The provision of technical education in Sunderland prior to 1908

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ABSTRACT

The period dealt with by this survey is from 1825 to 1908, those being the dates, respectively, of the first foundation of the Sunderland Mechanics' Institute and the end of the first phase of Sunderland Technical College's development. The Mechanics' Institute, which was declining by 1856, was succeeded, in 1855, by a Navigation School which operated under South Kensington Regulations until 1864. That year, a Science and Art School, established in 1861, was closed, and another was opened in 1859. This last developed into a Central School of Art and Science offering day and evening courses; maintained a continuous existence for nearly forty years; and evolved into two major institutions for art and technical education respectively. From 1873 onwards, the work of this School was supplemented by varying numbers of Science and Art evening classes provided mainly through private enterprise.

The development of these institutions is traced in detail - with particular reference to such questions as the type of instruction given and by whom, the subjects taken, contemporary views on technical education, methods of administration, and the status of the teachers - against the background of nineteenth century economic development in Sunderland and in relation to developments on the national scene.

The local developments dealt with show clearly the change of public opinion with regard to provision of technical education facilities that took place during the period. Such provision, during most of the nineteenth century was regarded as the concern of private enterprise, but, by 1903, local authority provision dominated the field. The local administrative reorganisation which accompanied this change of view is also dealt with.

The survey concludes by drawing general conclusions about such matters as the curriculum, the types and numbers of students, their motives for attendance, causes of expansion and the aims of technical education during the period.

THE PROVISION OF TECHNICAL EDUCATION IN SUNDERLAND PRIOR TO 1908.

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CONTENTS

Volume I.

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FOREWORD

The purpose of this survey is to describe the development of technical education facilities in Sunderland up to 1908. Before embarking on the survey itself, however, there are one or two points which require clarification.

Firstly, the chronological limits of the survey, which run, roughly, from 1824 to 1908. The former was the date on which a Mechanics' Institute was established in Sunderland, and the latter the year in which, by the provisions of the University of Durham Act, conditional permission for affiliation was granted to Sunderland Technical College. It will also be seen that 1908 marked the end of the first phase of the College's development.

Secondly, the term 'technical education' itself is one which has carried many different meanings at different times. In the sense in which it is used in the title of this survey, it means the vocational education of the working classes generally, and where mentioned in the course of the survey, it is intended that the meaning in general use at the time under discussion be applied. This point is further discussed in the first chapter.

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Chapter I.

The General Background - the development of Technical Education in England during the Nineteenth Century.

It is intended, in this chapter, to describe in outline the large-scale movements on the national scene which provided the backcloth against which local developments took place. Before doing this, however, it is clearly necessary to decide what is meant by the term 'technical education.'

It is by no means easy to define such a term as this. T.H. Huxley referred to it as "that sort of education which is specially adapted to the needs of men whose business it is to pursue some sort of handicraft."[1] Yet again, he spoke of it as "instruction in that kind of knowledge which is essential to the several branches of trade and industry."[2] These are well enough, but offer little help to anyone trying to decide on what should be the content of technical education. The Technical Instruction Act, 1889, however, defined it as "instruction in the principles of art and science applicable to industries, and in the application of special branches of science and art to specific industries or employments. It shall not include teaching the practice of any trade or industry or employment....."[3] Technical education, for all practical purposes, meant, during the nineteenth century, the teaching of science, and it was not

until 1901 that the Science and Art Department of the Board of Education paid grants for the teaching of practical subjects. It will be equally clear that, to the nineteenth century man in the street, technical education included art education. The attitude reflected by the Act's definition was a fairly general one during the nineteenth century. Technologies or trades were not proper subjects for instruction, only the relevant sciences or arts were to be taught. There were several reasons for this - some employers feared that they might lose trade secrets if their workmen were allowed to congregate in Government-provided workshops; the Government believed that to teach trades would be to give a State bonus to the industries concerned; and the Mechanics' Institutes firmly established the principle that the workshop was the proper place for a trade to be learnt. There was no attempt to work out a true 'technical' education, i.e., the teaching of a particular trade together with the relevant sciences. The principle of instruction in science only, together with another derived from the Mechanics' Institutes - that such instruction was to be given after work - impeded the development of English technical education until the Second World War. Their effects are still felt today.

Equally difficult as the attempt to define technical education is the attempt to assign a beginning to it. Technical education is vital to the survival of any country which

relies for its livelihood on manufactures rather than on primary produce. Britain is such a country, and the development of technical education in this country may be said to date from that time in the last century when it was realised, belatedly and with dismay, that England's craftsmen were suffering in comparison with, let us say, Germans, through ignorance of essential, basic technical knowledge; and that, in consequence, our reputation for high quality goods was on the decline. This, however, is not to say that there were not other forces already at work before the increasing efficiency of foreign competition was realised to be a serious threat to our industrial prosperity. The introduction of machinery, with its consequent division of labour, mass production, concentration of labour into large factories, convergence of capital into relatively few hands, and the decline of the apprenticeship system - all of these had already, before the foreign competition panic of the sixties, produced some realisation that there was a need for efficient training of the people who worked in industry, and brought about the Mechanics' Institute movement. The effect of the alarm and upset over the supposed decline of English industrial standards, added to the foregoing, set on foot a movement far more widespread and significant in its effects that the Institutes - the technical education movement.

Having discussed briefly the meaning attached

to the term 'technical education' during the nineteenth dentury, and looked, fleetingly, at the beginnings of the technical education movement, it is time now to investigate the development of English technical education during the nineteenth century in rather more detail. From the confused and inchoate ideas, feelings, and desires mentioned above there sprang, first, the Mechanics' Institutes, and later, the technical education movement.

The Mechanics' Institutes stemmed from a growing interest in science among working men which led to a desire for education beyond the elementary stage; a desire which was largely satisfied by middle-class philanthropy. The origins of the Institutes in the lectures given by Dr. Birkbeck and his successor Dr. Ure are well known, but it was not until 1824, after the success of the London Mechanics' Institute, that the movement began to establish Institutes in all parts of the country. The chief object of the Mechanics' Institutes "was to make their members efficient industrially; they aimed at useful knowledge in full sympathy with the prevailing philosophy of which their middle-class promoters were the leading exponents."[4] The courses at the Institutes were confined to instruction in the scientific principles underlying a craft but did not include instruction in the craft itself. "In practice this meant largely the teaching of pure sciences: mathematics, chemistry, physics,

astronomy, botany, meteorology, the theory of the steam engine, etc."[5] From 1824, Mechanics' Institutes spread rapidly over the country. Millis gives the following list: "In Scotland and the North, Edinburgh, Glasgow, Durham, Newcastle, Sunderland; in the South, Brighton, Portsmouth, Devonport; in the West, Liverpool, Manchester, Bolton, Bristol, and Bath; in the East, Hull, Norwich, Ipswich; and in Yorkshire and the Midlands, Keighley, Leeds, Halifax, Huddersfield, Sheffield and Birmingham."[6] From these beginnings the Institutes grew fast. There were 300 in 1841, and 700 in 1851,[7] and they were remarkable not only for their number, but for their variety. They ranged from handsome buildings, as in Liverpool and Manchester, to tiny village Institutes with a mere handful of members; their promoters included middle-class philanthropists, the Church of England, industrialists, the Nonconformist churches, and temperance organisations. Despite all this, it was obvious, by 1835, that the Institutes were in trouble.

They failed to capture and hold the interest of the majority of the workmen - the unskilled men. The skilled men, too, were abandoning the Institutes, and clerks and shopkeepers were taking their places. The lecture courses in mathematics, chemistry and physics were falling off badly and there was an increase in courses in literature and drama, and even in "quite bogus sciences - phrenology and mesmerism were very popular."[8] The

reasons for the decline of the Mechanics Institutes are not difficult to find. At a time when there was relatively little working-class education, a large part of the membership was illiterate. No financially worthwhile certificates or diplomas were provided. Syllabuses did not, as a rule, include economics or politics - subjects of vital interest to an intelligent working man. Finally, the Institutes were self-supporting bodies, and had no alternative but to cater for public tastes - which brought in the lower middle-class to use them as public libraries and debating societies. As these symptoms of decline became noticed there were vigorous attempts at reform and reorganisation. Attempts were made to teach the three 'Rs', the larger Institutes established day schools for children, and there was a great deal of union between Institutes.[9] Despite the prevalence of symptoms of decline, however, the Mechanics Institutes were not dead by 1850; those which survived the sixties lived on and became, eventually, Technical Colleges and Institutes, as at Birmingham, Edinburgh, Glasgow, Halifax, Huddersfield, Keighley, Liverpool, London, and Manchester. Other Institutes survived as public libraries, Colleges of Art, museums, secondary schools, etc. "Thus, the end of the Mechanics' Institutes was not inglorious. They perished, indeed, for the most part, but they left behind them a legacy of useful public institutions."[10]

To an observer at the time, it must have

appeared that the effort to educate the workers had been only a partial success - it had left untouched the great mass of the working class. Such observers were not slow in coming forward with their own theories about the reasons for the failure of the Institutes. Reverend E.S. Bayley, an Independent minister, felt that they had been too narrow in scope and purpose and had needed some co-ordinating principle. When he opened the Sheffield People's College, in 1842, his answer was to offer to the working man, not only English grammar, geography, and Euclid, but literature and composition, history, logic, Greek, Latin, and modern languages. This emphasis on the humane studies was to be his unifying factor. Bayley left the College in 1846, and by 1853, it had become absorbed into the growing body of technical education.[11] Inspired by the Sheffield experiment was the London Working Men's College, founded in 1854, by Frederick Denison Maurice, a Christian Socialist, together with J.M.F. Ludlowe, a barrister, Charles Kingsley, parson and novelist, Thomas Hughes, author of 'Tom Brown's Schooldays' and Liberal M.P. As in Sheffield, the humane studies were to be emphasised, moreover, mathematics and drawing were not to be excluded but were to be taught ffom a liberal point of view. After the initial disappointment of finding that their students were the same as those who had joined Mechanics' Institutes and wanted the same subjects, the founders did succeed in creating a corporate life

in the College and in imparting a liberal spirit to the acquisition of knowledge. The London College was a much longer-lasting institution than that at Sheffield, its students rising to over 1000 before the end of the century. After 1855, Working Men's Colleges were founded at Cambridge, Halifax, Wolverhampton, Manchester, Leicester, and Oxford (Ruskin College). The Working Men's Colleges were meant to provide a more general type of education than the Mechanics' Institutes so that workmen could be helped to deal with social and economic problems. "It was necessary that education should start with the problem of social reconstruction and should be grounded on a deeper and more spiritual analysis than had underlain earlier movements. The new ideal was not information but enrichment of personality."[12] They were more the forerunners of the Adult Education movement than of technical education.

The creation of the Science and Art Department in 1853 marks the first action of the State in the field of scientific and technical education. The new Department arose from the agitation of Lyon Playfair, Professor of Chemistry at Edinburgh and Liberal M.P., after his continental tour of 1852, the ideas of the Society of Arts, and the hopes of the Prince Consort for a co-ordinated scheme of scientific instruction throughout the country, topped by an Industrial University in London. With money from the Great Exhibition, land was bought

at South Kensington.

In 1853, Treasury approval was given to Edward Cardwell's plan for a Department of Science to be formed and added to the already existing Department of Practical Art (founded in 1840). The new Department of Science and Art (of the Board of Trade) was created to control the Government School of Mines (founded 1851), the Royal College of Chemistry (founded 1845), the Government Geological Departments, and an assortment of museums and institutes, and took up its abode at South Kensington. In 1857, when the Education Department was created, the Science and Art Department was transferred from the control of the Board of Trade to that of the Committee of Council for Education. On the formation of the Board of Education, in 1900, the Science and Art Department was absorbed into it.

For several years after its creation, the Science and Art Department played but a small part on the national educational scene. It created a number of science schools in various parts of the country, including one in Sunderland, most of which failed before 1860 through financial machinery which was cumbersome even for that time.[13] The only ones to survive were those at Aberdeen, Bristol, Wigan, and Birmingham. In 1859, a step forward was made with the introduction of a comprehensive system of grants for Science and Art Classes over

the whole country as a result of a Minute of Lord Salisbury's. "The grants were given on the results of the annual examinations held by the Department in April and May.....the first experiment in a general system of payment by results by the State.....gave a great impetus throughout the country."[14] The grants were paid to many different types of institution, as will be seen, including local science evening classes, Organised Science Schools and Classes (these were often part of endowed secondary schools or of Mechanics' Institutes or were run by bodies like public library committees), and the Department was willing to encourage other forms of local enterprise in the field of technical education. Any person who passed the Department's examinations could, if approved, set up as a Science or an Art teacher, and was paid by the Department in proportion to the number of examination successes obtained by his pupils.

The typical form of local organisation, at first, was the evening class attended by large numbers of the more skilled workmen and some elementary school teachers, and they were held in whatever premises could be found for them. Later, full-time Schools, offering day courses developed. They were run by local voluntary committees, and supported by grants, voluntary contributions, and pupils' fees. Grants were paid by the Department only on subjects listed in its Directory - an obvious limiting factor on the Classes and Schools. The first

subjects for which grants were paid are given by Millis as: Practical Plane and Solid Geometry, with Mechanical and Machine Drawing; Mechanical Physics; Experimental Physics; Chemistry; Geology and Mineralogy; and Natural History. These were later increased to a total of thirty.

Apart from the work of the Department in connection with its own Evening Classes and Day Schools, they very quickly became involved, after 1870, with the Board Schools. The School Boards in many of the large towns established Higher Grade Schools to meet the demand for education beyond the limits of the elementary system - illegally, as it turned out. These schools charged fees to their pupils and were financed by the School Boards, but they very often entered large numbers of their pupils for the South Kensington examinations thus acquiring the Department's grants as part of their incomes. As Organised Schools of Science supported by the Department, and as Organised Science Classes within other Board Schools, their curriculums became very narrow. They were, however, the first instance of State intervention in the field of secondary education.[15]

By 1880, therefore, there were two central authorities responsible for education. The Education Department of the Privy Council maintained a general administrative and financial surveillance over the School Boards created by the

1870 Act. The Department of Science and Art was concerned with grants to local Science evening classes and day schools and with those Board Schools which were Organised Science Schools or ran Organised Science Classes.

So far, it is true to say that the movements for technical education which had taken place were the result, on the part of the workers, of those confused aspirations arising from the social results of the Industrial Revolution; and on the part of the middle-class promoters, of those liberal tendencies arising from the War of American Independence and the French Revolution. The situation with regard to technical education produced by these various forces was, as has been seen, a chaotic one. The period so far discussed may well be described as an experimental one; the years to come, from 1880 to about 1905, saw the beginnings of really systematic technical instruction and were probably more formative in character than the years following 1905, up to the Second World War.

Industry in the eighties of the last century was rapidly realising that the key to the future lay in industrial development. Industry was growing fast. In just more than forty years (up to 1913) steel production increased thirtyfold.[16] The electrical and chemical industries were also expanding rapidly. Machine tools made possible new methods of

manufacture. By the end of the century the 'domestic' system which was still widely prevalent in the fifties had almost entirely given way to centralised factory production. Yet, in spite of all this apparent progress and prosperity, expert observers were looking at the industrial scene with some disquiet. The Paris Exhibition took place in 1867, and Lyon Playfair, as a result of what he noted there, wrote to Lord Taunton (of the Schools Inquiry Commission) claiming that "foreigners believed that we had made little progress since 1862.....our engineers and scientists ascribed our failure .....to the systems of technical education developed in European countries for the masters and managers of industry."[17] The lack of trained men at managerial level, and the paucity of industrial research were noted also by the Devonshire Commission.[18] A prominent Yorkshire industrialist, Swire Smith, called attention to our deficiencies in a speech at Dundee in 1888. "The wealthy manufacturer.....sends his son to a classical school to learn Latin and Greek as preparation for cloth manufacturing, calico printing, engineering or coalmining.....He enters his father's factory at 20 or 24 absolutely untrained in the chief requirements of the business he is called on to direct.....Is it fair that he should have been taught nothing of chemistry, or of practical mechanics, steam, electricity, the methods of commerce or even of foreign

languages."[19] Increasing foreign competition was forcing industrialists and government officials alike to concentrate their attention on technical education - although there was some uncertainty as to who were to be the recipients, the higher industrial echelons or the workmen.

As a result of Playfair's letter, there ensued a great deal of agitation by individuals, meetings of committees, and publication of reports. A Technical University, government help for University research, trade classes for artisans - all were advocated with varying degrees of perseverance. To this crowded, unorganised, and wordy hubbub has been affixed the label 'technical education movement.' Those taking part - Playfair, T.H. Huxley, Henry Cole, Colonel Strange, Captain Donnelly, Edwin Chadwick, Bernhard Samuelson, Henry Roscoe, to name but a few - were a heterogenous mixture of University teachers, Royal Engineers' officers, government officials, philanthropists, united by the aim of securing government aid for the provision of a comprehensive scheme of technical education for the whole country. No such aid was supplied.

Instead, as was usual in nineteenth century Britain, the beginnings of technical education were left to private enterprise - it was held that it was not the function of the State to do any more than was already being

done by the Department of Science and Art. In 1869, the Chancellor of the Exchequer had said to a deputation, which included Playfair, "I am in principle opposed to all grants, and it is my intention not to entertain any applications of this nature. We are called upon for economy.....and I hold it as our duty not to spend public money to do that which people can do for themselves."[20]

Such being the attitude of the Government, the leaders of the technical education movement now turned their attention to the Livery Companies of the City of London. At the same time, a suggestion of Captain Donnelly's - that the Society of Arts should set technological examinations in place of the theoretical science examinations it had handed over to South Kensington - was being considered. It was felt that the Livery Companies could very well co-operate in this - they were very wealthy and one of their original functions had been the regulation of apprenticeship. Help was forthcoming. Scholarships were provided at the new liberal science colleges (developments of the People's Colleges after 1873); a sum of £10,000 was set aside for a Technical University (1873); and, on November 11th, 1878, the City and Guilds of London Institute for the Advancement of Technical Education was inaugurated.

Thus, the technical training responsibilities

which South Kensington had failed to shoulder were taken over by the City and Guilds Institute. They took up, and expanded the system of technological examinations already started in a small way by the Society of Arts, increasing the number of subjects examined from 24 in 1880 to 64 in 1900.[21] The City and Guilds Institute, therefore did for practical and trade training what South Kensington had done for the more theoretical subjects. The Institute also founded two very important educational institutions. One was the first real Technical College in England, at Finsbury, in North London, where Philip Magnus, the enthusiastic director and Principal, was able to develop day and evening classes in subjects such as mechanical and electrical engineering, technical chemistry, and building crafts, all based on adequate laboratories and workshops. The other was the Central Institution at South Kensington, opened in 1884, which was intended for the education of technical teachers, industrial technologists, and managers. Now part of the Imperial College, the Central Institution was one of the first British colleges to provide technical education at a high level. In addition, the City and Guilds Institute gave grants in aid of technical education to technical classes already established and to the new universities and university colleges which were coming into existence in the manufacturing cities.

Alongside this 'private enterprise' activity, a Royal Commission on Technical Instruction sat from 1881 to 1884. Under the chairmanship of Bernhard Samuelson, its members were Henry Roscoe, Philip Magnus, John Slagg, Swire Smith, and William Woodall - dedicated liberals, educationists, and industrialists. Its Reports[22] provided a clear analysis of a confused and complicated situation, as well as giving much information about continental schemes. Its chief recommendations were:

(1) Science subjects in schools and local classes should be more practical;

(2) Scientific and technical education should be increased in the endowed schools and the public schools;

(3) Technical education could only come with a unified system of secondary education.[23]

The Reports gave utterance to a steadily mounting feeling among those engaged in technical and scientific education that just as the Mechanics' Institutes had failed in their purpose owing to the inadequate elementary education of members, so technical education was now feeling the lack of an efficient secondary system. It was beginning to be realised that technical education was a branch of the national education system as a whole and that to consider it apart from sound and efficient elementary and secondary systems was to prejudice its

success. It had been found necessary, in some of the London polytechnics during the seventies, to remedy earlier educational deficiencies as integral parts of their courses. Having helped to bring about so much, the leading members of the Commission now turned their attention to the creation of a climate of opinion sympathetic to technical education.

The propaganda of the National Association for the Promotion of Technical and Scientific Education, founded in 1887 under the chairmanship of Lord Hartington, carried on the work of appealing to the materialistic instincts of the British public by hammering home the strength of foreign industrial competition. Their exhortations began, very slowly, to rouse the powers that be from their slumbers.

In 1888, local government received its coping stone by the creation of County Councils, which, with the Boroughs already in existence, took over most of the functions which we now usually associate with local administration. The Technical Instruction Act of 1889, the first useful piece of Parliamentary legislation in this context to be passed in Britain, enabled the new local authorities to levy a penny rate for technical education. The definition of technical education used in the Act, and quoted earlier, was a wide one, and the science departments of existing secondary schools benefited as well as specifically technical institutions.

It retained the bias in favour of theoretical studies noted earlier. By 1898, all local authorities had adopted its provisions and were raising a total of £39.000 for this purpose.[24] In addition, they were spending appreciable sums on building and capital equipment, mostly derived from loans, South Kensington grants, and public donations.

A further source of revenue was soon available, indeed, much progress would probably not have been made without it. In 1890, the Local Taxation (Customs and Excise) Act allocated certain surpluses (originally intended to compensate publicans for loss of licences) to the local authorities for the benefit of technical education or rate relief. The 'Whiskey Money' was quite substantial. In 1892-3 it was £472.560, rising to £863.847 in 1900-1.[25] Though many councils spent it on secondary education, and others used it in relief of rates, the money enabled facilities for technical education to be expanded enormously during the twelve years preceding the 1902 Education Act. Many municipal technical colleges date from this time.

By the nineties, there were two authorities at local level offering educational facilities - often in opposition to each other. There were the School Boards created by the 1870 Act, giving universal elementary education and playing tentatively with secondary and technical education, and

there were the Technical Instruction (or Education) Boards and Committees administering the local whiskey money grants and often offering secondary as well as further (or adult) technical education.

The London Technical Education Board, for example, under the chairmanship of Sidney Webb, was particularly active. It expanded the famous Polytechnics[26] which had been financed largely from City Parochial funds, gave large grants to help the London School Board's 'illegal' science and secondary schools, and organised scholarship schemes.

In the rest of the country, particularly the North, technical colleges (many formed from old Mechanics' Institutes) and evening schools were being created rapidly by the Technical Education authorities. By 1902, the evening schools had half a million pupils,[27] although a large proportion of these were taking relatively elementary non-technical courses. The evening school pattern set at this time, resulting from the reports of the Technical Instruction Commission and the Cross Commission, established a format which has very largely persisted to the present day - despite the growth of day-release.

Towards the end of the nineteenth century, the whole picture of English public education - whether elementary, secondary, or technical - was confused, both at national

and local levels, owing to the overlapping fields of action of the Education Department and the Science and Art Department; the School Boards, the Technical Education Committees, and the Voluntary School Managers. A cumbersome financial machinery did nothing to relieve the situation. Partly resolved by the amalgamation, in 1899, of the Education and Science and Art Departments into the Board of Education, the chaos was to await further clarification until the 1902 Act. All forms of public education were then placed under County and Borough Councils, to be administered as one service.

So far, we have been concerned with developments in technical education, and although university scientific education falls outside the scope of this survey, some mention of contemprary developments in this field is not out of place. There was much creative development in higher scientific education after 1880. New courses were founded at Oxford and Cambridge; the Cambridge School of Engineering was taking a leading place in professional education. Six new Universities were founded after 1880 and their locations in manufacturing cities (Leeds, Sheffield, Manchester, etc.) led them to develop technological schools. In 1889, the Government granted the universities the sum of £15.000 - a significant step. Finally, engineering, chemical, and technological departments grew up at London and Birmingham. It is worth noting that

the present grant to the universities is in the region of £50 million.

By 1902, when English education became organised at last, much progress had been made in technical education. Although some would say that not enough has been done, when one considers that for over a century previous to 1880, Britain had recklessly squandered her human and material resources in a policy of 'get rich quick', it is truly remarkable that so much order was brought out of confusion in only twenty or so years. These years, from 1880 to the early nineteen hundreds, were formative years. The Department of Science and Art, the City and Guilds Institute, Whiskey Money and the growth of local authority enterprise, the rise of universal elementary education, the first beginnings of secondary education for all, scientific development in old and new universities - a period with features like these is one of progress indeed. Moreover, these years established the salient features of English technical education as a predominantly part-time education for students from offices and factories, concentrating on the needs of the technician, craftsman, and office-worker, and preparing students for external examinations. Clearly, by the early nineteen hundreds, the seeds of an effective national system of technical education had been sown.

The inter-war years, however, were to be a

a period of slow progress and consolidation, and were followed, after the Second World War, by an immense expansionist programme of technical and scientific education which still continues.

These later developments, however, do not concern this survey, since they are beyond its chronological limits. It is necessary now to turn to the local scene, firstly, to look at the economic conditions prevailing in nineteenth century Sunderland, and, secondly, to investigate the various stages of the local provision of technical education.

Chapter II.

Nineteenth Century Sunderland - a brief economic survey.

Every social entity, whether it is an isolated farm, a hamlet, village, town or busy metropolis, develops not in a vacuum, but as a scientifically determinable response to environmental opportunities. Thus, a town may develop as a regional centre of administration, industry, routes, commerce or recreation. In the same way as the town responds to the needs of the region, so its educational system responds to the needs of the town. This is particularly true with regard to technical education. Examples of this tendency are not difficult to find - the development of electrical engineering courses at Rugby College of Technology; at Brighton and Blackpool with their hotel management and catering courses; Leeds College of Technology's courses in clothing technology; Manchester's textile chemistry courses; and the wide variety of language courses at Liverpool's College of Commerce. Obviously, many technical college courses, such as mathematics and pure science, are common all over the country, but others, clearly, respond to local needs. The purpose of this chapter is to consider what were the needs, in this connection, of the town of Sunderland during the last century.

Today, Sunderland is the largest town,

apart from Newcastle, between Leeds and Edinburgh, and the largest port on the east coast of England. It has a population of almost 190.000; within twelve miles there are one and a third million people, with a further million within twenty miles.

As a port, Sunderland is strategically placed for the shipment of goods to and from north-west Europe, particularly Holland, Germany, and Scandinavia. It is also a seaside resort which attracts thousands of people daily during the summer. Sunderland is, too, an industrial town with industries as diverse as the casting of anchors and the production of high precision components for aircraft engines. The town's industrial importance, however, originated from its shipbuilding and its function as a coal-shipping port for the Durham coalfield.

The early history of Sunderland is closely interwoven with that of Bishopwearmouth until 1183, when Bishop Hugh Pudsey granted a charter giving Wearmouth the status of a borough with other privileges similar to those obtained earlier by Newcastle. At this time, as the charter indicates, Sunderland was already a place of maritime importance.[1] The first authenticated reference to shipbuilding was in 1346, and the first shipment of coal from the river is said to have taken place in 1396.[2] In Elizabethan times, however,

Sunderland appears to have declined to a mere fishing village of little importance, without even a Custom House.[3]

In 1669, Charles II granted Letters Patent for the building of a pier and lighthouse. By now, the population of the town was over 6.000 and other industries had been added to the original coal-shipping and shipbuilding.[4] A theatre was opened in 1778, and in 1796, the first bridge across the Wear was opened. This was, at the time, the longest single-span, cast-iron bridge in the world, and it was not until 1929 that it was replaced by the present Wearmouth Bridge.

The real period of growth for Sunderland, however, came during the eighteenth and nineteenth centuries. A survey, completed in 1819, lists seven glass-bottle and three other glass factories, several potteries, many factories making grindstones, and a ropery.[5] In that same year, the records of Lloyds Register tell us that, "The Wear ship-building business in the port stands the highest of any in the United Kingdom, and gives employment to a great number of carpenters."[6] 7.078 ships were cleared from the port, and coal shipments exceeded 500.000 tons. The population had reached 30.000.[7]

By 1827, we are told, "the commerce and population of this port have long been in a situation of

progressive increase,"[8] and that the principal industries of the town were shipbuilding, the coal trade, the manufacture of earthenware, glassware and pottery, lime quarrying, and the production of grindstones. Population for 1827 was in the region of 36.000,[9] and the Customs dues for the year amounted to some £54.000.[10]

Four years later, Sunderland was described as "in point of maritime importance the fourth port in the United Kingdom."[11] The same source supplied the information that 651 ships were registered at the Custom House, their gross tonnage being 113.206 tons.[12] The amount of coal exported in 1830 was 564.928 Newcastle chaldrons,[13] or one and a half million tons. Other exports listed were lime, glassware, earthenware, and grindstones. The population for 1831 is given as 39.470.[14] A later description, for 1834, adds iron-works, roperies, and sawmills to the list of local industries.[15] By 1843, the value of the town's exports and imports had risen to £22.540. 10. 9d. and £51.800. 5. 10d., respectively.[16] At this time, according to Lloyds Register, Sunderland was "the most important shipbuilding centre in the country, nearly equalling, as regards number and tonnage of ships built, all the other ports together."[17] In 1835, Sunderland became a Municipal Borough, and elected its first Mayor in 1836 - the town had been a Parliamentary Borough since 1832.

Clearly, Sunderland had become an important manufacturing and commercial centre before the middle of the nineteenth century. Situated at the mouth of a river and in the heart of the coal trade, having, even, a large pit, Wearmouth Colliery, said to have been at one time the second deepest in the world, within the borough boundary, such development was only to be expected.

The town's principal industry during the nineteenth century was, undoubtedly, shipbuilding. There were many small yards established on the Wear during the seventeenth century, and it was at this time that the industry took firm root. During the Napoleonic Wars, from 1801 to 1815, the number of shipbuilding establishments on the Wear increased from nine to fifteen,[18] rising to 34 by 1830.[19] There were, of course, during these early years, many places where ships were built by small groups of carpenters which were too small, temporary, and unorganised to be described as shipyards. The war period was followed by a depression, but a boom from 1835 to 1840 brought the number of ships built in the latter year to 251, their tonnage to 64.446 tons, and the number of yards to 65.[20] The first of the seven major shipyards at present operating in the town was established in 1793,[21] and the ramainder between 1826 and 1850. The number of ships built on the Wear in 1840 has never been exceeded,[22] but they were, of

course,small wooden ships, not to be compared with the steel monsters of today. A depression in the early forties was, once more followed by a boom owing to the demands of the Crimean War for shipping.[23] In 1853, 152 ships, totalling 68.479 tons were produced - the largest tonnage of wooden ships up to that time. The first iron ship from the Wear, the 'Loftus', of 77 tons, had been completed in the previous year.[24] By the sixties, there were 58 yards producing wooden ships on the Wear, but gradually the proportion of wooden ships to iron grew less, the ships themselves grew larger, and the number of yards progressively fewer. The last wooden ship from the Wear was launched in 1880,[25] and with the introduction of iron ships and screw propulsion Sunderland's pre-eminence as a shipbuilding town was lost. The introduction of the steam ship brought marine engineering to the Wear, and in 1905, marine engines totalling 189.849 tons were built in the town.[26] By the end of the century, nine large shipbuilding firms remained on the Wear, later reducing to seven, and the records for the past one hundred and twenty-five years show that 10.251 ships with a gross tonnage of more than eighteen million tons have been built since the middle of the last century, (see Appendix A, Table III).

Sunderland's other staple occupation during the nineteenth century was the coal trade. The town's

importance in this respect dates back to the early seventeenth century - in fact, Sunderland's increasing prominence in the coal trade had become a matter of some concern to Newcastle merchants before 1650. Sunderland's development as a coal shipping port was hindered by disadvantages. The Durham coal-seams dip sharply in the east some way before they reach the sea. Thus, the nearest pit to Sunderland which could be worked by seventeenth century methods was ten miles upstream. In addition, the Wear was more difficult to navigate, and smaller, than the Tyne. Nevertheless, the coal trade from Sunderland began to increase after 1600, probably because the growing demands of the south of England for coal began to exhaust the supply from the best situated, shallow pits in the Tyne valley. Moreover, during much of the Civil War, Newcastle was Royalist, and cut off coal supplies to London, thus considerably assisting the coal trade of Parliamentary Sunderland. Finally, the establishment of salt pans in the town may have had some influence in drawing the attention of merchants to the possibilities of large-scale shipping of coal from the Wear. In 1634, shipments of coal from Sunderland were 70.000 tons per year, reaching 110.000 tons by 1660.[27] By 1825, the export of coal from the Wear had reached 1.330.414 tons, rising to 4.924.077 tons in 1905,[28] (see Appendix A, Table IV).

Parallel with the expansion of shipbuilding, the coal trade, and industry generally in nineteenth century Sunderland went the development of the port. Today, the enclosed harbour, extensive docks and deep water quays can accommodate large modern vessels and handle all types of cargo.

The mouth of the Wear - the Roman Vedra and Saxon Wiri - has provided a safe haven for ships from the earliest times. It has already been remarked that Bishop Pudsey's charter of 1183 mentioned Sunderland as being a place of some maritime importance. The real importance of the port, however, dates from the opening up of the North Durham coalfield and the development of the coal trade with London and the South of England. In 1717, Commissioners of the River Wear were appointed by Parliament and they immediately set to work to improve the port.[29] In 1726, the first pier on the South bank was completed and subsequently, a pier was built on the North side.[30] The North Dock was opened in 1837,[31] the South Docks followed in 1850,[32] and were extended in 1855 and 1868. In 1885, the foundation block of the first of the two granite-faced piers which now protect the harbour entrance was laid, work on the second being started in 1893.[33] Reference to Appendix A, Table V shows clearly how these improvements brought a steadily increasing trade to the port. Subsequent improvements have not neglected to keep pace with the growing

needs of industry, trade and shipping.

Apart from coal and shipbuilding, however, it has been seen earlier that other industries in Sunderland during the first half of the nineteenth century included lime-quarrying, burning, and exporting; glassmaking; the manufacture of earthenware, grindstones, anchors and chains, and hawsers; as well as many others of lesser importance. By the end of the century, however, as a glance at the list of local industries mentioned in the Technical Education Committee's Report of 1894 will show, marine and electrical engineering, iron forging, papermaking, and brewing had been added. Tables VI and VII of Appendix A show that the older items of trade of the port were declining and being replaced by new items, thus reflecting the development of industry in the town itself.

Although industrial development continued to take place in Sunderland fairly steadily during the second half of the nineteenth century, it was in the natural course of events subject to periodical depressions. In particular, the continuous fall in prices from the middle seventies to the middle nineties produced some unemployment in Sunderland, enough, at any rate, to lead the Council to set up a Distress Committee in 1894.[34] It should, therefore, be borne in mind that the period of greatest expansion of facilities for

technical education in Sunderland proceeded against a background of some local unemployment.

Enough has been said now to show that Sunderland during the nineteenth century was a place of growing commercial and industrial importance, with some diversity of economic life, but with two major industries staple to the town and overshadowing everything else. A third, engineering, added itself in the latter years of the century. It is not surprising, therefore, to find in the town an increasing interest in technical education giving rise to widely differing attempts at its provision. A Mechanics' Institute, which was to follow the usual pattern of early success followed by long-term failure, was followed by various evening classes and a School which operated under the Department of Science and Art. The first of these was a School of Navigation, others were Science and Art evening classes. There was also a Government School of Science and Art which ran classes during the day, but where art led the way over science. Out of these diverse beginning was to be created a technical college which was to acquire, in some aspects of its work, an international reputation.

We have seen that there is a strong tendency for technical education to respond in detail to the demands of the economic and social environment. When Sunderland

Technical College was opened in 1901, the courses which took root and progressed most quickly were those in the various branches of Mechanical Engineering, and the general engineering employers were the earliest to join in the College's student-apprenticeship scheme. Strangely enough, as will be seen, courses in Naval Architecture and Mining did not feature very largely in the College's early development, and some possible reasons for this will be suggested when this point is examined in detail in Chapter IX. It will be seen then that these apparent exceptions do not, in fact, invalidate the generalisation with which this chapter began.

Details of the provision of technical education in Sunderland, however, yet remain to be investigated. For the moment, we must take a closer look at the earliest manifestation of technical education in the town - those brought about entirely by private enterprise.

Chapter III.

Technical Education in Sunderland (1): an early Evening Class, and the Sunderland Mechanics' Institute.

The difficulty of trying to select any single happening as the origin of English technical education has already been noticed with regard to the national picture, and there is no less difficulty on the local scene. General agreement, however, gives pride of place to the Mechanics' Institutes as the source from which our technical education system has developed. Despite this, earlier attempts, such as the Army classes and the Admiralty school at Rosyth,[1] should not be overlooked. Nor, indeed, should such examples of local private enterprise of which records have survived.

A handbill, advertising what was probably one of Sunderland's first evening classes, has survived and is now in the possession of the local Museum. The bill is dated from Bishopwearmouth, on November 11th, 1788, and in it, Mr. Rowland Weatherald "respectfully begs leave to inform his Friends and the Public that he has Opened his Night School (at his House in Captain Hopper's Buildings) Where will be carefully taught Writing and all Branches of the Mathematics." Under the latter heading Mr. Weatherald included "Common Accounts, Algebra,

Geometry, Navigation, Astronomy, and Fluxions." This last is the name used, rather loosely, by eighteenth century writers for the Newtonian calculus.[2] In addition to the foregoing, Mr. Weatherald offered instruction in "Drawing in Architecture and the Perspective.....the Use of Globes and Geography."

Rowland Weatherald was a farmer's son from Northumberland who settled in Sunderland in 1762 as a teacher of mathematics. He set up what is believed to have been the town's first printing press, but throughout most of his life his first preoccupation seems to have been teaching. He died in 1791, aged 64, leaving his business to his sons.[3] Whether Mr. Weatherald's activities would fall within the scope of any definition of technical education is open to considerable doubt. One receives the impression that much of his work was done among the relatively well-to-do of the town, who studied the subjects he offered for their general interest, and who could afford his fees, and not among those who would study mathematics for its vocational advantages. Probably he would have many clients from among the higher echelons of the town's seafaring fraternity. His handbill also states that "Ladies and Gentlemen who desire to be Privately Instructed; may be waited on at their own Homes at convenient hours," so he was obviously used to dealing with middle-class customers.

A more interesting point than the nature of Mr. Weatherald's activities is the source of his own education. However, his handbill is interesting as an early example of private enterprise facilities for the continuance of education.

Nothing else of this sort seems to have survived. There were large numbers of private acadamys in the town at the beginning of the last century, but they all seem to have been day schools for the sons and daughters of the better-off sections of the community. The Sunderland Mechanics' Institute seems, therefore, to have been the first institution providing vocational instruction for the working classes.

Investigation of such scanty records of the Sunderland Mechanics' Institute as have survived show that, in 1831, the Institute was occupying premises in Sans Street which were also occupied by a 'School of Industry.'[4] Examination of this promising title shows that the Sans Street School of Industry was built in 1809, was supported by voluntary contributions, and had, in 1831, 75 young girls as pupils.[5] It was further found that "Schools of Industry were instituted because of the demands for child labour and the resentment felt by parents at the loss of income caused by attendance at Day School. The scholars at Sans Street were instructed in crafts whereby they could earn their daily bread and take home a few

pence. The crafts taught were plain sewing and plaiting straw for bonnets."[6] There were two other institutions of this type in the town at the time, both for boys, and like the girls' school, they were intended for children "of the poorest industrial classes."[7] Such severely vocational instruction could well be considered to fall within the ambit of some definitions of technical education.

A much wider field of activity was envisaged by the founders of the Mechanics' Institute of Sunderland and its Vicinity. Founded in 1825 at a house in Sunderland Street,[8] the Institute had for its purpose, "..... ...to educate the illiterate, to direct the studious, to afford every necessary aid to the intelligent and ingenious, and to assist every mind aspiring to knowledge."[9] By 1827, the Instititute was receiving considerable support. It had 250 members paying a subscription of twelve shillings a year each, a library of four hundred volumes, a collection of apparatus, and was holding monthly lectures on Chemistry, Mathematics, and Mechanics in the evenings. The classes were led by instructors who gave their services free, and who "..... ....endeavoured on all occasions to illustrate the principles of the different arts and sciences, so as to elucidate completely the subject on which they respectively discourse or lecture to the humblest capacity."[10] The Sunderland Institute,

as might be expected, was far from being an isolated example in the North, since we are told in 1824 that "Mechanics' Institutes are established at nearly all the towns, etc., in the counties of Northumberland and Durham."[11]

To return, however, to the Sunderland Institute. By 1831, when, as we have seen, the Institute had moved to Sans Street, membership had risen to three hundred and the annual subscription had been reduced to eight shillings. Apprentices were allowed a reduced amount of six shillings.[12] It should be remembered that Mechanics' Institutes received no State aid and were dependent on their subscriptions and voluntary contributions. Three years later, in 1834, the Institute was still in Sans Street[13] but no information is available about membership. This may well have been declining, since there is no further mention of a Mechanics' Institute in Sunderland until 1844. In that year, we are told that an Institute for Mechanics was situated in Bridge Street, at No. 9, and mention is made of its being "founded by the Earl of Durham in 1837."[14] There seems, thus, to have been a break of some sort between the original Institute founded in 1825, and the 1837 Institute in Bridge Street. Since there is no more mention of the 1825 foundation in local records, there would not seem to have been two such Institutes in existence at the same time.

At about this time, "some concern was being felt about the Newcastle Mechanics' Institute because of its declining membership."[15] It would appear that there was reason for similar concern to be felt in Sunderland, for after 1856, no further reference to a Mechanics' Institute in the town can be found in any of the surviving local directories, guide books, or almanacs. It would appear that the local Institute ran true to pattern, and succumbed to the difficulties created by lack of adequate finance, and failure to understand the needs and educational limitations of the working men of the period. The lectures given, popular though they were, were no substitute for organised teaching. There is evidence to suggest that the Institute did not decline because of any lack of local interest in scientific matters - and some suggestion that the interest may have been on the part of different sections of society. "The first exhibition of the Sunderland Polytechnic Society was opened" (on September 4th, 1838) "and was very numerously attended for several days. The contributions consisted of paintings, drawings, statuary, mechanical inventions, etc., and the committee awarded twenty-four silver medals to the most praiseworthy exhibitors."[16] This, and other similar entries relating to the Sunderland Society and to one in Newcastle, suggest that there was rather more of middle-class dilettantism

about them than working-class urge to self-improvement.

The Sunderland Mechanics' Institute might have disappeared, but it was not to be long before a further attempt at providing technical education facilities was to be made. This time, although the mainspring was still to be private enterprise, there was to be some assistance from the State through the medium of the newly created Department of Science and Art.

Chapter IV.

Technical Education in Sunderland (2): Sunderland School of Science and Art, and other Science and Art Classes, from 1855 to 1890.

It has already been seen that the demise of the Mechanics' Institute movement was followed by the beginnings of State intervention in the field of technical education. The Science and Art Department of the Board of Trade, established in 1853, was slow at first in making any appreciable impact on the provision of tachnical education in England, but with the establishment of a system of payment-by-results grants in 1859, some expansion began.

In Sunderland, the first institution to operate under the auspices of the Department was a School of Navigation, in Lodge Terrace, Hendon, which was established in 1855.[1] The School provided both day and evening classes and had a staff of four - the headmaster, Mr. J.J. Styles, one part-time assistant teacher, and two pupil teachers. There was a wide range of students - from extra masters to boys wishing to go to sea - studying such subjects as Navigation, Arithmetic, Astronomy, Trigonometry, Geography, Algebra, and Steam Engines. It would appear that the School was a successful one for some years, since, in 1861, it received £233 from South Kensington.[2]

However, no further mention of the School occurs in the Department's Reports after 1863, and no local records of its further existence have survived.

The next development followed in 1861. In that year, a School of Art and Science was set up in Bridge Street, Monkwearmouth Shore,[3] under the chairmanship of the then Mayor, with a Mr. William Kelsey as Secretary. Mr. Herbert Lees was headmaster. The School appears to have been open mainly in the evenings - it had only four daytime students, while 67 students attended the evening classes. It appears, too, that Art was the mainstay of the School, no mention being made of Science. In addition to its work with its own pupils, the School seemed to carry out some work during the day with classes in various public and private schools in the town. Mention is made of 614 pupils receiving art instruction in 1861, and they were divided into three groups, apart from those attending the School itself. These were, schoolchildren attending public day schools, private day school pupils, and pupil teachers. Despite this apparently wide range of activity, the School earned only £27. 5. 3d. from the Department in 1861, which would indicate that not many of its pupils sat the South Kensington examinations.[4]

The School's life was a short one, as the Report for 1864 informs us that it was closed after a special

examination held in February, 1863.[5] No further mention of it occurs.

The first institution to maintain a continuous existence for more than a few years was opened in 1869. Its address was 21 Norfolk Street, the Chairman of the School Committee was a Reverend R. Burnett, the Secretary, a Mr. W.H. Mills,[6] and the headmaster a Mr. Stephen Thomas. It was this School, destined to maintain a continuous existence, though with many vicissitudes and in one form or another, to the present time, which was the real beginning of the provision of technical education in Sunderland. The School began life as an art school, but, a science class established in the same year at Monkwearmouth Colliery School,[7] was soon to be amalgamated with it. It is impossible to discover exactly when this event took place because of gaps in the surviving Departmental Reports, but it was certainly before 1872. Between them, the two institutions had one hundred and forty evening-class students, mainly taking such subjects as Practical Plane and Solid Geometry, Machine Construction, Building Construction, Applied Mechanics, and Pure Mathematics. The Norfolk Street School had forty-four day students, most of them taking art subjects.[8] No pupils of the School took examinations in 1869, so no subject details are available.[9]

Three years later, in 1872, the School

the Norfolk Street School and the Monkwearmouth science class had amalgamated, and had acquired a new headmaster, Mr. William Cosens-Way, who was to remain with the School till 1890. From 1872 onwards the School is referred to in South Kensington Reports as the Government School of Science and Art No. 1141, (Sunderland). A new address - 21 Fawcett Street - had been acquired, as well as a new headmaster.[10]

Detailed records of these early years have not survived, and one is dependent on those South Kensington Reports which are still available and on a few advertisements for information. The advertisements tell us that there were no full-time courses, that classes were open in the mornings for art, and in the evenings for science. The same sources indicate that art studies formed the bulk of the work done, and consisted of painting, drawing from still-life, the cast, and the figure; together with a certain amount of design for embroidery and metalwork. The science subjects dealt with were mainly Machine Construction and Building Construction, although there were occasional classes in Mathematics and Mechanics. The staff of the School were six in number - the headmaster, and Messrs. F. Wood, G.W. Grainger, W.D. Wright, T.W. Brown, and J. Gannon. All were part-time. The School's income from the Department in 1872 was £138. 17. 11d., and it had 51 day and 89 evening students. That year, the students gained nine third-

grade art prizes and eighteen second grade, with forty-four students out of ninety-two successful in the Department's May examinations.[11]

The School remained at 21 Fawcett Street until 1880, when it moved to the Hall School, a private school in Toward Road.[12] It remained there until 1883, when it once more returned to Fawcett Street, this time to No. 27, the Athenaeum Building, where it shared the premises with the Liberal Club, two shipowners and a building society.[13] This was to be its last home before moving to the Town Hall in September, 1891. It is worthy of note that, at some time in its early career, the School acquired a grant of £30 per annum from the Corporation, payable through the Museum and Libraries Committee,[14] but the date of origin of this windfall remains unknown.

From 1872 onwards, twenty-two other Science and Art classes, all evening classes, were established in the town at various times. The peak years were 1881, 1888, and 1897 - each of these saw ten classes at work as well as School No. 1141. For convenience' sake, School No. 1141 will be referred to as the Central School - a phrase used in the Minute Books - from now on. Once more, but little information about these other classes is available, but statistical information taken from the Department's Reports is included in Appendix B. The first of these evening classes began in 1872, at

Bishopwearmouth National School, Rectory Park, and was given the number 1136. It had sixty-nine students taking the following combinations of subjects:

Practical Plane and Solid Geometry.....33 students
Machine Construction and Drawing.....33 students
Building Construction.....16 students
Pure Mathematics, Stage I.....50 students
Theoretical Mechanics.....10 students
Applied Mechanics.....28 students
Steam Engines.....20 students.[15]

The Central School, at this time, had a mere six science students taking Machine Construction, and four taking Building Construction.[16] By 1877, five other evening classes were at work. These were at Bishopwearmouth National School (1136), Monkwearmouth Workmen's Hall (1139), Milton Hall Academy, Vine Place (1140), the Y.M.C.A. (1143), and the Hendon Church Institute (1144). Between them, they dealt with 168 science students and 121 art students.

By 1881, one of the peak years, there were ten evening class centres at work, as well as the Central School. No. 1140 had lapsed, and No's. 1168, 1169, 1182, 1188, 1142, and 1196 had been established, (see Appendix B, Table I). The Central School had 12 science students and 120 art students, while the other centres had greatly increased, having 327 science

students and 180 art students between them. So far, there was a wide variety of institutions giving shelter to these evening classes - two were in voluntary schools; one at the Co-operative Society Hall; two in Board Schools; three in private schools; one at a Church Institute; and one at the Y.M.C.A The Central School, in Fawcett Street, was still, as it was to remain, the only one offering classes during the day. The science subjects taken by students at the evening classes included Practical Plane and Solid Geometry, Machine Construction, Building Construction, Pure Mathematics, Acoustics, Light and Heat, the Theory of the Steam Engine, Magnetism and Electricity, Chemistry, and Physical Goegraphy. Of this number only Practical Geometry, Machine Construction, and Building Construction were offered at the Central School. Although the number of classes was to vary from time to time, the pattern of technical education in Sunderland was not to alter greatly up to 1901. Until the opening of the new technical college in that year, technical education in the town was carried on through one School which provided both day and evening classes, and a number of evening classes attached to miscellaneous institutions - all of them operating under the Department of Science and Art.

From 1885 onwards, information, at least about the Central School, is much more plentiful. Two Minute

Books of the School's Management Committee have survived, furnishing a great deal of information about the day-to-day life of the School. It is unfortunate that the School about which most information is available is precisely the one which was most heavily biassed towards art teaching - in contrast with the other evening classes which always had more science than art. However, one can safely assume that the way in which the Sunderland Science and Art School worked was not entirely different from schools in other places where science predominated. In any case, art, in the later nineteenth century was regarded as a part of technical education, as is made clear in the correspondence carried on, in 1894, between Mr. Patterson of the School of Art, and 'Technical', which is attached as Appendix E.

The two Minute Books, between them, cover the period from 1885 to 1902, but before proceeding to the activities of the Central School it is convenient to take a brief look at the state of the other classes in the town at the beginning of the period. In 1885, there were eight other evening classes operating in the town, No's. 1143, 1162, 1165, 1173 having disappeared from the scene and No. 11.135, at Blackett's Buildings in High Street being a new creation. No. 1143, the Y.M.C.A., had only disappeared temporarily, since it was re-established with the same number in 1887. Between them,

the eight classes had 416 students, 282 taking science and 134 taking art. The Central School had 20 science students, and 106 taking art. In all, there were 542 people taking advantage of the facilities for technical education available at the time - not a large number out of a population of about 120,000.

To return, however, to the Central School. During the period covered by the two Minute Books, the School had three headmasters, of whom Mr. William Cosens-Way, appointed in 1872 and resigning in 1890, was the first. He was followed by Mr. John Woodhouse Stubbs, who remained with the School until September, 1901. In his place came Mr. Charles H. Rogers, who was to see, early in his term of office, the division of the School into two - the Science classes being transferred to the new Technical College, and the Art section remaining with him at the Town Hall. It is convenient, therefore, for the purposes of this survey, to deal first with the period of office of Mr. Way, a long but relatively uneventful period. Mr. Stubbs' headmastership, a shorter but more significant period, will then be dealt with in terms of its main events. Such information as exists with regard to the other Science and Art evening classes will be interpolated where relevant.

In September, 1885, when the first Minute

Book begins, the School was situated at 27 Fawcett Street, the premises now occupied by the Corporation's Health Department. It was run by a voluntary management committee of local business men consisting of: Mr. T.W. Backhouse, Chairman; Messrs. S.S. Robson, D. Ranken, William Tone, C. Lilburn, E.W. Wilson, J.A. Longden, J. Lindsay, G.S. Brady, W. Scott, J. Haswell, H. Squance, and W. Mills Roche, Committee Members; Messrs. James Patterson and Alexander Corder, Secretary and Treasurer respectively.[17] Mr. Backhouse had only just become Chairman, his predecessor being the same Canon Burnett who had opened the School in 1869.[18] As for the rest of the Committee, the professions, local commerce and industry were about equally represented - Messrs. Tone, Scott, Longden, and Roche being solicitors; Messrs. Brady and Squance, medical men; Mr. Ranken, a builder and contractor; Mr. Corder a draper. Mr. Roche was also a member of the Council. The Chairman, Mr. Backhouse, was a member of a well-known family of Quaker bankers. Many of these men, Mr. Roche in particular, were to play leading parts, during the nineties, in the establishment of the Technical College.

The Committee appear to have met at rather irregular intervals - only nineteen full committee meetings are recorded between 1885 and 1890 - although the frequency of meetings increased towards the end of the century. The bulk

of the School's business was apparently transacted by the Secretary. Chapter V will show that membership of a local management committee was not intended to be a sinecure, as the members were expected to visit the School frequently to ensure that the Department's regulations were carried out, that registers were correctly kept, that apparatus was properly used and stored, and that examinations received the necessary supervision. In practice, as is apparent from the Secretary's numerous complaints throughout the Minute Books, in Sunderland such matters were all too often left to him alone.

Mr. Patterson spent a great deal of his time in correspondence with South Kensington over matters of detail, as the following extract from his first Minute Book shows.

"Nov. 5th, 1885. Received acknowledgement of new Committee, Chairman, and Secretary.

10th. Received objections to prizes for Andrew Bevan, John Heys, and Laura Swainston.

12th. Answered objections as above, claiming again for Andrew Bevan.

18th. Received notice that claim for Andrew Bevan had been allowed.

Dec.21st. Received package of prizes from Messrs. Chapman and Hall. Acknowledged same, and notified

that two copies of Rogers' Manual of Design had been omitted.

24th. Received notice from the Department that our new Committee was approved of.

Received Science and Art Directory and Form 120.

Received notice that £5. 17. 5d. only would be allowed for Laura Swainston, the remainder going to Norwich School; that May Davison's claim was not allowed; a question of claim made on behalf of Edith Bond's work, and as to place of examination for Emily Bryers."[19]

An interesting point arising from the above is the query raised by the Department, about the "place of examination for Emily Bryers." Miss Bryers was the daughter of Mr. Thomas W. Bryers, the Clerk to the Sunderland School Board, and she was sitting for an Art Teacher's Certificate. Since she was a relation of the Local Examinations Secretary, the Department suggested that she sit the examination at Newcastle.

Such attention to detail, particularly with regard to examinations, was very necessary under a system such as that outlined in Chapter V. Examinations meant income, and the only other income a School would have, apart from grants, would be that from students' fees, unless, as in

the case of the Central School, there was a grant from the Corporation. Private subscription, of course, was always a possible source of income, but not a very reliable one. A balance sheet for 1887 shows that fees for a morning Painting class were £2 for the year; an afternoon Drawing class, 33/6d., and an early evening Drawing class, 27 shillings. The fee for an artisan evening class was ten shillings for the year.[20] Nevertheless, the School was in debt to the extent of £70 by 1888.[21] The main reason for this sad state of affairs seems to have been the necessity of paying rent for the School's premises, and as early as 1887, we find the Committee urging the need for free accommodation in the projected Municipal Buildings.[22] They also appealed for subscriptions to help build up a fund for furniture and equipment. The School's accounts were always fairly close, with only very small annual credit balances, so there was little opportunity of building up funds. Later in the School's career, as we shall see, the situation was to become very much worse.

If the financial arrangements of the School were on an uncertain basis, so were those of its headmaster. Mr. Cosens-Way was a part-time, teaching master-in charge. He was also headmaster of the Newcastle School of Art. He received no fixed salary from Sunderland, having instead half the class fees of all classes except the 5 p.m.

to 7 p.m. class, of which he took the whole, plus the Art grant less the amount for Pupil Teachers. On this basis, the sum paid him in 1886 was £161. 17. 6d.,[23] in 1889, a bad year, he received only £94. 2. 1d.,[24] and, in 1890, his last year at the School, he was paid £148. 18. 9d.[25] In October, 1889, Mr. Way applied to the Committee for "an increase to two-thirds of the whole of the fees instead of half of all but the 5 p.m. to 7 p.m. class, of which I get the whole." The Committee were unable to grant his request, considering that "it would be impossible to keep open the School if this were done."[26] They, therefore, deferred any decision about Mr. Way's salary until the removal to the new Municipal Buildings. It is far from unreasonable to suppose that this decision was a factor in Mr. Way's leaving the School in 1890. It could well be that he judged the status, financial and otherwise, of the Newcastle School to be superior to that of Sunderland.

Mr. Way's assistant teachers in 1886/7, both part-time, were Mr. Frank W. Wood, who received £30 per annum, and Mr. John Heys, a former pupil of the School, who was a pupil teacher at £15 per annum. Mr. Wood also taught at the Newcastle School and was appointed to Sunderland, in 1894, to "assist with Day and Evening Drawing Classes," while Mr. Heys taught evening classes only.[27]

Under Mr. Way, the School appears to have

provided classes mainly in Art, with a few miscellaneous Science subjects added on (see Appendix C, Tables II(a), II(b), and III). Art subjects included Painting in oils, water colour, and monochrome; chalk drawing and shading; freehand drawing and shading, drawing from models; perspective, and shading. Among the Science subjects were Practical Geometry, Building Construction and Machine Construction.[28] Mr. Way, a versatile man by South Kensington standards, held certificates for both Art and Science, and taught both.[29] The work of the School was mainly devoted to preparation for Government examinations, for the national art competition organised by South Kensington, and for art teacher's certificates. A member of the School Committee, in proposing a vote of thanks to the Mayor at a prize presentation, remarked, "It was intended that pupils who went to the School should receive sufficient instruction to enable them to become art teachers."[30]

A description of the School and its work, in the local press at this time, ascribes to its influence, "the growing taste for art in the town," and asks its readers to notice "the wonderful strides that have been made in matters of taste." The article points out, also, that the "School is attended by many pupil teachers, which is the first step towards improving the elementary art education of the future."[31] The general tone of the report is extremely favourable and

shows that the School held a high place in public esteem.

Among the pupils of the School, the young ladies of the town predominated - about 65 per cent. of the students were girls.[32] Some of these would be the "school teachers and governesses" for whom a special Saturday morning class was provided in 1888.[33] Others were the elementary school pupil teachers mentioned above, but probably the largest group among them would be the daughters of the tradesmen and minor business men of the town. Many of the names listed in the School's Prize Lists are well known ones in Sunderland. According to report, for a considerable number of its girl day-students the School represented a suitable place for the spending of two or three years in a reasonably pleasant manner before marriage - a sort of local finishing school. The majority of the male students attended the evening classes - particularly those designed for artisans. These were held both in Science and Art and it is impossible to disentangle from the Prize lists exactly which subjects were taken by the various groups of students. It should be noticed, however, that attendance at an artisan evening class did not imply instruction in Science - the classes were so named simply because they were in the evening and reduced fees were charged.

It is with regard to students that the

first reference to relations with the local School Board is made. A circular letter was received by Mr. Patterson from the West London School of Art, in March, 1886.[34] The letter complained of "a considerable falling-off in our elementary classes" and the writers blamed this on the activities of elementary schools which formed art classes under the Department's regulations, thus preventing pupils attending the Art Schools - to the financial loss of the latter. The writers went on to ask if the Sunderland School had suffered in the same way, and suggested joint-action to urge the Department to find a way of ending the situation. A later reference to this matter, in 1891, would indicate that nothing was done about it. Mr. Patterson's reply pointed out that not only had the Sunderland School suffered "severely from the same causes.....but also from the disadvantage..... of having to pay a heavy rent against the rent-free system of the Board Schools."[35] This, as has already been seen, was a grave source of dissatisfaction among the members of the School Committee.

Plans were afoot, however, to deal with the situation as early as 1886. The proposed new Municipal Building (the present Town Hall) was intended to contain some accommodation for the School. On November 9th, 1886, Mr. Eyre Crowe, "the Government Inspector, paid a visit to the School.. .....and after examining the work and the premises, he said

that the work was done under great difficulties - bad light, bad ventilation, and too small space for the students. He requested that a plan of the proposed Municipal Buildings should be sent to him showing the intended space for the School."[36] The plan was duly sent, and was returned with Mr. Crowe's comments, which were hardly encouraging. "......a cursory glance, however, suffices to show, as you hint, that the height is unsatisfactory. I will go further and say that eight feet from the floor is quite insufficient."[37] Mr. Crowe's remarks did not prevent the Committee from pressing the Corporation to grant them the premises - a campaign which continued with mounting intensity until eventual success in 1891. In March, 1887, Mr. Patterson had a meeting with Mr. Brightwell Binyon, the architect for the new Building, at which Mr. Binyon expressed his willingness to do "all he could for the convenience of the School"[38] with regard to lighting and space. The question of the height of the ceiling must have been dealt with, for the second floor of the Town Hall has a ceiling height of ten feet, and has not been altered in this respect since the building was opened.

To return, however, to relations between the School Committee and the local School Board. These, on the whole, appear to have been fairly close and friendly. Some of the meetings of the School Committee were held in the School

Board offices in John Street, and, once a year, when it was necessary under the Department's Regulations to elect a Local Examinations Secretary and Custodian of Papers, Mr. Thomas W. Bryers, ex-headmaster of the Monkwearmouth Colliery School and Clerk to the Sunderland School Board, was always chosen. Indeed, in 1892, when a Mr. Johnston was elected, South Kensington cancelled the election, insisting on Mr. Bryers.[39] Moreover, Mr. Backhouse, the School Committee Chairman, was also a member of the School Board, becoming its Chairman in 1893. He was also a member of the Board of Guardians. Quite obviously, membership of local ad hoc bodies in Sunderland followed the usual nineteenth century practice of being drawn from a small, overlapping group of men.

It is convenient, at this point, to take a brief glance at the activities of the other Science and Art evening classes in the town. By 1889, there were, apart from the Central School, nine other evening classes. Between them, the ten institutions had 673 Science students and 298 students attending Art classes. Of these last, 100 were at the Central School. Of the other classes, two were housed in Board Schools, at Hendon and Diamond Hall; one was in a Voluntary School, at Bishopwearmouth; and the remainder were organised by various private bodies such as the Y.M.C.A., the Co-operative Society, and a Church Institute at Hendon. They had been established at various times between 1873 and 1889 and

were all, more or less, thriving. No one of them, however, or even all of them together, approached the prominence of the Central School in the town - even if the others did have more Science students, public opinion, at the time, regarded the Central School as the leader.

In January, 1890, the School Committee received a letter from Mr. Way, the headmaster, resigning his position because "his duties in other respects were increasing and he was not so young as formerly."[40] In a speech on a later occasion, he observed that it was his work at the Newcastle School of Art, of which he was also headmaster, that was increasing.[41] The Committee expressed their thanks to Mr. Way, saying that they desired "to express their sense of their indebtedness to him for his services to the school during the lengthy period of nearly 20 years" and wished him "health and success in his profession for many years to come."[42] They then proceeded to ask advice of South Kensington on the obtaining of a successor.

Mr. Way's retirement from the School marks the end of a period in its development, and it will be seen that, under the new headmaster, a time very different in character from Mr. Way's followed. It is, therefore, convenient to see, now, what information about the School under Mr. Way can be found in the Minute Books, and attempt an evaluation.

In his Report for 1889, Mr. Way said, ".....the past year has been a successful one though there was some falling-off in the lower stages of art work. We were successful in the higher grades, owing to the pupils taking it up from the lower section. The total number of students was 129, being the largest since 1881. This, though large, is not what it should be for a town like Sunderland."[43] On the same occasion, a prize-giving ceremony, Councillor Ritson remarked that Mr. Way "was leaving the School, not like a sinking ship, but in the flood tide of prosperity."[44] Councillor Roche, proposing a vote of thanks to the Mayor, struck a gloomier note, "the reason why art was not making much progress in Sunderland was because the premises were ill-adapted and totally inadequate for a school."[45] He added that it would be a good thing if the School could have a master resident in the town. However, statements made much later and at a greater distance strike a rather different note. In 1901, the Mayor, speaking of the period of Mr. Way's headmastership, said, "For many years we made no progress at all."[46] On April 23rd, 1901, in a paragraph dealing with the then headmaster's retirement, one of the local papers said that the School had "advanced by leaps and bounds from the insignificant position it held on his appointment."[47] It is difficult to escape the conclusion that the School, under Mr. Way, merely held its own and did not

flourish. As head of two schools his attention must have been sadly divided, and since he was resident in Newcastle, that school probably took most of his time. Enthusiastic direction of the Sunderland School was impossible under such circumstances, and clearly, the period of Mr. Way's headmastership, when compared with what was to follow, can only be labelled one of relative stagnation. To be fair, however, the new master was to have the advantages, as will be seen, of much superior premises, more money, and more teachers.

Before continuing with the next period in the development of technical education facilities in Sunderland, it is necessary to take a more detailed look at the system under which the Science and Art Schools and classes operated than has been possible hitherto. There are many references throughout the Minute Books to the Science and Art Department's Regulations, but the only place where these are given in full is the Department's Directories. Chapter V, therefore, examines the South Kensington system as it was reflected in its Regulations for the conduct of schools and classes.

Chapter V.

The Science and Art Department System.

As one might expect, the Regulations of the Science and Art Department cover a great deal of ground. They also varied from time to time, particularly with regard to grants, but the following summary, though based on the Directory for 1890-91, includes those regulations which were in force for most of the period with which this survey deals.

The Regulations were divided into four chapters, of which the first dealt with the regulations common to art and to science; the second and third, respectively, with those special to art and to science. The fourth chapter was concerned with the various methods of completing Departmental forms. In addition, there were appendices containing the syllabuses of the art and science subjects on which grants were paid by the Department.

Chapter 1 began by classifying the different forms of aid given by the Department as payments to local committees on examination results together with certificates, prizes, and medals; building grants and grants for apparatus and equipment; aid to teachers attending courses at approved institutions; loans and grants to museums and Science and Art Schools; and aid for Science instruction in

Training Colleges and Drawing Teaching in Elementary Schools. The Regulations underlined the fact that help could be given only to approved schools and classes which were open to inspection, and emphasised that fees should always be charged.

The requirements of the Department with regard to local management committees were next dealt with. ".....all the members of the Committee must be well-known responsible persons of independent position, who have no personal interest in the teachers of the school..... .....It is very desirable that as many persons as possible in recognised positions of public responsibility in the district, such as mayors, provosts, town and county councillors, magistrates, members of school boards, trustees of grammar schools, clergymen of the Established Church in parochial employment, and ministers of religion in charge of legally recognised places of public worship should be on the Committee....."[1] The duties of the Committee of a School included general responsibility for it; engagement of staff; conduct of examinations; and responsibility for all apparatus, fittings, etc., for which the Department granted aid.[2]

Proceeding next to discuss premises, fittings and apparatus, the Regulations pointed out that the grants would be withdrawn if accommodation was found to be unsatisfactory, and that, where elementary school premises

were used for a Science and Art class, such use should not interfere with the primary use of the premises. With regard to grant for fittings and apparatus, it was stated that fifty per cent. of the cost would be borne by the Department so long as the rest was provided by the local committee; that the item in question should cost at least two pounds ten shillings; that it be used only by a teacher duly recognised by the Department; and that formal application to purchase be made on the appropriate form. The section concluded by stating that the Department would retain a lien on all objects bought with its aid, and that this would decrease by one-fifth of the purchase price each year.

In connection with buildings, South Kensington offered grants for new buildings at a rate not exceeding two shillings and sixpence per square foot of internal area, and that there be a maximum of five hundred pounds. Once more, application was to be made in the prescribed manner on Form 348. No grant would be made unless the Department was satisfied that the locality had a sufficient population to support the new institution.

Chapter 1 continued by stating that teachers must be qualified in accordance with the Department's rules; that classes must meet for at least twenty-eight hours per session; and that returns of timetables and teaching staff

be made before October 1st of each school year, on Form 120. In addition, a general register of students was to be kept, together with attendance registers for each subject taught. No grants or prizes would be allowed unless registers were correctly kept and certified. In connection with forms, it is interesting to note that the Department imposed a fine of two shillings and sixpence for each week a school was late in submitting a form.

Chapter 1 also dealt with examinations, their conduct and organisation, and application for examination papers. The Regulations distinguished two types of examination - the annual, personal tests held in April and May each year, and the examination of works sent up to South Kensington for assessment. This last concerned art rather more than science. The examination regulations required that a Local Examinations Secretary be appointed together with Supervisors for each room in use, or for each fifty students. Amalgamation of local committees was also allowed for, where they were within a reasonable distance of each other, into a Special Local Examinations Committee - as, in fact, was always done in Sunderland. In such a case, a Special Local Examinations Secretary and Custodian of Papers was to be appointed - in Sunderland, Mr. Bryers, the Clerk to the School Board, usually occupied this position - to manage the whole business of the

examinations. The Secretary so appointed was paid by the Department, together with his assistants, at the rate of half a guinea for every examination session plus half a guinea for every seventy-five papers worked. Mr. Bryers, in Sunderland, always made it his business to hand over his fees to the School Committee - the Minute Books are studded with votes of thanks to him. Since other classes, apart from those of the Central School, were involved, this was rather unfair, and may help to account for the occasion when someone else than Mr. Bryers was chosen. Another function of the Local Examinations Secretary was to apply for the necessary examination papers and keep them in a safe place.

After providing for the conduct and organisation of examinations, the Regulations went on to deal with payments to local committees on the results of the May examinations. Results grants were paid only on certain conditions, as follows:

(1) that the teacher be qualified under the Department's regulations;

(2) that at least twenty-eight lessons had been given in the subject;

(3) that students for whom claims were submitted fell into one or other of the undermentioned groups:-

(a) wage-earners or their unemployed children,

(b) teachers and pupil-teachers in elementary schools,

(c) persons not inreceipt of an income greater than £400 per annum,

(d) elementary school pupils and leavers,

(e) students of an Organised Science School, or of an artisan evening class,

(4) that claims be made before the end of December following the issue of the results.

That examination results grants and works grants were not easily earned is shown by the following remarks, made by Mr. Way, in his Report for 1888. ".....the work of a large number of students was of such a nature as to earn neither grant nor prize, and was, therefore, not sent to the examiners at South Kensington.....What the examiners required to show that a subject had been satisfactorily taught was a sufficient quantity of work extending over at least eight working months of the year.....Perhaps only 40 of the students would satisfy the examiners in this respect."[3]

The Regulations continued by making provision for the award of local scholarships to pupils of elementary schools and Organised Science Schools who qualified by the examinations, so long as the managers of the school concered provided five pounds per annum to cover part of the cost. South Kensington then provided sums ranging from four pounds

to ten pounds for each student, depending upon the year or stage of his course. Such scholars were to be under sixteen years of age, in attendance at a day school, and should guarantee satisfactory conduct and performance.

For adult, part-time students there were local exhibitions awarded by the Department. The awards, of twenty-five pounds per annum, were given, subject to the local committee raising a like sum, to students who were "members of the industrial classes"[4] and who did well in the May examinations. The purpose of the exhibitions was to maintain promising students "at some school or college where a thorough course of science, or art, instruction of an advanced character"[5] could be obtained on a full-time basis. Exhibitions were tenable for three years, and the place where the student was to pursue his studies could be chosen by his school committee, provided that he had the option of going to the Normal School of Science, the National Art Training School, the Royal College of Mines, or the Dublin School of Art. In such cases, fees for instruction were remitted.

The penultimate section of Chapter 1 dealt with inspections, stating that schools and classes must be open to inspection by Departmental officials, who would report on "the condition and suitability of the premises and fittings; the sufficiency of the apparatus, etc. used in

the instruction of the school; the character of the instruction; the constitution of the Committee; and the manner in which the Regulations are carried out."[6] The section concluded by requiring schools visited by an Inspector to hold a Committee meeting for him to attend.

In conclusion, the first chapter of the Regulations provided for grants to museums for purchasing reproductions and loans to schools and classes of casts, models, examples, and books.

The second chapter was concerned with those regulations which were special to Science, and opened by listing the subjects for which the Department provided assistance. There were twenty-eight of these, as follows:

I. Practical Plane and Solid Geometry.

II. Machine Construction and Drawing.

III. Building Construction.

IV. Naval Architecture.

V. Mathematics.

VI. Theoretical Mechanics.

VII. Applied Mechanics.

VIII. Sound, Light, and Heat.

IX. Magnetism and Electricity.

X. Inorganic Chemistry, (Theoretical).

Xp. Inorganic Chemistry, (Practical).

XI. Organic Chemistry, (Theoretical).

XIp. Organic Chemistry, (Practical).

XII. Geology.

XIII. Mineralogy.

XIV. Animal Physiology.

XV. Botany.

XVI.) Biology, including Animal and Vegetable.
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XVII.) Morphology, and Physiology.

XVIII. Principles of Mining.

XIX. Metallurgy, (Theoretical).

XIXp. Metallurgy, (Practical).

XX. Navigation.

XXI. Nautical Astronomy.

XXII. Steam.

XXIII. Physiography.

XXIV. Principles of Agriculture.

XXV. Hygiene.

Each subject was divided into three stages - Elementary, Advanced, and Honours - except Mathematics, which had seven stages, the last three being Honours.

Building grants, for new buildings and adaptations of old ones, were dealt with next. Apart from the general requirements described earlier, the Department required that a plan of the site together with estimates and specifications

be forwarded to them, and laid down certain conditions to be met. Rooms were to be not less than twelve feet high, and should communicate with each other directly, as well as by passages; there were to be adequate lighting and ventilation systems. No grant was to be given unless a room was provided, with proper fittings, for lectures on experimental science, together with another fitted as a laboratory. On completion of the building work, a Trust Deed was to be drawn up providing that the building be used in perpetuity as a School of Science or Art; that it be open for inspection; that the teachers be qualified under South Kensington's regulations; and that a local committee of management be properly constituted. The grant would then be paid on presentation of a certificate of completion and a balance sheet.

The Regulations continued by setting down the qualifications to be held by Science teachers before payment by results could be made. Generally speaking, a teacher of a Science subject must have obtained, in that subject, a First Class (Advanced) pass in the Department's examinations, or a class in Honours, or a certificate of the Normal School of Science, or a First Class or Honours Class in the special examination for teachers' training colleges. Teachers with a First Class in Subjects VIII or IX were qualified for Physics; for Practical Chemistry (Organic or Inorganic) a teacher must

have obtained a First Class (Advanced) in both theory and practice. The section closes by providing that certificates gained before 1867 remain in force, despite subsequent alterations in the regulations, and a list is given of qualifications entitling the holder to recognition without examination.

Having dealt with teachers' qualifications, very detailed arrangements for examination timetables are next provided for, the main points being that examinations in the three stages of a subject were held at the same time, and that elementary school pupils would not be examined by the Department unless they had passed Standard VI.

The important subject of payment on results was discussed at length. The Science grants were:-

(1) £2 and £1 for a First or Second Class respectively, in each stage of each subject;

(2) £4 and £2 for a First or Second Class respectively in Honours;

(3) 10 shillings for passing Section I (Geometrical Drawing) of the elementary stage of Practical Plane and Solid Geometry.

The only exception to the foregoing was that, in Practical Organic Chemistry, Practical Inorganic Chemistry, and Practical Metallurgy, the payments were £3 and £2 for a First or Second Class respectively in the Advanced Stage; and £4 and £3 for a First or Second Class respectively in Honours. In addition,

payments not exceeding £3 for each student could be made (under the Art regulations) for works carried out by students of Practical Plane and Solid Geometry, Machine Construction and Drawing, Building Construction, and Naval Architecture, and sent up to South Kensington for examination.

There were, also, various restrictions on payments on the results of Science examinations. No grants were paid for those branches of Science taught in various other Institutions receiving State aid - Normal School of Science, Royal Dockyard Schools, University Colleges, etc. No payment was made on account of a student who had previously been successful in a higher stage of the same subject; or in Honours, unless the student had already passed the first two stages of the same subject. No student was allowed to take more than two subjects per year, in addition to Geometry and Mathematics. Again, no payments were made on behalf of students taking the three practical subjects unless the laboratory in which they were taught had been approved by the Department. Finally, a rather interesting rule. "Grants are not made for instruction in subjects of Applied Science which are inappropriate to the students in the locality."[7] No Navigation was to be taught in Matlock simply because the teacher had a certificate for it.

After dealing with regulations concerning

Organised Science Schools, the Directory continued with rewards to students and teachers. Apart from certificates recording success in the various stages, students could obtain Queen's Prizes of books or instruments for First Classes of the Advanced Stage; Bronze Medals for Firsts in Honours; Royal Exhibitions with a maintenance grant of £50 per annum; National Scholarships, which were almost the same; and Free Studentships at the Normal School of Science or the Royal School of Mines. All were awarded on the basis of the highest marks gained in the May examinations. The Department also dealt with the award of Whitworth Scholarships and Exhibitions.

Chapter 3, which dealt with Regulations special to Art, began by listing all the branches of Art instruction for which aid was given. These consisted of twenty-three stages, each with many subsections. The various stages fell into three parts - Drawing, Painting, and Modelling - and the only stage which had any real relevance to technical education was the first - Linear Drawing with the aid of instruments. The rest were purely artistic - in the worst sense of the word.

There were three grades of Art examination - the First Grade in Drawing for elementary schools only, and the Second and Third Grades. The Second Grade examination

consisted of freehand drawing from flat examples, freehand drawing from models, and perspective drawing. The Third Grade was of a higher standard still, involving examination in six or seven subjects from a selection of about nineteen.

Building grants for Art Schools were obtainable on the same terms as those for Science. Art Schools were to have, at least, an elementary room twenty feet by thirty feet, and sixteen feet high; a life room twenty feet by twenty-four feet, lighted from the north side; a modelling room fifteen feet by twenty feet; and a master's room, twelve feet by fifteen feet, as well as the usual cloakrooms. These were minimum requirements, representing accommodation for fifty students, and should be compared with the plan attached to Appendix D. It will be seen that the accommodation provided for the Sunderland School in the Town Hall was not ungenerous. For the rest, the procedure was the same as for Science Schools.

Detailed directions relating to teachers' qualifications follow. The School must be under the charge of a master holding the Art Master's Certificate, Third Grade, which was obtained by taking additional subjects to the Art Teacher's Certificate, which was the basic qualification for a class teacher. In all, there were four certificates for art teachers, an Elementary School Teacher's Drawing Certificate and a Second Grade Drawing Certificate being awarded as well as

the two mentioned above. Once these certificates had been obtained, their possessors were encouraged to extend their scope by sending works to the Department and taking examinations in other subjects.

In Art, grants could be paid for works in all subjects sent to South Kensington for examination, at the rate of not more than £3 per head. The works sent up must have been carried out during the previous year in the recognised hours of meeting of the School or Class. They were expected to be something more than merely exercises preparatory for an examination. This is the main difference between the grants for art and those for science, in which it was possible to obtain this grant in four subjects only.

The examination results grants for art were:

(1) £1 and 10 shillings for a First Class or Second Class respectively in each subject of the Second Grade examination;

(2) £3, £2, and £1 respectively for an Excellent, First Class, or Second Class in each subject of the Third Grade examination;

(3) £3 on account of each free studentship. These were peculiar to Art, and could be awarded to any student of a school who had attended for two years and gained a First Class in the Third Grade examination, or a prize or maximum payment for

works. To receive the grant for such a student the local committee had to undertake to admit him to the school without fee.

(4) There were also grants of £15 per annum for Pupil Teachers in schools where "20 students of the Industrial Classes are satisfactorily taught."[8] A second Pupil Teacher could be engaged if the number of such students rose to fifty. A Pupil Teacher must have passed the Second Grade examination, must submit works annually, and be under twenty-five years of age.

(5) £5 for every student who intended to become an "Art workman or designer of manufactures"[9] and who obtained a National Scholarship.

(6) 10 shillings for every elementary school teacher who passed in Model Drawing with chalk on the blackboard, and Drawing in Light and Shade.

Rewards to art students differed from those for Science students insofar as there were more local prizes, as opposed to national scholarships and medals. Prizes not exceeding twelve shillings in value were awarded to succesful Second or Third Grade students if they had maintained a good attendance record. Medals and book prizes were awarded for works sent to South Kensington for examination and selected for the National Art Competition. Apart from these, national scholar-

ships, exhibitions, and medals were awarded in much the same way as for Science.

Particulars of grants for Drawing in Elementary Schools and aid for Training Colleges for Teachers were included in the Directory, but are beyond the scope of this survey. Other matters dealt with were instructions to local secretaries and committees, rules for completion of registers, and guidance in the completion of Departmental forms.

The Directory concluded by setting out detailed syllabuses for all the Science and Art subjects supervised by South Kensington. It is, of course, difficult to assess the standard of these without examples of examination papers. It would appear, though, that for the Science subjects, the general level of the Advanced stage was about that of the Ordinary National Certificate today. Difficulties of assessment are also complicated by the fact that techniques have changed drastically with the advent of new knowledge. This is particularly so in subjects such as Mining, Naval Architecture, and Physics, by way of example. There is, for instance, no electro-statics content in present day Electrical Engineering syllabuses, but this figured largely in the Magnetism and Electricity syllabus set out by South Kensington. In general, the Science syllabuses were very lengthy, and one must admire the application of those who worked their way through them. They

were, also, extremely theoretical, and this led to much 'cramming'. Such versatility as that of Mr. Way, the Sunderland headmaster, who held certificates both for Science and Art,[10] must have been by no means uncommon - and accompanied by a high degree of superficiality. The theoretical nature of the syllabuses was, as has been seen, merely a reflection of current educational thought in connection with technical education, and of the suspicion of many employers who were reluctant to engage anyone who had not completed a practical training in industry.

The abuse of the system through 'cramming' has already been mentioned, but there were other possibilities. The investigation of the allegations against Mr. Stubbs, recounted in Chapter VIII, indicates clearly that unscrupulous teachers could succeed in tampering with students' work which was to be sent up for inspection. In a system which almost put a premium on this sort of thing, it would be surprising if a great deal of 'alteration and correction' did not take place.

So much for the system under which the Science and Art Schools and evening classes worked. It was a comprehensive one - its main characteristic being that it was not complete State aid, but merely help for those who were willing to help themselves. Having reviewed the system's chief features, it is now time to return to developments in Sunderland.

Chapter VI.

Technical Education in Sunderland (3): the move to the Town Hall; the beginnings of expansion and the end of private enterprise control.

Although, as has been seen, the School Committee took advice from South Kensington on the question of a successor to Mr. Way, they seem to have had quite clear ideas about the type of man they wanted as the new headmaster. In a letter to the Sunderland Daily Echo, dated 6th February, 1890,[1] Mr. Patterson said that the Committee, "have already decided that such successor should be a resident in the town, and, if possible, young, energetic, and imbued with the latest ideas of art teaching; and also that the School shall be open at least five days in the week." Clearly, they realised the deficiencies of the School, and were probably encouraged to hope for expansion by the prospect of a move to better premises, and by the promises inherent in the early stages of the Local Taxation (Customs and Excise) Act.

At a Committee meeting on February 28th, 1890, it was announced that nine applications had been received for the vacant post.[2] After much deliberation, these were reduced to three,[3] but the references of only one of these were taken up. On March 5th, the position was offered to a Mr. John Woodhouse

Stubbs, headmaster of the Hawick School of Art. He was appointed on the same terms as Mr. Way - half the fees, except those for the 5 p.m. to 7 p.m. class, which he was to receive in full, as well as all the grant, except that part which was for pupil teachers. The appointment was subject to a term's notice on either side, and was to be effective from 1st May, 1890.[4]

Mr. J. Woodhouse Stubbs had previosuly been headmaster at the Norwich School of Art, before going to Hawick for health reasons, and his success was said to have been phenomenal. While at Norwich, his pupils had earned eight silver and ten bronze medals, two National Queen's Prizes, and many other National Competition awards. He, himself, was a silver and bronze medallist, and holder of the Art Master's Certificate. He had, apparently been in Sunderland before, as an assistant teacher under Mr. Way, in 1883. After supplying this brief biographical sketch, the Sunderland Daily Post went on to congratulate the Committee on securing "a first-class teacher".[5] He was not to belie his reputation.

The School Committee, in 1890, was not changed,[6] and Mr. Patterson was still School Secretary. Only a minor changes took place on the teaching staff also. In June 1890, the Committee were notified that John Heys, who had long been a pupil teacher at the School, was no longer eligible for grant as he was now over twenty-five years of age. The

Committee decided to engage him as an assistant teacher at £20 per annum, and to ask Mr. Stubbs to appoint another pupil teacher.[7] This was duly done, and in July, William Morton was appointed at £5 per annum.[8] The staff of the School in 1890 were Mr. Stubbs, John Heys, William Sutherland (for Machine Construction), and William Morton, all part-time, and resident in Sunderland.[9] The School was now open on five days in the week.[10] Classes were held every morning from 10 a.m. to 12 noon; on Tuesday and Thursday afternoon from 2 p.m. till 4 p.m., on Saturdays from 10 a.m. to 12 noon, and from 2 p.m. to 4 p.m. Evening classes were held on Mondays, Wednesdays, and Fridays, from 7 p.m. to 9 p.m.[11]

These changes notwithstanding, the major event of the early part of Mr. Stubbs' headship was the move to the Town Hall. As has been seen, this question had cropped up on many earlier occasions. The position was that while it had been understood for many years that rooms would be made available in the new Town Hall, no firm promise had ever been given by the Corporation. The campaign to extract such a promise had been in progress for some three or four years before 1890, and, on June 12th, 1890, an unofficial meeting of the School Committee took place in the Town Hall. It was put to the Council that, "there was an increase in the number of students, a resident master is appointed to give lessons daily, and smaller

towns than Sunderland had Schools of Art costing from £10,000 to £50,000."[12] Those in opposition to having the School in the Town Hall managed, on this occasion, to have the proposal defeated as being premature.[13] At a further meeting on April 15th 1891, the question was again adjourned for a fortnight. At about the same time, a Government Inspector had visited the School and some of his remarks supplied ammunition for the opposition. Of the School, he said, "....the premises in which the school is carried on" (27 Fawcett Street) "are most inadequate for the purpose, and are a discredit to the town.....I was surprised to find how excellent the work produced in the school is, more especially considering the great disadvantages the students are working under. I am glad to say that there is a prospect of the school being removed to rooms in the new Municipal Buildings.....and although these are not all that can be desired in the way of lighting, they will answer the purposes of the school."[14] In March, General Festing, from South Kensington, had examined the rooms and pronounced them not good enough.[15] The opposition, therefore, took the view that it was hardly worthwhile moving the school unless the new premises were in every way suitable. Those in support, however, lost no opportunity of urging their case. In February, 1891, Councillor Roche is reported as saying that it was a "burning disgrace"[16] that Sunderland had no Art School premises

worthy of the name. Another Councillor quoted figures showing that the School now had 250 students, and that, of these, 25 (all ladies) would be there each day.[17] On April 29th, at a meeting of the Town Hall Committee, the motion was carried unanimously that the School of Science and Art have the use of the vacant rooms on the second floor of the Town Hall.[18] The Council approved the motion on May 16th, 1891. After some argument over whether or not to continue the School's grant of £30 per annum, it was resolved "that the Council allow the Government School of Science and Art the use during the pleasure of the Council of the four rooms on the second floor of the Town Hall, on the following conditions:

(1) The entrance to be from the archway in Athenaeum Street.

(2) The cost of gas, water, and coals used for the rooms and the cleaning and attendance be paid by the School.

(3) The School to make good any damage caused by its use of the rooms and leave the same in as good condition as they now are.

(4) Such other terms and conditions as the Council may, from time to time, consider necessary."[19]

The £30 grant was to be continued.[20] The battle was now won, and on May 7th, Mr. Patterson sent in the School's notice of removal from 27 Fawcett Street.[21] As the local press put it, "Generous action has been taken.....We trust that as

additional public support has been given to the school, the managers will redouble their efforts to make its advantages more widespread....."[22] A plan and description of the new premises are attached as Appendix D.

Once the battle was over, the question of money arose. The local press tells us that, "the committee have, as it were, to start almost from the beginning, as the furnishing of the premises will cost a great deal to do the work in a manner worthy of the building, and they will shortly make an appeal to the public for subscriptions to enable them to carry out these intentions."[23] Some such action was necessary, for the Department had declared, after General Festing's adverse report,[24] that no grant towards furnishing and equipping the rooms could be made because of their unsuitability.[25] Later, they must have relented to some extent, for they eventually allowed about a seventh of the sum spent by the Committee.[26] The Committee appear to have been only just in time to secure even this meagre amount, for, in 1892, South Kensington discontinued grants for fittings.[27] In order to deal with the problem of furnishing, Messrs. Roche, Tone, Corder, Ellis, Shields, Patterson, and Stubbs were appointed as a sub-committee.[28] The funds of the School at this time were £145, all of which was accounted for.[29] After receiving Mr. Stubbs' specifications, tenders were asked for by the Furnishing Sub-committee, and eventually, on June 6th,

1891, a statement was sent to South Kensington that a sum of £479. 16. 2d. was required.[30] The Department's eventual contribution was £69. 12. 2d.[31] The Committee's undoubted gloom would be greatly lightened when, on August 6th, Mr. Corder, who was in charge of the public appeal, announced that £153 had been received.[32] Since the Science and Art Department were only prepared to pay such a small proportion of the cost, it became necessary for the School to apply for a Bank overdraft. Mr. Backhouse's Bank was approached, the matter was arranged without difficulty, and by February, 1892, the overdraft stood at £86. 2. 3d.[33] As a result, application was made to Sunderland Corporation for aid from the funds received under the Local Taxation (Customs and Excise) Act, 1890.[34] A previous application had been made on January 15th, 1891.[35]

The end of September, 1891, saw the School established in its new rooms,[36] and one of the first matters to be considered by the Committee when they had concluded the business of equipping the School was the appointment of a Second Master.[37] This was felt to be necessary because of the Committee's intention to expand the activities of the School and so that Mr. Stubbs could have some assistance with its administration. The reason given for the appointment was the increase in student numbers which was taking place,[38] in particular, the expected increase in the number of artisan

students whom, it was hoped, would attend classes in the evenings in practical design. It would appear that the provision of these classes was an attempt to bring the work done in the School more into line with what the Committee thought would be required in order to obtain a grant from the 'whiskey money'. There were indications in speeches made in Sunderland at this time, that the propaganda of the technical education movement was having some effect.[39] For example, the Mayor, Alderman Stansfield Richardson, speaking at a School prize presentation in 1892, said, "Proud as I am of the British working man, and believing that for strength and solidity British workmanship still holds its own and cannot be beaten in this respect, yet in taste and design we are far surpassed on the Continent."[40] He felt that the function of the Science and Art School was to help to create a sense of good taste and so improve the standard of our manufactures. This was obviously the view of many members of the Council and accounts for the fact that most of them looked upon art as part of technical education.

Whatever the reason, expansion was in the air, and the terms on which the Second Master was to be appointed were agreed. He was to receive a fixed salary of £100; 25% of the fees over and above £300 from the Committee; and 25% of the grant (on subjects taught by him) over and above £75 from

Mr. Stubbs.[41] Mr. Herbert A. Lawson, who was appointed on 6th August, 1891,[42] had previously been an assistant teacher at York and Scarborough. He was a specialist in design, geometry, and building construction.[43] He was to spend his time, or at least some of it, teaching geometry and building construction to craftsmen in the evenings, and the fees for these classes had been specially reduced.[44] His appointment can only be taken as part of a policy of expanding the Science side of the School. Reference to Appendix E shows that there was some public demand for this, as do Councillor Summerbell's remarks about the School in 1894.

Unfortunately, Mr. Lawson did not last very long. On November 23rd, 1891, he was given notice to leave on the ground of incompetency. There was probably rather more to it than this, however, for on February 9th, 1892, the Committee interviewed Mr. Lawson to listen to his "complaints", but after hearing them, "saw no reason to alter their previous decision."[45] It is unlikely that Mr. Lawson's complaints can have been against anyone else but Mr. Stubbs, and they were probably concerned with facilities for his work. Mr. Stubbs was a man of forceful and energetic character and was probably not inclined to be interested in expansion along lines with which he was not familiar. As we shall see, Mr. Stubbs' relations with a Second Master were to cause trouble again. Mr. Lawson's successor, Mr. Edwin E. Brown, another artist, of Manchester

Technical Art School, was appointed on January 9th, 1892, on the same terms as Mr. Lawson.[46]

Expansion continued. At a meeting on 6th August, 1891, Mr. Stubbs put forward a suggestion for encouraging Board School pupils to attend the School of Science and Art after carrying out the elementary stages in their own schools. It would not appear, therefore, that South Kensington had done anything to remedy the situation complained of in the circular letter from the West London School mentioned in Chapter IV. Mr. Stubbs' idea was that lectures be given in the School for "such B oard School teachers as may care to attend"[47] on the benefits of attendance at an advanced school. The matter was referred to the School Board and the lectures were eventually given, but their result remains unknown.[48] It would appear that Mr. Stubbs was an empire-builder - but only along lines in which he could remain an authority. While at the School he did a great deal to improve its status - but, as an Art School - he did relatively little to cater for the needs of industrial students.

One year after his appointment, the local press remarked that the Sunderland Science and Art School had emerged from obscurity to a leading position among such schools, and that this had happened since Mr. Stubbs came. "In the national competition, this school stands 21st out of 851 schools and

classes competing, having taken more awards than all the schools and classes in Northumberland and Durham combined. As compared with former years, the number of awards this year is 28, compared with an average of 17 over the last four years."[49] In his report for 1891, Mr. Stubbs listed 6 National Competition awards, 33 Advanced prizes and 55 Advanced passes, and 53 elementary level passes.[50] That the science classes had, at least, participated in the year's work leading up to these successes is illustrated by their being mentioned for the first time in the account of the annual exhibition for 1892. "At the further end of the room is seen a large section of technical work by artisan evening students, consisting of mechanical work, original designs, modelling in clay, casting, studies of ornament in tempera, geometrical work, etc. The work in this section has been done chiefly by engineers, builders, joiners, decorators, sign-writers, wood-carvers, and instrument-makers, of whom large numbers attend the evening classes. This section of the school has this year obtained 58 passes in strictly technical subjects, viz., 22 in mechanical work, 13 in design and tempera, and 23 in modelling."[51] While the definition of 'strictly technical' subjects could easily be quarrelled with, at least there was some expansion of science classes. A year later, in his report for 1892, Mr. Stubbs informed his listeners that results were

still improving. "The average of passes at the various examinations from 1887 to 1890 was 39, in 1891 it was 108, and last year it reached 180."[52] Clearly, the School was doing well under Mr. Stubbs' direction.

The School's financial situation, however, was less prosperous. South Kensington withdrew prizes in 1892 and much reduced the elementary grants in 1893. The total deficiency in the School's accounts was £100 per year, and they were £200 in debt.[53] By 1893, the amount of 'whiskey money' received by Sunderland Corporation was £4000,[54] and the School Committee considered themselves entitled to a share, as well as to the annual grant already applied. However, as yet the Corporation had made no allocations from the fund, as the Technical Education Committee were still preparing their report on what should be done with the money. As will be seen in Chapter VIII, there were several opinions. Some wished to apply the money to offset the cost of building the new Town Hall;[55] others wished to build a Technical College, while others wanted the money to be used in relief of rates.[56] The deliberations of the Technical Education Committee finally resulted, as will be seen, in provision being made for the School,[57] and the first payment was made in October, 1894.[58]

The School's financial difficulties mark the beginning of the end of an epoch in its development. It

could no longer continue as a private enterprise institution controlled by a private committee of local worthies. Once public money was spent, some measure of independence must be relinquished. The knell sounded on March 15th, 1894, when the School Committee agreed to a proposal from the Council that, "for the future, the School Committee shall consist of nine members of the Town Council, plus nine other gentlemen." The latter group consisted of Messrs. Backhouse, Corder, Ellis, Longden, Patterson, Scott, Shields, Squance, and Tone.[59] The Council nominees were Aldermen Coates, Robson, and Fairless, and Councillors Porteous, Ranken, Roche, Vint, Kirtley, and Scott,[60] most of whom were members of the Technical Education Committee.

The teaching staff of the School in 1893 were Mr. Stubbs, Mr. Brown, the Second Master, Messrs. James Bevan, and William Sutherland, and two pupil teachers.[61]

The school's early tenure of the Town Hall rooms was not without incident. There were arguments with the Town Hall Committee over floor-coverings and heating - many entries in the Minute Books bear witness to these. In June, 1892, the Committee were forced to authorise the expenditure of £70 on cork matting for the School floors, the city fathers "insisting that it be done to deaden the noise."[62] Another fragment from 1893 is not without interest. A newspaper

cutting headed "Nice Young Ladies - a Cruel Committee"[63] concerned a letter read at a meeting of the Town Hall Committee on behalf of the School asking that the young ladies who attended the morning Painting classes might be allowed the use of the front entrance to the Town Hall instead of the side where "the young ladies complained that they were brought into unpleasant contact with the dirty people frequenting the Health Department. They were also afraid of contagion from the poor people who went to the Health Department for disinfectants." The application was declined. Probably, nothing could give a clearer idea of the social status of the School's daytime students. The offending entrance, in Athenaeum Street, still bears the superscription 'Government School of Science and Art.'

Before continuing with later developments in Sunderland's provision of technical education after 1892, another glance should be taken at the other Science and Art classes in the town. The Department's Report for 1894 tells us that eight evening classes were at work in the town in 1893, and these, together with the Central School, had a total of 1523 students - 1039 for Science and 484 for Art. Further analysis shows that, of the Science students 618 were attending classes housed in Board Schools, 367 were with other private institutions, such as the Y.M.C.A. and Co-operative Society,

and 54 were students of the Central School. Of the Art students, the Board Schools claimed 248, the private institutions 76, and the Central School 160. It should be remembered that much of the instruction given in the other evening classes was of an elementary level both in art and science. While it is clear that advanced art courses were only provided at the Central School, it is impossible to say how many of the science students in the other classes were working at an advanced level. The majority of those at the Central School were taking elementary Machine Construction.

The figures quoted above are a good example of the administrative confusion prevailing in the field of technical education in the last decade of the nineteenth century. Concerned in the affairs of the institutions mentioned would be the Education Department and South Kensington at the national level, and at local level, the Sunderland School Board, the Sunderland School of Science and Art Committee, the Managers of Voluntary Schools, the education committees of the Co-operative Society and the Y.M.C.A., and - after 1892 - the Corporation. A fine example of too many cooks, indeed.

In conclusion, a look ahead. The period to come - from 1892 to 1902 - was to be a period of further expansion and new departures in the field of technical education in Sunderland. It was also to see some simplification in administrative matters.

Chapter VII.

Technical Education in Sunderland (4): the Science and Art School and the other Evening Classes from 1892 to 1902.

The establishment of the Science and Art School in the Town Hall marked the end of a period in the development of technical education in Sunderland. Private enterprise provision now began , gradually, to give way to that of the local authority. The provisions of the Technical Instruction Act of 1889, and the Local Taxation (Customs and Excise) Act, 1890, meant that local authorities now had funds available for the provision of facilities for technical education - even if they did not always use them for that purpose - and since this same period was one of rising costs and falling grants, it is not surprising to find the Corporation exercising more and more control over the Science and Art School. Further, it is to this period that the origins of many local authority technical colleges can be traced. In this chapter, which deals mainly with the later activities of the Sunderland Science and Art School, it must be borne in mind that the doings of the School and the other classes proceeded against this background of growing activity on the part of the Corporation's Technical Education Committee, which was

established in 1892.[1] For the sake of clarity, however, it has been decided to deal with these two lines of development separately, and the work of the Technical Education Committee will be taken up, therefore, in Chapter VIII.

Before going on to the proceedings of the Central School, however, it is convenient to deal here with a spirited correspondence in the local press on matters closely involving the School and technical education in general, which has been mentioned previously only in passing. The correspondence between 'Technical' and Mr. James Patterson, Secretary of the Sunderland School of Science and Art, which is attached in full as Appendix E, illustrates so well the attitudes regarding technical education which were prevalent in the early nineties that it merits closer examination. In addition, it throws a great deal of light on the activities of the School itself.

The occasion of the correspondence was the decision, in February, 1894, of the Technical Education Committee to spend part of the 'whiskey money' on giving annual subsidies to science and art schools and classes then operating in the town. In particular, the decision to include the Central School among those so benefited aroused the ire of a local citizen who, preferring anonymity to immortality, wrote to the local paper under the pseudonym 'Technical' attacking the School.

Mr. Patterson, in duty bound, rose to its defence.

'Technical's' chief criticisms were that science was virtually non-existent in the School, the vast majority of its pupils being students of art; that the students themselves were from what he called the "better-off classes" rather than the working class; and that art education was not technical education. A further point was that since art education was more profitable to a school than instruction in science, a subsidy from the Corporation was not needed.

In support of his first point, 'Technical' advanced the statement that, in 1893, only four students passed in what might be called advanced scientific subjects. In his second letter he elaborated on this, and claimed that out of 150 total passes, only 16 were in science subjects - 12 in geometry and 4 in machine construction; and that, further, seven out of the twelve passes in geometry were obtained by young women. Since the School claimed to have 120 artisan students, 'Technical' wished to know what they had been doing. That 'Technical' was correct in his assertions is obvious from only the most superficial study of the School's Reports, summarised in Appendix C. Science instruction, even in what South Kensington regarded as the two basic subjects - Geometry and Mathematics - occupied a very inferior place to art throughout the whole of the life of the School. In his replies, Mr.

Patterson did not deal honestly with this matter at all, but persisted in trying to fog the issue by attempting to equate all art education with technical education through the use of such phrases as "technical art", "technical drawing", of quotations about technical drawing, and of statements illustrative of the utility of drawing to the artisan. Mr. Patterson's argument, in this respect, just does not stand up.

About the composition of the School's students, both parties were partly right. The application by the 'young ladies' of the School to be allowed the use of the front entrance to the Town Hall does not sound as if it came from members of what South Kensington referred to as the industrial classes. Perusal of the School's Reports shows clearly that most of the students attending full time were girls - drawn from what we would now call the lower middle-class - with a very much smaller proportion of young men. The artisan classes of which Mr. Patterson spoke were also present in the School, indeed, some of their occupations are listed on page 91. Mr. Patterson, of course, included in his artisan numbers those who were attending both art and science classes. If his artisans were "preparing for 21 different Government examinations" these were most certainly not all in Science subjects. The results for 1894 show clearly that only two Science Subjects were taken that year [2] - Machine Construction and Building

Construction - with only 14 passes between them. It is worthy of note that it was only after 1890 that we find the School making much play with the word 'artisan'. Once more, Mr. Patterson does not succeed in making out a case.

The main bone of contention in the correspondence, however, seems to have been the question of whether art teaching paid better than science teaching, or vice versa. 'Technical' maintained that art was the more profitable for the School since grants could be obtained from South Kensington for art works done during the years by students of all branches; while, in Science subjects, only four qualified in this way. Mr. Patterson, naturally, took the opposite view that, since the science results grants for each stage were higher than those for art, science was the more profitable. Both parties were, of course, really arguing about whether the School really needed the proposed Corporation subsidy, and for Mr. Patterson, the correspondence was really an occasion for propaganda. Mr. Patterson raised such further points as the discontinuance of art prizes in 1893,[3] and the statement in the Directory that grants for apparatus, etc. be halted while the Local Taxation Act remained in force. On balance, however, 'Technical' carries the most weight - the two School Minute Books bear ample witness to the large numbers of art works sent to South Kensington and on which grant

was paid. In 1895, for instance, £116. 4. 0d. was paid to the School for art works sent up for assessment, while only £20. 12. 0d. was paid for Science works.[4] Further, it is difficult to see why the withdrawal of prizes - mostly books - should have made any difference to the School's income.

It is, however, with regard to the views expressed on technical education generally that the letters hold most interest. 'Technical' took a utilitarian viewpoint - technical education was concerned with work, livelihood, and national prosperity - and hence should consist of "instruction in the theory and practice of those crafts forming the staple industries of the area." In particular, 'Technical' instanced mathematics, chemistry, naval architecture, and engineering as subjects which should form the backbone of technical education in Sunderland. Mr. Patterson, on the other hand, thought that it was enough for artisans to be acquainted with drawing and the principles of design - what might be called the 'background' point of view. 'Technical', in fact, went further than many of his contemporaries by advocating instruction in crafts - his ideas might be quite acceptable today. Mr. Patterson and 'Technical' were, of course, discussing two quite different groups of people - Mr. Patterson's artisans were not 'Technical's' engineers.

In fact, the correspondence was largely

unnecessary - the aims of both parties were soon to be achieved. Mr. Patterson was to get his subsidy and the plans for a Technical College were already under consideration. The ideas expressed by 'Technical' must have represented a fairly large body of public opinion - it is unlikely that Mr. Patterson would have troubled to reply unless he thought that there was some need for propaganda in the School's favour to be made. One cannot help feeling, however, that he came a poor second, despite the apparently methodical arrangement of his replies. His letters contain more question-begging and red herrings than 'Technical's'.

To return, however, to the School which Mr. Patterson so earnestly defended. After the first two years in the new rooms, the School was visited by Mr. Crowe, the Government Inspector, in September, 1893. After expressing his general satisfaction with the arrangements and work, he went on to suggest the formation of a reference library for the use of students and staff.[5] The School machinery moved but slowly, but by the following July, the Committee were circularising the public asking for gifts for a Library Fund.[6] The results of this appeal are not recorded, but by September, 1897, the Committee were spending £10 per year on library books.[7]

The School was now bent on expansion, and,

as a first move in this direction, it was decided in March, 1894, to open three branch classes in the Hendon, Hylton Road, and Stansfield Street Board Schools,[8] this distribution giving coverage to both side of the river. The use of rooms in the schools was arranged with the School Board in the following month and classes were planned in freehand drawing, plane geometry, model drawing, and perspective.[9] Apparatus and equipment, mainly consisting of models and copy sheets was duly ordered and the School Committee was divided into three Visiting Sub-Committees.[10] Despite a great deal of preparation, however, when the classes opened in September, 1894, only one student registered at each. They were, therefore, closed, the three students transferred to the Central School,[11] and no further mention of the formation of branch classes is made. It should be remembered that, in 1894, there were seven other Science and Art evening classes at work in the town. It is unlikely that anyone wishing to study science subjects would have registered at a branch class of an institution well known locally to be predominantly artistic.

Despite this set-back, the School itself prospered, its numbers rising from 165 in 1893 to 275 in 1901.[12] In December, 1895, the Government Inspector reported that, "The intelligent chairman and committee and the energetic master by united action have succeeded in giving this school

a very satisfactory position, comparing well with most others in the kingdom.....The system of teeching modal drawing and freehand drawing and perspective is worked with such precision and discipline so strict, that they have a minimum of failures."[13] Such was praise indeed - but of what a sterile and regimented teaching!

The growth of the School is also reflected in its teaching staff, which numbered nine by 1896. Apart from Mr. Stubbs and Mr. Brown, the headmaster and second master, there was a Third Master, Mr. James Bevan, with a salary of £50 per year and part of the grant. The other assistant masters were Mr. W.K. Blacklock, who taught modelling at £30 per year; Mr. J. Hutton, woodcarving, £15 per annum; Mr. W.R. Neill, Machine Drawing, £15 per year; Mr. G.T. Brown, Building Construction, £10 per annum plus half the results grant; and two Pupil Teachers, Messrs. J. Raine and J.B. Scott. Mr. Stubbs, Mr. Brown, and Mr. Bevan were all artists and taught the painting and drawing classes. The staff collectively were described by Mr. Stubbs at an exhibition in February, 1896, as "the best talent in Sunderland."[14] All of them were still part-time, even Mr. Stubbs. Although he devoted most of his time to the School, an ever-increasing portion of it, in fact - he remained a part-time master-in-charge until he retired. As time went on his duties became more and more administrative in

character, until, in September, 1894, it was agreed by the Committee that his duties should be mainly those "of a Director and Superintendent of the work of the School."[15]

Probably as a result of the growing public interest in technical and scientific education the School had, in 1894, fitted up a room for the teaching of machine construction and building construction, and classes in these subjects had greatly increased. They were all evening classes.[16] At a Committee meeting in October, 1896, it was decided to organise the School into three distinct sections - preparation for Government examinations in Science and Art; secondary art education as a part of a liberal education; and technical art beyond what was possible under the South Kensington regulations. It was intended in this last section that "designs will be carried out on the premises in.....wood, metal and pottery."[17] Much of this reorganisation was part of the School's attempt to expand the technical side of its curriculum. From 1895 onwards, complaints of lack of space become frequent, but the Committee did succeed in obtaining the use of an extra room in the Town Hall in 1894.[18]

Despite all efforts, the School never succeeded in offering anything like the variety of science subjects provided by the other science classes in the town. By 1897, there were, once more, ten of these in operation, offer-

ing, between them, the following: Practical Plane and Solid Geometry; Machine Construction; Building Construction; Pure Mathematics; Steam and Applied Mechanics; Heat, Light and Sound; Geology; Magnetism and Electricity; and Chemistry.[19] Of the ten classes existing in 1897, one dated from 1873, two from 1877, one from 1878, two from 1891, and four had been started in the previous year. Three of them were controlled by the School Board - the Higher Grade School, Valley Road School, and Hudson Road School; one, at Bishopwearmouth Church of England School, was under the control of Voluntary School managers; and the other six were the responsibility of miscellaneous institutions such as the Y.M.C.A., the Co-operative Society, and four nonconformist church institutes. It is possible that this expansion in the number of classes operating in the town was mainly owing to the Corporation's decision, in 1894, to pay subsidies to the Science and Art evening classes. Most of them, however, were to be short-lived. Apart from the annual meeting necessary for the election of a Local Examinations Secretary, there does not seem to have been much contact between the evening classes and the Central School. Between them, the other classes had 941 science students and 291 art students, most of whom were studying Geometry and Model Drawing. At this time, the Central School had 225 art students and eight science students, but 198 of

this total were attending evening classes. In all, in 1897, there were 1430 students following evening courses which would now be classified as part of Further Education, out of a population of about 130.000. This figure, or at least one fairly near it, would seem to have been a ceiling, a conclusion which is supported by the fact that the majority of the evening classes were short-lived - those at the Y.M.C.A., the Co-operative Society, and the Hendon Church Institute being the longest lasting. It would appear that ten evening classes, in addition to the Central School, was more than enough to supply the existing demand at that time.

The development of the Central School was greatly affected by a major change in South Kensington's grant policy which became effective, after much discussion, in September, 1897. From that time, grants were to be paid not, as before, on examination results, but on attendances. Notice to this effect had been received at the School on July 12th, 1897.[20] The receipt of the letter caused the Committee grave concern and they became involved, at once, in the agitated compilation of balance sheets, financial statements, and other calculations. It was found that, on August 1st, 1897, the School's overdraft stood at £150. 2. 7d.[21] The largest item of expenditure - a familiar note, this - was on teachers' salaries, on which £732. 9. 4d. had been spent in the previous

year. This item took the whole of the South Kensington grant, and about fifty-five per cent. of the fees received. It was decided that reorganisation with a view to economy must take place - a decision which was reinforced when it was calculated by Mr. Stubbs that if attendance grants instead of results grants had been paid for the year 1896-7 there would have been a loss to the School of £126.[22] In fact, Mr. Stubbs was not so far out with his calculation, the actual loss for 1897-8 proving to be £106. 7. 1d.[23] The immediate results of all this activity were a letter to South Kensington asking for a supplementary grant, and a deputation to the Technical Education Committee to ask for a larger Corporation subsidy.[24] Other measures were to follow.

Following a Committee decision of June 23rd, 1899, Mr. Patterson wrote to the Second Master, Mr. R.B. Poynder (appointed to replace Mr. Brown in July, 1896) to inform him that his services were no longer required. It had been decided by the Committee that the School could no longer afford to pay the salary of a Second Master and that he be replaced by a Student Assistant at £80 per year.[25] The reasons given by Mr. Patterson in his letter were the changes made by South Kensington and the necessity of paying more for Pupil Teachers.[26] Mr. Poynder was offered the alternative of submitting his resignation and was assured of the assistance

of the Committee in finding another post.[27] It would appear, however, that there was rather more to the situation than the mere desire for economy, and subsequent events tend to support this view. For some time past, Mr. Stubbs had been complaining that the art side of the School was not all that it should be.[28]

Mr. Poynder did not go quietly. An item appeared in the local newspapers shortly after he received his letter of dismissal headed "Our School of Art - a Little Trouble."[29] It mentioned Mr. Poynder's dismissal and stated that the reason was his lack of strictness with the students. Mr. Poynder leapt to his own defence four days later, with a letter to the Editor. He denied emphatically that his methods of discipline were in any way at fault or that he was too friendly with students, but admitted that "trouble had arisen in the School." His closing words are a clear indication of the strength of his feelings. "I have left Philistine Sunderland, and I hope that I may never meet again so long as I live some of the Philistines who inhabit it."[30] It will be remembered that Mr. Stubbs' relations with Second Masters had been called in question before.

No mention had yet been made of exactly what the "little trouble" in the School consisted of. However, on August 22nd, 1899, a special Committee meeting was held to consider a letter from Mr. J.A. Longden, a local solicitor and

long-term member of the School Committee, enclosing a memorial to the Committee signed by "Students and Ex-Assistants,"[31] setting out some complaints against Mr. Stubbs. No complete copy of this document has survived, but its contents were of so serious a nature that Mr. Stubbs was required by the signatories to sign an indemnity against action for libel on his part.[32] The memorial was signed by Messrs. Blacklock, Smythe, Steel, and Scott, as ex-members of the School staff, and by the Misses Hall, Bowmaker, Bruce, Brantingham, and Cook - students of the School. Mr. Poynder did not sign, but it is clear that it was his dismissal which sparked off the controversy.[33]

Mr. Stubbs was accused of "unwarranted behaviour and overbearing manners towards both pupils and teachers";[34] "the unfair method in which he divides his time among the students, in some cases spending almost the whole class time on one drawing";[35] compelling students who "wish to do Certificate work to do National Competition work";[36] and finally, "works intended for the National Competition are systematically gone over and corrected by Mr. Stubbs until there is practically none of the student's work left."[37] Contained in these last two accusations, of course, is the allegation that Mr. Stubbs was faking students' work in order to increase his own financial gain and that of the School - a type of

offence to which the South Kensington system particularly lent itself.

The Committee held no less than seven special meetings between August and October, 1899, at which witnesses were examined and statements taken, the whole of the proceedings being recorded by a specially hired short-hand-writer, Mr. Guy. During this time, Mr. Stubbs was absent through illness - possibly diplomatic - his place being taken by a Mr. Crockett - a locum from South Kensington.[38] The investigation proceeded on its way in similar fashion to most hearings of its kind. Mr. Steel, after giving his evidence on October 7th, refused to return to further meetings, alleging that "the conduct of the Committee was unfair."[39] Several students, including those named earlier, produced examples of works which had been, as they put it, "worked upon,"[40] while only one student, a Miss Tawse, wrote a letter denying that her work had been unfairly treated.[41] Mr. Stubbs produced letters from other headmasters on the subject of "correcting students' work".[42] The investigation dragged on until October 31st, 1899, when a meeting was held to issue decisions on the various accusations made. The Committee found no evidence of ungentlemanly behaviour on the part of Mr. Stubbs and completely exonerated him in this respect. They did, however, find "that there is evidence that Mr. Stubbs has

on certain occasions given prolonged attention to the work of individual students.....there is no evidence that he has ever neglected any student on that account."[43] It was also decided that the evidence brought in support of the accusation of improving students' work completely failed to sustain it.[44] Copies of the minutes of this meeting were sent to Mr. Stubbs and the complainants. The investigation, thus, ended in exoneration for Mr. Stubbs, who returned to duty on November 5th, 1899.[45] It is difficult to see what other result the hearings could have had - yet, one is left with the feeling that there may have been something in the charges after all. Minute Books are impersonal documents, and one would not expect to be able to gain much in the way of ideas about personalities from them - but, Mr. Stubbs shows through the entries about him as a strong and forceful personality, and one gains the impression of a thruster. He stood or fell by his results, and it is difficult to accept the existence in Sunderland of a reservoir of artistic talent large enough to supply the steady stream of works sent to South Kensington for examination during his period of office. He was a very successful headmaster, and his Committee - all local business men - were bound to support him.

Whether or not there was any basis for the charges, they resulted in the issue, by the Committee, of

a code of conduct for assistant teachers in the School. It was dated March 27th, 1900, and contained the following:

"(1) Teachers should teach, firstly, verbally, secondly, by sketches and demonstration on the edge of the paper, and thirdly, by correction of the work itself made strictly for the purpose of tuition.

(2) Teachers should never spend more than 5 or 10 minutes at a time correcting any one student's work.

(3) Certificate works should never be corrected.

(4) All complaints, whether from teachers or students, should be made to the Headmaster in writing."[46]

During all this, the work of the School had proceeded as usual. It had re-opened in September, 1899, after the Summer vacation, with more evening class students but fewer day students than in the previous year.[47] There were changes, too, in the staff - in the interests of economy. Mr. Bevan's hours and salary were reduced; two new teachers, Messrs. Morrall and Bannister, were engaged at £50 per year each to replace those who had left at the beginning of the investigation; and Mr. Edward Reed replaced Mr. G.T. Brown as teacher of building.[48] Several new classes were started - a training class for art teachers and art mistresses on Saturday mornings, classes for house-painters in graining, decoration, and sign-writing,[49] together with one for stone-carving.[50]

No one could complain that the School was not a purveyor of vocational education. The established classes continued - classes for drawing and painting each morning and on Friday and Monday afternoons; a general art class from 7 p.m. to 9 p.m. each evening, as well as an artisan evening art class; a class in Design each evening; and a wood-carving class on Monday and Thursday evenings. Science classes were Machine Construction on Monday evenings; Building Construction on Friday evenings, and a class in Steam and Applied Mechanics on Thursday evenings.[51]

Mr. Stubbs, however, on his return to duty was not satisfied. "The School had got into a disorganised state during my illness," he reported on November 17th, 1899. "……the evening classes have decreased by about one third……and the day classes have an attendance of about half what it was a year ago."[52] Clearly, Mr. Stubbs thought that Mr. Crockett, his locum, had not done too well! However, Mr. Stubbs was soon "engaged in getting order and method re-established and so far, with success."[53] Mr. Patterson, too, had his troubles. He complained "that he could not continue to undertake the work connected with the examinations as he was so badly supported by the Committee."[54] However, on March 5th, 1900, a report was received from South Kensington that their Inspector, Dr. Hopper, had found the School to be

"satisfactory in all things" and had received the report of the investigation.[55]

From the financial point of view, matters were not so satisfactory. A meeting held in June, 1900 estimated that the School's debt by the end of that session would stand at £250, and that the average annual deficit over the last few years was about £50.[56] From the beginning of its career until 1892, the School had been, more or less, self-supporting. Sometimes there was a small credit balance at the end of a year, sometimes a small deficit which was usually cleared by private subscription. Such amounts were never more than £20. The move to the Town Hall, however, altered this, and for the first time, a bank overdraft was required, which rapidly became a permanent feature of the School's budget. When grants from the 'whiskey money' were received they were soon swallowed up by the cost of expansion and rising teachers' salaries. Coupled with the progressive reduction in grants by South Kensington from 1893 onwards, rising costs produced real trouble for the School by 1900. After a great deal of consideration, the Committee decided that, in view of the figures mentioned above, their only recourse was to approach the Technical Education Committee and offer to hand over complete financial control of the School to them.[57] In due course, the Committee agreed to clear the School's debts and allow it an

additional £50 per annum. In return, however, the Council were to have a preponderance of membership of the School Committee, i.e., ten members of the Council to nine lay members.[58] For reasons which will be apparent later, the Council were not willing to undertake complete responsibility for the School. The end of independent existence was, however, not far off. Already, in June, 1901, it had been decided to remove the advanced science courses in Machine Construction and Building Construction to the new technical college, the elementary levels remaining at the Central School. The same was to be done, by agreement, with the other evening classes in the town.[59]

A further change came on July 24th, 1901. It was reported to the School Committee that Mr. Stubbs was so seriously ill that it was doubtful if he would ever be able to return to the School.[60] A letter of resignation followed on August 13th. That there must have been, all along, some lack of sympathy between Mr. Stubbs and part of the Committee, is shown by his closing remarks, "I have tried to do my best for the Sunderland School and regret that I have been unable to better adapt myself to the people of Sunderland and district."[61] It was at once resolved to advertise the post at a salary of £250 per year, rising to £295 in three years.[62] The Central School was to get its first full-time headmaster, since, as will be seen, it was now included in the Corporation's general

scheme for technical education.

In its old form, the School was finished. Its science classes were transferred to the new technical college and the evening institutes. It became known, from 1902 onwards, as the Central School of Art, and in May of that year, it was transferred to the ownership of the Corporation to be administered by the Technical Education Committee as a department of the technical college.[63] Despite efforts to cater for the needs of local trade and industry, and the needs of local craftsmen from 1890 onwards, the School was never able to shed its predominantly artistic character. This was probably owing more to the natural bias of a strong headmaster than to anything else, but the difficulty of obtaining science teachers at this time must not be forgotten. At a time when such men were difficult to obtain, good ones would not be willing to come to Sunderland for a small salary and a part-time post. The School was, therefore, forced to rely on local men. The relative lack of difficulty in staffing the full-time posts at the new college offers some support for this view.

Mr. Stubbs' successor was Mr. Charles H. Rogers, A.R.C.A., ex-Principal of the South Norwood School of Art. He remained with the Sunderland School until 1918. The School continued to prosper as an Art School, though circ-

umscribed by lack of room in the Town Hall. In 1934, it removed to Ashburne House, its present home, the premises being presented to the town by Mr. T.W. Backhouse, Chairman of the School Committee for so many years. In 1951, the School became a College of Art, and is now in the front rank of such institutions.

Before concluding this chapter, it is interesting to note that although Mr. Stubbs retired for reasons of ill-health, he is heard of as late as 1937, when holding exhibitions of flower-paintings in London, and selling work to the then Queen Mother.[64] He must have been almost ninety years of age.

As we have seen, during the period dealt with in this chapter, the School was led by financial difficulties to come more and more under the influence, if not the control, of the Corporation's Technical Education Committee. Even before 1897, there are many refernces in the Minute Books to consultations and conferences with this body, and by 1902, no less than twelve members of the School Committee were also members of the Technical Education Committee. At this point, having traced the development of the first Government-aided institution for technical education to maintain a continuous life for more than a few years from its beginnings, we must move backwards from 1902, and look at the activities of the

Corporation's Technical Education Committee, with particular reference to the foundation of Sunderland Technical College, joint-heir, with the College of Art, of Government School of Science and Art No. 1141.

Chapter VIII.

Technical Education in Sunderland (5): the Technical Education Committee and the creation of Sunderland Technical College.

On 31st December, 1890, Sunderland Corporation sent Alderman Robert Cameron to London as their delegate to a conference under the chairmanship of the Duke of Devonshire to consider the question of how best the 'whiskey money' could be spent, and how the grant could be made permanent.[1] On his return, Alderman Cameron reported to the Museum and Libraries Committee that the conference had suggested the following forms of aid:

"(1) assistance to existing institutions giving permanent instruction;

(2) provision of Modern departments in existing schools;

(3) foundation of scholarships for children who had passed the seventh standard;

(4) provision of travelling teachers to lecture on agricultural and other subjects;

(5) assistance to centres of University Extension teaching in scientific and other subjects."[2]

Alderman Cameron went on to advise the Committee that, in his opinion, the money could also be used to reduce the rates, to

assist the Free Library, and to help the Science and Art Classes, and he recommended that a committee be set up to consider the matter.[3] In due course, his report was submitted to the Council, who adopted it, and resolved that "the Committee referred to consist of a Committee of the whole Council."[4]

Several meetings of the Council in Committee took place during 1891, the upshot being that the proceeds of the first year's 'whiskey money', about £1905, was applied to reduce the rates, the question of its future disposition being held over.[5] This decision was not taken without intervention from interested parties. At a meeting on June 2nd, 1891, applications for assistance were received from the North-East Coast Institution of Shipbuilders and Engineers, the Hendon Church Institute, the Sunderland School Board, the Y.M.C.A., and, as has been seen, the Sunderland School of Science and Art. It was further decided at this meeting that the question of how to apply the money in the future become the business of a specially appointed sub-committee of the Council.[6] This decision having been taken, the sub-committee disappeared into obscurity for the best part of a year.

On September 21st, 1892, the sub-committee reported the results of its deliberations to the Council in Committee as follows: "That after mature consideration as to the appropriation of the moneys now in hand, and to be received

under the Local Taxation (Customs and Excise) Act, 1890, they recommend that such moneys be applied for the purposes of Technical Education, and that a Special Committee consisting of the Mayor for the time being, Councillor Stansfield Richardson, Alderman Shadforth, Councillors Bruce, Hudson, Porteous, Vint, Cameron, Roche, Harrison, Ranken, Calvert, Kirtley, Thompson, Short, and Dixon, be appointed to consider and report with a definite and permanent scheme for affecting the objects of this resolution."[7]

The adoption of this report was moved by the Mayor, but an amendment was moved and carried, after an adjourned debate, that the words 'or other' be inserted in the sub-committee's report between the words 'Technical' and 'Education'. On the amendment being carried, its proposer, Councillor Frederick Storey, was elected to the sub-committee.[8]

An interesting sidelight on the contemporary lack of knowledge about the application of the money is supplied by a letter to the sub-committee from the local branch of the British Shipmasters' and Officers' Protection Society. They asked "that part of the grant made to the Borough by the Government for the purpose of advancing technical education be applied for the purpose of teaching cookery to seamen to improve the standard of cooking and serving food on shipboard."[9] One can only assume that the association wished to

protect its members against indigestion! At the same meeting, a letter was read from the Sunderland Property Owners' Association deploring the high rates then prevalent (1s. 4d. in the pound) and asking that the 'whiskey money' be used permanently in relief of the rates.[10]

On October 6th, 1892, the Special Committee's report came before the Council, and it was moved as an amendment by Councillor Stephenson that "Until by Act of Parliament the grant be made permanent, it be appropriated to the reduction of the Borough Rates." The amendment was not carried, whereupon Councillor Stephenson returned to the attack with a further proposal "That, after the word 'Education' in the report the following words be inserted, viz. 'or for the reduction of the rates, or for either of these purposes.'" Councillor Stephenson's tenacity was doomed to frustration, for his second amendment also failed to gain acceptance. The Special Committees's report was then adopted, and the members of the sub-committee were formally constituted as the Technical Education Committee with the specific object of "advising the Council how the Local Taxation Money could best be applied for the purposes of Technical or other Education in the Borough."[11]

Further meetings of the Committee resulted,

in February, 1893, in the decision that the Local Taxation Fund be used solely for the purposes of technical education, and the words 'or other' were formally struck out of the terms of reference.[12]

Once more, the Technical Education Committee receded into obscurity for a twelve-month, but, that this time was not wasted was abundantly proved when they re-appeared, on 7th February, 1894, triumphantly to present a full Report on Technical Education in Sunderland to the Council. During this period of preparation, Councillor Wilson Mills Roche, an influential local solicitor, had become Chairman of the Committee, and it was, he, in an able and persuasive speech, who presented the Report to the Council. The Report itself was printed, and is entered in full, though unfortunately without its two appendices, in Volume 17 of the Council Minutes.

The Report began by presenting its assessment of the special needs and requirements of Sunderland, and "having had before them a large number of gentlemen who are experts in matters of technical education," stated that the leading trades and industries of the town were: "Shipbuilding, Marine and General Engineering, Shipping (Steam and Sail), Iron and Steel Manufacture, Brass and Iron Foundry, Coal Mining, Chemical Manufacture, Flour Milling, Glass and Paper Mak-

ing, Rope Manufacture, Cement Making, Pottery and Brick Making, Cabinet Making, Bread and Biscuit Bakery, Printing, Fishing, Agriculture, including dairy farming and market gardening, and Coal Exporting."[13]

Having outlined the town's industries, the Report went on to comment that the Scheme of Instruction contained in it was designed to allow for the introduction of new trades, as well as to cater for existing ones, and continued by listing the subjects it was considered necessary to have taught under four headings - Science, Art, Commerce, and Special Classes for Women.

Under Science were included, "Mathematics; Chemistry; Mechanics; Practical Geometry; Steam; Machine Construction; Naval Architecture; Engineering - Marine, Mining, and Electrical; Sanitary Engineering and Plumbing; Principles of Mining and Mineralogy; Metallurgy; Navigation and Nautical Astronomy; Heat, Light and Sound; Magnetism and Electricity; Agriculture; and Building Construction." It was observed that all of these were recognised for grant by the Department of Science and Art.[14]

Art subjects recommended were "Freehand Drawing; Modelling; Perspective; Architectural and Mechanical Drawing; Oil and Water Colour Painting; Design and Decoration."[15]

Commerce was not forgotten, and subjects

considered necessary were "Modern Languages and Correspondence; Shorthand; Book-keeping; Typewriting; and Commercial Arithmetic and Geography."[16]

The Report continued with the remark that "although women will be eligible for all or any of the above courses.....Special Classes in both Science and Art as applicable to women's trades and occupations may with advantage be established."[17] The Committee recommended that these classes be for "Cookery; Dress and Millinery Design and Making; Laundry and Housework; Domestic Economy and Management; Telephony and Telegraphy; Decorative Art; Elements of Nursing."[18]

The Report specifically stated that it did not consider it necessary to make any provision for the teaching of "practical skills in workshops" and, in this, was merely following the definition of technical instruction given in the Act of 1889. It did, however, recommend that properly equipped lecture rooms be provided for Physics, Chemistry, Mechanics, Electricity, etc. In a manner which anticipated more recent pronouncements, the Report expressed the Committee's opinion that no matter what course a student was engaged on, he should have the opportunity of becoming proficient in the use of his own language.

With regard to teachers, it was hoped that while some full-time teachers would be appointed, economy

would be achieved by making use of science teachers from Newcastle. Mr. Roche remarked that he had heard that "there were many men in the Newcastle College of Science whose time was not fully occupied."[19] This was not the only time, or even the last, when buildings were planned, equipment ordered, and teachers economised on. The history of local educational effort in all parts of the country is full of such examples.

The second section of the Report dealt with what was already being done in Sunderland with regard to technical education. The information for this section had been gathered by sending out questionnaires to the various bodies concerned. The information was then summarised and attached to the Report as Appendix A. Unfortunately, whoever was responsible for pasting the Report into the Council Minute Book neglected to include the two Appendices. Protracted search has failed to unearth them. The Report itself contained only a very brief summary of numbers. Six institutions are mentioned - the Co-operative Society, the Y.M.C.A., the Hendon Church Institute, St. Thomas's Church Institute, and the Chester Road Primitive Methodist Institute - as well as the Central School of Science and Art as being engaged in the provision of technical education facilities. Between them, they catered for 1144 students. In addition, the School Board is listed as providing science classes for some 2025 students, but no mention

made of how many of these were adult evening students and how many were pupils of Organised Science Classes. Four schools were mentioned as providing evening classes - Bishopwearmouth Church of England School; the Higher Grade School; Valley Road Boys' School; and Hudson Road Boys' School. The Report observed that "some financial aid should be accorded the existing institutions to make up for loss of grants."[20]

Section Three was concerned with what other towns did, in particular, towns with over 50,000 people. The information for this section had been gathered in the same way as that for Section Two - and, in the same way, has not survived. A short summary was, however, included in the body of the Report, from which the following points emerge. ".....out of 50 large cities and towns which have made returns, 23 have established.....Municipal Technical Colleges.....eight additional Boroughs.....are actively preparing to adopt the same course. In many Boroughs .....(19 in number) including Leeds, Cardiff and Newcastle, grants have been made to existing institutions.....in some cases with and in some without municipal control.....in eleven cases Boroughs have levied a special rate for Technical Education purposes. As to the method of management....in almost all cases the supervision and control of a scheme of Technical Education is vested in a Special Committee composed

of members of the Corporation and 'outsiders' chosen for their special knowledge."[21]

Following these three preparatory sections the Report went on to make definite recommendations about what should be done in Sunderland. First, and foremost, came the firm suggestion that a municipal college be built and equipped.[22] The Committee estimated that about £2000 per year would continue to be received from the Local Taxation Fund and that £4000 was already in hand with another £2000 to come within a month. This was enough to buy a site, if this was necessary, the hope being expressed that the Council would save this substantial sum by presenting a site. It was estimated that £15,000 would be required to build and equip the College. Income from courses at the College, when complete, was next discussed, and was reckoned at £1500 per annum. The suggestion was made that when the College was seen to be a success, local philanthopists would "come forward with funds."[23] Finally, the Committee did not recommend the raising of a "small temporary rate" under the provisions of the Technical Instruction Act, as, they felt, "this was outside their scope." In fact, they went further, and promised the building of the College "without recourse to the Rates."[24]

The Reports's second recommendation was that "Scientific Art teaching" was part and parcel of any

"efficient and complete scheme of Technical Education," and it was suggested that, in Sunderland, this side of things could be left in the hands of the Central School of Art, which should have its debts paid, and an annual allowance of £250,[25] subject to the Council being represented on the School's Management Committee. Until the Technical Education Committee's plans were fully accepted by the Council, they were not ready to take over the School completely.

Thirdly, the Report continued by recommending that immediate aid be given to "Sunderland School Board - £250 per year; Hendon Church Institute - £60 per year; and the Y.M.C.A. - £40 per year."[26] Nothing was given to the Co-operative Society, probably because some of its classes - such as those in Co-operation - would be regarded as political.

With regard to future developments, the Report suggested, finally, that the Technical Education Committee be reconstituted and enlarged to include representatives of local industry as well as members of the Council. The names suggested were: the Mayor; Aldermen Cameron, Shadforth, and Richardson; Councillors Addison, Bruce, Calvert, Dixon, Harrison, Hudson, Kirtley, Laing, Ranken, Roche, Short, Storey, Summerbell, J.L. Thompson, and Vint; Messrs. T.W. Backhouse, R.A. Bartram, Gordon Bell, T.W. Bryers, A. Corder,

W.T. Doxford, Henry Johnson, Hugh Maccoll, James Patterson, W. Smart, J.H. Thompson, Robert Thompson, and Peter Wood. One representative of the local Trades Council was to be added. The Committee as reconstituted was to prepare a detailed Scheme for the new College.[27] It is worthy of note that the lay members of the new Committee included the Chairman, Secretary, and Treasurer of the School of Art. In particular, the inclusion of Dr. Gordon Bell on the Committee is interesting. He had only recently come to the town after a distinguished career in Arts and Medicine at Glasgow University, where he had become interested in technical education. He had made, in 1890, a tour of the Continent at his own expense, to study the provision of technical education there, and had been particularly impressed by the Technische Hochschule at Charlottenburg. One of the points which had interested him most, while there, was the coupling of theory and practice in a sandwich course.[28] He would, also, have seen something of this type of course organisation at Glasgow. Dr. Bell, along with Councillor Roche, was to become one of the principal movers in the establishment of the Technical College. The composition of the rest of the Committee is equally interesting, but will be remarked upon later in another connection.

Councillor Roche's speech presenting the Report was well received by the Council and met with only minor

opposition, some members of the Council complaining that they had been given too little time in which to study it.[29] On this ground the discussion was adjourned for two weeks.

The debate was resumed on Wednesday, 21st February, and once more, little real opposition was expressed to the idea of building a Municipal Technical College. The amounts of the grants to the existing institutions came in for some criticism, and it is interesting to note the views of Councillor Summerbell, a printer and ex-Mayor. ".....he was prepared to say that the Science and Art School was practically no use whatever to the working men of Sunderland. There were far more science subjects taught at the Hendon Church Institute than at the Science and Art School.....The Hendon Church Institute was patronised by working men pure and simple .....and so was the Y.M.C.A. So far as the Board Schools were concerned, he was of the opinion that that was the proper place to have evening classes."[30] Could this have been 'Technical' speaking? It is a tempting assumption - but, not really likely. Councillor Summerbell was a well-known and respected figure in the town - a future M.P. Had he wished to place his views before the public in the local press, he would have done so under his own name. After a long discussion on possible sites, "the Report was carried unanimously, amid applause." In view of later developments, one cannot escape the

impression that the point about the Report which carried most weight with the Council was the promise that the College would be built without making demands on the rates.

For two years subsequent to the presentation of the Report the proceedings of the new Technical Education Committee are veiled in secrecy, but, in May, 1896, in the course of a Council debate on another topic entirely, the members of the Committee were taxed with having done nothing to justify their existence.[31] The accusation sparked off another burst of activity. On June 10th, Councillor Roche reported to the Council that the Committee recommended that the new College be built on a site on the Green, Bishopwearmouth, a site described as "the best, most central, and cheapest that could be obtained." The site covered some 3000 square yards, and the price was £3150.[32] The recommendation was accepted. In October, the Council resolved that the design for the College be selected on the results of a competition, for which prizes of £100, £50, and £25 were to be offered.[33] Three months later, the conveyance of the Green site to the Corporation was sealed by the Town Clerk in the presence of the Council. The same meeting agreed to the appointment of Mr. J. McLean Bryden, F.R.I.B.A., as assessor of competition entries, at a fee of one hundred guineas.[34] By April, the results were known. The winners of the competition were Messrs.

Potts, Son, and Hemmings, architects, of London. However, it was not until the following February that instructions were issued to them to begin the preparation of working drawings.[35]

The interim months were passed in discussion over building costs - in particular, the question of where the money was to be obtained from. In August, 1897, Councillor Roche and Dr. Bell reported to the Council on the financial position with regard to the building of the College. The cost of building had risen to £17.000 and an estimated £3000 was required for furniture and equipment. By the time the College was finished, the Committee hoped to have in hand £10.358. This sum was the residue of Local Taxation money after various grants to other institutions had been paid out, the site bought, and the assessor's fee paid. The problem was the missing £10.642. Councillor Roche shocked the Council by suggesting that they allocate £5000 and the balance would be made up by various local magnates whose promises he had. The proposal was greeted with some consternation - questions were asked about the promise contained in the 1894 Report, and remarks were passed about irresponsibility.[36] Councillor Roche, a practical man, bowed to the storm, allowed the discussion to be adjourned, and retired to regroup his forces.

At the next meeting, Councillor Roche withdrew his Committee's recommendation that the Council

provide £5000 on the grounds that, "he, and others, now believed that the College should be erected, equipped and maintained from public funds."[37] Mr. Roche, as has been remarked, was a local solicitor, who represented, according to report, the majority of the town's more prominent business men. In addition, he had, as members of his Committee, some of Sunderland's wealthiest and influential citizens - Mr. R.A. Bartram, Mr. W.T. Doxford, Messrs. J.H. and Robert Thompson, Mr. J.L. Thompson, and Councillor Laing were all shipbuilders and engineers; Councillor Ranken was a leading builder; Councillors Summerbell and Vint were printers and publishers. Undoubtedly, some, if not all of this extremely powerful group were the "others", referred to above, as desiring the public provision of the College.

It is apparent that a great deal of influence must have been exerted behind the scenes, for, in January, 1898, the Council accepted with only token protests, Mr. Roche's new proposal that ".....the Corporation be asked to provide the interest and sinking fund on a capital sum of £10.000, the estimated balance required to build and equip the College." The opposers of the proposal, the Mayor and Alderman Richardson, made only the most formal of statements that they considered the promise made in the 1894 Report to have been broken. Mr. Roche also stated that, when the College was opened, his

friends would make voluntary contributions towards extra equipment.[38] It is a great pity that information about these negotiations must be obtained from Council Reports - there must have been a great deal of running up and down the back stairs during this period.

In the following July, tenders were asked for for the erection of the building,[39] and, in October, that of a local builder, Mr. J.W. White, for £17.583 was accepted. In all the building was to cost £22.183 - the builder's £17.583, £1600 for the architects, and £3000 for furnishing.[40] The Corporation Common Seal was affixed to Mr. White's contract in the following month.[41]

From the end of 1898 to the middle of 1901 was another period when the activities of the Technical Education Committee passed without public record. In May, 1901, however, the Principal of the new College was appointed.[42] The advertisement for the post, which carried a salary of £500 per annum, brought fifty-one replies; these were first of all reduced to twelve, then to six, and finally to three. Mr. Bonchara Branford, M.A., a lecturer in mathematics at the Yorkshire College, Leeds, was elected by unanimous vote of the Committee. At the time of his appointment, Mr. Branford was thirty-three, and had been educated at Stewart's College and Edinburgh University. He had been teaching mathematics for

ten years, and, because of his interest in the wider aspects of education, had attracted the attention of the Civil Service Commission's Chief Examiner in Mathematics. Mr. Branford was greatly interested in problems of mathematical education and it was his contributions to the 'Journal of Education' which had gained him an appointment as an Assistant Examiner for the Commission. His work at Leeds had involved the application of mathematics to the varied industries in the area, and he had initiated many classes designed specifically for industrial students. In addition, he had been the organising secretary for extension work of Victoria University.[43] From his photograph,[44] Mr. Branford appears to have been a man of exceptionally strong personality, and altogether a most suitable choice for the task assigned him by the Technical Education Committee at this time. At about the time of his appointment, the Council agreed to a significant recommendation of the Committee's. Observing that they had heard of many so-called Colleges which only dealt with work of Higher Grade School type, the Committee stated that it should be the policy of the Council to aim at creating an institution which would do work of University College standard.[45] This point will be taken up again at a later stage.

Certainly, when the first teaching-staff appointments were made, a high standard was set. In July, four

lecturers were appointed to act as Heads of Department at salaries of £200 per annum each. They were Dr. Charles F. Baker, for Chemistry; Mr. James H. Smith, M.Sc., for mechanical and civil engineering; Dr. Thomas C. Bailey, for physics and electrical engineering; and Mr. George Readdie, M.A., for English and Modern Languages. In addition, four part-time appointments were made: Mr. A. Kidd, instructor in solid geometry, for one evening per week at £25 per year; Mr. A. Neill, late of the Central School, to teach Machine Construction and Drawing for two evenings per week at £40 per year; Captain G. Watson, a retired master mariner, for navigation, on two days and one evening per week at £50 per annum plus half the course fees (with a guaranteed total of £150); and Mr. F.H. Watson for naval architecture on one evening per week, at £50 per year. It is of interest that this last appointment was made on a part-time basis because "it is hoped to persuade industrialists to endow a full-time lecturer's post."[46] Two further appointments were made before the College opened. Mr. C.F. Metcalfe was appointed an assistant lecturer in applied mechanics with a salary of £100 per annum; and Mr. F. Wills was appointed as a clerk at ten shillings per week.

Just before the opening of the College, the Technical Education Committee concluded negotiations with

the School Board over the allocation of work between the College and the evening classes provided by the Board. Elementary work was to be dealt with by the Board's evening classes at the Higher Grade School, Hudson Road School, and Valley Road School, and these were to be administered by the School Board on behalf of the Technical Education Committee, who were to pay expenses. For the year 1901-1902, a sum of £1050 was voted by the Council for this purpose. The object of the arrangement was to prevent overlapping and competition, and it is clear that there had been some ill-feeling. The local press, in reporting the agreement, said, ".....the attempt to incite a feeling of jealousy, and to get the Technical Education Committee to stand on its dignity has failed."[47] Unfortunately, no indication is given about who made the attempt. However, although agreement had been reached with the School Board, negotiations were still proceeding with the other institutions concerned in the provision of science evening classes. The Committee evidently felt that some attempt must be made to rationalise administration, for, on September 11th, the Council applied to the Board of Education to be recognised as the Science and Art Examination authority for the town.[48] This application was made under Clause VII of the Science and Art Directory, a clause which had been inserted at the instigation of Sir John Gorst, in 1897, because of his

belief that County Councils and County Borough Councils should be the education authorities for their areas. This matter, too, will be further dealt with later.

For the moment, the most important item on the Corporation's calendar was the opening of the College. The ceremony was to be held, with full civic trappings, on 13th September, 1901, and the guest of honour was to be Mr. Samuel Storey, ex-Liberal Member of Parliament, ex-Mayor of Sunderland, newspaper proprietor, and, in 1901, Chairman of Durham County Council. The selection of Mr. Storey to open the College is interesting because it was he, while in Parliament, who proposed the amendment requiring the Government not to spend some of the Local Taxation money on compensation for loss of licences but instead to add it to the proportion already voted for technical education.[49] A more appropriate choice could not have been made for a 'whiskey money' college.

To prepare the expectant populace for the official opening, Principal Branford issued the College's first Prospectus.[50] The objects of the College were first discussed, and were listed as: "To provide higher education for persons of both sexes and of all classes, both by day and evening instruction; and, in particular, to provide instruction by lecture, laboratory or seminar, or any other means deemed proper, in such sciences and arts as are applicable and

ancillary to the manufacturing, mining, engineering, shipping, agricultural, and other industries of Sunderland and its environments; to establish a commercial department, in which a broad training may be given to those engaged in, or about to be engaged in, the various administrative duties of commerce; to establish a training department for teachers; to establish a department in domestic economy, and in such other subjects as are particularly appropriate to the higher technical education of women; to promote a harmonious and thorough correlation of educational objects and means, adapted to the needs of the district between the College itself and other existing bodies and institutions."[51] This last was to be achieved, firstly, by organised courses of study, "the elementary instruction for which.....shall be provided by approved institutions already existing.....and the advanced instruction for which shall be provided by the College." Secondly, certificates were to be granted "of such classified grades as may be deemed advisable."[52] Thirdly, every effort was to be made to achieve recognition for the certificates by "the manifold bodies representing local industrial, commercial and domestic interests."[53]

The Prospectus next dealt with the subjects to be taught, stating that these "have been selected both with respect to the particular industrial needs of the town and the teaching already being given in existing local institutions."[54]

The subjects considered most important were "engineering, machine construction and drawing, applied mechanics, building construction and drawing, steam and the steam engine, plane and solid geometry, naval architecture, navigation, nautical astronomy, electricity, heat, mechanics."[55] The College was also equipped to deal with "electrical engineering, engineering laboratory work, surveying, and boiler construction."[56] Not surprisingly, in view of Mr. Branford's interests, "a special feature is to be made of mathematical teaching, a thorough groundwork in which is so essential to the understanding of the technical subjects mentioned."[57] Commercial subjects were not forgotten. There were to be "foreign languages, book-keeping, English composition, shorthand, and domestic science."[58] Other courses to be provided included a series of twenty lectures for teachers by Principal Branford on mathematical education "from the kindergarten upwards"[59] to be delivered on Saturday mornings; and two similar courses on the teaching of French and German.[60] Classes in mathematics, science, and languages were also to be held "to suit the requirements of students studying for degrees of London University."[61]

The opening ceremony, on September 13th, was a full-scale civic occasion. The new building, described as "English Renaissance" by the local press, and built mostly of red Sherburn brick,[62] was decorated with flags and streamers

and had a red, white and blue canopy over the main doorway. "A large crowd assembled outside to watch the proceedings and the Police Band.....played selections."[63] The public part of the ceremony consisted of a procession of dignitaries and guests, in civic and academic dress, which moved in stately manner from the Drill Hall on the Green round the corner to the main entrance of the new College. On reaching the door, Mr. Storey was presented with a large golden key by Councillor Roche, and the doors were formally opened. The invited guests then filed into the examination room to listen to Mr. Storey's inaugural speech.

Mr. Storey was a practised speaker and a politician of many years standing, and his speech, though long, had only two main points. Since his speech was made on the eve of one of our major Education Acts, it is interesting to note that he was in favour of County and County Borough Councils becoming authorities for secondary education - but he thought that elementary education could well be left in the hands of the School Boards.[64] His other major point was to envisage the closest possible contact between the town and the surrounding county districts over the question of county students attending the College. Since the achievement of this happy state of affairs was the real reason for his having been invited to open the College,[65] it would appear that Councillor Roche's

manoeuvre had been successful. Mr. Storey remarked that while the County Council could not, legally, make any contribution towards either building fund or furnishings, he would consult with Councillor Roche about ways and means of helping.[66] These consultations were eventually to result in the payment, by the County Council, of £5 per head for every county student attending the College.[67] Mr. Storey concluded his speech by wishing, amid a plethora of public speaker's platitudes, every success to the College and its staff.

After a move to the Town Hall for lunch, there were more speeches, most of them verbose, self-congratulatory, and without significance. Councillor Roche, however, made mention of ".....the practical trade advantages which had resulted from a sound and systematic scientific and technical training.....in the cases of Germany, America, and Switzerland."[68] He also introduced some skilful propaganda for contributions to the College and for employers to help their apprentices to attend the classes provided for them.

Principal Branford's address was of greater significance, for it gave a hint of the kind of development he had in mind for the College. His theme was a liberal education, and he pointed out that "the education of the artisan, the apprentice, the craftsman, had no liberal or theoretical side, it consisted only of the mechanical perf-

ormance of many manual operations solely in practice." He stated his determination to work towards the same kind of liberal education for industrial students as that received by "doctors, lawyers, and clerics," and looked forward "to the time when public opinion would regard an industrial education which was efficiently founded on a broad school education and a subsequent scientific and artistic college education, interwoven harmoniously with the practical training of the workshop, the counter or the office, as a truly liberal education." He hoped, ".....when that day came, to be able to remove the word technical from their college, for the simple reason that when every college training was seen to be essentially technical, the differentiating force of the word was dead."[69] Clearly, Principal Branford had something more in mind than a training school for engineering apprentices.

It is an interesting point that many of the speakers, particularly those engaged in local politics, while making much play with such phrases as "the onward march of democracy"[70] spoke of democracy as something relative to which they occupied a superior position. It is true, also, that references to the "lower orders of society" were frequent in Council debates. Moreover, references to secondary education made in the course of the speeches make it quite clear that these gentlemen saw it as something for the chosen few. These

are, of course, merely local instances of what, it is well known, were the current ideas of such men at this time.

Sunderland Technical College was now open. Ten years of endeavour on the part of the Technical Education Committee had been rewarded. The building was there, the teaching staff were ready, all that was lacking were students. Registration for the first session was carried out in the Examination Room of the College during the week ending October 6th, 1901.[71] On the first three evenings, some 600 evening class students presented themselves instead of the 200 prepared for. There were also some thirty day students.[72] Many of the evening students were found not to possess the entrance qualifications for the College courses and were recommended to begin their studies with a preliminary year at one or other of the evening institutes. In all, 671 students were actually registered for evening classes.[73] Their calculations having been sadly upset, the Committee had to ask for a supplementary grant of £1500 to carry on the work of the college.[74]

More teachers were needed as well as more money, and on November 8th, five full-time and three part-time teachers were appointed. There were 67 applicants for the five full-time posts, so the Committee found no difficulty in maintaining the standards set by their first

appointments. In fact, in its early years, the Technical College found no problem at all in recruiting the right type of man to its full-time posts, unlike the Central School where the part-time nature of the work limited recruitment mainly to local men. The new assistant lecturers were appointed at a salary of £150 per year, and were: Mr. E.R. Verity, A.R.C.S., for mathematics; Dr. Julius Leonhardt, for German; Mr. E. Stansfield, B.Sc., for chemistry; Mr. F.H. Mould, A.R.C.S., Wh.Ex., for engineering; and Mr. A.H. Lawrence, of Bangor University College, for electrical engineering. The three part-time teachers were local men: Mr. W.R. Rudd, chief assistant at Valley Road Board School, for mathematics; Mr. S.E. Thirkell, for shorthand; and Mr. W.M.Johnson for book-keeping.[75] At the same meeting, the Committee placed on record their thanks to the Reverend W.A. Wigram, a local Anglican clergyman, who was instructing evening classes in Latin, without pay, for students who were studying for the London University Matriculation.[76] The teaching staff of the College now stood at five heads of departments, including the Principal, six assistant lecturers and demonstrators, and seven part-time instructors.

While all this was going on, the Technical Education Committee were equally hard at work in another direction - resolving the difficulties raised by the question

of allocation of work between the other institutions providing science classes and the College. This problem had been dealt with earlier with regard to the School Board, but the problem remained in connection with the private institutions. The Corporation had already applied to take up its powers under Clause VII of the Science and Art Directory, but some objections must have been raised, for the Board of Education sent Mr. G.R. Redgrave, Secretary of the Secondary Education Branch, to hold an inquiry in Sunderland.[77] Clause VII, it will be remembered, allowed the Corporation (represented by the Technical Education Committee) to apply for recognition as the Science and Art Examinations authority for the town. If the application was granted by the Board, the Technical Education Committee would become fully responsible for the whole of the instruction in science and art in the county borough area. The management committees of existing classes would not be altered at all, but the Committee would be the only body able to start new classes. In addition, all management committees would receive their grants from the Committee instead of direct from the Board. A special meeting was held on 27th September, 1901, which was attended by Councillors Roche and Gordon Bell, Principal Branford, and representatives of the Co-operative Society, the Y.M.C.A., the School of Science and Art, and the Hendon Church Institute.[78] Mr. Redgrave,

on behalf of the Board, suggested that the various bodies represented shpuld line up under the Technical Education Committee in the interests of co-ordination. The discussion that followed showed general agreement with this, the main points requiring settlement being, firstly, the fear of the private institutions that they might lose their Corporation subsidy, and secondly, the financial loss they had already suffered through the attraction to the College of most of their advanced students. They wanted some reassurance from the Council that they would receive enough money to carry on their work. Once more, Councillor Roche pointed out that it was the intention of the Council that they should develop the College as a University College and that it was not regarded simply as a place where advanced Science and Art courses could be provided in competition with the private institutions. His reassurances must have been effective, for, early in October, general agreement was reached, and on October 16th, the Board of Education approved the Corporation's application to exercise its Clause VII powers.[79]

The provision of technical education through private enterprise agencies in Sunderland was now virtually ended. No new classes could be started except by the Technical Education Committee, and grants to all institutions providing such education were paid through the Committee.

Private enterprise provision, mainly of elementary courses, was to continue for some years, gradually growing less and less until, of all the twenty-two Science and Art classes which had been at work in Sunderland at various times since 1873, only the Co-operative Society remained in being as an educational institution. Even then, it was no longer providing technical courses, but classes in Co-operation, Economics, and Industrial History. By 1901, a long and eventful period had come to a close.

The closing date of this survey is 1908 - the year in which conditional approval was given to the application to affiliate Sunderland Technical College to the University of Durham - and we must now turn to an examination of the first seven sessions of the College in order to see the ways in which the College achieved the status necessary for the making of such an application. Because of the large amount of material involved in the study of this period, and because such material falls naturally into two parts, the period from 1901 to 1908 will be dealt with in two chapters.

Chapter IX.

Technical Education in Sunderland (6): Sunderland Technical College from 1901 to 1908.

It is the object of this chapter to consider the development of Sunderland Technical College during its first seven sessions, and in doing so, to examine such questions as the aims of the College, its departmental organisation, the types of courses provided, the development of sandwich courses, certain deficiencies of provision, changes in course organisation, and an attempted assessment of the status of the College in 1908. It has already been remarked that 1908 has been selected as the year at which to finish this survey because the University of Durham Act of that year marked the end of the first stage in its development. Such considerations as those outlined above should begin with the aims of the College - although no attempt will be made to evaluate how far the College was successful in those aims until the final chapter. In addition, certain administrative changes which affected the development of technical education in Sunderland will be examined in Chapter X.

It will be remembered that, on the occasion of Mr. Branford's appointment, the Technical Education Committee issued a statement that it was their intention to develop an institution of University College standard. They

did not intend to provide a secondary school under another name. The object of the College as set out in its first Prospectus was to cater for the "higher education" of the town's youth. In his address at the opening ceremony, Principal Branford indicated clearly that he was thinking of a higher education on professional lines. The aim of developing a University College was repeated by Councillor Roche on the occasion of the meeting between the Technical Education Committee and the representatives of the private institutions in September, 1901. A more specific statement of purpose was made on the occasion of the second annual presentation ceremony, by Dr. Gordon Bell. ".....they aimed at giving the student the kind of knowledge that would enable him when he commenced his work as an engineer to face any new problem in engineering that might arise in the course of his practice."[1] In other words they aimed training professional engineers. Further pointers to the intentions of the Corporation may be found in their attempts to unify the post-elementary education of the town under Principal Branford, and to make the Technical College the sort of multi-purpose institution described in the first Prospectus - both these developments will be described in the next chapter. Throughout the period of office of Principal Branford there was a great deal of emphasising of the high standards of the College, coupled with attempts to gain

public recognition of these, and it is clear that, under Principal Branford, the College was to develop along general lines which would lead to the creation of a University College.

Such aims could only be carried out by a highly qualified and well-organised staff, and we should now look at the Departmental organisation by which the College was to achieve its aims. The College began its life in October, 1901 with five Departments - Mathematics and Mechanics, under the Principal; Physics and Electrical Engineering, with Mr. T.C. Baillie, M.A., D.Sc., in charge; Chemistry, which had Mr. C.F. Baker, B.Sc., Ph.D., as Head; Mechanical and Civil Engineering, under Mr. J.H. Smith, M.Sc., which was destined to become the largest Department; and Commerce and Modern Languages, under Mr. George Readdie, M.A. Four of these Departments were to maintain a continuous existence to the present day - the Commerce Department ceasing to exist in 1908, when Mr. Readdie became Principal of the Sunderland Day Training College.[2] Of the original Heads of Department, in fact, only Mr. Baker was to remain in office during the whole of the period to which this chapter refers. Principal Branford was to leave during 1905 as well as Mr. Smith, and Messrs. Readdie and Baillie in 1908. Mr. Smith was replaced by Mr. L.D. Coueslant, B.Sc., A.M.I.M.E.,[3] Mr. E.R. Verity, B.Sc., A.R.C.S., a future Principal of the College, became Head of Mathematics,[4] and Mr.

W.T. Maccall, M.Sc. replaced Mr. Baillie.[5] It is worthy of note, in view of Sunderland's reputation as a shipbuilding and coal-exporting centre at the time, that there was no Mining Department until 1908, and no Department of Naval Architecture until 1922.[6] Both these subjects were taught on a part-time basis at first. Finally, in connection with the internal organisation of the College, the Sunderland Art School, although still in the Town Hall, was a Department of the College, and was so listed in its Prospectuses.

The courses offered by these Departments were of two types. For day students, courses of three or four years' duration leading to Associateships of the College in Engineering (Mechanical, Civil, Electrical and Marine), Pure Science (Mathematics, Chemistry, Physics), and Commerce were planned.[7] Evening students were to follow four-year courses leading to College Certificates of Proficiency in Engineering, Commerce, and Plumbing.[8] The classes provided during both these types of course also prepared students for Board of Education (Science and Art) Certificates in single subjects, such as Mechanics, Electricity, Chemistry, Practical Geometry, Building Construction, the Steam Engine, and Naval Architecture.[9] Students were, in fact, advised to take such certificates in addition to the College's own internal ones, although this meant, as Principal Branford put it, in

1904, "some hardship for them because of larger syllabuses."[10] Presumably he meant that the Board of Education syllabuses covered a wider field than those of the College. In addition, some students, "that have been apt pupils at school, finding little or no difficulty in bookwork," were advised to attempt the B.Sc. degrees of London University, the College classes being suitable for these. Other students, those who had attended elementary schools, were advised to prepare themselves for the College courses by taking the elementary examinations of the Board of Education, courses for which were provided at the evening institutes.[11]

Students were also encouraged, where relevant, to enter for City and Guilds examinations, but the College provided no courses for these. The attitude of the College authorities towards practical training is clear. ".....students are instructed in the scientific principles underlying the industries in which they work.....but no attempt is made to teach them the technique of a manufacturing industry, for this is best learned through actual practice under trade conditions."[12] Consequently, with regard to City and Guilds courses, the College authorities felt that ".....an intelligent person engaged in some branch of technology can pass the examination in that branch without attending a class. He should attend classes.....in the sciences

to which his industry is allied."[13] The course in Plumbing, mentioned in the first Prospectus, appears no more, and can be regarded as a casualty of the foregoing beliefs. Clearly, it was the principle of the College that apprentices should be taught 'why' things were done, and learn 'how' they were done. The College authorities were not interested in what we would now call 'craft courses.'

As an example of course requirements, the subjects needed for the four-year day course leading to Associateship of the College in Electrical Engineering will serve. First year students were to take Mathematics, Mechanics, and Chemistry; followed by Physics I and Engineering I in the second year. In the third year, Electrical Engineering was begun, and was supplemented, in the fourth year, by Dynamo Design. All courses, except Mathematics, included laboratory work as well as lectures, and regular submission of homework was insisted on.[14] The level of these courses in terms of present day qualifications is difficult to estimate, the problem being confused by the different levels of knowledge, then and now. However, the final examination for the Associateship Diploma seems to have been the same as the present Ordinary National Certificate - with some exceptions, such as Mathematics and Dynamo Design, where the level was approximately one year higher.

For evening students, College Certificates of Proficiency were available, after a four year course in Commerce, Mechanical Engineering, Civil Engineering, Naval Architecture, Marine Engineering, Electrical Engineering, and Metallurgy.[15] They were also available, in the first year, in Photography and Plumbing, but as seen above, these courses disappeared. For the Certificate in Electrical Engineering, a student had to pass in Technical Electricity, Dynamo Construction, Electric Lighting and Power, plus two subjects from Dynamo Design, Alternate Current Work, Machine Construction, and Applied Mechanics.[16] It would appear that the Certificate of Proficiency was a great deal more specific in content than the Associateship Diploma, and its level would seem to have been about that of the first (01) year of the present Ordinary National Certificate. The courses themselves, were "so arranged that the education of the young artisan, clerk, or other student of technology in the principles underlying the efficient pursuit of his calling can be carried on in Evening Classes simultaneously with his ordinary and practical training during the day in workshop, factory, or office."[17]

Finally, in connection with courses, both the Associateship Diploma and the Certificate of Proficiency were available at Ordinary and Honours Levels - one year's extra study being necessary for the latter.

Both the Diploma and the Certificate courses depended on the first year being taken at one of the evening institutes held at the Higher Grade School, Hudson Road School, the Co-operative Hall, the Hendon Church Institute,[18] and the Y.M.C.A. These, of course, were the survivors of the twenty-two Science and Art centres which had operated in the town at various times, (see Appendix B, Table I). They were now under the administrative control of the Technical Education Committee, and received their grants through that body. During the period under discussion, the privately provided centres gradually gave up their work of providing preparatory classes for the College and left this to the local authority evening classes at Hudson Road and the Higher Grade School.[19] Instead they provided courses with which the College did not bother. Records of the activities of these privately provided centres have not survived, and only a very brief glimpse of one of them is possible. A magazine article of 1904 tells us that. "The Sunderland Equitable Industrial Society's classes are held in deservedly high repute, and many of the students have achieved high examination honours. During the winter evenings, classes are held weekly for the study of Co-operation, Citizenship, and Industrial History, these being free and open to both sexes. There are, also, classes for Naval Architecture, Steam and Applied Mechanics,

Book-keeping, Dressmaking, Cookery, Hygiene, Ambulance work, Mathematics and Shorthand.....and a library containing 1200 books."[20] Some of the above classes were for Board of Education (Science and Art) Certificates. Generally speaking, up to 1908, the local authority began providing more and more evening classes, and the privately provided centres less and less.

In addition to the day and evening courses provided at the College, Principal Branford began a series of lectures for teachers on Saturday mornings. The subject of the course, which was of two years' duration, was the teaching of mathematics. The content of the course included "the aims and methods at present in vogue in the teaching of mathematics and recent advances on these.....the growth of ideas fundamental to Arithmetic, Algebra, Geometry, and Trigonometry; seminars and practical work with a demonstration class."[21] Some later remarks of Mr. Branford's, after the first College entrance examination, will show that there was a need for such classes. Twelve teachers enrolled for the course in the first session.

Before proceeding to consider some developments in the organisation of courses at Sunderland Technical College, it is convenient to pause and summarise the types of course offered by the College. The day classes provided courses

in Engineering and Chemistry, extending over three or four years, and leading to a Diploma of Associateship of the College. These courses included classes in Mathematics and Physics, and could also lead to the degrees of B.Sc. and B.Sc.(Engineering) of London University. The evening classes provided instruction in Mathematics, Physics, Chemistry, Engineering (including Naval Architecture), and Commerce. First year courses were provided at the evening institutes. The system of course organisation created during these first years was to last, with only minor alterations, until after the First World War.

At the first presentation of awards, in April, 1903, one hundred and five certificates were presented - 9 Honours, 77 Advanced, and 19 Elementary.[22] It is probable that these were Board of Education Certificates, although the press report does not make that clear. The same occasion was also noteworthy for the announcement, by Councillor Roche, of the results of his appeal to local industrialists for contributions to the College's equipment fund. In all, over £3000 was given in cash and machinery by the leading employers of the town.[23]

It is, however, with regard to course organisation that Sunderland Technical College made its first important contribution to technical education. Mention has already

been made of Dr. Bell's visit to Continental technical institutions and of his acquaintanceship with the sandwich method of training. How far it was owing to his influence, and how far the result of pressures of expediency is difficult to say, but Sunderland Technical College was certainly the first in England to develop sandwich courses. Venables, in his book on this method of course organisation, says that while "sandwich courses of some sort were established north of the border as far back as 1880.....sandwich courses were begun at Sunderland in 1903."[24] It would appear, however, that some form of sandwich organisation developed during the first session, 1901 to 1902, for the Prospectus for the second session contains details of sandwich courses for day students. The Prospectus states that the College authorities had arranged the day courses to fall within six months of the year, and had been mainly guided by the conviction that "Technical education is efficient in proportion to the closeness of the co-ordination of the underlying scientific studies with the practical training of the workshop. By the arrangement adopted, the division of the year into two periods of equal length, during the six winter months of which the apprentice attends the College, and during the remaining six months the workshop, an opportunity is given to the apprentice to carry on simultaneously each year both his practical and theoretical training,

and thus to avoid a too common defect in technical education, namely the divorce of several years between theory and practice which experience has shown to be detrimental in many essential respects, both to the complete education of the student and to his future interests in life."[25] Since the Prospectus for the second session of a new college may be expected to be based on experience gained during the first session, there is strong justification for Principal Branford's claim, in a letter to the press dated 6th April, 1903, that sandwich courses had been organised at the College ever since it first opened.[26] Further evidence is supplied by Councillor Roche. Speaking at the first presentation of awards, he said that, "they had got hold of some of the very best young men in the engine shops, the shipbuilding yards, and other centres of industry, to give a considerable portion of their time to attending the College .....for six months of each year, for three or four years, in the College and the remainder in the workshops."[27]

It is probable that, during the first session, some sort of day course organisation involving the six winter months being spent in the College and the summer months in the workshops had evolved for some students. If this were so, as seems fairly certain, it is interesting to speculate on the reasons for the adoption of such a system. Dr. Bell certainly knew of its use in Glasgow and Germany, and Mr.

Branford was a progressive minded educationist. The reasons may have been those given in the second Prospectus - or they may have lain in the reluctance of local employers to part with their best apprentices during the summer months when more outdoor work was possible. At this distance it is impossible to say with any certainty.

Whatever the reasons for beginning the system, it rapidly became a part of College policy. Early in April, 1903, the local press published a report that a meeting of the Institution of Naval Architects had recommended a method of training based on the sandwich course.[28] It was in connection with this report that Principal Branford's claim was made. Early in the following month, a meeting between local employers and the Technical Education Committee took place to work out a training scheme.[29] The firms represented were the North-Eastern Marine Engineering Co., Ltd., Messrs. John Dickinson and Sons, Messrs. George Clark and Sons, Messrs. J.L. Thompson and Sons, and Messrs. R.A. Bartram and Sons. They were all engineering and shipbuilding firms. The Secretary of the Wear Association of Shipbuilders and Engineers, Dr. John Haswell, was also present. Agreement was reached, and the report of the Technical Education Committee recommending the Council to agree to the scheme was adopted on 12th August, 1903.[30] This recommendation was probably one of the last matters

to be dealt with by the Technical Education Committee, as the 1902 Education Act came into effect in Sunderland on 1st July, 1903.

The main points of the student-apprentice training scheme, as eventually adopted, were, firstly, no boy was to become a drawing office apprentice in an engineering firm without a certificate of a satisfactory secondary education. Secondly, the first two years of apprenticeship were to be spent wholly in the works, and the apprentice was to attend evening classes. Thirdly, in the third year of apprenticeship, selected apprentices would be given the opportunity of pursuing their engineering education by means of the sandwich course for a College Associateship in Engineering for the remaining three years of apprenticeship. Each firm agreed that not more than four of their apprentices could be chosen in this way, and that their wages would be paid, according to scale, during the periods in College. Entrance to the course would be by competitive examination, and the College would award Free Studentships to the top candidates, the rest paying their own fees. Finally, apprentices so selected were to guarantee a minimum two years' service with their firm after completion of apprenticeship.[31]

The first examination for the selection of student-apprentices was held on 27th August, 1903.[32] Fifty-

eight apprentices competed, and fourteen free-studentships were awarded. It is not known how many fee-paying students were accepted - there were only 40 day students in the College during the third session, and some of these were studying Languages and Commerce. From Principal Branford's criticisms of the papers there would not be many. The examination consisted of an English paper, comprising an essay and dictation; a Mathematics paper; and a General Science paper, which included a question on drawing. Its standard was about that of the present Northern Counties Technical Examinations Council School Leaving Certificate. Mr. Branford's criticisms were sweeping. "Bad spelling and handwriting" in the English paper; "no capacity whatever to apply their arithmetic, geometry and algebra to concrete numerical problems" in Mathematics; and, less specifically, "much bad work" in the Science paper. The report on the examination, signed by Mr. Branford and Dr. Bell, was published in the press, and concluded by remarking that, on the evidence afforded by the examination, "the teaching of elementary mathematics appears to be distinctly inefficient. The main fault.....the divorce between theory and practice." The first fourteen free students began their course on 1st October, 1903.[33] In all, during the first seven sessions, 59 free studentships were awarded.[34]

The student-apprentice scheme shows clearly

that the College's best support came from the general and marine engineering firms, and not, as might have been expected, from the shipbuilders. Of the five firms which began the scheme, three were marine engineers; of the twenty-five[35] which were members by 1908, fourteen were engineers. An interesting sidelight on this question is available through the action of Mr. J.H. Meek, Manager of the Scotia Engineering Works, and later a co-opted member of the College Governors. He was so enthusiastic about the student-apprentice scheme that he released twelve apprentices to attend the day classes, and engaged eight journeymen to do the work they left.[36] Such enthusiasm is infectious, and it is not surprising that, during the period under discussion, the number of firms participating in the scheme rose from five to twenty-five.

The position with regard to sandwich courses at Sunderland Technical College, therefore, was that some such system probably began during the first session in a small way, and was continued in a similar manner into the second session. Stimulated by the remarks of the Institution of Naval Architects, the College authorities and local employers agreed on an organised training scheme during 1903, and put it into full-scale operation at the beginning of the third session. From that time, the scheme has maintained a continuous

existence, and has been extended to other courses apart from Engineering.

Numbers of students attending the College during its first seven sessions are set out in Appendix F, Table I, and it will be seen that, after the first session, numbers began to drop, a decrease which was accepted as the result of a progressive raising of standards. Principal Branford stated in 1905 that, ".....about 75 per cent. of the students are attending advanced or honours courses or equivalents. The elementary and preparatory classes are, in general, taken by such institutions as the Y.M.C.A., the Science Evening Schools, and the classes of the Co-operative Society. The aim of the College has been quality rather than numbers."[37] Until 1905, although total numbers are always given in the Principal's Reports, lack of other information prevents any attempt at analysis. However, in 1905, Mr. Branford included some additional information in his Report. Of the fifty-three day students attending that year, 23 had free-studentships in Engineering, 17 were fee-paying Engineering students, and 13 were fee-paying students of pure science and languages.[38] In the following session, information is available about the distribution of evening class students, (Appendix F, Table III). The largest groups were those taking Mechanical Engineering, Electrical Engineering, Languages and Commerce, Mathematics,

and Naval Architecture, and this pattern was repeated in the next session. The large numbers of evening class students taking Languages and Commerce had not been a feature of the first five sessions, but was due to an expansion of evening work in these subjects in the sixth and seventh sessions - a kind of swan song before the Department disappeared. Although total student-numbers declined somewhat over the first seven sessions, Board of Education grants rose steadily, probably owing to increasing numbers of day students. The slight decline after 1906 was probably the result of the removal of more lower-level courses to the Evening Institutes.

It will be apparent from what has already been said that, for a town like Sunderland, serious deficiencies of provision existed in the technical education system. No Department of Naval Architecture was established at the opening of the College, and the work in this field was carried on entirely by part-time instructors at evening classes. This remained so until the fourth session, when it was announced in the Prospectus that arrangements would be made for day instruction in this subject in time for the opening of the session.[39] It would appear, however, that this action was not taken as a result of demand from day students wishing to specialise in Naval Architecture, but because of the needs of Marine Engineering students for subsidiary

classes in Naval Architecture as part of their course. A. Mr. T.C. Tobin, M.A., A.M.I.N.A. was appointed as 'day instructor' in Naval Architecture and it was announced that he would hold classes for Marine Engineers from 8 a.m. to 9 a.m. each day. Students wishing to specialise in Naval Architecture were advised to make their own arrangements with Mr. Tobin.[40] The reasons for this apparent lack of interest on the part of the College authorities in the town's major industry are hard to discern. No doubt encouraged by their success in gathering contributions to their equipment fund, the Council had, ever since the opening of the College, been trying to persuade the shipbuilding employers to endow a full-time post in Naval Architecture.[41] It would appear, however, that these same employers were not as fully convinced of the value of trained and qualified naval architects as were the engineering employers of trained engineers. A letter to the press in March, 1906, tells us that prospects were so poor for qualified and experienced men in shipbuilding that many, on the Wear, earned a mere £2 per week.[42] It would seem, therefore, that the local shibbuilding employers were satisfied with the quality of their draughtsmen and designers and saw no reason to spend money on their theoretical training. The local press supported them in this, pointing out that it was the duty of the local authority to provide such facilities, and not that of private

individuals.[43]

Even the announcement, in February, 1906, that Lloyds Scholarships in Naval Architecture were to be tenable at Armstrong College, Newcastle-upon-Tyne, failed to stir the Council into action, although it produced a spate of letters to the local press. ".....why should our town lose its prestige through apathy or indifference?.....in the near future our College must be equipped for higher instruction in Naval Architecture."[44] No full-time lecturer, however, was appointed until 1922, and it is not surprising that only one day student managed to obtain a Diploma in Naval Architecture during the first seven essions, (Appendix F, Table VI).

Naval Architecture was not the only field of local activity to be so neglected. No courses in Mining were provided when the College opened, and provision was not made until 1907, and then only at evening classes.[45] To do justice to the College authorities, both these industries - shipbuilding and mining - were notorious for the reactionary outlook of employers. It may well have been that the only prospect of getting day students to attend the College from these industries was if the employers could be persuaded to create teaching posts themselves.

It has already been remarked that the

system of course organisation set up during the first session was to remain in use until after the First World War. There were, however, even during the first seven sessions, some minor modifications. In the second session, Commerce classes were provided in the afternoons to permit clerks the opportunity of "combining the practical office training in the mornings with College studies in the afternoons."[46] There is, unfortunately, no evidence about numbers attending these classes, but they must have had some success for the practice was continued in subsequent sessions. It would appear that the Commerce Department was somewhat of a Cinderella in the College - and it was allowed to lapse in 1908, after Mr. Readdie's appointment as Principal of the Day Training College.

While in existence, however, efforts were made to establish the Department on a sound foundation. In the fifth session, evening classes in Accountancy were formed and were attended by 30 students.[47] Other classes, in commercial history and geography for the London Chamber of Commerce examinations were begun.[48] The greatest expansion of Commerce classes came, however, in the sixth session. Six additional part-time instructors - the Head of Department was by now the only full-time member of the Department - were engaged, to teach between them Latin and Greek, Spanish, Commercial History and Geography, Political Economy, Book-keeping, Accountancy,

and Commercial Law.[49] The intention was to provide evening courses leading to Intermediate and Final B.A., London; the Junior and Senior Certificates of the London Chamber of Commerce; College Certificates of Proficiency in Commerce, Spanish, French, and German; the Institute of Bankers examinations; and the various commercial certificates of the Society of Arts.[50] This was the first attempt at the major provision of commerce classes in the town, hitherto, there had only been the classes in Book-keeping at the College, the Y.M.C.A., and the Co-operative Society.[51] Some 29 students enrolled for the courses in Commercial subjects, while 83 took the various Language courses, (Appendix F, Table III). Unfortunately, it is impossible, from the sources now available, to estimate the success of these courses, but it is probably sufficient to say that there is no record of anyone passing any of these examinations before the First World War. Nor is there any reference to Commerce classes in succeeding Principal's Reports. In view of this, and of the discontinuance of the Department in 1908, it is clear that the Commerce Department failed to establish itself in the College. Probably, the reason lay in the reluctance of local commercial employers to release employees, or even to encourage them to attend evening classes. Beyond a certain point, rewards in small, local business firms have never been large enough to provide an incentive for their

employees to undertake extra study. At a time when the speediest road to promotion in such businesses was through relationship to the proprietor, there would be even less incentive. Commercial firms have always been hard to convince that any training apart from experience was needed for their employees.

From 1906 onwards, the College Prospectuses begin to be more expansive. Details of external examinations and scholarships open to students were included. This would seem to have meant, however, not the creation of new courses, but the adaptation of existing ones to new purposes. In 1904, the College acquired its first internal scholarship. Lady Allan, widow of Sir William Allen, the late owner of the Scotia Engineering Works in Sunderland, and M.P. for Gateshead, endowed an annual scholarship to be called after her late husband. A capital sum of £500 was provided, the interest on which was about £17 per year. It was to be awarded to a marine engineer apprentice in the penultimate year of the Associateship course, the award to be based on his performance in the previous year.[52] The first Sir William Allan Scholar received his award in October, 1905.

A further change in course organisation which took place during the first seven sessions was the introduction, in October, 1907, of a two year preparatory evening evening course for entrants aged fifteen. It was intended to

occupy the first two years of apprenticeship, and was "intermediate between those provided by the College and those of the Evening Continuation School or of an Elementary Day School."[53] The object of these classes, held at the Bede Collegiate School and Hudson Road School, was to prepare pupils for the entrance examination for the College day courses. They represent an attempt to move away from courses leading to certificates in single subjects to a progressive course of study leading to the Associateship. The fact that it was felt necessary to introduce such courses serves to illustrate the need for basing technical education on a sound secondary foundation, a need which was commented on by Principal Mundella in his Report of 1909. "The success of the College depends mainly upon the efficiency of the elementary and secondary education in the town, as without well-prepared students the College can make little progress in promoting more advanced studies." Mr. Mundella went on to remark on the success of ex-Bede Collegiate School pupils in gaining scholarships under the Apprentice-Student scheme.[54]

The only other alteration in courses was the provision of Mining classes, already referred to, in October, 1907.[55] They were evening classes, and were intended for students who had already passed Stage I Board of Education Certificates. They aimed at the First Class Mine Manager's

Certificate after a two year course. Entrants were advised that no elementary classes were held in Sunderland and that they must make their own arrangements about these.[56]

Having discussed the organisation of the College, its aims, and the development of courses, it is now time to look at results. Examination results, collated from Honours Lists in the Prospectuses, are summarised in Appendix F, Table VI. It must be pointed out, however, that these are final examinations only, and do not include internal stage examinations, of which no record exists. At first glance, they may not seem spectacular, but it should be remembered that while many students would start courses, relatively few would finish. Even today, wastage rates are a major problem in technical education. It has already been seen that the first student-apprentices began their courses in October, 1903, and the first Diplomas of Associateship were awarded at the end of the fifth session. Nine students out of the original fourteen were so honoured - seven in Mechanical Engineering, three Honours and four Ordinary Diplomas; and one Ordinary Diploma apiece in Electrical Engineering and Naval Architecture.[57] In addition, a Whitworth Exhibition, the College's first, was won by Frank Cothay, one of the original fourteen student apprentices. However, these awards pale into insignificance beside the achievement of Arnold C. Palmer. In September,

1905, he was awarded the first London University degree gained by a College student - a B.Sc. in Pure Science. His success was all the greater since he was an evening class student.[58] He was equalled, in 1906, by another evening class student, William R. Ball. The first Honours degree won by a College student came in 1908, when Frank Cothay obtained a London B.Sc.(Engineering) with Honours.[59] In all, during the first seven sessions, three degrees, seventeen Associateship Diplomas, and seventeen Certificates of Proficiency were awarded, as well as other successes from other examining bodies.

Examination results, however, are merely one way of gauging the success of a College - a better one is to see what opinions were expressed by outside organisations. A Board of Education Inspector visited the College in 1904, and his report stated that he regarded it as likely "that a very important institution will be developed here before long," and went on to observe that, "the whole of the work is excellently organised, and the students appear to be well-qualified to benefit by the instruction, and have made satisfactory progress."[60] In June, 1905, just before his departure, Principal Branford presented a valedictory Report.[61] After stating that the Board of Education had estimated the work of the College to be equal in standard to that of a University College, he observed that, "the College Engineering Day Classes

have been recognised as a 'Technical Institution'[62], a title newly created by the Board of Education." In July, 1906, the Governors of Gordon College, Aberdeen, were recommended by the Board to visit Sunderland Technical College, described by the Board as "one of the finest for its size in the United Kingdom."[63] In his Report on the session 1908 to 1909, the then Principal, Mr. Mundella, refers to a Board of Education Inspector's Report from the previous session. "The equipment is generally satisfactory, and in some cases, very full..... .....the teaching staff is adequate and well-qualified, the Heads of Department in particular having been chosen with great care. The instruction given is thoroughly good, that in Mathematics and Mechanics especially so."[64]

A further mark of recognition was to come, but before proceeding to deal with it, the emergence of Students' Societies merits some attention. A Common Room was provided in 1906, and an Association Football team had existed since the fourth session. In 1907, a Debating Society and a Swimming Club were formed. The practice of holding an Annual Students' Dinner was begun in 1906. All in all, the students of the College were beginning to show that interest in a strong corporate life which has since been such a marked feature of the College's development.

To return, however, to external marks of

recognition. Early in 1907, the Council received a report from the Higher Education Sub-Committee that a Bill for the reconstitution of Durham University was to be promoted. The reorganisation was required because the Newcastle branch of the University (founded in 1871) had become larger than its parent (founded in 1832) and resented its dependence. It was at once resolved that Sunderland Council should seek to have included in the Bill provision for the Sunderland Technical College to become a 'constituent college' of the University.[65]

There had always been, in Sunderland, the feeling that Newcastle had scored when the Durham College of Science was established there, and previous approaches to secure affiliation to the University had been made on many occasions, without result. A conference, held in Sunderland, in May, 1907, had already passed a resolution declaring that institutions other than those at Durham and Newcastle should be represented on the new senate.[66]

However, when passed, the new University statutes, issued in 1908, satisfied neither the town nor the College. They made no provision for the representation of the wide range of interests required by the Sunderland Conference, and accorded only limited recognition to the College. Sunderland Technical College was to be affiliated to the University of Durham in the Faculty of Applied Science only so soon as the

following requirements were met:

(1) A more extensive physics laboratory more fully equipped for the teaching of branches other than electricity;

(2) A separate Head of Department for Electrical Engineering;

(3) Extended laboratory accommodation and appliances for teaching Electrical Engineering;

(4) A more adequate Engineering laboratory equipped with the necessary steam machinery.[67]

Affiliation would have meant that students of the College would be admitted as candidates for Durham degrees in Engineering without being required to attend lectures or instruction other than that provided at the Technical College. Unfortunately, discussions between the University and the College Governors on the question of implementing the 1908 University of Durham Act did not begin until 1924. Extensions to the College were provided in 1926, and in 1930, the long-delayed affiliation took place.[68]

Although the Act gave only limited recognition to Sunderland Technical College, the University's willingness to agree so far must be taken as a mark of approbation. It would appear that, by 1908, Sunderland Technical College was highly regarded, and well on the way to that position of eminence in its field which it has since attained.

It now remains only to examine various

administrative changes which affected the College's development before, in the final chapter, attempting to draw some general conclusions about the development of technical education in Sunderland in its early days.

Chapter X.

Local Administrative Changes.

During the period covered by this survey, drastic changes of opinion took place with regard to the provision of technical education. Such provision, in the early nineteenth century, came through various private enterprise agencies, but, by 1908, local authority provision dominated the field, only the last vestiges of private enterprise remaining. Sweeping changes of this sort, were, of course, reflected in equally sweeping changes in local administrative methods, and it is the object of this chapter to show how both of these changes took place in Sunderland. Consideration of how administrative reorganisation affected the development of technical education in the town will be left to the concluding chapter.

Both the Mechanics' Institutes and the schools and classes conducted under the auspices of the Science and Art Department resulted from private effort. Both were organised by local committees of private persons who served from no thought of gain but rather through motives of public service and philanthropy. The discussion of the South Kensington system in Chapter V will have made it clear that this was no system of complete Government provision

but rather one of first-aid to private enterprise. It is plain that local committees were intended to be completely responsible for the running of their schools and classes, the only conditions laid down for payment of grant being that the schools and classes must be open for inspection and that fees should be charged. There was no attempt at central administration in any area, except the giving of permission for the formation of Special Local Examinations Committees which had no other function except that of organising local Science and Art examinations, and no other reason for existence except expediency. In any area, Science and Art schools and evening classes existed side by side, each with its own organising body. In Sunderland, records of the twenty-two Science and Art centres which operated from time to time have not survived, but the Minute Books of the Central School of Science and Art supply no evidence of any contact between institutions except in the matter of the annual examinations. The main point about these local committees is that they were composed of local business men who had , if any, only accidental connection with any other local body dealing in the provision of education. This was in full accordance with mid-nineteenth century theories of local government administration.

In Sunderland it was noticed that from very early in its career, the Central School of Science and

Art had received a grant of £30 per annum from the Corporation. This was merely a grant in aid, and carried with it no rights of Corporation representation on the School Management Committee. It did, however, lead to a closer connection with the Council than was probably usual with such Schools. From 1890 onwards, however, the School's growing financial difficulties led to a gradual increase in Council representation on the Management Committee, consequent on the gradual increase in the amount of Council financial help. The point of no return was reached in 1900, when, in return for further help from the Council, the School Committee had to agree to a majority of Council representatives. This did not imply that the Council thought it their duty to provide such facilities as those available in the School, but merely that public money was being spent, therefore, public men would have a hand in its control.

Alongside this gradual process of increasing Corporation control of the School were proceeding the activities of the Technical Education Committee. Formed as a result of the provision of Local Taxation funds by the government, the Committee's activities were to provide more positive evidence of changing attitudes towards the promotion of technical education.

When the question of financing the build-

ing of a Technical College was first considered by the Council in 1894, it was generally accepted that no recourse was to be had to the rates. It is worthy of note, in this connection, that there is no record of Sunderland making use of its power to levy a penny rate for purposes of technical education under the Technical Instruction Act, 1889. The College was to be built with a combination of 'whiskey money' and local, private subscription. Clearly, there was, as yet, no overt acceptance on the part of the Council that they should provide facilities for technical education.

But, opinions were changing. During the last quarter of the nineteenth century, public opinion, probably as a result of constant German competition and a series of Commissions of Enquiry, was slowly moving round to the view that the provison of technical education was a public responsibility. It is not surprising, therefore, to find the more enterprising members of the Council in Sunderland adopting this view, as well as some who were not members of the Council. It will be remembered that, in 1897, Councillor Roche reported to the Council that he and others now believed that it was the function of the Council to supply the finance for the Technical College. The proposal was adopted in January, 1898 - at least, a majority of the Council had come, through one means or another, to agree with him. The

building of the College, partly financed by the Council, is a clear indication of the change of viewpoint which had taken place during the twenty-five years preceding the opening of the College. It is equally clear that old ideas die hard - as can be seen from the subsequent attempts to win contributions from local employers for equipment and full-time posts. Such changes of opinion take time, nor are they necessarily unanimous.

Changes of opinion of this nature, of course, bring with them sooner or later changes in methods of administration, and no sooner had Sunderland Technical College settled down to its task than the local scene was disrupted by the effects of a sweeping reorganisation of the national educational system. On December 20th, 1902, a great Education Act became law. This is not the place to enter upon a detailed discussion of the antecedents of the 1902 Act, or, indeed, of its main provisions. These are more than adequately dealt with elsewhere, and it is sufficient for the purposes of this survey to see what changes were brought about in the system of educational administration in Sunderland, and to relate them to the direction subsequently taken by technical education in the town.

It is well known that the 1902 Act was passed against strong Liberal opposition, and that the local

re-organisation consequent upon its becoming law was the occasion for fierce political and religious dispute. Evidence of this is not lacking in Sunderland, but it would be irrelevant to discuss it here. In January, 1903, Sunderland Council created yet another Special Committee to consider and report on the measures to be taken as a result of the new Act.[1] The Technical Education Committee, the only Corporation group with educational experience, was not largely represented on the new body - mainly owing to Liberal opposition. Once established, a great deal of time was spent in considering such matters as the inspection of voluntary schools before they were taken over; evidence of 'romanising' tendencies in Anglican schools; and supposed dictation by the Board of Education, but, in May, 1903, an Education Scheme was approved by the Council.[2]

The Scheme provided for an Education Committee of twenty-one members of the Council and ten co-opted members to assume its duties on 1st July, 1903. The School Board and the Technical Education Committee were to end their existence on the previous day. There was more of political wrangling than sectarian dispute over the working out of the composition of the Education Committee, as is apparent from Council Reports, but it was eventually agreed that the new Committee should be, as far as party strengths were

concerned, a representation in miniature of the Council. The co-opted members and the interests they served were, Dean Kitchin, of Durham, for Higher University Education; Mr. G.O. Wight, Secretary of the Sunderland Chamber of Commerce, for Technical and Commercial Education; Mr. Alexander Corder, Honorary Secretary of Sunderland School of Art, for Boys' Secondary Education; a Mrs. Hancock, for Girls' Secondary Education; Messrs. Peter Wood, R.A. Bartram and T.W. Backhouse, for Provided Elementary Schools; and Dean Smith, Reverend F.L. Cope, and Mr. F. Forrest, for Non-Provided Elementary Schools. Dean Smith, Reverend Cope, and Messrs. Backhouse and Bartram were former members of Sunderland School Board.[3]

Two points of general interest emerge from the Scheme. Firstly, the Council did not follow the spirit of the Act and delegate powers to their Education Committee - they constituted it merely as a reporting body. Secondly, there was no provision for teacher-representation.

The rest of the Scheme, so far as it concerns this survey, consisted of the division of the Education Committee into four Sub-Committees - Elementary Education, Higher Education (including Secondary and Technical), Works, and Finance. The Higher Education Sub-Committee was composed of the Mayor, Councillor H.J. Turnbull; the Chairman of the Education Committee, Alderman Gibson; the Vice-Chairman,

Councillor Nicholson; Councillors Roche, Kirtley, Fowler, Gordon Bell, Vint, Hastings, Johnson, Summerbell and New. The co-opted members serving on the Sub-Committee were Dean Kitchin, and Messrs. Backhouse, Corder, and Wight.[4] Since the Technical Education Committee had been very much by-passed in the formation of the Special Committee which produced the Scheme, it is not surprising that neither Councillor Roche nor Dr. Bell held office on the Education Committee. Both were Conservatives, and the local Liberals had, throughout the discussions leading up to the production of the Scheme, made every effort to change the personnel of the group dealing with the town's educational provision. They were only moderately successful.

At the first meeting of the Higher Education Sub-Committee, on July 23rd, Dr. Bell was unanimously elected Chairman. The same meeting decided on its scheme for the administration of Higher Education in the town, and split itself into two minor sub-committees - one to be Governors of the Technical College, and the other to look after the affairs[5] of the Higher Grade School and the Pupil Teachers' Centre. In 1906, further reorganisation took place. The College Governors reconstituted themselves by admitting to their deliberations nine representatives of various local interests. Six local shipbuilding and engineering firms were represented as well as the Durham County Council, the University of Durham, and the

Sunderland Chamber of Trade.[6] There were, as yet, no representatives of local trade union branches. The actions of the Governors of the Technical College were, of course, subject to the veto of the Education Committee, to whom they reported through the Higher Education Sub-Committee.

The details of the Education Scheme were completed by the appointment of the Town Clerk as Clerk to the Education Committee, and of Mr. T.W. Bryers, former headmaster and Clerk to the School Board, as Secretary, at a salary of £800 per annum.

The general reorganisation was now complete, but the Higher Education Sub-Committee were ready to carry matters a stage further, and bring order into the business under their control. At the September, 1903, meeting they appointed Principal Branford as Director of Higher Education,[7] and increased his salary by £200 per year. He was to have the general charge of all Sunderland education above the elementary level, and was to supervise and co-ordinate the activities of the Technical College, the School of Art, and the Higher Grade School, which included a Pupil Teacher Centre as well as a secondary section.[8] There were to be two main lines of development at first. The Higher Grade School was to be reorganised as a Secondary School and be renamed the Bede Collegiate School; and the Technical College was to have a Teacher Training Depart-

ment added to its establishment,[9] or, as Principal Branford preferred to put it, a Department of Education.[10] All educational provision in Sunderland above the elementary level was to become part of a unified structure with the Technical College at the top. It is impossible to see this scheme as anything but the overt implementation of the often expressed intention to make the Technical College into a Municipal College with general facilities, which would, in turn, become a University College. There were many examples of this sort of development - Armstrong College, Newcastle; University College, Nottingham; Firth College, Sheffield; and University College, Liverpool, to name but a few. It was obviously Mr. Branford's intention, if nobody else's, to ensure that the development of the College took place along non-specific lines. He was not interested in the education only of engineers, and must have realised the danger that Sunderland Technical College could easily develop into a one-line institution, and become a place where only engineers of various kinds were trained. The opportunity to take overall charge of the town's higher education must have been more than welcome.

Before going on to consider the further development of these schemes, it is necessary to pause here to record the passing from the scene of one of the leading

figures in the creation of Sunderland Technical College. On 23rd September, 1903, the Council received a report of the death of Councillor Wilson Mills Roche. He had been in poor health for sometime, and while on holiday in Crieff, took his own life. At a Council meeting in October, tributes paid to his memory included the following from the Mayor. "He was one of our ablest members.....the Technical College is a monument to his perseverance and determination."[11] This is no less than the truth, though we must not forget his coadjutor, Dr. Gordon Bell. Councillor Roche's greatest contribution was his singlemindedness and the way in which he could influence local opinion. His work was continued by Dr. Bell.

To return now to the schemes for the expansion of higher education in the town. Both lines of development were, indeed, carried out, but the ultimate objective, the development of a University College, was not achieved. Had the scheme been carried out to the full, it is unlikely that anything could have prevented the development of such a College in Sunderland - and a great deal of the present uncertainty over the future position of the Technical College might have been obviated.

The Higher Grade School was reconstituted as a Secondary School and was opened and renamed by Dr. Bell on 26th September, 1906,[12] but it was to operate under its own

headmaster, Mr. G.T. Ferguson, B.A., B.Sc., who had been head of the Higher Grade School. It would appear that the scheme to include the Bede in Principal Branford's empire broke down through the conflict of two very strong personalities. It has already been seen that Mr. Branford was a forceful and energetic man, and Mr. Ferguson is well-remembered to have been of the same stamp. According to report, he was not content to be merely a Head of Department under Mr. Branford, and he had very clear ideas that his school was to be something more than a mere feeder to the Technical College, as Mr. Branford viewed it.[13] Mr. Ferguson's aim was to develop along traditional lines and prepare his pupils for the professions and the University.[14] Mr. Ferguson carried his views with the Council and became the independent headmaster of the new school, which has since developed into the Bede Grammar School.

The second line of development, it will be remembered, was the establishment of a Department of Education in the Technical College. This must have been a project particularly dear to Principal Branford because of his interest in educational affairs generally. It was the intention of the Higher Education Sub-Committee to cater for the needs of local pupil-teachers who could not secure College places.[15] In August, 1904, the Council accepted the Sub-Committee's recommendation that such a Department be set up at the College.[16]

However, upon application being made to the Board of Education, it was found that, although approving the scheme in principle, felt that the Technical College was the wrong place for a teacher training department. Their reason was the almost entirely scientific nature of the qualifications of the staff of the College - it was felt that the training given would be far too specific. They recommended that the staff be enlarged by the appointment of several arts graduates.[17] The Council did not wish to make such appointments - indeed, did not wish to make any full-time appointments at all, as has been seen. Instead, they merely persevered in their attempts to obtain permission for the foundation of a Training College.

At this point, news of Principal Branford's impending departure was received.[18] He had been offered a post as a divisional inspector with the London County Council, and left the town in August, 1905. It is tempting to suggest that he took this action because he forsaw an end to his general supervision of the town's higher education. The Board were blocking the establishment of the teacher training department, and he must have been aware that Mr. Ferguson was working for his own ends. If this was his reason, it merely proves him a farsighted man. No successor was appointed, and Dr. C.F. Baker, Head of Chemistry at the College, became Acting Principal. He was to

remain so until May, 1908. The reason for the long delay in appointing a new Principal was simply indecision about the way in which the College was to develop.[19] As yet, in 1905, neither the training department question nor the future of the Higher Grade School was finally settled.

In the end, the unified higher education structure in Sunderland separated into its component parts. The result of the Council's deliberations over the Higher Grade School has already been seen. In 1908, a Day Training College for Teachers was opened in Westfield House, opposite the Technical College, where the present Priestman Building now stands. It was a separate institution, with its own Principal and Governors. Mr. George F. Readdie, M.A., formerly Head of Commerce at the Technical College was its first Principal.[20] The School of Art, under Mr. Charles H. Rogers, A.R.C.A. went its own way separately from the Technical College also. Unified development under a single head had given way to piecemeal progress. The question of how far this change of policy influenced the later development of the Technical College will, however, be discussed in the last chapter.

It only remains now to record the appointment of the second Principal of the Technical College. On May 28th, 1908, the Higher Education Sub-Committee appointed

Mr. Victor A. Mundella, M.A. (Cantab.), B.Sc. (Dunelm) as the new Principal, at a salary of £500 per annum. At the time of his appointment he was 41 years of age, and was Head of the Department of Physics and Electrical Engineering of the London Northern Polytechnic. He was a recognised teacher of physics of London University.[21] There had been 49 applications for the post, which were reduced to a short-list of three. One of these was Dr. Baker, who had been Acting Principal for nearly three years, and whose rejection by the Sub-Committee gave rise to some comment in the town.[22] Mr. Mundella was appointed solely as Principal of the Technical College and was to remain until 1932. He, therefore, had a great deal more influence than Mr. Branford on the College's later development.

The development of technical education in Sunderland up to 1908 has now been recounted at some length, and many widely different agencies have figured in it. The change from private enterprise provision to that of the local authority represents a long road, and many conclusions can be drawn from the journey. It is the business of the next, and final chapter to this.

Chapter XI.

Some General Conclusions.

The general outline of the development of technical education in Sunderland up to 1908 is now complete. A Mechanics' Institute was established in 1825, and was in decline by 1856. In 1855, a School of Navigation, under the auspices of the Science and Art Department, was opened and lasted till 1864. In that year, a Science and Art Department centre, established in 1861, closed its doors, and in 1869, another was opened. This last was to become the Central School of Science and Art, was to maintain a continuous existence for nearly forty years and blossom into two major institutions, one for art, and one for technical education. The work of the Central School, which eventually became situated in the Town Hall, was supplemented, from 1873 onwards, by varying numbers of Science and Art evening classes. By 1908, Sunderland had a well-established Technical College, provided and maintained by the local authority, and private enterprise provision was dying out. A period of eighty-four years is a long time, and it is convenient, first, to summarise its main features and characteristics as shown in local developments, before going on to see what general conclusions can be drawn.

For convenience' sake, the long period mentioned above may be divided into three sections. The first of these, from 1825 to 1856 is the period of the rise and fall of the Mechanics' Institute in Sunderland; the second, from 1856 to 1892, the period of initial development of the local Science and Art classes; and the third, from 1892 to 1908, the period of expansion leading to the establishment of the municipal Technical College.

It is unfortunate that prolonged search has produced no more concrete evidence relating to the Sunderland Mechanics' Institute than that presented in Chapter III. There is, however, enough to make clear that the Sunderland Institute conformed to the pattern usual to such organisations in other places of which more information has survived. The reasons for the decline of the Mechanics' Institutes are too well known to need discussion here, but it would have been useful to have obtained some local evidence of the operation of the various factors which changed the characters of the Institutes and brought them to an end. However, it is true to say that the Mechanics' Institutes were important in the history of English technical education not so much for what they did, but for the influence they exerted on subsequent developments in the field. The brief and fragmentary information available about the Sunderland Institute serves to illustrate

this. Classes were held in the principles of science - in particular, Chemistry, Mathematics and Mechanics - and they were held in the evenings, after work was over. There is no mention of practical classes. These ideas - evening instruction in the principles of science were carried forward from the Institutes to the next stage in the local development of technical education.

The period from 1856 to 1891 saw, in Sunderland, a major step forward in technical education with the growth of evening classes and day classes in the principles of science and art, which was stimulated, after 1859 by the payment of examination results grants by the Department of Science and Art.

Of the twenty-two centres providing such classes in Sunderland from time to time, only one, the Central School, offered classes during the day - all the others were evening classes - and these day classes were in art subjects. The Central School always had far more art students than science students, while the other evening classes were precisely the opposite. Leaving aside, for the moment, the question of art and technical education, it is interesting to note the relatively narrow range of subjects offered at the various centres. Practical Plane and Solid Geometry; Machine Construction and Drawing; Building Construction; Mathematics;

Naval Architecture; and the Steam Engine were those science subjects mentioned most frequently in connection with the local centres. Even without reference to the syllabuses in the Science and Art Directories, it is clear that the work done in the various classes was of an entirely theoretical character. Appendix D illustrates and describes the accommodation given to the Central School when it was moved to the Town Hall, and it is clear that apart from drawing, no practical work was envisaged. This accommodation was undoubtedly the best available to any Science and Art class in the town.

The purely theoretical nature of the South Kensington syllabuses was, of course, in full accord with the ideas and traditions handed on from the Mechanics' Institutes, and a reflection of current educational thought in this connection at the time. In Sunderland, work done by 'artisan' students for a School exhibition included designs, mechanical drawings, and models in clay. Such was the nearest these schools got to practical work.

Equally in accord with prevailing educational views was the limitation, by the Department, of the earning of grants to any but members of the 'industrial classes'. It is well known that nineteenth century educational provision was closely connected with the class structure, and that science occupied but a low place among subjects of study.

It was regarded as suitable for the working classes since it represented useful knowledge rather than a liberal education. The Department's regulations reflect this point of view, and it is not surprising to find that the evening students of the Central School consisted largely of builders, joiners, decorators, sign-writers, wood-carvers, instrument makers, and engineers. In addition, there were elementary school teachers and governesses. During the day, the School was attended largely by young women, the daughters of moderately prosperous shopkeepers and tradesmen, who regarded the School as a 'finishing' establishment where the training in Drawing and Painting acquired a 'genteel' character never intended by the Department. Grants could be earned by these young ladies since they had no private incomes. The School's day classes, therefore, were quite different in character from its evening classes, and it fulfilled two quite different functions. That this dual character did not extend to the other evening classes is clear from Councillor Summerbell's remarks comparing the School and the Hendon Church Institute evening class on the occasion of the Council debate on the Technical Education Committee's Report. They were for working men.

The next phase, from 1891 to 1908, saw a vast expansion in the local provision of technical education based upon, firstly, an increasing realisation that technical

and scientific education was necessary for industrial progress, and secondly, on the provisions of the Technical Instruction Act, 1889, and the Local Taxation (Customs and Excise) Act, 1890. Student numbers in Sunderland rose steadily, both in the Central School and the evening classes, although in the former, science student numbers declined, probably owing to the minor place occupied there by science subjects. This was also the period during which the work of the Corporation's Technical Education Committee resulted in the provision of a municipal technical college.

With regard to the first of the causes of expansion mentioned above, it is clear that the business men of Sunderland were aware of the dangers of foreign competition. In 1892, the Mayor remarked that the British working man was lagging behind his Continental counterparts in taste and design, and that the function of the School of Science and Art was to help to improve the standards of our manufacturing industries. Other examples of the expression of such opinions are not lacking - Councillor Roche's speech at the opening of the Technical College; and the Mayor's on the occasion of the first annual prizegiving of the College. It will also be remembered that the Technical Education Committee had the advantage of Dr. Bell's experience of Continental training methods.

Expansion of the provision of technical education in Sunderland, however, proceeded along lines laid down earlier. There was no provision of trade classes, as in the London Polytechnics, instead, facilities were provided increasing the teaching of those scientific principles underlying industry which had been the staple content of technical education since the days of the Mechanics' Institutes. The views of the Technical College authorities with regard to practical training have already been mentioned, and Principal Branford's remarks on the type of training he wished to give will be remembered. Expansion, in Sunderland, took the form of an increase in the facilities for the study of the higher reaches of the more theoretical subjects.

This period, 1891 to 1908, stands out locally, as it does nationally, as one in which the traditions and organisation of technical education were finalised - the predominantly part-time character, some continuance of elementary education, and the shaping of courses to the needs of the brighter and more ambitious students. All of the work done at the Technical College was with part-time students, whether evening or day sandwich course; courses were provided at the evening institutes to bring ex-elementary school pupils up to the level required by the College courses; and, more and more, even during the first seven sessions, one can see effort

being concentrated on the needs of the student wanting a degree - even if local industry did not always need such well-qualified men. Finally, in connection with the characteristics of local technical education, it had become firmly established, by 1908, that it was the function of the local authority to provide such facilities.

Before continuing by dealing with several matters which do not fit into the chronological framework so far used, we should take a brief look at student numbers during the whole period. The general trend, as shown in the relevant tables in the appendices, is upwards. Generally speaking, a peak was reached about 1892 which was not again equalled until the Technical College was well under way. After 1892, numbers for both Science and Art declined, the only exception being the art numbers at the Central School. The probable reason for this was the unsuitability of instruction in theoretical science for working men with only an elementary education at best. With regard to the steadily rising numbers of art students at the Central School, its function as a 'finishing' school for middle-class young ladies must not be forgotten. Naturally, the opening of the Technical College caused the numbers of Science students at other institutions to decline still further. Total numbers attending all the various institutions up to the opening of the Technical College

were not great - never rising above the peak number of about 1500, attained in 1892. The majority of these were students of science subjects.

A summary of developments and characteristics placed within a neat division into stages does no more than pull a few loose ends together. It does not leave room for mention of several points which cannot, conveniently, be fitted into such a framework. A closer look at the technical education curriculum needs to be taken; some consideration of the demand for technical education ought to be made; the factors which aided or hindered expansion should be investigated; and the question of how far Sunderland Technical College achieved its aims, and whether its development was affected by the administrative changes discussed in Chapter X needs to be answered.

It has already been seen that the Mechanics' Institutes were responsible for establishing the tradition of part-time instruction in the principles of science underlying industry and that the idea persisted into the Science and Art Department system. Mention, too, has been made of the lack of elementary education on the part of students of the Institutes as being one of the factors leading to their eventual failure. Although no local evidence can be found from the records of Sunderland Science and Art

School, when Sunderland Technical College began operations it became obvious that this handicap had not been completely removed by the advent of increased provision for elementary education. From the beginning of the first session, first year evening courses were provided at the evening institutes, and ex-elementary school pupils were advised to attend classes which would prepare them for Board of Education elementary certificates before beginning classes at the College. Later, in 1907, a two-year preparatory evening course was introduced to prepare ex-elementary pupils for the College entrance examination. In 1909, the new Principal, Mr. Mundella, commented on the necessity for basing advanced technical studies on a sound elementary and secondary system. It is unfortunate that he did not supply figures to bear out his contention that the pupils of the Bede Collegiate School were being the most successful in winning free studentships. It is, however, fairly safe to assume that ex-pupils of this school - the only one of secondary status in the town - would take most of the fifteen or so free studentships awarded each year. Clearly, the poor quality of elementary school education in mathematics and science, as instanced by Principal Branford's criticisms of the first entrance examination, was found to be a severe handicap by the College authorities in their attempts to provide advanced scientific studies. The situation was complicated

by the fact that, from the first session onwards, the standards of work at the College were being steadily raised. The gap between general school education and the advanced work of the College was, therefore, not being narrowed by rising elementary standards.

A further point with regard to the curriculum of technical education during the period under discussion is concerned with the place of art in technical education. The definition of technical education used in the Technical Instruction Act of 1889 included both sciences and arts; Mr. Patterson, in his replies to his anonymous correspondent, 'Technical', made it quite clear that he regarded art schools as having a useful function to fulfil as far as technical education was concerned. This view is not incorrect, if one limits one's view of art to what Mr. Patterson referred to as 'technical art' - training in drawing and design. Mr. Patterson, of course, was trying to justify his School's inclusion in a technical education scheme, and the situation was correctly summed up by 'Technical' when, in his letter of 11th February, 1894, he differentiated between technical art and the general work of the Central School as applied to the training of engineers. Both parties, of course, were right, but to have limited the work of the School of Art and Science to such a narrow field as that mentioned above would

undoubtedly have impeded its development. In fact, there is some justification for the view that until art education was divorced from technical education there was little possibility of its development beyond the rigid confines of the South Kensington syllabuses.

Closely connected with the low level of science teaching in elementary schools mentioned above was the fact that, for many years up to the end of the century, there was a shortage of teachers of science. Indeed, the latter may have been a contributory factor to the obvious inadequacy of elementary schools in this respect. Although the effects of the 1870 Act eventually improved the situation, the only teachers of science generally available up to 1890 were those produced by the Science and Art Department system. Improvements in University science teaching after 1880 would not really help to alleviate the shortage, for teaching posts were so poorly paid that science teaching would not recommend itself as a profession. The remuneration of the teachers at the Central School was scarcely princely. The difficulties of the School in finding science teachers have already been remarked on, and it is worthy of note that all the School's staff were part-time. Even when a science teacher was available, his qualifications would be similar to those of the first Second Master, Mr. Lawson. In other words, they would be South Kensington

certificates gained as a result of passing examinations which were purely theoretical and which could be passed by 'cramming'. The headmaster of the School, Mr. Cosens-Way was a registered science teacher under South Kensington regulations, although principally an artist, his scientific qualification being a certificate in Machine Construction and Drawing. The assistant teachers at the School were all local men who had passed South Kensington examinations, some of them being ex-students at the School. The other evening classes in the town were staffed in the same way - with local, part-time teachers, some of whom were probably masters in elementary schools. Up to the end of the century, the majority of science teachers in Sunderland probably fell into one or other of four categories. Firstly, local men with special knowledge derived from their occupation, but without South Kensington qualifications, like Mr. G.T. Brown, a local architect, who taught Building Construction at the School; secondly, science teachers from elementary schools; thirdly, ex-students of Science and Art Classes who did part-time teaching; and fourthly, educated workmen and foremen who wished to pass on to others the benefits they had, themselves, received. By the time the Technical College opened, the situation was improving. The Heads of Department who were appointed in 1901 were men of high University qualifications - an indication that the supply of University trained

scientists had increased to the point where many of them were taking up teaching. Later, when full-time assistant lecturers were appointed, no great difficulty seems to have been found in obtaining well-qualified men. Salaries had improved, at least for College teachers, but the most probable reason for the freer supply was the increased attention being given to science in the Universities and University Colleges.

The greater supply of science graduates from the Universities and University Colleges leads us to consider who were the recipients of technical education during the period under discussion. The Science and Art School and evening classes in Sunderland make frequent mention of artisans and artisan evening classes, particularly after 1890. It has been seen already, in the earlier part of this chapter, that the majority of the artisans attending the Central School came from trades associated in various degrees with some kind of artistic training, but one fact is clear, unlike the young ladies of the day classes, they were working class. Nineteenth century educational provision looked upon technical education as particularly suitable for the working classes because of its associations with utility, but when one comes to examine the aims of Sunderland Technical College, it would appear that Principal Branford had in mind the training of professional engineers, and did not intend to cater for the needs of artisans

for practical training. It would appear, then, that the provision of technical education in Sunderland suffered from the same dichotomy of aim as that at national level, and that there was considerable uncertainty about who should benefit from it. The average working man in Sunderland would not find the classes provided during the period of much use to him. Instead, those who aspired to supervisory positions would be able to make most use of the facilities offered, both at the Science and Art Classes and the Technical College. Certainly, the fastest developing feature of the Technical College during its first seven sessions was the Student-Apprenticeship Scheme - and it was this scheme which was most supported by local industry. It would appear that what was wanted from technical education by local industrialists was the production of professional engineers with qualifications which would enable them to aspire to managerial posts. One thing is certain, the facilities provided right throughout the period of this survey did not cater for the needs of the ordinary working man.

Although local employers supported the Student Apprentice Scheme, thus endorsing its aim of turning out professional engineers, there is no evidence of incentives offered to encourage apprentices to undertake further study. Anyone willing to suffer the inconvenience and drudgery

of attending evening classes would have to have very strong motives for so doing. Bettering oneself, until recently, has probably been the strongest motive for seeking technical education, but there is no evidence, in Sunderland, of improved prospects offered by employers as a result of winning technical qualifications. In fact, the only piece of concrete evidence available points in the opposite direction. Local shipbuilding employers did not seem to offer any incentives to those of their men who tried to qualify as naval architects. Despite this, however, it is unlikely that the local engineering employers would have supported the Student Apprentice Scheme as they did if they had no opportunity to make use of the qualified men it presented them with. Some rewards there must have been.

The number of students attending classes of the Science and Art centres and the Technical College was not large relative to the population of the town during the period. This, of course, is not surprising when one considers what the hindrances to study must have been for the average apprentice. In his Prospectuses, Principal Branford mentioned only lack of sufficient general education and lack of moral strength as factors which would lead a student to give up a course, but there would be many others. Working-class conditions in the latter half of the nineteenth century are

familiar from the many social investigations made at the end of the century. Living conditions, long working hours, shift-work - all or any of these could present an insuperable obstacle to further education, and large sections of the working classes would have little spare time for study at night. Until recently, technical education has always catered for those who were willing to make the effort and had the moral fibre necessary to carry it through.

Despite the foregoing, it is true that total student numbers in Sunderland rose during the last twenty years of the nineteenth century, and the expansion of provision which took place at national level was reflected locally. It is appropriate here to see what local evidence of factors contributing to this expansion can be found. It has already been seen that the supporters of the technical education movement made much of the utility of technical education as a contribution to national prosperity, and the course of events leading up to these assertions is outlined in Chapter I. Comments showing that this was accepted as a motive for increasing the provision of technical education can be found in most local speeches dealing with educational matters, and extracts have been quoted where relevant. It is clear that public figures in Sunderland were aware of the argument, but not so clear how far they actually agreed with it. It would

seem far too tenuous and remote a proposition to carry much weight with hard-headed, local business men whose first interest was self-interest. They may, possibly, have been interested in technical training as an alternative to apprenticeship - which, owing to the economic and social changes of the nineteenth century, had declined in importance in many industries - but Sunderland's engineering industry does not seem to have been greatly affected by this. There is, in fact, no evidence extant of the views of local employers on the desirability or otherwise of technical education in Sunderland. All that can be said is that once the facilities were provided, and the Technical College open, the majority of the local employers made use of them. Probably, in Sunderland, a great deal of the push for expansion of facilities came from a relatively small group, both on and off the Council, led by Counsillor Roche and Dr. Bell. Certainly, a great deal of the credit for the early development of the College must go to Principal Branford, who became, during his five years' stay, a highly respected figure in the town, if one can judge from the way in which the local press referred to him. His appointment as Director of Higher Education in 1903 may be taken as another token of the esteem in which he was held. All in all, it would appear that the expansion of technical education that took place in Sunderland happened as a result of the perseverance

of a few men whose influence was wide-reaching, rather than of the efforts of a large group of convinced local business men.

Principal Branford, as has been seen, had high and lofty aims for the College - nothing less than development to the highest possible level would satisfy him. From his many statements on the subject it is not possible to be in any doubt as to what he wanted - not merely a place specialising in the training of engineers and scientists, but a true institution of higher education which would cater for the needs of anyone who could profit from its facilities. It would serve a useful purpose to recapitulate here the main points of the College's development as set out in the first Prospectus. Education in the sciences and arts applicable to industry was to be supplemented by a Commerce Department, a training department for teachers, a domestic economy department, and an Art Department. After the 1902 Act it was seen that this development was to proceed as part of a unified and co-ordinated scheme of higher education in the town. This scheme, however, failed to work, and the various institutions split up and developed each in its own way. After Principal Branford's departure, the College began to specialise in the education of engineers and scientists, a path it has travelled ever since. The second Principal continued this line of development during his much longer stay at the College. After the

failure of the higher education scheme, the College was allowed to develop along the lines in which most development had already taken place, and any possibility of development to University College status vanished through over-specialisation. From the College's point of view, the collapse of the scheme was a great pity, had it continued, Principal Branford's ambition might have been achieved. For the other institutions concerned, however, the failure of the scheme meant that they were free to develop along their own lines, and each - Bede School, Art School, and teachers' Training College - has since become a successful institution in its own right. Too rigid a shackling to the Technical College would probably have impeded their development, while allowing the College as a whole to have become a University College.

Despite these 'might-have-beens', the achievement of Sunderland Corporation with regard to technical education must not be ignored. The building of a first-class Technical College was the culmination of a long period of development in Sunderland, and should be regarded as a worthy contribution to the provision of technical education in the area. In point of time, Sunderland Technical College belongs to a middle group - it was not one of the earliest creations but it preceded those established between the wars. Ten years elapsed between the first considerations of how to spend the Local Tax-

ation money and the opening of the College, and when opened, it was clear that provision had lagged behind demand. This habit, however, has been a marked trend in many aspects of English educational history over the last hundred years, and Sunderland's efforts in the provision of technical education before 1908 are merely a microcosm of the whole picture. It may be said, with some justification, that the supply of trained technicians still lags far behind the demand. If this is so, and this is a question which demands greater consideration than is possible here, Sunderland Technical College has done its best since its establishment to supply the deficiency. It has set the pace in many fields of technical education; of which the sandwich system of training is but one, and has since acquired a national, if not international, reputation as a centre of advanced technical education.