CHAPTER THREE

THE ERA OF DR. ROBERT MULLINEUX WALMSLEY, 1896-1924

Preamble

Set up under the "scheme" of June 1891, the Governing Body first met on 1st February, 1892, at the Birkbeck Institution. The membership was:- the five named cooptative members, Thomas Baxter, Daniel Buckney, William Craighead, the Hon. Emily Kinnaird and Miss Maud Wylde; the nominees of the Skinners' Company, (Charles Dorman, F.H. Morris, W.C.B. Stamp, and H.A. Wix); of the Saddlers' Company, (Lt. General Laurie); of the Central Governing Body, (Quintin Hogg, A. Bassett Hopkins, H.C. Saunders, Q.C.); of the L.C.C., (B.L. Cohen); of the School Board for London, (Rev. J.H. Rose); of Birkbeck Institution, (J.C.N. White); and of City of London College, (J.O. Harrison). J. Lambert was Acting Clerk and F. Kingsford was appointed Solicitor.

At their second meeting, which was held at Skinners' Hall on the 10th February, 1892, the Marquess of Northampton and Earl Compton were present and stated that "they found with very great surprise that they had not been appointed Members of the Governing Body by the Scheme; that they had all along desired to be Members, and they could only suppose that the omission of their names from the Scheme was through some misunderstanding, and they requested the Governing Body to apply to the Charity Commissioners that the Scheme might be amended and that they should be added to the Governing Body for their respective lives." Great embarrassment must have resulted, for, in their promised donation of the 1¼ acre site from their properties in Clerkenwell, the two were jointly cast in the role of major benefactors of the planned institution. Additionally, the site was then not yet legally conveyed and, clearly, a faux pas had been committed. The other major benefactors, the City Parochial Foundation, the Skinners' and the Saddlers' Companies were allowed seats on the Governing Body by the scheme, as we have shown above. It was resolved that application be made to change the scheme by increasing membership of the Governing Body from 17 to 21 persons, that is by addition of the Marquess and the Earl together with one additional place each for the Saddlers' Company and the Skinners' Company, "so as to maintain as near as may be their present proportional numbers." The Commissioners agreed
to the addition of the noble lords, but not to the other proposed changes, but it took until the end of October 1893 to effect the revision of the scheme. Meanwhile they were coopted to the Building Committee.

The 1892 Technical and Industrial Institutions Act enabled the transfer of the site to the Institute by removing the difficulty of the donors in conveying more than an acre of land to any one institution, under the Literary and Scientific Instruction Act of 1854. Progress was thereafter more rapid, the Governing Body meeting every third Monday in the month and the Chairman, Charles Dorman, calling committee meetings as and when necessary. The land was soon vested in the Official Trustees of Charity Land. Charles Barry was appointed, in July 1892, to assess architectural plans submitted under an open competition with a closing date of 31st December of that year. The successful design was that of E.W. Mountford, details of whose building and its subsequent history are to be found in chapter eight. As soon as a vacancy was available, in December of the following year, Barry was coopted to the Governing Body. It was at this time that the Central Governing Body (the City Parochial Foundation) authorised going ahead on the first stage of the building. Mountford was asked to submit his final plans to the Central Governing Body for approval and on doing so he submitted with them an updated version of the lowest tender that had been accepted by the Governing Body of the Institute. In accepting a fait accompli that had saved time, the Governing Body wrote to the architect requiring him to agree in writing to adopt in future more normal formal procedures of prior approval of all estimates! He had, after all already upset them by asking for tenders to be submitted to himself without consultation!

Transfer of funds held centrally under the scheme on behalf of the Institute was effected in 1893 and by Christmas of that year the accumulated funds totalled £67,820. This sum included income and interest, namely £1,350 per annum from the City Parochial Foundation accumulated since Lady Day 1890 and 78/101th’s of the income from Kitchin’s Charity since 1891, (totalling £1,078), both as detailed in the scheme of 1891. The £1,000 per annum that the Skinners’ Company were to give was interpreted by them to mean from the date of Corpus Christi immediately preceding the opening of the Institute.

The other major source of funding, the Technical Education Board of the London County Council was in operation from 1893. It will be remembered that its income derived from the “whisky money” collected under the 1890 Custom and Excise Act and from local rates. The conditions under which money was offered to the Northampton Institute, which was,
of course, independent, followed the proposals outlined in the Llewellyn Smith report to which we referred in chapter two. Money was not to be made available for building; neither was it to be granted for the "social" side of the work, but strictly for the purely educational. The offer, in respect of the year ending 31st March 1894, was that £500 be put aside into a special account towards the cost of equipment. This account would be credited with £500 p.a. subsequently and £2,500 per annum would be available for educational purposes upon the opening of the Institute. Specifically £500 per annum towards the salary of a Principal and £500 per annum towards the cost of an advanced department of applied science with bearing upon local industry, were proposed. In fact, from the total of £25,675 expended by the Technical Education Board on equipment grants to polytechnics, 1893-4 to 1896-7, Northampton Institute received £3,650.

Included in the conditions was requirement of representation on the Governing Body of the Institute. The one existing L.C.C. representative provided for by the scheme of government was perhaps adequate for the time being but, as the L.C.C. contribution grew as a proportion of total Institute income, further representation would be required. "The Council do not wish to force their contributions upon any governing body who consider they cannot accept the conditions." At least one condition stemmed from the provisions of the Technical Instruction Acts and was indeed present in the Northampton Institute scheme itself; this was to the effect that all purely trade classes shall be strictly confined to persons already working in that trade thus not "disturbing existing conditions and running the risk of offending trade organisations." Other important conditions related to the size and conduct of classes and the qualifications and remuneration of teachers — these the Governing Body was told "shall be approved by the Technical Education Board; much stress is laid on this."

Further, teachers should be paid a fixed salary according to qualifications and not according to the number of pupils passing certain examinations and gaining payment by results which the Board considered to be a wrong principle, unsatisfactory educationally.

These conditions were, naturally enough, considered very carefully by the Governing Body with an eye to protecting its own independence. No doubt at that stage members considered that the L.C.C. contribution would not be a sufficiently high proportion of total income materially to affect autonomy. Years later there was conflict with the L.C.C.'s centralising and rationalising propensities which were first outlined in Llewellyn Smith's far-sighted report of 1892.
Mullineux Walmsley Appointed

Robert Mullineux Walmsley, D.Sc., London, Fellow of the Royal Society of Edinburgh, the first Professor of Electrical Engineering and Applied Physics at Heriot-Watt College, Edinburgh from 1890, who had previously been a technical teacher both at Finsbury Technical College and The City and Guilds Institute at South Kensington, and sometime Principal of the Sind Arts College, Bombay, India, was appointed Principal of the Northampton Institute, Clerkenwell in September 1895 at the age of 41. He had been selected from a total of 94 applicants. At Finsbury Technical College he had been a Senior Demonstrator from its opening in 1883 until 1887 and immediately before that he had been engaged in testing and developing the early forms of ammeter, voltmeter and ohmometer in the basement of the Cowper Street School under the direction of Ayrton and Perry. His publications include “The Electric Current” (1894) and “Electricity in the service of man” (1904). The importance of his appointment in the development of the Northampton is difficult to over-emphasize. Of outstanding ability, he made his mark from the outset and continued to impress it upon the growing college for the whole of his long years in Clerkenwell.

Walmsley commenced his Principalship on the first of January 1896, working from temporary offices in the City at 8½ Dowgate Hill, the Hall of the Worshipful Company of Skinners, for the building was not ready. Enrolment of members and associates for the “Social side” of the work of the Institute began on January 10th 1896 and the first part of the St. John Street building was in use on the 27th June of the same year. During the first winter, that of the session 1896/97, only limited classes on the educational side were possible, (building work having been delayed by a strike), and these commenced on the 19th October, 1896. The Institute was fully operational by the end of September, 1897. From that date until his sad death following a road accident in 1924, Mullineux Walmsley soundly established and ably directed an institution that gradually evolved away from its secondary teaching, fostering the university level work. Under him the Engineering Day College started, he set up links with industry and he pioneered “sandwich” courses. On the social side some of the recreational needs of a heavily populated district with poor housing were catered for.

Early Educational Work

The early educational work of the Institute centred on the needs of the Clerkenwell district, an area then packed with small workshops for watch
and clock-making, for electroplating and electrotyping, for mechanical engineering, for electrical engineering and for art metal work among other trades. I has the six departments of the Northampton Institute of the 1890's were:-

1) Mechanical Engineering and Metal Trades (which also covered Building and Furniture Trades)
2) Artistic Crafts (wholly for the needs of industry)
3) Applied Physics and Electrical Engineering
4) Horology
5) Electro-Chemistry
6) Domestic Economy and Women's Trades

An examination of the formal opening booklet of 1898, together with the Annual Report for 1899/1900 enables us to acquire a full picture of the subjects taught at the outset.

The Mechanical Engineering and Metal Trades Department, under the direction of Mr. John Ashford, AMIME, was responsible for instruction in die sinking, press tool making, metal plate working, smith's work, engineering workshop skills, pattern making, plumbing, brickcutting, plastering, cabinet making, carpentry, building construction and drawing office work. The Applied Physics and Electrical Engineering Department was under the direction of the Principal, with C.V. Drysdale as Chief Assistant and Senior Lecturer. By far the largest proportion of the work of the Institute was carried out in this department and it comprised optical and scientific instrument making, telegraphy, telephony, optics, applied optics and visual optics.

The Associate Head of Department, as he came to be known, Dr. Charles Vickory Drysdale was an inspired and inspiring lecturer who never used notes. Between 1896 and 1910 he built up the equipment of the department to be, it was said, “without any rival in the country.” He came to the Northampton from Finsbury Technical College where he had been a demonstrator with no previous lecturing experience. He served as President of the Optical Society. “His father’s death brought him an income sufficient to free him to follow his own inclinations entirely and he then devoted himself to the work he felt to be most essential to humanity. He was passionately convinced that birth control was the most direct need for man’s fullest and longest life and the most direct path to world peace. He was President of the International Neo-Malthusian Conference held in London in 1921 and in New York in 1928 and he spent his later years entirely in this work.”

It is recounted that he was on occasion called away from a
lecture in order to bail his wife out of Holloway Gaol, for she was a leading suffragette. He was something of an inventive genius, one of his successes being a reflection depth sounding device for ships. He became Director of Scientific Research at the Admiralty during the Great War. The City University very properly has a building named after him.

In the Department of Electro-Chemistry, renamed The Technical Chemistry Department by 1900, Samuel Field was responsible for instruction in technical chemistry, electrotyping, stereotyping and metallurgy. Field had been appointed to the visiting staff in 1897 and in 1905 became Head of the Technical Chemistry Department and remained in charge until 1937. He helped to found the Electrodepositor’s Technical Society and was its first President. The Third International Conference on Electrodeposition was held at the Institute and a commemorative plaque is mounted on a wall on the third level of the Mountford Building main staircase. In April 1915, Mr. F. Brotherton, Chief Assistant in the Technical Chemistry Department resigned “to take charge of a new chemical industry to manufacture certain dyestuffs . . . which he hopes to establish partly as a result of his researches at the Polytechnic.”

The Domestic Economy and Women’s Trades Department under the direction of Miss M.A. Gibbs (1896-1900) taught dressmaking, laundry work, household management and health, artificial flower making and tailor’s cutting. There was also instruction in millinery given by Madame Louise Rosée. Miss Gibbs was succeeded by Miss E.S. Shurlock in 1901.

The Horological Department, naturally enough, covered instruction in clockmaking, springing and timing. Clerkenwell was the centre of the London watch and clockmaking and repairing trade and so it was no accident that the British Horological Institute, founded in 1858, had its first premises in St. John’s Square and in 1865 moved to a new building in Northampton Square. When the Northampton Institute was set up the British Horological Institute lost its City and Guilds of London Institute grant for running practical classes and so made arrangements with the Northampton to transfer the services of T.D. Wright as Director and part-time teacher, and thus horology began in 1897. Unfortunately, wrote Walmsley, “the trade generally is not alive to the advantages of technical instruction.” so the evening classes developed slowly. Wright was Director part-time 1897-1928 when E.W. Birch succeeded.

The Equipment at the outset

In order to cope with this work, the Institute was equipped, at an initial cost of £6,990, with machine tools such as universal milling machines,
drills, lathes, grinders, twist drill grinders, with a smithy housing gas forges and brazing hearths, a carpentry shop, a metal plate workshop, a plumbers shop with melting furnaces, a building trades laboratory with a cement tester and a beam tester, plastering and brick cutting rooms, an instrument workshop with facilities for electrical instrument making and brass finishing, an optical laboratory with provision for photometry and lens measurement, as well as a heavy electrical engineering laboratory with Ferranti alternator, dynamos and belt drives to other machines. There were, too, a watchmakers' room, a clockmakers' room, an electrochemistry laboratory with plating work facilities, an electrotyping and stereotyping room, metallurgical chemistry and physics laboratories, a room for instruction on boilers, a drawing office and lecture and class rooms. The lecture and class rooms were planned to be “used more or less in common, by all departments.”

The Artistic Crafts Department, under John Williams, catered for the needs of local industry, with no pictorial art, but gold, silver and other jewellery work, enamelling, modelling, wood carving, engraving, painting and decorating. There were also four music rooms with instruction available for the violin, a hall for entertainments, choir, orchestra and organ recitals, a library, a swimming bath and a gymnasium.

Teething Troubles

Although the social work started in June 1896 and the educational work in the same October, the Principal’s Report Book records the opening of the year 1897 with the complaint that no further rooms had been made available despite promises from the architect and the building contractor. This had the effect of making the number of members and associates fluctuate as they found facilities promised but long in being made ready.

Early on, too, in November, 1896, the unreal nature of the association of the three institutions, Birkbeck, City of London College and the Northampton Institute was demonstrated. Two members of the Northampton Institute were refused lending library facilities at the Birkbeck Institute and top level protest failed to rectify the situation. Also, it was noted that although the two sister institutions lacked the recreational facilities being provided at Clerkenwell, their students failed to take advantage of them. Efforts were made to dissolve the City Polytechnic and these were successful in 1907. Birkbeck College became a “School” of London University in 1921.
The Polytechnic Concept in Action

To a large extent, the two fields of work of the Institute, the educational and the social, conflicted. Each was conceived in very wide terms and was attempted in the way conceived. The educational side had to force to start with many ill-prepared pupils for secondary technical and vocational education as well as some rather better prepared who aspired to an altogether higher level of technical education. Success in the former sustained the latter. The social side was an attempt to provide social and recreational club facilities for the young of Clerkenwell. The initial outlay on social equipment was £650, which would have provided a well equipped recreational club for those days. It was a very different activity from the educational work and was taken up, overwhelmingly, by a different group of people.

Sidney Webb noted of the London Polytechnics the equal attention paid by the governing bodies of these institutions to the three purposes “social intercourse, recreation and instruction.” Yet, at this distance in time one can assert that the full polytechnic concept was doomed to failure in the longer term. Too much was being attempted by one agency, for too many people.

<table>
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<th>End of Session</th>
<th>Students Not Members</th>
<th>Total Individuals</th>
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<tbody>
<tr>
<td>1896-7</td>
<td>130</td>
<td>1323</td>
</tr>
<tr>
<td>1902-3</td>
<td>1556</td>
<td>2819</td>
</tr>
<tr>
<td>1924-5</td>
<td>2135</td>
<td>2990</td>
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During the Walmsley era, the number of students who were not members or associates of the social side grew steadily both in absolute terms and as a percentage of the total number of enrolled individuals. This perhaps indicated scope for two separate institutions devoted to divergent social purposes, for the educational rightly took precedence over the local social purpose, not only because of the predilections of those directing the institute, but also in direct response to local need. To quote Sidney Webb again, “there is every indication that the . . . students thus brought under educational influence are a net gain; they represent the arrival of a poorer class of students than the University Colleges have as yet catered for.”

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The Social Side

Because of the nature of its support from charitable funds accumulated for the benefit of the poorer members of the community, the social side was vigorously developed during the early years of the institute. The first annual report lists, as existing in 1897, clubs devoted to cricket, cycling, debating, physical development, chess, swimming (men), swimming (women), water polo, life saving and Saturday recreation. The swimming bath opened in April 1897 (hours 6am - 10pm weekdays) and during the first session was used by 6,424 persons of whom 651 were women. The gymnasium attracted 1,181 people in the first year, of whom 264 were women. A cricket pitch was hired, by the season, the first year at Masterman’s Playing Grounds Harringay and subsequently at Manor Farm Dairy Co. grounds at Highgate, where a football pitch was also hired. The development of a competitive spirit was fostered in the first instance by the presentation of a swimming challenge cup by Earl Compton in June 1897. An Institute choir and orchestra were in being by the end of 1897. H. Davan Wetton, Mus.Bac. FRCO., was organist and choirmaster, holding the same position, also, at the Foundling Hospital. He was succeeded in 1906 by Seymour Dicker who remained organist until 1938. There was a military band that had been incorporated as the Institute’s own from an existing East London Church Polytechnic military band. It was not restarted after the interruption of the Great War.

Twenty-seven entertainments were given in the Great Hall during 1897-98 with an average attendance of 375 persons and a loss of £132. The early entertainments ranged from Sydney Darke’s Plantation Troubadours via Gilbert and Sullivan to Handel’s “Messiah” and the Royal Handbell Ringers.

Christmas entertainment for children at a penny entrance fee became an annual event and this was quite in keeping with the objects of the Scheme, which was however restrictive as to the type of entertainment that could be given. Thus in 1908, application was made to the Charity Commissioners for a modification of the Scheme to allow dramatic representations and dancing, and approval was given late in 1911. In 1913-14, 18,122 people attended concerts over 21 evenings as against only 168 people over 20 evenings in 1920-21. So “Entertainments” were ended. It should be borne in mind that neither then nor later were the majority of the students taking any part in the social side which catered for a different section of the local community.
Gymnastics

To a great extent gymnastics and swimming transcended the boundary between the educational and social sides of the Institute. Arrangements were made also for students to receive instruction. One of the earliest staff appointments was that of Rudolf Oberholzer as Gymnastic Instructor, in June 1896. A German, world famous as a gymnast, Oberholzer stayed on until the age of 67 in 1928, thus firmly impressing his mark on gymnastics at the Northampton. Such was his fame that sanction was given in 1932 for the erection of a commemorative plaque of polished granite in the gymnasium. Separate gymnastic clubs for men and women were instituted in 1899 and in 1900 the Northampton Gymnastic Club took six of the eleven prizes in the competitions of the German Gymnastics Society.

The annual displays of the Gymnastic Teachers’ Association were held at Clerkenwell and Oberholzer took part. A jumping pit and take-off were constructed in the floor of the gymnasium. Boxing was started. A tie was struck, designed by Mr. John Williams, Head of the Artistic Crafts Department, to be used to provide a “distinctive Medal for the Institute Club Championships”. A Morris Tube Shooting Range was set up in the space beneath the swimming bath in 1901. Prizes were won regularly in outside competitions. It was all very serious and comment was recorded on “the strict disciplinary habits at the Northampton Institute gymnasium”. If one were to record successes here, quite a long list would result. International gymnastic events were won, however. In the Olympic Games of 1908 the Northampton Institute was represented in three branches of the games: gymnastics, wrestling and boxing. In gymnastics E.W. Potts took first place and J.T. Cook 31st place, in wrestling H.E. Baillie was defeated and in boxing H.H. Johnson reached the semi-final for the lightweights. The boxing was staged at the Institute. Also the Women’s and the Men’s Gymnastic Clubs each took part in displays. These teams also won the Inter-Polytechnic Challenge Shields for the session 1908/09. In 1910 two of the six members representing England in an international gymnastic competition in Leith were members of the Northampton Institute Club. Four competitors from the Institute took part in the Championship Meeting of the Amateur Boxing Association in the same year and one, G. Haughton, won the featherweight championship.

New rifle ranges in the galleries of the swimming bath were completed in 1911 and a section of the University of London Officers’ Training Corps (Engineer Unit) was formed.

Oberholzer accepted an appointment as coach to the British gymnastic team to compete at the Olympic Games in Stockholm in 1912. The Men’s
Gymnastic Club held the Adams Shield from 1912 to 1922. Training for the 1920 Antwerp Olympic Games Gymnastics Team was held in the Institute gymnasium. Ten members of the Institute were in the British team, which was not successful. In 1922, also, the first three places in both the men’s and women’s events in the Metropolitan and Southern Counties Amateur Gymnastic Association went to *Northampton* competitors and in the following year first places for both sexes in both first and second grade competitions.

A truly formidable record! However, the very success of Rudolf Oberholzer’s instruction in gymnastics was the subject of an adverse report of H.M. Inspectors following their 1926 inspection. The report criticised the work of the gymnasium on the obvious ground that it was concerned with the training of gymnasts for competitions and championships and that the necessary proficiency was obtained at the expense of over-developed muscles of the shoulders, arm and back, this excess development having an injurious effect upon the back and chest. The Inspectors recognised the exceptional degree of skill attained by members of the gymnasium and were aware that their alternative, — indeed their recommendation as general policy, — the Swedish system of free exercises using less apparatus — would profoundly affect the work of the gymnasium. The Social and Recreational Committee of the Governing Body recommended no changes until they had investigated other gymnasia. After Oberholzer’s retirement two years later, Swedish drill was adopted. The object was recreation not gymnastics!

The Role of the Lady Superintendent

The Lady Superintendent was “responsible, under the direction of the Principal, to the Governing Body, for all matters educational and social connected with women attending the Institute.” This responsibility included day and evening class and club organisation for women, control of the refreshment room and of the domestic staff of the Institute. The work increased steadily. The female members were “of all sorts and conditions of women and girls, chiefly between the ages of 16 and 25... drawn from the ranks of dressmakers, milliners, machinists, feather curlers, book folders, bookbinders, gold and silver embossers, jewel case liners, polishers of precious stones, clerks (including telephonists, telegraphists, Savings Bank clerks, typists, shorthand writers, book-keepers, etc.) and others.”

The women’s social side existed “for the purpose of promoting social intercourse between young women of various ranks and ages, to brighten
their lives by putting them in touch with simple and healthy recreations and thus generally to improve them mentally, morally and physically." The club facilities for women included a large social room with basket chairs, a sewing machine, bagatelle board and piano, writing tables, books and magazines and was open from 6pm to 10pm each weekday. There was also a joint social room "where men and women members may meet for conversation and quiet games such as chess and draughts"; both rooms were under the control of the Lady Superintendent. There was also the Library available to them and Refreshment Rooms, with "light refreshments of various kinds . . . at cheap rates, the tariff being fixed to cover the bare cost." The gymnasium was available to women two evenings a week from 7pm to 9.45pm and the swimming bath two days a week. Tennis and Hockey facilities were also available.

The social side of the Northampton Institute, then, as was that of the Regent Street Polytechnic was "practically speaking a club for the wage-earning class." The work of the social side faltered and stopped during the Great War of 1914 to 1918 when the buildings were in demand for war purposes and it never regained its importance.

The Artistic Crafts Department

John Williams, Head of Department of Artistic Crafts from 1896 until 1916 received a warm expression of the Governing Body's "high appreciation of his efficient and loyal service to the Polytechnic throughout the twenty years during which he had held his appointment," . . . (It) deeply regrets the necessity which has arisen for closing the Clerkenwell Crafts School, and thereby parting with a most valued member of the staff." For his part he "expressed his regret at the severance of such pleasant relations." The title Clerkenwell Crafts School was used for the first time in the 1914-15 Prospectus in a last attempt to retain the department and even to develop it. The London County Council had ceased to grant aid it after 1909, but the Governing Body doggedly resisted closure for several years. Victory to the L.C.C. came in 1916 after a long struggle with the Institute in the cause of rationalisation of educational provision in London. He who pays the piper calls the tune!

In its very successful twenty year period the Department had attained Evening Class entries ranging from 305 to 952 and Day School student numbers from 2 to 26. The unique applied arts approach to the teaching of printing, block-making, engraving, enamelling, wood-carving, etc., was not lost, for the students and staff were transferred to the L.C.C's Central
School for Arts & Crafts. John Williams was missed not only for his contribution to teaching, but in many other ways, for he was always called upon to advise on colour schemes for redecoration and on all matters of artistic design.

The value placed on his contribution to the work of the Institute was clearly expressed in the relatively high level of his salary. He was appointed to be Principal of the Hammersmith School of Arts and Crafts.

Interestingly, in 1948 arrangements were made for Industrial Design students from the Central School of Arts and Crafts to take a course in Workshop Technology at the Northampton and for some students of the letter to attend the Central School for instruction in Design.

**Setting the longer-term Educational Pattern**

We learn from the early Annual Reports that, at the close of each session, examinations were held, “under the direct superintendence of the Principal”, over the whole range of the work of the technological classes. The examinations set in 1900 did not achieve the usual satisfactory attendance owing to their being held “during the week in which the rejoicings for the Queen’s birthday and for the relief of Mafeking were so prevalent throughout the town.” We also learn that the staff in that year totalled one hundred persons and that 2,500 copies of the “Announcements” (the prospectus), for the 1900-1901 session were to be printed at a cost of £103.19.0. This issue had 1/6 pages and 8 plates.

It was as early as this year of 1900 that the foundation for future achievement and status of the Northampton was firmly laid by Mullineux Walmsley. In June of that year the Education Committee of the Governing Body recommended the establishment of “systematic engineering day courses in accordance with a scheme prepared by the Principal” and one month later the resolutions of a special meeting chaired by Sir Philip Magnus were adopted:

1) That the draft syllabus of the proposed Engineering Day Courses, as settled by the Committee, be approved.

2) That the draft application to the Technical Education Board for a special grant be approved.

3) That the draft circular letter to the Principals of Secondary Organized Science and other schools be approved.

The Technical Education Board then granted £500 “in respect of the maintenance of a day department in mechanical, electrical and horological engineering for the year 1900-1.”
Thus on 26th and 27th September 1900 the first entrance examination for engineering day classes was held. It attracted but five candidates, (3 for electrical engineering, 1 for mechanical engineering, and 1 for horology). The low number of candidates was a reflection both of scarcity of technical education to the entrance level and of the economic necessity in most cases at that time to work during the day and study at evening classes thus not losing wages. From these small beginnings the day college grew and flourished in the Walmsley era. Indeed the Principal had written in April 1896, before the work of the Institute got under way: "the subject of day classes has also been under consideration by the writer . . . but the time is not yet right." The title Engineering Day College was used in the "Announcements" (prospectus) from 1913-14.

In 1898 a Governing Body Minute records the commencement of a steadily growing concern for research and development projects. It reads:- "that leave of absence be granted to Mr. W.R. Elliott for the months of June and July, without pay, for the purpose of allowing him to assist Signor Marconi in experiments on wireless telegraphy." In the next year it was agreed that the Principal and Heads of Departments be allowed to undertake consultancy work in order to keep in touch with scientific progress. These researches are usually reported in the Governing Body Minutes, as, for example, in 1909 when the Head of the Department of Mechanical Engineering is noted as being engaged on research on torsion of metals aided by a small Royal Society grant.

In his dealings with the Technical Education Board to secure grants for equipment and maintenance Walmsley adopted the tactic of asking that the Institute be considered as an independent polytechnic with no regard paid to the fact of the link with Birkbeck and the City of London College. In this he was successful. The Board commented: "the Northampton Institute, besides possessing recreative facilities exceeding those of any other polytechnic aided by the Board is provided with the best suite of art rooms in any London educational institution and by the addition of a floor to the main wing of the building the governors have increased the space available for educational work so as to provide a technical institute affording more accommodation then any other polytechnic. It is reasonable to suppose that had the Northampton Institute as now established been considered by the Charity Commissioners on its merits, it would have been deemed worthy of recognition as a complete polytechnic." In January 1898, in noting that a metallurgical section was then being equipped the Board’s Secretary reported that he was "of the opinion that the establishment of a first-rate school of electro-chemistry either at the Northampton Institute,
where the boiler power and dynamos offer great facilities, or elsewhere, is a
matter which should engage the attention of the Board at an early date, and
is of sufficient importance to justify a special item in the estimates
submitted to the Council. In the subject of electro-chemistry it is stated that
Germany is making strenuous efforts to secure the leading place. The
enhanced equipment grant was awarded to the *Northampton*, "on
condition that the proposed metallurgical laboratory is provided and
efficiently equipped before the commencement of next session." It was
then decided that the Mechanical Engineering Department staff should
erect a single-storey building under the supervision of the architect and the
Head of Department during the vacation and thus the deadline was met!

In the same session classes of the Central Telegraph School were
transferred to the Institute, together with some staff, bringing an additional
513 students, and the National Telephone Company sent its employees for
classes in telephony and electrical science. The Horology second year
course was arranged to be taken in part at the British Horological Institute,
next door to the *Northampton Institute*. In 1899 courses
included cycle construction (favourably noted in the technical press). At
this time the majority of students were artisans and apprentices living or
working in Clerkenwell.

By 1900-01 the general educational level of students on arrival at the
Institute was much improved and more attention to the taking of external
examinations became possible. In that year twelve medals were gained at
examinations of the City and Guilds of London Institute, more than were
gained by any other London College. Board of Education funding was then
sought for most of the evening classes and this was granted for 80% of the
work, beginning 1902-03; very much more than before.

In a report on the polytechnics for 1907-08, The Technical Education
Board commented: “The *Northampton Institute* was the pioneer in
framing definite courses of study and insisting upon students attending
such courses instead of isolated subjects. The great success which has
attended the institution of these systematic schemes of instruction has fully
justified this important development.” The Board of Education inspectors
were impressed, too, for their 1908 reports on the engineering day classes
were "very appreciative even eulogistic." Following this the Board paid an
increased grant on the block grant principle in place of the former
attendance grant. The same year the Institute was awarded the Diploma of
Honour for its exhibit at the Franco-British Exhibition.

Growing status was signalled by the acceptance in 1911 of the
Presidency of the Institute by the Duke of Connaught, he having been assured that the duties attaching would be almost non-existent and he remained President until his death in 1942. There was no subsequent incumbent. A presidential chair was designed by John Williams, as a memorial to the late Sydney Axford.

In this period there were formed bodies that were vital in the subsequent growth of the College and University. I refer to The Northampton Past Day Students Association, (1909), Board of Studies of Heads & Associate Heads (1912), the Union of Students, (1912) and the Academic Staff Association, (1922), which are discussed later. The relationship with the L.C.C. is outlined later in this chapter and it is sufficient to note here that certain teaching of minimal academic content was removed to other colleges around this time, e.g. Domestic Economy, Carpentry and joinery, (1913). Building and architectural classes had ended in 1908-09 and were not resumed.

Meanwhile new work stemming from an existing sound basis was instituted. There were pioneer courses in radio telegraphy and telephony in 1907-08 and submarine cable work was started. Another interesting pioneer course was Aeronautical Engineering.

**Aeronautical Engineering**

In June 1909 a class in aeronautics was arranged for the following session and Mr. L.W. Blin Desblies was appointed to attend two evenings a week. The L.C.C. approved the course in retrospect! The Governing Body in May 1910 approved a new day course in aeronautical engineering on the general lines of the other engineering day courses. The same year the Women's Aerial League presented a silver medal to be awarded to the best student on the course and this was won by Duncan George. A room was placed at the disposal of the Aeronautical Society for the holding of meetings.

The momentous event of 1910, as it turned out, was the appointment of a Mr. Frederick Handley Page to be lecturer in aeronautics, to attend two evenings per week and on occasion on a third evening at £75 per session. Within a few months Handley Page was further appointed teacher of aeronautical calculations at £15 per session for one evening per week. Not surprisingly, aeronautical engineering with Handley Page teaching this rapidly developing subject, was a great success at the *Northampton*, and in October, 1914, the War Office wrote appreciatively of the good work done by these courses.
The Aeronautical Society presented £5 for prizes for aeronautical students in 1913-14 and “enquired whether the wind-tunnel . . . would be available for a model aeroplane competition.” The London Aero Club was formed, on the proposal of Handley Page as a Northampton Institute Society (1913). It was stated that “the members . . . would, under Mr. Page’s supervision and as students of the Polytechnic, construct an aeroplane, the engine and materials for which have already been purchased out of the grant for educational equipment made by the London County Council. The aeroplane when constructed, is to be used for flying, if deemed desirable by the Governing Body, upon further report.”

About the same period the Governing Body Minutes contained the following letter in full.

Dr. Mullineux Walmsley

Dear Sir

Upon a recent visit to Northampton Institute I was very sorry not to have been able to call upon you to present the compliments of Dr. Maclaurin, President of the Massachusetts Institute of Technology, Boston, by whom I am sent abroad to study aeronautical development with a view to establishing courses and a research laboratory in Boston.

I was much pleased and surprised to find the work at your Institute so complete. I believe it is the only complete course in theory and design that is available.

With high regards, I am,
Very respectfully yours,
J.G. HUNSAKER,
Naval Constructor,
United States Navy. 11

Thus it is clear that Handley Page’s work in aeronautical engineering education at the Northampton inspired and informed that at the Massachusetts Institute of Technology.

In March 1916, with the ready agreement of the Governing Body, in the national interest, Mr. R.O. Boswell was granted leave of absence without pay “for twelve months, or for the duration of the war, whichever period shall be the shorter” to carry out research work in aeronautical problems at the works of Messrs. Handley Page, Ltd. This leave of absence was renewed until 1918 when Boswell resigned to stay with Handley Page,
Ltd. In 1919 when he was Chief of the Handley Page experimental
department, Boswell was working with G.R. Volkert, Chief Designer and
ex- Northampton student, on an aeroplane for a transatlantic flight.
Useful equipment was acquired opportune at this time, e.g. three
surplus aero-engines were purchased from the Ministry of Munitions for £6
each, complete with sectional drawings. Later four German aero-engines
were presented via the now "Royal" Aeronautical Society — they had been
on exhibition in the Royal Agricultural Hall.
Another field of study that was developing in this first phase of
the history of The City University needing further comment here, was Optics.

Technical Optics

The most important educational development of the session 1903-04,
was the separation of the Technical Optics Department from the
Department of Electrical Engineering and Applied Physics. S.D. Chalmers,
B.A. (Cantab), M.A. (Sydney) was appointed Head of Department. This
development stemmed from a proposal of Mullinoux Walsley of 1897
when he saw "scope for a good laboratory in practical optics ... Much of
the optical work of London is within the Institute's district and there is no
provision for instruction in this special branch of physics." The 1901-02
annual report had pursued the matter further:- "largely owing to the work
done at the Northampton Institute, the optical trade is now keenly alive to
the advantages of good technical education and a movement is on foot for
the purpose of inducing the Technical Education Board to found an
Opto-Technical Institute" — which "ought to be located at the
Northampton Institute because it is here that all the pioneer work in this
special form of technical education has been done." The Technical
Education Board agreed rapidly and Chalmers was appointed during 1903,
having been a lecturer in mathematics both at Owens College, Manchester,
and the Royal Naval College, Greenwich but also consultant mathematical
optician to Messrs. Chance Brothers in the designing of optical apparatus
for lighthouses.

The movement for the founding of an opto-technical institute referred
to above owed much to Silvanus P. Thompson, Principal of Finsbury
Technical College. He used the term "opto-technics" to cover all questions
relating to the training of opticians and had hoped for such a department at
Finsbury Technical College. Later "he had hoped for an opto-technical
institute at Clerkenwell", holding the view of the Northampton Institute and
the other polytechnics, "that the less they have of poly, and the more of
technic, just so far (will) they benefit the industries." 12 These views were
given in a speech at the Royal Society of Arts in 1902 and directly led to a
deputation of the Optical Society to the Technical Education Board of the
L.C.C. 13

Mullineux Walmsley, too, was a founder and Fellow of the Optical
Society (1899). The first English Optical Convention, at which Lord
Rayleigh, Walmsley and Silvanus Thompson spoke was held at the
Institute in 1905,14 and Walmsley was Chairman of the 1912 Optical
Convention. His key role and that of Dr. Drysdale in the early days of
ophthalmic optics education have been acknowledged. Seventy five
students enrolled for the first opticians’ evening classes in 1903 and these
classes included the first course in sight testing. Full-time day classes were
started in 1904, but attracted only four students at first. At that time
certification of having attended courses was voluntary. The first
educational courses in technical optics, started in the session 1898-99,
included two courses by Dr. Drysdale and one by Mr. Lionel Laurance. By
pioneering these courses, the Northampton assisted in turning a trade into
a profession.

By 1909 Chalmers was taking part in research in optical measurements
of school children. In 1910 he gave lectures to an advanced course in optics
at the Cavendish Laboratory and in 1915 was awarded a Readership of
London University in Applied Optics.

A junior appointment of the early years that is worthy of note here is
that of W.H.A. Fincham as Junior Assistant in the optics workshop, at a
salary of seven shillings and sixpence per week from 1st September 1904.
His brother Edgar was appointed in 1909. Progressing to the academic staff
Walter Fincham turned out to be one of the outstanding teachers of the
polytechnic period, serving the Department for forty-six years and in
retirement as an external examiner. James Greig recorded this interesting
anecdote: “Walter Fincham, who later in life became the author of one of
the most widely used textbooks on Ophthalmic Optics, recalls that he was
examined by Glazebrook and Thompson. He was, as it happened, the only
candidate for the Diploma. The written papers were followed by a searching
oral examination. Fincham was first questioned by Thompson, and made,
as he thought, a good showing. Then Glazebrook followed with a number
of straightforward questions, but finally, to Fincham’s dismay, which he
could not conceal, asked how the candidate would measure the
transmission of a pair of prism binoculars. To his astonishment he heard
Thompson interject, “Ah, Glazebrook, that’s a most interesting question.
I’ve often wondered how to do that. How do you do it in your laboratory?”
Fincham passed!15 On his death in 1977 a collection of early books on
optics was presented by the family to the University Library in his memory.

Optical teaching had begun to develop in 1898 when the Spectacle Makers' Company offered to contribute funds to pay the salary of an instructor in visual optics. The next session both visual optics and optical workshop instruction were under way and when the livery company said it could not continue its financial aid, the optical trade, via the Optical Society, met the bill. These Optical Society donations totalled £1,391 by the time they ceased in 1917. In 1902 J. Aitchison commenced donating annual prizes to the value of eight guineas to optical students and Herr Carl Zeiss gave equipment. Shortly, Mr. Aitchison also provided money for scholarships in technical optics. When James Aitchison died, an Aitchison Memorial Scholarship was set up tenable in the Institute day courses in Technical Optics.

The Optical Standards Committee of the Optical Society held its first meeting at the Institute in 1901 and with Dr. Drysdale as President of the Optical Society monthly meetings were held at Clerkenwell from 1903. Following an established lead, the British Optical Association started giving money to support the classes. Initially the only examinations relevant to the Department were those of the Spectacle Makers' Company, but in 1909 changes of syllabus enabled the sitting of the British Optical Association examinations also. Physiological optics including an advanced course and an evening course in ophthalmological instruments were also available. By 1908 a student was admitted for special work for a D.Sc. of London University.

Although a separate technical optics building nearby was the agreed policy of the Governing Body, nevertheless the department had to move into temporary accommodation in the British Horological Institute Building in Northampton Square in 1907. Late in 1909 £7,000 was transferred from the Income account to a special reserve to be devoted to the building of a Technical Optics Institute. No part of the extension opened in February of that year was made available to the Optics Department, probably because, two years earlier, a site had been acquired and was awaiting development for that purpose. "Meanwhile," wrote the Principal, "other nations are passing us in the race."

A new course was started in the Technical Optics Department in October 1907 in an up to the minute subject, this was a Kinematograph course run with the co-operation of the Kinematograph Manufacturers' Association. There were lectures, demonstrations and an examination and the course was repeated in succeeding years until 1914; it was a new course for a new industry.
Dr. Robert Mullineux Walmsley
The Mountford Building from Northampton Square, 1898

The original Great Hall.
A cookery class at the turn of the century.

The Second World War - A Service course.
Dr. C.V. Drysdale

Howgrave Graham in action at a Christmas lecture - demonstration for children.
The first sandwich course students 1903-04 together with the last second year students of the two year course, and staff.
Second World War. The entry point of the bomb.

Second World War - The bomb.
Samuel C. Laws, Principal, 1924-47

Dr. J. E. Richardson, Principal, 1947-56.
The project for a Technical Optics Institute to be housed in 23,000 square feet of a new purpose-built building across St. John Street, dragged on and became embroiled both in the consequences of national war policies and in a developing struggle between the Institute (Walmsley?) and the London County Council. This conflict with the L.C.C. was made inevitable by the natural desire of the Institute fully to retain its independence on the one hand and on the other by the desire of the L.C.C. to secure rationalisation and centralisation of the educational facilities for which it was by far the major paymaster.

In January 1916, Sir Philip Magnus, by then a Member of Parliament, took a hand, writing a letter to the Morning Post and introducing a deputation from the Northampton Institute to The Board of Education. He also spoke in Parliament on the issue. The Principal prepared a scheme of instruction for operatives in the optical instrument making trades and submitted it to the Minister of Munitions. He also invited donations for the £40,000 building fund. The fund raising pamphlet carried a foreword by David Lloyd George, then Minister of Munitions, urging the necessity for the establishment of an Imperial School of Technical Optics at the Northampton Institute. The use of the word "Imperial" was, I think, unfortunate, for in due course the Principal reported (September 1916) that the L.C.C. had sent a report "Provision of instruction in technical optics" which they had already adopted as policy without consultation with the Northampton Institute. This report involved "the highest grades of instruction" being provided at Imperial College of Science and Technology in a separate department of technical optics, and a trade school and senior day and evening technical courses being established at the Northampton Polytechnic Institute, supervised by an advisory council and the head of technical optics at Imperial College. In this instance a Walmsley inspired scheme of many years standing, that is to promote higher level work based on the optics expertise available in the Institute, went seriously awry. There was in the report an offer of up to £500 for alterations to the vacated art rooms, up to £2,000 for equipment and up to £1,000 more per annum for annual grant.

Apart from securing development in optics by several staff appointments, Walmsley dragged his feet. The L.C.C. paper was considered by a Committee of the Board of Scientific Societies organized by the Royal Society and Walmsley informed the L.C.C. that the Governing Body of the Institute must await the deliberations of this Committee before replying to the proposals, but this "will not alter the willingness of the Governing Body to co-operate with the London County Council as is proposed." The L.C.C.
replied assuming the answer meant approval, but meanwhile the Chairman and Principal of the Northampton had had an interview with the President of the Board of Education, H.A.L. Fisher. It was acknowledged that the Committee of the Scientific Societies strongly urged the erection of a technical optics institute as a matter of national importance, but this was not part of the Board of Education's proposals to which the Governing Body offered a "fair trial" in March 1917. The outcome was rather along the lines of the L.C.C.'s original proposals and Professor F.J. Cheshire, Director of the Department of Technical Optics of Imperial College was appointed Honorary Head of the Technical Optics Department of the Northampton Institute "on terms arranged with the Board of Education".

The instruction was then divided between the two Colleges and Chalmers gave an advanced course at Imperial College. Walmsley was not happy and accused the L.C.C. of "ignoring all the negotiations that have taken place since August 1916."

When S.D. Chalmers died in November 1919 there was a long haggle with the L.C.C. about a successor and Cheshire was appointed Executive Head of the Department. H.H. Emsley who with C.L. Redding and W. Swaine had unsuccessfully applied for the headship, was appointed Associate Head of Department and the L.C.C. promptly reduced the salary of the post by £15 p.a. Shortly, it was decided that the department should be called Optical Engineering and Applied Optics Department. Meanwhile day and evening classes in visual optics and spectacle frame making were started (February 1919). Later, in 1924, Professor Cheshire recommended that the department be made a centre for research in Ophthalmology.

**Sandwich Courses**

The "sandwich course" system was first so called in our records in the annual report on the work of the session 1904-05. In 1903 the Governing Body had granted Dr. Walmsley three months leave of absence and a £200 grant to enable him to visit American technical educational institutes. A resulting paper "Transatlantic engineering schools and engineering" was read by him before the Institution of Electrical Engineers on 11th February, 1904, and four days later he presented a printed copy of his complete report of the American visit to the Governing Body. But before that, at a meeting of the Governing Body held on the 20th July 1903 he had reported on the visit and had suggested extending to four years' duration the day courses in mechanical and electrical engineering, to include the students spending five or six months in the second year and five or six months in the third year in commercial workshops.
Having carefully considered the scheme, the Governing Body thought it advisable to try it experimentally if the Principal proved successful in obtaining from manufacturers favourable replies to his suggestions that students be taken into their workshops. The difficulty was seen to be that free entry was being requested when normally a premium was required. Mullineux Walmsley, having been told that he could institute sandwich courses if he so wished, provided that he went out and obtained the necessary places for his students, did just that, single-handed and with great success. He not only obtained free placings but, in some cases, small payments of wages to the students. He personally visited students at work during their industrial workshop periods, not only all over the United Kingdom, but also in works abroad. There was one student in Austria as early as 1905-06, and two in Genoa in 1908-09 working on electrical construction for Italian State Railways. These two had been found passages out in the engine room of a liner. The Principal carried out the visits in his vacation periods merely for out of pocket expenses, continuing to do so with a slight easement of the chore in 1912 when use of the College motor car was authorised for this purpose. The car, by the way, had a hood “hired from time to time at a cost not exceeding £2”. The annual report for the academic year 1904-05 set the tone of comment on the sandwich course system for many years ahead in reporting that it had justified the hopes with which it was started; placement for all the students being achieved without payment of premiums.

Initially, the constitution of the sandwich was the ending of the second year’s college based work at Easter with continuation in industrial workshops up to the opening of the new session in the following October. As to the numbers of sandwich course students placed in the early years; there were fourteen in 1904-05 and twenty-five in the following year. Not until 1924 did departmental heads regularly assist the Principal in covering some of the industrial visits which must have become a chore long before then, for the towns listed for 1920, for example, included, in addition to London, Barrow, Birmingham, Hull, Loughborough, Manchester and Rugby. Walmsley was not easily deflected from his purpose of serving the best interests of his students, for, when, in 1922, a lockout of engineers prevented placements in British industry, he sent the Head of the Mechanical Engineering Department to Belgium and Switzerland and industrial experience was thus arranged for thirteen students.

H.M. Inspector, reporting on the session 1906-07, wrote, “the course for apprentices in the Engineering Department is proving very successful and quite a feature of the Institute, the six months’ consecutive workshops
experience following a six months' consecutive work at the Institute in the second and third years having been found to produce good results, it is hoped that the experiment will be conducted in future sessions on an even larger scale." In recognition of the resulting high standard of work achieved the Board of Education awarded a high rate of grant in respect of sandwich course second and third year students. The following vacation the first artistic crafts student was placed in industry and by 1910-11 the Principal was reporting that he had places offered by industry for which he was unable to find students. Thus a scheme pioneered in the U.S.A. by those technical institutions known as "Co-operative Colleges" because of their co-operation with industry became the model for the English sandwich course system still in use in The City University.

Some students working in industry remote from London obviously needed financial assistance and in the academic year 1908-09 the Saddlers' Company set up a Bursary scheme.

By 1911 the sandwich course scheme was well enough known for the following to appear in the Encyclopaedia Britannica:— "at the Northampton Polytechnic Institute in Clerkenwell there is a very important day school of engineering conducted on the "sandwich system . . .""

The Great War, 1914-18

The first session of the war years opened with fourteen students having already enlisted and it was arranged that course fees should be held over giving the right to a place on return. Paid leave of absence, less forces pay, was allowed to all members of staff volunteering or called up for service. Initially, all courses continued despite diminished numbers and the minimum viable number for a course was reduced. "Enemy aliens", read a Governing Body minute, "are to be refused admission to classes." First aid classes were restarted and the wireless telegraphy installation was dismantled, "in accordance with the requirements of the Postmaster General." First and second year classes in the Day Engineering College went on, but very soon third and fourth year classes could not be held because of the call-up age. Sheep grazed on the recreation ground and members of staff worked on special projects for Government departments as requested. The rifle ranges were in continual use for shooting practice.

A very brief summary of the quantifiable contribution of the Northampton Institute to the war effort can only selectively record that approximately 2052 individuals, 469 members, 1518 students and 65 past and present staff joined the colours. They gained 237 commissions, 137
gave their lives and 251 became wounded or missing. Many were
decorated. In the Mechanical Engineering Department munitions
were produced totalling 14,720 precision gauges and 43,511 gun parts. The
Electrical Engineers produced "closed circuit inductances for service
wireless telegraph sets for armies in the field," and trained service
personnel in field telephony and range finding. The Technical Optics
Department trained 322 women optical munitions workers in lens and prism
grinding before setting up their own optical factory. A case of lenses from
this factory was presented to the Imperial War Museum, but was
unfortunately subsequently lost. All departments took part in schemes
for retraining disabled ex-servicemen and courses were arranged for
electric-sub-station attendants, switchboard operators, optical work,
mechanical draughtsmanship, and clock repairing and several hundred men
were then found work. Her Majesty Queen Mary paid a visit to these classes
for the disabled on 21st February 1917 and "also inspected the shops of the
newly instituted lens-grinding section." Refugees were also assisted; one Ralph Tourover, a Russian who had
become a refugee in Belgium and had then come to England and been
assisted in gaining London University Matriculation was then granted a full
engineering day course at the Northampton Institute without fee. In 1920
he was awarded the Certificate of the Institute in Electrical Engineering.
Subsequently he emigrated to the United States where he became a
successful lawyer, but he did not forget his debt to the Northampton and he
made a small bequest to The City University Library.

After the war there were special accelerated courses for returning
ex-servicemen, 1918-1925, and 177 grant-aided full-time students were
taught.

Developing Technical Education in Britain

In an article that appeared in "The Electrician" in September 1916, Mullineux
Walsmsley wrote: "one thing is certain, and that is that this
country will never return to the state, political, social or educational, which
marked the epoch which came to an end on August 4, 1914." His paper
whilst indicating the great contribution made by the polytechnics to the war
effort addressed itself, in the main, to the post-war role of these
institutions. He advocated that they be allowed to cease their munitions
work forthwith, leaving it to the 4,212 controlled establishments of the
Ministry of Munitions, (there does not seem to have been an effective
Official Secrets Act or censorship of printed material likely to assist the
enemy!)
The educational institutions, he felt, had in this respect fulfilled their role and could resume teaching. He pointed to the fact that the 1916 final examination for the B.Sc (Engineering) degree of the University of London had only three internal candidates in electrical engineering from all the London University Colleges and Institutions connected with the University (including the Northampton), "and," he went on . . . "not one of these candidates was an Englishman. It is undoubtedly a noble thing that our students should have so sacrificed their careers for their country in her extremity, but was it best for the country that it should be so, and should it be allowed to continue any longer?" He was bothered, as he was in 1902-03, about the ability of British industry to meet and combat foreign competition unless its engineers were well trained. In 1902-03 he had noted the dominance of Germany in the optics industry and had succeeded in getting Technical Optics started at the Northampton and incidentally, at the time he was writing, the laboratory was making vital lenses and optical instruments as war munitions. His current concern was full-time engineering training and he wanted students, whose studies had been interrupted by the war, traced and brought back to college from the battlefields at once. Teachers, too, were to be recalled.

Day release of workers below the age of 17 or even 18 for attendance at technical institutes, was he thought desirable; and not only for industrial workers! The sandwich course idea coupled with scholarships and payment for the works periods were essential features. "We are," he went on, "in this article, concerned chiefly, if not exclusively, with technological education, but it must not be overlooked that large numbers of the population will require and demand training in the liberal arts and in the humanities, perhaps to an extent never before contemplated. Full provision should be made to satisfy such a demand." He made several other potent comments:- that although technical evening classes in Britain were second to none, "it was not fair to the individual that after a heavy day's work he should be called upon for further strenuous exertion, even though he may be perfectly willing to respond"; — more consultation with industry was necessary — and representation of technical teachers on industrial advisory committees must be arranged.

Concern for people, depth of perception of the real national educational economic and social needs are all to be found in this article. It really should be required reading in the study of British education. Obviously, subsequent development of the Northampton into The City University rested on the firm foundation of the wisdom of its first Principal.
The University of London

From 1908 Mullineux Walmsley was Chairman of the Board of the organisation to promote the Extension of University Teaching, and it can be said that a major thread in his direction of the Institute was evolution towards greater concentration on higher level work. The developments he fostered were all of a piece and were systematically pursued by his successors. The alternatives of concentrating either on the lower level educational work or on the social side were rejected. In 1908-09 the first Northampton candidates for the University of London B.Sc. degree were presented. The close relationship of the Institute with the University is of great interest.

A Royal Commission of 1888 (Selborne) had proposed that there should be a “teaching” university in London — the existing incorporation being an “examining” university. Kings and University Colleges then wished to petition the Privy Council, together with medical schools, to become the Albert University or Gresham University if the funds pertaining to the latter proved to be available. They would then leave London University to exist merely as an examining body for other colleges. Naturally, this scheme did not find favour elsewhere and protest led to yet another Royal Commission to consider the Organisation of the University of London (Cwper), 1892-94. The Secretary of the Technical Education Board wrote to the Earl of Rosebery, Lord President of the Council in March, 1894; — the Board having considered the report of the “Royal Commission on the proposed Gresham University” had proposals to make.

In brief these included central university laboratories in mechanical and electrical engineering, experimental physics and industrial chemistry additional to laboratories for advanced students of all colleges or of none, based on ability to benefit from the facilities provided and provision of evening classes at low fees.

This, possibly economy-inspired, gambit was not successful and in July 1897 the London Polytechnic Council expressed approval of the new London University Bill, “being satisfied that students of the London Polytechnic Institutes pursuing a course of study, approved by the University, under one or more recognized teachers of the University will enjoy equal facilities with the students of a school of the University in graduating at the University.” The 1898 University of London Act created a Commission which framed Statutes of the University which were approved by Parliament in June 1900. Statutes numbers 32 and 33 established the Academic Council for “Internal” students which solved the old difficulty of
1891 by uniting in one university the teaching of such students and the examination without teaching of “external” students. This involved the concepts of “Schools of the University”, “Appointed Teachers” and “Recognized Teachers” whose students became internal students of the University. Statute 130 also had great relevance to the Northampton Institute: “No disability shall be imposed upon any internal student by reason of the approved course of study pursued by him being or having been pursued in the evening.” This statute followed representations from Sidney Webb in his capacity as Chairman of the Technical Education Board Sub-Committee on the University of London: “That evening courses of instruction shall not, as such, be excluded from recognition as courses qualifying for internal degrees.”

The University of London Commission in 1900 issued regulations in which the name of Mullineux Walmsley appeared as a Member of the Faculty of Engineering and also as a “recognised teacher of the University” in electrical engineering. Later he was recognised as a teacher of mathematics and in 1905 was elected to the Senate of the University. Walmsley remained Convocation representative on Senate from 1905 until his death in 1924 being Chairman of Convocation in his last two years, following a contested election in which he beat Sidney Webb by 342 votes to 194. Other teachers recognised were Mr. C.V. Drysdale in optics, physics and electrical engineering (in the same year he was awarded his D.Sc.), Mr. E. Kilburn Scott in electrical engineering, Mr. H. Davies in structural engineering and A.C. Jolley in electrical engineering, with John Ashford and C.E. Larard in mechanical engineering these were the first of a steadily growing stream.

Courses were not so rapidly approved and the Governing Body protested against the attempt of the Academic Council of the University to impose onerous conditions in the provisional recognition of courses of study for the degree of B.Sc. in Engineering at the Northampton. The University purported to want the recognised teachers to do all the teaching for all degree courses and although this condition was eased, some courses were withdrawn. In 1902 provisional recognition was given to day courses in mechanical and electrical engineering and a series of evening courses arranged by the Principal to enable evening students to complete their undergraduate studies in engineering in five years.

As early as 1902 consideration was given to the use of the title “Professor”. The London Polytechnic Council then advised the Principal that “it is doubtful whether the title of “Professor”, accorded by any institution other than a University holding a charter for degrees is a title
which ought to be recognised.” At that time London University itself had not used the designation!

It would be wrong to leave the impression that the Northampton was the only London polytechnic to foster university work, for Chelsea was active in this area from its opening. There was, too, opinion within the Technical Education Board of the L.C.C. supporting the move in the direction of university level work. In January 1902 the Board granted funds “for special electrical appliances in connection with the polyphase machinery and other apparatus having a direct bearing on the more modern problems connected with electric traction, but the expenditure of this grant must be confined to apparatus required by the most advanced classes, in fact by classes studying subjects of university rank.” William Garnett, Secretary of the Technical Education Board was, of course, a member of the Governing Body of the Northampton. Sidney Webb, and Philip Magnus also both supported the trend to higher level work. Webb later observed “even the new provincial universities, with all their dignities of charters and chancellorships, diplomas and degrees, often do less work of university grade than a London polytechnic.”

Evidence given to the Royal Commission on University Education in London (1910-13), by Rev. A.C. Headlam had included . . . “The question you have to consider with regard to the Northampton Institute is whether it is to give university work or whether it is not. I understand that it is exceedingly well equipped, and it is quite conceivable that that is the one Polytechnic which ought to be definitely given university functions . . .”

Walmsley’s work in this respect was such that in December of the year of his death (1924), his successor was able, credibly, though unsuccessfully, to propose to the Departmental Committee considering the Constitution of London University that the Northampton Engineering Day College be recognised as a School of the University.

The London County Council

It would be wrong to give the impression that Walmsley had things all his own way and was not strenuously opposed in some quarters. Two significant sources of opposition were the City Parochial Foundation with its emphasis on serving the poor of the district and Robert Blair, Education Officer of the L.C.C. The latter was in a powerful position and his opposition to university level work at the Northampton was based on his firmly held view: “Universities are institutions for making officers; the polytechnics were intended to make the rank and file and most capable rank
and file in the world.”24 Perhaps he was influenced by George Bernard Shaw for in Man and Superman are the lines: “very nice sort of place, Oxford, I should think, for people that like that sort of place. They teach you to be a gentleman there. In the Polytechnic they teach you to be an engineer or such like.”25

The remark attributed to Blair appears in an L.C.C. Education Committee Report of 1909 and there are others in similar vein: “I am of the opinion that a considerable amount of University work in the evening may be reasonably defended as within the schemes or as a legitimate development of them; but that the conversion of a polytechnic into a school of the University, or a large development of day university work in a polytechnic is neither within the terms of the schemes nor is it a legitimate development of them.”26 Walmsley’s copy of this report is heavily annotated with “out of date”, question marks, etc. Blair goes on “As to the Polytechnics, the best provision of laboratory accommodation in electrical engineering and probably in mechanical engineering also is at the Northampton Institute... Dr. Walmsley, the Principal, has a high reputation as an engineer, a teacher and an investigator.”27 Blair went on to observe that fees at the Northampton were 16 guineas p.a. as against 35 at University College and 50 at King’s and that the Northampton should not be a cut price university.

London County Council power over the Institute, was, by and large, wielded with discretion from the beginning until 1909. At that date friction arose because the desire of the Council to close the Artistic Crafts Department and transfer its work and students to the Central School of Arts and Crafts was resisted by the Governing Body until 1916, even though funding for it ended in 1909. When the Technical Education Board was dissolved in 1904, the Governing Body took well into the next year to accept that although funds came from the Board of Education it was no accident that they came via the London County Council, for the purpose was to ensure “the co-ordination of the work”... “with that of other educational institutions within their area.”28 This clarification came in response to a Governing Body statement to the Board of Education “that the scheme by which this Institute was established, and under which it works, contains no clause placing the Institute under the direction of the L.C.C.” But, conformity was required and, “saving all rights of the Central Governing Body, the Northampton Institute is willing to be regarded as working under the direction of the L.C.C. in the sense in which that term is used in the Regulations.” Concessions were, however, gained in that the Regulations were re-drafted more liberally shortly after.

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The L.C.C. used the award of block maintenance grants as a bludgeon, for in 1912 there was still a sum owing for the maintenance of the Artistic Crafts Department. The Governing Body would not agree to the closure of that successful department and L.B. Sebastian met the appropriate Sub-Committee of the L.C.C. He asked "by what authority statutory or otherwise the recommendation under consideration was being made as he could not find any such authority in the Education Act (1903), or in any other enactment, and the Governing Body did not understand how the proposed transfer could be made without its consent, which so far had not been given" — and, on the point being pressed, a member of the L.C.C. Sub-Committee said, "It is our money."

The other departments that the L.C.C. said in 1912 that they wished to close down were not the subject of the same opposition, for Building and Architecture classes had actually ceased, 1908/09, and so were happily transferred elsewhere in 1912! Domestic Economy was another where there were certainly adequate classes elsewhere. By early 1914 the Governing Body accepted the L.C.C. conditions for block grant payment (except for the closure of the Artistic Crafts Department) but later the same year Walmsley accused the L.C.C. of "not giving effect either in the spirit or the letter" to the negotiated conditions.

The battle continued even after the closure of the Artistic Crafts Department in 1916. So strong was the feeling in the Northampton, that an exchange of letters with the L.C.C. was documented by publication in 1922-23. In a letter that he affected to believe to be conciliatory, the Chairman, L.B. Sebastian, wrote at length about how the "block" grant had become a "deficiency" grant by force of successive L.C.C. regulations and resolutions. He referred to the 1912 "concordat" and the 1914 "conditions" to which the Governing Body had subscribed. Sir Cyril Jackson, Chairman of the L.C.C. Education Committee replied that approximately one million pounds was sought by the nine London polytechnics, of which half would come from local rates and half from taxes. This would amount to about 70% of the income of the nine, fees would account for 20% and the remaining 10% would come from the City Parochial Foundation: "grants from public money to this extent could not be made without closest scrutiny and most rigorous examination in the interest of both the ratepayer and of the taxpayer." Sebastian replied: "the Governors' time is valuable and so are their brains, yet they take such an interest in the cause of education that they are willing to give both freely in order to promote it. But they are rapidly coming to think that they might be making a better use of their time and their brains than in acting as unpaid

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clerks to the clerks of the Board of Education and the London County Council.” The L.C.C. was then increasingly calling for statistical returns as a management tool to aid in control of the colleges just as the U.G.C. is doing in the late 1970’s.

Conclusion

Mullineux Walmsley, then, was the right man in the right job. Not only had his earlier experience fitted him so exactly to the post he filled at Clerkenwell, but his subsequent direction of the Institute firmly established it on sound lines. He became a legend in his lifetime: “He was a big man, not tall but broad and portly, a handsome presence with his fourteen or so stone, with a grey moustache and a generous pointed beard; and he always wore a grey frock-coat with long tails and putty-coloured spats, with a top hat when outside the building” . . . “he was known as “Mully” — but not to his face!”

He died, at the age of 70, whilst still in office, as a result of an accident with a car. “His whole heart and soul were given to the polytechnic and it was his greatest joy to see the institution developing and progressing under his influence and guidance.” “His memory will be held in most affectionate respect.” “The aim of the Governing Body is to keep the Polytechnic a living memorial to the ability and devotion of its first Principal.” Those phrases are all taken from his quite exceptional obituary and celebrate a most outstanding life of service. A bronze medallion portrait head in relief with an inscription was designed by C. Hartwell, R.A., (who had been a part-time teacher under John Williams), as a Walmsley Memorial. This was set on Hoptonwood stone and erected on the main staircase landing and unveiled on 2nd December 1927. There was also, of course, a Walmsley Memorial Fund that was set up to provide scholarships.
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