay the recognised list prices. He firmly refuted the claims.(SI 19.11.1889; 26.1.1889) This ill feeling however, did not stop him entertaining his workmen at the Cutlers' Hall in 1902, following the custom of in-coming Master Cutlers. 850 guests were present, including all the in/workers and as many out/workers as could be accommodated from the various firms with which Hobson was associated. The workers presented him with a portrait of himself, and Mrs. Hobson with a gold necklace. (SI 3.10.1902)

HOLMSHAW Robert, b.1818, of Elliott Road , Crooksmoor, a scissor grinder, and founder of that union. He remained the president, treasurer and collector of the Union from its formation in 1867 until his death. "A skilful workman in his earlier days, his services were eagerly sought for, and he worked both in Germany and America and in London and the North of England. The experience he thus obtained, and especially whilst he was in Germany, subsequently stood him in good stead, and he was able to render valuable assistance to his and other trades when the agitation against German goods having Sheffield trademarks, or bearing Sheffield label was commenced. In that agitation indeed, he played a prominent part, and his opinion and experience were of great value". Before the establishment of the S.F.T.C., he was a prominent member of the Sheffield Association of Organised Trades. He gave evidence before many Select Committees and Royal Commissions, including those on the Outrages, the Depression in Trade and Industry and Merchandise Marks. He had four sons and four daughters. One of his sons was a Unitarian minister in Belfast, another, Robert, took over his father's union duties. He died in 1891, and his coffin was carried by members of the Scissor Grinders' Union. (SI 5.11.1891)

HOLMSHAW Robert, (junior) of 16, Leamington St. Like his father, he was president, treasurer and collector of the Scissor Grinders' Union, and President of the S.F.T.C. He represented Labour in many directions, but notably in connection with education. He was a member of the School Board for some time, the Education Committee, and also the Free Public Libraries and Museums Committees of the city council. In 1905 he was a member of the committee of welcome when the Iron and Steel Institute visited the University, which

was felt to be a great honour for a workman. He was also a member of the city council's Distress Committee, the Sheffield Insurance Committee,and the Board of the Royal Hospital. In 1907 he was made a J.P. for the West Riding. "He had the honour of being selected as the representative of the Sheffield Cutlery Council on the Mosely Labour Commission, which inquired into the conditions of trade in America in 1902, and his report was one of the most thoughtful, suggestive contributions to the volume which the commission presented. (WW p.70; S.F.T.C.reports)

HOWARD Francis, of Nether Green. Keen churchman, Conservative, and a member of the Ecclesall Board of Guardians. d.1905 (SI 19.6.1905)

HOWSON George, b.1851 at "Tapton Park", into a family of cutlery manufacturers. His grandfather was a partner in Thomas Sanson & Co., which was succeeded in 1844 by Harrison Bros. & Howson. He was educated at the Collegiate School and in France, and became a partner in Harrison Bros. & Howson in 1875. In 1884 he married the daughter of Mr. David Ward, who was a former Master Cutler and Mayor. He was a seacher and warder of the Cutlers' Company; president of the Cutlery Manufacturers Association; and vice-president of the Silversmiths Association. He was a member of the board of management of the Sheffield Royal Hospital, a trustee of the Hallamshire Savings Bank, and a director of Truswell's Brewery Co. He was a keen sportsman.(WW p. 234)

HUNTER Michael, brother of the Rev. Joseph Hunter. Educated at Abrams School, and succeeded his father in his firm. " During the whole time he occupied the position of senior partner in the firm, he waged war with the Trade Unions". He was the first Sheffield manufacturer to introduce circular saws to cut knife handles and scales. He was also the first to use machines to forge knife blades. He was always a great supporter of high quality production. A favourite saying of his was, "I would rather make the best goods at 5%profit, than an inferior kind at a greater gain". In 1842 he was elected a Police Commissioner; in 1844 he became a Highway Surveyor; between 1844 and 1847 a town councillor; in 1845 a Guardian for Brightside; and in 1852 Master Cutler. He was a moderate liberal,"or a whig of the old school",and a staunch supporter of A.J.Mundella. d.1886 (SI 15.3.1886)

HUNTER Michael J, of "Carisbrooke", Oakholme Rd., Sheffield, and Stoke Hall, Derbyshire. Chairman of M. Turner & Sons Ltd., Talbot works, a business established by his great-grandfather in West St., in 1760. He was born in 1856, served four years apprenticeship under his father,and became a partner in 1883. He became a Master Cutler in 1903. following two Michael Hunters who also filled the office in 1852 and 1860. He was a

Unitarian, and chairman of the trustees of its principle chapel in Sheffield. He married the second daughter of Henry Harrison. (WWp.91) In 1899, the business was converted to a private limited company, and Hunter became chairman of the board. The firm manufactured every description of cutlery and had extensive trading connections with the British Colonies and S. America. They were the first firm to receive a contract to supply cutlery to the government.(SI 3.10.1903) On his appoinment as Master Cutler, he entertained 300 guests at the Cutlers' Hall, including all the staff and workpeople of his firm. The workpeople presented Hunter with a portrait, and his wife with a silver salver. (SI.13.10.1903)

LOCKWOOD G.F., b.1850 of 4, Park Avenue, and educated at the Collegiate School. He was a member of Lockwood Bros. Ltd., steel, file and cutlery manufacturers, founded by his great -grandfather in 1767. He was Master Cutler in 1886/7, president of the Chamber of Commerce in 1889/90 and for 20 years Conservative member of the city council. He was connected with the management of the Sheffield Royal Hospital and the City Hospital. He was a J.P., and interested in all outdoor sport. (WW p.98)

MALLINSON Joseph, secretary of the Razor Grinders' Union,and widely respected as the first member of the working classes to become a member of the Sheffield Bench of Magistrates in 1866. d.1892 (SI 22.8.1894)

MAPPIN Fredrick Thorpe, b.1821 of "Thornbury" Sheffield, and 38, Princes Gate, London, the son of Joseph Mappin, cutlery manufacturer. He left school at 14 to join his father's business, the management of which he took over before he was 21. He joined his brothers in partnership in 1859, and afterwards became senior partner in Thos. Turton & Sons, where he remained until 1885, when he retired to devote himself to his public and parliamentary duties. He entered the Town Council in 1854, where he sat for St. Peter's ward for 3 years. He re-entered the council in 1876 for Ecclesall ward, and in 1877 became Mayor. He was Master Cutler in 1854. In 1880 he became M.P. for Bassetlaw. From 1885 until 1906 he represented Hallamshire. In 1886 he was conferred a baronetcy, and in 1900 he was placed on the roll of freemen of the city. He was pro-Chancellor of the University and president of Sheffield Technical School, of which he was a founder, and to which he gave large sums of money and scholarships. He was a great believer in the value of secondary and technical education. As a commercial man he had few equals. He was a director of the Midland Railway Co., and chairman of the Sheffield Gas Company. He gave huge sums of money to a variety of causes in the city, religi ous, charitable and educational. His gifts to the Technical School included £200 towards its erection in 1884; £100 yearly for

five years; £1,250 for engineering prizes and machinery and £2,500 between 1900 and 1904 towards the purchasing and fitting up of premises. In 1903/4 he gave £7,000 towards the building of the University. He also donated large sums to the building and maintenance of the Church Day schools. In the year of his mayoralty, 1877, he opened a Distress Fund , to which he contributed £500. He was a keen churchman and gave much support to church work. The Mappin Art Gallery was built with a bequest of £15,000 by his uncle Mr. Jonn Newton Mappin, but Sir Fredrick Mappin contributed many works of art. He attended St. Mary's Church and was a warden there for many years, but in his later life he attended St. John's, Ranmoor, and St. Augustine's, Brocco Bank, towards the building of which he contributed £600. He died in 1910 leaving £931,000 in his will. He left £1,000 each to the University, the Royal Infirmary, the Royal Hospital, Jessop's Hospital for Women, and the Royal Albert Asylum. (WW p. 14; HW pp.92-95; N&Q pp.214-15)

MAPPIN Frank, b.1846 of 272,Fulwood Road, eldest son of Sir Fredrick Mappin, and succeeded to the baronetcy in 1910. Managing director of Thomas Turton, a town councillor and a Liberal. He was a magistrate, a member of the Council of Sheffield University, and a patron of the School of Art. He was a churchman, and a generous contributor to the Church Extention Scheme. (WW p.95; HW p.95)

MARSDEN John, b.1843 at the Ball Inn, Carver St., and later of 28, Riverdale Rd. He was educated at Dance's School, Fitzwilliam St., and then at the People's College although he left at the age of 9, he attended evening classes until he was 14. He was apprenticed to the scissor trade on his 13th birthday. He was a trade union secretary for many years, and a general merchant. He did much church work, especially for the Protestant League. He spent twelve years as a Sunday School superintendant at St. George's. A Conservative, and returned to the Council for Hallam in 1904. He was active for the Ecclesall Branch of the Primrose Leaague. (WW p.54)

MARSH Harry Parker, b.1857, and educated at Sheffield Collegiate School, Clifton College Bristol, and Dresden, Germany. He spent time in all the departments of the firm to gain practical experience. In 1887 he contested Park Ward for the Conservatives without success, but the following year he was elected for the Ecclesall Ward. He became an Alderman in 1905, and Lord Mayor in 1907/8. He was a member of the City Council for 39 years. He was elected a Town Trustee in 1913, a Church Burgess in 1901, and chairman of the Sheffield Public House Trust Company Earl Grey's scheme for reformed public houses. He was a member of the Iron and Steel Institute, and very interested in education, marked by his long service as a governor of the Grammar School, on the City Education Committee

and the University Applied Science Committee. He was a governor of the Royal Hospital, a General Commissioner for Income Tax, and a Guardian of Assay of Sheffield. He was a president of the Chamber of Commerce in 1900, and chairman of the Conservative and Constitutional Federation from 1924 to 1928. He carried through the transformation of Marsh Bros. into a Limited Company in 1907, and became the first chairman. Relations with his employers were always exceedingly good, and the staff joined in celebrating the firms 250th anniversary in 1904, and were also invited to a special dinner. Harry Parker Marsh became Lord Mayor in 1907/8. (S.Pollard, Three Centuries of Sheffield Steel: The Story of a Family Business. Sheffield: Marsh Bros. 1954. p.51)

MARSH John Parker, like his brother Harry, John was educated at Clifton College, and in Germany, and from the age of 21, became associated with the firm. He was a freeman of the Cutlers' Company from 1901, and a fellow of the Royal Society of Arts. He was a keen tennis player, representing Yorkshire, and with his brother Harry, was a prime mover behind the formation of the Sheffield and Hallamshire Tennis Club. When the company was reorganised in 1907, he became a director, and remained on its board until he died in 1926.(S.Pollard, Three Centuries of Sheffield Steel: The Story of a Family Business. Sheffield: Marsh Bros. 1954. pp.50-51)

MARSHALL John, of Broomhall Road. Son of William Marshall of Lanark. Educated at Ardrie Academy and Glasgow. Worked for Christopher Johnson & Co. Chairman of the Weekly Board of the Royal Infirmary, and a J.P. (WW p.98)

MILNER Isaac, b.1834, of Laveroc Bank, Kenwood Road, son of Charles Milner of Fargate, and "The Edge," Sheffield. Educated at the Friends' Boarding School, Ackworth. Cutlery manufacturer and merchant. J.P. and Guardian of Ecclesall and Bierlow. President of Sheffield Sunday School Band of Hope, for 30 years. A President of Ecclesall Liberal Association. Director and later chairman of Sheffield Cafe Co. Ltd. from 1885. He was a teacher in the Friends, Childrens and Adult Sunday School for over 30 years. He was involved in many local temperance organisations. A Trustee of the Board of Management of the Savings Bank. (WW p.102)

MOORHOUSE James, b.1826, son of James Moorhouse, cutlery manufacturer, and a native of Sheffield. He left school at 16, but then attended the People's College. His father wanted him to become a cutlery merchant and enter his business, but he preferred the church. He went to St. John's College, Cambridge, and went on to become Bishop of Melbourne and bishop of Manchester. d. 1915 (HW pp.28-30)

NIXON William, came to Wostenholm's Washington works as a boy,and gained considerable experience under George Wostenholm . He retired in 1888, but remained a member of the board, becoming chairman on the death of William Wake, until his own death in 1926, aged 84. (S.C.L. Wos. R/10)

NEWBOULD Robert, d.1895 at his estate in Guildford, Surrey, aged 77. His father was of a Coventry family, but married into the Rodgers family. Robert also married a Rodgers, and joined the firm at an early age. He was a partner for many years, and in 1871 when the firm became a limited company, he became managing director and chairman of the board. He severed his connection with the firm in 1890 and retired to Guildford, with his second wife. He had two sons, but neither remained in Sheffield or the cutlery trade. He was a churchman and a Conservative, but took no part in public life. He aquired a valuable collection of works of art during his life. (SI 8.7.1895)

NOWILL C.R., b.1850, of "Newlands" Ranmoor, eldest son of John Nowill of Sandygate, senior partner in the firm of J. Nowill & Sons, cutlery and plate manufacturers. The firm was one of the oldest in Sheffield. He was educated at Milk Street School, and Boulogne-sur-Mer, and entered his father's firm, becoming a partner at the age of 28, and eventually became the senior member. He was a firm believer in the importance of upholding the reputation of Sheffield goods. He was the Conservative member for Hallam for 12 years, and held a seat on the City Council. He was a member of the education committee from its foundation, a churchman and for many years a manager of Fulwood School, and warden of the church. In later life , he worshipped at Ranmoor. He was an enthusiastic football player and keen gardener. He was married with no children. d.1910 (SI 17.2.1910; WW p.201)

NOWILL J.S., brother of C.R.Nowill, a member of the City Council and member of the Ecclesall Board of Guardians. (WW p. 201)

OATES J.S., of Park Lane, Broomhall. General manager of Harrison Bros. & Howson, spending 50 years with the firm. d.1890 aged 68. (SI 17.6.1890)

OSBALDISON Louis, of "Grange Court" Ashland Road, Nether Edge. His cutlery business was founded in 1863. He was an important freemason, and a member of St. Andrew's Church, Sharrow. d.1901, aged 65. (SI 13.11.1901)

OXLEY Walter, of Machon Bank. (SI 10.4.1907)

PLATTS Arthur, of 28, Talbot Place. Scissor manufacturer, elected to the School Board. (SI 10.11.1882)

RAWSON Fredrick Percy,b.1843, of "Kenbrook" Sharrow,and of a very old Sheffield family: Hunter's Hallamshire had records of their existence for 5 centuries and John Rawson was Sheffield's second Master Cutler in 1625. He was educated at the Lancastrian School and the Hebblethwaite Academy, and became a partner in the Globe cutlery works in 1870. He was a radical of advanced views. From 1878 to 1890, he sat in the City Council for St. George's ward. He did much useful work, not strictly within the realm of his duties, e.g.increasing Sheffield's postal facilities. He had a keen interest in social reforms, and unsuccessfully contested Stamford for the Liberals. He served intermittently on the School Board, was a member of the Technical Council of the University, and a member of the Northern Counties Education League Executive. He was also a J.P. He had a very keen interest in religious affairs, being a Baptist lay preacher, and the promoter of numerous Baptist extention schemes. He was a firm believer in the Disestablishment of the Church of England, and wrote many pamphlets on this subject. Member of Glossop Rd. Baptist Church. He was knowledgable on Indian affairs, having once visited India on a business tour. d.1909 (WWp.73; N&Q .268; F.P.Rawson, The Church in England; In Loving Memory of F.P.Rawson.

REUSS Ernest, of 8, Tapton House Rd. He was a native of Alsatia, but lived in Sheffield for 30 years. Until three years before his death he was in partnership with J. Deakin, but then he bought the firm of Samuel Hancock and Co., Mazzepa works. He was an important freemason, a past master of Britania Lodge, and treasurer of Hallamshire Lodge. He was also a member of the masonic Amateur Dramatic Society, violinist, and member of the Collegiate Ochestral Society. d.1898 (SI 4.2.1898)

RICHARDSON Samuel Gray, of "Stone Grove." He was educated at the Collegiate School, where he was a distinguished scholar. In 1868 he entered his father's business, Southern and Richardson, Don Cutlery works. He was Master Cutler in 1889-90. A member of the School Board 1894-1896. A keen churchman, a Church Burgess, member of the York House of Laymen, and a great contributor to church charitable institutions in the city. He was also a J.P. (WW p.99) On becoming Master Cutler in 1889, he entertained 450 guests to dinner at the Cutlers' Hall, including his employees, their wives and friends. The work people presented Richardson with an illuminated address and a silver dessert service. Many had

worked for the firm for between 30 and 50 years, during which time there had never been a dispute at the firm. (SI 10.8.1889; 9.9.1889)

RODGERS John, b.1856, of 14, Endcliffe Avenue, the son of George Rodgers. He was educated at Wolston,(near Rugby), Malvern College, and Neuwied in Germany. He then entered the family firm, and became managing director on the death of his brother, Maurice, in 1898. He travelled a great deal for the firm, visiting America, Canada, Australia and New Zealand. He was closely associated with the Hallamshire Volunteers for 24 years, holding the position of Honorary Lieutenant Colonel and second in command for many years. d.1918 (WW p.244; HW pp.174-5)

RODGERS Maurice, brother of John, and son of George Joseph Rodgers, He appears to have been the first member of the family to become a member of the Cutlers' Company, and was appointed Master Cutler in 1898, although he died aged 43, during his year of office. (SI 5.1. 1897; HW p.175)

RODGERS Wilfred, of Tapton Close, youngest son of George Joseph Rodgers. He was on the board of directors of Joseph Rodgers and Co., and also the managing director of Cocker Bros. Ltd. He took no active part in public life, but was a keen tennis and golf player. He was married to the daughter of a director of Vickers, Sons & Maxim Ltd. (SI 14.1.1908)

SADLER James, of 11, Priestly St. d.1908 aged 85 (an exeptionally old age for a grinder.) He worked for George Butler for 36 years, until he was 84. His three sons all followed him at his trade. As a mark of respect, the Trinity works were shut for a day following his death. (SI 19.8.1908)

SCHNETZTER Herman, of 305, Fulwood Rd. He was a file, tool and cutlery manager with S.Colley & Co., Arundel St. Shortly before his death, the business was amalgamated, and became a limited company, with Schnetzter and Colley as managing directors. He died aged 44, in 1899, in Constance, his native city. (SI 28.7.1899)

SCOFIELD John, d.1891, aged 82. For 40 years he had been a manager for Francis Newton, cutlery manufacturers. (SI 25.9.1891)

SHAW G.H., a member of the executive of the S.F.T.C., on which he represented the pen blade forgers. He was a member of the Distress Committee and the Sheffield Old Age Pensions Committee. (S.F.T.C. Annual Reports 1909 p.7; 1913 p.8; 1914 p.11)

STACEY James, b.1818, at Dunfields, the son of a cutler. He was educated until the age of 9, at the Lancastrian School, and when he was 12 he entered his father's trade, and worked for some time at Joseph Rodgers and Sons. He bought books, and taught himself,"labouring during the day in the cutler's shop, and spending his nights in mental toil in the persuit of knowledge." He became a member of Scotland St. Chapel, a local preacher, and in 1839 was ordained a regular minister of the Methodist New Connexion. With his influential friends, the Firth family, he took an active part in the foundation of the Methodist New Connexion College at Ranmoor, where he was principal from 1863 to 1876. He was well versed in Greek, Latin, Philosophy, and English Literature. He was especially interested in trade matters, and "declared that among the causes of bad trade were reckless competition, ambition and avarice, which with other things, tended to over-production, and in the long run created a scarcity of remunerative labour." d.1891 (HW pp.71-72)

TURNER Thomas, of Scofton House, Worksop. He was the eldest son of Thomas Turner, who founded the business in 1802. He was born in 1829, and educated at Rev. John Cockerton's school. Dronfield. In the business he was helped by his two brothers, but in 1893 he retired, and sold the business to Messrs. Alfred and Wilfred Hobson, although the firm kept the same title. Was a member of the Sheffield Corporation from 1857, Master Cutler in 1871 and a J.P. He was a Burgess of the parish church where he lived in Worksop, and a keen suppporter of the Temperance movement. He was a generous supporter of many funds, including the Worksop Victoria Hospital. He was on the committee of the Girls & Boys Charity School. In his will, he left £100 each to the Royal Hospital, the Infirmary, and Jessop's Hospital; £50 to two of his servants; and £10 to any others of more than 5 years service. (WW p.95)

TYZACK Walter, of Broomhall. Native of Sheffield, born in Abbeydale in 1857, and educated at Mr. Bowling's school, Milk St. and the Rev.Thomas Howard's, Broombank House. He travelled for a time, for Needham Veall and Tyzack, in Norway and Sweden, and in 1879 became a partner. When, in 1897, it became a limited liability company, he was its first chairman. He was also chairman of Nixon & Winterbottom Ltd., table cutlery manufacturers. Joined the Cutlers' Company in 1893, and became a searcher in 1905. (WW p.248)

VEALL James, of "The Elms," Collegiate Cresent. A native of Sheffield, and member of the firm of well known cutlery manufacturers, Needham, Veall and Tyzack. He was educated at the Milk St. School, and was apprenticed to Messrs. H. Long & Co., cutlery manufacturers, Rockingham St. Having served his apprenticeship he joined the firm of T.B. Needham & Co.,and in partnership with Needham, worked hard to make the firm very successful. When he first joined it, the firm employed 20-30 hands; by the year of his death, in 1906. it

employed nearly 1000. He was a Liberal Unionist, but never wanted to be elected for a Sheffield ward. He was a member of the reform club for many years. A keen billiard player, and rifle shot. (SI 13.8.1906)

WARDLEY W.F., born in the cutlery area of Solly St. in 1848. He received some education at the Redhill Wesleyan School, but on becoming a forger, he continued his education in the evenings at the Ragged School in Baker's Yard, and won a scholarship at the School of Art. He worked for a long time with his father, winning the respect and esteem of the table blade forgers. He became Secretary of the Table Blade Forgers and Strikers Society in 1890. He was president of the S.F.T.C. between 1885 and 1887, and in 1891, became its treasurer until 1919. "There is no more ardent trades unionist in Sheffield, and though the 'independent' sector cannot agree with him in his attachment to the Liberal Party, they see in him a leader who has the best interests of the working class at heart." He did not believe in strikes. He took a leading role in the fraudulent marking controversy and was an important witness before numerous Royal Commissions and Select Committees. He entered the City Council in 1890 as a Lib-Lab for St. George's Ward, and later represented St. Peter's Ward. He was an ardent supporter of friendly societies. In 1823, a group of workmen who included his father, founded the Montgomery Independent Tessarian Sick and Funeral Society, and he was re-elected as its president for 13 years. He was appointed a city magistrate in 1902, and before the School Board took over the management of the Evening School, he was a member of its voluntary committee, and in charge of Springfield Evening School. He was also a member of the City Hospital, and Parks and General Purposes Committees. A keen Wesleyan Methodist, he worked for the Redhill Wesleyan Sunday School, and afterwards for the Garden St. Congregational School. He was a member of the Distress Committee. Lived at "Ivy Grove," Crookesmoor Rd. (WW pp.34-35; S.F.T.C. Annual Reports 1909 p.7; 1913 p.8; 1914 p.11)

WATERHOUSE T.H., of Barncliffe, Beech Hill Road, b. 1833, third son of Robert Waterhouse, of Pitsmoor. He was educated at Dr. S. Eadon's School, which in its curriculum was an establishment in advance of most of its day. At 15 he worked for Francis Newton and Sons, Portobello Works. At 21 he set up business on his own account, but it took him a considerable time to achieve any real success. Robert Dodge & Co., steel manufacturers, was the last firm with which he was associated. When he retired, it was only from the commercial world, as he continued to take considerable interest in his philanthropic, public and social duties. He was closely associated with the cause of Congregationalism. His father was superintendent of the Queen St. Sunday School, and he himself taught there for over 50 years. He taught at the Wicker Congregational Church, and was late appointed

deacon and church secretary there. He was interested in foreign mission work, and was a director of the London Missionary Society. No man was said to have done more than him for the Sheffield Y.M.C.A. He was also connected with the Royal and Jessop's Hospitals; on the board of management of the Sheffield Savings Bank; a vice-president of the Sheffield City Mission, and a J.P. d. 1907 (SI 5.10.1907)

WATTS John, of Lea Wood, Pitsmoor. Cutlery manufacturer. Buried at Fulwood Church. (SI 24.7.1895)

WHEATLEY William Thomas, of Sharrow, b. Hull, 1846, but educated at Milk St. School, and later gained a knowledge of foreign languages. He was head of the firm Wheatley Bros., cutlery manufacturers. Between 1898 and 1904, he represented the Conservative interest, first for St. George's ward, and later for Sharrow. He was a freemason, and in 1891, was made a Freeman of the Cutlers' Company. In 1899, he was made Sheffield's Consul for Peru. In 1904 he was made President of the Sheffield Consular Corps, and in the same year, chairman of the United Kingdom Commercial Travellers' Association. He was made a J.P. in 1903, He was a member of St. Matthias' church, and was a churchwarden, and a manager of the Sunday School for many years. d.1912 (SI 6.5.1912)

WHEATLEY W.E., at his coming of age, in 1895, he was presented with a gift from the workpeople of Wheatley Bros., and celebrated the occasion with them at the works. (SI 18.4.1895)

WILSON James, of 14, Rutland Park. In his early life, he was engaged in the cutlery trade, and for reasons of business visited India. He stayed there, becoming a jounalist, and ultimately, editor of the India Daily News, published in Calcutta. In 1893, he retired to Sheffield, becoming an important member of the Literary and Philosophical Society. d.1903 (SI 9.5.1903)

WILSON John, a Sheffield grinder who died in 1890, having become a well-known and much respected civic dignity. He was born on Granville St., attended the Lancastrian School, and was apprenticed when he was 13 years old, and later worked for Joseph Rodgers. He was not a great believer in trades unionism, but a firm advocate of laissez-faire, self-help and conciliation. He was a member of the City Council's Free Libraries and Museum Highways and Stage Play Licensing Committees. At his funeral, respects were paid by members of all classes, from grinders to a knight, and he was generally taken to be a shining example of the possibilities of self-help. "With no advantage of birth or

education, he rose to be more than the equal of most of his fellows." The high esteem in which he was held by fellow townsmen was evidenced by the large number attending the funeral, and the eulogistic references of the public press." His early advantages were limited but by self-culture, thrift and integrity, he fitted himself for the position of honour and responsibility which he was afterwards called to adopt. He took great delight in helping any scheme which tended to the moral elevation of the people, especially the working classes... He took a deep interest in educational work, and in all that concerned the well-being of the very young." For 45 years he was a member or Burngreave Rd. Wesleyan chapel and was a Sunday School teacher.

WILSON J.B., of Tapton Grange. He was born at Harthill, and educated at York. His uncle was William Howson, and he entered the business of Harrison Bros. & Howson in 1865, and was finally taken into the partnership. He was a warden at Ranmoor church for 20 years; a keen supporter of the Sheffield Royal Infirmary, and the Hospital Sunday Fund Movement. Biographical Notices Relating to Sheffield. p.344

WOSTENHOLM George, lived at the mansion he built for himself on two acres of land in Sharrow in 1840, "Kenwood". B.1800, the only son of George Wostenholm , a 'little mester' of Broad Lane. His grandfather and great-grandfather were also cutlers called George. He assisted father for some time, and because of increased business, moved to the Rockingham Works, Rockingham St. George then became a partner with William Stenton, in the firm styled "Stenton & Wostenholm ". Trade was gradually built up with America, and George Wostenholm is said to have crossed the Atlantic thirty times in furtherance of business. When Stenton died, and his own father died, Wostenholm continued the business under the title "George Wostenholm & Son." His succsess was so great that the Washington Works, Wellington St. were acquired and extended. In 1875 the business became a limited company with £100,000 capital, and Wostenholm as chairman and managing director. He was Master Cutler in 1856, and was later made a J.P. He was a liberal patron of the arts and many charities. He attended St. Mary's Church, and donated the site for the vicarage. He contributed to the cost of building St. Andrew's Church, Sharrow, to the cost of the Sale Memorial Church, and also to St. Barnabas' Church. Shortly before his death, he promised £10,000 to Archdeacon Blakney, for a new Mission Hall, which was built in 1879, and named the George Wostenholm Memorial Hall." He died aged 76, leaving personal effects of £250,000. Also in his will, he left £3,000 to each of the directors of the company, Mr. Wing and Mr. Nixon. The two representatives in

America were left £2,000 each, and to each of the three managers at the Washington Works, £200. Smaller sums were left to workmen, girls and apprentices, and he left numerous sums to charity, including £200 each to the General Infirmary, the Girls' Charity School and the Public Dispensary; and £100 to the Womens' Hospital. (HW p.178; SI 30.11.1876)

WRAGG Walter, b.1842, son of a working Sheffield cutler. He was educated at Sheffield Grammar School, and the Sheffield Collegiate School. He won open exhibitions to Lincoln and Worcester Colleges, Oxford , afterwards becoming a police magistrate, commissioner, and a District Judge in Ceylon. He was Knighted in 1891. d.1913 (SI 29.10.1913)

Appendix 5: Wage Data

Table 8 Earnings in the Sheffield Light Trades 1871-1914

Source: S.Pollard, 'Wages and Earnings in the Sheffield Trades 1850-1914', p.61

Year	Pen & Pocket Knives	Table Knives	Razors	Scissors	Steels & Forks	Index for all Light Trades (1900=100)
1871	104	102	102	144	92	100
1872	107	97	108	157	95	104
1873	84	97	119	168	94	100
1874	79	87	113	155	93	93
1875	73	85	110	129	89	87
1876	73	84	105	122	79	83
1877	77	83	100	112	78	83
1878	81	85	93	103	76	83
1879	81	85	90	84	84	82
1880	83	85	90	82	70	83
1881	83	91	91	86	70	86
1882	94	92	103	92	73	92
1883	106	94	108	98	88	92
1884	83	82	107	104	68	81
1885	80	82	110	100	64	77
1886	78	82	100	98	59	76
1887	77	84	94	96	65	79
1888	77	85	95	112	69	83
1889	77	88	97	116	89	91
1890	101	93	97	128	82	93
1891	94	91	103	132	79	96
1892	73	88	98	127	74	88
1893	72	92	92	100	80	84
1894	69	92	95	104	78	86
1895	74	100	95	113	82	89
1896	82	103	104	122	83	98
1897	87	104	112	130	91	103
1898	77	103	104	124	92	98
1899	86	103	105	118	104	101
1900	100	100	100	100	100	100
1901	101	95	96	92	98	95
1902	97	90	94	98	80	93
1903	85	86	92	85	76	88
1904	82	81	98	82	75	85
1905	75	86	103	86	78	83
1906	76	93	100	90	80	90
1907	83	94	92	86	83	88
1908	78	91	88	92	79	84
1909	82	91	100	105	85	86
1910	86	98	111	119	95	93
1911	93	98	113	121	99	98
1912	95	100	115	121	103	104
1913	97	105	120	121	103	105
1914	107	103	121	124	99	102

Table 9 Average Limits of Actual Earnings in Sheffield

Source: Lloyd, p.211

Wages are in shillings, varience is in brackets

Occupation	1833	1850	1871	1889	1910
Table Knife Forger	21-35(14)	27-40 (13)	28-36 (8)	--	30-60 (30)
Grinder	27-40 (13)	27-32 (5)	24-30 (6)	21-27 (6)	20-35 (15)
Hafter	18-27 (9)	17-27 (10)	21-24 (3)	14-30 (16)	18-40 (22)
Spring Knife Forger	21-31 (10)	18-35 (17)	22-38 (16)	25-32 (7)	28-40 (12)
Grinder	20-40 (20)	20-40 (20)	30-36 (6)	18-28 (10)	18-38 (20)
Hafter	15-25 (10)	16-30 (14)	18-30 (12)	12-20 (8)	16-40 (24)
Razor Forger	26-30 (4)	24-33 (9)	25-40 (15)	--	35-50 (15)
Grinder	18-50 (32)	21-48 (27)	35-40 (5)	25-50 (25)	30-60 (30)
Hafter	18-40 (22)	15-30 (15)	18-26 (8)	25-30 (5)	18-38 (20)
Scissor Forger	23	28	20-32 (12)	24-34 (10)	28-35 (7)
Grinder	35	35	25-36 (11)	30-40 (10)	28-40 (12)
Workboard Hand	26	24	21-33 (12)	25-35 (10)	25-35 (10)

Table 10 Average Weekly Earnings in a Cutlery Firm 1901-1914

Source: S. Pollard, 'Wages and Earnings in the Sheffield Trades 1850-1914', p.59

Wages are per head, and in shillings and pence.

	Table Knife Dept.	Spring Knife Dept.	Scissor Dept.
1901	43 0	11 11	20 9
1902	48 1	21 5	23 7
1903	49 10	25 5	24 7
1904	48 1	20 1	23 5
1905	35 8	23 3	19 0
1906	44 6	20 10	20 11
1907	45 10	21 4	20 6
1908	43 4	17 8	23 5
1909	39 11	17 7	24 7
1910	43 11	16 11	29 4
1911	42 9	19 9	32 9
1912	50 5	24 2	27 10
1913	51 11	24 8	22 8
1914	49 9	26 4	32 6

Appendix 6: Residential Location

Table 11. A Sample of the Location of the Private Houses of Cutlery Manufacturers in 1876

Name	Address of Place of Work	Home Address in 1876	Location of Home Address					
			Work Premises	Central Area	'Working Mens' Suburb	Older 'Middle-Class' Suburb	Richer 'Middle-Class' Suburb	
Askam,J.	Broad Lane Works	Osborne Villa, Brincliffe Park					x	
Baker,J.	Wheeldon Works	29,Redhill		x				
Barnes,V.	103,Arundel St.	144,Ecclesall Rd.				x		
Barston,J.	Harwood Works	Shorham St.			x			
Beardshaw,G.	2,Marcus St.	39,Brunswick Rd.				x		
Blyde,Wm.	96,Carver St.	118, Hanover St.				x		
Brooksbank,A.	Malinda St. Works	Moor Lodge, Clarkehouse Rd.				x		
Burnand,J.	Leicester St.	40, Leafygreave Rd.				x		
Cantrell,E.	68,Napier St.	Shelburn Pl.			x			
Copley,J.	Richmond Wks.,Walkley	Carr Rd., Walkley			x			
Crossland,J.	Eclipse Wks., Edward St.	Norfolk Rd.			x			
Dawson,W.	Pool Wks. Burgess St.	25, Evans St.			x			
Elliott, R.	151, Arundel St.	32,Chippinghouse Rd.				x		
Epworth,T.	Truss Wks., New George St.	63,Highfield			x			
Greaves,F.	Radford Wks., Radford St.	74,Upperthorpe			x			
Hardy,F.T.	Cutts Wks., Division St.	Norton				x		
Haxton,R.	Marsden's Wheel, Love St.	164,Carr Rd,Walkley			x			
Holmes,T.	Scotland St.	195,Ecclesall Rd.				x		
Hunter,M.	Andrew St.	Dam House					x	
Ibberson,G.	Central Wks.,West St.	237,Glossop Rd.				x		
Masterton,J.	Central Wks.,West St.	184,Witham Rd.				x		
Mosley,R.	Portland Wks., West St.	Croft House, Lyndhurst Rd.					x	
Nadin,A.	Court 8,Radford St.	49,Summer St.			x			
Nowill,H.	135,Scotland St.	Westbourne Rd.				x		
Nowill,J.	135,Scotland St.	Westbourne Rd.,East				x		
Paterson,A.	Forth Wks.,Glossop Rd.	28,Wilkinson St.				x		
Peace,W.K.	Mowbray St.	300,Western Bank				x		

Name	Address of Place of Work	Home Address in 1876	Location of Home Address				
			Work Premises	Central Area	'Working Mens' Suburb	Older 'Middle-Class' Suburb	Richer 'Middle-
Pearce,H.K.	208,West St.	Wadsley Bridge				x	
Petty,Jos.	58,Garden St.	Same	x				
Pryor,M.	Scotland St.	Netherthorpe St.			x		
Renshaw,T.	32,Birkendale	69,Havelock Sq.				x	
Renton,G.	Carver St.	76,Nether Edge Rd				x	
Richardson,W.	Broomhall St.	41,Parkers Rd.				x	
Roberts,L.	Rockingham St.	Same	x				
Rowland,L.	Solly St.	116,Broad La.		x			
Ryalls,J.	Solly St.	Same	x				
Scaife,F.	73,Eyre St.	73,William St.		x			
Schofield,J.	39,Broomspring La.	Same	x				
Shaw,J.	Orchard La.	101,Woodhead			x		
Schemeld,J.	47,Chester St.	Same	x				
Slinn,W.	36,Thomas St.	23, Broad La.		x			
Taylor,H.H.	Times Wks., Paradise Sq.	Eagle House, Owlerton				x	
Taylor,W.	188,Rockingham St.	Nicholson Rd., Heeley			x		
Townsend,F.	Solly St.	1,Blake St.				x	
Twigg,F.	25A,Owlerton Rd.	Same	x				
Watson,G.	25,Cornhill	Same	x				
Webster,W.	Jessop St.	2,Shorham St.			x		
Whitham,J.	Cambridge St.	118,Cemetery Rd.				x	
Wragg,W.	Cambridge St.	208,Hanover St.				x	
			7	4	13	22	3

Examples of the Occupants of Sample Roads Inhabited by

Cutlery Manufacturers

Nowill,J.& Nowill,H.: Westbourne Rd.
Mining Engineer, electro-plate manufactorer, solicitor, steel manufacturer, grammar school teacher, wire manufacturer.
Renton,G.: Nether Edge Rd.
Steel manufacturer, horn merchant, 3 other cutlery manufacturers coal merchant, butcher, school master, Nether Edge Bowling Club.
Masterton,J.: 184,Witham Rd.
Cutlery manufacturer,manager, merchant,clerk,artist,butcher painter
Webster,Wm.: Shorham St.
Various industrial buildings, brickmaker,storefitter,comb manufacturer.

(Sample roads contd.)

Taylor,Wm.: Nicholson Rd.,Heeley
Clerks,shopkeepers
Lewis,R.:116,Broad La.
shopkeeper,shoemaker,dressmaker,victualler.

Table 12. The Residential Location of a Sample of the Exhibitors At the Cutlers' Company Industrial Exhibition,1885

Source: Cutlers' Company Industrial Exhibition Catalogue, Sheffield, 1885.

Location of Home Address	No. of Cutlers
St. George's (W. of the town centre,bounded by Broad Lane in the N., by West St. in the S., by Bailey St. in the E., and Gell St. in the W.)	3
Hollis Croft (N. of St. George's, boarded by West St., Tenter St., West Bar Green, Scotland St. Meadow St., Upper Allen St., Cornhill, and Redhill.)	16
St. Paul's (Around the town centre, bounded by Coalpit La., Furnival St., Arundel St., Norfolk St., Fargate and Barker's Pool.)	9
South of Town Centre (Bounded by Hanover St., St. Mary's Rd., Suffolk Rd., Howard St., and the S. edges of St. Paul's and St. Georges.)	42
Crookesmoor,East, to Upper St. Philip's Rd.	37
St. Philip's Rd. area, North towards the River Don.	10
Heeley.	29
Crookes and Walkley.	39
Highfields.	43
Broomhall,East towards Hanover St.	13
Sharrow, North towards Ecclesall Rd., East to London Rd.	14
Park.	9
Attercliffe.	1
Pitsmoor and Infirmary Rd.	17

BIBLIOGRAPHY

1: Primary Sources

a) Manuscripts (Sheffield City Libraries Archives Division, unless otherwise stated)

Apprenticeship Indenture (MD 2362)

Chamber of Commerce Minutes (LD 1981/1-8)

Cutlers' Company Records, at the Cutlers' Hall, Sheffield

Ellin, Thos & Co. (MD1717)

Fearn, John Ltd. (MD6862/7-6867)

Grinding Wheels (MD6443, 6436)

Hobson, A.J., The increased Cost of Living as Effected by Recent Legislation, in the Chamber of Commerce Minutes 1912 (LD1986/8)

Heiffor, J., Notes on Razor Manufacture (BC20)

Innocent, Henry (CBC 927)

Jackson Collection (JC 1371-4)

Johnson, Christopher & Co. (MD2366-2377, 2690-1)

Marsh Bros. (M9,10,11,12,15,17,19,20,21,22,81,96-103,145,150-1, 233,240)

Needham, Veall and Tyzack Ltd. (NVT 2-13, 17-19)

Partnership Deeds (MB 6343-4, 6365, 6368, 6382, CB 1025)

Pen and Pocket Blade Forgers' and Smithers' Protection Society Records (MD 2347-65)

Sister Margaret, Eight Cases of Married Women Workers' Wages (MD 1441)

Soho Grinding Wheel Minute Book (MD 718)

Spencer Mathias and Sons Ltd. (LD 1927)

Sheffield Borough and Corporation, Minutes of the Trades Inquiry Committe (CA 8(8)), Minutes of the Technical Instruction Committee (CA 197(28))

Table Blade Grinders' Society Minutes (Microfilm A112)

Webb Trade Union Manuscripts, vol. A.18,Sheffield Trades, at the London School of Economics.

Wostenholm , Geo.& Son Ltd. (Wos. R1-4, 23)

b) Official Publications

P.P. 1824, V,Select Committee on Artisans and Machinery,2nd Report 1824, (51).

P.P. 1833, IV, Select Committee on Manufactures, Commerce and Shipping, 1833, (590).

P.P. 1843, XVI, Royal Committee on Children's Employment, 2nd Report, Report by J.C.Symonds on the Trades of Sheffield, 1843,C. 431.

P.P. 1865, XX, Royal Commission on Children's Employment, 4th Roport, Report by J.E.White on the Metal Manufactures of the Sheffield District, 1865, C.3548 .

P.P. 1867, XXXII, Report Presented to the Trade Union Commissioners ...Appointed to Inquire into Acts of Intimidation, Outrage or Wrong...in the Town of Sheffield, 1867, C. 3952 I.

P.P.1871, XXV, Royal Commission on Friendly and Benefit Building Societies, 1871, C.452.

P.P. 1873, LXXI, Census of England and Wales, 1871, C.872.

P.P.1876, XXX, Royal Commission on the Working of the Factory and Workshop Acts, 1876, C.1443.

P.P.1877, XI, Select Committee on Intemperance, 1877, C.171.

P.P.1884 XXXI, Royal Commission on Technical Instruction, 2nd Report, 1884, C.3981.

P.P.1886, XXI, Royal Commmission on the Depression in Trade and Industry, 2nd Report, 1886, C.4751.

P.P.1887, X, Select Commmittee on the Merchandise Marks Act (1862) Amendment Bill, 1887, C.203.

P.P.1888, XXVI, Factory Inspector's Report, 1887, C. 5328.

P.P.1889, LXV, Report on the Epidemic of Small-Pox in Sheffield During 1887-8, Dr. Barry, 1889, C. 5645.

P.P.1889, LXXXIV, Labour Statistics, Returns of Expenditure of Working Men, 1889, C . 5851.

P.P.1889, XIII, Select Committee on the Sweating System, 3rd Report, 1889, C . 4715.

P.P.1890, XV, Select Committee on the Merchandise Marks Act, 1887, 1890,C . 7586.

P.P.1892, XXXVI, Royal Commission on Labour, 2nd Report, 1892-4, C . 9795.

P.P.1894, XXI, Factory Inspector's Report, 1892, C . 7386.

P.P.1896, XIX, Factory Inspector's Report, 1895, C . 8867.

P.P.1897, X, Select Committee on Government Contracts (Fair Wages Resolution)1897, C. 334.

P.P.1899, XII, Home Office Departmental Committee on Dangerous Trades, 3rd Interim Report, 1899, C.9073 .

P.P.1873, LXXI, Census of England and Wales, 1871, C. 872 .

P.P.1904, X, Factory Inspector's Report, 1903,Cd. 2139.

P.P.1905, Board of Trade Second Series of Memoranda, Statistical Charts and Tables, LXXXIV, Cd.2334 .

P.P.1905, X, Factory Inspector's Report, 1904, Cd. 2569 .

P.P.1906, XV, Factory Inspector's Report, 1905, Cd. 3036.

P.P.1907, X, Factory Inspector's Report, 1906, Cd.3586.

P.P.1908, CVII, Cost of Living of the Working Classes, Report by the Board of Trade into Working Class Rents, Housing and Retail Prices, Together with the Standard Rates of Wages Prevailing in Certain Occupations in the Principal Towns of the U.K., 1905, Cd. 3864 .

P.P.1908, XII, Factory Inspector's Report, 1907, Cd. 4166.

P.P.1908, XXXVI, Report of the Fair Wages Committee, 1908,Cd.4422.

P.P.1908, III, Departmental Committee on the Truck Acts, 1907, Cd.4444 .

P.P.1909, XXI, Report by A.H.Lush on the Draft Regulations for Factories in which Grinding Metals and Racing of Grindstones is Carried on, 1909, Cd.4913 .

P.P.1909, XXI, Factory Inspector's Report, 1908, Cd.6464.

P.P.1910, VIII, Royal Commmission on the Poor Laws and Relief of Distress, 1909 Cd.5066; XVI, Report by Mr. A.D. Steel-Maitland and Miss R.E.Squire on the Relation of Industry and Sanitary Conditions to Pauperism, Cd. 4653.

P.P.1910, XXVIII, Factory Inspector's Report, 1909,Cd.5191.

P.P.1911, XXII, Factory Inspector's Report, 1910, Cd.5693.

P.P.1911, LXXII,National Insurance Bill(Part II Unemployment) Table Showing Rules and Expenditure of Trade Unions in Respect of Unemployment Benefits, 1911, Cd.5703.

P.P.1912, CXI, Census of Production of the U.K., Final Report, 1907, Cd.6320 .

P.P.1912, XXV, Factory Inspector's Report, 1911, Cd.6239 .

P.P.1912, II, Report by the Committee Appointed to Consider and Advise on the Application of the National Insurance Act to Outworkers, 1912, Cd.6179 .

P.P.1913, LXXIX, Census of England and Wales, 1911, Cd.7019.

P.P.1913, LXVI, Cost of Living of the Working Classes, Report by the Board of Trade into Working-Class Retail Prices, together with Rates of Wages in Certain Occupations in Industrial Towns of the U.K in 1912, Cd.6955.

P.P.1913, XXIII, Factory Inspector's Report, 1912, Cd.6852.

P.P.1914, XXIV, Factory Inspector's Report, 1913, Cd.7491.

Macklin, E.L., and Middleton, E.L., Report on the Grinding and Cleaning of Castings, with Special Reference to the Dust Inhalation of Workers, London, H.M.S.O., 1923.

Ministry of Labour and National Service, Industrial Conditions in the Cutlery Trades, Report by the Cutlery Wages Council (G.B.), London, H.M.S.O., 1946.

Working Party Reports, Cutlery, London, H.M.S.O., 1947.

c) Trade Periodicals, Journals and Newspapers

Board of Trade Jounal

Health of Sheffield

Ironmonger

Labour Gazette

Metal Worker

Metal Industry

Quality of Sheffield

Sheffield Federated Trades Council, Annual Reports

Sheffield Independent

Sheffield Daily Telegraph

Sheffield Local Register

Sheffield Morning Telegraph

Sheffield Technical School Metallurgical Society Jounal

Star

Statement of Accounts of the Guardians of the Sheffield Union

The Times

d) Published Books and Articles (Place of publication is Sheffield unless otherwise stated)

Allen,Thomas, A New and Complete History of the County of York, 3 vols., London, 1828-31.

Black,Clementina, Sweated Industry and the Minimum Wage, London, 1907.

Blyde,John Ltd., Catalogue, 1902.

Bray,R.A.,'The Apprenticeship Question', Economic Journal, XIX, 1909.

British Association, Handbook and Guide To Sheffield, 1910.

British Industrial Publishing Company, Industries of Sheffield, Birmingham, 1888.

Brittain Frederick, British Trade and Foreign Competition, 1878.

Butcher, W.&S.Ltd., Circular,[stating discounts], 1871.

Bywater, Abel, The Sheffield Dialect, 1839.

Cadbury,E., Matheson,M.C., & Shann,G., Women's Work and Wages, London, 1906.

Callis, Frederick, Sheffield Under Free Trade, 1903.

Chemical Society, Handbook For the Annual Meeting, Sheffield 1911, 1911.

Cutlers' Company Industrial Exhibition, Catalogue, 1885.

Dearle, N.B., Industrial Training, London, 1914.

Earnshaw, Samuel, The Church and the Artisan, 1861.

The Equipment of the Workers: An Enquiry by the St. Philiph's Education and Economic Research Society into the Adequacy of the Adult Manual Workers for the Discharge of their Responsibilities as Heads of Households, Producers and Citizens, London, 1919.

Ensor, R.K.C., 'The Practical Case for the Legal Minimum Wage', Nineteenth Century and After, LXXII, 1912.

Four and Forty Years: A History of the Surrey Street Sick and Funeral Society, 1867-1911, 1911.

Freeman, A., Boy life and Labour: the Manufacture of Inefficiency, London, 1914.

Gatty, A., Sheffield Past and Present, 1873.

Hadfield, W.H., Cutlery: Stainless and Otherwise(from a scient--ific point of view),[Lecture delivered to the Sheffield cutlery trades historical Society] 1919.

Hall, J.C., On the prevention and Treatment of Sheffield Grinders' Disease, London, 1857.

Hall, J.C., Trades of Sheffield as Influencing Life and Health, and More Particularly, File Cutters and Grinders, London, 1866

Handicrafts that Survive: A Souvenir of the Mastercutlership of A.J. Hobson,1902-3,n.p. 1903.

Haywood Joseph & Co., The Illustrated Sheffield List, Sheffield, 1860.

Hill, Frank H., An Account of Some Trade Combinations in Sheffield. London, 1860.

Hobson, Charles, 'Walkley: A Fifty Year Old Workingmen's Suburb', Town and Country Planning Review, 1912.

Holland, George Calvert, Diseases of the Lungs From Mechanical Causes, London, 1843.

Holland, George Calvert, Inquiry into the Condition of the Cutlery Manufacture, 1842.

Holland, George Calvert, The Vital Statistics of Sheffield, London, 1843.

Hunter, Michael & Son, Illustrated Catalogue and Price List, (Knives, Scissors, Cutlery, Razors, Silver Plated Items), 1912.

The Institute of Metals, Souvenir Booklet, 1919.

Iron Steel and Allied Trades, Sheffield in 1905: Industries of Sheffield and District, London, 1905.

Johnson Christopher (Cutlers), Ltd., Cutlery Catalogue, n.p., 1892, 1899.

Johnson, Christopher (Cutlers), Ltd., Cutlery Pattern Book, n.p., 1886.

Kingsbury, Benjamin, A Treatise on Razors, London, 1820.

Lynch, J., 'Skilled and Unskilled Labour in the Shipbuilding Trade', Industrial Remuneration Conference, London, 1885.

Manning, J.E., History of Upper St. Chapel, Sheffield, 1900.

Mearns, Andrew, The Bitter Cry of Outcast London: An Enquiry into the Condition of the Abject Poor, London, 1883.

N.A.U.L. Table and Butchers' Blade Grinders Association, Agreed List of Prices for Grinding, October 16 1913, 1913.

Needham Veall and Tyzack, Memorandum of Articles of Association, 1897.

Odom, William, Fifty Years of Sheffield Church Life: 1866-1916, 1917.

Odom, William, Hallamshire Worthies, 1926.

Pagé, Camille, La Coutellerie Depuis L'Origine Jusqu'à Nos Jours, 6 vols., Chatellerault, 1896.

Palmer, H.J., 'Cutlery and Cutlers at Sheffield', English Illustrated Magazine, Aug. 1884.

Parker, John, A statement of the Population etc. etc. of the Town of Sheffield, 1830.

Pawson and Brailsford's Illustrated Guide to Sheffield and Neighbourhood, 1879.

Pen and Pocket Knife Cutlers, Report of the Committee, 1821.

Pen and Pocket Knife Cutlers, Abstract of Articles of Agreement, 1831.

Penny Magazine Supplement, XIII, April 1844, 'A Day at the Sheffield Cutlery Works'.

Prices of Steel Scissor Forging: 1817 Statement, Revised and Corrected with Additions to 1844, 1844.

Reply of the General Committee of the General Grinding Branches of Sheffield to the Earl of Fitzwilliam's Speech at the Cutlers' Hall, 15th September 1844, 1844.

Report of the Committee Appointed by the Town Council to Inquire into the Apparent Excess of Drunkenness in the Borough of Sheffield, and to Consider the Best Means for Ensuring its Decrease, 1853.

Report of the Committee of the Journeymen of the Spring Knife Trade Appointed for the Purpose of Taking into Consideration the Propiety of Applying to Parliament for an Act for the Better Management of the Incorporated Cutlery Trades, 1821.

Revised List of Forging Pen and Pocket Knife Blades of 1810,1844.

Rowley, H.& Pettifer, H.J., Public Debate at the Cutlers' Hall: Free Trade Versus Fair Trade, 1885.

Rhodes, E., Essay on the Manufacture, Choice and Management of a Razor, 1824.

Roberts, Samuel, Tom amd Charles; or the Grinders, 1828.

Rules of the Number One Lodge of the Spring Knife Cutlers' Protection Society, 1872.

Rodgers, Joseph & Sons Ltd., Under Five Sovereigns, 1911.

Rodgers, Joseph & Sons Ltd., A Royal Record, 1930.

Schloss, D.F., 'Methods of Industrial Remuneration', Economic Journal, II, 1892.

Scissor Grinders, Price List 1915, 1915.

Scissor Forgers, Price List 1844, 1844.

Sheffield and Rotherham 'Up-To-Date', 1897.

Sheffield: Cutlery Capital of the British Empire, 1919.

Sheffield in 1902: A Survey of the City at the Beginning of the Twentieth Century, 1902.

Snell, Simeon, Prevention of Eye Accidents Occurring in Trades, London, 1899.

Tawney, R.H., 'The Economics of Boy Labour', Economic Journal, XIX,1909.

To the Journeymen Table Knife Hafters in the Scale Tang Line, 1844.

The Century's Progress: Yorkshire Industry and Commerce, London, 1893.

Turner, James Barber, An Address to the Operative Spring Knife Cutlers, 1873.

Visits and Excursions of the Meeting of the Iron and Steel Institute,1905, London, 1905.

Walker and Hall Ltd., Knife, Fork and'Plate', 1902.

Sheffield and District Who's Who, 1905.

Wilson, John, 'The Extention of the Factory Acts to Other Industrial Occupations', Transactions of the National Association for the Promotion of Social Science,1865, Sheffield Meeting, London, 1866.

2: Secondary Sources

a) Unpublished Theses and Typescripts

Baxter, John, 'Origins of the Social War: A History of the Economic, Political and Cultural Struggles of Working People in South Yorkshire', 2 vols., PhD, Sheffield, 1976.

Blackwell, D.H., 'The Growth and Decline of the Scythe/Sickle (Shear) Trade in Hallamshire', 2 vols., PhD, Sheffield, 1973.

Burke, Cathy, 'Working-Class Politics in Sheffield 1900-1922: A Regional History of the Labour Party', PhD, Sheffield, 1983.

Carvill, R.W., 'Personal Reminiscences of Cutlery Manufacture', 1950, Sheffield City Libraries, MP 184 L.

Fletcher,D.E., 'Aspects of Liberalism in Sheffield 1849-1886', PhD, Sheffield, 1972.

Garlick, P.C., 'The Sheffield Cutlery and Allied Trades and their Markets in the 18th and 19th Centuries', M.A., Sheffield, 1951.

Hayter, M.,'Technical Change and Labour in the Sheffield Staple Trades 1850-1914', Sheffield, 1983.

Higginbotham, M., 'The Career of A.J. Mundella, with Special Reference to his Sheffield Connections', M.A., Sheffield, 1941.

Ledbetter, R.M.,'Sheffield's Industrial History from about 1700, with Special Reference to the Abbeydale Works', M.A.,Sheffield, 1971.

Mathers, Helen E., 'Sheffield Municipal Politics 1893-1923: Parties, Personalities and the Rise of Labour' PhD, Sheffield, 1980.

McPhee, W.A., 'The Growth of the Cutlery and Allied Trades to 1814', typescript, Sheffield City Libraries, 1939.

Passmore, R.S., 'The Mid-Victorian Urban Mosaic: Studies in Functional Differentiation in Three Urban Areas 1841-1871', PhD, Sheffield, 1975.

Reid, Caroline O., 'Middle-Class Values and Working-Class Culture in 19th Century Sheffield', PhD, Sheffield, 1976.

Smith, Dennis A., 'A Comparative Study of Class Relationships and Institutional Orders in Birmingham and Sheffield, with Particular Reference to the Spheres of Education, Industry and Politics', PhD, Leicester, 1981.

Timmins, John G., 'The Commercial Development of the Sheffield Crucible Steel Industry', M.A., Sheffield, 1976.

b) Books and Articles Relating to Sheffield (Place of publication is Sheffield, unless otherwise stated)

Abercrombie, Patrick, Sheffield: A Civic Survey and Suggestions Towards a Development Plan, Liverpool, 1924.

Answer, Valerie,Sheffield's Traditional Craftsmen, 1980.

Baker, H.C., and Mitchell, S., 'Factors Affecting Technical Progress in the Cutlery Industry', Occupational Psychology, 34, 1960.

Barraclough, K.C., 'Crucible Steel Manufacture', Sheffield City Museums Information Sheet, 8.

Barraclough, K.C., 'The Origins of the British Steel Industry', Sheffield City Museums Information Sheet, 7.

Barraclough. K.C., 'The Production of Steel By the Cementation and Crucible Processes', Journal of the Historical Metals Society. 8, 1974.

Barraclough, K.C., Sheffield Steel, Buxton, 1976.

Barraclough, K.C., Steel Making Before Bessemer, 2 vols., London. 1984.

Bexfield,H., A Short History of Sheffield Cutlery and the House of Wostenholm, 1945.

Bingham, J.H., The Period of the Sheffield School Board, 1870-1903, 1959.

Brearley, Harry, Knotted String: Autobiography of a Steel Maker, London, 1941.

Brearley, Harry,'Stainless Steel: the Story of Its Discovery', Reprinted from the Sheffield Daily Telegraph, 2.2.1924.

Brearley, Harry, The Steel Makers, London, 1933.

Brown, Joyce, 'Attercliffe 1894: How One Local Liberal Party Failed To Meet the Challenge of Labour', Journal of British Studies, XIV, 1975.

Brown, R.N.R., 'Sheffield Its Rise and Growth', Geography, XXI, 1936.

Buckatsch, E.J.,'Occupations in the Parish Registers of Sheffield, 1655-1719', Economic History Review, 2nd Series,I, 1948.

Buckatsch, E.J., 'Places of Origin of a Group of Immigrants into Sheffield, 1624-1799', Economic History Review, 2nd Series, II, 1950.

Chapman, A.W., The Story of a Modern University: the History of the University of Sheffield, London, 1955.

Crofts, W., 'The Sheffield Cutlery Trade : A Short Review of Its History and Development', Junior Institution of Engineers Journal and Transactions, 52, 1941-2.

Crookes: The History of a Sheffield Village, 1982.

Desch, C.H.,'The Steel Industry of South Yorkshire: a Regional Study', Sociological Review, 1922.

Desch, C.H., 'A Study of Sheffield', Geography, XIV, 1928.

Dyson, B.Ronald (ed.), A Glossary of Words and Dialect Formerly Used in the Sheffield Trades, 1936.

Flinn, M.W., and Birch, A., 'The English Steel Industry Before 1856, with Special Reference to the Development of the South Yorkshire Industry', Y.B.E.S.R., 6, 1954.

Fox, W., Ridgeway and its Industries, 1950.

Garlick, Peter C., 'An Old Sheffield Cutlery Firm: the House of Nowill 1786-1825', T.H.A.S., 7,1954.

Gaskell, S.M., 'Yorkshire Estate Development and the Freehold Land Societies in the 19th Century', Yorkshire Archaeological Journal, 43, 1971

Goodfellow, A.W.,'Sheffield's Waterway to the Sea', T.H.A.S., 5, 1943.

Hart, H.W.,'A Brief Study of the Events Leading up to the Opening of the Sheffield and Rotherham Railway, 31st October, 1838', T.H.A.S, 9,1969.

Hawkins, R.,'The Distribution of Water Powered Sites in Sheffield', Sheffield City Museums Information Sheet, 4.

Hey, David,The Rural Metal Workers of the Sheffield Region, Leicester, 1972.

Hey, David, The Village of Ecclesfield, Huddersfield, 1968.

Himsworth, J.B., The Story of Cutlery: From Flint to Stainless Steel, London, 1953.

Hopkins, G.C.,'The Charcoal Iron Industry of the Sheffield Region, 1500-1775', T.H.A.S. 8, 1963.

Hopkins, G.C., 'The Development of Inland Navigation in South Yorkshire and North Derbyshire, 1697-1850', T.H.A.S., 7, 1950.

Hopkins, G.C., 'Road Development in South Yorkshire and North Derbyshire, 1700-1850', T.H.A.S., 10, 1971.

Huntsman, Benjamin Ltd., A Brief History of the Firm of Benjamin Huntsman Ltd., 1742-1930, 1930.

Islip, R.J., 'A Future for the Past in Sheffield?', Yorkshire Architect, May/June 1978.

Jenkins, J.G., The Craft Industries, London, 1972.

Jeynes, S.H., and How, F.D., The Life of Sir Howard Vincent, London, 1912.

Johnson, M.P.,'The History of Grinders' Asthma in Sheffield' T.H.A.S., 11, 1981.

Jones, G.P., The Development of Adult Education in Sheffield, 1932.

Jones, G.P., and Townsend, H.,'The Rise and Present Prospects of the Sheffield Cutlery Trades', Westminster Bank Review, Nov., 1952.

Keeble Hawson, H., Sheffield: The Growth of a City 1893-1926, 1968.

Leader, Robert E., A Century of Thrift: An Historical Sketch of the Sheffield Savings Bank, 1819-1909, 1920.

Leader, Robert, History of the Cutlers' Company in Hallamshire in the County of York, 2 vols., 1905-6.

Leader, Robert, Sheffield in the 18th Century, 1905.

Linton, D.L., Sheffield and Its Region, 1956.

Lloyd, G.I.H., The Cutlery Trades: An Historical Essay in the Economics of Small-Scale Production, London, 1913.

Lloyd Jones, R., and Lewis, M.J.,'Industrial Structures and Firm Growth: The Sheffield Iron and Steel Industry 1880-1901', Business History, XXV, 1983.

Mendelson,J.,Owen, W., Pollard,S., and Thornes,V.M., Sheffield Trades and Labour Council, 1885- 1958, 1958.

Mott, R.A.,'The Watermills of Beauchief Abbey', T.H.A.S., 9,1969.

Oxley, J.E., 'Notes on the History of the Sheffield Cutlery Industry', T.H.A.S., 7,1951.

Pollard, Sidney, 'The Ethics of the Sheffield Outrages', T.H.A.S., 7,1957.

Pollard, Sidney, 'Factory Discipline in the Industrial Revolution', Economic History Review, 2nd Series, XVI, 1963-4.

Pollard, Sidney, A History of Labour in Sheffield, Liverpool, 1959.

Pollard, Sidney,'Real Earnings in the Sheffield Trades', Y.B.E.S.R., 9,1957.

Pollard, Sidney, Three Centuries of Sheffield Steel:The Story of A Family Business, Marsh Bros., 1954.

Pollard, Sidney(ed.), Trade Union Commission: Sheffield Outrages Inquiry, 1867, London, 1971.

Pollard, Sidney, 'Wages and Earnings in the Sheffield Trades, 1851-1914', Y.B.E.S.R., 6,1954.

Pollard, Sidney and Holmes, Colin (eds.), Essays in the Economic and Social History of South Yorkshire, Barnsley, 1976.

Sheffield Transport Department, A Brief History of the Progress of Municipal Transport in Sheffield Sinde 1896, 1949.

Singleton, H.R., A Chronology of Cutlery, 1973.

Smith, D.J., The Cutlery Industry in the Stannington Area, 1977.

Smith, D.J.,'Notes on the History of Walkley Bank Tilt', T.H.A.S., 11, 1981.

Smith, H.,'Sheffield Road Travel and Transport Before the Railway Age', Sheffield City Libraries Local Studies Leaflet.

Smithhurst, Peter, The Cutlery Industry, Aylesbury, 1987.

Stainton, J.H., The Making if Sheffield 1865-1914, 1924.

Survey of Sheffield's Industries, complied by the Trades and Tariffs Committee of the Sheffield Junior Chamber of Commerce, 1956.

Henry Tatton's Heeley Notebook: Sketches from Heeley's History, 1986.

Taylor, W, The Sheffield Horn Industry, 1927.

Townsend, H., 'Economic Theory and the Cutlery Trades', Economica, Aug. 1954.

Townsend, H., 'World Trade in Cutlery 1920-1951: German Competition and World Markets', International Cutler, 2, 1952.

Townsend, H.,'The Structure and Problems of the Sheffield Cutlery Trade', District Bank Review, March 1954.

Turner, Colin A., A Sheffield Heritage: An Anthology of Photographs and Words of the Cutlery Craftsmen, 1978.

Tweedale, Geoffrey, Giants of Sheffield Steel: The Men Who Made Sheffield the Steel Capital of the World, 1986.

Tweedale, Geoffrey, Sheffield Steel and America: A Century of Commercial and Technical Interdependence, 1830-1930, Cambridge, 1987.

Vallance, Aymer, 'Little Mesters', New Statesman and Nation, 24.5. 1952.

Walton, Mary,A History of the Parish of Sharrow,Sheffield, 1968.

Walton, Mary, Sheffield:Its Story and Its Achievements, Wakefield, 1968.

Wickham, E.R., Church and People in an Industrial City, London, 1957.

Willan, T.S., The Early History of the Don Navigation, Manchester, 1965.

Williamson, William R., I*XL Means I Excel: A Short History of the Bowie Knife, n.p., 1974.

Woodriff, B., and Hemmingfield, M., Fork Making and Farming at Shiregreen, North Sheffield, in the County of Yorkshire,Kingston. 1980.

Wright, E.P., Seventy Five Years of History, 1977.

c) General Books and Articles (Place of publication is London unless otherwise indicated)

Aldcroft, D.H., 'The Entrepreneur and the British Economy 1870-1914', Economic History Review, 2nd Series, XVII,1964.

Aldcroft, D.H., 'Retardation in Britain's Industrial Growth 1870-1913', in Aldcroft, D.H. and Richardson, H.W.(eds.), The British Economy 1870-1939, 1969.

Allen, G.C., The Industrial Development of Birmingham and the Black Country 1860-1927, 1929.

Armytage, W.H.G., A.J. Mundella 1825-1897: The Liberal Background to the Labour Movement, 1951.

Ashworth, W., 'The Late Victorian Economy', Economica , XXXIII, 1966.

Bartrip. P.W.J. and Burman,A.B., The Wounded Soldiers of Industry: Industrial Compensation Policy 1833-1897, Oxford,1983.

Benson, John, The Penny Capitalists: A Study of 19th Century Working-Class Entrepreneurs, 1983.

Benson, John,'The Thrift of the English Coal Miners, 1860-1895', Economic History Review, 2nd Series, XXXI, 1978.

Benson, John,(ed.), The Working Class in England, 1985.

Bythell, Duncan, The Sweated Trades: Outwork in Nineteenth Century Britain, 1978.

Church, R.A., The Kenricks in Hardware: A Family Business 1791-1966, Newton Abbot, 1969.

Crossick, Geoffrey, An Artisan Elite in Victorian Society: Kentish London, 1840-1880, 1978.

Dingle, A.E., 'Drink and Working-Class Living Standards in Britain, 1870-1914', Economic History Review, 2nd Series XXV, 1972.

Djang, H.K., Factory Inspection in Great Britain, 1942.

Duffy, A.E.P., 'New Unionism in Britain 1889-1890: A Reappraisal', Economic History Review 2nd Series, XIV, 1961-2.

Elbaum, Bernard E., and Lazonick, William (eds.), The Decline of the British Economy, Oxford, 1986.

Floud, Roderick, The British Machine Tool Industry 1850-1914, Cambridge, 1976.

Foster, John, Class Struggle and the Industrial Revolution: Early Industrial Capitalism in Three English Towns, 1974.

Fox, Alan, 'Industrial Relations in 19th Century Birmingham', Oxford Economic Papers, VIII, 1955.

Garside, W. and Gospel. H.F., 'Employers and Managers: Their Organizational Structure and Changing Industrial Strategies', in Wrigley, Chris (ed.), A History of Industrial Relations, Brighton, 1982.

Gray, Robert, Q., The Labour Aristocracy in Victorian Edinburgh, 1976.

Habakkuk, H.J., American and British Technology in the 19th Century: the Search for Labour-Saving Inventions, Cambridge, 1962.

Harris, José, Unemployment and Politics:A Study of English Social Policy 1886-1914, Oxford, 1984.

Harrison, Brian, Drink and the Victorians, 1971.

Harrison, Royden (ed.), The Independent Collier: the Coal Miner as Archetypal Proleterian Reconsidered, Hassocks, 1978.

Harrison, Royden, and Zeitlin, Jonathan (eds.), Divisions of Labour: Skilled Workers and Technology in 19th Century Britain, Brighton, 1985.

Hartley, C.K., 'Skilled Labour and the Choice of Technique in Edwardian Industry', Explorations in Economic History,XIX, 1974.

Hay, J.R., 'Employers and Social Policy in Britain:the Evolution of Welfare Legislation', Social History, IV,1977.

Hennock, E.P., 'Poverty and Social Theory in England: The Experience of the 1880's', Social History, I, 1976.

Hobsbawm, Eric, J., 'Artisan or Labour Aristocrat?', Economic History Review, 2nd Series, XXXVI, 1984.

Hobsbawm, Eric, J., Labouring Men: Studies in the History of Labour,1964.

Hobsbawm, Eric, J., Industry and Empire: the Penguin Economic History of Britain 3, London, 1969.

Hudson, Patricia, Berg, Maxine, Sonenscher, Michael (eds.), Manufacture in Town and Country Before the Factory,Cambridge, 1983.

Hutchins, B.L. and Harrison, B.L., A History of Factory Legislation.

2nd edition, 1911.

Johnson, Paul, 'Credit and Thrift and the English Working Class', in Jay Winter (ed.), The Working Class in Modern British History: Essays in Honour of Henry Pelling, Cambridge, 1983.

Johnson, Paul, Saving and Spending: the Working-Class Economy in Britain 1870-1939, Oxford, 1984.

Joyce, Patrick, Work, Society and Politics: the Culture of the Factory in Later Victorian England, Brighton, 1980.

Joyce, Patrick, 'Labour, Capital and Compromise: A Response to Richard Price', Social History, 9,1984.

Keynes, John M.(ed.), Official Papers of Alfred Marshall, 1926.

Kriedte, P., Industrialization before Industrialization, Cambridge, 1981.

Landes, David, 'Technological Change and Development in Western Europe 1750-1914', in Habakkuk, H.J., and Postan, M. (eds.), The Cambridge Economic History of Europe, vol. VI, Cambridge, 1965.

Landes, David, The Unbound Prometheus: Technological Change and Industrial Development in Western Europe from 1750 to the Present, 1969.

Lawson, R. (ed.), The Census and Social Structure: An Interpretative Guide to 19th Century Censuses for England and Wales, 1978.

Lazonick, W.,'Industrial Relations and Technical Change: the Case of the Self-Acting Mule', Cambridge Journal of Economics 3,1979.

Lewenhak, Sheila, Women and Trade Unions: An Outline History of Women in the British Trade Union Movement, 1977.

Littler, Craig, 'Deskilling and Changing Structures of Control', in Wood, Stephen (ed.), The Degradation of Work? Skill and Deskilling in the Labour Process, 1982.

Lynd, Helen, England in the 1880's: Towards a Social Base for Freedom,New York, 1945.

Marx, Karl, Capital, 3 vols.,1982 Penguin edn.

Matsumura, Takao, The Labour Aristocracy Revisited: the Victorian Flint Glass Makers 1850-1880, Manchester, 1983.

McCloskey, Donald M.,'Did Victorian Britain Fail?' Economic History Review, 2nd Series, XXIII, 1970.

McCloskey, Donald (ed.), Enterprise and Trade in Victorian Britain: Essays in Historical Economics, London, 1981.

McCloskey, Donald and Sandberg, Lars G.,'From Damnation to Redemption: Judgements on the Late Victorian Entrepreneur', in McCloskey D.(ed.), Enterprise and Trade.

Meacham, S., 'The Church in the Victorian City', Victorian Studies, II, 1968.

Meller, Helen, Leisure and the Changing City 1870-1914, 1976.

Mendels, F.,'Protoindustrialization: the First Phase of the Industrialization Process', Journal of Economic History, 32, 1972.

Moorhouse, H.F., 'The Marxist Theory of the Labour Aristocracy', Social History, 3,1978.

More, Charles, Skill and the English Working Class 1870-1914, 1980.

Morris, Jenny, Women Workers and the Sweated Trades: the Origins of Minimum Wage Legislation, Aldershot, 1986.

Nicholas, S.J.,'The Overseas Marketing Performance of British Industry 1870-1914', Economic History Review, XXXVII, 1984.

Payne, Peter L., British Entrepreneurship in the 19th Century, 1974.

Payne, Peter L., 'The Emergence of the Large Scale Company in Great Britain', Economic History Review, 2nd Series, XX, 1967.

Pelling, Henry,'The Concept of the Labour Aristocracy' in Popular Politics and Society in Late Victorian Britain, 1968.

Pelling, Henry, A History of Trade Unionism, 1963.

Pelling, Henry, The Social Geography of British Elections 1885-1910, 1967.

Price, Richard, 'Conflict and Compromise: A reply to Patrick Joyce', Social History, 9,1984.

Price, Richard, Labour in British History: An Interpretative History, 1986.

Price, Richard, Masters Unions and Men: Work Control in Building and the Rise of Labour 1830-1914, 1980.

Redgrave, A., The Factory,Truck and Workshop Acts, 12th edn., 1916.

Reid, Alistair, 'Politics and Economics in the Formation of the British Working Class: A Response to H.F. Moorhouse', Social History, 3, 1978.

Reid, D.,'The Decline of St., Monday 1766-1876', Past and Present, 71, 1976.

Rimlinger,G.V.,'Welfare Policy and Economic Development: A Comparative Historical Perspective', Journal of Economic History', XXVI, 1966.

Roberts, Elizabeth, 'Working-Class Standards of Living in Barrow and Lancaster, 1890-1914', Economic History Review, XXX, 1977.

Rosenberg, N., Perspectives in Technology, Cambridge, 1976.

Samuel, Raphael, 'The Workshop of the World: Steam Power and Hand Labour in Mid-Victorian Britain', History Workshop Journal, 3, 1977.

Sandberg, Lars G.,'American Rings and English Mules: The Role of Economic Rationality', Quarterly Journal of Economics, LXXXIII, 1969.

Sandberg, Lars G.,'The Entrepreneur and Technical Change', in Floud, R., and McCloskey, D.(eds.), The Economic History of Britain 2, 1860-1970's, 1981.

Sandberg, Lars G., Lancashire in Decline: A Study of Entrepreneurship, Technology and International Trade, 1974.

Sanderson, Michael, The Universities and British Industry, 1850-1970, 1972.

Saul. S.B., 'The American Impact on British Industry 1895-1914', Business History, 3, 1960.

Saul, S.B., 'The Market and Development of the Mechanical Engineering Industries in Britain 1860-1914', Economic History Review, 2nd Series, XX, 1967.

Saul, S.B., The Myth of the Great Depression, 2nd edn., 1986.

Schmiechen, James A., 'State Reform and the Local Economy: An Aspect of Industrialization in Late Victorian and Edwardian London', Economic History Review , 2nd Series, XXVIII, 1975.

Schmiechen, James A., Sweated Industry and Sweated Labour: The London Clothing Trades 1860-1914, 1984.

Smith, Dennis, Conflict and Compromise: Class Formation in English Society: A Comparative Study of Birmingham and Sheffield, 1982.

Stedman Jones, Gareth, 'Class Struggle in the Industrial Revolution', New Left Review, 90, 1975.

Stedman Jones, Gareth, Outcast London: A Study of the Relationship between Classes in Victorian Society, 1984 edn.

Stedman Jones, Gareth, 'Working-Class Culture and Working-Class Politics in London, 1870-1920: Notes on the Remaking of a Working Class', Social History, 7,1974.

Thane, Pat, The Foundations of the Welfare State,1983.

Thompson, E.P., 'Time, Work-Discipline and Industrial Capitalism', Past and Present, 38, 1967.

Tilleyard, Frank, The Worker and the State, 1936.

Wearmouth, W.F., Methodism and the Struggle for the Working Classes, 1880-1900, Leicester, 1954.

Whipp, Richard, 'The Art of Good Management: Managerial Control of Work in the Potteries', International Review of Social History, XXIV, 1984.

Whipp, Richard, 'Work and Social Consciousness: the British Potters in the Early Twentieth Century', Past and Present, 119, 1988.

Whiteside, Noelle, 'Welfare Insurance and Casual Labour: A Study of Administrative Intervention, 1906-1926', Economic History Review, 2nd Series, XXXII, 1979.

Wiener, M.J., English Culture and the Decline of the Industrial Spirit, Cambridge, 1981.

Wilson, Charles, 'Economy and Society in Late Victorian Britain', Economic History Review, 2nd Series, XVIII, 1965.

Wrigley, Chris (ed.), A History of Industrial Relations, Brighton, 1982.

Wrigley, E.A.(ed.), Ninteenth Century Society: Essays in the Use of Qualitative Methods for the Study of Social Data, 1972.

Wrigley, Julia, 'Technical Education in the Nineteenth Century', in Elbaum, Bernard E., and Lazonick, William (eds.), The Decline of the British Economy, Oxford, 1986.

Wood, Stephen(ed.), The Degradation of Work? Skill, Deskilling and the Labour Process, 1982.

Yeo, Stephen, Religion and Voluntary Organizations in Crisis, 1976.

Zeitlin, Jonathan, 'Craft Control and the Division of Labour: Engineers and Compositors in Britain, 1890-1930', Cambridge Journal of Economics, III, 1979.

Zeitlin, Jonathan, and Sabel, C., 'Historical Alternatives to Mass Production: Politics, Markets and Technology in 19th Century Industrialization', Past and Present, 108, 1985.

Fig. 2 **Map of SHEFFIELD. 1893.**

KEY

SCALE

St. George's

Hollis Croft

St. Pauls

NETHER HALLAM DIVISION

ECCLESALL DIVISION