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THE GROWTH OF TECHNICAL EDUCATION IN DARLINGTON

1825-1915

Abstract of a thesis submitted for the degree of Master of Education in the University of Durham.

The aim of this thesis is to give an account of the development of technical education in Darlington from 1825 to 1915. These limits have been chosen, because, in 1825, the Darlington Mechanics' Institute was founded, while, ninety years later, the town gained County Borough status and complete control of technical education.

The first period, 1825-1857, is concerned with the efforts of the local Mechanics' Institute to supply working class mechanics with theoretical instruction in the scientific principles behind their trades. However, it was with the establishment of the Darlington School of Art in 1857, earning the grants in aid of the Department of Science and Art, that technical education was really launched. Science instruction at the Training College, the Grammar School, and in various evening classes in the 1880's,

was the prelude to the idea of a technical college. The opening of the Darlington Technical College in 1897, the responsibility of the Technical Instruction Committee, represented the prime achievement in the town's technical education facilities. The final section examines the progress of the work of the Technical College from 1897 to 1915. The system of dual control of technical education and the relationship between the local committee and Durham County Council was the controlling factor in this period.

The development of technical education in Darlington is traced against the background of national developments, including the growth of basic elementary education, the confusion and overlapping between secondary and technical education, and the belated provision of State support for technical instruction. The economic development of Darlington in the nineteenth century, particularly the impact of the railways, is also considered.

This survey concludes with a brief assessment of the main factors and agencies, national and local, which contributed to the state of technical education, when Darlington became a County Borough in 1915.

July 1967.

M. Lucas.

THE GROWTH OF TECHNICAL EDUCATION

IN DARLINGTON : 1825-1915

by

MICHAEL LUCAS, B.A.

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THESIS SUBMITTED FOR THE
DEGREE OF MASTER OF EDUCATION

1967

P R E F A C E

Technical education in nineteenth century England, both nationally and locally, is as difficult to define with precision and certainty as it is to establish exactly its origins. However, the aim of this thesis is to give an account of the development of technical education in Darlington from 1825 to 1915. These limits have been chosen, because in 1825 the Darlington Mechanics' Institute was founded, while, ninety years later, the town gained county borough status and thereby complete control of technical education.

Although the Mechanics' Institutes are generally acknowledged to have been the first organizations to attempt, without much success, to supply the working classes with theoretical scientific instruction, there were no national or government agencies providing facilities for technical education before the creation of the Department of Science and Art in 1853. This absence of state responsibility and the attitudes behind it, the economic growth of Darlington, and the private enterprise efforts to launch technical instruction for the town's mechanics and artisans

form the subject matter of Chapters I-III. These are followed, by a description, in Chapter IV, of the foundation of the Science and Art Department, and the earning of its grants in aid of examination results in Science and Art by the Darlington School of Art, which became the principal agent of technical instruction in the town, from 1857 until local government control and finance stimulated technical education during the last ten years of the nineteenth century.

Because of the lack of any system of basic elementary education until after 1870, and the confusion which existed about the nature of technical education itself, a variety of unrelated agencies, running technical instruction classes, grew up from about 1880. The wide range of such unco-ordinated classes in Darlington, culminating in the establishment of the Technical College, is examined in Chapters V and VI. Finally, Chapters VII and VIII are concerned with the progress of technical education facilities during the seventeen years from the opening of the Technical College until the outbreak of the First World War. The vital relationship between the local sub-committee responsible for

technical education and the controlling authority, Durham County Council, is presented in some detail.

The thesis concludes with a brief survey of the national and local developments during the period under review and an assessment of the main factors and agencies in Darlington, which contributed to the state of technical education existing when the town achieved local government independence in 1915.

C O N T E N T S

CHAPTER I	The National Background - the general state of Education and of Technical Education in particular during the first half of the nineteenth century.	1
CHAPTER II	Darlington in the Nineteenth Century - the economic and educational consequences of railway development.	21
CHAPTER III	The Darlington Mechanics' Institution - the foundation and refoundation of the Institute and its educational activities, 1825-1854	42
CHAPTER IV	The Department of Science and Art and its effects on Technical Education in Darlington, 1853-1870 - the Darlington School of Art; Drawing Instruction in voluntary schools; Science classes; the Mechanics' and Railway Institutes to 1870.	71
CHAPTER V	Technical Education, national and local, 1870-1890 - the 1870 Education Act; Higher Grade and Organized Science Schools; the C.G.L.I. and the N.A.P.T.S.E.; the Technical Instruction Act and Whisky Money; the Darlington School Board; Science and Art instruction at the School of Art, the Training College, the Grammar School, the Mechanics' and Railway Institutes and in other Evening classes.	115
CHAPTER VI	The Darlington Technical Instruction Committee and the Darlington Technical College, 1891-1897 - Local Government administration and the establishment of Darlington Technical College and its staff; other Technical Instruction classes.	160

CHAPTER VII	Technical Education in Darlington, 1897-1904 - the Technical Instruc- tion Committee and the working of the Technical College: aims and organization; examinations; staff; classes - the 1902 Education Act and its local application.	204
CHAPTER VIII	Technical Education in Darlington, 1904-1915 - the Secondary Education Sub-Committee - Technical College Courses: Evening Continuation and Branch Technical Schools; Evening Courses; Day Courses; the School of Art; Examination results; Staff and Administration - Local Government changes leading to local control of Technical Education.	240
CHAPTER IX	Retrospect.	300
APPENDIX A	<u>Darlington Mechanics' Institute</u> 1. Membership Table 1825-1890. 2. (a) Presidents, 1825-1890. (b) Secretaries, 1825-1870. 3. Handbill of Institute Lectures and Classes 1848.	311
APPENDIX B	<u>Darlington School of Art</u> 1. The Number of Art students 1859- 1881. 2. The Number of Science and Art students 1883-1897.	314
APPENDIX C	<u>Darlington School Board</u> 1. Elementary Schools in the Borough 1871. 2. Evening Continuation classes.	316
APPENDIX D	<u>Darlington Technical College</u> 1. The Number of Individual students 1897-1915. 2. The School of Art 1901-1914 - Students and Results.	318

3. Technical Classes 1901-1910 -
Students and Results.
4. Technical Education in Darlington -
Press Report.
5. Attendance at Technical Classes
1896-1897.
6. Statistical Report 1902-1903.
7. The Technical Instruction
Committee 1891 and 1901.
8. The Secondary Education Sub-
Committee 1904 and 1915.
9. Principals of the College
1897-1918.

CHAPTER I

THE NATIONAL BACKGROUND

The end of the eighteenth century and the beginning of the nineteenth century saw Britain in the turbulent throes of the Industrial Revolution. In fact a complete reorganization of English life took place in the period 1750 - 1850. The changes were primarily the result of the gradual, but radical, replacement of the traditional and static rural economy, based on the domestic system, by a new and dynamic industrial order, centred on the urban factory or mill. At the same time, and often closely linked with it or as a consequence of this process of industrialisation, important social, political, religious and intellectual changes were taking place. In this examination of the origins and growth of technical education in Darlington these national trends need to be considered first, so that local developments, to be considered in subsequent chapters, can be viewed against the wider background.

It was unfortunate for this country that these powerful internal forces, outlined in the opening paragraph, coincided with the revolutionary doctrines

advanced by the French Revolution and the threat to national security from Napoleonic France, as any consideration of political advancement and social reform, including the provision of a national system of education, had to be postponed until more settled times. Fears of the influence of dangerous foreign ideas on the working classes, which might lead to violence and disorder, were reflected in various repressive measures, such as the Combination Laws. These factors at home and abroad were responsible for producing in the first half of the nineteenth century a period of social stress among the working classes, affecting all aspects of life including education.

Despite the harsh physical conditions of life for the labouring poor in the new and changing industrial society, there were a number of philanthropists and social reformers who saw education as a means of raising the standard of our national life, at a time when the majority of the people were illiterate. Men such as Whitbread, Brougham, Lovett, Place, Owen, Mill, Ricardo, Bentham, Bell, Lancaster and Birkbeck, all of whom attempted so much for English education at this time, were influenced chiefly by two eighteenth century philosophers: John Locke and Adam Smith. Locke had advanced the view that the child was moulded by his environment and that he should best learn what would be most

Useful to his vocation in life, ⁽¹⁾while Smith felt that education was a human necessity as it would result in a better organised and better behaved society. ⁽²⁾

As any form of higher education, including scientific and technical instruction, is closely linked with - indeed dependent upon - the earlier stages of education it is first necessary to consider briefly what forms of popular education existed in this country in the year 1800. The work of educating children was carried out by private individuals, religious organizations and philanthropic bodies in public and grammar schools, private day schools, including Dame schools, Charity schools and Sunday schools. Only in the last two of these was any attempt made to give primary education to working class children. Charity schools were founded from the reign of Queen Anne by such bodies as the Society for the Promotion of Christian Knowledge to educate the children of the poor in reading, writing, moral discipline and the principles of the Established Church. These schools were on the wane by 1800. The Sunday School Movement, established about 1780, had similar objectives, placing special emphasis on the spread of religious truth by means of teaching

(1) J. Locke: Some Thoughts Concerning Education, 1693.

(2) A. Smith: The Wealth of Nations, 1776.

the poor to read the Bible. Because of the current belief in the doctrines of individual liberty and laissez-faire, the State did nothing for the education of the illiterate poor.

Various attitudes towards educating the masses were revealed by those in authority. Successive governments, wishing to maintain the existing class system and fearing violence and unrest, denied any responsibility for the provision of popular education. The upper classes felt that the working classes existed to work and that offering them education would lead to dissatisfaction with their proper stations in life. "Giving education to the labouring classes of the poor.....would be prejudicial to their morals and happiness; it would teach them to despise their lot in life, instead of making them good servants in agriculture and other laborious employments. Instead of teaching them subordination, it would render them fractious and refractory." (1) In fact there was considerable hostility to the notion of popular education as there was resistance to social reform generally. Furthermore the division of the eighteenth century Church into Anglican and Dissenter, with their sectarian policies on

(1) Mr. D. Giddy in House of Commons Debate 1807.
Quoted in J. L. & B. Hammond: The Town
Labourer Vol. I, (1937), p.66.

education, had resulted in the growth of separate Charity and Sunday schools. These schools, which had achieved a rapid growth, were, by the turn of the century proving inadequate in many ways to meet growing needs. Moreover there was a lack of any further provision for those children and adults who had been taught to read in them. "The new Charity Schools and Sunday Schools had the merit of trying to do something for all, but they had the demerit of too great an anxiety to keep the young scholars in their appointed sphere of life and train up a submissive generation.....the eighteenth century fault carried over into the education of the early years of the nineteenth century, was excessive emphasis on the difference of classes and the need for due subordination in the lower orders..... In the early nineteenth century, the age of Hannah More, too much of the education and charity bestowed on the poor continued to be class conscious and patronising when an equalitarian spirit, unknown in the eighteenth century, was beginning to render such anxious condescension unpalatable and out of touch with the needs and problems of a different age." (1)

(1) G. M. Trevelyan: English Social History, (1942) pp. 363-4.

It was chiefly among the philanthropists and reformers of the middle classes that genuine concern was expressed for the moral and social condition of the toiling labourers and their families. This was the outcome of diverse motives. Some realised that the bulk of the population was illiterate and that a more literate society would be an enormous benefit nationally. Others, attracted by Adam Smith's philosophy, saw the value of education as a social policeman exerting an influence for law and order and acting as an antidote to crime: self-government, the result of education, was better than good government imposed from above. There were also those who were firmly convinced that middle class guidance on education was to be preferred to independent working class action. For these reasons a growing interest in and enthusiasm for popular education began to be felt.

But from the point of view of scientific or technical education there were other factors adding their impetus to this movement. It was in the interests of both the national economy, now coming to depend more and more on our industrial prosperity, and the new middle-class factory owner to have better educated working men, that is, men who were more efficient in understanding and operating the machines they tended. The need to improve factory techniques and products in the face of increasing

foreign competition, especially the commercial rivalry of France, served to emphasize this utilitarian motive. Moreover, a well-to-do independent middle-class, engaged in the various branches of industry and commerce which had arisen as a result of the application of scientific invention and method, wished to be informed of recent technical developments and therefore demanded some scientific instruction. This desire for useful scientific knowledge was shared by ambitious members of the new class of skilled mechanics and artisans who also recognized that education could provide social advancement, especially when they saw how much had been achieved by such self-educated men as Watt, Brindley and Arkwright. Education, they hoped, might lead to social amelioration, political emancipation and equality of opportunity for them too. However, before any progress could be made in scientific or technical education the problem of the very limited provision of basic elementary education had to be tackled.

The efforts of those who wished to improve the defective state of existing education for the working classes were severely handicapped by the material conditions and by the educability of the poor. Contemporary social conditions in some of the new manufacturing centres had become vicious and degrading. "The working

population were ignorant, brutal, uncivilized, degraded, inhuman - human machines for the creation of wealth." (1) Although there is little evidence on the state of adult literacy at the beginning of the nineteenth century, which varied considerably from one part of the country to another, Harrison estimated that there existed "a quarter or one-third of the working classes who were totally illiterate, and a further percentage, whose literacy was only rudimentary." (2) The statistics of the marriage registers of the first half of the nineteenth century also confirmed considerable illiteracy among the working classes: 33% of the men and 49% of the women marrying in 1841 in England and Wales had to sign the register with a mark because they could not write. (3)

Although there had been various eighteenth century experiments in educating the adult poor, such as the establishment of the Welsh Circulating Schools and the Birmingham Sunday School, later the Birmingham Brotherly Society, the beginnings of an adult education movement can be traced to Bristol in 1812 with William Smith's

- (1) R. Detrosier. An Address delivered to the Members of the New Mechanics' Institution, Manchester, 1831, quoted M. Tylecote: The Mechanics' Institutes of Lancashire and Yorkshire before 1851, (1957) p.41.
- (2) J. F. C. Harrison: Learning and Living, 1790-1960, (1961) p.42.
- (3) J. W. Dodds: The Age of Paradox, 1953.

"Institution for Instructing Adult Persons to Read the Holy Scriptures." A year later 601 men and women were receiving instruction in eighteen schools which had been founded. (1) The Adult Schools in Bristol were soon followed by others in twenty towns and cities, so that, according to Hudson, in England in 1816 over four thousand adults, who had had no learning in childhood, were receiving instruction. (2) He went on to demonstrate the magnitude of the problem when he estimated that over 1,200,000 adults, out of a total adult population of about 6,000,000 in 1811, had never been taught to read. Despite this expansion the success of these Adult Schools, unlike that of their parent body, the Sunday Schools, was short-lived, most of them having disappeared by 1825.

The religious feud between the Established Church and the Dissenters, already seen in their denominational Sunday schools, was carried into the sphere of elementary education: first in the formation, under Dissenting and Whig patronage, in 1808, of the committee which later became the British and Foreign School Society, based on Joseph Lancaster's ideas of popular education, and then three years later in the establishment by the Anglicans of the National Society for Promoting the Education of

- (1) T. Kelly: A History of Adult Education in Great Britain, (1962) p.150.
- (2) J. W. Hudson: History of Adult Education, (1851) pp. 7-8.

the Poor in the Principles of the Church of England, based on the teaching principles of Dr. Bell. As well as providing the State with an excuse for taking no action itself, the founding of voluntary elementary schools - based on the monitorial system - by these two rival societies meant that the education of the nation was to be bedevilled by religious interests for more than one hundred years.

Most middle-class efforts to promote working class education were willing attempts to help the working classes adjust themselves to the new society which the Industrial Revolution was creating and took the form of literary instruction based on the three R's. The working class had no choice but to accept the instruction provided in the middle-class day and Sunday schools, although many skilled engineers and mechanics - "the elite of the Industrial Revolution" ⁽¹⁾ - gave impetus to the new demand for some form of education for the adult poor by their desire for scientific instruction to support their technical knowledge. In fact, the efforts of some working men to educate themselves was an expression of the growing doctrine of "self-help", a more positive side of the prevailing philosophy of laissez-faire.

(1) Trevelyan, op.cit., p.479.

Although there had been a few isolated attempts by private societies in London and other cities to provide evening classes in science for the working classes, it is generally agreed by historians that it was the establishment of Mechanics' Institutes - "those elements of social progress" (2) - which was the most successful venture in the field of technical education before 1860. The actual origin of Mechanics' Institutes was an experiment in Scotland. In 1760 Professor John Anderson, who taught Natural Philosophy in the University of Glasgow, gave a course in experimental philosophy, (i.e. practical science), which was attended by a number of mechanics. As a result of Anderson's bequest a rival university was established in Glasgow, known as Anderson's Institution, which ultimately became the Royal College of Science and Technology, and it was there that Dr. George Birkbeck, Professor of Natural Philosophy between 1799 and 1804 gave scientific lectures to the operatives and mechanics of Glasgow. Birkbeck aimed to satisfy their natural curiosity and aid their intellectual development by providing instruction in those branches of science which might be of service to working men in their trade or industry. He was motivated not only by enthusiasm for science but also by a desire to

(2) Hudson, op.cit., p.58.

give working men an interesting occupation for their leisure time, by means of which they would derive more enjoyment from their actual work. When Birkbeck left for London in 1804, his flourishing mechanics' class was carried on enthusiastically by his successor, Dr. Andrew Ure.

The successful lectures of Birkbeck and Ure provided the particular inspiration and momentum to a more general movement, even though there was a twenty year gap between this initial experiment in the scientific education of working class adults and its general application. The example of Glasgow was followed in 1823 by the establishment of a Mechanics' Institute in London in which Birkbeck, supported by such radicals as Francis Place and Henry Brougham, again took a leading part. The *raison d'être* of the London Institute was similar to that of the Glasgow Institute; "the instruction of members in the principles of the Arts they practise and in various branches of science and useful Knowledge." (1) Lectures were given in mechanics, elementary geometry, hydrostatics, astronomy, electricity, the application of chemistry to the useful arts, and French. The foundation of the London Institute began a national movement, and institutes sprang up rapidly in large cities and small towns throughout the provinces.

(1) Rules and Orders, London Mechanics' Institution, November, 1823.

Although local variations can be seen in the aims and objects of the first Mechanics' Institutes as outlined in their rules and regulations, the general aim was to teach working men the scientific principles involved in their crafts - "the reason of the thing, the why and wherefore the act should be performed in a certain way and no other." (2) Hudson summed up the motives of the founders, "first the rapid promotion of general science by the greater number of persons engaged in observation of its phenomena; second an extensive diffusion of rational information among the general mass of society, and third the creation of intellectual trends and refined amusements tending to the general elevation of character." (3) The object of the Leeds Mechanics' Institute was to supply "to the mechanics and artisans of Leeds the means of acquiring a competent knowledge of those branches of science which are applied to the manufactures of the town and for the further purpose of affording them pleasurable mental relaxation." (4) By the term 'science' was meant the pure sciences; practical trades and skills were not to be taught but to be learnt in workshops.

(2) J. Hole: An Essay on the History and Management of Literary Scientific and Mechanics' Institutions, (1853) p.14.

(3) Hudson, op.cit., pp. 54-5.

(4) Ibid., p.90.

Generally speaking, the lead in establishing Mechanics' Institutes was taken by the wealthy middle-classes, often with the support of the aristocratic upper class. Some manufacturers, merchants and bankers realised that it was in their interest that their employees should be better educated, which meant, in the contemporary industrial situation, more skilled. They drew the attention of the working man to such working class inventors as Watt, Brindley and Arkwright as examples of economic self-improvement, while they stressed the social and moral improvement that would accrue from being better educated. Although in many institutes it followed that control rested in a committee chosen from the donors or patrons, others, including the Darlington Institute, adopted the London rule that two-thirds of the committee should be working men, while a few, like Glasgow, were run entirely by mechanics.

Some working men realised the various benefits that increased knowledge could bring to an age of poverty, wretchedness and crime, and at first many of the more literate mechanics supported enthusiastically the lectures and classes in chemistry, natural philosophy, mathematics and drawing. But as time went on, and as something of the novelty wore off, the character and courses of the Mechanics' Institutes underwent a change. Scientific lectures were replaced by literary and

cultural lectures, while classes in physical science gradually disappeared in favour of elementary instruction in reading, writing, grammar and arithmetic. Membership of the Institutes also showed considerable change after the early years. Mechanics and operatives were soon replaced by lower middle-class clerks, tradesmen and shop assistants. The contents of some libraries, often the central and most valuable aspect of the Institute, also reflected this gradual change of emphasis away from science and its demands.

The reasons for this noticeable change in the nature and work of Mechanics' Institutes were many and varied. It ought to have been obvious, to the well-intentioned middle-class founders of this movement, that the educational background of the majority of working class men, particularly in Mathematics, Science and English, was totally unrelated to and inadequate for the curriculum designed for them, many of them having had only the sketchiest kind of schooling in Sunday school or at home. Apart from this crippling lack of previous education, the great bulk of the working class were too much occupied in repetitive work twelve to fourteen hours a day in order to obtain the bare necessities of life for their large families. Thus they had neither the time, the capacity, nor the subscription money, to partake of the

scientific lectures given at their local Institute. Nor, in fact, did they see the relevance of what was taught there to their everyday job in mill or factory. They preferred to sit back and enjoy some more popular form of cultural or recreational activity such as a soiree, a concert or an excursion, or relax with their social equals in the freer atmosphere of pub or club. Moreover, many working class members of the Mechanics' Institutes grew increasingly dissatisfied that controversial political matters and newspapers were excluded. Many of the Institutes also found themselves in financial difficulties with the decline in membership and with the reduction of the support of the wealthier classes. Finally the teaching methods and the gratuitous lecturers were often most unsuited to the Institute audience.

By the middle of the nineteenth century most of the Institutes had thus changed considerably from those envisaged in the original and optimistic intentions of their founders in the 1820's. Professor Harrison states that "by the '40's most contemporary observers of Mechanics' Institutes were obsessed by their failure - and indeed, judged by their original aims of 1824-5, such they were.....As far as producing a scientifically minded working class elite was concerned, they were a failure. As an attempt to grapple with some of the

problems of human relations within the new industrial society, they were susceptible of a more sanguine interpretation." (1) Engels was harshly critical of them:

"Here all education is tame, flabby, subservient to the ruling politics and religion so that for the working man it is merely a constant sermon upon quiet obedience, passivity and resignation to his fate." (2)

Dr. J. W. Hudson, who was intimately concerned in the Mechanics' Institute movement, regretted that Mechanics' Institutes had, in twenty-five years, effected a complete change in their leading principles and in the class ruling and attending them, (3) and stated that another attempt must be made to provide entertainment and instruction for the bulk of working men and their families. (4) James Hole, Secretary of the Yorkshire Union, from 1848-1867, after paying tribute to the achievements of the Institutes: "Mechanics' Institutes have become an element of English life - a power acting and re-acting for good on thousands and tens of thousands of our population and through them on unborn generations," (5)

(1) Harrison, op.cit., p.58

(2) F. Engels: The Condition of the Working Class in England in 1844, (1892) p.239.

(3) Hudson, op.cit., Chapter III.

(4) Ibid., Preface.

(5) Hole, op.cit., p.10.

recognized that their deficiencies were many and serious: "they have overlooked half the population and have scarcely touched as yet the other half." (1) He realised that new and more efficient methods of implementing old ideals must be devised, but through existing institutions: "Mechanics' Institutes, to answer their end, must become more educational and practical" (2) and he went on "to raise the working man we must take hold of him where he is, not where he is not." (3) According to one authority, of 204 Institutes in England and Wales in 1851, 43 were supported by operatives and mechanics, 96 by gentlemen, ladies, tradesmen or shop keepers, etc., and 65 by a combination of both groups. (4)

An attempt was made to give new life to the Mechanics' Institutes by a process of federation. By joining a Union many Institutes could provide mutual assistance to each other and this meant a broadening of their resources. The Yorkshire Union of Mechanics' Institutes, founded as the West Riding Union by Edward Baines in 1837, appointed a lecturer-organiser to tour the Institutes, issued a list of lecturers and a catalogue of second-hand books available, as well as holding an annual meeting at which

(1) Ibid., p.41.

(2) Ibid., p.44.

(3) Ibid., P.44.

(4) Tylecote, op.cit., p.259.

Institute delegates shared their experiences. Unions were also established for Institutes in Lancashire and Cheshire (1847), Northumberland and Durham (1848), Scotland (1848) and in the Midlands and South. Federation, however, made no permanent contribution to the furtherance of scientific or technical education provided by Institutes. In fact soon after 1850 the Mechanics' Institute Movement began to decline. Many Institutes disappeared during the last thirty years of the century, while others handed over their remaining educational functions to the Technical Institutes and Colleges that, as a result of belated state action, were being founded up and down the country from about 1890.

Thus any scientific or technical instruction of the working classes that was being attempted in England in the first half of the 19th century was taking place in a haphazard unco-ordinated manner, confined in amount and quality to the ad hoc Mechanics' Institutes' courses. Technical education, in the sense of the provision of "Instruction in the principles of art and science applicable to industry and in the application of special branches of art and science to specific industries and employment",⁽¹⁾ was non-existent in England until very late in the 19th century, although the creation of such

(1) C. T. Millis: Technical Education: Its Development and Aims, p.1 (1925).

professional institutions in London as the Royal College of Chemistry (1845), the Government School of Mines (1851) and certain Geological and Industrial museums, records offices and surveys, was evidence of some acknowledgement of the educational demands and needs of an industrial society.

Although it is impossible to date exactly the origins of technical education in England, the first landmark came in 1853 with the establishment of a Government Department of Science and Art, about which more will be said in Chapter IV. Laissez-faire attitudes and the defective educational condition of the poor were the chief obstacles to be overcome before any national system of technical education could be instituted. Moreover it was the industrial successes of other European nations, first noticed at the Great Exhibition of 1851, that finally convinced a few English manufacturers and engineers that their 'hands' needed some industrial training. However the relationship between a nation's industrial progress and prosperity and the application and diffusion of scientific discovery, so clearly recognised as the 20th century has advanced, was only slowly realised in 19th century England. This was an unfortunate additional handicap on the development of the English system of technical education.

CHAPTER II

DARLINGTON IN THE NINETEENTH CENTURY

Economic Development

Darlington is situated on the southern slopes of the plain of Durham and because of its geographical position enjoys in the twentieth century favourable communications and transport facilities. Two hundred and forty miles from London and one hundred and sixty from Edinburgh, Darlington is on both the Great North Road and on the main British Railways East Coast line which link these cities. Newcastle and Middlesbrough are within easy reach and the population for the past ten years has remained steady at approximately 84,000. This is about twelve and a half times that of 1825, the year in which Darlington achieved immortal and international fame as the birthplace of the world's first public railway.

It is not easy to obtain a detailed picture as to the character of the town of Darlington and its inhabitants of 140 years ago as its industrial history has yet to be written. However, in the absence of such a history, an outline can be drawn from the various

materials available.⁽¹⁾ When the first Government Census was taken in 1801, the Parish of Darlington had a population of 5,349 inhabitants. Ten years later the population had grown to 5,820 and by 1821 it had risen to 6,551.⁽²⁾ Of the 1,399 families living in the four townships of Archdeacon Newton, Blackwell, Cockerton, and Darlington with Oxenhall (or Oxen-le-Field), 255 were employed in agriculture, 905 in trade, manufacture, or handicraft, and 239 followed professional pursuits or were unemployed.⁽³⁾

The chief industries of the town were concerned in the manufacture of linen and in spinning worsted yarn. Within a few miles thirteen water mills on the River Skerne could be counted, including seven for grinding corn and five for spinning purposes, while there were also several steam-powered mills. The following quotation clearly demonstrates the nature of local employment: "Over 1,500 looms are employed in Darlington in weaving linen cloth, carpets, and worsted stuffs - large quantities of yarn 'of a superior quality' are sent from this town to be manufactured in other parts of England."⁽⁴⁾

(1) Vide Bibliography.

(2) Victoria History of the County of Durham, Volume II, (1906) p. 265.

(3) W. Parsons and W. White: History, Directory and Gazeteer of Durham and Northumberland, Volume I, (1827) p.237.

(4) Parsons and White, op.cit., p.244.

Leather had for many years also been a staple article of the trade of Darlington "where greater quantities have been produced than in any other town in England of its size." (1)

In 1820 this quiet market town with its woollen and linen industries was still dependent upon stage-coaches and post-chaises. There was, as yet, no public railway in the country, but on 13th May, 1822 it was announced that the first rail of the Stockton and Darlington railway had been laid at Stockton. Thus the day of the railway, not yet dawned, was coming very near, bringing with it a new era for the nation at large and for the town of Darlington in particular.

The woollen industry had been one of the main supports of Darlington's economy from the early eighteenth century and it was in 1752 that the Pease family opened their famous worsted and woollen mills. Although the mills were, in those days, more a centre for exchange and traffic than for manufacture their growth and importance to the town can be judged from the fact that when one of the mills was destroyed by fire in February, 1817, about 600 persons - nearly one half of Darlington's working population - were thrown out of

(1) Mackenzie E. and Ross M.: View of the County Palatine of Durham, Volume II, (1834) p.149.

work. One local historian summed up the dependence of the town on its mills in these words: "The principal employment of the labouring classes in Darlington is in combing and other occupations connected with the spinning mills producing worsted and woollen yarn applicable to every common purpose as well as for the finest imitation Indian shawls, Brussels and other carpets, etc." (1)

Large quantities of flax were also brought considerable distances to the Darlington spinning mill of Messrs. I'Anson, Toulmin and Ord, which had extensive bleaching grounds near the Skerne. It was in Darlington that flax was first spun by machinery. John Kendrew, the "ingenious inventor and patentee", was a local optician, and before his death, in 1800, his machine for flax spinning was in general use wherever the industry was pursued on a large scale.

The textile trade and thereby the town continued to prosper as the 19th century advanced. At the Great Exhibition of 1851 Messrs. H. Pease & Co. exhibited 144 samples of worsted merino yarn and were awarded a prize medal "for Coburg cloths, single and double, twill worsted weft and cotton warp." (2) Local pride was

(1) R. Surtees: The History and Antiquities of the County Palatine of Durham, Volume III, (1823) p.359.

(2) W. Fordyce: History and Antiquities of the County Palatine of Durham, Volume I, (1857) p.449.

reflected in the comments of Darlington's Chief Bailiff, Francis Mewburn, who remarked in January, 1854: "In the midst of all this marvellous show have not Darlington and its neighbourhood borne their part? The material of which flags which decorated the exterior of the building (Crystal Palace) was made were by Messrs. H. Pease & Co..... and the exquisite fabric exhibited by H. Pease & Co. known as Coburg cloth and manufactured here carried away a prize against Halifax competitors."⁽¹⁾

However, for some years prior to the Great Exhibition, Darlington had been moving away from its traditional dependence on textiles and agriculture towards engineering, particularly the iron trade. As early as the middle of the eighteenth century as a result of increasing industrial activity along Tees-side, the necessity of providing better and cheaper transport facilities for the conveyance of coal from the rich Durham coal fields, to the north of the town, to the Yorkshire towns and for export to London from the Tees at Stockton, became a matter of the greatest urgency.

Early in the nineteenth century, and after the failure of two schemes to construct a canal from Darlington to Stockton, a committee of local business men began to consider the advisability of constructing

(1) Fordyce: op.cit., p.480.

a tramroad or railway. The chief instigators and supporters of a project to build a railway between Stockton and the collieries in the Auckland district by way of Darlington were Darlington Quakers including Mr. Jonathan Backhouse, banker, and Mr. Edward Pease, the 'Father of Railways', who were very strongly in favour of the proposed line. Despite the considerable opposition from turnpike authorities and landowners in the district, a Parliamentary Bill was passed in 1821, authorising the construction of a line of railway or tramroad with horse-drawn wagons, from Witton Park Colliery to Stockton, which became known as the Stockton and Darlington Railway. After an historic meeting between Edward Pease and George Stephenson and a visit by Mr. Pease to Killingworth to see Stephenson's steam engine at work, "his faith in the locomotive engine never wavered. In the Bill presented to Parliament in 1823 Mr. Pease caused to be inserted a clause empowering the promoters of the railway to work it by means of locomotive engines and to employ them to haul passengers as well as merchandise." (1)

In 1822 George Stephenson was appointed Engineer, at a salary of £660 per annum, to the Stockton and Darlington Railway, which cost nearly £150,000 and

(1) E. Wooler and A. Boyde, Historic Darlington, (1913) p.172.

was the property of sixty shareholders. On the 27th September, 1825, the world's first public railway was opened amid scenes of extraordinary enthusiasm. This event proved to have a profound effect on the economy of the town, which gradually began to expand, particularly at the north end, where industries associated with the railway and its needs began to appear. Extensions of the first twenty-five miles of the Stockton and Darlington Railway and the laying down of other local independent lines quickly followed one another "like strands of a web that was beginning to spread over the land." (1) "In the course of a few years the annual shipment of coal led by the Stockton and Darlington Railway to Stockton and Middlesbrough exceeded 500,000 tons.....The anticipations of the company as to passenger traffic were in like manner more than realised..... Additional branch lines were constructed and amalgamations effected with neighbouring branch companies which brought the mileage controlled by the company to about 200 miles." (2) By 1863, all the vast northern network of lines, including the Stockton and Darlington Railway Company, was absorbed into and became part of

- (1) C. P. Nicholson: *Those Boys O' Bondgate*, p.54. (Articles written towards end of 19th century for local press, published in book form 1949)
- (2) F. Whellan: *A History of Durham* (1894), p.453.

the North Eastern Railway.

The rapid extension of the railway system provided facilities of transit hitherto undreamed of. Markets were created and the railways led to extraordinary developments in the industrial world. They brought increased industrial activity to Darlington too. Engineering works to supply the equipment and accessories, associated with the organization and laying of railways, were built. The existing iron foundries at Hope Town of Lister and Kitching, for the construction of passenger and truck railway carriages, were extended, and large new iron-works and foundries were built, the first of which were the works of T. Summerson and Sons (1840), the Darlington Forge (1854) and the South Durham Iron-works (1855). These were followed by the Darlington Iron Works (1859), the North Road Locomotive and Wagon Shops (1863), the Skerne Iron Works (1864), the Rise Carr Rolling Mills (1865), the Whessoe Foundry (1865), and many smaller iron foundries, which used the rich iron-ore resources of the South Durham and Cleveland districts.

In fact the discovery and commercial exploitation of Cleveland ironstone, less than twenty miles from Darlington, affected considerably the growth of the town from about 1850. New works for the manufacture of

crude and finished iron sprang up along the banks of the River Tees, following the invention of the Bessemer process in 1856, and there was a tremendous increase in mineral traffic on the Darlington to Middlesbrough railway. In 1850 just over one million tons of coal were carried on the line from Joseph Pease & Company's coal-mines around Shildon and Crook to their ironstone mines in the Cleveland. Ten years later, this coal traffic had increased to more than two million tons and by 1870 to four and a quarter millions.⁽¹⁾ Limestone traffic also expanded as supplies of limestone from the extensive limestone quarries of Messrs. Pease & Co. in Weardale went through Darlington to the Tees-side blast furnaces.

One local historian commented on the events of these years: "The woollen trade formerly occupied a prominent position among the industries of the town but it is now only represented by the successors of Joseph Pease's works; the place was also noted for its linens, but that business has now become extinct. Several other large and important industries have however been developed, the most notable being a very extensive establishment for the construction of locomotives in connection with

(1) Anon: A Descriptive Account of Darlington (1894).

the North-Eastern Railway Company of which system this town is the centre. These works, which may be considered the chief industry of the district, were transferred from Shildon in 1862. Since that time many extensions have been made."⁽¹⁾ The new industry gave increasing prosperity to the town, as well as providing it with one of its major sources of employment. Thus the economic face of Darlington was gradually but distinctly changing.

The coming of the railways also meant an increase in the population of the town, as can be seen from the following census figures: ⁽²⁾

1821	6,551
1831	9,417
1841	11,877
1851	12,453
1861	16,762
1871	30,298
1881	36,666
1891	39,450
1901	45,958
1911	55,631

Thus while in the thirty years following the launching of the Stockton and Darlington Railway, Darlington's population almost doubled, it trebled in the next thirty years when activity concerned with the laying

(1) Whellan, op.cit., p.454.

(2) Victoria County History of Durham, op.cit., p.265, and The Registrar-General's Census Figures, 1911.

down of railways and its associated industries was at its height.

Even though the mills of Messrs. H. Pease & Company still employed seven hundred men in 1894, the woollen and linen trades had, well before the end of the nineteenth century, been ousted by the manufacture of locomotives and railway equipment as the premier industry of the town. Darlington, which had become the centre of the vast railway network of the North Eastern Railway Company, possessed iron and steel works, producing engines, rolling stock, rails, sleepers, switches and crossings and various other railway accessories. By 1893 the North Road Railway Workshops, with three large boiler-shops, as well as a forge, a brass foundry and several machine-shops, had extended to cover twenty-seven acres and employ fifteen hundred men and boys, while Robert Stephenson and Company, locomotive builders, transferred their works from Newcastle to Darlington in 1901.⁽¹⁾ The Darlington Steel and Iron Company, making steel rails and sleepers and producing between 70,000 and 80,000 tons of finished iron and steel per year, provided employment for nearly one thousand men, as also did the Darlington Forge, which made castings and

(1) Whellan: op.cit. p.455.

forgings weighing from one hundredweight to fifty tons.⁽¹⁾ Other engineering firms, such as the Darlington Wagon and Engineering Company (rolling stock, bridge-castings, wheels), the Cleveland Bridge and Engineering Company, and the Whessoe Foundry (engine boilers, cranes, weighing machines), each had a labour force of about five hundred. Several smaller engineering works and iron and brass foundries like Davison's Engineering and Wagon Works, Richardsons & Co. had also been established in the town and gave employment to large numbers of men.

Although two local newspapers - the Darlington Pamphlet and the Darlington Mercury - had been established in the late eighteenth century, their existence was short-lived, and the lack of newspapers in the town during the first half of the nineteenth century makes it difficult to discover and assess opinion and comment on local events, especially reactions to any efforts to provide educational facilities. The industrial and economic history of nineteenth century Darlington has yet to be written. However, this paucity of local records began to be remedied on the 20th October, 1847 when the first copy of Darlington's longest established newspaper, The "Darlington and Stockton Times", was printed. This weekly paper aimed "to promote the

(1) Ibid.

diffusion of liberal principles", and in his first editorial George Brown, the founder, pleaded that measures for the amelioration of the conditions of the working classes should transcend political partisanship. In 1854 a monthly periodical, The "Darlington Telegraph", appeared at a penny per copy. On the 1st January, 1870, the first half-penny daily in the country, and the "voice of liberalism" in the North-East, the "Northern Echo", was published in Darlington. Two other local weeklies of the 1870's - "The Ironworker's Journal" and "North-East Industry" - confirm the changed nature of the town's economic situation. Unfortunately there are no copies of these two newspapers available in Darlington.

Educational Facilities

Because any system of technical education can only be built on the achievement of a certain standard of literacy in the earlier stages of education, it is first necessary to consider the agencies which existed in Darlington to provide basic elementary education.

At the beginning of the eighteenth century, the only educational facilities that existed in the town were those provided by the Grammar School. Although there are no records available, it is certain that there was a Collegiate Grammar School attached to the parish

church of St. Cuthbert as early as the thirteenth century.⁽¹⁾

In response to a local petition, the Grammar School received official recognition with a granting of a Royal Charter by Queen Elizabeth I in 1563.⁽²⁾ By the beginning of the nineteenth century the number of scholars had fallen to thirty-five and this included eighteen girls.⁽³⁾ From then until the years 1874-1878, when the school was reorganized as a result of the Endowed Schools Commission and the present building was erected, the fortunes of the Grammar School experienced many ups and downs. During the years when nationally the voluntary National and British Schools were trying to supply the need for some form of elementary education, and locally the coming of the railways was gradually changing the economic character of the town, the mainly classical education provided at the Darlington Grammar School was becoming less suited to the more practical requirements of the sons of Darlington businessmen. Moreover local Non-conformists and Quakers, actively interested in education and growing extremely influential, were resenting the Church-wardens'

(1) N. Sunderland: The History of the Free Grammar School of Queen Elizabeth, Darlington, 1963, pp.4-5.

(2) N. Sunderland, op.cit., p.12.

(3) Ibid., p.42.

control of the school, while other schools, private academies and voluntary elementary schools began to provide competition. In fact, in 1840 with only twelve pupils, the Grammar School, apart from its classical curriculum, was little more than an elementary school. Although in 1867, the year the town became a Parliamentary and Municipal Borough, there were thirty-six boys, chiefly in the ten to fourteen age group,⁽¹⁾ major reforms were necessary if the school was to give a successful grammar school education. Clearly a situation had arisen "from which there was no escape without legislation".⁽²⁾ The school's deficiencies were mainly of a financial and administrative nature, as the Charity Commission Inspectors and the Endowed Schools Commissioners pointed out on several occasions.

Thus the only secondary school in Darlington, which could have supplied the science and art instruction, then considered to constitute technical education, chose to adhere to the old classical tradition. Indeed when the following instructions of the Endowed Schools Commission to its Assistant Commissioner, Mr. Stanton,

(1) N. Sunderland, op.cit., p.43.

(2) Ibid., p.47.

in 1872, are considered it is clear that the Grammar School had grown out of touch with the local community and its industrial development. "Looking to the industrial characteristics of the neighbourhood, practical science ought to be a prominent feature of the course of instruction and it may be advisable to introduce into the scheme a clause empowering the governors to establish a distinct science department... He was advised to recommend a second grade school..... which gave a useful and practical education up to the age of seventeen."⁽¹⁾ But Mr. Stanton reported "the governors hope to raise the character of the school inclining to the classical rather than to the modern side so that boys might pass on to Durham University and use the exhibitions there."⁽²⁾ Moreover the governors showed considerable indifference to the novel idea of a science department. However, under the new Scheme of 1874 for its reorganization, the Grammar School did become a second grade school providing a liberal and practical education. Fortunately when the new building was opened four years later under a headmaster, Mr. Philip Wood, who was an outstanding

(1) Ibid. p.49

(2) Ibid. p.50

mathematics teacher, the Grammar School curriculum included the teaching of Mathematics and Science and Drawing and students, who took these subjects, were soon earning grants from the Science and Art Department. Chapters five and six will contain the details of the technical education provided by the Darlington Grammar School in the last twenty years of the nineteenth century.

Although a Blue-coat Charity School had been in existence in Darlington from 1715 and "from 1800 to January, 1876 when the register ends the number of scholars who benefited by the Trust was 1,792, an average of just under a dozen entrants every year",⁽¹⁾ the first public elementary school in the town was St. Cuthbert's National School, founded in 1812 mainly through the enthusiasm of a young Solicitor, Francis Mewburn and with a sixteen year old master, Robert Wilson from the Barrington School at Bishop Auckland, and held in the west end of the parish church.⁽²⁾ Despite local apathy and at first opposition, the school proved a successful venture in the education of the poor and after a number of years in hired rooms, sufficient funds became available to buy a piece of land from the Bishop of Durham next to the Grammar

(1) C. P. Nicholson: "Those Boys O' Bondgate"
(1949) p.33.

(2) Ibid., p.44.

School in the Leadyard on which to erect, in 1824, the National School's own premises. Three years later one hundred and fifty boys and a hundred girls were "enjoying the benefits of this institution under the mastership of Mr. J. A. Storey, who received a penny a week from each child and fifty pounds per annum from the National Society funds."⁽¹⁾

Meanwhile in 1819 a Lancasterian school had been built in Skinnergate by public subscription. This came to be known as the British School. It was for the instruction of children of all religious denominations and was supported chiefly by Dissenters, especially the wealthy Quakers, "Joseph Pease and other leading Friends taking a prominent part in its maintenance."⁽²⁾ In 1827, there were also one hundred and ten boys under the tuition of Mr. John Harris, and a hundred girls, who were educated separately in a female School of Industry at the expense of the Wesleyan Methodist Sabbath and Weekday School Society.⁽³⁾

Two other National Schools were founded for the children of the labouring poor of the town - Holy Trinity and St. John's. Begun in Commercial Street

(1) Parsons and White, op.cit., p.241.

(2) Nicholson, op.cit., p.45.

(3) Parsons and White, op.cit., p.241.

but transferred about 1850 to a new building in Union Street, Trinity National Schools had an average attendance in 1857 of one hundred and seventy at the boys' and a hundred at the girls' school. They were inspected annually by a government inspector and supported by voluntary subscriptions, scholars' weekly pence, government grant and tea parties.⁽¹⁾ Although there is no mention in Longstaff, (1854) or Fordyce, (1857) of St. John's National School, its pupils were earning aid from the Department of Science and Art in 1866 for success in Drawing examinations.⁽²⁾ It must therefore have been built about 1860.

Fordyce sums up the educational facilities of Darlington in mid-century by stating that the town "contains five boarding (i.e. private) schools, ten ordinary schools and an infants' school!"⁽³⁾ In addition to the five voluntary elementary schools, already referred to, he mentions by name Bridge Street British School, a Catholic School and a Congregational School as well as numerous Sunday schools in connection with the day schools. In point of time the Sunday

(1) Fordyce, op.cit., p.471-2

(2) Department of Science and Art, 14th Report, (1867), p.74.

(3) Fordyce, op.cit., p.473

schools preceded the day schools and were the first to offer opportunities of continuous or elementary education to adults and young people who had left school at an early age as well as to children. Thus considerable local activity by various religious bodies was taking place to provide some form of basic literacy - an essential pre-requisite of technical education - for the children of the working class poor. This provision of voluntary elementary schools gained momentum so that by the time the Darlington School Board was established in January 1871 there were eighteen such schools in the town.⁽¹⁾

The national backwardness in organizing elementary day schools and the educational deficiencies in those which did exist meant that in Darlington, as in the other new communities created by the effects of the Industrial Revolution, the foundations of elementary education, on which the superstructure of technical education must be built, were themselves only slowly and casually being put down. Moreover the nature and quality of that elementary schooling, which consisted mainly of a low standard of teaching in reading, writing, arithmetic and religious instruction, on the

(1) Vide Appendix C, 1.

monitorial or pupil teacher method, was hardly the most suitable basis on which to lay the future higher education of an industrial nation. For the first seventy years of the nineteenth century the educational facilities of Darlington could only be said to include technical instruction of the most basic kind - that attempted in the classes of the Mechanics' and Railway Institutes and the simplest instruction in Drawing in the voluntary elementary schools. These developments, as well as the important event of the establishment of the Darlington School of Art in 1857, will provide the material for the next two chapters. Effective technical education could not be provided until a system of elementary and secondary education was nationally organized.

CHAPTER III

THE DARLINGTON MECHANICS' INSTITUTION

The Foundation and Re-foundation of the Institute : 1825-1854

In the opening chapter we saw something of the early rather feeble attempts in the national development of scientific or technical education, and the important role played by the Darlington Mechanics' Institute in the local attempts to instruct mechanics and artisans will now be considered in some detail. The first Darlington Mechanics' Institution was founded on the 13th May, 1825, and technical education in the town can be said, at any rate in theory, to have been born on that day. For almost the next thirty-five years the only attempt at providing some form of technical education for the working classes of Darlington was made by the Mechanics' Institute and during that period the amount and quality of technical instruction varied a great deal. For some of the reasons suggested in Chapter I, but mainly because of the hopelessly inadequate provision of basic literacy, upon which any form of further education depends so much, the technical instruction provided at the Mechanics' Institute

was of the most elementary kind, consisting mainly of classes in Drawing and Chemistry and affecting only a handful of Darlington artisans.

The distinguished support that the "Mechanics' Institution of Darlington and its Vicinity" received can be seen from the impressive list of patrons and officers in the 1825 Rules and Regulations.⁽¹⁾

The four patrons were:-

William Van Mildert, Lord Bishop of Durham, Sir R. J. Eden, the Earl of Darlington, the future Lord Durham, J. G. Lambton, M.P., and the Honourable W. I. F. V. Powlett, M.P.

Although it was rare for a Mechanics' Institute to enjoy the active support of a Bishop of the Church of England, the Whig M.P. for Durham, J. G. Lambton, played a prominent part in several Mechanics' Institutes in the North-east as well as contributing £50 to the building of the London Mechanics' Institution. A well-known local land-owner, Lieutenant-General Aylmer of Walworth Castle, was the first President and the eight Vice-presidents included the brothers Edward and Joseph Pease, Quaker owners of the famous woollen mills, and Jonathan Backhouse, another Quaker and local banker, who helped to finance the Stockton and Darlington Railway. The Quakers had for some time

(1) Rules and Regulations of the Mechanics' Institution of Darlington and its Vicinity, 13th May, 1825.

exercised considerable influence on local affairs, many of them occupying positions of wealth and importance in the community, particularly in industry and banking, and owning much land and property in Darlington and its environs. As the nineteenth century passed, the town was to become greatly indebted to their generosity and service, and in no social sphere were the contributions of the local Society of Friends more valuable than in education in all its stages.

The following were some of the more important
Institute Rules:-

- I. "This Society shall be called The Mechanics' Institution of Darlington and its Vicinity and shall consist of ordinary and honorary members.
- II Persons at the age of twenty years shall be eligible to become members of this Institution; but young men between fourteen and twenty may be admitted at half price, as reading members, and may attend the classes which may form, lectures, etc.....
- III All candidates for admission shall be proposed by a member, and ballotted for on a Thursday evening, between half-past seven and eight o'clock after a week's notice.....
- IV Each member shall pay ten shillings annually; viz. two shillings and sixpence on the fourth Thursday in June, September, December and March; which sums shall be regularly paid: or the members may pay their annual subscriptions at once, in advance.
- V That donations in money, books, models, minerals, or any other thing approved of by a majority of the committee, be received for the benefit of the Institution.....And any person giving at any one time five guineas or upwards or ten shillings

annually, and not wishing to enter into any of the classes, shall be deemed honorary members, and entitled to all the privileges of the Institution.

- VI The Officers of the Institution shall consist of Patrons, a President, Vice Presidents, a Treasurer, Honorary Secretary, two Acting Secretaries, and a Committee of eighteen members. The Secretaries and Committee shall be annually elected by written lists.....Every member shall be eligible to the office of Committee-man; but two-thirds of the Committee shall, at all times, be operative mechanics.
- VII To the Committee shall be entrusted the direction of the affairs of the Institution, five being competent to act. They shall determine what books and apparatus shall be purchased.....
- IX The General Meetings of the Society shall be held on the fourth Thursday in every month, at a quarter past seven o'clock in the evening, and the Chair taken precisely at half-past unless the Committee direct otherwise. The subjects for discussion shall comprehend the Mathematics, Engineering, Natural Philosophy, Chemistry, Mineralogy, the Arts, Antiquities, History, Biography, Moral Philosophy, Polite Literature and other scientific subjects; but party politics and controversial divinity shall be prohibited. The reading of papers or conversations on these subjects shall commence precisely at eight o'clock; and if the election of members or other business should not be completed before that period, it shall be postponed until the next meeting." (1)

The remaining Rules dealt with the administration of the library, the appointment of auditors, the alteration of Rules and the Committee's power of expulsion. According to the first Minute Book of the Mechanics'

(1) Rules and Regulations, op.cit.

Institute, which dates from the 9th June, 1825, after the Inaugural Meeting had been held in the Town Hall, a Sunday School room of the Bethel Chapel in Union Street was obtained for four nights a week until certain premises of Jonathan Backhouse in Regent Street became free, and were converted by various members into their Institute in 1826.

The first Annual Report, presented at a General Meeting of Members on the 28th September, 1826, summed up the progress made during the first year, as well as containing a catalogue of the 270 volumes and maps in the library, a list of donations and subscriptions, details of membership with ordinary members' trades, and the accounts. In presenting their first report, the Committee felt "a peculiar diffidence in laying before the public an account of their proceedings, arising from the circumscribed operations, and infantile labours of a Society, which has not been privileged with advantages, possessed by many similar Institutions. They are, nevertheless, aware that although any statement now made of the Darlington Mechanics' Institute must necessarily be brief, yet the utility and advantages of such Societies present them with ample materials to expatiate upon the importance of the Institution, for affording instruction to persons in

the humbler walks of life."⁽¹⁾ The aim of the founders was similar to that of many other contemporary Institutes. "The great object of this Institution is to supply, at such expense as the working classes can readily afford, knowledge in various branches of Science, so that they may become acquainted with more certain rules, than the mere imitation of what they have seen done by another. It is not intended to teach the trade of the Carpenter, the Mason, the Dyer, or any other particular business; but there is no trade which does not depend, more or less, upon scientific principles; and to teach what these are, and to point out their practical application, form the business of this establishment."⁽²⁾ Thus the main intention in establishing the Institute was to provide the mechanics and artisans of Darlington with scientific instruction. The theoretical not the practical aspects of science were therefore what technical education was thought to consist of at that time.

In conclusion, the Report stated quite bluntly that the upper classes must face the question whether the bulk of the community "shall be well or ill taught." In fact, in order to deserve their title

(1) The First Report of the Mechanics' Institution of Darlington and its Vicinity, 28th September, 1826.

(2) Ibid.

of "betters" the upper classes might now be encouraged to the pursuit of "solid and refined learning and employments." As well as "securing for ever the great advantages of knowledge," the working man "may derive from the Institute increased comfort and happiness for himself and his family." The Institute would provide "a pleasant and refreshing employment of leisure" as well as amusement more beneficial than that of the public house. Thus labourers would work "with a clear head, a light heart, and a skilful hand." (1) Their wives and children would share in their improvement and they would be better as well as happier men.

The forty-six honorary members included six members of the Pease family and four Backhouses, who between them donated fifty guineas - one quarter of the year's income - towards the establishment of the Institute. In fact, the Balance Sheet for the first year showed that donations accounted for seventy per cent of the total receipts. Here was practical evidence that some local employers, particularly the active and liberal Quakers, felt that the education of their working-class employees was an object worth their support. Of the one hundred and six ordinary members who paid their subscriptions of ten shillings,

(1) Ibid.

fifteen were connected with the textile industry, the same number were joiners, twelve worked in various branches of engineering, ten dealt in some aspect of the leather trade, while there were seven cabinet makers and six bricklayers. ⁽¹⁾ These, and the many other trades represented, reflected the economic activity of the town in the first half of the nineteenth century outlined in the previous chapter.

The Institute's accounts at the end of the first year showed an income of £197 3s. 5d. including £135 15s. 0d. from donations. The Committee had spent £81 17s. 0d. on books and maps for the Institute library, £30 on a series of twelve lectures by a Mr. Jackson, and £12 12s. 0d. on the Librarian's salary, leaving a balance in hand of £19 19s. 0d. ⁽²⁾

Although the Committee made no reference in their Report to any classes, they stated: "it has been a cause of great satisfaction to observe the regular attendance of many of the members, particularly of the younger class, and their assiduity in improving themselves in useful elementary knowledge." ⁽³⁾

- (1) The First Report: List of Ordinary Members
- (2) Ibid.
- (3) Ibid.

In fact, at a Committee Meeting in September, 1825, it was reported that the classes formed "keep close to their studies." (1) Such was the fluctuation that two months later the attendance at classes was falling off, while in the following Spring members were pursuing their studies with "unabated zeal." (2)

Although there must be strong doubts about the nature, level and value of the educational work, which was basic rather than technical in content, the Darlington Mechanics' Institution had nevertheless been launched on a wave of local interest and enthusiasm and made considerable progress during its first year, despite the handicap of inadequate premises. This local success was part of the national expansion in the year 1825, when about seventy Mechanics' Institutes were founded. (3) Both in the country at large and in Darlington in particular, it seemed that after such an auspicious beginning, the Mechanics' Institute Movement was destined to perform great feats for working class scientific education. Some of the reasons why the high hopes of the early founders were

(1) Minutes of Mechanics' Institute Committee, 15th September, 1825.

(2) Ibid., 20th April, 1826.

(3) T. Kelly, George Birkbeck, (1957) p.209.

not fulfilled have already been suggested in the opening chapter. It now remains to trace the educational activities of the Darlington Mechanics' Institute and to try and establish why it disappeared in 1832.

Although the Balance Sheet of the first Annual Report had shown an income of almost £200 and a working balance of £20, a year later the Institute had a deficit of £16, and, owing to uncollected subscriptions, its exact financial state was unknown. The monthly meeting due to be held on the 25th October, 1827 did not function because, according to the Minute Book "there was no attendance by the time the General Meeting should have taken place." A month later it was decided to organize classes immediately and £3 was put at the disposal of the managers of the Chemistry class and £1 10s. Od. for the Geography class,⁽¹⁾ although there is no record as to the number of members participating in these classes. Attendance probably fluctuated from week to week and registration was perhaps haphazard.

For six months in 1828 no minutes were kept, but the first item after this lapse reveals that the

(1) Minutes of a Mechanics' Institute Meeting, 27th November, 1827.

Institute was again in financial difficulties. "The amount of money owed by the Institute cannot be determined; bills are to be paid when enough subscriptions have been collected." (1) In order to increase revenue the Committee decided to let a room to a private school during the day and to the local Harmonic Society on two evenings. A membership campaign was launched, subscriptions being reduced from five shillings to four shillings for apprentices.(2) The following new classes were formed: Writing and Arithmetic, to be taught every evening (except Saturday and Sunday); Geometry and Mensuration, to be taught on Tuesdays; Geography on Thursdays; Chemistry (sic) on Fridays.(3) Although there is no record of attendance or how long these classes continued, the fact that Writing and Arithmetic were taught on five nights per week suggests that the greatest need was for basic elementary instruction.

Unfortunately the members of the Institute were given notice to quit their Regent Street premises in April, 1830 and for three months activities were suspended. The Committee accepted temporarily the

- (1) Minutes of a Mechanics' Institute Meeting, 25th September, 1828.
- (2) Minutes of a Public Meeting of the Mechanics' Institute, 9th January, 1829.
- (3) Minutes of Mechanics' Institute Committee, 30th January, 1829.

offer of the Institute Librarian and Secretary, John Harris, a day-school master, to house the Institute books and to hold classes in his home for two nights a week. But as well as this accommodation problem the Institute had another financial crisis on its hands. Membership had probably fallen considerably and it became obvious the Institute could not stagger on much longer. On the 9th December 1831 "the Committee regrets there is no further point in continuing the Society" ⁽¹⁾ and again in February, 1832 "interest has so far declined that the Committee do not think any material benefit can arise from keeping the Institute open." ⁽²⁾ A General Meeting of subscribers in the Town Hall decided that all stock, including furniture, apparatus, maps and books, except that presented by individuals to the Institute, must be auctioned.

The Darlington Mechanics' Institute, which had begun seven years earlier with such optimism and enthusiasm, had thus apparently come to a miserable end. But this was an experience not limited by any means to Darlington. The Middlesbrough Mechanics' Institute which was established in 1844 was only saved

(1) Minutes of Mechanics' Institute Committee, 9th December, 1831.

(2) Ibid., 3rd February, 1832.

in 1857 from a similar fate to the Darlington Institute by the caretaker personally canvassing two hundred new members. (1) In Sunderland too, neither of the Institutions, one of which had been founded in the same year as Darlington's, survived beyond 1856, chiefly for the same reasons that the Darlington Institute had become moribund in 1832. (2)

In fact, the closure proved to be only a temporary cessation of activity and the Darlington Mechanics' Institute was soon to rise again in a new form. One contemporary source offered two reasons for the failure of the Institute. "The failure of the Mechanics' Institute evinces either a supineness in the acquirement of scientific knowledge scarcely to have been expected in the present-day, or an indifference or jealousy in the more influential classes, deterring them from the encouragement of such establishments." (3) The decline in interest of the operative mechanics - and it must be remembered that during the first year of the Institute's life they constituted two-thirds of the Committee - could be chiefly attributed to

- (1) H. Butterworth: The Development of Technical Education in Middlesbrough, University of Durham M.Ed. Dissertation, 1958.
- (2) W. G. Hall: The Provision of Technical Education in Sunderland Prior to 1908, University of Durham M.Ed. Thesis, 1964, p.40.
- (3) Mackenzie, E. and Ross, M.: View of the County Palatine of Durham, Volume II, 1834, p.150.

their lack of basic education, while some of the wealthier patrons were probably not prepared to continue their generous initial support, particularly in view of the fluctuations in interest and membership and the limited amount of scientific knowledge being supplied by the Institute.

In spite of the entry in Appendix VI of Thomas Kelly's "George Birkbeck" that the Darlington Mechanics' Institute was closed about 1828 and then re-founded in 1840,⁽¹⁾ I have found evidence that it was operating in 1835 and 1836. A Financial Statement for the year ended March, 1836, pasted in the front of the second Minute Book, reveals an income of £73, including almost £48 from subscriptions, while £40 expenditure on a Master's salary suggests that classes were running. A balance of £25 confirms that the Institute was in a healthier financial position than when it had been forced to break up a few years earlier. No more details of Institute activities are available until a meeting of the Provisional Committee of the Darlington Mechanics' Library and Reading Room took place at the bank of Jonathan Backhouse on the 28th February, 1840. A week later a room adjoining the

(1) Kelly, op.cit., p.307.

school of William Stevenson in Thompson's Yard was obtained at a rent of £4 per annum. ⁽¹⁾ In this way, quieter perhaps than the original foundation, the Darlington Mechanics' Institute was re-born and it has had an unbroken history to the present day.

In the light of the following analysis of the Mechanics' Institute Movement, it is clear from the title of the re-formed Darlington Institute, given in the preceding paragraph, which element the founders considered paramount. "The Mechanics' Institutes, as originally developed, embodied three elements which in the perspective of history are clearly distinguishable. There was the element of technical education by means of lectures and classes; there was the library element intended initially to subserve the purpose of technical instruction, but soon breaking away and achieving a vigorous life of its own; and there was the social club element which forced its way in rather against the wishes of many of the founding fathers and which found expression in general interest lectures, concerts, musical entertainment and a variety of recreational facilities."⁽²⁾

(1) Minutes of the Mechanics' Library and Reading Room, 6th March, 1840.

(2) Kelly: op.cit., p.271.

At the first General Meeting of subscribers, Henry Pease, fifth son of Edward Pease, "Father of the Railways," who had been a Vice President of the original Mechanics' Institute of 1825, took the Chair. John Church Backhouse, son of the Quaker banker, was appointed Treasurer and John Harris, Secretary and Librarian. (1) There was no reference to any patrons in the list of officers. Of the twenty-one rules drawn up there were two significant changes from the rules of 1825: the annual subscription was reduced from ten shillings to five shillings and there was no mention that a proportion of the Committee must be operative mechanics. The first of these changes was something of a bait to attract members and the second something of a confession that the Darlington Mechanics' Institute, like others, had been unable to attract the working-class membership anticipated in the educational aims of the original founders. Again, no books on theological or political controversy were allowed in the Institute Library, which was open as a reading room from 7-10 p.m. every night except Sunday.

(1) Minutes of a General Meeting of Subscribers, 13th March, 1840.

Despite the glowing tribute of one local commentator that since its revival "The Institute has been the literary and scientific nursery of the town and by books and lectures has conferred benefits of incalculable value on many who otherwise might have thirsted for knowledge with no accessible fountain of living water whereat to assuage the longings of divinely inspired appetite," ⁽¹⁾ the chief benefits of the Darlington Institute, as of many others at this time, were of a literary and social nature rather than scientific and technical. The lack of classes, the nature of the few lectures given and the programme of activities all confirm this trend.

The most valuable educational work of Mechanics' Institutes were their classes, and yet in the five years following the re-founding of the Darlington Institute it would appear that Mr. Mason's Drawing Class, which ran during the Spring of 1841, was the only class provided. Because the Institute was "in its infancy" and could not afford paid lecturers, ⁽²⁾ lectures were given at very infrequent intervals on such topics as "Ancient and Modern Architecture."

(1) H. Spencer: Men That Are Gone from the Households of Darlington, 1862, p.487.

(2) Minutes of Mechanics' Institute Committee, 1st April, 1841.

Regular efforts were made to draw the attention of the working classes to the attractions of the Institute, by means of public lectures in the Town Hall, various canvasses of the town, excursions sometimes with members of other Institutes, and by the introduction of an annual soiree or tea-party, to which the general public were invited.

During the Hungry Forties, the Institute found it necessary to move its premises several times, which was a distinct obstacle to the successful organisation of classes. Late in 1843 a room to act as the Library and Reading Room was obtained in Union Street at a cost of £4 per annum.⁽¹⁾ A year later, although the Institute transferred to two large and one small room of Messrs. Thompson in the Horsemarket in the front of the Central Buildings at a rent of £7 10s. Od.,⁽²⁾ in their Annual Report to the Yorkshire Union, the Committee stated that "the accommodation, particularly as regards the Reading Room, is very inadequate to the wants of members."⁽³⁾ In 1847 three rooms in the basement of the new Central Hall became the home of the Institute

(1) Minutes of Mechanics' Institute Committee, 9th August, 1843.

(2) Ibid., 16th August, 1844.

(3) Annual Report of the Darlington Mechanics' Institute to the Yorkshire Union, 1847.

until the members were able to occupy their own building seven years later.

Two significant decisions were taken during this period. First it was decided in April, 1842, after long discussion and then only by a majority of six at a Special General Meeting, to admit newspapers to the Reading Room.⁽¹⁾ The 'Durham Chronicle' was taken as the most suitable weekly and the daily 'Globe' was ordered for three months from Mr. W. Thompson for twopence per paper or a shilling per week. In their Annual Report, the Committee stated that the admission of these two newspapers was "an arrangement that had given great satisfaction".⁽²⁾ By 1848, the Reading Room was taking two daily, six weekly papers, and ten periodicals. Secondly, in 1846 the Darlington Mechanics' Institute, disregarding geography, joined the Yorkshire Union of Mechanics' Institutes, referred to in the opening chapter, by paying the annual subscription of £1. The local Institute thereby began to enjoy such benefits of membership as the receipt of manuscript lectures to be read to members and friends,

(1) Minutes of Special General Meeting,
19th April, 1842.

(2) Annual Report of Mechanics' Library and
Reading Room, 11th April, 1843.

visits of distinguished lecturers at reduced rates, such as that given by Elihu Burritt, the "eloquent" American blacksmith, on the "Philosophy of Labour," and the privilege of sending delegates to the Union's Annual General Meeting to discuss mutual problems. Federation however could do little to promote the essential educational work of the Institute - classes for instruction in science and art. In 1850, when the Yorkshire Union had 109 affiliated Institutes with 18,516 members and 83,000 books,⁽¹⁾ the Annual General Meeting took place in the lecture room of the Public Buildings, Darlington, with Edward Baines in the Chair. This was an outstanding social occasion for the local Institute with its membership of 341, and a high honour for the town, which still had only a population of 12,000.

Early in 1845 fresh efforts were made to provide instruction and the Committee gave their approval to the following classes:⁽²⁾

- (1) Annual Report for 1850, Yorkshire Union of Mechanics' Institutes, 22nd May, 1850.
- (2) Minutes of Mechanics' Institute Committee, 22nd January, 1845.

<u>Monday</u>	7-8	p.m.	Languages	Mr. Hines
	8-9	p.m.	Mathematics	Mr. Sowerby
<u>Tuesday</u>	7-30	p.m.	Discussion Class	Mr. Haswell
<u>Wednesday</u>	7-8	p.m.	Languages	Mr. Hines
	8-9	p.m.	Elocution	Mr. Spencer
<u>Thursday</u>	7-30	p.m.	Arithmetic and Writing	Messrs. Haswell Keener, and Sowerby
<u>Friday</u>	7-30	p.m.	Arithmetic and Writing	

These classes, with their noticeable literary or basic educational bias, cannot be considered technical education in any sense and even they did not enjoy much permanent support, for the Committee noted "with regret that this department has not been so efficiently carried out as they had anticipated".⁽¹⁾ On the other hand more lectures, which were of a scientific nature, were given, as the list for 1845-6 reveals:

A course of lectures on Electricity and Pneumatics	Mr. Richardson
One lecture on Chemistry	Mr. White of York
Three lectures on Chemistry	Mr. James Cooke
Three lectures on Anatomy and Physiology	Mr. John Fothergill

(1) Annual Report of the Darlington Mechanics' Institute to the Yorkshire Union, 1846.

As the membership grew and finances permitted, the Committee decided to make known the benefits of the Institute by means of increased publicity.⁽¹⁾ Here again the only connection with technical instruction was the Monday night Drawing class. But although similar lectures took place regularly every winter, on the subject of classes the Committee were forced to report in 1850 that "efforts made to re-establish winter classes have not proved successful",⁽²⁾ mainly because of the difficulty of obtaining suitable teachers, and again in the following year they were "sorry to report an unsuccessful issue of effort"⁽³⁾ to get classes going.

Although links were forged with other local Institutes and female members were at last admitted, the Annual Report, which regretfully concluded that "the advantages which the Institute affords are not sufficiently appreciated and that it does not receive that amount of support which in a town like Darlington might fairly be expected",⁽⁴⁾ also contained the first hint that the considerable expenses involved in renting

- (1) Vide Appendix, A.3., 1848 Handbill of Institute Lectures and Classes.
- (2) Annual Report of the Darlington Mechanics' Institute, 14th March, 1850.
- (3) Annual Report of the Darlington Mechanics' Institute to the Yorkshire Union, 1851.
- (4) Annual Report of Darlington Mechanics' Institution, 14th March, 1850.

accommodation - £21 per year - could be put to greater educational use if the Institute possessed its own premises. "Possession of premises exclusively devoted to the purpose of the Institute may be looked to as a desirable object to be attained at no distant day." (1)

Thus was launched a bold idea, which was to have a purposeful unifying effect on an Institute, which had become more interested in chess than chemistry. The Darlington Mechanics' Institute now undertook the most ambitious project connected with technical education in Darlington until the Technical College was envisaged forty years later - a new building. Hopes rose as members felt that a permanent home of their own would solve many of the Institute's problems and ensure success in all its activities. "At no distant period the Committee hopes the causes for the imperfect operation of some of the Institute's departments will be effectually and permanently removed; and that from this important epoch in its history may be dated the successful working of all its branches." (2)

(1) Ibid., 14th March, 1850.

(2) Ibid., 11th March, 1852.

A tremendous effort, sustained over a period of twenty years, began. A suitable site in Skinnergate was bought from the Earl of Beverley and subscriptions invited. A "munificent" donation of £400 was received from an "unknown friend" of the Institute. This was Quaker generosity being expressed by Miss Elizabeth Pease. Mrs. Barclay, sister of J. C. Backhouse, Treasurer of the Institute for over twenty years, and who shared Miss Pease's religious persuasion, followed with a donation of £300. By March, 1853 the Committee reported progress in the following terms: "Since the last General Meeting the Committee have directed much attention to the new building.....The Committee have considerably exceeded their first estimated cost and to meet this increased outlay would earnestly recommend that strenuous efforts be made not only to obtain additional subscriptions, but for the adoption of every means for enlarging the building fund as may secure the completion of the building with the least possible encumbrance on it. The entire cost of erection, including land, furniture, etc. will probably be about £2,200, half of which has already been subscribed." (1)

One year after the foundation stone of the present

(1) Annual Report of the Darlington Mechanics' Institution, 11th March, 1853.

building had been laid by Miss E. Pease on the 12th May, 1853 the Library and Reading Room were completed and occupied. Many money-raising efforts took place and the final cost of the building - £2,325 - was almost double the £1,200 subscribed.⁽¹⁾ As a gesture to mark progress, the Institute Committee decided in the Spring of 1854 to open their News Room from 7 a.m. to 10 p.m. every day, except Sunday, to members who had paid their annual subscription of 12s. 6d. Teachers and lecturers who were prepared to give their services gratuitously were welcomed. However, it must again be noted, the only class remotely related to technical education was Mr. Kelly's Drawing class.

On the 25th August, 1854 with a larger than usual tea-party, the Skinnergate building was officially opened. An "eloquent and highly scientific lecture," on the "Immensity and Endurance of Creation," was given by Professor Nichol, Professor of Astronomy at Glasgow University and husband of Miss Elizabeth Pease. Of this historic event in the life of the Darlington Mechanics' Institute, the editor of the 'Darlington and Stockton Times' wrote in approving terms: "We trust that the Institute may be productive of much

(1) Building Fund Account, Annual Report,
9th March, 1855.

good and that the warmest of its friends may never have cause to lament any further apathy on the part of the working men of Darlington. Mechanics' Institutes are capable of effecting great benefits and it now only rests with the sons of toil to work them out." (1)

Unfortunately the local "sons of toil", with the exception of a tiny minority who came to improve their ability to read, write or reckon, continued to display apathy towards the efforts of their betters to improve them.

Although over £700 remained to close the accounts on the "handsome and commodious" building, it was not surprising that in the Annual Report for 1854 a note of self-congratulation was sounded. "In presenting a report of the proceedings of the past year, the Committee have pleasure in congratulating members on the increased facilities and advantages which occupancy of the new building affords and the impulse which has been thereby given to the various objects of the Institute". (2) The membership had risen to 486, an increase of 43 on the previous year; 245 books had been added to the Library, bringing the total to 2,166, while there had been 12,200 issues recorded during the year -

(1) Darlington and Stockton Times, 2nd September, 1854.

(2) Annual Report, Darlington Mechanics' Institution, 9th March, 1855.

an average of 25 books per member.⁽¹⁾ But these statistics cannot hide the fact that in a town that, as was described in Chapter II, was gradually becoming a railway and engineering centre of some note, even the simplest form of technical education - Drawing - provided at the Mechanics' Institute made no appeal to the working-class mechanic.

It must have seemed to the members of the Darlington Institute occupying their attractive and spacious new premises that future success was assured. For fewer than 500 members to have raised £1,600 in three years was a fine achievement. Furthermore membership of the Darlington Institute at this time was greater than that of any other Yorkshire Institute in proportion to the population. According to one estimate, in Yorkshire less than two per cent of the population was said to be connected with Mechanics' Institutions ⁽²⁾ while the proportion in Darlington was about three per cent. ⁽³⁾ But over the fourteen years since the re-founding of the Institute the provision of scientific knowledge for the working classes of the town, which had been the aim of the founders in

(1) Ibid.

(2) Tylecote, op.cit., p.260.

(3) Vide Appendix, A.1, Membership of the Institute.

1825, had been so limited as to be almost meaningless. Average attendances in 1854-5 of eight at the Elementary class, fourteen at the Drawing Class, and twenty-three at the Singing or French Classes revealed the nature of and the support for the real educational work of the Institute.⁽¹⁾ Two of the five teachers were paid, while eight of the ten lectures were given without payment.⁽²⁾

In conclusion it must be admitted that the Darlington Mechanics' Institute was not alone in providing more recreational activities and social amusements than technical education. The Annual Report of the Yorkshire Union in 1853 regretted the general trend. "Your Committee would offer few remarks on the miserably small proportion of the working classes who participated in the advantages which these Institutes ought to confer.....We believe the Institutes are not sufficiently educative..... We look for the remedy in a great increase in class instruction".⁽³⁾ There was something lacking in the

(1) Tabular View of the Institutes in the Yorkshire Union, May, 1855.

(2) Tabular View of the Institutes in the Yorkshire Union, May, 1855.

(3) Annual Report of the Yorkshire Union of Mechanics' Institutes, 18th May, 1853.

Mechanics' Institutes. "Flourishing, respectable, imposing even, the Institutes certainly were - but at the price of an uninspiring orthodoxy."⁽¹⁾ For various reasons, technical education had made very little progress during the thirty years the Mechanics' Institutes had attempted to supply it. One distinguished advocate of technical education was in no doubt as to the chief cause. "The very backward condition of elementary education blighted this first organised attempt at technical instruction in England."⁽²⁾ The local Institute must be included in this evaluation for, despite the worthy intentions of devoted officers and committees, behind the external facade of the handsome new building, few mechanics or artisans were being given even elementary scientific or technical instruction. As the sole agent of technical education in Darlington, the Mechanics' Institute had unfortunately not been able to live up to its original aim.

(1) J. F. C. Harrison: Learning and Living (1961) p.213.

(2) M. E. Sadler: Continuation Schools in England and Elsewhere (1908) p.22.

CHAPTER IV

THE DEPARTMENT OF SCIENCE AND ART AND ITS EFFECT ON TECHNICAL EDUCATION IN DARLINGTON, 1853-1870

The Department of Science and Art.

As was suggested at the end of the first chapter, the first action taken by the State towards the provision of technical and scientific education - the creation of the Department of Science and Art in 1853 - was a significant step forward. The origin of this department can be found in the creation of a Normal School of Design in 1837, following the enquiry of a Committee of the House of Commons "into the best means of extending a knowledge of the Arts and of the Principles of Design among the people (especially the manufacturing population) of the country."⁽¹⁾ To establish this School, in Somerset House, the Government voted £1,500, which was the first State aid given to education which was not of

(1) The Department of Science and Art Calendar, 1898, p. viii.

an elementary nature. Four years later the Government decided to give an annual grant to provide similar Schools of Design in manufacturing districts, and by 1851-2 this vote had grown to £15,055, nearly half of which was allocated to the seventeen provincial Schools of Design, which had been set up in such industrial districts as Manchester, Birmingham, Glasgow and Leeds. (1)

As these Branch Schools of Design were not working satisfactorily they were reorganized in 1852 and a Department of Practical Art was constituted whose three principal objects were to be (a) the promotion of elementary instruction in drawing and modelling, (b) special instruction in the knowledge and practice of ornamental Art, (c) the practical application of such knowledge to the improvement of manufactures. (2) The Department was also empowered to grant aid to local committees wishing to establish Schools of Art.

In the following year, Treasury approval was given to Edward Cardwell's plan for a Department of Science to be created and added to the existing

- (1) Ibid.
- (2) Ibid.

Department of Practical Art. According to the new Department's first report its object was "to extend a system of encouragement to local institutions for Practical Science similar to that already commenced in the Department of Practical Art; to combine the systems on an enlarged scale and to furnish, through the instrumentality of one department in connection with the executive government having the support and being subject to the control of Parliament, the means for mutual co-operation and correspondence to every district of the kingdom, where the local intelligence and energy of the inhabitants should create Schools of Industrial Science and Art." (1)

The new department, under the control of the Board of Trade, also incorporated the Government School of Mines and Science applied to Mining and the Arts, the Royal College of Chemistry, the Museum of Practical Geology, the Geological Survey, the Museum of Irish Industry, the Royal Dublin Society and the provincial Schools of Design. The Department's Joint Secretaries were Henry Cole for Art and Lyon Playfair for Science, who expressed the hope "that

(1) The Department of Science and Art,
First Report, 1854, pp. ix-x.

the department will continue to be instrumental in raising the character of our manufactures as well as the intelligent appreciation of those who have to produce and consume them." (1)

On the creation of the Education Department in 1857, the Science and Art Department, now moved to South Kensington, was amalgamated with it and both were placed under the Lord President of the Council and the Vice President of the Committee of Council on Education. While the Education Department promoted primary education, the Science and Art Department concentrated on the encouragement of the teaching of the applied sciences. It tried to do this by giving financial help towards the establishment of local science schools. With the exception of those at Aberdeen, Birmingham, Bristol and Wigan, these experimental science schools failed before 1860. However, a comprehensive system of grants in aid of Science and Art Department science classes over the whole country was introduced in 1859. The new system was one of payment of certificate allowances to qualified teachers, earned on their students' results in the annual examinations held by the Department, (1) Ibid.

and including additional grants of £3, £2 and £1 respectively for a first class, second class and third class Queen's prize.⁽¹⁾ Any person who gained the Department's certificates could, if approved, set up as a science teacher, hold classes in suitable premises and be paid by the Department in proportion to the examination successes of his students.

Thus began the first experiment in a general system of payment by the State according to results and it gave a great impetus throughout the country to private enterprise science and art evening classes. These were run by voluntary committees of responsible people and held in schools, Mechanics' and other institutes, and even in private houses. They supported themselves by grants, voluntary contributions and students' fees. The science subjects for which the Science and Art Department gave aid were limited at first to the following: Practical Plane and Solid Geometry, Mechanical and Machine Drawing, Mechanical and Experimental Physics, Chemistry, Geology and Mineralogy, and Natural History,

(1) Dept. of Science and Art, 7th Report, 1860, p.32-34.

including Zoology and Botany.⁽¹⁾ These were later increased to a total of thirty. Grants were also available for the purchase of apparatus and books and for the provision of prizes and medals to students. The rate of expansion which resulted can be seen from the fact that, in 1862, there were 70 science schools with 2,543 students earning grants of £2,666, but ten years later this had grown to 948 schools, with 36,783 students gaining aid to the value of £25,201.⁽²⁾ These classes were attended by large numbers of the more skilled workmen and artisans and by elementary schoolmasters and formed the ground-work of much future technical education.

When the Department of Science and Art and the Education Department were amalgamated, the number of students being taught in 68 local schools of Art was 12,509, while there were 43,212 pupils receiving drawing instruction in Elementary Schools.⁽³⁾ This latter figure increased to 87,000 in 1865 and to 387,000 ten years later.⁽⁴⁾ Before 1864 an

(1) Department of Science and Art, Calendar, 1898, p.xii.

(2) Ibid., pp.xii-xiii.

(3) Ibid., p.xx.

(4) Ibid., p.xxiv.

annual inspection of local Art Schools took place on the results of which local and national medals were awarded. However, in 1864, the system was changed, so that Schools of Art sent their works annually to the Department in London, where they were examined by Committees of Professional Examiners, who awarded the marks on which payments were made and medals and prizes given. The system of payment by results operating in Science Schools from 1859 was extended in 1863 to the Schools of Art, replacing the aid of £10 for each certificate held by the master, grants for examples, and medals and prizes awarded.⁽¹⁾

Drawing, Painting and Modelling were the subjects taught and of these only the first had any relevance to technical education, although, later, elements of design study were introduced. Drawing in elementary schools was taught by the Masters or Pupil teachers of Schools of Art or by the Elementary School teachers under the supervision of Art Masters, while the aid from the Department of Science and Art took the form of small annual grants to the teachers and schools, and prizes to the scholars; inspection of the drawing by an Art Inspector being a condition of the aid.⁽²⁾

(1) Ibid., p.xx.

(2) Ibid., p.xxiv.

Night classes for instruction in drawing also began in 1865. (1)

As the figures given at the beginning of the preceding paragraph suggested, this system of grants and examinations of the Department of Science and Art was beginning to exert a growing influence on the voluntary elementary schools and was soon to do so on the secondary schools. Even before the 1870 Education Act, these schools saw in the Department's provision of aid a welcome source of income, although it was not originally intended for the education given in schools. However, the tendency of schools to enter pupils for the Department's examinations assumed such proportions that confusion and duplication as between elementary, secondary and technical education became increasingly apparent during the last thirty years of the nineteenth century, when the first legislative attempts to establish a national system of education got under way. One of the worst features of this tendency was that the instruction and curricula of schools became too narrowly and rigidly geared to cramming and drilling pupils in order to pass the Science and Art Department's

(1) Ibid., p.xx.

examinations and thereby gain grants. Moreover it must be remembered that, as in the Mechanics' Institutes, the teaching was concerned with the theoretical, rather than the practical or vocational, aspect of the Science and Art subjects. The engineering works were the only places where a trade or technology could be learned.

Thus the Department of Science and Art stimulated, and then sustained, considerable educational interest and activity in science and art through local schools of Science and Art, night classes and in day schools. More will be said about the continued expansion of science and art education - at this time synonymous with technical education - and its relationship with elementary and secondary education in the next chapter. It is now appropriate to examine the local application of the national developments just outlined and to see what effect the Department of Science and Art had on technical education in Darlington in the decade or so before the passing of the 1870 Education Act. This will involve investigating the activities of the Darlington School of Art, the Mechanics' and Railway Institutes, and the instruction in Drawing in schools for the poor.

Darlington School of Art.

The first institution in the town to operate under the auspices of the Department of Science and Art was the School of Art, which was established in 1857 in premises adjoining the Congregational Church in Union Street. "The only new school established during the year has been at Darlington. The number of students, chiefly artisans, who attended the evening classes and paid a fee not exceeding 2s. Od. a month during the past year was double the number of students receiving instruction in the day-time, who consisted of children of the middle classes and tradesmen and paid fees from 2s.Od. to 8s. Od. per month, whilst the fees received from the latter amounted to about double the sum paid by the artisans."⁽¹⁾ No figures as to the actual numbers attending the day and evening classes are given. The chairman was one of the best-known local personalities, Mr. Henry Pease, Quaker M.P. and President of the Mechanics' Institute from 1850 to 1869. Mr. Samuel Elton, certificated to teach Elementary Drawing and Colouring, and Mechanical Drawing, was the master, and Mr. J. P. Pritchett, Secretary.⁽²⁾

(1) Department of Science and Art, 5th Report, 1858, pp.23-25.

(2) Ibid.

In fact, two years earlier in April 1855, Mr. Pritchett, architect of the new Mechanics' Institute building in Skinnergate, had written to the Mechanics' Institute Committee offering to become Secretary of a School of Design to be held at the Institute.⁽¹⁾ He informed the Committee that £10 would be needed to purchase equipment and that the Government would appoint and pay the teacher, who would also be entitled to half the students' fees. The Committee decided to write to the Department of Practical Art to find out what assistance would be forthcoming.⁽²⁾ Whether the Department's reply was unfavourable or whether the Committee felt such a school would provide too much competition for their only successful class - the Drawing class under Mr. Kelly of Stockton - is not clear, but the Mechanics' Institute Committee took no further action in the matter.

It was with the establishment of the Darlington School of Art - the oldest institution of this kind in the county with the exception of the Durham School of Art, founded four years earlier⁽³⁾ - which was to maintain a continuous existence until it became an

(1) Minutes of the Darlington Mechanics' Institute Committee, 12th April, 1855.

(2) Ibid., 26th April, 1855.

(3) Department of Science and Art Calendar, 1898, pp. 26-34.

integral part of the Technical College in 1897, that the foundations of technical education in the town were laid. Because they could rely on financial support and schemes of instruction from the Department of Science and Art, South Kensington, the local School of Art classes enjoyed a permanence and security that the ad hoc classes run by the Mechanics' Institute never shared.

The school appears to have made a successful start in providing instruction in Drawing. Within two years of its foundation, Mr. Elton, now aided by two art pupil teachers, was responsible for 1,109 pupils. This total consisted of 890 scholars taught in local elementary schools, 30 in private schools, 45 school and pupil teachers and 144 students at the School of Art itself.⁽¹⁾ £185 15s. 6d. was paid in fees for this tuition, while the school received aid worth £102 18s. 6d. from the Science and Art Department, which included payment for the master's certificate and other allowances, payment to the art pupil teachers, money for rewards and the cost of medals.⁽²⁾ These rewards and medals were related to examination successes, and, in 1859, thirty-five local scholars

(1) Department of Science and Art, 7th Report, 1860, p.76.

(2) Ibid.

gained First grade rewards in Free-hand, Model and Geometric Drawing, twenty-two Second grade rewards were made to pupil teachers and seven more advanced older scholars in the same three subjects and in Perspective, while thirteen local medals were awarded.⁽¹⁾

Local reaction to the School of Art in its infancy can be seen in the press. According to a Darlington newspaper, reporting on the first examination of the School by Mr. Wylde, a South Kensington Inspector, there were about eight hundred students, with an average age of eighteen, under "the able and indefatigable master," Mr. Elton.⁽²⁾ Mr. Wylde considered he had never met with a more promising set of pupils.⁽³⁾ In fact the average attendance at the classes held at the School of Art was sixteen in the morning and one hundred and ten in the evening classes.⁽⁴⁾

Three years later, in 1862, the same newspaper noted that there were about one hundred students in the School of Art and about a thousand at the National

(1) Ibid.

(2) Darlington Telegraph, 5th February, 1859.

(3) Ibid.

(4) Department of Science, 7th Report, 1860, p.76 and Vide Appendix B.1.

and other schools under the instruction of Mr. Elton and his assistants.⁽¹⁾ The editor commented in favourable terms on the valuable work being done at the School of Art. "The rising generation in our town may be expected to carry into their several occupations an amount of taste not possessed by their fathers.....the object is not so much to make professional designers as to create a taste for the beautiful among the people and by doing so stimulate the art manufactures.....We know that several from this school have already made use of their knowledge to great advantage in their occupations as engineers, architects, painters, joiners, etc.... What a contrast between Locomotion No. 1 on the pedestal at the Stockton and Darlington railway station and those now running on that railway; showing as much as in any we can name the progress of art and science hand in hand. We think that our country will be much better for the Schools of Art and hope that the Government will do all that they can to improve them."⁽²⁾

Attendance figures at the Central School of Art in the 1860's ranged from 135 to 165 with a peak figure of 185 in 1866. The number of day students

(1) Darlington Telegraph, 15th March, 1862.

(2) Ibid.

doubled from 19 to 41 while evening class students increased from 116 to 124 in the decade under review.⁽¹⁾ The number of pupils at local private schools taught art subjects by Mr. Elton and his pupil teachers also grew from 40 to 60,⁽²⁾ while there is evidence of the Drawing instruction being given at a Branch School of Art in North Road.⁽³⁾ This class was held at the North-Eastern Railway Institute, which had been opened in 1862 for the workmen of the Stockton and Darlington railway, but "through the kindness of the promoters a large number of puddlers, mill furnace men, forge men and labourers at the Albert Hill and South Durham Iron Works will be permitted to share the treasures of knowledge accessible within the building."⁽⁴⁾ More will be said, later in this chapter, about the attempts of the North Road Institute to provide the employees of the Iron and Steel works in the northern part of the town with some technical education.

In 1860, when three students of the Darlington School of Art each received one of the hundred national

(1) Department of Science and Art 8th and 17th Reports, 1861 and 1870 and Vide Appendix B.1.

(2) Ibid.

(3) Ibid., 16th Report, 1869.

(4) Darlington & Stockton Times, 4th October, 1862.

medallions awarded annually as a result of work submitted to the Department at South Kensington, the total income of the School amounted to £365 9s. 7d. This was obtained from two sources: £203 0s. 3d. in fees and £162 9s. 4d. in aid from London. Of the fees, £27 came from public elementary schools on account of instruction in Drawing, £70 from private schools, £3 7s. 6d. from teachers and pupil teachers and £102 12s. 9d. from students at the Central School. The day-time students were required to pay fees of from 1s. Od. to 8s. Od. per month according to the subject and grade, and evening students from 2s. Od. to 4s. Od. plus a 2s. Od. entrance fee.⁽¹⁾ Probably as a result of abolishing certificate allowances and going over to the system of payment purely on examination results, the amount of aid received annually from the Department had fallen to £90 by 1869. This payment was made on account of the works successfully submitted to South Kensington by 59 Darlington artisans for the 3rd grade examination and for the success of 57 students, who passed the 2nd grade examination at the local public examination.⁽²⁾

(1) Department of Science and Art, 8th Report, 1861, p.62.

(2) Department of Science and Art, 17th Report, 1870, p.237.

The School of Art moved its headquarters from Union Street in 1868 and leased one of the two new large rooms, which had recently been added to the Mechanics' Institute in Skinnergate.(1) One morning class - for Ladies and Gentlemen on Tuesdays and Fridays from 11 a.m. to 1 p.m. at a cost of 8s. od. per month or 30/-d. per session - and five evening classes were advertised - a special class for Gentlemen on two evenings, a general Male class on three nights, a similar Female class, a class for Mistresses and Female Pupil teachers on a Tuesday from 6-30 to 8-30 p.m. and one for Masters and Male Pupil teachers on Wednesdays from 7 to 9 p.m.(2)

The Mechanics' Institute Committee referred rather enviously to the "flourishing" School of Art and no doubt wished that its own classes exerted a greater influence on the local working man. Although a local science night class had been established at the Institute in 1866, in connection with the Department of Science and Art, there were as yet no night classes for instruction in Drawing outside those of the School of Art.

(1) Darlington & Stockton Times, 29th August, 1868.

(2) Ibid.

To complete this description of the activities of the Darlington School of Art before the 1870 Education Act, some account must now be given of its Drawing Instruction in Schools for the Poor, i.e. local voluntary elementary schools. Whilst student numbers increased slightly at the School of Art, the number of children taught Drawing in the voluntary elementary schools showed a marked fall from 890 in 1859 to 307 in 1869.⁽¹⁾ It is difficult to give reasons with any certainty for this. Perhaps the explanation lies in the fact that the voluntary elementary schools saw in the new system of payments according to results an additional source of income and entered as many scholars as possible in the years immediately following the introduction of the system. As the years passed examination standards probably rose and fewer children could attain them. Possibly school managers and parents felt the fees for instruction in Drawing were too high and that greater attention should be given to raising the generally low standard of basic education, rather than introducing an extra luxury subject into the curriculum.

(1) Ibid. 7th and 17th Reports, 1860 and 1870.

The local School of Art attributed the reduction to the Government's Revised Codes of 1861 and 1863.⁽¹⁾ Certainly the great national expansion of Drawing instruction in elementary schools, referred to earlier in this chapter, did not occur in Darlington until after 1870.

The following table reveals the local position for the years 1866 and 1867:

Instruction in Drawing in Schools for the Poor (2)

	<u>Number</u> <u>Taught</u>		<u>Number</u> <u>Examined</u>		<u>Children</u> <u>on Whom</u> <u>Payments</u> <u>Made</u>		<u>Amount</u> <u>paid to</u> <u>the</u> <u>School</u>	
School	1866	1867	1866	1867	1866	1867	1866	1867
St.Cuthbert's National School	60	50	35	29	34	21	£ s.d. £ s.d. 3 8 0 2 10 0	
St. John's National School	120	100	47	46	26	19	3 4 0 1 10 0	
Trinity National School	192	60	31	38	30	29	3 8 0 3 8 0	

(1) Darlington Telegraph, 4th June 1864.

(2) Department of Science and Art, 14th and 15th Reports, pp.74-5 and pp.94-5.

It would appear from these statistics that the smaller number taught at St. Cuthbert's School led to greater measure of success in the Department of Science and Art examinations. Numbers had increased slightly to 65, 120 and 72 in these three schools by 1869, and there were, in addition, 50 children at the Wesleyan Day School also being taught Drawing, under the auspices of the Science and Art Department's regulations.⁽¹⁾ That these schools welcomed the chance that these examinations gave their pupils to distinguish themselves and be a credit to their school can be seen in the following extract taken from a local day school's annual report. "A gratifying feature in connection with these schools is the number of prizes taken in connection with the Government School of Art. Out of thirty who competed for the honour, twenty-four received prizes and four the honourable distinction of fair, being four more than last year."⁽²⁾

Science classes.

It was not until 1866 that a Science class in connection with the Science and Art Department was

(1) Ibid., 17th Report, 1870, p.172.

(2) Wesleyan Methodist Day Schools, Bondgate, 5th Report, 1862.

held in Darlington. This enjoyed a precarious existence for three or four years and it was not until the British and Foreign School Society's College for the Training of Mistresses for Elementary Schools was founded, in 1872, that any continuous Science teaching took place locally. Eight years later, the Darlington Grammar School, in its new building and under its distinguished headmaster, Philip Wood, who was a first class honours graduate in Mathematics, was also teaching Science in connection with the Science and Art Department.⁽¹⁾ The original Science class was begun in the Mechanics' Institute in May, 1866 and, during the following winter, there were thirteen students studying Magnetism and Electricity under Mr. Robert Weatherill, a certificated Science teacher from Middlesbrough.⁽²⁾ Two years later, two other classes were running in what was now described as a Science School: Inorganic Chemistry with fifteen members and Elementary Mathematics with four students.⁽³⁾ Of the nine students who entered the Science and Art Department's examinations in May, 1868, three passed in

(1) Darlington & Stockton Times, 3rd July 1880.

(2) Department of Science and Art, 14th Report, 1867, pp. 41 and 48.

(3) Ibid., 16th Report, 1869, p.92.

Inorganic Chemistry, two in Electricity and Magnetism and one in Physical Geometry.⁽¹⁾ Unfortunately these early attempts to provide the mechanics and artisans of Darlington with some scientific education were temporarily interrupted in 1869, because further extensions and alterations were made to the Mechanics' Institute building. The Mechanics' Institute Committee recommenced the Chemistry class under Mr. Marshall of Bishop Auckland in 1870, inviting scholars of local elementary schools to attend at a charge of sixpence per month.⁽²⁾ More will be said about the efforts of the Mechanics' Institute to inaugurate and develop Science and Art education in the next section.

In attempting an appraisal of technical instruction in Darlington, in the years following the provision of grants by the Department of Science and Art, it must be remembered that similar difficulties were encountered by neighbouring committees, who tried to launch Science and Art classes for the working man. At Sunderland, for example, two schools founded in connection with South Kensington - a School of Navigation established in 1855 in Lodge Terrace, Hendon, and an Art School

(1) Annual Report, Darlington Mechanics' Institute, 13th March, 1868.

(2) Darlington Mechanics' Institute Committee Minutes, 4th November, 1870.

in Bridge Street, Monkwearmouth, 1861 - were successful for a few years, then disappeared.⁽¹⁾ It was not until 1869, twelve years after the Darlington School of Art had been set up, that an Art School at 21 Norfolk Street and a Science class at Monkwearmouth Colliery School, began to provide classes. Subsequently these two classes amalgamated and this school became the forerunner of Sunderland Technical College and College of Art.⁽²⁾ Although the Middlesbrough Mechanics' Institute had been running a successful Chemistry class as early as 1861, where the students had been placed ninth out of thirty-five centres taking the Science and Art Department examinations, difficulties in forming day classes prevented the formation of a School of Art in Middlesbrough until 1870.⁽³⁾

Thus, in relation to other similar agencies in the North-east, the Darlington School of Art was one of the first in the field in attempting to implement the system of technical education, i.e. Science and Art instruction, introduced by the Science and Art Department. This early initiative probably derived

(1) W. G. Hall: The Provision of Technical Education in Sunderland Prior to 1908, University of Durham M.Ed. Thesis 1964 pp.42-45.

(2) Ibid.

(3) H. Butterworth: The Development of Technical Education in Middlesbrough - University of Durham M.Ed. Dissertation, 1958.

from the strong Quaker belief in educating the labouring poor, for the first Art master, Mr. S. Elton, who studied at the original Government School of Art, Somerset House,⁽¹⁾ is reputed (after teaching in Norwich and London) to have been invited to inaugurate a local School of Art by members of the Pease and Backhouse families and other industrialists, who were well-known Friends.⁽²⁾ From its humble beginnings in providing Drawing instruction, the Darlington School of Art slowly developed into the central agency of technical education for Darlington and district, and the number of students, entering the Science and Art Department's examinations from the School of Art and other local classes, gradually increased during the last thirty years of the nineteenth century. But this forms part of the next chapter. It now remains to examine the educational activities, in the years 1855 to 1870, of the Mechanics' Institute and the North Road Railway Institute, to both of which passing reference has already been made in their relations with the School of Art.

(1) Northern Echo, 17th June 1866.

(2) This information was provided by Mr. Elton's grandson, who resides in Darlington, 1967.

Darlington Mechanics' Institute

As was stated in Chapter III, the Darlington Mechanics' Institute, in its first thirty years, had not lived up to its original aims of teaching the local working classes the scientific principles underlying their trades and of pointing out the practical application of these principles. Nevertheless, in the years following the opening of their fine new building, the Institute Committee went on trying to attract artisans to the Institute's classes and lectures. It was given an incentive in this by another examination system, that of the Society of Arts, introduced in 1856. This Society had been founded, a hundred years earlier, "for the encouragement of Arts, Manufactures and Commerce," and had been responsible for the Great Exhibition of 1851, "which resulted in an enhanced social approval of science and technology and stimulated the advocates of science to renewed efforts."⁽¹⁾ The Society of Arts examinations covered a wider range of subjects than those of the Department of Science and Art and included mathematics, book-keeping, science, history, literature, modern languages and drawing, thus

(1) D. S. L. Cardwell: The Organization of Science in England, 1957, p.59.

enabling "The Mechanics' Institutes in many places to establish themselves from 1857 as efficient night-schools for adolescents and adults, solving thereby at one stroke the thorny problems of finance, incentives and educational conscience."⁽¹⁾ How welcome these examinations were is clear from the enthusiastic comments in the Annual Report of 1857 of the Yorkshire Union of Mechanics' Institutes. "Since the first establishment of Mechanics' Institutes this is the greatest event in their history. It is the best endeavour that has yet been made to render these Institutes more educational."⁽²⁾

In Darlington, the Mechanics' Institute joined some 220 Institutes, with a membership of 90,000,⁽³⁾ in affiliating to the Society of Arts in 1852, and, in their Annual Report for that year, the Institute Committee anticipated from this arrangement "much advantage in securing eminent lecturers at reduced rates, in the loan of casts, models, etc. for exhibition or Drawing classes, and in the frequent supply of papers and other valuable publications

(1) Harrison: op.cit., pp.213-4.

(2) Annual Report of the Yorkshire Union, 1857.

(3) Cardwell: op.cit., p.63.

issued by the Society." (1) They hoped members would avail themselves of those benefits. The only student of the Darlington Mechanics' Institute to enter the Society of Arts examinations at Huddersfield in 1857, James Bower, received a prize of books worth £4 from Earl Granville at the Annual Meeting of the Yorkshire Union, and certificates of proficiency in Arithmetic, Algebra, Geometry, Mensuration and Geography. (2) Two years later a local Examining Board in connection with the Society of Arts examinations was set up and included several men who had taught Institute classes. Members of the Mechanics' Institute over sixteen were eligible to enter these examinations free of charge. (3)

The Darlington Mechanics' Institute soon found itself providing more activities of a recreational, rather than educational, nature in an attempt to make greater contact with working men. A seven week Grand Polytechnic Exhibition was held in the Central Hall during September and October, 1855 with the two-fold object of "promoting the educational interests of the

- (1) Annual Report of the Darlington Mechanics' Institute, 11th March, 1853.
- (2) Annual Report of the Darlington Mechanics' Institute, 5th March, 1858.
- (3) Ibid., 9th March, 1860.

Institute and at the same time reducing the debt of the new building."⁽¹⁾ Considerable local interest was shown in the 895 exhibits, while £450 went towards liquidating the building debt.⁽²⁾ Despite this successful outcome, the Committee were still conscious that the outstanding £300 was a heavy burden for the Institute to carry. "To make the tree so nurtured, thrive with its years, showering down into the minds of men its priceless fruit, and this now important Institute fulfil its real object - not as a place of amusement merely, nor as a large circulating library - but in fact as a Working Man's College - this debt must be altogether removed; without such relief efficient paid masters for adult classes cannot be provided, for casual and gratuitous assistance, so long enjoyed, is but unstable aid."⁽³⁾ However, instead of the Institute becoming a Working Man's College, the most successful feature of this time was a series of Saturday evening musical entertainments, in the intervals of which short popular lectures and readings were given.

(1) Ibid., 6th March, 1856.

(2) Ibid.

(3) Preface to Prize Essays on the Grand Polytechnic Exhibition, 1856.

Membership of the Institute continued to increase during the fifties, reaching the peak figure of 524 in 1859,⁽¹⁾ but in the sixties, in spite of several canvasses of the town, membership steadily declined, until in 1869 it had fallen to 379.⁽²⁾ Their own fluctuating and uncertain economic and social condition, the illiterate or semi-literate level of their education, a lack of interest in Institute activities, and the rise of "new and kindred institutions", which seemed closer to their educational and social backgrounds, were probably the chief reasons why the local artisans did not recognize the "superior claims and advantages" of the Institute. Although the Committee admitted that less than half the members were practising mechanics and said they were "fully convinced of the indispensable importance of the Institute to the working classes,"⁽³⁾ they took no effective steps to create a Working Man's College in a town in which the number of unskilled and semi-skilled mechanics in the new iron and steel workshops was growing rapidly.

- (1)Annual Report of the Darlington Mechanics' Institute, 11th March, 1859, and Vide Appendix A.1.
 (2)Ibid., 13th March, 1869.
 (3)Ibid., 14th March, 1862.

One of the features of the educational character of an Institute was its lecture programme, and, as the previous chapter revealed, the lectures given in the local Institute were changing from scientific to literary or general topics during the 1840's. The lectures provided in the new Institute were hardly calculated to encourage the underpaid, over-worked and probably semi-illiterate mechanic to hurry to the Institute after a hard day's toil. The list of lectures for 1859 was typical⁽¹⁾ for only that of Mr. Wheeler had any connection with technical instruction:

"Popular Proverbs"	G. Dawson, Esq, Birmingham.
"Macbeth"	Rev. M. Miller, Manchester.
"The Poetry of Byron, Moore and Others"	Mr. Jeffreys, Stockton.
"The Uncrowned Monarchs of Europe" and "The Genius and Writings of Lord Macaulay"	The Rev. E. P. Hood, London.
"Electricity"	Mr. E. Wheeler
"Charles I," "Charles II," "The Romance of the Bourbon Family," "Cardinal Wolsey,"	Dr. Daniel, London.
"Foreign Travel - St. Petersburg"	Mr. Taylor, Middlesbrough.

(1) Annual Report of Darlington Mechanics' Institute, 9th March, 1860.

Public apathy towards such a programme of lectures was inevitable, despite the occasional lecture by a distinguished visitor, such as that given in 1868 on the "Advantages of Technical Education", by Mr. Buckmaster of the Science and Art Department.

The contents of their libraries also reflected the popularisation that the Mechanics' Institutes had experienced, as many had not restricted their book stock to works of a scientific nature, but had been glad to receive any books, journals, maps, models and apparatus that had been donated. In the absence of public libraries, the Institute Library had always been regarded as one of the most valuable means of furthering the technical education of members, and in this matter the Darlington Mechanics' Institute was no exception. It had been re-born as the "Darlington Mechanics' Library and Reading Room", and in every Annual Report mention was made of the state of the Institute Library. When the new Institute building opened, the Library and Reading Room, which were kept separate, could boast over 2,000 books and over 12,000 issues in one year.⁽¹⁾ A wide selection of newspapers and periodicals was also taken.

(1) Annual Report of Darlington Mechanics' Institute, 9th March, 1855.

The following table, collated from the Annual Reports, indicates the growth and use of the Institute Library over a twenty year period:⁽¹⁾

	<u>1851</u>	<u>1859</u>	<u>1870</u>
Institute Membership	379	461	390
Income of the Institute.. ..	£120	£216	£274
Book Allowance	£23	£26	£29
Total Number of Books	1608	2737	3431
Increase on the previous year..	157	124	177
Number of Books Issued	9580	9890	8043
Librarian's Salary	£10	£25	£35

In 1868, the year after the granting of Borough status on the town and eighteen years after the passing of the Public Libraries Act, which empowered local authorities to establish free libraries supported out of the rates, the Mechanics' Institute Committee were approached on the question of a Free Library for Darlington.⁽²⁾ They considered the existing Library facilities in the town were adequate to meet requirements. This unenlightened view was supported by the result of a town referendum in 1870, when the proposal to establish a Free Library supported by the rates was defeated. The town had to wait another fifteen

(1) Annual Reports of Darlington Mechanics' Institute, 11th March, 1852,; 9th March, 1860; 10th March, 1871.

(2) Minutes of Darlington Mechanics' Institute Committee, 21st February, 1868.

years and it was Quaker generosity again that provided a Public Library, following a £10,000 bequest by Edward Pease, the "Father of the Railways."

It now remains to consider the most important educational work of the Darlington Mechanics' Institute, during the years 1855 to 1870, - the classes - and in particular those which can be termed 'technical instruction.' Despite the upsurge of enthusiasm which accompanied the new building, referred to in the previous chapter, the Committee were forced to confess that "the subject of classes has not excited the interest which its importance deserves, with the exception of the Drawing class under the care of Mr. Kelly, which continues^u to be steadily supported."⁽¹⁾ The average attendance at this class was twenty-two pupils.⁽²⁾ Although during the winter of 1856-7 the class position was more encouraging, the number of pupils in the following classes was still very limited,⁽³⁾ and only the Drawing class could be described as technical education:

- (1) Annual Report of Darlington Mechanics' Institute, 6th March, 1856.
- (2) Tabular View of the Institutes of the Yorkshire Union, May, 1856.
- (3) Annual Report of Darlington Mechanics' Institute, 6th March, 1857.

Mathematics and Arithmetic	Rev. J. Marshall
Reading and Spelling	Mr. F. Mewburn
Writing	Mr. F. Gibbs and Mr. W. Forster
Drawing	Mr. Kelly
French	Monsieur de Baste

During the next winter, however, only a German class, under Mr. William Jones, and the Drawing class, now under Mr. Sam Elton of the School of Art, received enough support to run.⁽¹⁾

This situation of the Institute Committee struggling to launch and maintain classes only to have them collapse after a few weeks or a winter, continued with slight variation for the next twenty years. Though the Committee were aware of the value of class instruction and were desperately anxious that the Institute classes should make a bigger impact on a growing working class population, the response was nearly always disappointing. In September, 1858 the Class Committee reported that class instruction "as hitherto practised in the Institute was a good deal of a farce."⁽²⁾ A letter was sent from the Institute to eleven elementary and private schools in the town, inviting boys leaving to join the Institute

(1) Annual Report of Darlington Mechanics' Institute, 5th March, 1858.

(2) Minutes of Class Committee, 9th September, 1858.

and its classes and asking for a list of names of those who had recently left school.⁽¹⁾ Renewed efforts were made: a class for elementary instruction in Reading, Writing, Arithmetic and Geography was regularly conducted on four evenings each week by Mr. G. W. Bartlett, master of the British School, Skinnergate, with an average attendance of twenty-three scholars, who paid 3d. per week.⁽²⁾ But because "the superior advantages" presented by the Central School of Art led to the withdrawal of many pupils connected with the Institute Drawing class, the Mechanics' Institute Committee decided to discontinue its own Drawing class as well as its £5 subscription to the School of Art.⁽³⁾ Thus the only kind of technical instruction ceased.

During the 1860's, the Annual Reports regularly contained expressions of regret that classes had been discontinued or did not commence through lack of support. "Apathy" and "indifference" were words frequently used to describe the response of members and, at the 1864 Annual General Meeting, the Chairman said the position was "something comparable to the paralysis of a right arm."⁽⁴⁾

(1) Ibid.

(2) Annual Report of Darlington Mechanics' Institute, 11th March, 1859.

(3) Annual Report of Darlington Mechanics' Institute, 11th March, 1859.

(4) Darlington and Stockton Times, 12th March, 1864.

Probably as a result of a lecture on "Instruction in Science and the aid given by the Department to Science Classes" by Mr. Buckmaster of the Department of Science and Art during the winter season 1866-7, a Chemistry class, referred to in the previous section, was launched at the Mechanics' Institute, under Mr. Robert Weatherill of Middlesbrough. Class fees were 7s. 6d. for members of the Institute and 10s. Od. for non-members, although the Class Committee had the power to remit the fees of "lads" belonging to the Institute who wished to join the class.⁽¹⁾ Once more the Institute was indebted to a member of the Pease family, Edward, who gave £10 towards the establishment of the class, without which it would probably not have run.⁽²⁾ Of the thirteen members attending the Chemistry class, six out of seven passed the Science and Art Department examination, thus earning grant-in-aid for the class.⁽³⁾

In 1868 a separate Class Management Committee was appointed and thanks again to the generosity of Edward Pease, a Mathematics class, hoping to receive a grant from the Science and Art Department on the

(1) Annual Report of Darlington Mechanics' Institute, 8th March, 1867.

(2) Ibid.

(3) Annual Report of Darlington Mechanics' Institute, 13th March, 1868.

examination results , was formed under Mr. Heys, a certificated teacher.⁽¹⁾ This class of only four pupils met for an hour and a half lesson on two nights each week, but there is no record of how successful it was. Institute classes received a visit from Mr. Wylde, the Science and Art Department Inspector, who reported satisfaction with them. He also suggested a meeting with local employers in order "to make the advantages of the classes to those requiring technical education more generally known."⁽²⁾ As only two employers attended the meeting a canvass of employers was undertaken. This, too, met with "no practical response." Comment was made, earlier in this chapter, on the nine students who entered the Science and Art Department examinations in May, 1868, in Inorganic Chemistry, Electricity and Magnetism, and Physical Geometry.⁽³⁾ Here at last, almost half a century after the Darlington Mechanics' Institute had set out to instruct the local artisan in the scientific principles behind his trade or craft, was evidence that some form of technical education was being taught.

(1) Ibid., 13th March, 1869.

(2) Ibid.

(3) Ibid.

An enlargement of the premises meant the suspension of classes and cost the Institute £200, at a time when the Committee still owed £450 on previous extensions. A subscription list was opened and the magnificent total of £770 was raised.⁽¹⁾ The Committee felt that their acknowledgments were especially due to "Mrs. E. Barclay who, in addition to the sum of £300 contributed at the erection of the building, has added the further donation of £200; to Henry, Edward, Arthur, Gurney and Charles Pease, Esquires, for gratuities of £50 each; to J. W. Pease, M.P., for a gift of £25 and to Messrs. J. Backhouse and Company for the sum of £100."⁽²⁾ Once again, the Quaker belief in the importance of working class education had been expressed in magnanimous terms. The burden of debt finally removed, the Committee reopened the Chemistry class in 1870-1 under Mr. Marshall of Bishop Auckland.⁽³⁾

In summing up the contribution of the Darlington Mechanics' Institute to local technical education in

(1) Ibid., 11th March, 1870.

(2) Annual Report of Darlington Mechanics' Institute, 11th March, 1870.

(3) Ibid., 10th March, 1871.

the years preceding the passing of Forster's⁽¹⁾ Education Act, which, incidentally, the Institute Committee warmly applauded,⁽²⁾ the only real achievements were the small Drawing and Chemistry classes, set up sporadically in connection with the Department of Science and Art. It was a story of hopes dashed and ideals unfulfilled, in spite of valiant and enthusiastic efforts by officials over many years. Moreover, compared with the advantages and security enjoyed by the classes at the Darlington School of Art, where, from 1864, over a hundred evening class students each year were being given Drawing instruction⁽³⁾ these ad hoc classes at the Mechanics' Institute appear puny and insignificant.

- (1) It is of interest to note that W. E. Forster (1818-1886) had some connection with Darlington. The Dictionary of National Biography (Volume XX 1889, p.26) reveals that Forster, a Quaker, "left Norwich in 1838 for Darlington to learn other branches of the wool business with the Peases. He worked for twelve hours a day in the woollen mill and for several hours in the evening studied mathematics and politics."
- (2) Annual Report, Darlington Mechanics' Institute, 10th March, 1871.
- (3) Department of Science and Art, 8th-17th Reports, 1861-1870, and Vide Appendix B.1.

Darlington Railway Institute

Finally, a brief account must be given of classes, similar to those of the Mechanics' Institute, which were being held at the North Road Railway Institute. Reference has been made to this Institution, earlier in this chapter, on account of its connection with the Darlington School of Art.

Another "new and kindred institution"⁽¹⁾, to which, in 1862, the Mechanics' Institute attributed some of its decline in membership, was the Stockton and Darlington Railway Company's Institute. In January, 1858, the workmen of the Stockton and Darlington Railway had applied to the Railway Board to provide accommodation for a Reading Room and Library, and the Directors agreed to adapt the old Rolley shed, at a cost of £80, for such a purpose.⁽²⁾ With the opening of new branch lines and the establishment of the North Road engine shops, the Reading Room and Library became too limited and inadequate for the "vast mass of men the Directors are anxious to provide with the means to exercise their mental faculties"⁽³⁾, and in 1862 a

(1) Annual Report of Darlington Mechanics' Institute, 14th March, 1862.

(2) Minutes of the Board of Directors, Stockton and Darlington Railway, 22nd January, 1858.

(3) Darlington and Stockton Times, 4th October, 1862.

Workmen's Institute was built at the corner of North Road and Whessoe Road, at a cost to the Stockton and Darlington Railway of £1,800.⁽¹⁾

At the sixth Annual General Meeting of the North Road Institute, as it came to be known, membership had reached 147, the library had over 1,000 books, and three classes, which could be described as technical education, were running - Drawing, Mathematics and Chemistry.⁽²⁾ The last named was described as "thoroughly successful," laboratory fittings were made and new apparatus bought so that quantitative analysis could be started during the next session.⁽³⁾ In the following year, 1865, these classes progressed satisfactorily and of six lectures also given, five were of a distinctly scientific nature: two on Electricity and Galvanism - Mr. Richardson; two on Pneumatics - Mr. Richardson; one on The Phenomena of Combustion - Professor Mureco, and one on Phonography - Mr. Bothy.⁽⁴⁾ The scientific content of these lectures was in marked contrast to the overwhelming literary content of the lectures given at the Mechanics'

(1) Ibid.

(2) Ibid., 24th September, 1864.

(3) Darlington and Stockton Times, 24th September, 1864.

(4) Ibid., 30th September, 1865.

Institute. Established in the rapidly expanding industrial North end of the town, the North Road Institute of the North Eastern Railway appeared to be attempting some provision of technical education, if only in a small way, for working class men. Membership of the Institute must have remained fairly constant, for, although it was not named a 'Mechanics' Institute', it had much in common with one, and in 1872, when it applied to join the Yorkshire Union of Mechanics' Institutes, there were still 140 members.⁽¹⁾

Despite strenuous efforts and exhaustive enquiries, by the present writer, to trace the future development of the North Road Institute, the only evidence found has been that contained in the Department of Science and Art Reports from 1869, which refer to the Branch School of Art No. 1106 at the Darlington Railway Institute. By virtue of its general Drawing class for men, which met for two hours on three nights each week,⁽²⁾ the Railway Institute was placed in touch with South Kensington, local artisans being entered for the Department's examinations and earning payments according to their results. Further reference will be made

(1) Ibid., 25th May, 1872.

(2) Darlington and Stockton Times, 29th August 1868.

to the technical instruction given at the North Road Institute in the next chapter.

Summary

In attempting to assess the growth of technical education in Darlington in the years covered by this chapter, 1853-1870, it is clear that the leading achievement was the establishment of the Darlington School of Art. But even here technical education was only in its embryonic stage and limited to Drawing instruction of a most elementary kind. The main difficulties still to be overcome were the totally inadequate state of primary and secondary education in the town, an inability by the growing number of local industrialists to see any relevance or need of technical instruction for their workmen, and, nationally, a lack of any co-ordinated and organized system of education, including technical education. It was now vital for the nation, and for Darlington, particularly in view of the poor performance of British industry at the Paris Exhibition of 1867, that State direction and aid should supersede well-meaning, but frail, local voluntary efforts. However, it needed the 1870 Act, a technical instruction movement culminating in the formation of the National Association for the Promotion of Technical

and Secondary Education, several Royal Commissions and further voluntary experiments, such as the School Boards' Evening Continuation classes and the creation of the City and Guilds of London Institute, before the landmark of the Technical Instruction Act of 1889 was passed. These events and their effects on technical education in Darlington will be discussed in the next chapter.

CHAPTER VTECHNICAL EDUCATION, NATIONAL AND LOCAL,1870 - 1890

At this chronological halfway point it seems valuable to review the progress made in the field of technical education, both nationally and in Darlington, in the half century preceding 1870, and to take a brief glance forward at the major developments which were to come in the next forty-five years and which form the subject matter of the second half of this thesis.

In the period covered by the first four chapters, there was a complete lack of any nationally organized agencies to provide a system of technical education in England until the system of payment by results, by the Department of Science and Art, became effective in the late 1860's. Hostility, indifference or ignorance were the prevalent attitudes of those in Government and in position of authority towards education in general and technical education in particular. It has been stressed on several occasions already that any advance in scientific and technical education is totally dependent on

an efficient system of elementary literacy and no steps were taken by the State to ensure that this was provided on a national scale until the 1870 Education Act. This neglect of primary education meant that, despite the valiant attempts of such far-sighted pioneers as Babbage, Playfair and Huxley, both before and after the Great Exhibition of 1851, to rouse and persuade politicians and educated public opinion that England would maintain her commercial prosperity and industrial wealth only if she had adequate numbers of properly educated engineers and scientists, technical education did not receive the necessary government recognition and support until several years after our European rivals had organized their educational systems.

The problem was, however, complicated by ignorance as to what constituted technical education at any particular time. This difficulty of definition was really not surprising for the meaning of the term "elementary education" was uncertain, as events after the passing of the 1870 Act confirmed. Moreover there was no national system of secondary education at this time. This lack of clear definition between the three stages of education produced overlapping, duplication and waste throughout the country, and,

even after the Technical Instruction Act of 1889, technical education, in the sense of providing vocational instruction for the working classes, continued to be supplied by a variety of agencies, voluntary and aided, at local and national level. Thus, if there was a lack of agencies providing technical education in England before 1870, in the following thirty years there developed a confusion of agencies.

As the events described in Chapters III and IV suggested, the progress of technical education in Darlington reflected the national position just outlined. Although there was not a complete lack of agencies in the town, the technical instruction provided by the private enterprise committees of the Mechanics' Institute and the North Road Railway Institute consisted of intermittent and unco-ordinated classes of a very elementary kind, which appealed to only a mere handful of mechanics and artisans, at a time when the engineering industry was gradually becoming the premier industry of the town. Even the valuable work of the School of Art was only beginning and was confined mainly to evening classes in Drawing.

Something of the variety, indeed the confusion, of educational agencies after 1870, mentioned earlier, began to appear in Darlington. Some of the older pupils in the elementary day schools, run by the School Board, were given instruction in Drawing and evening Science and Art Department grants, as the children in the voluntary elementary schools had done previously. Science classes were introduced at the British and Foreign Society's Training College and at the only local secondary school, the Grammar School, with the object of preparing students for the Department's examinations. The School of Art offered day and evening classes in various aspects of Drawing, as well as teaching students from private schools, while in the 1880's, it, too, inaugurated ~~Sc~~ience classes. Several evening Science classes sprang up at various times, the Mechanics' Institutes continued to put on occasional Science classes, while the Railway Institute ran Art classes from time to time, all thereby obtaining aid from South Kensington. However, before elaborating on these local developments, it is proposed to look more closely at the chief landmarks in the national progress of technical education, during the years between the passing of two Acts of Parliament, the Elementary Education Act of 1870 and the Local Taxation (Customs and Excise) Act of 1890.

1870 Education Act

The main obstacle which had been holding back the development of technical education in England, inadequate basic education, was tackled and ultimately removed with the passing of this Act, which, by nationally organizing elementary education from the ages of five to thirteen, meant that, at last, standards of basic literacy would be assured, so that the superstructure of further, i.e. technical and higher education, could be gradually built on them. In other words, as it enabled the locally elected School Boards, responsible to the Government Education Department, to supplement the elementary schools already established by the voluntary bodies, by building and managing their own elementary schools supported by the rates, Government grants and pupils' fees, this Act paved the way for a national system of technical education to develop, even though it took twenty years for the beneficial effects to be seen.

The skills and talents of the industrial poor, previously lost to the nation, could be harnessed to the national interest. Science and Art education would be open to more children with the basic rudiments to understand and profit from such technical instruction. The nation's prosperity, dependent on

our industrial and economic progress, would increase and stand up to the challenge of our foreign competitors, whose education systems, including that of technical education, were already well established.

The impact of this overdue reform could be seen after only a few years. By 1876, one and a half million new school places had been provided (two-thirds by voluntary bodies and one-third by the Boards) and fifty per cent of the school population was under some sort of compulsory attendance by law. By 1880 there were over 14,000 voluntary schools and nearly 3,500 Board Schools.⁽¹⁾ Other developments took place as a result of this first major intervention by the State in the field of education. Higher Grade elementary schools, Organized Science Schools and Evening Continuation classes began to appear in connection with Board Schools, although evening schools had been attached to the voluntary elementary schools before the 1870 Act. It is necessary to see how these fitted into the now slowly developing pattern of technical education.

Higher Grade Elementary Schools and Organized Science Schools

It was not long in some areas before the School

(1) M. Argles, South Kensington to Robbins, 1964, pp.27-8

Boards had performed their duty of providing sufficient elementary school places. They then turned to the task of improving the range and quality of the instruction given in elementary schools, by adding higher classes, in which new subjects, such as the elements of physical science were taught, and by allowing brighter children to stay on two or three years after the normal leaving age. Thus these upper classes were in effect secondary schools being run and financed via the rates (illegally, as the Cockerton Judgments were later to show) by certain School Boards. They were also supported by scholars' fees and by Science and Art Department grants for certain subjects. Voluntary schools as well as Board schools established these "ex-standard classes".

These Higher Grade schools often became Organized Science Schools in which a certain number of hours per week had to be devoted to the teaching of Science subjects. Again, these were often upper classes or secondary departments of elementary schools, although they did appear as evening schools and as municipal technical schools, but they were financed by Students' fees and by examination successes in the Science and Art Department examinations and later by attendance grants. Thus by 1880 there were two Government

authorities for education: the Education Department, responsible for the School Boards and their elementary schools, and the Science and Art Department, through its system of payment according to results, supporting Higher Elementary classes and Organized Science Schools. This overlapping or blurring of responsibility for technical education at the centre was also becoming firmly established at the circumference, as several individual local committees sought to encourage Science and Art classes, where grants in aid could be earned.

This duplication and conflict was further complicated after 1890 by the fact that some Evening Continuation Schools provided classes of a scientific or technical character. In their early years before the 1870 Act, evening classes, which had been subsidised by the Education Department since 1851, were a continuation^u of the day school work of elementary instruction in the three R's. In 1870 - 1871 the number of evening class students had reached the peak figure of 83,457 ⁽¹⁾ but, because of the growth of elementary day schools and the Education Department's restriction of the teaching to elementary subjects, this total had fallen to 24,233 by 1884-5. ⁽²⁾

(1) Sadler, op.cit., p.60.

(2) Ibid., p.61.

However, the revival of Evening Continuation Schools and their contribution to technical education came with the Revised Codes of 1890 and 1893 and therefore belongs to the next chapter.

Technical Training and the C.G.L.I.

Although the Science and Art Department grants to local Science and Art classes acted as a great stimulus to English technical education, one of the great weaknesses produced by the South Kensington system was that the instruction in these classes was of a theoretical nature. Practical industrial instruction of trades and technologies did not exist. The two main reasons for this unfortunate limitation on technical instruction were, firstly, the opposition of employers, who feared that new industrial processes might become known and used by competitors, and then, the Mechanics' Institutes' aim of putting on classes, in which the scientific principles underlying a particular craft were taught, meant that the separation of theory and practice had become traditional. This state of affairs proved increasingly frustrating, both to the growing number of skilled mechanics and craftsmen, who wished to improve their skill, and to an influential body of scientists and engineers, which

included Lyon Playfair, T.H. Huxley, Henry Roscoe, Captain Donnelly, Colonel Strange, and Bernhard Samuelson, who demanded State action to promote scientific and technical instruction as our foreign competitors had done.

The result of agitation and campaigning through lectures, public meetings, correspondence in the press and foreign tours by such men was the Parliamentary Select Committee on Scientific Instruction (1868), and a Royal Commission, the Devonshire Commission on Scientific Instruction and the Advancement of Science (1872-1875). However because laissez-faire and self-help were still the dominant attitudes of governments towards education very few of the recommendations of the Devonshire Commission were implemented. Once again it was left to private enterprise and finance to carry technical education forward.

The Society of Arts was in the forefront of this "technical education movement", whose leading members realised that it was the defectiveness of elementary and secondary education which had to be repaired if technical education was to advance. Because the Society felt they were duplicating those set by the Science and Art Department, it dropped its own Science and Art examinations, which had been running since

1856, and in 1873 introduced technological examinations in Cotton Manufacture, Paper Manufacture, Silk Manufacture, Steel Manufacture and Carriage Building.⁽¹⁾

One of the chief benefits of the Devonshire Commission was that, in the absence of the State aid for Science it had advocated, it led to the proposal that the funds of the Livery Companies of London might be used for such a purpose. At a meeting of the representatives of the Livery Companies on 3rd July, 1876, Millis tells us that the following resolution was adopted: "that it is desirable that the attention of the Livery Companies be directed to the promotion of education not only in the metropolis, but throughout the country, and especially to technical education, with the view of educating young artisans and others in the scientific and artistic branches of their trades."⁽²⁾ The result was the foundation, in 1880, of the City and Guilds of London Institute for the Advancement of Technical Education, with Philip Magnus as its Secretary and Director.

The purpose of the C.G.L.I. was to encourage the teaching of Science in schools and evening classes and it organized a system of examinations

(1) Millis, op.cit., p.61.

(2) Ibid., p.60.

in technical subjects, taking over and expanding the technological examinations begun by the Society of Arts, and thereby giving a national lead in the development of technical education. Like the Science and Art Department, the C.G.L.I. adopted a system of grants based on results in technical examinations. In 1880 there were 24 subjects, 816 candidates and 515 passes in the C.G.L.I. examinations, but by 1900 the system had grown to 64 subjects and 14,105 passes.⁽¹⁾ The C.G.L.I. did therefore for practical vocational training what the Science and Art Department system from 1859 had done for theoretical science and art education.⁽²⁾

In 1881 Finsbury Technical College was founded, under the control of the C.G.L.I., with Philip Magnus as Acting Principal. Here the emphasis was firmly laid on practical instruction as a preparation for entering industry. In the following year, the Regent Street Polytechnic was opened, also providing classes in practical and trade subjects. Thus the view, that the "only place in which a particular trade could be learned was the workshop, which had become a fixed principle with the advocates of technical instruction,"⁽³⁾

(1) Argles, op.cit., p.23

(2) Millis, op.cit., p.61.

(3) J. W. Adamson, English Education, 1789-1902; 1930, p.398.

was being strongly challenged. Finally the C.G.L.I. financed the Central Technical College at South Kensington, which was opened in 1885 and provided high-level scientific and technological education and technical teacher training.

A Royal Commission and the National Association for the Promotion of Technical and Secondary Education.

Although much progress had therefore been made in the field of technical education since 1870, it had again been due to voluntary effort and private enterprise. In 1884, another Royal Commission, under Sir Bernhard Samuelson, the Middlesbrough industrialist and M.P., appointed to investigate the need for technical education and to consider the best method of promoting it, presented its report. Having investigated technical education at home and abroad, the Commissioners found that "nowhere in Europe was there a system of evening instruction in Science comparable with that undertaken by the Department of Science and Art and the C.G.L.I." ⁽¹⁾ although they felt that Science classes should be made more practical. It was in the field of elementary and, particularly, secondary education that Britain lagged behind her

(1) Cardwell, op.cit., p.104.

Continental rivals. Therefore the Commission recommended that our endowed secondary schools should be greatly improved and, in particular, that scientific and technical instruction in them should be greatly increased as this would lay the foundation for later technical training. It affirmed that technical education could only be built on a unified system of elementary and secondary education and stated "that, in the proposed re-organization of local government, power should be given to important local bodies, like the proposed County Boards and Municipal Corporations, to originate and support secondary and technical schools."⁽¹⁾ This last proposal anticipated the passing of the Local Government Act of 1888, about which more will be said in the next section.

Several of the Commissioners helped to arouse public interest, by establishing the National Association for the Promotion of Technical (later "and Secondary") Education in 1887, whose aims "were the promotion of legislation on technical education and the supply of information to local authorities and other interested bodies."⁽²⁾ One of the Association's chief methods of publicising technical education was its quarterly pamphlet "The Record" and its annual

(1) Royal Commission on Technical Instruction,
Vol. 1, (1884) p.517

(2) Argles, op.cit., p.33.

reports. In 1889 it brought out a detailed report of the existing provisions for scientific and technical instruction in England and Wales "to show how far the present agencies overlap and compete with each other and how far gaps are still left unfilled." (1) It examined critically the Science and Art Department and the C.G.L.I., as well as describing the technical instruction provided in connection with elementary and secondary schools and higher institutions. Statistics on Science and Art and technical teaching in special districts were included and the report concluded with the Association's views on what still needed to be done. The three reforms most necessary in technical education were (a) an increase of quantity - "a wider diffusion of technical instruction" (b) an improvement of quality - "more elasticity in method and more interest in teaching," and (c) an economy of machinery - "the waste of force, consequent on overlapping, and one of co-ordination of educational institutions and authorities." (2) It called both for the appointment of a Minister of Education to control the three Government Departments responsible for education and, above all, for an organized system of secondary education. (3)

(1) N.A.P.T.S.E. Technical Education in England and Wales, 1889, p.7.

(2) Ibid., p. 134-5.

(3) Ibid., p.136.

The Technical Instruction Act and Whisky Money

Technical education had been gathering effective momentum in the 1880's but it was not until three Acts of Parliament were passed, two of which related specifically to technical education, that State aid and responsibility really began. The Local Government Act, (1888), created local government authorities in the County Councils and the County Borough Councils for towns of over fifty thousand inhabitants. This was followed by the Technical Instruction Act of 1889, which gave County Councils, County Boroughs and Urban Sanitary Authorities the power to establish Technical Instruction Committees and to levy a penny rate "for the support or aid of technical or manual instruction."⁽¹⁾ The Act defined technical instruction "as instruction in the principles of science and art applicable to industries and in the application of specific branches of science and art to specific industries and employment. It included commercial and agricultural subjects, but the teaching of a trade was expressly excluded."⁽²⁾ Few local authorities took advantage of these new powers at first - only seven County Boroughs and forty-two Urban Sanitary Authorities

(1) Royal Commission on Secondary Education, 1895, Vol. 1, p.12.

(2) N.A.P.T.S.E. Third Report, 1890, p.8.

were levying this rate in 1893-4,⁽¹⁾ and "probably not much impulse would have been given to technical instruction had it not been for the funds made available by another Act passed at almost the same time."⁽²⁾

This Act, the Local Taxation (Customs and Excise) Act of 1890, provided the new Technical Instruction Committees with additional financial resources. This aid took the form of money, known as "Whisky Money," originally intended to finance the closure of redundant public houses by compensating publicans deprived of their licences, but which the Exchequer allowed local authorities to keep to reduce the rates or for the purposes of technical education. The general result of this Act was to place at the disposal of County Councils and County Boroughs in England and Wales £743,000⁽³⁾ and by the middle of 1891, 37 English County Councils and 33 County Boroughs were giving all their Local Taxation fund to technical education.⁽⁴⁾ Three years later, 42 of 48 County Councils were using the whole of the Local Taxation money, amounting to almost £600,000 per year, to promote technical education,⁽⁵⁾ while 51 of 61 County

(1) Royal Commission, Secondary Education, op.cit., pp. 32 and 37.

(2) Ibid., p.12.

(3) N.A.P.T.S.E. Fourth Report, 1891, p.6.

(4) Ibid., p.11.

(5) Royal Commission Secondary Education, op.cit., p.32 and pp. 332-340.

Boroughs were spending almost £160,000 in similar fashion.⁽¹⁾

Thus these two Government measures gave a belated impetus to technical education throughout the country, doing at last for technical education what Forster's Act of 1870 had done for elementary education.⁽²⁾

Many of the scientific and technical classes, which had been provided by voluntary bodies, such as Mechanics' Institutes, as well as the various organized Science Schools, which had sprung up as a result of Department of Science and Art grants, were gradually taken over by the local authority Technical Instruction Committees. Indeed some of the larger Mechanics' Institutes, like those at Huddersfield, Birmingham and Leeds, were converted into local authority Technical Institutes.⁽³⁾ Even though there were still two local education authorities in the 1890's - the School Boards, responsible to the Education Department for elementary education, but also extending into secondary and technical education, and the Technical Instruction Committees, responsible to the Science and Art Department and offering secondary as

(1) Ibid., p.37 and pp. 342-346.

(2) Millis, op.cit., p.11.

(3) Kelly, op.cit., p.274.

well as technical education - with much overlap, conflict and confusion as a result, the period 1890 to 1905 was one of marked progress and expansion for technical education. The seeds had been sown of an effective national system, but the technical education provided still consisted primarily of part-time evening classes.

It now remains to map the progress of technical education in Darlington in the years 1870 to 1890 and to show its relationship with the account of the national provision just outlined. Original records of this period appear to have been lost and one is dependent on the Reports of the Department of Science and Art and on reports and advertisements in the local press. This fact is particularly frustrating and disappointing as far as the School of Art is concerned, but, despite the writer's detailed enquiries, the valuable Minute Books of the Darlington School of Art Committee are not available. But, before describing the technical education at the School of Art, a brief glance will be made at the steps taken in Darlington to implement the 1870 Act. Although these measures relate specifically to the provision of elementary education, as has been suggested on several previous

occasions, they were a vital prerequisite for later technical instruction and training and are therefore included.

Darlington School Board

The first Darlington School Board was elected in January, 1871 and its members appointed as Chairman, Henry Pease, President of the Mechanics' Institute from 1850-1869 and Chairman of the School of Art Committee from its foundation in 1857 until his death in 1881, and as Vice-Chairman, another well known public figure in the town, David Dale, Chairman of the Consett Iron Company, Chairman of the Governors of the Grammar School for many years and Chairman of the Durham County Education Committee from 1892 to 1895. The Board's aim was to gather information as to the requirements of the Borough in the matter of public elementary school accommodation, the amount and character of the existing school provision and the manner in which any deficiency should be met. The duty of the Board was not to supplant but supplement voluntary effort. According to the Chairman, at the final meeting of the Board in 1904, "the work of the Darlington Board was comparatively light, for Darlington had 559 more school places than were needed, i.e. there was accommodation for 5,946 children when it was needed

for only 5,387."⁽¹⁾ These figures refer to children between the ages of five and thirteen, allowing eight square feet space per scholar, but, although 5,387 was the number of children who should have been attending elementary schools in the Borough, only 4,118 were enrolled and the average attendance was down to 2,903.⁽²⁾ With so many children irregular attenders or absentees the Board used its powers to introduce compulsion and appointed Mr. Armstrong, master of Holy Trinity School, as its first Attendance Officer.⁽³⁾ The penny rate, the Borough was empowered to raise, produced £413, but parents had to contribute 2d. per week school fees.⁽⁴⁾

Reference was made at the end of Chapter II to the eighteen voluntary elementary schools which the Darlington School Board found in existence in 1871.⁽⁵⁾ By 1874 the Board had taken over four of the British and Foreign Society's schools, Rise Carr (Infants), Skinnergate (Mixed and Infants), Albert Road (Boys, Girls and Infants) and Bridge Street (Mixed).⁽⁶⁾

(1) Report of final meeting of Darlington School Board, 1904.

(2) First Report, Darlington School Board, 1871.

(3) Ibid.

(4) Ibid.

(5) Vide Appendix, C.1.

(6) Darlington School Board, Report for 1874.

The connection between the Board's elementary schools and technical instruction was only very tenuous and can best be seen in the Board's balance sheets and in the Department of Science and Art's reports in the section "Instruction in Drawing in Elementary Day Schools." For example in the years 1876, 1877 and 1878 the Boards's schools earned £10 7s. Od., £7 5s. Od. and £22 4s. 6d. respectively from South Kensington.⁽¹⁾ In the 1880's, the School Board reports do not show the separate grants earned from this source but include them in the general education grants. Evening classes were also held in their schools in this period, but the Board gives no statistics about them. These classes provided instruction in the three R's for young men and adults and did not really flourish until after the new Evening School Code of 1893. More will be said about these Evening Continuation Schools in Chapters VI, VII and VIII.

Darlington School of Art.

Although there were other science and art classes, some permanent, some occasional, operating in Darlington between 1870 and 1890, which will be dealt with in

(1) Ibid., Reports for 1876, 1877 and 1878.

subsequent sections of this chapter, the Darlington School of Art remained the chief agency for providing technical education in the town after 1870, until it became absorbed as a department of the Technical College, when it opened in 1897. It continued to rent rooms in the Mechanics' Institute, Skinnergate, throughout this period. Student numbers fluctuate from 250 in 1872⁽¹⁾ to 158 in 1888,⁽²⁾ though it must be pointed out that the first total includes 87 students of private schools, whose students are not shown separately after 1880, while the latter number includes 31 Science students, as Science subjects were taught at the school from 1882-3.⁽³⁾ Of the 163 enrolled students of the School of Art itself in 1872, 44 attended morning Art and Drawing classes and 119 were evening class students.⁽⁴⁾ Although the numbers taught Art subjects fell to 117 in 1881⁽⁵⁾ they had risen again to 129 ten years later.⁽⁶⁾

- (1) Department of Science and Art, 20th Report, 1873, p.355 and Vide Appendix B.1. and B.2.
- (2) Ibid., 36th Report, 1889, p.24.
- (3) As the work of the Science and Art Department science and art classes and grants expanded, so the Department's method of publishing this information became more complex and, as the N.A.P.T.S.E. complained, it becomes increasingly difficult to find the relevant statistics from the three overlapping publications of the Department, i.e. the Directory, the Annual Report and the Calendar and General Directory.
- (4) Department of Science and Art, 20th Report, 1873, p.355.
- (5) Ibid., 29th Report, 1882, p.451.
- (6) Ibid., 39th Report, 1892, p.60.

The subjects taught at the school can be seen from the following press notice: "School of Art: Public Examinations in Drawing of the Science and Art Department will be held on the 10th and 11th March in Freehand Drawing, Geometry, Model Drawing and Perspective; Second Grade Examinations only, open to male and female candidates above twelve years of age and not attending elementary day schools for the Poor.

J. C. I'Anson, Secretary." (1) Examination successes varied from year to year and therefore payments, according to the School's results by the Science and Art Department, varied similarly. In 1870, 62 students sent 372 works to South Kensington to be entered for the Third Grade Drawing Examination; grants were made on the works of 60 artisans, 5 of whom received book prizes. (2) In the local examinations, for the Department's Second Grade Drawing Certificate, 77 out of 111 students were successful. (3) These results meant that the School of Art earned £101 19s. 1d. from the Department, which sum also included £16 18s. 1d. towards the purchase of examples and the cost of prizes. (4) Eleven years later, of 77 students to

(1) Northern Echo, 5th March, 1870.

(2) Department of Science and Art, 18th Report, 1871, p.304.

(3) Ibid.,

(4) Ibid.

send up works, 67 were awarded Third Grade Certificates, 2 gaining national prizes in the Advanced Art Section, while 17 out of 45 students passed the Second Grade Examination, 5 obtaining prizes, the total payment by the Department for these successes being £70 13s. 6d.⁽¹⁾

These results suggest that one of the main aims of the teaching was to prepare as many students for the Third Grade Examinations in Drawing and Painting, in order to earn the higher grants which the Department paid for success at this level. The proportion of passes at this grade was always much higher than in the Second Grade. In addition to the figures of the previous paragraph, which reveal this fact, in 1887 all the 68 students, who sent up their work to the Department, were successful in the Third Grade examinations, whereas the pass rate in the lower Second Grade examination was only 33%, 24 out of 72 students.⁽²⁾

The income of the School of Art came from three main sources: students' fees, grants from the Department of Science and Art and subscriptions. While it appears impossible to establish what the pupils from private schools paid individually for their Art tuition

{1} Ibid., 29th Report, 1882, pp.451 and 455.

{2} Ibid., 35th Report, 1888, p.200.

at the School of Art, their total fees made up a valuable proportion of the School's income. For example, in 1881, they contributed £110 to the total figure of £242 5s. 3d. obtained in fees, the remainder consisting of £89 4s. 0d. from students at morning classes and £43 1s. 3d. from evening classes.⁽¹⁾ Fees paid by day and evening students varied from time to time and according to the number and grade of subjects taught. In 1877 day students were charged 8s. 0d. or 4s. 0d. per month for tuition, while evening students paid 2s. 0d. or 4s. 0d. plus an entrance fee of 2s. 0d.⁽²⁾ Perhaps this latter charge was to counteract wastage of numbers. Four years later the system of fees had been changed to 15s. 0d. or 21s. 0d. per quarter for day students and 5s. 0d. or 10s. 0d. for evening classes.⁽³⁾ Money earned from the Department on results in 1881 totalled £70 13s. 6d.⁽⁴⁾ Besides payments on results of sessional examinations the Department could award money for other works done during the previous year by a student in an Art School, as well as make payments for free studentships and Art pupil teachers. Local subscriptions to the Darlington School of Art in 1881 amounted to £76 10s. 6d.⁽⁵⁾

(1) Ibid., 29th Report, 1882, p.455.

(2) Ibid., 25th Report, 1878, p.332.

(3) Ibid., 29th Report, 1882, p.433.

(4) Ibid.

(5) Ibid.

These private subscriptions were always a welcome source of income but not a reliable one. The School of Art had to watch its financial position carefully for, in addition to Mr. Elton's salary and any pupil teachers he might have to assist him, rent had to be paid each year to the Mechanics' Institute for the use of their rooms.

It appears, from the limited information available, that the bulk of the teaching was done by the Headmaster, Mr. Samuel Elton. In the school's earlier years he was assisted by two art pupil teachers.⁽¹⁾ Mr. Elton was obviously not fully occupied by his teaching commitments at the School of Art because the majority of students came to evening classes. According to press advertisements, he was teaching art at local private schools, such as Blacklock's Collegiate and Commercial School.⁽²⁾ He was also listed, in the press notice announcing the opening of the new Darlington Grammar School,⁽³⁾ as the member of staff responsible for Drawing, but this would only be a part-time appointment. Mr. Elton had obviously built up a reputation in the town as a talented teacher of Drawing, Freehand and Mechanical and Painting. This

(1) Ibid., 8th Report, 1861, p.62.

(2) Northern Echo, 5th March, 1870.

(3) Ibid., 12th January, 1878.

is confirmed by the following tributes on his death in 1886. "In addition to the School of Art he taught at various private schools in the neighbourhood and was very laborious in his profession. He discharged his duties with high ability and possessed considerable merit as an artist. He was a general favourite among his pupils, his increasing affliction led to the appointment of his son, Edgar, as his assistant nearly two years ago,"⁽¹⁾ and "he was considered to be very efficient as a teacher and to have much more power as an artist than his opportunities allowed him to use."⁽²⁾

During his almost thirty years as master of the Government School of Science and Art 1107 (Darlington), as it came to be known,⁽³⁾ Mr. Elton had concentrated on developing classes in Art, because this was what he was qualified and interested in. However a few years before his death, Science classes had been introduced⁽⁴⁾ and, in 1884, there were forty Science students at the school, who earned grants amounting to £35.⁽⁵⁾ Although the number of Art students only showed a slight increase from 126 in 1859⁽⁶⁾ to 130 in 1886⁽⁷⁾ during Mr. Elton's

(1) Ibid., 17th June, 1886.

(2) Darlington and Stockton Times, 19th June, 1886.

(3) Department of Science and Art, 31st Report, 1884, p.92.

(4) Ibid., and Vide Appendix B.2.

(5) Ibid., 32nd Report, 1885, p.43.

(6) Ibid., 7th Report, 1860, p.76.

(7) Ibid., Calendar and Directory, 1886, p.106.

mastership, with the period 1866-1874 being most successful,⁽¹⁾ many Darlington students, including pupil teachers for the town's elementary schools, had passed the various Drawing examinations of the Department of Science and Art, a few with considerable distinction, and thereby had gained the benefits of one aspect of technical education. Progress had not been spectacular, indeed it is not known how many of the school's students were mechanics or apprentices from the growing number of engineering works in the town, but the seeds of technical education in Darlington, though biased towards Art, had been effectively sown by Mr. Samuel Elton.

Mr. Edgar Elton now assumed the mastership of the School of Art. He held this position until the School of Art became a department of the Technical College in 1897, and he remained head of the Art Department until his retirement after the first World War.⁽²⁾

Mr. Elton gained his A.R.C.A. degree after several years' training at the National Art Training School, South Kensington⁽³⁾, and had been assisting his father for two years before his death. Mr. Joseph Bowker taught Geometry and Perspective in a part-time capacity

(1) Vide Appendix B.1.

(2) Darlington and Stockton Times, 16th June, 1923.

(3) Ibid.

from 1889,⁽¹⁾ and, according to one report "this partnership (with Mr. Elton) produced many brilliant students."⁽¹⁾

Before the other classes that were being run in Darlington, in connection with the Department of Science and Art, are discussed, the introduction of Science to the curriculum of the School of Art must receive comment, as it was an important step in breaking the monopoly that Art and Drawing had enjoyed for nearly thirty years. There were forty Science students in 1884 taking the following subjects: Geometry, Machine Construction, Building Construction, Animal Physiology, and earning £35 in grants from South Kensington.⁽²⁾

Numbers seemed to change dramatically from year to year in the Science classes. In 1888 there were 31 Science students; in 1889, 86; in 1890, 10; and in 1891, 54.⁽³⁾ The larger numbers warranted a teacher responsible for these Science classes and Mr. Edgar Elton was joined by Mr. J. H. Pryce.⁽⁴⁾ However, other local educational institutions and individuals had been teaching Science classes and earning payment

(1) Darlington and Stockton Times, 16th June, 1923

(2) Department of Science and Art,
32nd Report, 1885, p.43.

(3) Ibid., 36th-39th Reports and Vide Appendix B.2.

(4) Ibid., Calendar and Directory, 1888, p.116.

14)

from the Department of Science and Art for several years before the School of Art. These will now be described, as they are another facet of the complex proliferation of technical education. The permanent and continuous classes will be examined first.

The British and Foreign Training School

In February, 1872, the British and Foreign School Society opened in Darlington its North of England College for Training Mistresses for Elementary Schools and part of the curriculum consisted of classes, in Acoustics, Light and Heat, Animal Physiology and Physical Geography, in connection with the Department of Science and Art.⁽¹⁾ The College was obviously attracting some good students as well as being keen to increase its income, for five years later it was listed as a Science School, No. 1108, and 76 young ladies were under instruction in Animal Physiology, Elementary Botany and Physical Geography. The college received £118 in payment from the Department as a result of the examination successes in these three subjects, 34 students obtaining prizes or medals.⁽²⁾ The number studying Science subjects had fallen to

(1) Ibid., 20th Report, 1873, p.70.

(2) Ibid., 25th Report, 1878, pp.48 and 148.

26 by 1884, but now 71 students were taking Drawing classes in connection with the Department and in that year a total grant of £77 10s. Od. was earned.⁽¹⁾ Students at the Darlington Training College continued to enter the Department's examinations, though there were always more taking Art than Science.⁽²⁾ Again the N.A.P.T.S.E. pointed out the difficulty of obtaining the real position of Science and Art instruction in training colleges, but said "it is clear that the great majority of teachers receive but little, if any, adequate Science instruction and that this want of knowledge is the greatest obstacle to the spread of Science in elementary schools,"⁽³⁾

Darlington Grammar School

It was shown in Chapter II that the Queen Elizabeth Grammar School had, by the time of the 1870 Act, become little more than an elementary school, clinging to the old classical tradition and much in need of reorganization, especially if it was to cater for the new industrial characteristics of the town. Reform came in 1874 with the new Scheme for the School's management, based on the Endowed School

(1) Ibid., 32nd Report, 1885, p.93.

(2) Ibid., 37th Report, 1890, pp.123 and 38th Report, 1891, p.151.

(3) N.A.P.T.S.E. Report on Technical Education, 1889, pp.62-3.

Commissioner's Report, and this was the basis of the organization of the school for the next forty years.⁽¹⁾ Although it was classed as a second grade school, "its object was to provide a liberal and practical education."⁽²⁾ To this end the curriculum of the new school which opened in January, 1878 was broadened to include Mathematics, Science and Drawing. The new headmaster, Mr. Philip Wood, who was a First Class Honours Graduate in Mathematics of Edinburgh, and the most distinguished student in his year,⁽³⁾ soon introduced Science teaching in the fifth and sixth forms in connection with the Science and Art Department.⁽⁴⁾

At the Government's Science School No. 1178 (Darlington Grammar School) there were 48 scholars under Science instruction in 1881 and of these 21 gained prizes, earning £57 in grants from the Department.⁽⁵⁾ In the section which gave the subject analysis, of the total of 45 students at the Grammar School, who were being taught Science subjects by Mr. Wood and Mr. W. C. Anderson in January, 1882, 40 took Pure Mathematics,

(1) Sunderland, op.cit., p.51.

(2) Ibid.

(3) Ibid., p.53.

(4) Darlington and Stockton Times, 3rd July, 1880.

(5) Department of Science and Art, 29th Report, 1882, pp. 85 and 214.

16 Theoretical Mechanics, 26 Magnetism and Electricity, 16 Theoretical Inorganic Chemistry and 26 Physiography.⁽¹⁾ Seven years later Mr. Wood and Mr. Anderson had 62 Science students, who earned £36 from the Department.⁽²⁾ By now the School had once again become a genuine Grammar School, in so far as its pupils, five per cent of whom could remain until they were eighteen, could aim at the universities.⁽³⁾ This brief look at the town's secondary school indicates the confusion which existed over the nature of secondary and technical education and more will be said about the Grammar school's relationship with technical education and South Kensington in the next chapter.

Drawing in Elementary Schools and Evening Classes in Science

Although elementary schools, according to the 1870 Act, were those schools where elementary education was the principal part of the education given, because many of them were earning grants in respect of Drawing, and later Science, from the Science and

(1) Ibid., p.126.

(2) Ibid., 36th Report, 1889, p.24.

(3) Sunderland, op.cit., p.58.

Art Department, the Darlington elementary schools which provided a simple kind of technical instruction will now be briefly examined. Six voluntary elementary schools in Darlington, in 1872, were instructing children in Drawing and entering them for the First Grade Drawing examination of the Department: Albert Road and Bank Top Railway British Schools, St. Cuthbert's, St. John's and Holy Trinity National Schools and Bondgate Wesleyan School. Of 740 taught elementary Drawing at these schools, 453 children earned £47 3s.0d. from the Department, in respect of their examination performance, while the schools also received £8 17s. 2d. towards prizes and examples.⁽¹⁾ As the School Board took over some of the voluntary schools and built its own elementary schools, so the number of local children, paid monitors and pupil teachers examined by the Department in Drawing increased, so that by 1887 over 1,500 were earning small grants.⁽²⁾

Darlington did not possess any Higher Grade Elementary schools or an Organized Science School like the one at Gateshead.⁽³⁾ Its school population was not large enough to justify one being established. We

(1) Department of Science and Art, 20th Report, 1873, p.264.

(2) Ibid., 35th Report, 1888, p.114.

(3) N.A.P.T.S.E. Report on Technical Education, 1889, page 57.

shall see in the next chapter that the School Board offered Evening Continuation classes as a preparation for technical instruction classes. Later, the Technical College had a preliminary department in which elementary school leavers could take evening classes prior to following technical or technological course. However there were several evening classes, established in this period (1870-1890) by certificated day school teachers, teaching Science in connection with the Science and Art Department. As early as 1874 the following evening classes were described as Science Schools by the Department: Bank Top Railway School with 21 students taking Animal Physiology, St. John's School with 26 studying Pure Mathematics and Physical Geography, and the Wesleyan School, Bondgate, where 26 were also being taught Animal Physiology.⁽¹⁾ These Science classes were shortlived for they disappeared from the South Kensington reports after 1877. However, in 1881-2, 30 students were being taught Magnetism and Electricity at Trinity Boys' National School, (No. 1197),⁽²⁾ while a permanent Science School was established in Kendrew Street Board School, (No. 11111) with an increasing

(1) Department of Science and Art, 22nd Report, 1875, p.27.

(2) Ibid., 29th Report, 1882, p.126.

number of evening class students each year, ranging from 20 in 1884⁽¹⁾ to 63 in 1890.⁽²⁾ Subjects being taught by Mr. J. C. Oliver and Mr. C. E. Haggerty included Geometry, Machine Construction, Building Construction, Applied Mechanics and Steam.⁽³⁾ Finally, at Albert Road Science School (No.1104), evening classes in Machine Construction and Drawing and Steam were attended by 30 students, Beaumont Street Science School (No.1128) had 40 studying the Principles of Agriculture⁽⁴⁾, and another Science class (No. 11176), at the Wesleyan School, with 24 students, appeared in 1891.⁽⁵⁾

Before describing the events leading up to the establishment of the Darlington Technical College in 1897, which forms the material of the next chapter, it will be appropriate to conclude this review, of two decades of the slowly growing provision of technical education in Darlington, by taking a brief glance at the Science and Art classes of the two ad hoc bodies in the town, which had been pioneers in this field of education for so many years - the Mechanics' and North Road Institutes.

(1) Ibid., 32nd Report, 1885, p.43.

(2) Ibid., 38th Report, 1891, p.62.

(3) Ibid., Calendar and Directory, 1888, p.116.

(4) Ibid.

(5) Ibid., 39th Report 1892, p.60.

The Mechanics' Institute

In spite of the failure of the Darlington Mechanics' Institute, over a period of 45 years, to provide classes teaching the principles behind a particular trade together with the relevant sciences, already discussed in some detail in Chapters III and IV, the Institute Committee continued, even after the passage of the 1870 Act, to try and create a Working-Man's College of the Institute, but, by this time, the Institute had lost that little appeal to the working class mechanic it had enjoyed in its early days.^(a) Despite an increase in membership in the 1870's new members were not joining to participate in technical instruction classes.

- (a) This lack of working class support can be seen from the following analysis of Institute membership in 1874-5 according to occupation. This was the only Annual Report to give such a breakdown since the rebirth of the Institute in 1840. The total membership of 585 members was classified as follows: Ladies 23; Merchants and Gentlemen 62; Tradesmen 143; Clerks 219; Mechanics 80; Youths under 21, 58.⁽¹⁾ Less than one-seventh were working class labourers: a far cry from 1825, when Rule 6 stated emphatically that "at all times two-thirds of the Committee shall be operative mechanics."⁽²⁾ The Chairman regretted this trend: "a comparatively small proportion of members belonged to that class of society, a large number of mechanics of the town living at the north end preferred to attach themselves to the Railway Institute and the Working-Man's Club at Albert Hill."⁽³⁾

(1) Darlington and Stockton Times, 13th March, 1875.

(2) Rules and Regulations of the Darlington Mechanics' Institute, 1825, p.4.

(3) Darlington and Stockton Times, 11th March, 1876.

In January, 1873 there was a Science School running at the Institute, in which 20 students, out of a membership of 483 ⁽¹⁾ were being taught Magnetism and Electricity, Animal Physiology, Physical Geography and Inorganic Chemistry, though there were only 8 in the first 3 classes and 12 in the fourth. ⁽²⁾ Three years later no classes were running, at a time when Institute membership had reached the peak figure of 705 and when the Annual Report smugly stated that "the Committee gather from various sources an increased popularity of Mechanics' Institutes arising from the endeavours of Managers to supplement School Board work and to promote technical and scientific education. In this laudable object it is confidently hoped that the Darlington Mechanics' Institute will secure a place in the foremost ranks." ⁽³⁾ This last sentence had a wholly platitudinous ring, when it is remembered that the Chairman commented that, because of the unfavourable experience of the past with regard to the establishment of classes, nothing had been done in the past year. ⁽⁴⁾

In January, 1880 a Science class was running again in Inorganic Chemistry with 21 students, ⁽⁵⁾ but after

(1) Darlington and Stockton Times, 15th March, 1873.

(2) Department of Science and Art, 20th Report, 1873, p.70.

(3) Darlington and Stockton Times, 11th March, 1876.

(4) Ibid.

(5) Department of Science and Art, 27th Report, 1880, p.143.

this the Mechanics' Institute Committee appears to have given up all efforts to run its own classes. It perhaps felt that it could not afford to compete with the other evening classes in Science, which were multiplying in the town during the 1880's. In fact, these years saw the decline of the Darlington Mechanics' Institute, the membership of which slumped dramatically from 773 in 1877 to 83 in 1887.⁽¹⁾ The chief reasons for this were its middle class mismanagement, its lack of classes and its worsening financial position, but, above all, the opening of the Darlington Free Library in 1885, which resulted "in the withdrawal of a large number of members, including the whole of the working men apprentices and ladies, and the closing of the Institute Library."⁽²⁾

An attempt was made "to put the Mechanics' Institute on a new and solid basis, by the establishment of a system of technical classes together with a literary and philosophical institute, in which the social elements shall form a minor feature",⁽³⁾ and in 1887, David Dale, Chairman of the School Board and the Grammar School Governors from 1874 and a leading figure in promoting education in the North-east,

(1) Darlington and Stockton Times, 10th March, 1877 and 19th March, 1887, and Vide Appendix A.1.

(2) Ibid., 13th March, 1886.

(3) Ibid., 12th June, 1886.

proposed the creation of a Darlington Educational Institute to take over the Mechanics' Institute.⁽¹⁾ Its purpose was to be "the promotion of science, literature, the fine arts, adult instruction, the foundation or maintenance of libraries or reading rooms, museums or art galleries."⁽²⁾ The management of such an institution would be in the hands of a governing body consisting of many local educationalists. The success of the scheme depended on £4,000 being raised as an endowment on the Institute building.⁽³⁾ Although members of Mechanics' Institute agreed to it, the grandiose plan was abandoned, as the £4,000 could not be raised.

To sum up, the Darlington Mechanics' Institute, which had been formed originally with the intention of providing technical instruction for local working men, had achieved very little indeed as an agent of technical education. For sixty years it had struggled to initiate classes in art and science, but by 1886, with the appearance of other science and art evening classes, already described, it gave up the struggle.

(1) Ibid., 21st May, 1887.

(2) Ibid.,

(3) Ibid.

Darlington Railway Institute

Although evening classes in Chemistry and Mathematics had been running in the 1860's, it was the Drawing class at the North Road Railway Institute (No.1106), operating in connection with the Science and Art Department over several years, that was the most successful attempt at technical instruction. The first night class in Art in Darlington, outside the School of Art, was held at the Institute in 1874 with 23 students.⁽¹⁾ Three years later, of 21 students being taught Drawing by T. Woof, 13 artisans sent their work up to South Kensington for the Third Grade examination and 11 were successful, while 4 out of 14 were successful at the local Second Grade examination. £4 18s. Od. grant in aid was received on these results.⁽²⁾ This Art class was, in fact, a branch of the School of Art and in 1879 Edgar Elton was the teacher.⁽³⁾ There is no further record of Art classes being held at the Railway Institute after 1883 when 24 students attended Samuel Elton's Drawing class.⁽⁴⁾

Hence, several years before the passing of the

(1) Department of Science and Art, 22nd Report, 1875, p.255.

(2) Ibid., 25th Report, 1878, p.282.

(3) Ibid., 27th Report, 1880, p.372.

(4) Ibid., 31st Report, 1884, p.92.

Technical Instruction Act, the educational work of the Darlington Railway Institute had ceased, although in 1896 it was providing Ambulance classes, debates and concerts and could boast a membership of 430.⁽¹⁾ For twenty years, the Railway Institute had attempted to offer the mechanics of the Stockton and Darlington Railway and in the local engineering workshops occasional science and art evening classes and lectures. Like the Mechanics' Institute, it only attracted a handful of students and, similarly, it never achieved the permanency or equalled the esteem in which the School of Art was held.

Summary

Thus in Darlington, as in Sunderland,⁽²⁾ many science and art evening classes, attached to miscellaneous institutions, and some formed on the initiative of elementary school teachers, were running from 1866, when the first Science class in Magnetism and Electricity was launched at the Mechanics' Institute. But the most successful agent of technical education, until the Technical College was opened in 1897, was

(1) Annual Report, North-east Railway Institute, 18th November, 1896.

(2) Hall, op.cit., pp.46-8.

the School of Art, from 1883 the School of Science and Art, which, since its inception in 1857, had organized classes in connection with the Science and Art Department.

So, by the time the first state aid was granted for technical education, through the Technical Instruction Act of 1889, the situation that was emerging in Darlington, now an engineering and railway centre of importance in the north of England with almost 40,000 inhabitants, was the haphazard uncoordinated provision of technical education by a variety of local bodies, some responsible to Government Departments, others linked with voluntary organizations. Various kinds and grades of technical instruction were being taught in elementary and secondary schools, at the local Training College, in a wide range of evening classes and at the School of Science and Art, all of which were striving to earn as much in grants as possible from the Department of Science and Art. Some control and rationalization by the State was urgently required to bring order and purpose to over twenty years of chaotic development. Darlington needed the Technical Instruction Act and the "Whisky Money" Act as much as the other industrial communities which

had arisen in nineteenth century England and which, like Darlington, were trying to supply technical education.

CHAPTER VI

THE DARLINGTON TECHNICAL INSTRUCTION COMMITTEE AND

THE ESTABLISHMENT OF

THE DARLINGTON TECHNICAL COLLEGE : 1891-1897

Local Administration of Technical Education

Darlington had achieved the status of a Parliamentary and Municipal Borough in 1867, but, unlike Sunderland and Middlesbrough, it did not become a County Borough through the Local Government Act of 1888. It found itself in the same position as Jarrow, Stockton, Hartlepool and West Hartlepool of being dependent on the newly-created Durham County Council for the administration of the major aspects of local government. However, by the Technical Instruction Act of 1889, Darlington, like the other four municipal boroughs, was enabled to appoint a Technical Instruction Committee and levy a penny rate in support of technical instruction. Then, in the following year, came the Local Taxation (Customs and Excise) Act, which, by means of Government grants, raised from an increase

in duty on beer and spirits, provided the County Councils and County Boroughs with a financial wind-fall, which could be used in relief of the rates or for the purposes of secondary and technical education. Within a year, 70 out of 107 local authorities in England were devoting all of this revenue to education,⁽¹⁾ and so the organization of technical education begun under the Technical Instruction Act received a powerful stimulus.

If we examine the local application of these measures, we find that the County Council of the County Palatine of Durham, which had been established on the 1st April, 1889, was informed by its Clerk on the 7th November, 1890, that Durham's share of the Local Taxation Act or Whisky Money, as it became known, for the current year, after deducting the proportion due to the County Boroughs (Gateshead, South Shields and Sunderland) would amount to between £11,000 and £12,000.⁽²⁾ A sub-committee was appointed to consider the subject of technical and manual instruction and the utilisation of the Parliamentary grant for that purpose.⁽³⁾ Durham County Council was therefore one of the progressive

(1) N.A.P.T.S.E., 4th Report, 1891, p.11.

(2) Durham County Council Minutes, 7th November, 1890.

(3) Ibid.

authorities, which quickly resolved to use the new fund for education and not for the rates. The sub-committee became the Technical Education Committee of the County Council, and it began the complex task of becoming acquainted with the multifarious classes and schools which, similar to those in Darlington already described, had grown up piecemeal fashion throughout the county, and which were providing some form of technical or manual instruction.

In Darlington, at a special meeting of the Town Council on the 1st October, 1891, convened to discuss the implications for the town of the Technical Instruction Act of 1889, it was decided to appoint a Technical Instruction Committee under the terms of that Act. The committee was to consist of 14 members of the Town Council, including the Mayor, and representatives of the Grammar School (one), the Training College (one), the Mechanics' Institute (two), the School Board (two), The North Road Railway Institute (two), the School of Art (one) and two additional members co-opted by the committee.⁽¹⁾ However, the Minute Book of the Technical Instruction Committee dates from an earlier meeting, held on 11th March, 1891,

(1) Minutes, Darlington Town Council, 1st November, 1891; Vide Appendix D.7.

when a list of names to act on the Committee were suggested by the Mayor and Councillors Pease and Hoskins.⁽¹⁾ This unofficial committee was formed and appointed a sub-committee to "obtain and tabulate information as to the instruction now being given by various bodies or persons engaged in the work coming within the scope of the Technical Instruction Act and with power to make suggestions."⁽²⁾ The sub-committee found that between 300 and 400 students were receiving technical instruction in various Board schools and elsewhere in the town, earning Science and Art Department grants amounting to between £300 and £400 per year and paying fees of £100.⁽³⁾ The exact total of students, according to the Department of Science and Art, was 377.⁽⁴⁾ The full committee then recommended to the Town Council that the Technical Instruction Act of 1889 be adopted,⁽⁵⁾ which was the reason for the special meeting of the Council on the 1st October.

- (1) Minutes, Technical Instruction Committee, 11th March, 1891.
- (2) Ibid., 13th March, 1891.
- (3) Minutes of Sub-Technical Instruction Committee, 3rd June, 1891.
- (4) Department of Science and Art, 38th Report, 1891, p.62.
- (5) Minutes of Technical Instruction Committee, 3rd June, 1891.

At the quarterly meeting of Durham County Council in November, 1891, the Technical Education Committee reported that £17,425 was available for technical instruction in the county, and that schemes for the building of technical schools had been received from several corporations, including one from Darlington. The committee proposed that grants be made towards the cost of the proposed buildings, and their fittings and furniture, of one-third of the total, but not to exceed the following amounts:

Darlington - £1,600; Durham - £1,000; Felling - £1,000; Hartlepool - £1,100; Jarrow - £2,000; Stockton - £2,000; West Hartlepool - £1,800.⁽¹⁾

The committee was therefore prepared initially to spend £10,500 encouraging technical instruction in the populous urban centres of the county. An attempt to get the proportion of county grant to these towns raised from one-third to one half was defeated.⁽²⁾

These events suggest that the Darlington Technical Instruction Committee had moved quickly in drafting a scheme for rationalizing and centralizing the various technical instruction classes that had developed in the 1880's, referred to in the previous

(1) Northern Echo, 5th November, 1891.

(2) Ibid.

chapter. No doubt the committee wished to take full advantage of the new financial resources available, by erecting in the town a technical college with facilities that the employees of the local engineering works could take advantage of.

However, before describing the progress of the next six years, some comment must be made on the relationship between Durham County Council, the parent body, and Darlington Town Council and its Technical Instruction Committee (later the Secondary Education Sub-Committee), which was to last until April, 1915, when Darlington gained County Borough status and thereby complete control of all stages of education in the town. There was a built-in conflict of interest from the outset, which was bound to produce different points of view and ultimately a clash. On the one hand, Durham County Council was administratively responsible for the whole county and had to balance the needs of rural, mining and industrial areas as fairly and efficiently as its financial resources allowed. From the point of view of technical education, it had to consider existing facilities, how best to develop these and where and in what ways to provide new classes and institutions. On the other hand, Darlington had become

the most important railway centre of the region, with engineering as its staple industry and, particularly since 1867, a certain feeling of civic pride and independence had grown up. This was partly based on a sense of achievement in the field of education, for by 1891, when elementary education became free as well as compulsory, the average attendance at the town's elementary schools had improved from a mere 65% in 1874 to 80%.⁽¹⁾

Since 1878, the Grammar School, with its long tradition, had been building up a reputation of high academic standards as a secondary school. By 1891, the number of boys attending the school had grown to 154⁽²⁾ and several were gaining places at universities. Moreover, as the Grammar School had been linked with the Department of Science and Art through its Science teaching since 1880, it could expect to draw upon the new funds made available through the Acts of 1889 and 1890. In fact, in 1892, the Grammar School applied to the Durham County Council Technical Education Committee for a grant of £150 to enable it to increase the amount of technical instruction given, to introduce practical Chemistry into the curriculum, to fit

(1) Darlington School Board Reports for 1874 and 1891.

(2) North Star, 30th July, 1891.

up a practical laboratory and to appoint a specialist master.⁽¹⁾ This special grant was made to the school,⁽²⁾ which had also begun earning annual capitulation grants from the County Council, on account of the technical instruction that was taking place there.⁽³⁾

Furthermore, the County Council were now offering annually at least a dozen free places at the Grammar School to boys from elementary schools.⁽⁴⁾ These scholarships, which were open to boys in the Darlington schools as well as to boys attending schools in the county, meant that the County Council was contributing an increasing amount each year to the school's precarious financial position.⁽⁵⁾ Naturally, the County Council began to wish for some say in the organization of the school, whereas the local governors were anxious to avoid any diminution of their powers. But it was not until the effects of the 1902 Education Act were felt in Darlington, particularly as they affected the Grammar school, that the relationship between the County Council and the Grammar School governors deteriorated. This will be

(1) Minutes of the Durham County Council
Technical Education Committee, 7th July, 1892.

(2) Ibid., 19th October, 1892.

(3) Darlington and Stockton Times, 22nd July, 1893.

(4) Sunderland, op.cit., pp.63 and 65.

(5) Ibid., p.65.

referred to in the next chapter.

It has been necessary to deal with this slowly growing friction in some detail, because it reveals that it was developing on two educational fronts: in technical and in secondary education. This was not surprising, because the confusion which had grown up as to the definition of secondary and technical education was, as the Bryce Commission reported in 1895, becoming worse. To complicate the issue further, some leading public figures in Darlington must have begun to experience divided loyalties. Some Town Councillors and local educationalists were also County Councillors, so had strong ties with the county. For example, David Dale, Chairman of the Grammar School Governors from 1874 to 1906, was also Chairman of the County Council Technical Education Committee for three years from 1892. As an industrialist, he was particularly interested in the Darlington Technical Instruction Committee and its plans to build a technical college. Another Darlington industrialist and M.P. for the town, Theodore Fry, was also a County Alderman, while Councillors Bartlett, Pease and Widdowfield served on both the county's Technical Education Committee and the town's Technical Instruction Committee.

One of the first actions of the County Council

Technical Education Committee was the appointment, on the 1st February, 1892, of Mr. J. A. L. Robson, Managing Secretary of the Keighley Union, as Organizing Secretary for Technical Education, at a salary of £300 per year.⁽¹⁾ As the N.A.P.T.S.E. was quick to point out "the future development of technical and secondary education throughout the country will very largely depend on the gentlemen, who have been selected for these important posts."⁽²⁾ The Education Committee then submitted to the County Council a scheme, prepared by Mr. Robson, for the distribution of the considerable education fund it had at its disposal.⁽³⁾ It felt that the subjects to be aided should, as far as possible, cover the requirements of the particular trades and industries carried on in the county. Four groups of subjects were recommended for approval: Science, Art, Technology and Additional.⁽⁴⁾ All the Science and Art subjects earning grants from the Department of Science and Art were to be aided, as were the technological subjects hitherto aided by the C.G.L.I., with the exception of 16 subjects not appropriate to the

(1) Minutes, Durham County Council, 27th January, 1892.

(2) N.A.P.T.S.E. 5th Report, 1892, p.5.

(3) Durham County Council Minutes, 22nd April, 1892.

(4) Ibid.

industrial and commercial activity of the county, while 54 additional subjects such as Commerce, Modern Languages and Domestic Economy subjects were recommended to receive aid.⁽¹⁾

The outline of the county scheme consisted of five main points: (a) that provision be made to enable clever boys and girls to pass from the elementary through the secondary to the highest form of instruction suitable, (b) that for those not desiring a secondary day school course of instruction opportunity to continue studies in evening classes should be provided, (c) that provision should be made for apprentices and older persons who have left day schools to follow a suitable course by means of evening classes or lectures on technical subjects, (d) that there should be special facilities for certificated teachers and other suitable persons to qualify them to be technical instructors, (e) that a scheme of scholarships should be provided from primary schools and evening classes through intermediate and technical schools to colleges and universities.⁽²⁾

To enable these proposals to be implemented the Committee Report recommended that Technical Day,

(1) Ibid.

(2) Ibid.

Technical Evening and County Scholarships be awarded. One hundred Technical Day Scholarships (Class A) were to be made available to send boys and girls under fourteen, at non-secondary schools, to Grammar schools supplying technical instruction. These scholarships were obtainable by examination, lasted for two years, and covered school fees and travelling expenses. Thirty similar scholarships (Class B) were to be established for students already at grammar school to enable them to continue their technical education for a further year. One hundred Technical Evening Scholarships (Class A) were to be set aside for boys and girls under sixteen, in the ex-standard classes at elementary schools, to pay for their class fees and travelling expenses for one year at a local technical institute. A similar number (Class B) were to be open to students over sixteen, and an additional fifty (Class C) for those over fourteen attending evening classes, to enable them to go on to a central or district technical school. Ten County Scholarships (Class A), worth £30 per year and tenable for two years at any school or institute in the county supplying technical instruction, were to be awarded to boys and girls of school age. Five scholarships (Class B) worth £60 were to be competed for in order

to send students for two years to some other college or institute, such as the Durham College of Science, Newcastle, or the Royal College of Science in London, giving higher technical instruction. Finally sixty County Scholarships (Class C), value £5 plus the appropriate course fee, were to be established to enable students to attend a higher institute for one month.⁽¹⁾

The Committee also proposed to give grants to day classes and approved evening classes in technical instruction. For example, Grammar schools giving technical instruction could earn capitation grants per subject for every student over twelve having an 80% attendance record, who was making satisfactory progress.⁽²⁾ University Extension work and travelling lecturers also figured in the scheme, and the County Education Committee were prepared to provide grants to local committees, covering half the total cost of such courses.⁽³⁾ The Scheme concluded by proposing the setting up of teachers' Saturday classes for training teachers to give instruction in technical subjects, and by detailing its plans for agricultural education in the county.⁽⁴⁾ The County Council approved this detailed scheme to develop technical

(1) Ibid.

(2) Ibid.

(3) Ibid.

(4) Ibid.

instruction within its administrative area.⁽¹⁾

In July, 1892, Mr. Robson presented his first Report on the Technical and Manual Instruction provided in the county.⁽²⁾ In the section "Day Classes," the Darlington Training College was listed as having 75 females under instruction in Hygiene, Cookery, Laundry Work, Languages and Art; the Grammar school had 150 boys taking Art, Science and Languages; the High School, founded in 1885, taught 90 girls Science, Languages and Needlework; while 20 girls and 2 boys were attending day classes in Art at the School of Art.⁽³⁾ No figures were given of the number of students at evening classes at the School of Art, but the numbers attending such classes at the Mechanics' Institute, Albert Road Schools and Kendrew Street Schools were 35, 156 and 95 respectively.⁽⁴⁾ The fact that these numbers are much higher than those appearing in the appropriate Department of Science and Art Report⁽⁵⁾ suggests that the Organizing Secretary included in the day classes all the students attending the four secondary or higher institutions, and that, with regard to both day and evening classes, his interpretation of technical

(1) Ibid.

(2) Durham County Council Technical Education Committee, 13th July, 1892.

(3) Ibid.

(4) Ibid.

(5) Department of Science and Art, 39th Report, 1892, p.60.

instruction was in accord with the county's scheme already described, and therefore broader than that of the Department at South Kensington. Finally, his report showed that there was an average attendance of 100 at a series of 12 lectures on Electrical Engineering, given in the town by Dr. Garnett, Principal of the Durham College of Science at Newcastle.⁽¹⁾

The implementation of the County Council's ambitious scheme for technical and manual instruction was a slow and complex matter, but considerable financial resources became available each year. In 1893 - 1894, of £13,163 appropriated by the County Council under the Local Taxation Act of 1890, it spent £7,428 on various aspects of technical instruction in the county,⁽²⁾ keeping the remainder in a reserve fund. It awarded 91 scholarships to secondary schools, 6 to places of higher education and 450 tenable at evening classes or continuation schools.⁽³⁾ However, such was the pace of expansion that, two years later there was an excess of £2,635 of expenditure over income in the County Council Education Fund.⁽⁴⁾ In these circumstances the County

(1) Durham County Council Technical Education Committee, 13th July, 1892

(2) Royal Commission on Secondary Education, Volume 1, 1895, p.334.

(3) Ibid., p.374.

(4) Durham County Council Minutes, 28th July, 1897.

Education Committee was forced to revise its scheme "with a view to economy, but so as not to dislocate existing arrangements without due notice to local committees."⁽¹⁾ Herein lay the seeds of future differences with the Darlington Technical Instruction Committee for, two years later, the County's expenditure on secondary and technical education was again outpacing income and further economy measures had to be taken.⁽²⁾ However, this serious financial problem will be dealt with in the next chapter.

Darlington Technical College

Knowing that it could expect financial assistance from Durham County Council, the Darlington Technical Instruction Committee, early in 1892, began to look for a suitably central site for the proposed Technical College. Three possible sites were considered: to the North of the Edward Pease Public Library in Crown Street, including part of East Street and Mill Street; part of the Feethams site, where the new municipal buildings were to be built; and a site in Northgate belonging to the Trustees of the late Mr. J. Beaumont Pease. An offer of

(1) Ibid.

(2) Ibid., 16th March, 1899.

£1,500, which was made for 2,082 square yards at the third site in North Lodge, was accepted by the Pease family.⁽¹⁾ Mr. G. C. Hoskins, who had designed the new Grammar School buildings, had already been appointed architect.⁽²⁾ For the next five years the chief responsibility of the Technical Instruction Committee, under its energetic and enthusiastic chairman, Councillor Dr. Taylor Manson,⁽³⁾ was the planning and building of the Darlington Technical Institute.

After purchasing an additional strip of land behind the site, the Building Sub-Committee of the Technical Instruction Committee had, by the Spring of 1894, submitted plans of the proposed institute to the Science and Art Department and to Durham County Council, and had drawn up the following statement of the anticipated cost of its erection, furnishing and working:⁽⁴⁾

- (1) Technical Instruction Committee Minutes, 18th August, 1892.
- (2) Ibid., 12th April, 1892.
- (3) Vide Appendix D.4.
- (4) Ibid., 20th March, 1894.

Cost of Building, Site and Fittings:

	£	s.	d.	£	s.	d.
Site				1,750	0	0
Building				9,200	0	0
Furniture and Apparatus	1,187	15	0			
Less County Council grant	<u>386</u>	<u>5</u>	<u>0</u>			
				801	10	0
Electric Lighting	800	0	0			
Less County Council grant	<u>168</u>	<u>5</u>	<u>0</u>			
				631	15	0
Architect's Commission				460	0	0
Clerk of Works				200	0	0
Quantities				92	0	0
Heating and Ventilation				<u>550</u>	<u>0</u>	<u>0</u>
				13,685	5	0

To meet these expenses the following sums would be available:

	£
Borrowed	8,000
County Council grant	1,600
South Kensington	1,000
Balance of Rate already levied	1,225
Rate for third year	640
Donations promised	<u>1,075</u>
	<u>13,540</u>

The Committee expected that the balance of £145 outstanding would be covered as a result of a canvass for private donations, which, it was estimated, would bring in another £1,000.⁽¹⁾ In fact, £1,650 was

(1) Minutes of Technical Instruction Committee, 20th March, 1894.

ultimately raised by public subscription. The income from fees and grants would be more than sufficient to meet teaching costs, and standing expenses and administration each year would be covered by half the Technical Instruction Rate.⁽¹⁾

Following a detailed report on the Technical Instruction Committee plans by the County Surveyor, the County Technical Education Committee decided to increase its grant to the project to £2,250, "in consideration that the local committee intends to add an Art School to their scheme and to expend £10,500 over the building, irrespective of the cost of site, fittings and furniture."⁽²⁾ The Technical Instruction Committee were also informed that the Lords of the Committee of Council on Education had given their approval to the plans and authorized a grant of £1,000, i.e. £500 for the Science portion and £500 for the Art portion of the building.⁽³⁾

Although there was little division of opinion on the educational advantages that would result from a properly equipped Technical Institute, some

{1} Ibid.

{2} Durham County Council Technical Education Committee Minutes, 11th July, 1894.

{3} Minutes Sub-Technical Instruction Committee, 20th June, 1894.

Councillors felt that the project was too ambitious and expensive for a town of only 40,000 inhabitants. At a meeting of the Technical Instruction Committee in April, 1894, an amendment to refer the project back for further consideration was only defeated on the casting vote of the Mayor.⁽¹⁾ The opposition of some Council members was shared by some of the town's leading citizens, who linked the Technical Institute with the new municipal buildings, being built at a cost of £33,000, and condemned both projects as extravagance. The Darlington and District Property Owners' Association and the Darlington Traders' Association who wished to keep the rates down, held a public meeting to express their opposition to the proposed Technical Institute.⁽²⁾ Was there any sense, it was incorrectly asked, in spending £10,000 on a Technical Institute that Sunderland had built for £6,000 and which would, in any case, be a white elephant?⁽³⁾ Although this resistance was still being voiced in 1895, the Technical Instruction Committee forged ahead with its plans. One local newspaper came out strongly in favour of the penny

(1) North Star, 6th April, 1894.

(2) Ibid., 17th April, 1894.

(3) Ibid.

rate for Technical Instruction purposes, which the Town Council had levied since November, 1892,⁽¹⁾ stating that this would mean "good value for money."⁽²⁾

At this stage it is worth comparing the proposed costs of the new Technical Institute with those of the Darlington Grammar School, the Training College and the Sunderland Technical College. The new Grammar School had recently been built to accommodate 40 boarders and 150 day boys at a total cost of £16,597, of which over £13,000 had been raised by local subscription.⁽³⁾ The new Training College building, which was opened in 1875, had cost £17,000 and had a resident total of 6 staff and 75 students.⁽⁴⁾ In 1894 the Sunderland Technical Education Committee recommended that a Municipal Technical College would cost £6,000 for the site and £15,000 to build and equip.⁽⁵⁾ When the Sunderland College was opened in 1901, four years after the Darlington Technical College, costs had risen to over £22,000.⁽⁶⁾

(1) Minutes of Finance Committee, 28th October, 1892.

(2) North Star, 6th April, 1894.

(3) Sunderland, op.cit., pp.52-3.

(4) O. Stanton: "Our Present Opportunities", pp.46, 54 and 75.

(5) Hall, op.cit., p.130.

(6) Ibid., p.137.

The final cost of the Darlington Technical College was £16,000,⁽¹⁾ the raising of which was a considerable achievement for a town of its size, for it meant that, although Darlington's population was only one-third that of Sunderland's, the Technical Instruction Committee had provided a Technical College costing more than two-thirds of the amount spent at Sunderland. This would seem to suggest that the Technical Instruction Committee had possessed a certain optimism as to the future development of technical education in the town and had planned and had executed the whole project with some foresight and efficiency.

The ceremony of laying a red granite foundation stone, at the North-east corner of the new Technical College building, was performed on the 11th April, 1896, by Alderman Arthur Pease, M.P. for the town and a predecessor of Dr. Manson as Chairman of the Technical Instruction Committee. At the ceremony, which was accompanied by a procession and rites similar to those performed at the Mechanics' Institute 43 years earlier, it was pointed out that Darlington was the second town in the

(1) Darlington Technical College Prospectus, 1901.

administrative area of Durham County Council to build a Technical college, following the example set by West Hartlepool.⁽¹⁾ The Technical College, Alderman Pease stated, would be one more link in the town's system of education, which already consisted of elementary and grammar schools and a training college, and their object that day was "to inaugurate a building that would enable young artisans to improve their knowledge and technical skill that they might be better able to compete with others in the struggle for life."⁽²⁾

Darlington had never been behind and did not wish to be in the future.

During the Spring of 1897 the Mayor had to answer criticisms that the Technical College would never be finished because of delays in the delivery of certain materials. However, it was the discovery that the College was being built almost six feet nearer the main road in Northgate than originally planned that caused the bitterest storm.⁽³⁾ After many enquiries and several embarrassing inferences as to the responsibility for the blunder,

(1) Darlington and Stockton Times, 18th April, 1896.

(2) Ibid.

(3) Minutes of Technical Instruction Committee, 14th April, 17th May, 26th May, 1897.

the reason given for the College being set back only three feet one inch from the road and not eight feet nine inches, as originally intended, was that the Council Minute of 1894, authorizing the purchase of land eight feet nine inches wide behind the original site, did not state the object for which it had been bought. Although many people knew why the additional land had been obtained, no one had committed the reason to paper and so the architect, Mr. Hoskins, and Corporation officials were exonerated.

The climax of six years of vision, planning and hard work on the part of the Technical Instruction Committee was reached on the 8th October, 1897, when the Darlington Technical College was opened by the Duke of Devonshire, Lord President of the Council of Education and Chancellor of Cambridge University. Indeed, it could well be said that this occasion marked the fruition of the hopes and dreams of that small band of pioneers who, seventy-two years earlier in the foundation of the Mechanics' Institute, had attempted to provide the mechanics and artisans of the town with instruction in the scientific principles behind their trades. The opening of the Darlington Technical College, coming only eight

days after Sir Philip Magnus, Secretary of the C.G.L.I., had performed a similar ceremony at West Hartlepool, was regarded locally as a reason for pride and satisfaction and as removing any remaining doubts as to the necessity and importance of technical instruction. One newspaper summed up this feeling in these words. "After many years of patient and untiring plodding in a branch of education that has long been misunderstood, the advocates of technical instruction in Darlington have, this week, witnessed the beginning of a new era in connection with their laudable work, by the public opening of Darlington's magnificent Technical College." (1)

In welcoming the Duke of Devonshire, the Mayor stated that the object of the Technical College was to give young men technical instruction in those branches of trade carried on in their immediate neighbourhood, and every subject would be taught for which the College could gain a grant. (2) In his speech, the Duke of Devonshire pointed out the importance of scientific education to Darlington, because the town's industries were more concerned

(1) Darlington and Stockton Times, 9th October, 1897.

(2) Ibid.

with science than art, dwelt on the threat of foreign industrial competition, particularly from the United States and Germany, and emphasized that if students were to benefit from scientific instruction a better system of secondary education was required.⁽¹⁾ In the following extract he affirmed that the nation's livelihood depended on the importance it attached to technical education. "The cause for technical education and for the improvement of technical education, the cause for the provision of adequate development in the Science and Art education of our people, is that, in our judgment, it is essential to the continued efficiency of our manufacturing and commercial industries, without the prosperity of which, people could neither continue to prosper nor even to exist."⁽²⁾ Other distinguished speakers included Lord Barnard, Lord Lieutenant of the County, Dr. Manson, Chairman of the Technical Instruction Committee, Alderman Arthur Pease, M.P., the Dean of Durham University, Principal Gurney of the Durham College of Science, Alderman Hugh Bell of Middlesbrough, Sir Joseph Pease, Sir David Dale, Alderman Baines, Chairman of Durham

{1} Ibid.

{2} Ibid.

County Education Committee, Philip Wood, Headmaster of Darlington Grammar School, Principal Spafford of the Training College and Sir Henry Havelock-Allen, M.P.⁽¹⁾

Before proceeding to the second half of this chapter, which will be concerned with the variety of technical and manual classes running in the town, during the years the Technical Instruction Committee were organizing the building of the Technical College, it is necessary to give some account of the appointment of staff at the College.

As the new College was nearing completion,⁽²⁾ the Technical Instruction Committee, after obtaining information from several towns with Technical Colleges similar to the local one, drew up a special report, recommending that a Director of Studies and Organizing Secretary be appointed at a salary of £200 per annum, also a full time Art master with a salary of £150, plus a quarter of the fees and grants.⁽³⁾ As the Technical Instruction Committee had been informed that the County Council would not give a grant towards a Principal's salary,⁽⁴⁾ the Technical Instruction Committee's report, after listing the duties they

(1) Darlington and Stockton Times, 9th October, 1897.

(2) Vide Appendix D.4.

(3) Minutes of Technical Instruction Committee, 20th July, 1897.

(4) Ibid., 19th July, 1897.

expected of a Director of Studies, concluded with an estimated balance sheet for the year ending July, 1898.⁽¹⁾ This showed a total income of £1,650, made up of £805 from general receipts, including the Technical Instruction Rate and certain donations, £545 in receipts from Science classes, and £300 from Art classes.⁽²⁾ Expenditure would amount to £1,370 1s. 2d., including £665 1s. 2d. on general expenses, which covered payment of interest and redemption on the building, rates and taxes and a caretaker, £460 on expenses in connection with Science classes and £245 in expenses on Art classes.⁽³⁾ These last two items referred chiefly to teachers' salaries, which were to consist of seventy-five per cent of all fees and grants. It was, therefore, out of the estimated balance of £279 18s. 0d. that the Committee proposed to set aside £200 for the Director of Studies' salary.⁽⁴⁾

In August, 1897 advertisements appeared in the local press, inviting applications for the post of full time Art master at a salary of £150 per annum, plus one-quarter of the fees and grants for Art classes, and for the post of Director of Studies and

(1) Ibid., 20th July, 1897.

(2) Minutes of Technical Instruction Committee, 20th July, 1897.

(3) Ibid.

(4) Ibid.

Organizing Secretary at a salary of £200 per annum.⁽¹⁾ Applicants for the latter post were asked to state whether or not they were prepared to devote the whole of their time to the studies.⁽²⁾ This suggests that the Technical Instruction Committee were intending to appoint a part time Director, perhaps feeling that the work involved did not fully justify a full time Director. Messrs. E. A. Elton, who had been headmaster of the School of Art since his father's death in 1886, and A. B. Dresser, who had been teaching Art at various evening classes and at the Training College, were appointed joint Art masters, dividing the £150 salary between them.⁽³⁾

For the post of Director of Studies there were 134 applicants, many of whom held University degrees. The Technical Instruction Committee finally interviewed five and, after a lengthy meeting, decided, by a majority of nine votes to eight, to recommend the appointment of Mr. James I'Anson of Darlington, who stated that the Committee would have first claim on his time in discharging his duties efficiently.⁽⁴⁾

(1) North Star, 9th August, 1897.

(2) Ibid.

(3) Ibid., 9th September, 1897.

(4) Ibid., 14th September, 1897.

When the appointment came up for confirmation at the next meeting of the Town Council, charges of local bias and favouritism were voiced. One Councillor thought the money spent on advertising had been wasted, that the runner-up was a long way ahead of Mr. I'Anson, and that great injustice had been done in bringing Mr. Badger to Darlington when the final selection was a foregone conclusion. His attempt to refer back the appointment was only very narrowly defeated.⁽¹⁾ So the first Principal of the Technical College had been a distinctly controversial appointment.

James I'Anson, a staunch Quaker, did not have a University education, but entered the North Eastern Railway Company's North Road workshops as a premium apprentice in the Mechanical Engineering Department. Then he joined his father's engineering works, which became the Whessoe Foundry, in which he rose to be a managing partner. As a scientist and chemical engineer he was essentially a mineralogist, but also had extensive knowledge of geology, being a Fellow of the Geological Society and a member of the Iron and Steel Institute. He was an enthusiastic educationalist, having served the cause of education in

(1) Ibid., 21st September, 1897.

Darlington as Secretary of the School of Art, as a governor of the Training College and the Grammar School, as a lecturer under the Cambridge University Extension Scheme, and as a co-opted member of the Technical Instruction Committee. A man of wide cultural interests, he was "equally at home in Science, Art and Philosophy, Mechanics, Philology and Literature."⁽¹⁾ Since its inception in 1891, Mr. I'Anson had been a keen supporter of the Technical College and by his own exertions had raised a large sum in subscriptions.⁽²⁾ It is therefore not difficult to accept Sir David Dale's view, expressed at the opening of the Technical College, that "it would have been difficult to have selected from among the applicants a gentleman more capable of undertaking the duties."⁽³⁾ Unfortunately Mr. I'Anson, who did no teaching, filled the post of Director of Studies for only six months. His death in March, 1898, at the age of 52, was attributed by some to the energetic way he had carried out his onerous duties, which had overtaxed his strength.⁽⁴⁾

(1) Northern Echo, 31st March, 1898.

(2) Darlington and Stockton Times, 2nd April, 1898.

(3) Ibid.

(4) Northern Echo, 31st March, 1898.

One can form some idea of the relative respect, in which the new Technical College was held in Darlington, and indirectly the status of technical education generally, by a comparison of the first Director's salary with that of the Principal of Sunderland Technical College and that of the Headmaster of the local Grammar School. In 1901 Mr. Branford, a University graduate, was appointed Principal of the new Municipal Technical College at Sunderland, at a salary of £500 per year, with four Heads of Department each earning £200 per year.⁽¹⁾ Mr. Philip Wood, Headmaster of the Grammar School, a distinguished graduate of Edinburgh University and Mathematics master at two famous Edinburgh schools⁽²⁾ was receiving a salary of £702 in 1896.⁽³⁾ Although the Headmaster's salary consisted of a fixed stipend of £135 per annum, with £34 per year "head money" for each boy,⁽⁴⁾ and was therefore liable to fluctuate, it is clear, from these comparative figures, that the Grammar School and the education it gave was much more highly regarded than the new Technical College, where the great majority of students attended night

(1) Hall, op.cit., pp. 138-9.

(2) Sunderland, op.cit., p.53.

(3) Darlington and Stockton Times, 28th January, 1897.

(4) Sunderland, op.cit., p. 51.

classes. This disparity in remuneration, which was to be expected when one considers the ancient traditions of the Grammar schools and the novelty and uncertainty of technical education, continued well into the twentieth century. For instance, Mr. C. E. Handy was appointed the fourth College Principal in 1914 at a starting salary of £300,⁽¹⁾ with no additional perquisites, while the Grammar School Headmaster's salary in 1912 had reached £782.⁽²⁾

In addition to the appointment of a Director of Studies and two full time Art masters, the following part time Science teachers were engaged at the Technical College for the first session:⁽³⁾

- (1) Minutes, Durham County Council Education Committee, 11th November, 1914.
- (2) Abstract of Accounts, Darlington Grammar School, 17th May, 1912.
- (3) North Star, 21st September, 1897.

<u>Subject</u>	<u>Teacher</u>
Physiography	Mr. T. Hall
Building Construction	Mr. W. E. Turnbull
Mathematics	Mr. W. E. Blain
German	Miss Dodds
French	Monsieur P. Bazire ⁽¹⁾
Machine Construction and Drawing and the Steam Engine	Mr. W. R. Alton
Magnetism and Electricity, Inorganic Chemistry	Mr. A. F. Hogg

However, before looking at the events of the first sessions at the new Technical College, it is important to realize that during the preceding years several Science and Art evening classes, scattered throughout the town, had been running in connection with the Science and Art Department. Some account of these classes now follows.

Technical Instruction Classes 1892-1897

Following the decision by the County Council Technical Education Committee to implement its scheme

- (1) Monsieur Bazire appears to have been a member of the community of emigre Continental teachers who, in the late nineteenth century, formed a special sub-category of the English secondary school teaching force. A hitherto undocumented group, they were often characterised by their ineffectiveness as teachers (c.f. T.W. Bamford, *The Rise of the Public Schools* (1967) p.116, note 3).

to co-ordinate and expand technical education throughout the county, already outlined, and the establishment of the Darlington Technical Instruction Committee, the number of evening classes engaged in technical instruction in the town gradually increased during this five year period. Early in 1893, the Town Council constituted itself the local authority, responsible to the Department of Science and Art for the superintendence and management of all the Science and Art classes, with the exception of the Art classes at the School of Art. It then delegated its powers to the Technical Instruction Committee, which consisted of twelve Council members and thirteen local educationists.⁽¹⁾ Classes in such subjects as Plumbing and Woodwork, receiving grants from the County Council, were also controlled by the Technical Instruction Committee.

During the winter of 1893-4 the following evening classes of a technical nature were organized by the Technical Instruction Committee:⁽²⁾

- (1) Minutes, Darlington Town Council, 2nd February, 1893.
- (2) Minutes of Sub-Technical Instruction Committee, 30th August, 1893.

Albert Road Board Schools	Art	
	Geometry; Freehand and Model; Light and Shade	Mr. A. Young
	Machine and Build- ing Construction	Mr. L. Johnson
	Steam	Mr. L. Johnson
Skinnergate Cookery School	Magnetism and Electricity	Mr. J. H. Pryce
	Inorganic Chemistry	Mr. J. H. Pryce
Kendrew Street Board School	Applied Mechanics Machine	Mr. J. H. Pryce
	Construction	Mr. W. R. Alton
	Steam and the Steam Engine	Mr. W. R. Alton
Bondgate Wesleyan	Physiography	Mr. A. F. Hogg
	Mathematics and Geometry	Mr. W. C. Newman
Darlington Grammar School	Practical Inorganic Chemistry	Mr. A. F. Hogg
Mechanics' Institute	French	Mons. P. Bazire
	German	Mr. C. W. Bell

This session saw the inauguration of Cookery and Laundry classes under Miss Moore, following the setting up of a Ladies Committee to advise the Technical Instruction Committee.⁽¹⁾ Agricultural classes were conducted by the Chamber of Agriculture, with the Technical Instruction Committee acting as the local committee for obtaining grants.⁽²⁾

(1) Ibid., 26th February, 1894.

(2) Minutes of Sub-Technical Instruction Committee, 30th August, 1893.

The same classes ran with slight variations for the next three winter sessions, although the Technical Instruction Committee decided that class fees would be increased to consist of an entrance fee of 2s. 6d. and a fee of 2s. 6d. for each subject.⁽¹⁾ Part time teachers' salaries amounted to 5s. Od. per hour plus one-half of fees and grants.⁽²⁾

During the session 1895-6 there were 428 students participating in the Technical Instruction Committee's classes including 83 attending Machine Construction and Drawing, 46 at Art and 31 at the classes on the Steam Engine.⁽³⁾ In the following session the total had grown to 491 with a further 73 under Mr. Elton at the School of Art.⁽⁴⁾ A monthly report on attendances at all classes was made to the Technical Instruction Committee, and frequent visits to these classes by the inspectors of the County Council or the Department of Science and Art took place.

Another type of class on the fringe of technical education at this time was the Evening Continuation class, briefly referred to in the previous chapter. These classes, the responsibility of the

(1) Ibid., 22nd August, 1894.

(2) Ibid., 6th September, 1893.

(3) Darlington and Stockton Times, 18th April, 1896.

(4) Minutes of Technical Instruction Committee, 14th June, 1897, and Vide Appendix D.5.

School Boards and earning grants from the Education Department, experienced a new impetus as a result of the Evening School Code of 1893. Adults over 21 could now attend, no students were compelled to take the elementary subjects, previously the staple diet of evening schools, and grants could be obtained on the instruction of the school as a whole, instead of on the examination results of individuals, while the fixed grant was to be made according to the total hours of instruction and according to inspection.⁽¹⁾

As a result of these liberal measures and the consequent opportunity to widen the evening school curriculum to include nearly all forms of further education, during the winter of 1893-4 evening schools were opened at three centres in Darlington, where 443 students "availed themselves of the opportunity to increase their store of useful and recreative knowledge."⁽²⁾ In the following year, evening classes were held in six Board Schools, while there was an average attendance of 114 male and 83 female students, who attended classes of an

(1) Sadler, op.cit., p.63.

(2) Report of the Darlington School Board, 1892-4, Vide Appendix C.2.

elementary nature in such subjects as Writing and Composition, Shorthand, Arithmetic, Algebra, Mensuration, Book-keeping, Drawing, Geography, Needlework and Domestic Economy.⁽¹⁾ These classes produced an income of £522, of which £226 was earned in grant from the Education Department, £203 came from the rates and £73 from fees.⁽²⁾ Over £300 was spent on teachers' salaries, £87 on books and apparatus, and fees returned to students amounted to £74.⁽³⁾

Although the numbers attending these Evening Continuation classes decreased to 129 in the session 1897-8,⁽⁴⁾ probably because of the increased popularity of the technical classes run by the Technical Instruction Committee in the new College, the School Board reported "most successful enrolments of students" at their three centres in 1899-1900.⁽⁵⁾ Students were coming to regard these classes as a necessary link between the elementary day-school class and the evening classes at the Technical College. The Director of Studies confirmed that a

(1) Ibid., 1894-5.

(2) Ibid.

(3) Ibid.,

(4) Report of the Darlington School Board, 1897-8.

(5) Report of the Darlington School Board, 1898-1900.

large percentage of students attending Technical College classes had already passed through these Continuation Schools.⁽¹⁾ In 1904, with the abolition of the School Board, Evening Continuation classes were brought under the authority of the local Education Committee.

The School of Science and Art

Numbers attending the science classes at the School of Science and Art from 1883 to 1893 fluctuated considerably, whereas those in the art classes remained fairly constant.⁽²⁾ The School, held in the Mechanics' Institute, with 130 art and 80 science students in 1893⁽³⁾ was numerically still the largest institution in the town providing technical education. However, with the establishment of the Technical Instruction Committee, and its support of a growing number of science evening classes, the School, under Mr. E. A. Elton, reverted to concentrating mainly on art classes. The School Committee wished to maintain the identity of the School and resisted an attempt

(1) Ibid.

(2) Vide Appendix B.2.

(3) Department of Science and Art Calendar, 1893, p.148.

by the Technical Instruction Committee to take over its Art classes.⁽¹⁾ In the final session before it became a department of the Technical College numbers at the School had fallen to 73.⁽²⁾

Darlington Grammar School

The legislation affecting technical education further emphasized the need to sort out the continuing confusion between secondary and technical education and this was fully realized by the N.A.P.T.S.E.⁽³⁾ and by the Bryce Commission.⁽⁴⁾ In Darlington the introduction of technical instruction, in connection with the Science and Art Department, into the upper forms of the Grammar School and the growing financial dependence of the school on the County Council, already referred to, continued. A Chemistry laboratory was added and, as a result of its Science teaching and equipment, the school in 1894 became the Science and Art Department School of Science No.9077.⁽⁵⁾

- (1) Minutes, Technical Instruction Committee, 24th January, 1893.
- (2) Ibid., 4th June, 1897.
- (3) N.A.P.T.S.E. 6th Report, 1893, pp.8-12, and Appendix A.
- (4) Royal Commission on Secondary Education, 1895, Volume 1, pp.65, 98-103, 135-6, 326-7.
- (5) Department of Science and Art Report, 45th Report, 1898, p.214.

However, the Headmaster criticized the rigidity and uniformity of the new South Kensington rules, resulting, for the Endowed Secondary Schools, in loss of liberty, variety and elasticity, and a dislocation of ordinary school work.⁽¹⁾ Nevertheless boys in the fifth and sixth forms continued to take theoretical and practical Inorganic Chemistry and Physics, Drawing, Practical Plane and Solid Geometry and in 1896 earned £265 from the Science and Art Department on results in these subjects.⁽²⁾ This sum, when coupled with £273 received from the County Council, on account of capitation and apparatus grants, and £484 from fees for County Council scholars, meant that over one-third of the Grammar School's income came from these two sources.⁽³⁾

Summary

Thus, in the last decade of the nineteenth century, there had grown up in Darlington a small group of local councillors and educationists with an interest in and an enthusiasm for technical education. Thanks to the various Acts of Parliament

(1) Northern Echo, 30th July, 1896.

(2) Ibid.

(3) Ibid.

relating to technical education, to the grants provided by Durham County Council, but mainly to the initiative and energy of the local Technical Instruction Committee, the new Technical College was to become the chief means of providing Darlington and district with a range of technical instruction classes. These classes would still be concerned with the theoretical principles underlying trades and industries, and limited mainly to elementary instruction in Science and Art subjects, but an increasing amount of practical work was going to be done in the new College laboratories and workshops, and the subjects offered to reflect more closely the town's industries. Centralization and rationalization of the town's numerous private enterprise evening classes, earning grants from South Kensington, did not result in a dramatic leap forward and an unexpected expansion of the classes at the Technical College. Progress was slow and gradual, limited primarily by the financial resources available. Consolidation of existing classes was the key note of the first session's work; some expansion was to come later.

However, the Technical College did complete the town's ladder of public education, so that a boy or

girl, with the necessary ability, could progress from one of the local Board or voluntary elementary schools to a national or regional college for higher technical training, by means of national or County Council scholarships, awarded as a result of evening class successes. In the sphere of technical education, Darlington, like West Hartlepool, had been quicker to utilize the new opportunities and resources in building a Technical College than the neighbouring county boroughs of Sunderland and Middlesbrough. Sunderland, where the proceeds of the first year's Whisky Money went to reduce the town's rates⁽¹⁾ had to wait until 1901,⁽²⁾ while Middlesbrough, where part of the Whisky Money was used to subsidize the rates for several years after it became available,⁽³⁾ did not possess a Technical College until 1930.⁽⁴⁾

It now remains to trace the progress of technical education in Darlington by looking closely at the formative years of the Technical College. The work of the college from 1897 to 1915 and its relationship with the national provision, with Durham County Council and with local industry, will be analysed in the next two chapters.

(1) Hall, op.cit., p.122.

(2) Ibid., pp.131-147.

(3) N.A.P.T.S.E. Reports, 1891-7.

(4) Butterworth, op.cit.

CHAPTER VIITECHNICAL EDUCATION IN DARLINGTON1897 - 1904

In this chapter the organization and administration of the Darlington Technical College will be examined, from its first session until 1904, the year when the 1902 Education Act became operative and when the Technical Instruction Committee handed over responsibility for technical education to the Secondary or Higher Education Sub-Committee of the Borough's new Education Committee. This was a period of expansion, when student numbers doubled as a result of the continuing momentum created by the establishment of the College.⁽¹⁾ Chapter VIII will then review the decade leading up to the outbreak of the first World War, a period in which technical education in Darlington was marked by a reduction in student numbers,⁽²⁾ but also by more practical and purposeful achievements. Engineering courses came to form the central feature of the

(1) Vide Appendix D.1.

(2) Ibid.

College's work, but Evening Continuation classes and, later, Day Apprentices' and Trade classes, also constituted important aspects of technical education at this time. Throughout both chapters the relationship of the Darlington Committees, responsible for the Technical College and its work, with the Committees of the County Council, responsible for technical education, will be brought out.

Darlington Technical College The First Session, 1897-8

With the opening of the Technical College in October, 1897, and its facilities for a School of Art, for Science classes, administration rooms, laboratories, a lecture hall and workshops, all the technical education classes in the town, including the School of Art, but excluding the Evening Continuation classes and the classes at the Grammar school, were brought under one roof and one authority, that of the Director of Studies. This was of great benefit administratively. But, although the Technical Instruction Committee was to be congratulated on this major achievement within the short period of six years, it must be remembered that the new building was not completely furnished and equipped and

that the technical education provided was overwhelmingly part-time.

The raising of £14,000 had proved a great burden on the Technical Instruction Committee and the Corporation applied to the County Council to increase its building grant towards the College, as the Museum, Metallurgical laboratory, Metal-work room, College workshop and Domestic Economy rooms still remained to be furnished at a cost of £500.⁽¹⁾ Because the town had raised £10,000 itself, and because of "the efficiency and completeness of the college," the County Council further increased its building grant from £2,250 to £3,000.⁽²⁾ The balance sheet of the first College session showed that it was only by donations amounting to £190 that a credit balance of £150 had been produced.⁽³⁾ The other main sources in the total income of £2,025 were students' fees, £292, grants from the County Council, £623, and the Science and Art Department, £141, and the Penny Rate, £710. Teachers' salaries, £717, apparatus, £218, and interest charges

(1) Durham County Council Minutes, 16th March, 1898.

(2) Ibid.

on the £7,000 loan, £361, were the chief items of expenditure.⁽¹⁾ Thus the financial position of the new College was a precarious one and was to be a frequent source of friction between the Corporation and the County Council over the next 17 years. As technical education developed, with increasing numbers of students each session, the College soon began to incur the overdrafts which were a feature of the Grammar School accounts at this time.⁽²⁾

The Director's Report, on the 28 Science classes running during the first winter, showed that of the 456 male and 140 female students on registers the average attendance at evening classes was only 295.⁽³⁾ Examination successes were as follows:

Science Subjects

<u>Entered</u>	<u>First class result</u>	<u>Second class result</u>	<u>Failed</u>
272	79	91	102

Art Subjects

<u>Entered</u>	<u>First class result</u>	<u>Second class result</u>	<u>Failed</u>
269	96	108	65 (4)

(1) Ibid.

(2) Sunderland, op.cit., p.65

(3) Minutes, Technical Instruction Committee, 18th October, 1898.

(4) North Star, 19th November, 1898.

At the first Distribution of Prizes held in November, 1898, the Technical Instruction Committee Chairman claimed that, since the College opening, great benefits had accrued to the young people and students of Darlington. People who said the College was a "white elephant" had never entered it or seen the work carried on. It was pleasing to find the majority of students were sons and daughters of working men, which refuted the allegation that the building had been created for the benefit of a class.⁽¹⁾ Reports on classes of County Council inspectors now appear at regular intervals and frequently constitute the greater part of the Technical Instruction Committee Minutes. Classes were described as "very satisfactory," "very effective," and "creditabile", although small numbers in some Mathematics and Applied Mechanics classes, owing to students having to work overtime, were criticized.

The untimely death of the first Director of Studies, James I'Anson, has already been mentioned, and he was succeeded in May, 1898 by Mr. A. F. Hogg, M.A. Science master at the Grammar School, who had been teaching evening classes in Chemistry for

(1) Ibid.

several years.⁽¹⁾ After the resignation of Dr. Manson as Chairman of the Technical Instruction Committee in November, 1897, Councillor Swinburne was appointed the new Chairman.⁽²⁾ He held this position until 1904, and then continued as Chairman of the Higher Education Sub-Committee, when this body replaced the Technical Instruction Committee.

Technical Instruction Committee

The Technical Instruction Committee of the Borough Council, with the Town Clerk as its Secretary, was the governing body of the Technical College, and it consisted of eleven or twelve members of the Council, six representatives nominated by interested public bodies, and five representatives co-opted by the Committee each year. The Darlington School Board had three members, while the Grammar School, Training College and Naturalists' Field Club, one each. The co-opted members throughout this period were Philip Wood, Headmaster of the Grammar School, Mr. A. F. Pease, Vice-Chairman of the County Council Education Committee, and Messrs. R. Kendal, J. Johnson and W. Allan.⁽³⁾ Mr. R. Kendal was Manager of the

(1) Minutes, Technical Instruction Committee, 17th May, 1898.

(2) Ibid., 21st December, 1897.

(3) Technical Instruction Committee Minutes, 1897 - 1903.

North Road Locomotive Works of the North Eastern Railway Company, Mr. J. Johnson, a foreman joiner with a local firm of building contractors and Mr. W. Allan J.P., an engineer at the North Road Railway workshops. The Committee decided the policy of the Technical College, within the limits laid down by the County Council Directory, and the Director and his staff were responsible to the Committee for implementing policy and the general management of the College and its classes. The Director had to present a report to the monthly meeting of the Committee and make recommendations on future developments.

Early in 1899, in a special report on the future administration of the College, the Technical Instruction Committee recommended that the School Board establish an Evening Continuation School for boys at the College with the Director as head teacher, that, to provide adequate preparation for Engineering students, a Physics laboratory be fitted, and that admission to technical classes be not less than 15 years of age and to Evening Continuation classes not less than 13.⁽¹⁾

(1) Minutes, Technical Instruction Committee,
16th March, 1899.

However, the School Board's Pupil Teacher Centre and Evening Continuation classes did not come under the jurisdiction of the Technical College until Part III of the 1902 Act became operative. This delay was unfortunate, for, although the School Board felt gratified that a large percentage of students attending Technical College classes had passed through their Evening Continuation schools,⁽¹⁾ the existence of a separate organization, providing classes which were an essential preparation to the technical classes at the College, meant a lack of co-ordination, much overlapping and unnecessary duplication of staff and teaching.⁽²⁾ The subjects taught at the Evening Continuation Schools were of an elementary nature, while "recreational work formed an appreciative part of their programme. To a great extent they were frankly social. Educationally they were open to the charge that their aims were vague and discursive and the Technical College was compelled to do a great deal of elementary work, advance to higher work was slow and the amount done disappointingly little."⁽³⁾

(1) Darlington School Board Report, 1898-1900.

(2) First Report Borough Education Committee, 1906.

(3) Ibid.

Thus, during the first seven sessions of the College, many students lacked the basic background in such subjects as Mathematics, Geometry and General Science, so vital to the more advanced work taught in the College classes. Once again, as has been emphasized throughout this thesis, progress in technical education was severely handicapped by inadequate knowledge of elementary fundamentals. However, the Technical College tried to supply some of this elementary knowledge, by running special preparatory classes for boys and girls over 13 in Elementary Drawing, Physics and Chemistry and in basic French and German.⁽¹⁾ But this weakness was only remedied satisfactorily in the session 1904-5, when Evening Continuation Schools became the responsibility of the Technical College, details of which will be given in the next chapter.

The Technical Instruction Committee were always anxious to increase the number of classes and thereby the range of subjects taught at the Technical College, if grants could be obtained from the Science and Art Department or the County Council. But often this desire to expand local technical education met

(1) Prospectus, Darlington Technical College, 1901, pp.14-15.

opposition from the policy of the County Education Committee. For instance, in 1899, the expenditure of the County Education Committee was rising at such a fast rate that the Committee found itself drawing approximately £5,000 per year from its Reserve Fund and it decided that, from the 1st April, 1900, it must limit its annual expenditure, with the exception of building grants, to its annual Whisky Money income (£14,000).⁽¹⁾ A new Directory, governing technical and manual instruction in the county, was therefore framed on a more economical basis. The County Education Committee felt that the best way to promote technical instruction was to enable a limited number of capable and earnest students to go on to advanced stages of technical education, by means of a system of scholarships in connection with existing technical colleges, rather than by conveying a smattering of elementary knowledge to great numbers.⁽²⁾ This attempt to economise and retrench was strongly deprecated by the Technical Instruction Committees of the non-County Boroughs, including Darlington, at a conference called to consider the

(1) Minutes, Durham County Council, 16th March, 1899.

(2) Ibid.

1899 Directory.⁽¹⁾ A deputation from the Darlington and Stockton Committees got the County Education Committee to agree to place as wide an interpretation as possible on certain regulations and to give preliminary notice to local committees of any proposed changes in future.⁽²⁾ This was the first of many financial battles that were to be waged with increasing intensity, between Darlington Corporation and Durham County Council Education Committee, on the subject of technical education over the next fifteen years.

In fact at the Technical College's Prize Distribution in December, 1899, a member of the Darlington Technical Instruction Committee, Mr. A. F. Pease, found himself in the awkward position, as Vice-Chairman of the County Education Committee, of having to defend the latter committee against local charges of economy and red tape.⁽³⁾ He suggested the Technical Instruction Committee should obtain extra land for future extensions and, when it approached the County Council for additional financial help, the local committee should point out that

(1) Minutes, Darlington Technical Instruction Committee, 17th October, 1899.

(2) Ibid., 19th December, 1899.

(3) Darlington and Stockton Times, 23rd December, 1899.

between one-third and one-quarter of the Technical College's students came from outside the Borough.⁽¹⁾ Press comment at this time criticised "old Darlington" for lagging behind in the provision of first rate technical education, compared with towns of similar size in the West Riding and Lancashire, such as Keighley, Bingley, Saltaire, Oakworth and Crosshills, each of which had a "noble technical institute".⁽²⁾ A year later, the same newspaper welcomed the Technical Instruction Committee's decision to extend the Technical College, commenting that "the most sanguine supporter of technical education never contemplated that in so short a time extensions would be needed; but demands made on the Institute proved that people were ready for it and were prepared to utilize its advantages."⁽³⁾

The first reference of the need to extend the Technical College appeared in February, 1900, in the Director's monthly report to the Technical Instruction Committee, in which he pointed out that a good Mechanical Workshop and Testing-room, where the practical work of the Engineering classes could

(1) Ibid.

(2) Darlington and Stockton Times, 23rd December, 1899.

(3) Ibid., 24th November, 1900.

be more satisfactorily carried on, was necessary.⁽¹⁾

Two acres of land behind the College were obtained, and this was followed by another act of generosity by a member of the Pease family, for the benefit of technical education in Darlington. Mr. A. F. Pease offered to provide the Technical Instruction Committee with one-tenth of the cost (up to £500) of the buildings and apparatus for the College extension.⁽²⁾

The original architect, Mr. Hoskins, prepared plans, a public appeal for £6,000 was made⁽³⁾ and an application sent to the County Council for a building grant.⁽⁴⁾

Because the College provided technical instruction for nearly 200 students who lived outside the Borough, many of whom attended the advanced classes in an overcrowded Engineering department, the County Council made a grant towards the proposed extensions, equal to one half of the cost but not to exceed £3,000.⁽⁵⁾

This was quite a generous sum when it is remembered a similar grant had been made only four years earlier. It would seem that the Darlington "lobby" at Shire Hall, led by Mr. A. F. Pease, Vice-Chairman of the

(1) Minutes, Technical Instruction Committee, 13th February, 1900.

(2) Ibid., 20th November, 1900.

(3) Ibid., 20th May, 1901.

(4) Ibid., 16th December, 1901.

(5) Minutes, Durham County Council, 29th January, 1902.

County Education Committee, exerted considerable influence on behalf of the town. A year after the public appeal had been launched, the Technical Instruction Committee was informed that £3,700 had been promised in local subscriptions.⁽¹⁾ Many local engineering firms contributed, including the North-eastern Railway Company, which made a donation of £250.⁽²⁾

As a result of their visit to the opening of the well-equipped Manchester Municipal College of Technology, the Chairman of the Technical Instruction Committee and Mr. Hogg, now designated Principal,⁽³⁾ made the following suggestions in connection with the proposed extensions of the local college. They considered the extensions were urgently needed, but the cost of equipment and maintenance would be very considerable; that the mechanical laboratory was an urgent necessity and that in the future an engineering workshop would be desirable; that an examination hall was also needed and that, as soon as possible, proper provision should be made for supplying students with technical books and publications.⁽⁴⁾ The plans for the extensions were

(1) Minutes, Technical Instruction Committee, 8th May 1902.

(2) Ibid., 15th July, 1902.

(3) Ibid., 18th March, 1902.

(4) Ibid., 18th November, 1902.

approved by the County Council Education Committee⁽¹⁾ and, after insisting on some modifications affecting the School of Art, by the Board of Education.⁽²⁾

When the Technical Instruction Committee disappeared, early in 1904, the building of the extensions, consisting mainly of a Lecture Hall, Mechanical Engineering workshops and laboratories, had begun.

As the number of students attending the evening classes at the Technical College gradually expanded, so the financial problems of the Technical Instruction Committee became more acute. The College permanent, (i.e. capital) fund showed a debit balance of £460 as a result of the heavy expenditure on the building and equipment,⁽³⁾ though the Revenue Account on the first year contained a credit balance of £150.⁽⁴⁾ This balance fell to £7 during the following session,⁽⁵⁾ and each year the Committee found it increasingly difficult to cover the rising costs of technical instruction. The Committee's two main sources of income were the Penny Rate, which produced about £750 at this time,⁽⁶⁾ and the County Council grants. Half

(1) Durham County Council Minutes, 29th July, 1903.

(2) Technical Instruction Minutes, 15th September, 1903 and 20th October, 1903.

(3) Darlington and Stockton Times, 7th May, 1898.

(4) Minutes Technical Instruction Committee, 21st March, 1899.

(5) Ibid., 15th May, 1900.

(6) Ibid.

the rate was swallowed up by the interest charges payable on the original £7,785 loan⁽¹⁾ so the Committee came to depend more and more on the County Council. But, as has been mentioned already, the County Education Committee were having to economise and therefore scrutinized carefully the accounts of the Darlington Committee. The local committee regarded this as bureaucratic and restrictive and were critical of the slow and parsimonious manner in which the County Council made its grants.

The Technical Instruction Committee drew the attention of Mr. Robson, County Organizing Secretary, to the "immense inconvenience caused to the work of the Technical College by the delay in the payment of grants earned and by the insufficiency of such grants to meet the general expenses. The Committee hopes its future claims for grants will be more favourable dealt with and, in order to avoid a large bank overdraft, payments on account might be made by the County Council Committee during the session."⁽²⁾ It pointed out that a large number of students at

(1) Minutes, Secondary Education Sub-Committee, 10th April, 1906.

(2) Minutes, Technical Instruction Committee, 21st October, 1902.

the Technical College lived outside the Borough and that no contribution to the local rate was received on account of their tuition.⁽¹⁾ Three months later, the Committee, after considering the balance sheets of the past four years and the deficit which was building up - over £600 in 1901-2,⁽²⁾ put their financial situation to the County Education Committee.⁽³⁾ Moreover, the local Committee pointed out, that, when part of the 1902 Act came into force on 1st October, 1903, they would have additional financial commitments for Evening Continuation classes and a Pupil Teacher Centre,⁽⁴⁾ and urged the County Council to levy an additional penny rate over the Borough.⁽⁵⁾ The County Council agreed to do so and the sum of £751 2s. 6d. was paid over to the Corporation.⁽⁶⁾ Although this stop-gap payment helped to tide the Technical Instruction Committee over its immediate financial problems, the new local Committee, the Secondary or Higher Education Sub-Committee, with diminished powers for technical education, soon experienced further finan-

(1) Ibid.

(2) First Report, Borough Education Committee, 1906.

(3) Minutes, Technical Instruction Committee, 20th January, 1903.

(4) Durham County Council Minutes, 29th July, 1903.

(5) Ibid.

(6) Ibid., 11th November, 1903.

cial crises, which served to exacerbate already strained relations with the County Council.

Technical College Aims and Organisation

The work of the Technical College was carried on in evening classes, with a few day classes in the School of Art. Courses of instruction were arranged "to give systematic teaching in the principles which underlie the practice of the industries of the town and district."⁽¹⁾ The technical classes were open to students over 15 years old, but there were a few preparatory classes for boys and girls between 13 and 15. No pupils attending a day school were allowed to attend classes at the College unless at the request of a head teacher.⁽²⁾ One of the early College prospectuses summed up the aim of the technical instruction in these words: "The evening classes are specially arranged to afford to apprentices and to other persons desirous of self-improvement opportunities of continuous courses of study extending over three or four years. To those who are engaged in workshops, instruction will be given in the principles which govern and explain the processes of manufacture

(1) Technical College Prospectus, 1901, p.7.

(2) Ibid.

which they see daily carried on."⁽¹⁾

During the 1890's the majority of night class students took only one subject of technical instruction, but, with the improvement of technical education facilities through the opening of the Technical College, and with a growing realization that attendance at one class was a very inadequate method of learning about the principles behind particular industries, some system of integrating and coordinating related technical subjects became a vital element of technical education. Therefore the Principal urged students, in one of his first Annual Reports, to take at least two subjects.⁽²⁾ The College prospectuses at this time also drew students' attention to the need to take grouped courses of related subjects: "All students who intend to become engineers should pay especial attention to their Mathematics and Drawing and should obtain some general knowledge of Physics. All who intend to enter commercial life should not neglect the learning of a foreign language."⁽³⁾

Such was the expansion of the Technical College's work that the prospectus of the fifth session, 1901-2,

(1) Ibid., 1903, p.9.

(2) Darlington and Stockton Times, 23rd December, 1899.

(3) Technical College Prospectus, 1903, p.9.

contained a list of 66 Science classes, including two to be held on Saturday morning.⁽¹⁾ These evening classes were held in five College departments: Science, Engineering, Building Trades, Commercial and Women's. The School of Art offered five day classes, including a Saturday morning class for elementary school teachers, and twelve evening classes, all of which were taken by the two full-time Art masters, Mr. Elton and Mr. Dresser.⁽²⁾ Fees for joining the Science and Art evening classes were 2s. 6d. per session or per term, plus a 2s. 6d. registration fee on first joining a college class, while the day classes in Drawing and Painting cost 18s. 0d. or 15s. 0d. per term, for attendance on one morning or afternoon each week.⁽³⁾ When the 1902 Act became effective, the Technical College had an additional department, the Normal Department for Pupil Teachers, and took over responsibility for the Evening Continuation classes held in the local elementary schools. Further reference will be made to the Evening Continuation classes in the next chapter.

(1) Ibid., 1901, pp.48 and 49.

(2) Ibid.

(3) Ibid.

Examinations

Examinations taken at the College were those set by the Board of Education, the City and Guilds of London, the Society of Arts and Durham County Council. Students in the School of Art took various Drawing and Painting examinations of the Board of Education, while the Science and some Engineering classes were prepared for the Board's examinations at the advanced or elementary stage. More practical classes, in Engineering and in Building Trades, took the honours or ordinary grade examinations of the C.G.L.I. Commercial students in the French, German, Typewriting and Book-keeping classes entered the Society of Arts examinations, while Pitman's certificates could be obtained for Shorthand. Durham County Council examinations in Modern Languages and Cookery were also taken by Technical College students. Each year the examination results of successful students were published in the College prospectus, and an analysis of the results, in these early years, shows a growing number of students gaining certificates. The proportion of advanced certificates awarded was also increasing, as students continued

into their fourth and fifth years.⁽¹⁾

All the examination bodies awarded scholarships and prizes to outstanding students in science and art subjects. The best known of the Board of Education's national awards were the Royal Exhibitions and the Whitworth Scholarships. Medals and monetary prizes were offered by the C.G.L.I. and the Society of Arts, while Durham County Council's comprehensive scheme of scholarships, described in the previous chapter, enabled promising boys and girls and adult students to take courses of technical instruction, either at Darlington Technical College or at some other college providing higher technical training. The local Technical Instruction Committee also provided each year general prizes for "regularity of attendance and quality of homework," and special money prizes for the best pieces of work done during the College session in a wide range of science and art subjects.⁽²⁾

Staff

The teaching staff of the Technical College,

(1) Technical College Prospectuses, 1901-1904.

(2) Ibid.

which during its first session consisted of a non-teaching Director, two full time Art masters and eight part time teachers⁽¹⁾ had, by 1901, grown to a Principal, who taught several Chemistry classes, a full time Engineering teacher, seventeen part-time Science teachers and, in the School of Art, the two full-time teachers were assisted by two Art Pupil Teachers and one part-time teacher of Woodcarving.⁽²⁾

The appointment of Mr. J. Eagles, in 1899, as a full-time Engineering teacher at a salary of £130 per year,⁽³⁾ was acknowledged by the Technical Instruction Committee that the most important, as well as the most rapidly developing, aspect of the college work was on the Engineering side. Mr. Eagles, who was a National Scholar of the Royal College of Science, with first class honours in Geometry, Machine Construction and Steam,⁽⁴⁾ was probably chiefly responsible for urging the Principal of the need to expand the Engineering facilities at the College.

(1) Minutes, Technical Instruction Committee, 21st September, 1897.

(2) Technical College Prospectus, 1901, p.6.

(3) Darlington and Stockton Times, 24th June, 1899.

(4) Ibid.

Classes

For the second College session, 1898-9, the following additional evening classes were introduced: Marking Off, Practical Physics, Carpentry and Joinery, Latin, Botany, Materia Medica, Cookery and Wood Carving.⁽¹⁾ A further widening of classes, to include such subjects as Agriculture, Iron and Steel Manufacture, Electric Lighting and Power Distribution, Plumbers', Painters' and Decorators' work, Shorthand and Typewriting and Book-keeping, was recommended by the Technical Instruction Committee in the next session.⁽²⁾ It would appear that the Committee was enthusiastically trying to fulfil the promise made by the Mayor at the opening of the College, that every subject would be taught for which the College could gain a grant.⁽³⁾ However, several classes were small and often poorly attended. For example, the Marking Off class had six on the register with an average attendance of only 3.5.⁽⁴⁾

(1) Minutes, Technical Instruction Committee, 18th July, 1898.

(2) Ibid., 21st March, 1899.

(3) Darlington and Stockton Times, 9th October, 1897.

(4) Minutes, Technical Instruction Committee, 19th December, 1899.

In his second Annual Report, the Principal, after pointing out that student numbers had grown to 702, criticised students who took one subject only and those who failed, or obtained second class certificates, because of poor attendance.⁽¹⁾ Furthermore, he considered those who took the examination were too small a proportion of those attending classes. Although the number of students attending for the second and third years was increasing, he wished to see more students taking two subjects, and called for the assistance of foremen, managers and employers in encouraging a better attendance at trade classes.⁽²⁾ He felt that before long local employers would attach high value to the certificates given by the College.⁽³⁾

Early in 1900, there were 783 students attending classes at the Technical College, consisting of 216 in their third year, 224 in the second year and 343 in their first year.⁽⁴⁾ This was evidence that a growing number of students were regarding the Technical College classes as providing a continuous and progressive course of study from the elementary to the advanced stages in various technical subjects.

(1) Darlington and Stockton Times, 23rd December, 1899.

(2) Ibid.

(3) Ibid.

(4) Minutes, Technical Instruction Committee, 13th February, 1900.

Moreover attendance at the only classes held during the day, those of the School of Art, were slowly improving.⁽¹⁾ At last some apprentices and artisans in local industry were coming, however vaguely, to realize that the Technical College classes had some relevance for them, even though the content of such classes was still predominantly theoretical. Mr. Hogg reported that "employers are beginning to find our students make better employees than those who attend no classes, as is witnessed by requests for recommendations of students to fill the places employers have to offer."⁽²⁾ To build up a closer relationship with local industry, the Principal kept an employment register of situations vacant and invited students seeking employment to use him as a referee.⁽³⁾

With an almost 50% growth in the student population in three years,⁽⁴⁾ it is not surprising that the Technical Instruction Committee were forced to make plans to extend the College premises. A building designed for approximately 600 students attending each week must have been overcrowded with 842 using it.⁽⁵⁾

(1) Ibid.

(2) Ibid.

(3) Technical College Prospectuses, 1901-1904.

(4) Vide Appendix D.1.

(5) Darlington and Stockton Times, 18th January, 1902.

The Principal reported a steady development in the more advanced work, with nearly 150 students attending the College for the fourth successive session;⁽¹⁾ whereas in 1897 there were only 12 students of Mathematics, 96 were taking this subject in 1900.⁽²⁾ The statistical report in Appendix D.6. reveals the extent of the expansion in the work of the Technical College, by comparing the sessions 1901-2 and 1902-3. The significant figures are those which show that, although in both sessions the average weekly attendance at all classes was about 66%, less than half the students took any examinations at the end of each session. Again, the table does not show the examination results. Of the 441 papers worked in 1902, 195 first class certificates and 215 second class certificates were awarded, while, in 1903, papers numbered 582 and certificates were 317 and 218 respectively.⁽³⁾ The Principal commented that the most notable and satisfactory increase was in the number of first class advanced certificates gained, which rose from 6 to 34 in these two years,⁽⁴⁾ the result of regular homework and students' subjects being properly coordinated.

(1) Ibid.

(2) Ibid.

(3) Darlington and Stockton Times, 28th November, 1903.

(4) Ibid.

Perhaps the most interesting local development in connection with technical education during this initial period resulted from a lengthy report, drawn up by the Principal, on the Training of Engineering Apprentices and the desirability of forming such classes at the Technical College. After inquiring about the arrangements made by other towns, and consulting the managers of several engineering works in Darlington to determine what scheme would be most useful to local apprentices, Mr. Hogg made the following proposals. First he suggested that a Day Engineering School of a preparatory nature and limited in numbers should be opened as soon as possible; next, that employers should be persuaded to draw up a scheme of rewards for the theoretical certificates gained in the College evening classes, and finally, employers should be asked to consider the possibility of granting, to a very few specially meritorious apprentices of good age, leave of absence to attend Day classes, either for a continuous period or on certain mornings or afternoons each week.⁽¹⁾

Mr. Hogg concluded by pointing out that "the usefulness of the college to the main industry of

(1) Minutes, Technical Instruction Committee,
21st April, 1903.

the town would thereby be very materially increased. We should get the desideratum of continuous workshop practice with theoretical study. Employers would reap the benefit in the saving of waste now due to inefficiency, and the apprentices would be stimulated from the very beginning to work in the best possible manner."⁽¹⁾ The Technical Instruction Committee asked the Principal to implement these recommendations, but it was not until January, 1907, that the first part-time Day class in Science or Engineering was running at the Technical College. This suggests that the managers of local engineering works were not yet convinced of the practical value of their apprentices attending Technical College classes, at least not to the extent of being prepared to release them during the day.

1902 Education Act.

Although various references to the local effects of this Act have been made already, it will now be examined in greater detail. During the last twenty years of the nineteenth century, because of the haphazard and unco-ordinated development of the country's

(1) Ibid.

system of public education, described in the previous chapters, elementary, secondary and technical education had each grown up independently, sponsored by unrelated Government and private bodies, resulting in much confusion and overlapping. Although technical education had made rapid progress since 1889, with the new financial resources from the rates and Whisky Money, some clear definition and demarcation of its place in the overall educational system was still needed. The rationalization and co-ordination, urged by the Samuelson and Bryce Commissions and by the N.A.P.T.S.E., was realized by the merging of the three central agencies of education - the Education Department, the Science and Art Department and the Charity Commission - in the Board of Education in 1900, and then by the Education Act of 1902. This Act, which made the county councils, county boroughs, and, for elementary education only, certain municipal boroughs and urban district authorities, the Local Education Authorities for their respective areas, "brought administrative order where there had been chaos, and set up an organized system of elementary, secondary and technical education."⁽¹⁾

(1) F. Smith: A History of English Elementary Education, 1931, p.347.

327 local authorities replaced the 3,000 existing School Boards, School Attendance Committees and Technical Instruction Committees.⁽¹⁾ This Act repealed the Technical Instruction Acts, and the Whisky Money, some of which had been used for secondary and even elementary education, was exclusively earmarked for education other than elementary, technical instruction being included in secondary or higher education. The Local Education Authorities took over, from the School Boards, control of Evening Continuation Schools, and the instruction they gave was greatly extended. Thus state control and local co-ordination of the nation's educational facilities were substituted for the waste, duplication and limitations, which had appeared, during the second half of the nineteenth century, from the diverse efforts of various voluntary organizations.

As a result of the 1902 Act, the Technical Instruction Committee of the Darlington Borough Council, whose great achievement had been the provision of the Technical College, disappeared, and on the "appointed day," 1st February, 1904, its work was taken over by the Borough Education Committee's Secondary Education Sub-Committee. Because Darlington

(1) Ibid.

was a non-county borough, legal control of the educational work of the town was limited to Part III of the 1902 Act, that is elementary education, and therefore the Secondary or Higher Education Sub-Committee acted as a local sub-committee of Durham County Council. Although the chairman of the Technical Instruction Committee became the chairman of the new Secondary Education Sub-Committee, the membership of the Committee changed. Whereas the Technical Instruction Committee had consisted of twelve members of the Town Council, six members nominated by public bodies and five educationalists co-opted by the Council,⁽¹⁾ the Secondary Education Sub-Committee was composed of eight local Councillors, eight co-opted members, including two women, and five Councillors nominated by Durham County Council.⁽²⁾ The increased representation of the County Council reflected the increased powers over technical instruction in Darlington that the 1902 Act had given the County Council. The County Council could raise a rate, not exceeding two pence

(1) Vide Appendix D.7.

(2) Darlington Education Committee Higher Education Prospectus, 1904, p.11 and Vide Appendix D.8.

in the pound, to meet the needs of higher education over the whole county, while the Darlington Town Council still possessed the right to use a penny rate for higher education in the borough.

But to offset losing some of its power over technical instruction to the County Council through the 1902 Act, the town, through its new Secondary Education Sub-Committee, extended its authority in another direction. This was in the field of Evening Continuation Schools. Before this Act, the Evening Continuation Schools were under the management of the local School Board, and, as a result, co-ordination between the Elementary Schools and the Technical College suffered. Now that the classes of both institutions came under the authority of the same committee and the Director of Studies, it was possible to arrange the work of the Evening Continuation Schools to form a definite preparation for the more advanced courses at the College. The new local committee also took over the School Board's Pupil-teacher work, but the only connection this had with technical education was the establishment of a Normal Department at the Technical College.

In preparing for the increased work, resulting from the takeover of elementary education in the

town, the Borough's new Education Committee appointed an Education Secretary or Chief Education Officer at the end of 1903. This was another distinctly controversial appointment, involving the Principal of the Technical College. Mr. Hogg applied for the new post and was defeated by Mr. C. A. Coffin, B.A. by the narrow margin of nine votes to seven, mainly because he lacked primary school experience.⁽¹⁾ This was followed by a proposal to increase Mr. Hogg's salary to £360, which touched off a long and bitter discussion at a Town Council Meeting.⁽²⁾ Claims and counter claims were made about the value of Mr. Hogg to the town, several Councillors opposing an increase on the grounds that the Principal was already well paid and that, as a new Committee would soon be taking over the Technical College, it was inadvisable to commit the ratepayers to a further financial burden, particularly at a time of trade depression.⁽³⁾ Mr. Hogg was probably unsettled by these events and the hostile personal criticism to which he had been subjected, and, in 1905, he left Darlington and took up the post of the Principal of the West Ham College of Technology.⁽⁴⁾

(1) Darlington and Stockton Times, 5th December, 1903.

(2) Ibid., 9th January, 1904.

(3) Ibid.

(4) Minutes Secondary Education Sub-Committee, 28th September, 1905.

Summary

Thus, in the first seven Technical College sessions, the demand for technical education exceeded the provision, as was confirmed by a 75% increase in students attending classes.⁽¹⁾ This expansion, greater than the Technical Instruction Committee had anticipated, meant that additional facilities and equipment and more part-time teachers became necessary at the College. Although the Technical Instruction Committee and the College Principal did all they could to encourage this growth, limited financial resources was the chief factor governing the rate of progress. Differences with Durham County Council, over matters involving the finance of technical education in Darlington, which were to become more acute after the introduction of the system of dual control in 1904, had begun to arise.

However, in these early years, much of the technical instruction given at the College lacked purpose. The majority of evening class students were not taking any planned co-ordinated course, while too many dropped out during the year or failed to sit the examinations. Another handicap, soon to be remedied, lay in the fact that the link between the elementary schools and the

(1) Vide Appendix D.1.

Technical College, the Evening Continuation classes, was educationally weak and uncertain. These valuable preparatory classes remained outside the control of the College Principal until the session 1904-5. The inclusion of these classes within the orbit of the College was one of several important features, introduced in the years 1904 to 1915, which established technical education in Darlington on a sound basis for future development. These events, which form the climax of this thesis, will now be presented.

CHAPTER VIIITECHNICAL EDUCATION IN DARLINGTON1904 - 1915Secondary Education Sub-Committee

As a result of the 1902 Education Act, technical education in Darlington became an aspect or subdivision of secondary education, for which the Durham County Council and its Higher Education Committee was the responsible authority. This widening of the County Council's powers meant that the new local Committee, the Secondary or Higher Education Sub-Committee of the Borough Education Committee, unlike its predecessor the Technical Instruction Committee, became a sub-committee of the County Council. The constitution of the new committee authorised by the County Council has already been given.⁽¹⁾ The minutes of the committee were subject to approval or rejection by the County Council Higher Education Committee. A close examination, by the writer, of the committee Minute Books throughout this period,

(1) Vide Appendix D.8.

shows that the County Council increasingly queried or rejected items recommended by the Darlington Committee on the grounds of economy. Important questions of principle, affecting the development of the work at the Technical College, as well as trivial matters, often caused disagreement, usually on the financial aspect, between the two committees. It was unusual for the County Council Committee to approve the local committee's minutes in toto.

From September 1910, the local minutes record meetings or deputations, held once or twice each year, between representatives of both committees, to try and reach agreement on several issues over which they were divided. The friction, which has already been noticed as existing between the Technical Instruction Committee and the County Council Higher Education Committee, slowly increased as some members of the Darlington Secondary Education Sub-Committee experienced growing feelings of delay and frustration, in their efforts to press ahead with technical education in the town. The relationship with Shire Hall, Durham, was further complicated and embittered, during this period, over the question of the future development of the town's two secondary schools - the boys' Grammar School and the girls' High School

which, even before the 1902 Act, had been coming increasingly to depend financially on the County Council.

Typical of the clash between the two authorities was the annual modification or rejection by the County Committee of the local committee's proposed plans and estimates for each session at the Technical College. For example, in September, 1904, the County Council Higher Education Committee was unable to approve the local proposals for the forthcoming session, as expenditure, £2,774, would considerably exceed that of the session 1902-3, £1,271. The local committee could proceed with its programme, but, if it incurred expenditure beyond the sum received from the County Council in the earlier year, it would be "at its own risk." (1) In reply, the Darlington Committee stated that, apart from the redemption charges on the Technical College building, they considered all other expenses for Higher Education were chargeable to the County Education funds, that they administered County funds with the greatest care, that they had the additional responsibility for Evening Continuation classes and that "to

(1) Minutes, Secondary Education Sub-Committee, 20th September, 1904.

restrain expenditure within the amount, which was insufficient two years ago, is an impossibility if any educational progress is to be made."⁽¹⁾ As a result of a local deputation to the County Higher Education Committee, a compromise was reached. The local representatives, pointing out their particular aims in respect of co-ordination and graduation of technical education, agreed that the Darlington plan was more expensive than those of other non-county boroughs, "but it is an educational axiom that money is only well spent when students are produced who are capable of going on to higher work."⁽²⁾ The outcome was that the County Council cut the local estimates by £525 to £2,249, by reducing administrative, supervisory and examination expenses, but the latter figure was a considerable increase on the 1902-3 sum.⁽³⁾

Press reaction to this treatment came in an article entitled "A Darlington Grievance", in which the local writer laid the blame for reductions in classes and staff at the Technical College and in the Evening Continuation Schools at the County

(1) Minutes, Secondary Education Sub-Committee, 20th September, 1904

(2) Ibid., 15th November, 1904.

(3) Ibid.

Council's door.⁽¹⁾ It went on, "the absurdity of the position that a County Council twenty miles away should be responsible under the 1902 Act for the financing of secondary education in a town like Darlington is obvious. Darlington is a borough, very like a county borough in size, and it cannot be compared with other non-county boroughs who have not made similar requests. Conditions differ in various towns. The County's scheme should receive the closest attention of the town's educationists. As a concurrent authority for secondary education, Darlington should insist on having a large share in the development of its own educational methods."⁽²⁾ These sentiments, clearly suggesting that the town could and should run its own technical education affairs, were held quite strongly by some leading citizens, who agitated for greater local autonomy in secondary education, particularly after 1910.

Sometimes, circulars or letters from the County Council on class fees and staff salaries were received in Darlington after plans for the College session had been made, and the local committee con-

(1) Darlington and Stockton Times, 26th October, 1904.

(2) Ibid.

sidered they were too late for adoption.⁽¹⁾ Within five years of the passing of the 1902 Act, the County Council were already committed to the whole of their income, within the limits of the Act as far as concerned secondary education, and again requested the local committee to limit its expenditure to that of the previous session.⁽²⁾ It urged the local committee to restrict admission to technical classes to those who were engaged in a related industry,⁽³⁾ and to discontinue non-necessary work.⁽⁴⁾ The Darlington committee replied that, while exercising every economy, they had no other funds, apart from those provided by the County Council, and therefore could not accept liability for any expenditure incurred in excess of the amount spent during the previous session.⁽⁵⁾ They concluded the exchange by insisting that, in view of their anxiety to maintain the efficiency of the College work, they could see no possibility of making reductions.⁽⁶⁾

(1) Minutes, Secondary Education Committee, 11th July, 1905 and 17th September, 1907.

(2) Minutes, Secondary Education Committee, 17th September, 1907.

(3) Ibid.

(4) Ibid., 19th November, 1907.

(5) Ibid., 22nd October, 1907.

(6) Ibid., 19th November, 1907.

This financial struggle was the crux of the relationship between the local and County Council committees and was the chief factor in determining the progress of technical education in Darlington during this period. The County Council found that the costs of secondary and technical education in the county continued to rise at such a rapid rate that it was vital to restrain the expenditure of local committees. Higher Education estimates which were running at just over £50,000 per year in 1906⁽¹⁾ had reached over £100,000 four years later.⁽²⁾ So desperate did the financial position become, that, by the end of 1910, the County Council were considering the policy of requiring non-county boroughs to raise a special supplementary Higher Education Rate.⁽³⁾

An examination of the Darlington committee's annual estimates at this time reveals that the local sub-committee were not prepared to put a brake on the development of the town's technical education, by holding expenditure at a certain fixed sum. Estimated expenditure rose from £3,073, for the session

(1) Durham County Council Minutes, 24th January, 1906.

(2) Ibid., 27th July, 1910.

(3) Minutes, Secondary Education Committee, 24th November, 1910.

1905-6,⁽¹⁾ to £4,930 for 1909-10.⁽²⁾ Towards these sums the local committee were able to raise £485 and £450 in fees and considered the balances of £2,588 and £4,480 were the responsibility of the County Council.⁽³⁾ The twopenny rate, levied in the town by the County Council for Higher Education, fell far short of these large deficits. Moreover the local committee felt that it was inequitable that they should be paying about one half of the local penny rate, raised for Higher Education, in interest and redemption charges on the College building, in addition to the County Council rate, while at the same time the County Council, the responsible body for providing technical education facilities, enjoyed the use of the Technical College free of charge.⁽⁴⁾ The local committee therefore proposed to charge the County Council £500 as the annual rent of the College.⁽⁵⁾ The County Council contested this, pointing out no other non-county borough had charged rent for the use of institutions,⁽⁶⁾ but

(1) Ibid., 19th September, 1905.

(2) Ibid., 15th June, 1909.

(3) Ibid., 19th September, 1905 and 15th June, 1909.

(4) Ibid., 10th April, 1906.

(5) Ibid., 20th March, 1906.

(6) Ibid., 20th November, 1906.

eventually paid up.⁽¹⁾ This became an annual rental, which increased in amount when further extensions were added to the Technical College.

The Secondary Sub-Committee saw the completion of the College extensions begun by the Technical Instruction Committee. The new wing including a new Mechanical Laboratory and workshop and a drawing office was opened in February, 1905 by Sir Isambard Owen, Principal of Armstrong College, Newcastle.⁽²⁾ Although donations amounting to £3,700 had been originally promised,⁽³⁾ only £680 of the cost of £5,200 came from subscriptions.⁽⁴⁾ The County Council granted £1,991⁽⁵⁾ and a further £2,400 had to be borrowed.⁽⁶⁾

However, two years later, the Board of Education's Inspector criticized the College laboratory accommodation as inadequate and recommended that new and larger laboratories for Steam and Mechanics should be built immediately.⁽⁷⁾ Plans were drawn up

(1) Ibid., 22nd October, 1907.

(2) Darlington and Stockton Times, 11th February, 1905.

(3) Minutes, Technical Instruction Committee, 8th May, 1902.

(4) First Report, Darlington Education Committee, 1906.

(5) Ibid.

(6) Ibid.

(7) Minutes, Secondary Education Committee, 18th June, 1907.

for building an additional Mechanical Engineering laboratory to cost about £1,350,⁽¹⁾ but progress was slow, because loan sanction had to be obtained from the Local Government Board.⁽²⁾ The County Council agreed to pay five per cent of the cost of the additional building in the form of an annual rental,⁽³⁾ and to provide £200 as a special grant towards new equipment.⁽⁴⁾ The new Mechanical Laboratory, with its facilities for extended and more advanced work, was opened by Sir Charles Parsons, inventor of the steam turbine, on 20th October, 1910.⁽⁵⁾

It is convenient to break off this outline of the local committee's activities at this point of achievement, in order that an account of the courses, particularly in engineering, that necessitated the expansion and extension of the Technical College, may be given. Furthermore, it was not until the new Mechanical Laboratory was being erected that high-level representatives of local industry were nomin-

(1) Ibid., 22nd October, 1907.

(2) Ibid., 18th May, 1909.

(3) Minutes, Durham County Council, 29th January, 1908.

(4) Ibid., 27th January, 1909.

(5) Darlington and Stockton Times, 22nd October, 1910.

ated to serve on the Secondary Education Sub-Committee and began to play a more influential role in the affairs of the Technical College. Finally the relationship between the local committee and the County Council suffered a further deterioration after 1910, and a protracted wrangle over the purchase of a piece of engineering equipment at the College culminated in the demand for the abolition of the system of dual control over technical education in the town. These important events will be presented later.

Courses

(a) Evening Continuation Schools

From the session 1904-5, when the Secondary Education Sub-Committee assumed responsibility for the Evening Continuation Schools, these schools, as an essential preliminary to the Technical College classes, became an integral part of the town's growing system of technical education. Admission to these classes was restricted to those who had left elementary school, and the instruction followed directly that given in the elementary school. The committee established three Evening Schools for school leavers at Albert Road, Corporation Road and

St. John's Schools, where, on three evenings each week, the following subjects were taught: Shorthand and Book-keeping, Mathematics, English, Geography and History, Geometry and Drawing, Needlework, Dress-making, Cookery and Woodwork.⁽¹⁾ The preliminary classes for Engineering and Building instruction, previously held in the Technical College, were transferred to these schools, thereby reducing the overcrowding at the College.⁽²⁾ A fourth school for older men working in Engineering workshops was also started.⁽³⁾ The admission fee of 6d. was returnable, if attendance was regular, and the weekly fee of 2d. was also returned, if certain levels of attendance and progress were achieved.⁽⁴⁾ As a further encouragement and based on similar conditions, the Committee offered scholarships, or free admission in a succeeding session, to the more advanced classes in the Evening Continuation Schools or at the Technical College.⁽⁵⁾

The first report of the Borough Education Committee admitted that "the serious nature of the

(1) Darlington Education Committee, Higher Education Prospectus, 1904, pp.71-5.

(2) Ibid., p.79.

(3) Ibid., p.72.

(4) Ibid.

(5) Ibid.

work at the Evening Continuation Schools caused a loss of students at first", but noted that "the quality of the work both in Evening Continuation Schools and at the College has improved and the amount of homework done has increased."⁽¹⁾ The chief problem was to persuade school leavers to continue their education, by joining the Evening Continuation classes. A very large proportion of them allowed a year or more to elapse before joining these classes and "lost ground with astonishing rapidity."⁽²⁾ The Board of Education report on these schools, for the session 1907-8, pointed out that, of the 233 students who joined the Evening Continuation Schools, 161 completed the course, and of the 987 children who left the Elementary schools in 1907 only 107 entered evening schools.⁽³⁾ The minutes confirm that the local committee were anxious to attract more students to these preliminary technical classes and to co-ordinate the curricula more closely with the technical instruction at the College. Parents, headmasters and employers

(1) First Report, Darlington Education Committee, 1906.

(2) Minutes, Secondary Education Committee, 14th February, 1905.

(3) Ibid., 19th January, 1909.

were contacted and a reorganization of the Evening Schools took place under the guidance of the College Principal. The future pattern was set in 1908, when the Evening Continuation Schools were renamed Branch Technical Schools and courses of study brought into line with the grouped courses, which had been introduced at the Technical College evening classes. All students were expected to spend at least one session at the Branch Technical School and pass the County Council Certificate of Proficiency before being admitted to the College classes.⁽¹⁾ The following courses were organized from 1908.⁽²⁾

(a) Albert Road Branch Technical School -
Engineering Course for men only.

The College Prospectus stated that this course was "suitable for Mechanical Engineers, Pattern Makers, Fitters and Turners, Boiler-makers, Platers, Bridge-makers, Moulders, Smiths and Machine-men, who have not been able to attend classes at the Technical College but who realize that a certain amount of technical instruction in Workshop Arithmetic and Mensuration, Workshop

(1) Darlington Education Committee Prospectus, 1910-11, p.105.

(2) Ibid., 1908-9, pp.106-113.

Sketching and Drawing and lessons in Practical Mechanics would greatly help them in their daily work and afford opportunity for self-improvement!"⁽¹⁾

The subjects of this grouped course, held on two evenings per week, were taught by two men who were employed at the Cleveland Bridge Works and at the North Eastern Locomotive Works.⁽²⁾ This course ran for three sessions.

(b)

Corporation Road Branch Technical School

(i) Preparatory Technical Course for Youths

(13-14 year olds).

This was a two year course in the following group of subjects: Workshop Mathematics, Technical Drawing, Experimental Mensuration, including Elementary Mechanics and Physics, and English. Attendance was required at all four subjects in the course.

(ii) Preparatory Commercial Course for Youths and Girls (13 and 14 years old)

This again was a two year grouped course, consisting of the following four subjects:

(1) Ibid., p.109

(2) Ibid., 1910-11, p.107.

Commercial Arithmetic, Commercial Correspondence and Book-keeping, Shorthand, and Commercial Geography and History.

(c)

Kendrew Street Branch Technical School

A grouped Domestic course, including Needlework, Dressmaking and Cookery, for girls and women.

That these Evening Continuation Schools received growing support can be seen from the following enrolment figures.⁽¹⁾

	<u>1907-8</u>	<u>1908-9</u>	<u>1909-10</u>
Albert Road Branch Technical School		16	31
Corporation Road Branch Technical School		230	320
Kendrew Street Branch Technical School	<u> </u>	<u>86</u>	<u>74</u>
	<u>233</u>	<u>332</u>	<u>425</u>

At the beginning of each session classes had to be divided and additional teachers appointed, owing to the large number of entries,⁽²⁾ but still no more

(1) Fourth Report, Darlington Education Committee, 1910.

(2) Minutes, Secondary Education Committee, 20th October, 1908, 19th October, 1909, 18th October, 1910, 1st October, 1912.

than 20% of school leavers joined these classes.⁽¹⁾
 In order to improve on these figures, a scheme to allow boys and girls, between 13 and 14 years of age, who were still at school, to join the classes at the Branch Technical Schools was approved.⁽²⁾ Reduced fees were also an added incentive to join these courses.⁽³⁾

An assessment of the effectiveness of the Evening Continuation and Branch Technical Schools can be made from the Principal's and H.M.I.'s reports of this period. Mr. Hague commented, in 1911, that the co-ordinated scheme, strengthened during the last three sessions, between the College departments and the Branch Schools, had produced several pleasing features.⁽⁴⁾ There was now no complaint from evening class teachers that students were ill-prepared and attendance was becoming more regular.⁽⁵⁾ The Board of Education report for 1909-10 also commented favourably: "the benefit of the course organised in the lower evening

(1) Fourth Report, Darlington Education Committee, 1910.

(2) Minutes, Secondary Education Committee, 14th December, 1909.

(3) Darlington Education Committee Prospectus, 1912.

(4) Darlington and Stockton Times, 2nd December, 1911.

(5) Ibid.

schools is now making itself felt, and the educational standard of those entering the Technical College is considerably advanced upon that which formerly obtained, enabling teachers to dispense with much of the groundwork that used to be necessary."⁽¹⁾ It was becoming an accepted feature of technical education that, in order to benefit from a four or five year continuous course at the College, a two year course at a Branch Technical School was an essential preparation. By 1914, all the Branch Technical classes, with the exception of the Domestic Science courses, were taking place in the new Higher Grade School, which had been built at the rear of the Technical College, and the majority of Technical College students began their technical education in these preliminary classes. Over a period of ten years, reorganization and co-ordination had brought much needed purpose to the initial stage of technical education.

(b) Technical College Evening Courses

In similar fashion to the Evening Continuation and Branch Technical Schools, the work of the evening classes at the Technical College gradually became

(1) Minutes, Secondary Education Committee,
21st June, 1910.

better organized and therefore more useful. Some systematization had already been introduced by Mr. Hogg, and additional accommodation and equipment had been made essential by the growth of student numbers during the College's early years. However, student attendances fell considerably, following the take-over of technical education, in 1904, by the County Council Higher Education Committee.⁽¹⁾ This was due to tighter control over classes in order to effect economies, an increase in class fees, higher entry standards being demanded to join College classes, an insistence on regular attendance and homework and the growing awareness that at least two subjects must be studied if the course was to be of value. Apart from the normal wastage of students during a College session, many potential evening class students among the young local apprentices and artisans failed to join classes because they found standards too high and demanding. Moreover they were not encouraged to further their education, because overtime often conflicted with evening classes, and anyway, they were uncertain as to what recognition, if any, their

(1) Vide Appendix D.1.

employers would give to Technical College certificates, even if they were successful in passing the examinations at the end of the course.

Although the number of students at the College had fallen, it was pointed out at the College Prize Distribution that the College was turning them out better equipped than formerly and each student was taking an average of 2.1 subjects as against a little over one five years earlier.⁽¹⁾ But although the College prospectuses had, for several years, been urging students to take a definite course of allied subjects with a specific aim - for example, first year Engineering students were expected to study concurrently Machine Construction, Practical Mathematics, Steam and Geometry⁽²⁾ - it was not until 1908 that the Group Course system was officially introduced. The suggestion first appeared in the H.M.I.'s report for the session 1906-7 in these words: "Definite courses should be laid down and made compulsory, a composition fee being charged, which should not exceed that asked for a single subject of the course."⁽³⁾

(1) Darlington and Stockton Times, 2nd November, 1907.

(2) Darlington Education Committee Prospectus, 1906.

(3) Minutes, Secondary Education Sub-Committee, 18th June, 1907.

The committee had to be reminded by the Board of the importance of this re-organization a year later. "No organized courses of instruction are made compulsory and the students are practically left free to enter what classes they choose..... It is hoped that next session courses of instruction will be laid down and made compulsory for, at least, all students under 18, both in the Technical College and in the ordinary Evening Schools." (1)

The local committee and the new College Principal, Mr. Hague, carried out these recommendations, and the Board's Inspector then commented that "604 students entered the classes, of whom 344 took organized courses of instruction." (2) Wherever possible, students were now required to enter one of these grouped courses, for which a group fee was charged. This involved attendance of about five or six hours per week at evening classes. The prospectus claimed that "the students who work through a course may not only expect to make more rapid progress but also to reach a higher standard of efficiency and find their

(1) Ibid., 17th January, 1909.

(2) Minutes, Secondary Education Sub-Committee, 15th June, 1909.

knowledge the more readily applicable to practical problems than could be expected by taking up the study of subjects in a haphazard manner."⁽¹⁾ The following grouped courses were available:

Mechanical Engineering Science, Electrical Engineering Science, Building Trades Science, Organic and Inorganic Chemistry (Practical and Theoretical), Commerce, Matriculation and Art.⁽²⁾ As has been noted already, several of these courses were linked with the grouped courses introduced in the Branch Technical Schools.

The Principal referred to the value of these grouped courses at several Prize Distributions, pointing out that the increased stringency of them, from the point of view of regular attendance and homework, had not resulted in any reduction of numbers.⁽³⁾ In the first session of grouped courses, 622 students took 1,675 subjects in Science, Technological and Commercial evening classes and in the following year the numbers had grown to 639 and 1,761,⁽⁴⁾ so that the number of subjects individual

(1) Darlington Education Committee Prospectus, 1908, p.7.

(2) Ibid., pp.12-13.

(3) Darlington and Stockton Times, 22nd October, 1910.

(4) Ibid.

students were taking had reached 2.7.

Structural Engineering and Iron and Steel Manufacture grouped courses were added to the College curriculum and, by 1914, the majority of evening students were following a four year grouped course of study and sitting appropriate examinations. As with the Branch Technical Schools, the work of the College was given greater purpose and direction. By taking a grouped course, related to their daily work, students were finding the technical education provided at the College increasingly relevant and useful.

It was still possible to enrol for a single subject course at the College, and, where they felt there was a demand, the local committee were willing to introduce new subjects. For instance, in 1907-8, special classes in Motor Car Engineering, Foundry Work, Physics and Botany were put on,⁽¹⁾ while in the following session Geology, Metallurgy, Iron founding and Teachers' classes for Iron and Metalwork were added.⁽²⁾ However, some of these classes had to be closed, because attendance fell below that required by County Council regulations (i.e. six for an advanced class, ten for an elementary class).⁽³⁾ Other classes which ran for several sessions

(1) Minutes, Secondary Education Sub-Committee, 18th June, 1907.

(2) Ibid., 16th June, 1908.

(3) Ibid., 20th October, 1908 and 19th January, 1909.

were in Hygiene and Human Physiology, Esperanto and Geology, while Locomotive Engineering and Typography had become permanent features by 1913.⁽¹⁾

Both the reports of the Board of Education Inspectors and the Borough Education Committee take local employers to task for not doing more to encourage their apprentices to take advantage of the College facilities. After noting that 293 of the total of 668 students were engaged in Engineering and in other artisan pursuits, one of the Board's reports concluded that "employers of labour offer little or no inducement to their apprentices to attend evening classes. They certainly desire that they should do so, but such rewards as increases of wages or early promotion to successful students are wanting."⁽²⁾ The Secondary Sub-Committee was most anxious to improve the usefulness of the College and informed the leading local industries of appropriate new courses, and when the Secondary Committee was reconstituted, in 1910, to include representatives of four local firms - the North Eastern Railway Company, Robert Stephenson and Company, the Darlington Forge and the Cleveland Bridge Company - it was claimed that "this had acted

(1) Darlington Education Committee Prospectuses, 1908-14.

(2) Minutes, Secondary Education Sub-Committee, 19th January, 1909.

to the great advantage of the committee and the College." (1)

One of the most difficult tasks in writing this thesis has been attempting to measure how far local industry positively contributed to the success or lack of success of the College courses, and to determine how influential was the role played by local employers in guiding the development of the town's system of technical education during these years. The evidence of his researches leads the writer to the tentative conclusion that it was not until after 1910, when several members of the Technical College governing body held influential positions in local industry, that local industrialists exercised much influence. In fact, from 1897 until 1910, the main responsibility for determining the direction and content of the technical education provided at the College was borne by the Principal and his staff, Board and County Council Inspectors and a few enthusiastic members of the local committee, and their efforts to provide technical instruction classes, designed to serve local industry, deserve

(1) Fourth Report, Darlington Education Committee, 1910.

acknowledgment. Particularly commendable were the attempts to start day classes at the Technical College and these will now be described.

(c) Technical College Day Courses

Apart from the day classes at the School of Art, which had been running for many years, it was several years, after the opening of the Technical College, before day classes in Engineering and Trade subjects were established. Although, as was mentioned earlier in this chapter, the College Principal had proposed the opening of a Day Engineering School for promising apprentices in 1903, it was not established until January, 1907. Simultaneously another important step forward was taken with the opening of a Day Preparatory Trade School. Finally, afternoon classes for Painters and Decorators' apprentices were formed in September, 1908, but these only ran for three sessions.

(i) Day Classes for Engineering Apprentices

Following an H.M.I. report, recommending the establishment of day classes in Mathematics, Mechanics and Steam, because Darlington depended largely upon Engineering trades,⁽¹⁾ the committee

(1) Minutes, Secondary Education Sub-Committee, 16th May, 1905.

decided to visit local works. But the Board's next annual report again pointed out that "until arrangements have been made with the employers to allow their Engineering apprentices to attend Day Technical classes this College cannot be said to be serving adequately the purposes for which it was erected."⁽¹⁾ At the same time a memorandum on the technical instruction of apprentices was submitted by the North Eastern Railway Company's Chief Mechanical Engineer to the Company's Locomotive Committee.⁽²⁾ He felt it would be of benefit if the company sent five per cent of its most promising apprentices at Darlington to the Technical College to have technical education for an unbroken period during the year. The college responded to this suggestion, from one of its leading local industries, by opening Day classes for Apprentices on 7th January, 1907. Of 24 students who joined the classes initially, 13 worked at the Railway Company's North Road Engineering works and 7 at Robert Stephenson and Company's Engineering works.⁽³⁾

- (1) Minutes, Secondary Education Sub-Committee, 13th February, 1906.
- (2) Memorandum from Chief Mechanical Engineer to Locomotive Committee of North Eastern Railway Company, 1906.
- (3) Minutes, Secondary Education Sub-Committee, 22nd January, 1907.

The Education Committee report anticipated that the advantage to the College would be that staff and equipment were used during the day. To the North Eastern Railway Company the course would mean "a supply of well equipped young men for special work," while to the nation at large a quota was "being added to the national asset of skilled men."⁽¹⁾

The first course, which could aptly be described as the original "Sandwich" course in the town, ran for five months. The North Eastern Railway Company paid the fees, amounting to £2 each, of its apprentices, without making any reduction in their wages, although not all the other apprentices had their fees paid by their employers. For the second session, the directors of other large firms were invited to allow selected apprentices to join these day classes. The first and second year classes consisted of 21 students from the following companies - North Eastern Railway Company, 12; Robert Stephenson and Company, 5; North of England School Furnishing Company, 1; R. Wilson and Sons, Bishop Auckland, 1; others, 2.⁽²⁾

(1) First Report, Darlington Education Committee, 30th September, 1906.

(2) Third Report, Darlington Education Committee, 31st July, 1908.

The following table, which reveals that it became a 15 month course over 3 years, illustrates attendances at this class during its first 4 years, as well as showing considerable 'wastage' over the 3 years.⁽¹⁾

	<u>First</u> <u>Year</u>	<u>Second</u> <u>Year</u>	<u>Third</u> <u>Year</u>	<u>Total</u>
1907	23	-	-	23
1908	5	16	-	21
1909	10	6	5	21
1910	11	6	1	18

The course continued with small numbers, and the 1912-13 College Prospectus, advertising the seventh session of this course, stated that "the intention of the Day Apprentices' classes is to provide a type of Engineering education of a secondary character, intermediate between that of the University Colleges, preparing their students to become leading officials and managers for industrial works on the one hand, and the necessarily limited education of evening technical classes, where the range of studies must be so modified as to supply an efficient equipment for highly skilled artisans

(1) Fourth Report, Darlington Education Committee, 31st July, 1910.

on the other hand.... It has been arranged so that, while being comprehensive, it shall be practical and experimental, rather than analytical and abstrusely mathematical."⁽¹⁾ Subjects taught included Mathematics, Physics, Mechanics, Machine Construction and Design and Laboratory work, and the Prospectus claimed that "apprentices who have worked through this complete course should be able to readily read plans and direct workshop processes, as well as possess a trained mind, which, associated with actual workshop experience, should prepare them to solve workshop problems and undertake the designs and carrying through of structures and engineering plants."⁽²⁾ The examination results, printed at the back of the Prospectus, show a growing number of Apprentices each year passing the County Council and C.G.L.I. examinations.

(ii) Day Preparatory Trade School

Another progressive development, introduced at the Technical College in January, 1907, was the Day Preparatory Trade School for Boys to meet the need

(1) Prospectus of Classes, 1912-13.

(2) Ibid.

for Higher Elementary Instruction. This full-time one year course, for which the fees were sixpence a week, was designed to lead up to an industrial apprenticeship at the age of 15 or 16, and therefore, to be admitted, boys had to be 14 years old and to have passed an entrance test equal to that of the seventh standard of an elementary school.

The aim of the school was "to afford a brief period of thoroughly practical training before going into the works. No attempt will be made to teach any particular trade, but as far as can be the spirit and routine of the workshop will be observed."⁽¹⁾ Fifteen hours per week were to be devoted to practical work including Woodwork and Metalwork, five hours to Practical Mathematics and the same amount of time to general education.⁽²⁾ The first course was limited to 20 boys,⁽³⁾ and a full time member of staff responsible for the course was appointed.⁽⁴⁾

The first report of the Board of Education on this school was complimentary: "The lads attending

(1) Minutes, Secondary Education Sub-Committee, 18th September, 1906.

(2) Ibid.

(3) Ibid., 22nd January, 1907.

(4) Ibid., 19th December, 1906.

these classes are of the right type, all intending to enter the Engineering trade. They have done a good session's work and the teaching has been in the hands of capable instructors. The classes have made a progressive start and there would have been no difficulty in doubling the numbers if the committee had been willing and had there been sufficient staff available."⁽¹⁾ Later it was decided to reduce the age of entry to 13, and to extend the course to two years, but to make it less specialized by adding Chemistry, Mensuration and Drawing classes.

An important feature of the Trade School was that it enabled students, who completed the course, to commence their evening studies in the third or fourth year classes at the College. Confirmation of this was brought out in a report giving the number of students attending College Engineering evening classes, who had formerly been pupils at the Day Trade School. Of 130 students who were in their third year or above, 36 had passed through the Trade School.⁽²⁾ It was also hoped that the course would

(1) Ibid., 19th November, 1907.

(2) Minutes, Secondary Education Sub-Committee, 12th December, 1911.

provide suitable candidates for the Day Apprentices classes. In 1913, this school was renamed the Junior Day Technical School and continued to provide local Engineering and Building trades with youths trained for apprenticeships. The College Prospectus stated that "managers of large local works are giving encouragement to these Day classes, accepting youths as apprentices who have passed through them, because it is found that boys so trained spend less time in getting to know 'the run of the shop' and may be given a greater variety of work and have a better chance of becoming skilled and more adaptable craftsmen."⁽¹⁾

(iii) Other Day Classes

In one of his Annual Reports, the Principal suggested that apprentices from other trades, such as Plumbers, Joiners and Printers, besides Engineers, might have day classes.⁽²⁾ The outcome was a class for apprentices of Master Painters and Decorators held at the College on two afternoons each week. The aim of the course was to provide a more thorough training in Painters' and Decorators' work, with

(1) Darlington Education Committee Prospectus, 1913.

(2) Darlington and Stockton Times, 26th September, 1908.

associated calculations and Art work, than was possible in the evening classes.⁽¹⁾ Six junior apprentices joined the class in the first year and eleven in the second,⁽²⁾ but, when numbers fell to four, in 1911, the classes had to be closed and the experiment came to an end.⁽³⁾

(d) The School of Art

Although Art had been the predominant aspect of technical education in Darlington for about thirty years, following the opening of the School of Art in 1857, for several years before the Technical College was built the number of students attending science and technical classes in the town was considerably higher than those taking art classes. After the establishment of the College, the science and engineering classes continued to expand at a more rapid rate than those in the School of Art. However, when the Secondary Education Sub-Committee took over technical education, Art classes experienced a falling-off in numbers, similar to that in the other College departments.⁽⁴⁾ In fact, from 1904 to 1907, there

(1) Darlington Education Committee Prospectus, 1908, p.105.

(2) Fourth Report, Darlington Education Committee, 1910.

(3) Minutes, Secondary Education Committee, 14th February, 1911.

(4) Vide Appendix D.2. and D.3.

were about 130 students, each year, in the School of Art classes.⁽¹⁾ The Education Committee reported that this number was scarcely commensurate with the excellent facilities provided, and that the advantages of the study of Art were not so obvious as in the Engineering sciences.⁽²⁾

In order to try and encourage more students to take advantage of these facilities, the Technical College Prospectus each year, from 1903-1911, carried the following paragraph: "The study of Art is too much neglected in this district. The teaching given in the Art School is not only to develop artists, but it is to give that training of hand and eye which is so necessary in all work where skill in shaping is required. The art of designing is worthy of much greater cultivation in this country, not only towards the better development of forms of decoration, but towards the invention of solid objects of beauty and of use, and to place before the public articles of commerce in an attractive manner. In Art work especially, the first stages are always difficult, and often to the adult student somewhat disheartening,

(1) Second Report Borough Education Committee, 1907.

(2) Ibid.

but all can by perseverance attain to a useful facility. The Committee hope each year to see in the Art school a greater number of industrial students, and to find those, who come to study, with a view to an artistic career, taking seriously a regular course under the responsible advice of the Art masters."⁽¹⁾ The number of Art students gradually increased until it had reached 163 by 1909-10⁽²⁾ and 196 three years later.⁽³⁾

Throughout this period, Mr. Elton had the help of an assistant Art master - at first Mr. Rathbone, later Mr. Wise - an Art pupil teacher, and a part-time teacher of, first, Woodcarving and, later, Embroidery. In a very full and satisfactory Board of Education report on the School of Art, it was stated that students comprised painter, woodcarvers, stone carvers, milliners, teachers and others employed in various occupations in which art education was advantageous.⁽⁴⁾ About one-third of the students were receiving advanced instruction, and attendance at day and evening classes was regular

(1) Prospectus of Classes, 1903-4.

(2) Fourth Report, Darlington Education Committee, 1910.

(3) Darlington and Stockton Times, 12th April, 1913.

(4) Minutes, Secondary Education Sub-Committee, 21st June, 1910.

and satisfactory.⁽¹⁾ As in the other College departments, teaching was arranged, as far as possible, in grouped courses and students were expected to conform to the course prescribed by Mr. Elton. Most art students also attended a craft class, such as woodcarving, stencil-cutting, clay-modelling or embroidery.⁽²⁾ Students took one of the County Council Group Certificate examinations at the end of the course. Elementary school teachers, who joined the popular Saturday morning Drawing classes, entered the Art Class Teachers' Examination.⁽³⁾ Finally, elementary art classes were held for Elementary school pupils on one evening and Saturday morning each week.⁽⁴⁾

(e) Examination Results

As has been suggested already, the organization of the teaching at the Technical College into grouped courses produced a higher standard of work and thereby better examination results. Both the Principal's Annual Reports and the lists of results throughout these years, 1904-14, confirm an increased number

(1) Ibid.

(2) Darlington Education Committee Prospectus, 1910, p.88.

(3) Ibid., 1913.

(4) Ibid.

of examination passes and a higher grade of success. Even after the introduction of compulsory grouped courses, not all students completed the session - in fact, wastage, a perennial problem in technical education, appears to have approached 50% for several years - or were successful in the examinations, but as students attended the College for four or five years of continuous study so there was a marked improvement in the advanced examinations. It is difficult to arrive at an exact picture of the College examination results, because, in some annual reports, the Principal included passes achieved in the Branch Technical Schools and the School of Art, whereas, in others, his figures refer only to Technical College successes. However, the annual failure rate appears to have remained fairly steady at about 30%, while the 70% passes were usually evenly divided between first and second class certificates.

The examinations set by various bodies were taken by College students. Technological and practical classes, usually in connection with the Building trade, were preparing for C.G.L.I. examinations, Science and Engineering for those of the

Board of Education or the County Council.

Commercial students entered R.S.A., London Chamber of Commerce and Pitman examinations, while the Northern Counties School set the Cookery examinations. Younger students at the day classes or at Branch Technical Schools took County Council or the College internal examinations. There was a move at this time to set up a new Examination Board for the North-east, in view of the Board of Education's decision to discontinue their lower grade examinations,⁽¹⁾ but it was not until 1912 that the Northern Counties Technical Examinations Council became the regional examining board.

From time to time, a number of Darlington students achieved outstanding examination success and were awarded prizes and medals. In the Art Department, Evelyn Eglin gained a Board of Education National Competition Bronze Medal for Painting in Oils in 1906,⁽²⁾ and, two years later, Edith Wheeler received a similar medal for her Modelled Head from the Cast.⁽³⁾ In the Engineering Department in 1910, the C.G.L.I. awarded Albert Bainbridge a Goldsmith's Prize and

(1) Minutes, Secondary Sub-Committee, 18th July, 1911.

(2) Darlington Education Committee Prospectus, 1906, p.69.

(3) Minutes, Secondary Education Sub-Committee, 15th September, 1908.

two silver medals for his performances in the Honours Mechanical and Structural Engineering examinations.⁽¹⁾ At the same time, Richard Thompson won a Skinner's prize and silver medal for success in the Honours Builders' Quantities examination.⁽²⁾ Two C.G.L.I. medals were also received, in 1911, by John Beesley and Sydney Broadley for examination results in Engineering subjects.⁽³⁾ Mr. Eagles, Head of Engineering, and an assistant Engineering teacher, Mr. Scott, gained King's prizes for Practical Mathematics and Machine Construction,⁽⁴⁾ and, finally, two full time assistants in the College Engineering Department, Mr. Johnson and Mr. Griffiths, passed the final B.Sc. (Engineering) degree of London University in 1912.⁽⁵⁾

(f) College Staff and Administration

When the Secondary Education Sub-Committee replaced the Technical Instruction Committee, the following departments ran evening classes:

- (1) Ibid., 20th September, 1910.
- (2) Ibid.
- (3) Ibid., 19th September, 1911.
- (4) Darlington and Stockton Times, 13th October, 1906.
- (5) Minutes, Secondary Education Committee, 3rd September, 1912.

Commercial, Engineering, Building Trades, Chemical, Electrical, Domestic and the School of Art.⁽¹⁾ The School of Art and the Normal Department for pupil teachers also ran day classes. In addition to Mr. Hogg, the Principal, who taught all the Chemistry classes, there were four other permanent members of staff - Mr. Eagles, Head of Engineering Department, Messrs. Elton and Dresser, Headmasters of the Art School, and Mr. Stark, Headmaster of the Normal Department.⁽²⁾ All other classes were taught by part-time teachers, who were appointed annually, and paid an average of £10 per class per session.⁽³⁾

As the work of the College developed and expanded, particularly when the Apprentices' Day classes and the Preparatory Trade School were established and grouped courses replaced single subjects, additional full-time teachers were appointed. The departure of Mr. Hogg for West Ham in October, 1905 was followed by a period of two years when the College was without a Principal. During this time the organization of technical education and the management of the College were taken over by the Director of Education,⁽⁴⁾ an

(1) Ibid., 2nd June, 1904.

(2) Darlington Education Prospectus 1904, p.12.

(3) Minutes, Secondary Education Sub-Committee, 2nd June, 1904.

(4) Ibid., 28th September, 1905.

arrangement from which the local committee felt there would be a gain in efficiency and a saving of about £200.⁽¹⁾ About this time a full-time assistant in the Engineering Department and a Head of Chemistry were appointed. For the session 1907-8 Mr. Eagles, as Head Teacher, had four full-time assistants, in addition to the Head of Chemistry.⁽²⁾

The Board of Education Inspector's report on the College Day Technical work, during the session 1906-7, concluded that the future work of the College, particularly the valuable Engineering work, was in danger of being hampered by the absence of a Principal.⁽³⁾ However, an advertisement had already appeared for a Graduate Principal, with special qualifications in Physical and Engineering sciences, at a starting salary of £300.⁽⁴⁾ It was important to obtain a Principal well qualified and experienced in Engineering, not only because Darlington was now an Engineering centre and the Engineering work of the College was developing considerably, but also because Mr. Eagles had just been appointed Principal

(1) Ibid., 4th December, 1905.

(2) Ibid., 17th September, 1907.

(3) Minutes, Secondary Education Sub-Committee, 19th November, 1907.

(4) Ibid.

of the Doncaster Technical Institute.⁽¹⁾ Thirteen applicants, all highly qualified in Engineering, were interviewed,⁽²⁾ and Mr. J. Scholes-Hague, National Scholar, Whitworth Exhibitioner, and M.Sc. of Victoria University, Manchester, appointed.⁽³⁾ During his six and a half years as Principal, Mr. Hague introduced the Group Course system, continued the development of engineering and technological classes and Branch Technical Schools and gradually built up closer relations with local industry. In doing so, he was consolidating the work of technical education begun by Mr. Hogg, but, with only a small growth in student numbers, he slowly raised the standards of work and examination success at the College, as well as being responsible for the addition of further accommodation and equipment.

When Mr. Hague left Darlington to become Principal at the Liverpool Municipal Technical School in 1914,⁽⁴⁾ his successor, Mr. C. E. Handy, A.R.C.S., A.M.I.M.E., took over a College, which consisted of one large department of Science and Technology and one smaller department, the School

(1) Ibid., 3rd October, 1907.

(2) Ibid., 19th November, 1907.

(3) Ibid., 25th November, 1907.

(4) Darlington and Stockton Times, 4th April, 1914.

of Art. The Science and Technological department consisted of the following sub-sections:

Mechanical and Electrical Engineering and Mathematics, Building Trades, Chemistry and Pure Science, Commerce and Languages, and Domestic.⁽¹⁾ In this department the classes were taught by the Principal, five full-time assistants and 24 part-time teachers, while 22 part-time teachers were employed in the Branch Technical and Domestic Schools.⁽²⁾ The staff of the School of Art was made up of two full time and two student teachers.⁽³⁾

(g) Events Leading Up to the Local Control of Technical Education

To complete this account of the early years of organized technical education in Darlington, some detail must now be given of the operation of the system of dual control during the years 1910-14. The friction and conflict in the relationship between the County Council Education Committee and the Darlington Secondary Education Sub-Committee, already alluded to, continued and gradually reached breaking point. Underlying the differences was the

- (1) Darlington Education Committee Prospectus, 1914, p.45.
- (2) Minutes, Secondary Education Committee, 4th June, 1912 and 1st July, 1913.
- (3) Darlington Education Committee Prospectus, 1914.

growing cost of secondary, including technical, education in the County area. The County Council Committee were determined to provide as economical and efficient a system of secondary education throughout the county as possible. This involved a tight control on the expenditure of the four non-county boroughs so that they did not enjoy too great a share of the funds available. The Darlington Committee, overwhelmingly concerned with technical education, since the two secondary schools, the Grammar School and High School, had independent governing bodies, were equally determined to press ahead with the expansion of the work at the Technical College, even though annual costs were running well ahead of income.

The feelings of the local committee were clearly revealed in their decision to support a Parliamentary Bill giving Councils of large boroughs autonomous powers for secondary as well as elementary education.⁽¹⁾ However the full Borough Education Committee decided to rescind this resolution,⁽²⁾ even though one councillor complained that the Secondary Committee "were

(1) Minutes, Secondary Education Sub-Committee, 16th November, 1909.

(2) Darlington and Stockton Times, 27th November, 1909.

constantly being faced with all sorts of trivial things, which they thought unnecessary and at times were placed in an ignominious position." The local paper, supporting the Education Committee's decision, stated that the benefit was overwhelmingly on the side of continuing existing arrangements.⁽¹⁾ This attitude of not disturbing the status quo was hardly surprising, when it is realised that, for the year 1908-9, Darlington received for technical education £1,712 from County Council funds, to cover the excess of expenditure over income.⁽²⁾ A few months later, the County Council were again asking for the observations of the local committee on the fact that £2,428 had been spent in the following session on technical education in Darlington in excess of that raised by the local rates.⁽³⁾ In fact, the idea of requiring Darlington, as a non-county borough, to raise a supplementary Higher Education rate was being considered by the County Council.⁽⁴⁾

About this time the local committee decided to print its minutes in two sections. The first and most important part, for confirmation by the County

(1) Ibid.

(2) Minutes, Secondary Education Committee, 18th January, 1910.

(3) Minutes, Secondary Education Committee, 15th November, 1910.

(4) Ibid., 24th November, 1910.

Council, was to be reported to the Town Council for information, while the second part of the minutes, requiring confirmation of the Town Council, related to expenditure out of the local Secondary Penny Rate and dealt with very minor matters.⁽¹⁾ Perhaps this was a shrewd move by some members of the local committee to enlist support, from other members of the Town Council, for complete autonomy in matters of technical education, when the moment came to raise the issue again.

The County Council reconstituted the local committee in 1910, by appointing a governing body of 27 members for the Technical College over the next 3 years.⁽²⁾ Four members served on the County Council, which also nominated several others, and, for the first time, there were two women, but the most important feature was the belated recognition that local industry ought to be represented. The following Engineering firms were invited to serve on the committee: The North Eastern Railway Company, Darlington Forge, Robert Stephenson and Company Limited and the Cleveland Bridge Company.⁽³⁾ This was of mutual value, for the local industrialists

(1) Ibid., 14th December, 1909.

(2) Ibid., 19th April, 1910.

(3) Ibid.

could advise the committee and the Principal on the development of the most important department of the College, particularly in regard to new courses and equipment, while the committee could urge the representatives of industry to encourage their employees to make greater use of the College facilities. But this latter benefit was only achieved very slowly for few directors and works managers of local firms gave positive rewards for College attendances and certificates.

In 1913, the County Council notified the local committee that the composition of the governing body of the Technical College for the next three years was to be as follows:⁽¹⁾

Durham University	1
Darlington Borough Council	6
The North Eastern Railway Company	1
The Darlington Forge	1
Robert Stephenson and Company	1
The Cleveland Bridge Company	1
Darlington Grammar School	1
Durham County Council	12
Women Members	3

The liaison with local industry had become so close that the position of Vice-Chairman of the Committee

(1) Ibid., 3rd June, 1913.

was filled by Mr. V. L. Raven, M.I.C.E., M.I.M.E., the Chief Mechanical Engineer of the North Eastern Railway Company.⁽¹⁾ Earlier the Chairman of the local committee, Alderman Swinburne, had resigned.⁽²⁾ He had served on the Technical Instruction Committee since its establishment in 1891, being Chairman from just after the opening of the College in 1897, and then Chairman of the Secondary Sub-Committee from 1904. He had championed the cause of technical education in committee and Town Council meetings and on various public occasions for 21 years. He was replaced by a local solicitor, Councillor Wooler, who had served on the local committee for several years as the representative of Durham University.⁽³⁾

After the opening of the new Mechanical Laboratory in October, 1910, disagreements between the local committee and the County Council Education Committee became more frequent. As on several occasions since 1904, finance was the basic cause of the differences. Each year, from 1910 to 1914, the County Education Committee took exception to certain aspects of the schemes and estimates of the Darlington

(1) Ibid.

(2) Ibid., 2nd July, 1912.

(3) Minutes, Secondary Education Committee, 2nd July, 1912.

Committee and insisted on them being revised. Classes had to be discontinued or amalgamated at the beginning of each College session because of small numbers. The County Council complained that teachers were not being paid salaries nor students being charged fees in accordance with the County scale. The local committee felt the County Council should pay a rent for the use of elementary schools for evening classes. The County Council proposed introducing a new procedure for the payment of technical education accounts, which the local committee felt would lead to increased correspondence and delay. The purchase of apparatus and equipment for the College also produced strong divergence of opinions at regular intervals. The County Council also suggested that as the College was very little used, except in the evenings, it might be used as an alternative secondary school, for boys, to the Grammar School. The local committee used attendance statistics to show that the number of students in technical classes in Darlington was at least equal to and sometimes greater than the next two or three largest centres of technical education in the county. These and many other minor matters meant that, over a period

of eighteen months, five conferences were held between representatives of both committees to try to sort out differences. Often no agreement could be reached and a problem was shelved or referred to the Borough Council. It was clear that, with the accumulation of so many important differences, it would not be long before matters reached crisis point.

It was a long drawn-out wrangle over the proposed purchase and installation of an experimental Steam Engine and Boiler, included in the local Committee's schemes and estimates for 1911-12, probably because, in 1911, the North Eastern Railway Company had opened their fourth boilershop in the town, that played a major part in convincing the local Higher Education Committee that nothing less than a complete breakaway from the County Council would satisfy local aspirations of having complete control of the expenditure and management of all forms of Secondary and Higher Education in the Borough.

Briefly, the issue was that the estimated cost of £500 for an Experimental Boiler and Engine for practical instruction in Advanced Heat Engines classes was not approved by the County Council.⁽¹⁾ The Mechanical Laboratory Minor Sub-Committee set up

(1) Minutes, Secondary Education Sub-Committee, 19th September, 1911.

by the local Committee recommended the purchase of the following items: ⁽¹⁾

A Babcock and Wilcox Patent Water Tube Boiler	cost £272
A Marshall Compound Vertical M. P. Double Engine	cost £150
Various Accessories	cost £200
Estimated cost of alterations and additions to the existing buildings	cost £100

The total of £722 was increased to £750, following improvements suggested by Inspectors, who approved the whole scheme. ⁽²⁾ The County Council were asked to pay 10% interest on the above capital equipment, which amounted to £536, and 5% on the rest of the scheme. ⁽³⁾ They replied that they were prepared to adopt the scheme, provided that the Town Council accepted a rent of 7½% on the capital outlay, and 5% on the remaining £214. ⁽⁴⁾ As the Borough Council were not prepared to accept less than 10% as the rental for the proposed Experimental Boiler, the County Council decided to purchase it out of their own Higher Education Revenue Account. ⁽⁵⁾ When the

(1) Minutes, Mechanical Laboratory Minor Sub-Committee, 21st November, 1911.

(2) Ibid.

(3) Minutes, Secondary Education Sub-Committee, 20th February, 1912.

(4) Ibid., 16th April, 1912.

(5) Minutes, Durham County Council Education Committee, 24th July, 1912.

local Committee pointed out that this would not include auxiliary apparatus and other essential accessories, the County Council agreed to spend £125 on these.⁽¹⁾

In a letter to the County Council on the administration of secondary education, Darlington Corporation wrote, in May, 1913, that the "interests of the County and the Borough would be better served if all Higher Education matters were placed under the control of one local Committee instead of three independent bodies of Governors, (i.e. those of the Technical College, the Grammar and High Schools) each unacquainted with the other's work. The present system fails to provide adequately for the co-ordination of Secondary Education and results in unnecessary expenditure in administration and staffing."⁽²⁾

A parallel situation to that of the Technical College had arisen over the Darlington Grammar School, which was threatened by a County Council take-over in 1912-13.⁽³⁾ Local feeling ran high on this issue and, considering its distinguished history, it was thought detrimental to the best interests of the town

(1) Ibid., 6th November, 1912.

(2) Minutes, Durham County Council Education Committee, 7th May, 1913.

(3) Sunderland, op.cit., pp.66-8.

if control was transferred from the local governing body to the County Council. The report of the Chairman of the Durham County Council Finance Committee revealed that the establishment of Secondary Schools in the County, and this included Technical Colleges, had necessitated an application to the Local Government Board to levy a rate higher than the two pence in the pound, which was the limit imposed by the Education Act.⁽¹⁾ The County Council had also been suggesting for some time that the cost of higher education, including the loan charges on buildings, should fall on the authorities for areas particularly served by Colleges and Secondary Schools. Expenditure on technical and higher education in Durham County had increased from £20,250 in 1903 to an estimated £93,025 in 1914, while the amount raised by the County Council rate for Higher Education had grown from £16,179 in 1910 to £44,702 (2½d. in the pound) in 1914.⁽²⁾

Darlington Corporation now began the long legal battle to obtain County Borough status, again following in the footsteps of West Hartlepool. By this

(1) Darlington and Stockton Times, 3rd May, 1913.

(2) Minutes, General Purposes Committee of the Darlington Borough Council, 22nd January, 1914.

time also, the population of the town exceeded the 50,000 limit considered a minimum for County Borough status by the Local Government Board. The necessary Bill received Parliamentary assent, after much opposition from the County Council, and the town became an independent Local Authority on the 1st April, 1915. Darlington Corporation and its Education Committee thus achieved absolute control over the Technical College, which, for several years, had been considered by some councillors, though not all, to be vital to the best interests of the town.

Durham County Council had come to be regarded in Darlington as a frustrating and restrictive brake on local hopes of creating and maintaining a fine reputation for providing an up-to-date and expanding service of technical instruction in an engineering town and in the surrounding mining and agricultural districts. After the Darlington Bill had passed through Parliament and received the Royal Assent, the Mayor, at a special meeting of the Town Council, summed up the feelings of the local Higher Education Sub-Committee in these words: "Those who have been sitting on the Secondary Committee and those who have left it on account of the pettifogg-ing way in which many of the problems had to be

considered, will feel they have now got their liberty, and that control will be in our own hands and will enable us to adapt it and adjust it in the best interests of this great engineering centre we have at heart." ⁽¹⁾

Summary

In this way the technical education provided by the Technical College became the responsibility of the Town Council, now a County Borough Council. The Technical College reverted to the Corporation, which had complete control as in the time of the Technical Instruction Committee. However, arrangements were agreed with the County Council for students, who lived in the county administrative area, to attend the College classes. Though the abolition of dual control brought an end to frustration and restriction, it also meant that technical education was no longer subsidized by the County Council to the extent of approximately £2,500 per year, as it had been for the previous four or five years. Darlington had to pay for the whole of its secondary education

(1) Minutes of a Special Meeting of the
Darlington Borough Council, 17th March, 1915.

system, including the Technical College and the Grammar and High Schools, which were also taken over shortly afterwards. It had forfeited considerable financial assistance from the County Council in exchange for administrative independence and control. This had serious implications for the future of technical education in the town, but these lie outside the scope of this thesis.

In order to attempt to catch up with our foreign industrial competitors, the last fifteen years of the nineteenth century had seen a national drive to expand technical education and a growing feeling that it was a public responsibility. Sir Philip Magnus had fore-shadowed the extent of the problem in his article on technical education in the *Encyclopaedia Britannica* in these words: "In England technical students can be counted by hundreds, whilst those of Germany are numbered in thousands."⁽¹⁾ But this demand for Further Education lost a good deal of momentum after the passing of the 1902 Education Act, and the Board of Education and local education authorities devoted more energy and expenditure to the development of Secondary Education. In fact,

(1) *Encyclopaedia Britannica*, Volume 23,
9th Edition, 1888.

one writer regarded the period 1902-18 as "the lean years" in technical education.⁽¹⁾ In its report for 1908-9, the Board of Education maintained that "the slow growth of these technical institutions is, however, in the main to be ascribed to the small demand in this country for the services of young men, well trained in the theoretical side of industrial operations and in the sciences underlying them. There still exists among the generality of employers a strong preference for the man trained from an early age in the works, and a prejudice against the so-called 'College-trained' man."⁽²⁾

Nevertheless, as the last two chapters have attempted to show, the work of technical education in Darlington, so splendidly initiated by the Technical Instruction Committee in the years 1891-1897, proceeded with enthusiasm and vigour. Although the number of students attending classes fell, in the session 1905-6, to 62.5 per cent of the peak figure of 1,082, in 1902-3, they slowly rose again, particularly in the Branch Technical Schools, although, during the session following the outbreak of the

(1) Lowndes: The Silent Social Revolution,
p.195.

(2) Report of the Board of Education, 1908-9,
p.90.

First World War, enrolments naturally fell again.⁽¹⁾ But the technical instruction carried out, both in the Technical College and in the preparatory Branch Technical Schools, had become more serious, more purposeful and more profitable. The general satisfaction, expressed in the Board of Education Inspector's Report for 1911-12 - "the classes at this College have again been excellently conducted and attendance has been well maintained"⁽²⁾ - was confirmed, year after year, and revealed that local facilities for technical instruction were, within the limits imposed, closely related to the town's industrial needs, even though local industry showed very little realisation of this fact. The grouped courses, the grading of the work in the various departments, the introduction of additional subjects, the part-time day classes, the close co-ordination with the town's elementary schools by means of the Branch Technical Schools, the installation of the latest machinery and equipment, the appointment of well qualified lecturers and a growing public interest in and expenditure on the College - all these factors combined to produce

(1) Vide Appendix D.1.

(2) Minutes of Secondary Education Sub-Committee, 4th June, 1912.

more and better qualified students, at least in the theoretical principles of their subjects, for service in a largely industrialised community.

All those connected with the first seventeen years in the life of the Darlington Technical College, and its various branches, could be well satisfied with the gradual progress made. This feeling of pride was heightened by the knowledge that, from 1915 onwards, complete control came into the hands of those best fitted to tackle the problems that might arise in the years ahead. Although only about two per cent of the total population of the town had any contact with technical instruction and much remained to be done, the local pattern, which reflected national developments, had been set. The foundations of technical education in Darlington had been soundly laid.

CHAPTER IXRETROSPECT

Technical education in Britain dates from a vague and haphazard realization that the nation depends for its livelihood and survival on its industrial products. But this relationship between our national prosperity, our manufactures, and the amount and quality of our technical skill was only slowly realized during the nineteenth century. However, a few industrialists and scientists became increasingly aware, particularly after the Great Exhibitions of 1851 and 1867, that our initial industrial and commercial supremacy was being overtaken by other nations, like France and Germany, who regarded technical education more of a national priority. But it was only during the closing years of the nineteenth century that the State took action and provided aid and opportunities for technical instruction on a national scale. The result was an expansion of student numbers, but, after the passing of the 1902 Act, "the developments which took place in technical education were less in the field of new provision than in the

reform and re-organization of existing facilities."⁽¹⁾

During the ninety years covered by this thesis, technical education in Darlington conformed closely to the national trends. This is confirmed by the fact that the period under review falls naturally into the following three parts, each with its own distinctive features and contributions to the development of technical education: (a) 1825-1857, (b) 1857-1897, (c) 1897-1915.

The evidence available for the first period, which runs from the opening of the Darlington Mechanics' Institute to the establishment of the Darlington School of Art, reveals that the local Institute reflected the innate defect of the movement generally - an inability to provide classes in the scientific principles behind the trades of the local working class artisans. The Darlington Institute's Minute books show that, despite enthusiasm and energetic attempts by Institute committees to run scientific and technical classes, the crying need of the working classes was for a basic elementary education. As an agent of technical instruction, in a town whose economy gradually changed

(1) Education, 1900-1950, Ministry of Education Report, 1951, p.48.

from dependence upon textiles to reliance on engineering, particularly in connection with railway development, the Darlington Mechanics' Institute must, apart from occasional Science and Drawing classes, be counted a failure. But, even though little had been achieved, the aims and attempts of the local Institute in the field of technical education were of a pioneering nature and as such must be recognized as having contributed to subsequent developments.

Although the Minute books of the Darlington School of Art are apparently not extant, the Annual Reports and statistics of the Department of Science and Art confirm that the local School superseded the Mechanics' Institute as the instrument of technical education in the town, even though, for nearly thirty years, the technical instruction given was restricted to classes in various aspects of Art and Geometrical Drawing. The Science and Art Department, by its payment of grants in aid according to examination results, stimulated and encouraged the teaching of Science and Art classes, in a growing range of subjects in local Schools of Art and other educational institutions, such as Training Colleges, Secondary and, later, Elementary schools. Although the

scope of such courses was narrow and highly theoretical,⁽¹⁾ this system of payment by results produced in Darlington, from 1880, an expansion of technical instruction classes. The majority of these ad hoc evening classes, the result of private enterprise and initiative, provided instruction in a single art or science subject. Full-time technical instruction, in the form of day classes earning South Kensington grants, were organized only at the School of Art, the Training College and the Grammar School.

The great step forward in technical education, both nationally and in Darlington, came with the Acts of 1889 and 1890. Central organization and finance, coupled with local responsibility and control of technical education, took the place of unco-ordinated and overlapping voluntary effort. Thus, the second section of this thesis, which begins with the Darlington School of Art, ends on a note of achievement, with the opening of the Darlington Technical College in 1897. The Technical Instruction Committee not only realized that a central Technical College was essential to the growing

(1) Ibid., p.47.

number of evening class students scattered throughout the town and to the town's new industrial shape, but that, by taking advantage of the new financial resources available, through government and county council grants, the opportunity of building a college had arisen. The erection of the Technical College, only six years after the establishment of the Technical Instruction Committee, was the result of a firm conviction of the need for adequate technical education facilities in the town, and a vigorous campaign to obtain them, on the part of certain members of the committee. Moreover, there were now available potential Technical College students, whose previous elementary education was such as would enable them to benefit from the scientific and technical classes at the new College.

The third, and last, section of this thesis has been concerned with the years from the opening session of the Technical College until Darlington became an independent county borough and took over control of all its educational services, including technical education. During these seventeen years, the foundations of the future developments in the town's provision of technical education were firmly

established. It soon became clear that the Technical College, which incorporated the School of Art, was going to develop most rapidly its Engineering courses. In fact, because of the marked increase in the number of evening class students in the College's early years, and also because of inadequate Engineering facilities, the Darlington Secondary Education Sub-Committee had to extend the College premises and its equipment. Although the number of vocational trade classes was small, because the view was still held by industrialists, in Darlington as elsewhere, that the best practical training could be obtained in the engineering or railway workshop, a number of developments occurred which, though at first reducing numbers, meant greater purpose and value in technical education, as well as higher standards of attainment.

In Darlington the introduction of the Group Course System, of the Day Apprentices and Day Trade Schools, the closer liaison with elementary education through the Evening Continuation and Branch Technical Schools, were important features of the work at the Technical College, which were to become

permanent. The raising of students' standards was accompanied by the appointment of better qualified, full-time members of the College staff, though the Darlington Technical College could not aim to become a high-level Technical College on the lines of a polytechnic or a University college as could Sunderland.⁽¹⁾ In fact, the suggestion put forward by County Council representatives, that the College might be used as an additional boys' secondary school,⁽²⁾ implies that the bulk of the teaching at the College was, as in many of the new Municipal Technical Colleges, secondary rather than higher, aimed, mainly, at 14 to 18 year old part-time students.

The salient feature in the growth of technical education in Darlington, in the early years of the twentieth century, which is very evident in the Press, as well as in Committee Minutes, was the administrative relationship with the controlling local authority, Durham County Council. Although the County Council had given considerable financial assistance over several years toward technical education in Darlington, which enabled progress to be made

(1) Hall, op.cit., pp.179 and 211.

(2) Darlington and Stockton Times, 9th December, 1911.

probably at a faster rate than would otherwise have been possible, some local councillors found the system of dual control too irritating and frustrating. As secondary and technical education were bound together, after 1902, and the future of technical education became linked with that of the Darlington Grammar School, it was natural for some of the town's leading citizens to want complete control over the entire educational ladder. Although the town took on a growing financial burden, local civic and educational pride was satisfied, when 1915 brought independence. Moreover, the efforts of all the local pioneers of technical education had in some measure been crowned.

Co-operation between the technical education service and industry, in the years before the first World War, was only a small factor in determining the work of technical schools and colleges.⁽¹⁾ Indeed one authority observes, "There is no evidence of any pressure by industry before the 1930's for any extension of technical education.....There is evidence of distinct apathy in many industries towards the technical education of their workers."⁽²⁾

(1) Education, 1900-1950, op.cit., p.51.

(2) S. Cotgrove: Technical Education and Social Change (1958), p.81.

Important contemporary features of the close liaison between technical education and industry, such as part-time day release, sandwich courses and various training schemes, did not gain general acceptance among employers until after the 1944 Act. In Darlington too, there is no evidence of local employers demanding the establishment of a Technical College and then actively encouraging employees to use its facilities. Only after 1910, when high-ranking representatives of four of the town's major industrial concerns joined the Secondary Sub-Committee, could it be said local industry exerted any influence. The fact that the Engineering and Technological Department became the most important College department, offering courses designed to appeal to those employed in local works, suggests that some local industrialists and workmen were slowly beginning to make use of the courses of technical education provided at the College.

Those chiefly responsible for the development of technical education in Darlington, during the years 1825 to 1915, were to be found in public life and in education, rather than in industry. Warm tribute must be paid to a small band of influential

men, contemporaries of a similar group in Sunderland,⁽¹⁾ for their belief that there was a need for technical education facilities in Darlington, for students living in the town and in the surrounding district, and for their enthusiastic efforts to see that such facilities were provided. While it is impossible to select individuals, the main protagonists, who strove for a Technical College worthy of the town, included the Chairmen and members of the Technical Instruction Committee and the Secondary Education Sub-Committee, and the first three Principals and the staff of the Technical College. The generosity of the Pease family and others, first to the Mechanics' Institute, and later to the Technical College, anticipated and then supplemented the grants provided by the State and Durham County Council, when these became available.

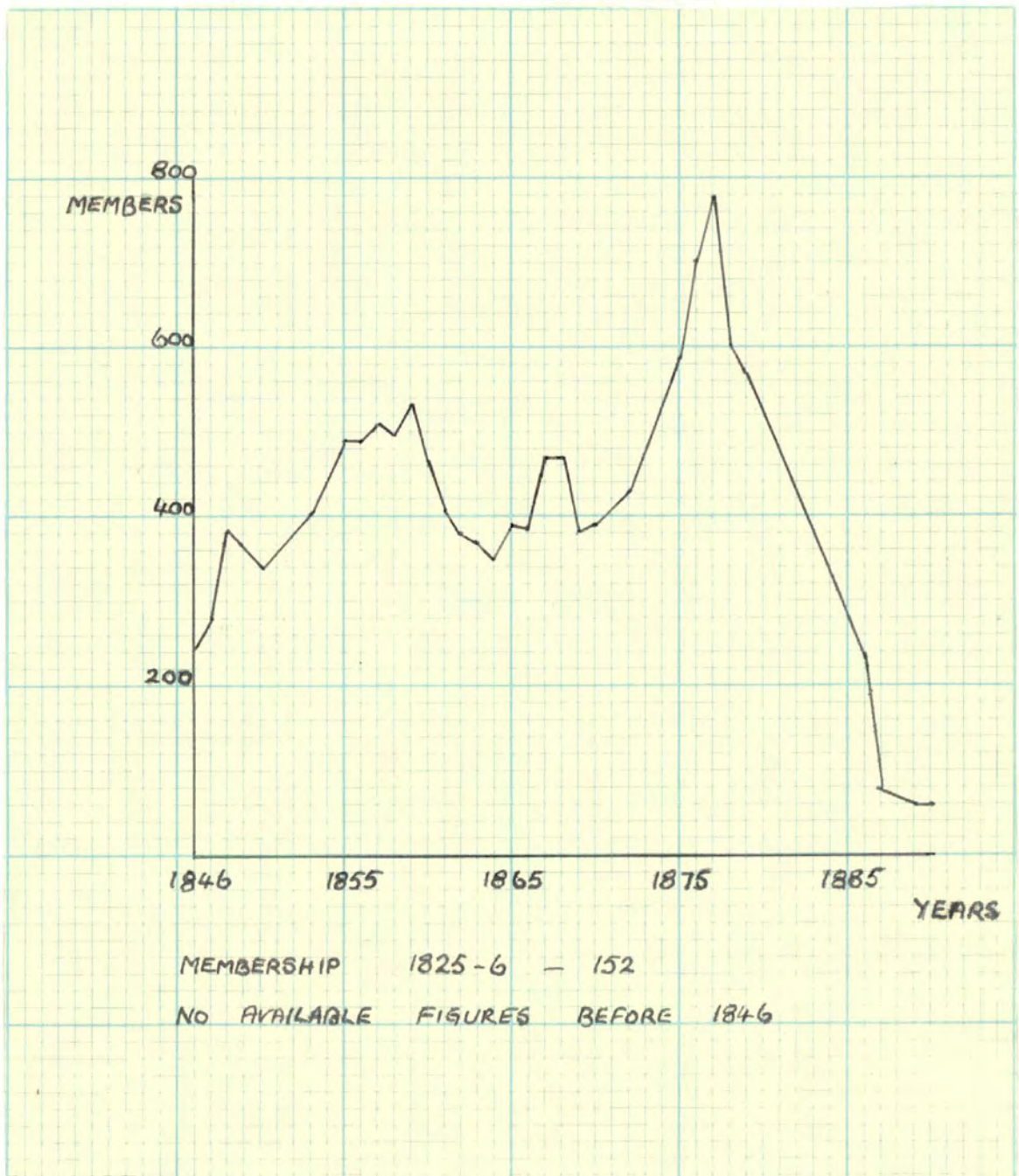
Although in technical, as well as in popular, education England had been a laggard, by 1914 a sound start had been made, though much remained to be done, particularly in the practical and commercial aspects of technical education. The progress of

(1) Hall, op.cit., pp.214-5.

technical education in Darlington was a microcosm of the national development, and, although it had been slow to take root, the evidence of the years 1897 to 1915 gives cause for much local satisfaction and pride.

APPENDIX A : DARLINGTON MECHANICS' INSTITUTE

Table 1. MEMBERSHIP 1846 - 1890



(Darlington Mechanics' Institute Annual
Reports 1847 - 1891)

Table 2(a) PRESIDENTS OF THE INSTITUTE 1825-1890

1825 - 1826	Lieutenant-General Aylmer
1827 - 1845	No names listed
1846 - 1847	John Church Backhouse
1848 - 1849	No names listed
1850 - 1869	Henry Pease, M.P.
1870 - 1873	Charles Pease
1874 - 1880	Arthur Pease, M.P.
1881 - 1890	Henry Fell Pease, M.P.

(Minutes, Darlington Mechanics' Institute)

Table 2(b) SECRETARIES OF THE INSTITUTE 1825-1870

1825 - 1826	Rev. Charles Gollop
1829 - 1844	John Harris
1844 - 1856	Hugh Dunn
1857 - 1860	George Brigham
1861	William Rutherford
1862 - 1865	J. C. Simpson
1866 - 1868	J. Gallagher
1869	T. W. Watson
1870	Thomas Eden

(Ibid)

DARLINGTON
MECHANICS' INSTITUTION.

LECTURES AND CLASSES.

The Committee of the Darlington Mechanics' Institution have much pleasure in informing the Public that they have made the following arrangements for Lectures and Classes in connection with the Institution, viz. :—

LECTURES,

Commencing the Winter Series, will be delivered in the LECTURE ROOM, PUBLIC BUILDINGS, on the Evenings of the following TUESDAYS, in the Months of OCTOBER and NOVEMBER, 1848 ;

October 10th.—*Introductory Lecture, on the Right Employment of Leisure,*

BY MR. SAMUEL FOTHERGILL.

October 17th.—*On the Law of Habit, as the foundation of Moral Improvement,*

BY MR. A. R. CRAIG, OF HURWORTH,

October 31st.—*On the Study of the English Language, and the best means of acquiring the Art of Composition,*

BY MR. SAMUEL FOTHERGILL.

November 14th.—*On the Legendary Traditions of the County of Durham, particularly those connected with its ancient Families,*

BY MR. W. H. LONGSTAFFE.

November 28th.—*On the Study of History,*

BY MR. JAMES COOKE.

ADMISSION.—NON-MEMBERS 3d., RESERVED SEATS, 6d. EACH.

Members will be admitted without Charge on showing their Tickets, (except to Reserved Seats,) and will also have the privilege of each introducing a Female Friend. Members and their Female Friends admitted to the Reserved Seats at Half Price.

Doors open at Half-past Seven, Lectures to commence at Eight o'Clock.

CLASSES

Under efficient Teachers, will be held from Eight to Ten each Evening, as under :—

MONDAY EVENING.—*For teaching Drawing.*

TUESDAY EVENING.—*No Class on account of the Lectures.*

WEDNESDAY EVENING.—*For teaching Arithmetic, Geography, and Astronomy.*

THURSDAY EVENING.—*For teaching Grammar and Composition.*

FRIDAY EVENING.—*For teaching Reading and Writing.*

Members of the Institution, who wish to avail themselves of the advantages of these Classes, should register their Names with the Librarian without delay.

The Subscription to the Institution is 5s. per annum, payable in advance, yearly, half-yearly, or quarterly; it is open from Seven to Ten each Night, (Sundays excepted,) and comprises a Library of upwards of 1,500 volumes, and a Reading Room supplied with daily and other Newspapers, Magazines, Periodicals, &c. Honorary Members' Subscriptions, 10s. per annum. Life Members, a Donation of £5.

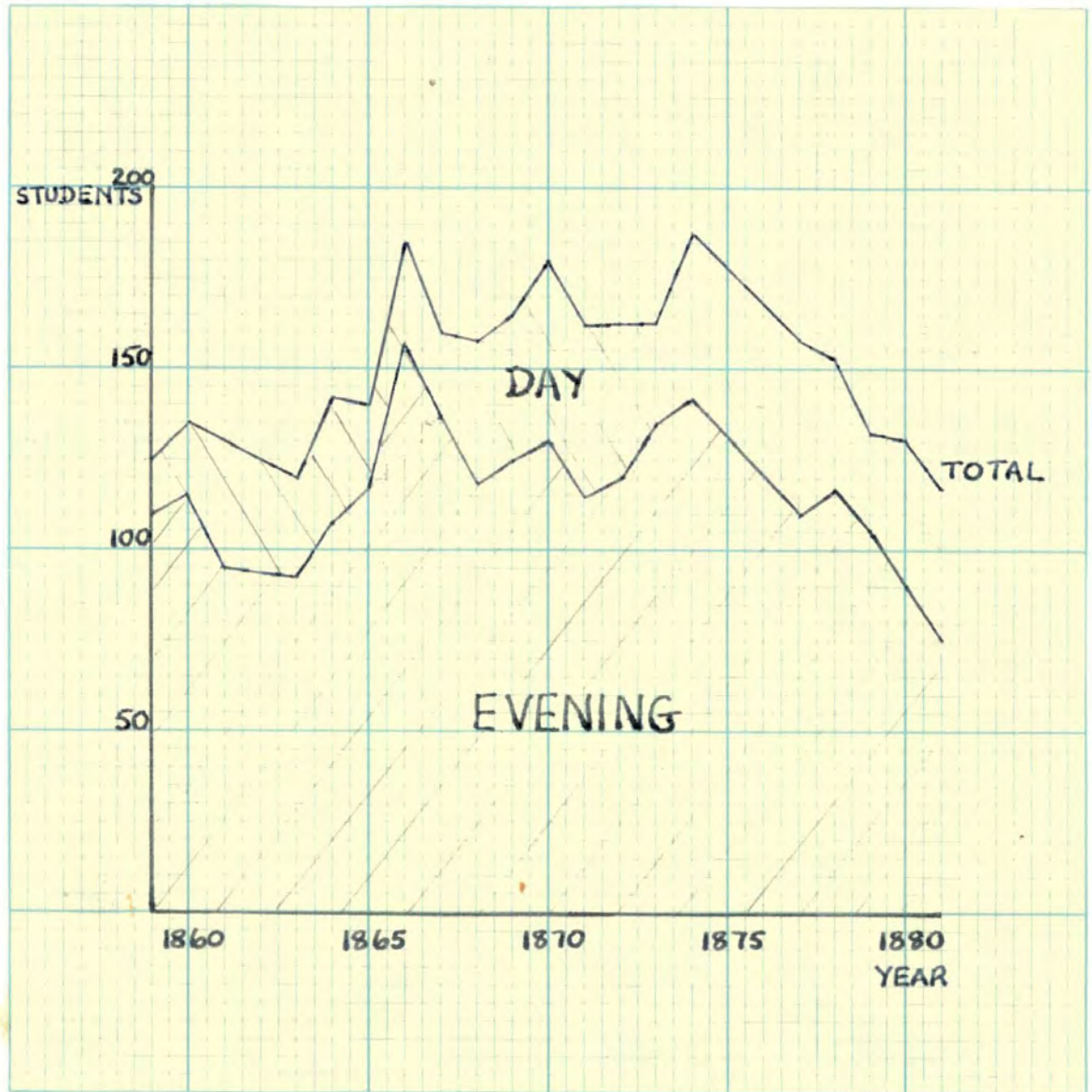
Darlington, September 27th, 1848.

DARLINGTON: PRINTED AT THE OFFICE OF COATES AND FARMER.

APPENDIX B : DARLINGTON SCHOOL OF ART

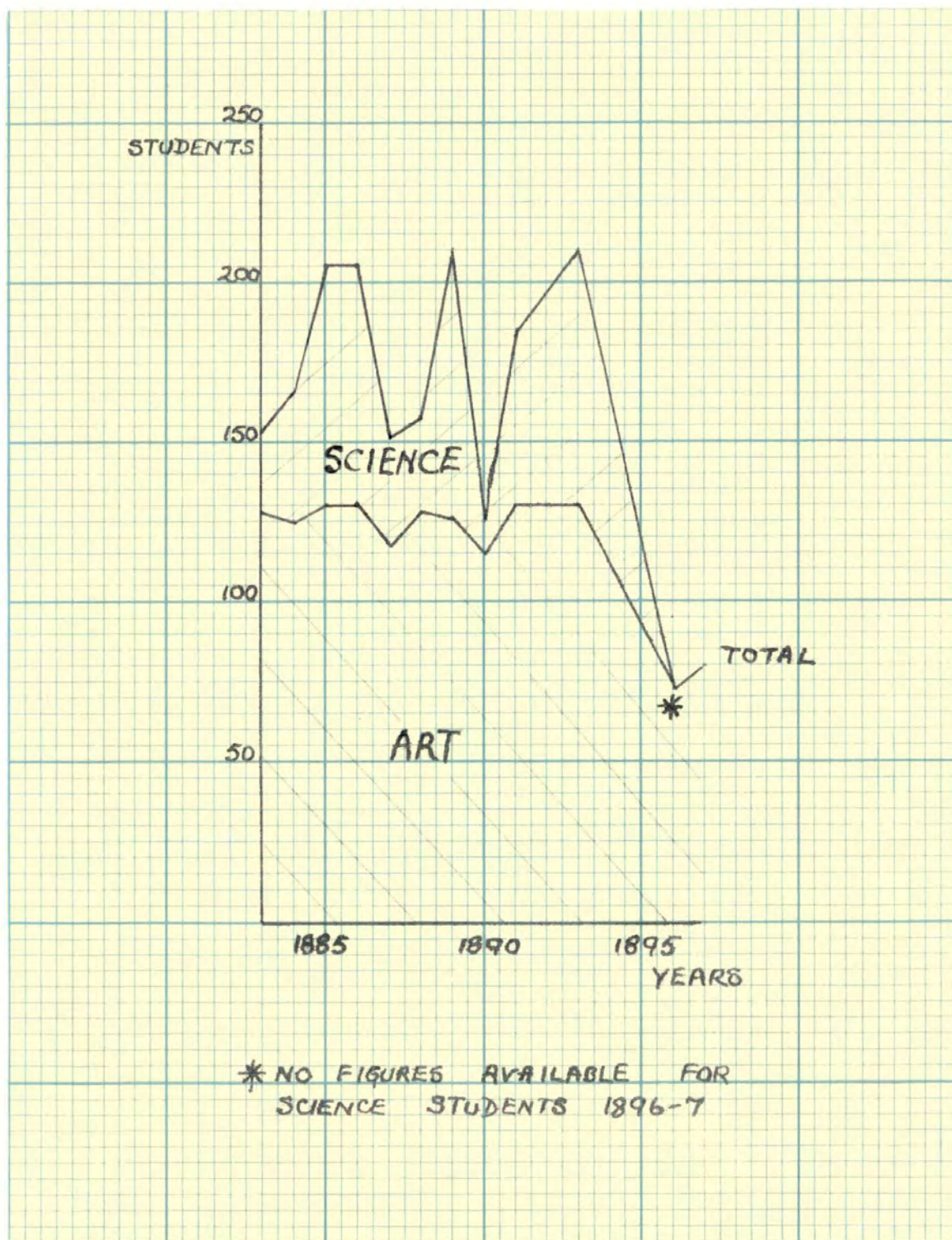
Table 1 SCHOOL OF ART, 1859-1881

STUDENT NUMBERS



(Department of Science and Art, Reports 1860-1882)

Table 2 SCHOOL OF SCIENCE AND ART 1883-1897

STUDENT NUMBERS

(Department of Science and Art, Reports 1884-1898)

APPENDIX C : DARLINGTON SCHOOL BOARD

Table 1 : ELEMENTARY SCHOOLS IN THE BOROUGH, 1871

List of Elementary Schools in the Borough when the School Board was formed in 1871.			
OWNERS	SCHOOL	DEPARTMENTS	FURTHER HISTORY
British and Foreign Schools Society	Rail Top	Boys and Girls	Transferred to the Board.
Do	Albert Road	Boys, Girls and Infants	1st March, 1875.
Do	Rise Court	Infants	19th June, 1873.
Do	Bridge Street	Boys	1st May, 1872.
Do	Skinnergate	Mixed	1st January, 1874.
Do	Isendrew Street	Girls and Infants	1st September, 1872.
Do	Curry Place	Mixed	1st September, 1875.
Methodist	St. Patrick's Infirmary and St. James's	Boys	1st August, 1878.
Roman Catholic	Street	Mixed and Infants	Purchased 5th May, 1879.
Church of England	Harrowgate Hill (changed to St. Paul's)	Boys	Purchased 1st January, 1879.
South Durham Schools	Cleveland Street	Mixed and Infants	Have been closed.
United Methodist Free Church School	Albert Hall	Boys, Girls and Infants	Do.
Church of England	Holy Trinity	Boys, Girls and Infants	STILL IN EXISTENCE.
Do	St. John's	Mixed and Infants	Do.
Do	St. Paul's	Boys, Girls and Infants	Do.
Roman Catholic	St. Augustine's	Girls and Infants	Do.
Do	St. William's	Mixed	Do.
Wesleyan	Handgate Wesleyan	Boys, Girls and Infants	Do.

(Final Report, Darlington School Board 1904)

Table 2 : EVENING CONTINUATION CLASSESAVERAGE ATTENDANCE 1893-1899

<u>Session</u>	<u>Evening School Centres</u>	<u>Male Students</u>	<u>Female Students</u>	<u>Total</u>
1893-4	3	-	-	443
1894-5	6	114	83	197
1895-6	4	77	56	133
1896-7	4	100	59	159
1897-8	4	93	36	129
1898-9	4	86	46	132

(Annual Reports, Darlington School Board 1894-1900)

APPENDIX D : DARLINGTON TECHNICAL COLLEGE

Table 1 TOTAL NUMBER OF INDIVIDUAL STUDENTS 1897-1915

(excluding Evening Continuation and
Branch Technical Schools)

1896-7 : 564	1904-05 : 760
1897-8 : 596	1905-06 : 677
1898-9 : 702	1906-07 : 721
1899-1900 : 838	1907-08 : 735
1901-01 : 842	1908-09 : 745
1901-02 : 940	1909-10 : 762
1902-03 : 1082	1911-12 : 871
1903-04 : 1058	1913-14 : 890
	1914-15 : 499*

* Numbers reduced because of outbreak
of First World War, August 1914.

(Principals' Reports and Education
Committee Reports 1897-1915.)

Table 2. SCHOOL OF ART 1901-1914ENROLLED STUDENTS (i.e. on class registers)and RESULTS

	<u>Total</u>	<u>Examination Results</u>			
		<u>Sat</u>	<u>1st class</u> <u>cert.</u>	<u>2nd class</u> <u>cert.</u>	<u>Failed</u>
1901-2	212				
1902-3	215				
1904-5	148	52	22	42	33
1905-6	137	110	28	48	40
1906-7	132	43	13	49	49
1907-8	154	56	20	63	29
1908-9	150	103	23	54	26
1909-10	201	80	25	35	20
1911-12	196				
1913-14	137				

(Principals' and Education Committee Reports)

Table 3. TECHNICAL CLASSES 1901-1910ENROLLED STUDENTS (i.e. on class registers)and RESULTS

	<u>Total</u>	<u>Examination Results</u>				
		<u>Sat</u>	<u>1st</u> <u>class</u> <u>cert.</u>	<u>2nd</u> <u>class</u> <u>cert.</u>	<u>3rd</u> <u>class</u> <u>cert.</u>	<u>Failed</u>
1901-2	1292					
1902-3	1499					
1904-5	1320	479	124	176	49	141
1905-6	1136	638	217	189	10	222
1906-7	1249	674	199	205	9	261
1907-8	1223	582	150	172	16	243
1908-9	1485	652	122	197	75	258
1909-10	1488	572	116	173	88	195

(Ibid)

DARLINGTON COLLEGE AND TECHNICAL EDUCATION.

WHAT IT IS AND WHAT IT MAY BE.

ITS PROSPECTIVE DEVELOPMENT.

["NORTH STAR" SPECIAL.]

Three burghesses of the proud town built stragglingly along the banks of sluggish Skerne met in Northgate in front of the scholastic looking building that appears more like a college transplanted from the cities on the Cam and on the Isis than a structure designed for the use of the prosaic town of their birth or adoption. One, of the ordinary Philistine type, pointed, with scorn, to "Darlington's latest white elephant." The second, an enthusiastic theorist, indignantly denied the applicability of the term. To him, the foundation of such institutions, if they did not herald the commencement of the Millennium, would save the country from being strangled by foreign competition, would arrest decaying trade, revive our languishing commercial superiority, and would regain for England the position in the intellectual movement, in science and art, and industry that she once held. The third, a practical man, shrewd, and without prejudice, quietly replied that such colleges were necessary factors in the bloodless warfare of nations, and necessary for the progressive development of national and individual life. He would have them conducted on business principles, and thought that College would make a good return, even in Darlington, if properly managed and financed. These dissentient opinions set a "Star" man thinking what view was the right one in this case, and as an aid to the consideration of the interesting problem, he ventured to call upon two gentlemen largely responsible for the building and intimately acquainted with its objects. Mr Hoskins, J.P., F.R.I.B.A., is a keen educationist, as well as an architect, and takes a deep interest in the progress of technical instruction. He furnished a lot of figures and data, and then wisely referred to the building itself.

This latest palace of art and science rises in noble proportions from no mean and unworthy ground. A monument to the educational and industrial progress of the Victorian era, it faces the house in which—pace certain respected correspondents of the "North Star"—the historical interview took place between Joseph Pease, the first railroad king, and George Stephenson, the engineer, which led to the laying down of the first passenger line. By-the-way, it is told that after that memorable discussion the great builder-of-railways and re-examiner of locomotion tramped back to Durham. The College is an imposing structure, built very suitably in the perpendicular Gothic style. The grey clamped bricks, with enrichments of tawny buff terra cotta of Burmantoft manufacture—harder and more durable than any stone—give a light and elegant appearance to the handsome facade, though the south frontage, by the side of the new street, which might be named "University," is severely plain. Little more need be written concerning the exterior.

INSIDE THE COLLEGE.

With Mr Dalton, the watchful Clerk of the Works, as cicerone, I inspected the interior of the building from basement to highest attic, from which the sea is visible on the eastern horizon. The mere enumeration of the rooms would make a list as long and tedious as that of the ships in the second book of the Iliad, for on the three floors almost half a hundred rooms are



THE ARCHITECT.

conveniently arranged. Entering the handsome vestibule, with pillared arches overhead, the visitor is confronted by the broad staircase, with a long row of high, light, well-appointed rooms on either hand. Provision has been made here for a chemical laboratory, a physical lecture-room, three class-rooms, and rooms for engineering drawing, optical experiments, and photography. Then, passing the Italian workmen engaged in laying down the beautiful corridor pavement in a substratum of fire-proof material, we reach the first floor, which is practically entirely devoted to art. Here are class-rooms specially adapted for elementary work, the antique, life-classes, painting, modelling, and a large room, 95 feet by 29½ feet, with a good northern light. These rooms have met with the approval of the Science and Art Department, have secured complimentary remarks from that mild autocrat, Col. Festing, and ought to obtain a good grant. A tall, squarely-built tower catches the eye as the visitor walks along the first floor corridor. It might be mistaken for a chimney, but Mr Dalton explains that the ventilating shafts, which are controlled by steam power, are connected through it with the outside world. All through the building, and especially in the chemical department, the fines and other arrangements for elaborate ventilation may be seen. Continuing our cursory survey, a descent to the semi-basement brings us to the joinery and plumbing workshops, the physical laboratory, the lockers, and rooms adapted for the teaching of domestic economy. The work, which commenced almost synchronously with 1896, is well advanced, and the building, structurally, will be completed by the opening day—the 8th of October. But the furnishing has yet to be commenced with, and ought to be carried out on a careful and elaborate scale. But time presses, and money is scarce. Darlington is not Saltaire, and there is no Sir Titus Salt to lavishly and royally endow the building with the vast and costly appliances and apparatus required by a thoroughly fitted-out college of science and art.

THE FUTURE OF THE COLLEGE.

Having seen the embodiment of a great idea, it was a natural corollary that the "Star" man should be animated with a desire to pursue the subject, and find how that idea was to be expanded and realised in an actual vivifying fact. To satisfy this legitimate thirst for information, it was almost necessary to see Dr. Manson, the chairman of the Technical Instruction Committee, to whose unflagging energy, indomitable perseverance, and clear recognition of the educational requirements of the day the erection of the College is really due. I found the Doctor full of enthusiasm at the near consummation of his cherished and unselfish purpose, and hopeful of its future as a centre of learning. He at once entered upon the subject to be discussed, and in reply to a query as to the formation of the classes in the College, said:

"We shall do something more than concentrate our present classes. We shall eventually embrace all the branches of technical education. The laundry and cookery classes are at present under the direction of the School Board, but we hope to have the direct control of them. We shall be able to sub-

stantiate our claim when we have provided the necessary accommodation. Our principal aim will be the development of technical education immediately relating to the industries of Darlington and district. Particular attention will be paid to commercial education in French and German languages—most important subjects inadequately appreciated. We shall take up, in fact, every subject that bears upon the work of the district, and will bring out the particular bent of a student's mind. There is

a great potentiality in the College. Its area of usefulness may be almost indefinitely extended. Look at the field we have to work upon. Not Darlington alone, but Tees-side, and not only Tees-side, but South Durham and North Yorkshire. The old town, by its situation, its accessibility, its cleanliness and beauty, is eminently adapted to become an educational centre.

"Yes, eventually, we hope to become affiliated to the University of Durham. There is at present no College between Newcastle and Leeds, and we may reasonably expect our Institute to fill on the South of Durham a similar position to that held in the North by the College of Science."

HOW THE COLLEGE WILL BE MANAGED.

It is a matter of interest to others than the professional teacher how the College will be managed. Will you appoint a principal, or what has already been termed a superintendent of studies, to the head of the institution?

"At first we intend to have a gentleman who can organise and develop the College. My committee has decided to advertise for a director of studies, who will have to perform a multiplicity of duties. He will undertake the general superintendence of the College, advise the committee about its management, conduct correspondence with the educational authorities, regulate the subjects of study, and, most important of all, in the eyes of the ratepayer, keep a keen watch upon the income and expenditure of the College. For the performance of these difficult and delicate tasks we offer a salary of £200 per annum. The director ought to be a man of scientific training—an expert in educational matters, but we shall not expect him to take part in the teaching."

In reply to a question about the personnel of the College staff, a reply that will bring relief mingled with disappointment to many, Dr. Manson said that, as far as possible, the present staff would be retained, but developments and changes would ultimately be necessary. They sought to attain efficiency by providing the best teachers, who, by the aid of the best and most complete apparatus would work on the best and most advanced methods. It would be very foolish, the enthusiastic Chairman insisted, to starve the splendid educational machine. "We are dreadfully hampered by the lack of funds," he mournfully added. "Our income from the rates is limited to £650, and £368 yearly goes in redemption. If it had not been for fairly liberal benefactions we could not have carried out our design so far as we have. Even now we are without a lecture hall or museum, but a site has been retained for these additions behind the present building, and will be utilised when funds permit and the success of the institution makes increased accommodation imperative."

A MUSEUM WANTED.

"My idea, unrealisable at present, is to buy North Lodge and grounds, turn the house into a museum, and use the park for agricultural experiments and for recreative and pleasure purposes. The scheme makes one's mouth water, but I hope some day it will be feasible. There is now no public garden for the people in that part of the town, the so-called Park at the North End being little better than a Sahara. A museum is almost an essential part of the College. It is required to illustrate the teaching and familiarise the layman with the mining industries of the district, with the lead mines of Weardale and the ironstone mines of Cleveland, and with the processes by which these ores are made useful—a branch of practical knowledge concerning which the popular mind is densely ignorant."

THE NEED FOR THE COLLEGE.

While not endeavouring to answer the carping criticism and short-sighted and niggardly policy of opponents of the erection of the building, Dr. Manson said the present position of technical education in the town justified the establishment of the College. There are about 500 students continuing their education under the auspices of the local Technical Instruction Committee at Albert-road, Mechanics' Hall, Kendrew-street, and elsewhere. An increase of 25 per cent. in the number of pupils may be looked for on the opening of the College—a very moderate estimate, considering the facilities offered by the new centre. Previously, the classes have been conducted under great difficulties, and in dark and out-of-the-way corners. For example, the drawing and mechanical engineering pupils at Albert-road have had to use the children's ordinary desks, which are far too narrow for drawing boards, and a chemistry class for many obvious reasons has found a shelter at the Grammar School. "Then, by forming classes devoted to the teaching of the arts and sciences employed in the industries of the district, we may hope," Dr. Manson continued, "to have a large accession of students from Tees-side, and from the mining districts near at hand. Metallurgy, mining, mineralogy, geology, and allied sciences, will be taught, and we purpose giving instruction in practical engineering—a subject that ought to be of paramount importance and interest in a town which proudly boasts of being the birthplace of railways, and which contains such works as the North-Eastern Shops and the Forge. The large and influential agricultural community that looks to Darlington for guidance and help in things intellectual, as well as things commercial, will be able to study agricultural chemistry at the College, under the most favourable conditions, and farming in the district will be brought to a high standard of efficiency and production by the adoption of scientific and economical principles. We act independently of the School Board, but the Board is represented on the Technical Instruction Committee, and I would like it to be understood that great care is taken to prevent overlapping, and perfect harmony exists between the two bodies."

August 7th 1897)

Table 5. ATTENDANCE AT TECHNICALCLASSES 1896-1897

<u>Albert Road Girls' School</u>		<u>Students</u> <u>on Register</u>
Machine Construction and Mechanical Drawing (E)	W.R.Alton	30
Machine Construction and Mechanical Drawing (A)	"	15
Machine Construction and Drawing (E)	"	28
Machine Construction and Drawing (A)	"	27
Steam (A)	"	9
" (E)	"	34
<u>Albert Road Boys' School</u>		
Geometrical Drawing	Mr.A.Young	10
Freehand (E)	"	25
Model Drawing (E)	"	21
Light and Shade (E)	"	18
" " " (A)	"	6
<u>Kendrew Street School</u>		
Building Construction (E)	W.E.Turnbull	26
" " (A)	"	8
Plane and Solid Geometry (E)	"	18
" " " " (A)	"	5
<u>Grammar School</u>		
Practical Chemistry (E)	A.F.Hogg	11
" " (A)	"	14
Theoretical Chemistry	"	17
<u>Kendrew Street School</u>		
German (E)	Miss M.A.Dodds	9
" (A)	"	8

Beaumont Street

Mathematics	Mr. W. Blain	19
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Mechanics' Institute

French (Stage I)	Mons. P. Bazire	22
" (Stage II)	"	7

Bondgate School

Physiography	Mr. T. Hall	81
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Cookery School

Chemistry	Mr. J. H. Pryce	9
Electricity	"	<u>14</u>
		<u>491</u>

Students at School of Art in Mechanics'
Institute - 73

E = Elementary

A = Advanced

(Minutes, Technical Instruction Committee
June 14th, 1897)

Table 6. STATISTICAL REPORT 1902-3

STATISTICAL REPORT, SESSION 1902-8.

		Shorthand Elem.	" Adv.	Bookkeeping Elem.	" Adv.	Typewriting & Office Routine	French Elem.	" Adv.	German Elem.	" Adv.	P. P. & S. Geometry.	Machino Constr. Elem.	" " Adv.	Building Constr. Elem.	" " Adv.	Pract. Mathematics.	Theo. Mechanics. Elem.	App. Mechanics. Elem.	" " Adv.	Practical "	Magnetism & Elect. Elem.	Practical " " "	Inorganic Chemistry. Elem.	" " Adv.	Practical " Elem.	" " Adv.	Organic Chemistry.	Geology Elem.	Biology. "	Steam. Elem.	" Adv.	Physiography. (Section 1.)	Physiography. Elem.	" Adv.	Practical " Elem.	Electric Light & Power.	Metal Plate Work.	Plumbers' Work. E. & A.	Practical Plumbers' Work.	Carpentry & Joinery, E. & A.	Practical "	Painters Work, E. & A.	Pract. " "	Quantity Surveying.	Dresscutting.	Cookery, E. & A.	Woodcarving.	Geometrical Drawing.	School of Art.	Mechanical Drawing.	Architectural "	TOTALS.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
Number on Class Registers	1901-2.	64	66	55	26	..	12	10	11	5	19	75	27	63	18	72	19	30	9	11	32	32	33	10	12	9	4	34	12	31	13	35	54	18	37	20	34	18	18	13	14	15	16	28	71	29	30	212	14	15	—1504																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
"	1902-3.	65	66	55	21	20	26	19	8	7	9	101	30	65	19	136	22	22	13	13	29	25	39	13	15	13	7	32	12	32	18	27	63	11	18	24	35	31	22	20	14	13	12	23	75	29	55	215	19	43	1714																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
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Number of Students in attendance during:—		42	28	31	..	7	17	16	7	6	7	68	15	58	9	77	11	11	9	8	17	17	32	11	14	10	5	29	8	15	5	5	56	5	18	8	29	16	12	7	..	8	11	..	23	14	160	7	..	948																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
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October		58	63	51	20	16	23	13	7	6	9	98	27	61	17	120	20	22	13	9	28	27	37	11	14	12	6	28	11	31	17	5	59	10	18	19	34	25	19	17	13	11	10	11	22	74	25	31	196	13	34	1526																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
November		62	63	51	19	18	21	12	7	6	9	55	29	58	16	125	20	22	14	11	29	27	35	13	13	13	6	29	11	31	14	5	60	10	18	23	35	26	21	18	12	21	71	27	33	196	12	26	1409																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
December		62	63	48	19	18	18	10	7	5	9	89	25	48	17	102	18	19	12	13	24	26	32	12	13	13	7	29	11	21	13	5	62	14	14	23	32	26	22	15	8	12	10	12	52	27	33	196	13	22	1096																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
January		61	56	47	17	16	15	10	6	5	8	82	22	44	14	94	15	19	11	12	24	24	29	11	12	12	7	12	22	12	5	14	23	30	24	22	16	10	11	11	9	18	44	25	30	151	12	12	1291																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
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March		57	53	47	16	13	12	11	7	4	6	73	24	46	15	81	12	12	10	11	24	18	36	11	10	10	5	21	10	20	11	21	63	11	18	21	30	24	18	14	8	7	10	7	19	42	24	21	166	12	12	1203																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
April		51	52	40	14	13	9	8	6	4	5	62	20	37	15	67	9	10	9	7	25	16	33	10	10	9	3	23	10	15	9	21	62	11	17	21	28	19	18	16	9	6	8	5	15	34	24	26	162	7	12	1118																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
May		..	42	14	54	18	28	14	41

* The closing on account of the Diphtheria Epidemic caused a great loss of attendance.

Actual Number of Individual Students:—Session 1955-56 145
1956-57 140

120000 200000 300000 400000 500000 600000 700000 800000 900000 1000000

Ages of Students:—		Males	Females.	Totals
	Between 13 & 15	41	14	55
	15 & 21	408	389	797
"	21 & over	184	104	288
"	TOTALS	633	507	1140

Ages of Students:—Between 13 & 15
" 15 & 21
" 21 & over
TOTALS

		1934-35	1935-36
No. of Students in their	1st year	200	235
	2nd "	213	230
	3rd "	122	138
	4th "	83	87
	5th " or over	154	160
	of consecutive attendance	770	850

Examinations--Individual Students Examined	1901--2	1902--3	1903--4
22	100	100	100
23	100	100	100
24	100	100	100
25	100	100	100
26	100	100	100
27	100	100	100
28	100	100	100
29	100	100	100
30	100	100	100
31	100	100	100
32	100	100	100
33	100	100	100
34	100	100	100
35	100	100	100
36	100	100	100
37	100	100	100
38	100	100	100
39	100	100	100
40	100	100	100
41	100	100	100
42	100	100	100
43	100	100	100
44	100	100	100
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46	100	100	100
47	100	100	100
48	100	100	100
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88	100	100	100
89	100	100	100
90	100	100	100
91	100	100	100
92	100	100	100
93	100	100	100
94	100	100	100
95	100	100	100
96	100	100	100
97	100	100	100
98	100	100	100
99	100	100	100
100	100	100	100

ASST. S. HIGGS, Principal

JULY, 1903.

No. 7: THE TECHNICAL INSTRUCTION COMMITTEE1891 : Members of the Town Council

The Mayor - Councillor Barron

Aldermen Sedgwick, Walker, Arthur Pease

Councillors Bartlett, Howden, Hoskins,
Widdowfield, Swinburne, Wallis, Drury,
Manson, James, Pease.

Co-opted Members

Rev. Boot	School Board
Mr. Buck	North Road Institute
Mr. Fry	M.P.
Mr. I'Anson	School of Art
A. F. Pease	Training College
Mr. Putnam	School Board
Mr. Spafford	" "
Mr. Wood	Grammar School
Mr. Wilson	Mechanics Institute

(Town Council Minutes, 1st October, 1891)

1901 : Members of the Town Council

Alderman Harding

Councillors Swinburne, Green, Imeson, Oliver,
Marshall, Stairmand, Meek, Harbottle,
Wooler, Gunter, Henderson.

Representatives of Public Bodies

Rev. W.A. Rigby,	representing the	School Board
Mr. Leach	"	" " "
Mr. Spafford	"	" " "
Mr. Hutchinson	"	" Grammar School
Mr. Hampton	"	" Naturalists'
		Field Club
Mr. Backhouse	"	" Training College
Messrs. Wood, A.F. Pease,)	Co-opted by Town	
Kendal, Johnson, Allan)		
		Council

Director of Studies: A. F. Hogg, M.A., F.C.S.

Secretary: H. G. Steavenson, Town Clerk.

(Technical College Prospectus, 1901)

No. 8. SECONDARY EDUCATION SUB-COMMITTEE

1904 : Aldermen Swinburne, Stewart, Widdowfield

Councillors Crooks, Leach, J. H. Pease,
W. E. Pease, Wooler, Miss C. Lucas,
Miss K. Pease, Principal Spafford.

Additional Members

Mr. A. F. Pease	Councillor	J. Robinson	} Nominated by the County Council
Mr. P. Wood	"	W.J. Oliver	
Mr. W. E. Brown	"	Henderson	
Mr. W. Allan	"	T. Bates	
Mr. J. Johnson	"	Starmer	

(Higher Education Prospectus, 1904)

1915 : Members of the Council

The Mayor

Aldermen Leach and Wooler

Councillors Crooks, Hall, Hinde, Hodgkin,
Lorraine, Lucas.

Co-opted Members

Mrs. Baynes, Mrs. Prior,
Alderman Bates, Councillor Raven,
Messrs. Brennan and Goodall.

(Ibid, 1915)

No. 9. PRINCIPALS OF THE COLLEGE1897 - 1918

1897 - 1898	James I'Anson
1898 - 1905	A. F. Hogg, M.A., F.C.S.
1905 - 1907	No Principal - The College was the responsibility of the Director of Education A. C. Boyde, M.A., LL.B.
1908 - 1914	J. S. Hague, M.Sc.
1915 - 1918	C. E. Handy, A.R.C.S., A.M.I.M.E.

(Town Council Minutes and
College Prospectuses)

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