

## CHAPTER XI

### EXTENSION OF THE ROYAL INFIRMARY IN THE NINETEENTH CENTURY, 1800-1853

NEW WING ATTACHED TO THE ORIGINAL HOSPITAL—THE OLD HIGH SCHOOL OF EDINBURGH AS THE SURGICAL HOSPITAL, 1829—SURGEONS' SQUARE AND THE EXTRA-ACADEMICAL SCHOOL—PROFESSOR JAMES SYME AND THE CHAIR OF CLINICAL SURGERY, 1833—THE SURGICAL STAFF OF THE INFIRMARY—THE NEW SURGICAL HOSPITAL, 1853—CHLOROFORM ANÆSTHESIA, 1847.

FROM time to time, as opportunity arose, house property in the immediate vicinity of the hospital had been acquired with a view to providing the means of future extension. But it was not till the last decade of the eighteenth century that the first addition was made to the Infirmary, not however by utilising any of the houses previously purchased, but by attaching a wing to William Adam's original building. Two questions had then come under the consideration of the Board, a proposal to transfer the maternity cases from the hospital to a separate house, and the provision of more beds for sick and injured sailors. The first of these problems solved itself, when in 1793 the Edinburgh Lying-in Hospital was opened as a special institution by Alexander Hamilton, the professor of midwifery.<sup>1</sup> The solution of the second problem, more beds for sailors, was arrived at when the managers added a new wing, containing three wards, to the west gable of the Infirmary.<sup>2</sup> The exact position of this wing is shown in Ainslie's Map of Edinburgh, published in 1804, but no detailed information concerning its internal arrangements is given in the minutes of the managers. But patients suffering from infectious fever were transferred from the fever ward to the upper floor of the wing, as the surgeons complained that during the summer months the air was frequently rendered

<sup>1</sup> Chapter VII, p. 100.

<sup>2</sup> Minutes, Royal Infirmary, 31st January 1791 and 4th June 1792.

## HIGH SCHOOL ERECTED ON CALTON HILL

so impure in the vicinity of the fever ward that the recovery of patients after operations was often retarded and that sometimes, indeed, it led to fatal results! The ward thus vacated was used for operation cases. It is somewhat difficult to find an adequate explanation of the action of the Board in erecting a new wing when a number of the beds in the hospital were unoccupied, and even the allowance provided by Government for the treatment of sailors scarcely seemed to justify this further outlay on construction.

Although the finances of the Infirmary had been subjected to considerable strain in connection with the early epidemics of fever, the prospective disposal of the High School, at the head of the High School Wynd and in close proximity to the hospital, compelled the managers in 1827 to face some financial sacrifice in order to protect the amenity of the Infirmary. The growth of the New Town had accentuated the need of establishing a school for boys in a more convenient situation than that provided at High School Yards. Many of the residents in the New Town considered that a second school had become necessary and, accordingly, the Edinburgh Academy was incorporated by Royal Charter in 1823 and, under the management of a board of directors, had been opened on the north side of the city. The Town Council, however, being of the opinion that the community would be best served by placing their school in a more central position, eventually decided to rebuild the High School upon the southern aspect of the Calton Hill, a site certainly more salubrious and more picturesque than that which it had so long occupied. The foundation stone of the new school was laid in 1825 and, in 1829, the pupils were transferred to Thomas Hamilton's classic edifice on the Calton Hill.<sup>1</sup>

Prior to this event the managers of the Infirmary, realising that the old building would probably be sold, and fearing the possibility that no limitation would be placed upon the height of new houses erected on the site, petitioned the Lord Provost and Magistrates to place some restriction upon their elevation.<sup>2</sup>

<sup>1</sup> *The History of the High School of Edinburgh*, by William Steven, D.D. Edinburgh, 1848.

<sup>2</sup> Minute, Royal Infirmary, 22nd January 1827.

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They drew attention to the need of a constant circulation of fresh air around the hospital and referred to the fact that some alarm had already been expressed in consequence of the height of the buildings previously erected between the Infirmary and University on the west side, and in Drummond Street on the south side of their property. If this were to be repeated on the east side, ventilation would be still further interfered with. When the school was eventually advertised for sale a committee of the Board of Management of the hospital were appointed to attend the proceedings; but the upset price being fixed at £9000 no offer was made.<sup>1</sup> A second upset price of £7750 again brought no response. Finally, in May 1829, the managers offered a sum of £7500 with the proviso that the Town Council would agree to pay the whole of the auction duty along with that on the feu charter. Although failing to obtain a rebate of more than half of the auction duty they purchased the property for the sum of £7609, nearly all of which, contrary to the provisions of the Charter, was provided by the sale of investments and from a cash deposit in the Bank of Scotland. In the following year a site adjoining the High School was also bought for £1300<sup>2</sup> so that the total sum withdrawn from the Capital Stock in connection with these transactions amounted to £8909, thus making a considerable drain upon the future annual revenue of the hospital derived from investments.

Having acquired the High School the managers decided to convert it into a surgical hospital, complaints having been made of the inconvenient overcrowding of the surgical wards in the original building. Plans were prepared and submitted for the consideration of the surgeons, and estimates for reconstruction of the building amounting to £3138 were accepted. In addition, an operating theatre capable of accommodating four hundred students was attached to the east wall of the building, so that the total expenditure upon the surgical hospital amounted to a sum slightly exceeding £12,000. In adapting the building for its new purpose many of the partitions

<sup>1</sup> Minutes, 5th May 1828, 20th April, 11th May and 27th July 1829.

<sup>2</sup> Minute, Royal Infirmary, 4th January 1830.



Photo by]

The Old Surgical Hospital opened in 1832: it was previously the High School erected in 1777 to replace the School of 1578 which occupied an adjacent site. The building is now used as the Department of Geography of the University

[Mr F. C. Inglis, Edinburgh



## OLD HIGH SCHOOL AS SURGICAL HOSPITAL

were removed, and a long corridor was constructed on each floor ; but the walls separating the corridors from the adjacent wards were not carried to the roof throughout their entire length, thus permitting of a better circulation of air between the wards, the corridors and staircase. Baths on improved principles were introduced and rooms were added for the use of nurses and resident house surgeons. The external walls were left untouched and, indeed, remain today as they were originally erected in 1777, solid and but little weathered with the passing of time.

In response to an appeal from Dr Carson, the Rector of the High School, a stone, on which were carved the Arms of the City and the dates of the reign of James VI, was removed from the east gable of the janitor's lodge for transference to the new High School. The stone had occupied a prominent place in the wall of the School built in 1578, and was therefore an interesting relic of bygone times and worthy of preservation in the new school on the Calton Hill.

While the surgical patients were still being entertained in the original Infirmary building, operations were not infrequently performed on Sunday morning during the hours of service at Lady Yester's Church on the opposite side of Infirmary Street.<sup>1</sup> The minister of the Kirk, a popular preacher and interested in the welfare of the students, attracted the more serious-minded who occupied the gallery in considerable numbers. When the clang of the Infirmary bell, signalling the commencement of an operation, resounded throughout the church, he deemed it wiser, as the result of experience, to stop his discourse and resume his seat in the pulpit till the unceremonious clatter of feet accompanying the rapid emptying of the gallery had ceased. The lure of the operating theatre prevailed over the eloquence of the preacher !

The Surgical Hospital was opened in November 1832 providing accommodation for seventy-two patients but, in the years following, the number of beds was increased to eighty and then to one hundred and three. All the surgical cases

<sup>1</sup> *Edinburgh Medical Journal*, vol. xxix, "Harveian Oration," 14th April 1884, by Alexander Keiller, M.D.

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were transferred to it with the exception of those patients suffering from erysipelas, so that separate medical and surgical houses were thus instituted.<sup>1</sup> Nearly forty years later, an inmate of the surgical house, a patient of Joseph Lister, has thus recorded his impressions of the hospital :—

And lo, the Hospital, gray, quiet, old,  
Where life and death like friendly chaffers meet

A tragic meanness seems so to environ  
These corridors and stairs of stone and iron,  
Cold, naked, clean—half workhouse and half jail.<sup>2</sup>

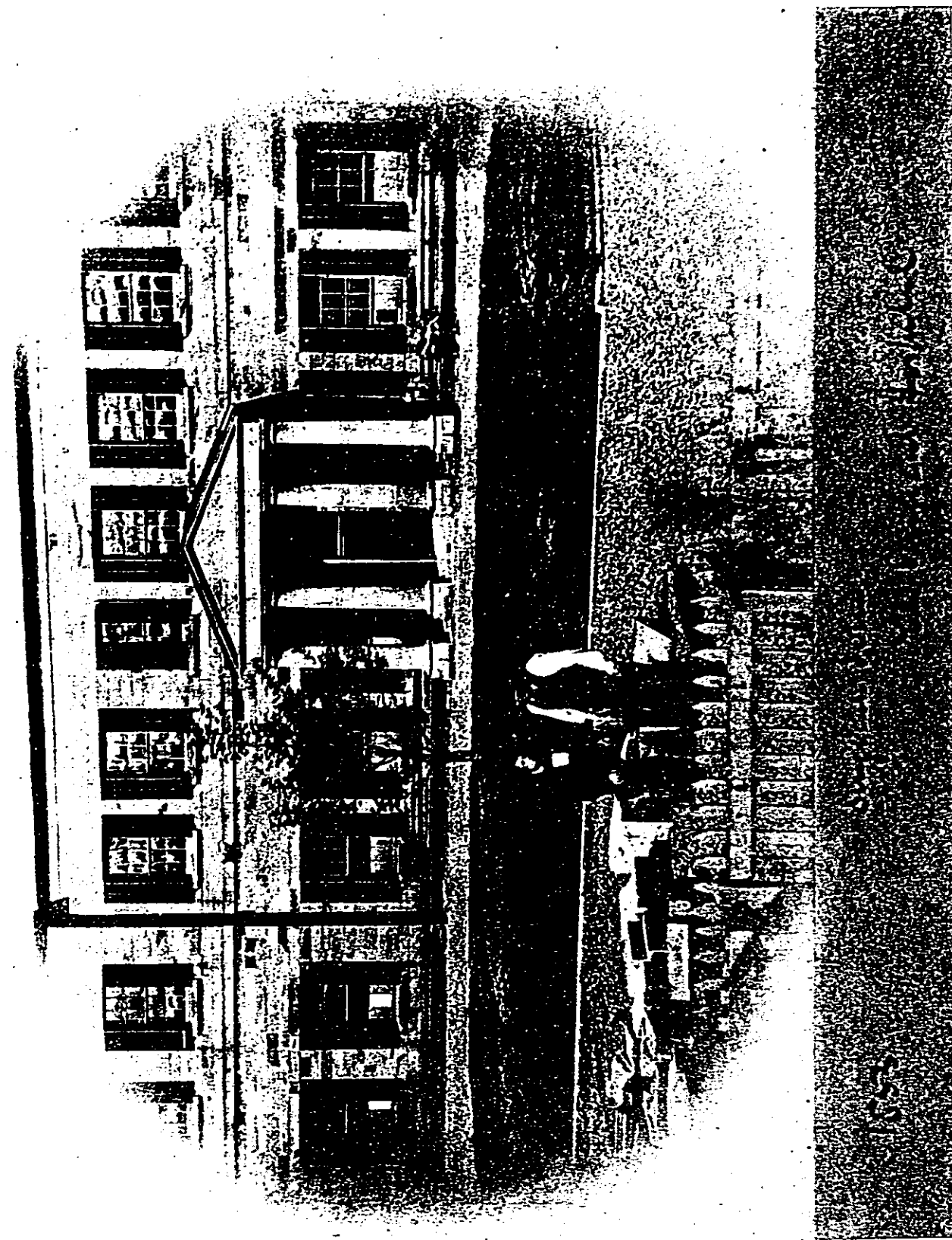
Following closely upon the purchase of the High School, with its conversion into a surgical hospital, the managers, in June 1833, came into possession of old Surgeons' Hall, built in 1697, and recently vacated by the surgeons on occupying their new premises in Nicolson Street. The managers of the Infirmary, apparently still obsessed by the fear that high buildings would be erected on the site of the Hall, then in a somewhat ruinous condition, if it were disposed of in the open market, made an offer for it and the adjoining ground. The property consisted of the Hall and the ground on its north frontage; the house built as a lecture room by John Bell, the surgeon; and the feu-duties of a number of houses in Surgeons' Square, of the annual value of £45. The College of Surgeons agreed to sell the several properties for a sum of £2100, taking £600 as the price of the Hall, £500 for John Bell's house and £1000 for the feu-duties at twenty years purchase.<sup>3</sup>

Slowly but surely the Infirmary was acquiring the whole of the area once occupied by the monastery and the other conventual buildings owned by the Black Friars in Pre-reformation days. Surgeons' Square was both the birthplace and the nursery of the extra-mural or extra-academical school of medicine. Although the Square has long lost its identity and its name is no longer written on the map of the city, the

<sup>1</sup> Minute, 17th January 1833.

<sup>2</sup> *A Book of Verses*, by William Ernest Henley. David Nutt. London, 1888.

<sup>3</sup> Minute, Royal Infirmary, 24th June 1833.



The façade of the Old Surgical Hospital during the period when James Syme was in charge of the wards : in the foreground is the figure of John, the surgical porter

(From an old photograph dated 1853, lent to the author by Mr. Andrew Whyte, the Steward, Royal Infirmary)



## LECTURES IN SURGEONS' SQUARE

area must always remain of historic interest to the medical profession of Edinburgh, as the early home of its school of anatomy and surgery. Occupying the ground on the east side of the Infirmary and the High School and between them and the Pleasance, the houses in the Square during many years served various useful purposes.<sup>1</sup> In Surgeons' Hall, Alexander Monro, *primus*, in 1720 as previously narrated, commenced his distinguished career as an anatomist and, in the Square in the later part of the eighteenth century, John Bell associated with his younger brother Charles, before the latter migrated to London, taught anatomy in its application to surgery. There too John Barclay and Robert Knox, during the professorship of the third Monro in the University, lectured on anatomy to many hundreds of students, and the teaching of surgery was in the hands of such able exponents as John Thomson, John William Turner and John Lizars, successively professors of surgery in the Royal College of Surgeons.<sup>2</sup> There Robert Liston and James Syme demonstrated anatomy with John Barclay and, as young men, together conducted a class of anatomy and surgery. Amongst others, at a later date, were Allen Thomson, John Struthers—afterwards Sir John—and William Sharpey teaching anatomy; and in the session of 1838-39 James Young Simpson delivered his first course of lectures on midwifery.<sup>3</sup>

After the purchase of Surgeons' Hall the managers granted a lease of the building to Robert Knox who, as the successor of Barclay, had at first occupied his rooms on the west side of the Square. As a teacher of anatomy, "*primus et incomparabilis*," Knox in 1833<sup>4</sup> was still attracting many students to his lecture theatre, but for him "the tide was on the ebb, and the growing animosities of his contemporaries rendered the ebb more and

<sup>1</sup> The area is designated as Surgeons' Square in Kincaid's Map of Edinburgh published in 1784; and in the city directory of the same year the Square is given as the address of a Mrs Porter who kept boarders: it is sometimes designated Surgeon Square.

<sup>2</sup> *The Edinburgh School of Surgery before Lister*, by Alexander Miles. A. & C. Black, Ltd. London, 1918.

<sup>3</sup> *The Edinburgh Medical Journal*, March 1882. "Some of the Older Schools of Anatomy," by Charles W. Cathcart, F.R.C.S.

<sup>4</sup> Minute, Royal Infirmary, 3rd August 1833.

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more apparent." In 1826, anatomical dissection had been made a compulsory part of the medical curriculum bringing with it increasing difficulty in securing the necessary material for the instruction of so many students. In Edinburgh the violation of graves, an old-standing means of supply, had been recently superseded by actual murder, as the crimes of the notorious Burke and Hare had disclosed to an astonished and indignant community. "Fifteen times the 'deil's luck' befriended them: the sixteenth turn of the wheel proved fatal to the murderers."<sup>1</sup> For twelve months they had carried on their nefarious traffic in the city till the murder of the old woman Docherty, whose body was recognised in Knox's dissecting room, revealed the tragedy. In 1829, William Burke was executed for the West Port murders and William Hare, having turned King's Evidence, fled the city. Knox never regained the confidence of the public and, a few years after his occupancy of Surgeons' Hall, he found it necessary to turn his back upon the scenes of his former triumphs. He died in London in 1862 in comparative destitution, "one of his last occupations being that of lecturer, demonstrator or showman to a travelling party of Ojibbeway Indians."<sup>2</sup>

In the course of the next few years the remaining houses in the Square were purchased. These included the house immediately to the west of the old Hall formerly used by John Thomson when teaching surgery. The accommodation in it had also proved useful during the recent epidemics of fever. Finally, the Hall of the Royal Medical Society adjoining John Barclay's anatomical theatre, the foundation stone of which had been laid by William Cullen in 1775, was purchased in 1851, thus preparing the way for further extension of the Royal Infirmary.

Today only two buildings remain to mark the site of the old Square; the greatly altered Surgeons' Hall, of three storeys instead of the original two, now the Headquarters of the University Officers' Training Corps and, in the north-east

<sup>1</sup> *The Sack-'em-Up Men*, by James Moores Ball, M.D. Oliver & Boyd. Edinburgh, 1928.

<sup>2</sup> *The Life of Sir Robert Christison, Bart.*, vol. i, p. 311. William Blackwood & Sons. Edinburgh and London, 1895.



South-west corner of Surgeons' Square: on the left is Surgeons' Hall, on the right the Hall of the Royal Medical Society, and in the centre the building with the pillars contained the Lecture Room of the anatomists, Barclay and Knox: in the building between it and Surgeons' Hall is the Lecture Room of John Thomson

(From a Drawing by Shepherd, published in 1829)

### JAMES SYME JOINS STAFF OF INFIRMARY

corner a tall and renovated house which, in its time, had served various purposes, but is now part of the establishment of the University Settlement at High School Yards.

The opening of the Surgical Hospital in the autumn of 1832 and the transference of the surgical patients from the old building necessitated a rearrangement of the beds and a new distribution amongst the members of the staff. It may be recalled at this point that, in 1800, the old system of attendance by rotation had been abrogated and six surgeons were elected by the managers; three groups of two, each in succession, took charge of the wards for a period of two years, the individual surgeons, however, being eligible for reappointment four years after the expiry of their previous period of service. But in 1818, although maintaining the same number of surgeons, a subdivision of the staff was made into three classes, the Consulting, the Acting, and the Assistant Surgeons, two being placed in each group. At the end of every biennial period thereafter, a change was made in each group: the senior consulting surgeon retired, the senior acting surgeon became a consulting surgeon, and the senior assistant surgeon was promoted, but this latter step "was not to be regarded as a matter of course, far less of right."<sup>1</sup> A new junior assistant surgeon was then elected. In the event of any vacancy occurring from death or resignation during the biennial period, it was filled by election. This was still the method of staffing when the Surgical Hospital was opened.

While the managers were considering the allocation of the beds, James Russell announced his resignation of the chair of clinical surgery<sup>2</sup> and James Syme was appointed his successor. In a letter to the Infirmary dated 23rd March 1833, intimating his election, Syme stated that an offer of his services to the hospital might facilitate the arrangements which would be necessary, in case it was the desire of the managers that the course of lectures delivered by the occupant of the chair should continue to be connected with the Royal Infirmary. As

<sup>1</sup> Minute, Royal Infirmary, 14th December 1818.

<sup>2</sup> Chapter IX, p. 145.



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"mature and anxious deliberation" by the Board was necessary in reaching a final decision upon the plans to be adopted in the Surgical Hospital, the reply of the managers was not communicated to the Senatus Academicus till 8th May, when it was presented in the following terms :—

The Managers of the Royal Infirmary beg leave to assure the Senatus that they feel the same desire to maintain an intimate connection between the Hospital and the University as their predecessors have constantly done. In regard to the present application they have to inform the Senatus, that they consider that it is not only *ultra vires*, but would be improper were it not so, to form any permanent arrangement for the Professor of Clinical Surgery, or put any part of the establishment committed to their superintendence beyond their control.

They beg leave, however, to acquaint the Senatus that they have appointed Mr Syme, the Professor of Clinical Surgery, Junior Assistant Surgeon, by which he will, if nothing unforeseen occur, be connected with the Hospital for a long series of years; and in consequence of his filling the Chair of Clinical Surgery in the University they propose to put immediately under his charge three of the smaller wards capable of containing thirty beds, with the privilege of giving clinical lectures upon such patients as may come under his care.

It must be left for the Managers of the day to determine what arrangement ought to be made for the Professor of Clinical Surgery when he shall cease to be an Assistant Surgeon, by which time they shall have had the experience of some years to guide them. The Managers think it necessary to add that they at all times reserve to themselves the power of making such changes in their arrangements as any emergency may require.

Syme expressed his satisfaction with what had been done and, as junior assistant surgeon in the Infirmary, he commenced his distinguished career in the chair of clinical surgery. As an old High School boy he was to become a "Master" in the building in which he had formerly sat as a pupil. Although only thirty-three years of age when appointed to the chair, he had already established his fame as a surgeon. Foiled, in 1829, in his attempt to obtain an assistant surgeoncy in the Infirmary, Syme founded his surgical hospital in Minto House,



THOMAS ANNANDALE  
Surgeon to the Royal Infirmary and Regius  
Professor of Clinical Surgery, Edinburgh



JAMES SYME  
Surgeon to the Royal Infirmary and Regius  
Professor of Clinical Surgery, Edinburgh



ROBERT LISTON  
Surgeon to the Royal Infirmary and  
Professor of Clinical Surgery, University  
College, London

(Photographs of the Busts in the Board Room of the Royal Infirmary, by kind permission of the Managers)



## JAMES SYME'S SURGICAL COLLEAGUES

once the town residence of the Elliots of Minto. A three-storeyed building surrounded by garden, it stood on the east side of Argyle Square, overlooking the Cowgate and within a stone's throw of the University.<sup>1</sup> There he gathered around him an ever increasing number of patients and students, enhancing his reputation as an operating surgeon and as a teacher.

When he joined the surgical staff of the Royal Infirmary in 1833, his colleagues were Sir George Ballingall and John Campbell, the consulting surgeons; Robert Liston and John Lizars, the acting surgeons, along with John William Turner, the professor of systematic surgery, as the senior assistant surgeon. Turner, promoted acting surgeon, died in November 1835 and the vacancy on the assistant staff was filled by the appointment of William Fergusson. In the hands of these accomplished men, all of whom had served their apprenticeship in the dissecting room, following the tradition of the Edinburgh School at that period, surgery then stood on a very high plane in Edinburgh. It was still the pre-anæsthetic period when a combination of coolness, dexterity and rapidity of action was essential for the performance of a successful surgical operation. It was still the pre-Listerian age. The range of surgery was thus restricted, and major operations consisted largely in amputation of limbs, in the removal of stone from the bladder and in the ligation of arteries in the treatment of aneurysm, an operation which is now relatively infrequent. It was the period too when infections frequently supervened on surgical interference, a complication which often terminated in the death of the patients from hæmorrhage, septicæmia or pyæmia.<sup>2</sup>

Sir George Ballingall, a man of military bearing and a capable surgeon, knighted on the occasion of the accession of William IV, had served as a surgeon in the army in France and in the Far East. Elected to the staff of the Infirmary

<sup>1</sup> Old Minto House was demolished when a city improvement scheme carried Chambers Street through Argyle Square. The present Minto House is a comparatively modern building now occupied by departments of the University.

<sup>2</sup> *Joseph, Baron Lister, Centenary, 1827-1927*. "Before the Dawn," by Alexander Miles, M.D., LL.D. Oliver & Boyd, Edinburgh, 1927.

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in 1822, he was appointed regius professor of military surgery in the University, retaining the chair and his position as consulting surgeon in the Infirmary till his death in 1855.<sup>1</sup> John Campbell was consulting surgeon till 1838 when he joined the Board of Management of the hospital. A good and reliable surgeon, he was never classed like some of his colleagues as brilliant. Robert Liston and John Lizars were men of a different stamp. Liston, whose bust has a place in the Board Room of the Infirmary today, was a son of the manse: he has been described as "a tall man, powerful in form, dressed in a dark bottle-green coat with velvet collar, double-breasted shawl vest, grey trousers and Wellington boots," and one of the boldest and most dexterous operators of his day. While still a student and acting as one of the surgeons' clerks he had criticised the surgical practice of the hospital and, being found guilty of interfering improperly with the arrangements of the department, he was prohibited from entering the wards and the operating theatre. Some years later he tendered his apology to the managers and was reinstated. When appointed assistant surgeon in 1828 his reputation was already established but, being defeated by Syme in the contest for the chair of clinical surgery in 1833, he resigned his position as acting surgeon in the following year and accepted the chair of clinical surgery at University College, London, and the surgeoncy at the North London Hospital, later named University College Hospital. John Lizars who held the professorship of surgery in the College of Surgeons of Edinburgh was "bold and fearless, almost reckless, as an operator." He was the first in Scotland to tie the innominate artery in the treatment of an aneurysm and the first in Britain to perform ovariectomy. John William Turner was "a timid, shy man who seemed fitted by nature for anything rather than the duties and responsibilities of an operating surgeon." In William Fergusson the hospital secured for five years the services of a remarkably dexterous and skilful surgeon. A man of handsome and commanding presence, he became, after Liston's death in 1847, the leading operating surgeon in London, as in

<sup>1</sup> The chair of military surgery was abolished in 1856.

## SIR CHARLES BELL ON STAFF OF INFIRMARY

1840 Fergusson had left Edinburgh, having accepted the chair of surgery at King's College, London, and the surgeoncy at King's College Hospital. Created a Baronet in 1866 he was made Serjeant-Surgeon to Queen Victoria. A word-picture of him in the operating theatre of King's College Hospital has been left to posterity: it describes him as a tall dignified figure, carefully dressed in black frock coat, wearing a black bow tie and with his feet encased in "Bluchers"—half-boots, no laces or buttons, square-toed and highly polished. With a white apron tied over his coat and, with his voluminous wrist-bands turned well upwards, he was then ready to commence operations.<sup>1</sup>

With the departure of Liston and Fergusson from Edinburgh London gained the services of two of the most distinguished surgeons of the period. But James Syme remained in his native city, "in all supreme, complete in every part."<sup>2</sup>

For a brief span one further contemporary figure, Sir Charles Bell, took his place on the stage of the Royal Infirmary, pre-eminent amongst his colleagues, not as a brilliant operating surgeon, but as an anatomist, physiologist, pathologist, surgeon and artist, to whom the term genius may be assuredly applied. Reference has already been made to his migration as a young man from Edinburgh to London, in 1804.<sup>3</sup> There, as a pioneer, "he formulated a working conception of the nervous system at a time when all was in a state of chaos, a conception which stands today and has served as a basis of all subsequent inquiry and progress."<sup>4</sup> On the death of J. W. Turner in 1835, Charles Bell was invited to fill the vacant chair of systematic surgery at Edinburgh, and his appointment was received with general acclamation. His departure from his beloved Middlesex

<sup>1</sup> *British Masters of Medicine*, edited by Sir D'Arcy Power, K.B.E. London: "The Medical Press and Circular," 1936, p. 104. Article by Mr Cecil P. G. Wakeley, F.R.C.S.

<sup>2</sup> *Horæ Subsecivæ*, by John Brown, M.D., LL.D. A. & C. Black, London, 1897. Quotation from Joseph Lister's estimate of his master.

<sup>3</sup> Chapter VIII, p. 129.

<sup>4</sup> *Edinburgh Medical Journal*, 1935, vol. xlii, p. 252. Professor Edwin Bramwell, "Harveian Oration," 15th June 1934.



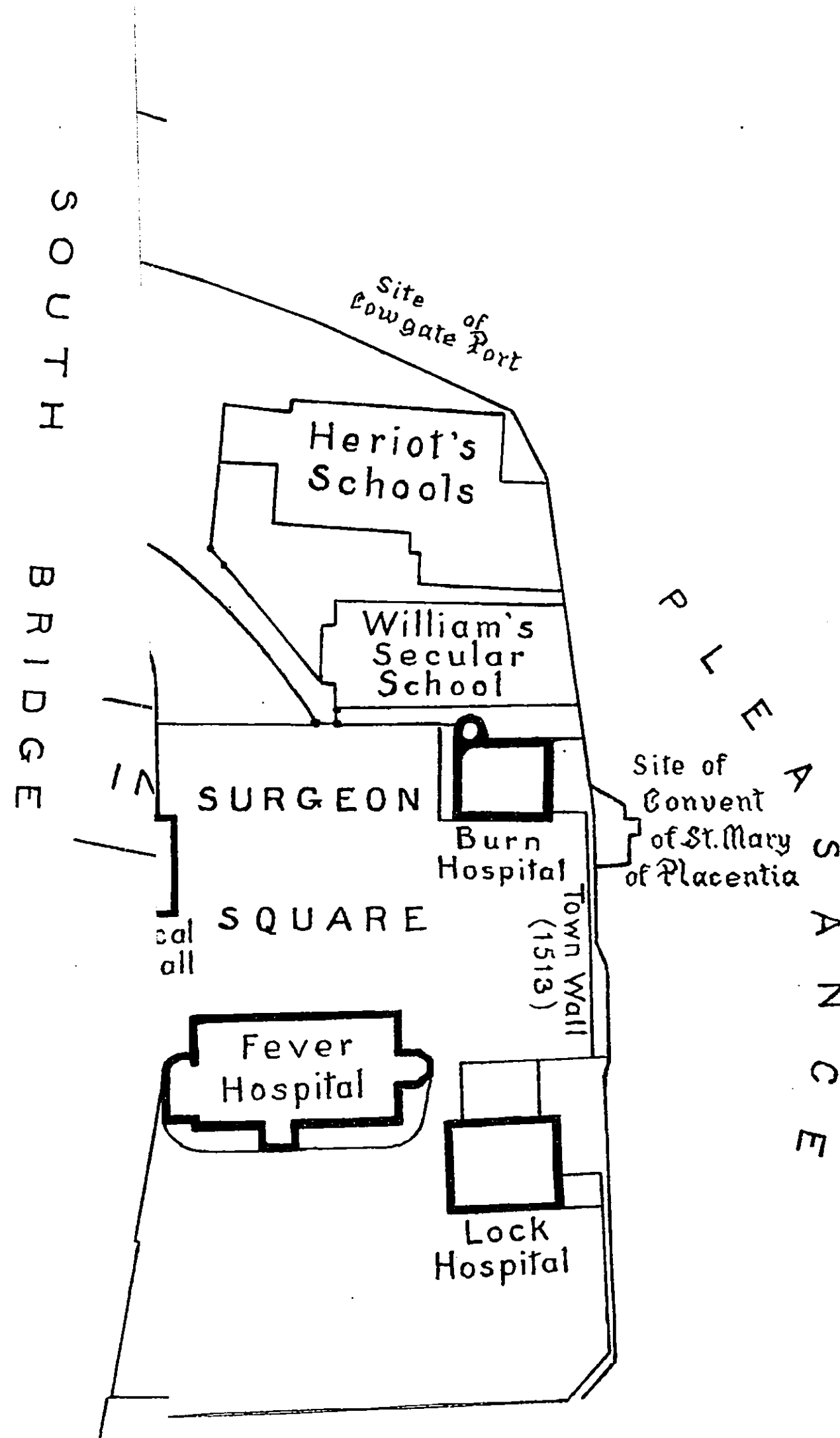
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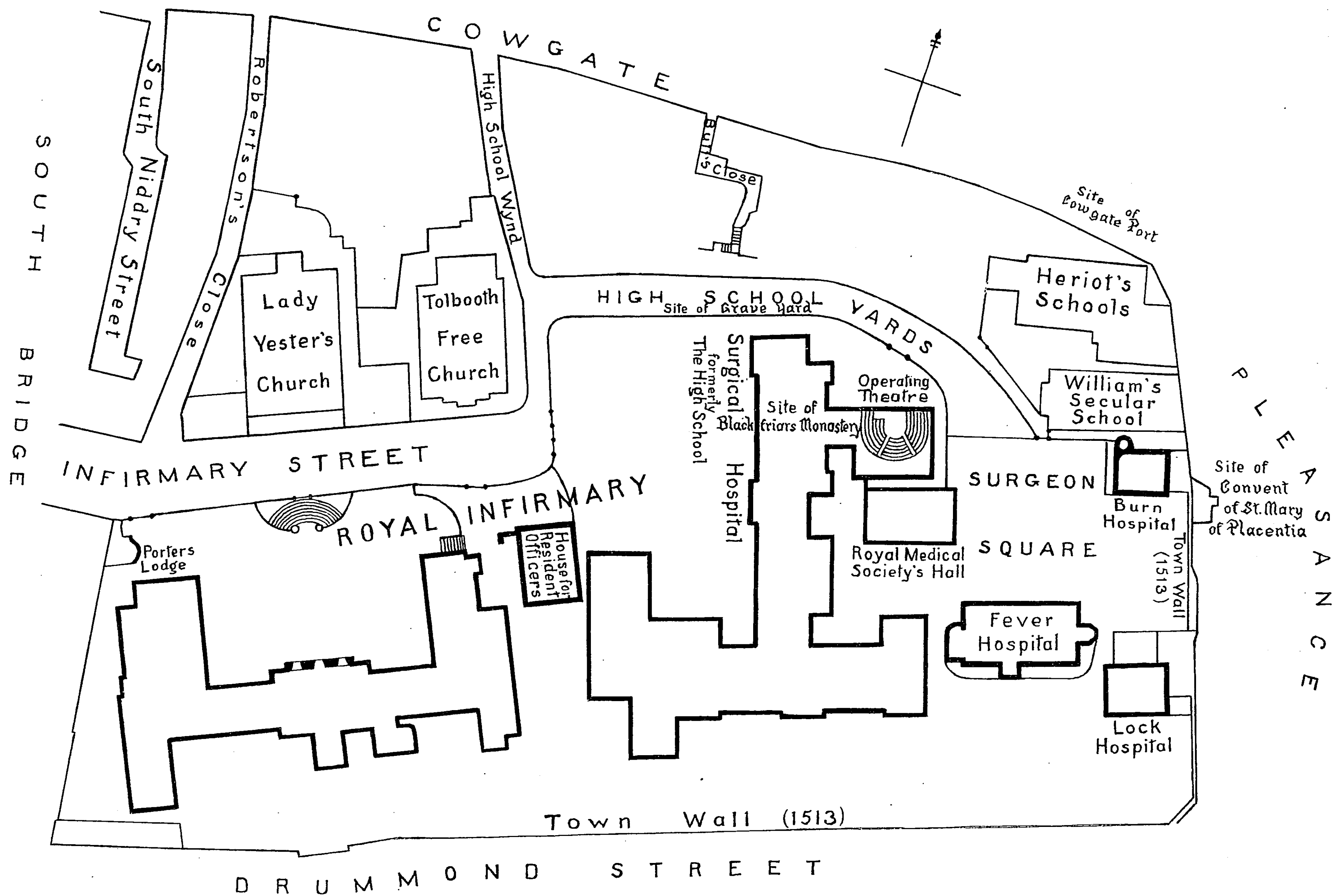
Hospital, at the very commencement of its life as a medical school, and his resignation of the surgical chair in the University of London were regarded by his colleagues in the nature of a calamity ; but the step was not lightly undertaken.

Bell was then sixty-two years of age, too old to make a fresh start in life : but, "London," he wrote to his brother, "is a place to live in, not to die in," and the opportunity thus offered to return to his native city must have made a very strong appeal. On his return to Edinburgh in 1836, Charles Bell was elected one of the consulting surgeons to the Royal Infirmary and, along with his colleagues Sir George Ballingall and John Campbell, he served the hospital in that capacity till his death in 1842. He died at Worcester while on a visit to friends and was buried in Hallow Churchyard.

When Syme in due course became one of the acting surgeons to the Infirmary the managers proceeded to re-distribute the surgical beds, then 103 in number : 43 were given to Syme, 40 to the senior and 20 to the junior acting surgeon.<sup>1</sup> As there were then 280 beds in the medical hospital the full complement of beds in the Infirmary was 383, but all were not in daily occupation. In 1841, as the surgeons were unanimous in their opinion that the wards were overcrowded, the number of surgical beds was reduced by thirty, thus reverting to the accommodation for which the surgical hospital had been designed. An improved system of ventilation was at the same time introduced, this and the reduction of beds being very necessary alterations when septicæmia and pyæmia were so prevalent in the surgical wards of the hospital. It is unfortunate that in the annual report of patients under treatment in the Royal Infirmary no differentiation of medical and surgical cases was made till the year 1849-50 ; but in that year, of the 3633 patients under treatment, 1764 were ordinary medical cases, 1349 were surgical, and 520 were fever cases. Although there was no general epidemic in the city, the number of patients suffering from infectious fevers still remained abnormally high.

<sup>1</sup> With the promotion of the professor of clinical surgery to the position of acting surgeon there were thus three acting surgeons.





PLAN OF INFIRMARY AREA OF THE CITY IN 1853 AFTER THE ERECTION OF THE NEW SURGICAL HOSPITAL



## NEW SURGICAL HOSPITAL OPENED

It soon became necessary to consider the erection of a second surgical hospital, the construction of a new kitchen, laundry and washing-house to serve the needs of the whole establishment, an extensive drainage system and much needed repairs upon the medical hospital, then more than a century old. For these and other reasons the financial situation continued to cause anxiety, as the future maintenance of a greatly enlarged Infirmary could not be viewed with equanimity. In December 1848, Syme had drawn attention to the deficiency in the surgical accommodation, so that patients requiring relief had to be rejected while convalescents were often prematurely discharged. The beds in the Surgical Hospital, therefore, had been supplemented by utilising the fever hospital—the old Surgeons' Hall—by erecting a shed in Surgeons' Square and by transferring the cases of burns from the existing surgical wards to a house on the east side of the Square, which became designated the Burn Hospital.<sup>1</sup> The Lock patients also were housed in the building which formerly contained John Bell's lecture room.

Plans for the New Surgical Hospital and the other extensions were prepared by Mr David Bryce, architect, and a building fund was opened: larger legacies and donations followed the announcement of the projected new hospital. The site selected was situated on vacant ground to the east of the Medical Hospital between it and Surgeons' Hall. The building was of three floors with attics: its south frontage faced Drummond Street and, on its northern aspect an extension was constructed so as to communicate with the first Surgical Hospital, the waiting rooms being placed in the portion connecting the two buildings. Accommodation was thus provided for 128 surgical beds along with additional 19 beds for patients suffering from diseases of the eye.

The hospital was opened on 30th April 1853. This permitted of a rearrangement of the whole surgical department with the assembling of the patients in two buildings structurally

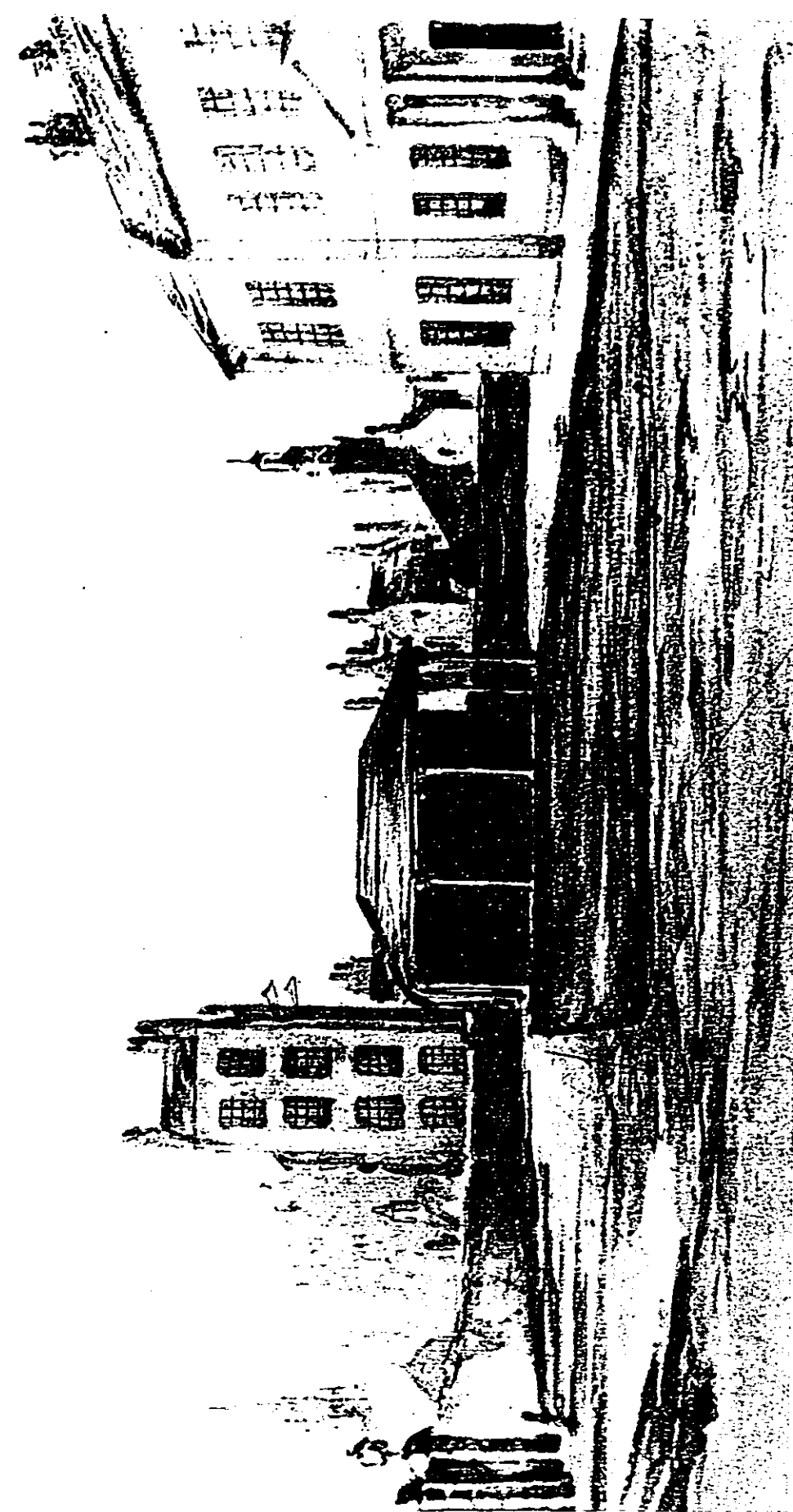
<sup>1</sup> Burn Hospital was No. 9 Surgeons' Square and was formerly called the Cottage; it was the janitor's house in the time of the High School, and as stated on p. 187, the building is now part of the establishment of the University Settlement at High School Yards.

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adapted for their care and treatment, while the various out-buildings above described were dispensed with. As ten of the beds in the old Surgical Hospital were reserved for special emergencies or as "relief" beds, when a ward or wards required to be cleaned, there remained 62 beds in daily use in the old High School building. In the New Surgical Hospital, provision having been made for 128 surgical patients, there was a total of 190 available beds in the two hospitals. The professor of clinical surgery, ranking as an acting surgeon, was given 72 beds—62 in the old Surgical Hospital and 10 in the new building: the remaining 118 in the New Surgical Hospital were allotted to the senior and junior acting surgeons-in-ordinary in the proportion of 72 to the former and 46 to the latter. The patients suffering from affections of the eye were at first placed under the care of the surgeons admitting them but, in 1855, William Walker was appointed the first ophthalmic surgeon to the Royal Infirmary. Walker became surgeon-oculist to Queen Victoria and was president of the Royal College of Surgeons of Edinburgh in 1871. He commenced a course of lectures on diseases of the eye in 1858. Thus was established the second of the special departments in the Infirmary.<sup>1</sup>

James Dunsmure, senior, and Richard James Mackenzie were the two acting surgeons-in-ordinary when the hospital was opened, James Spence and James Donaldson Gillespie being the assistant surgeons. Mackenzie was a surgeon of great promise but his career was unfortunately cut short by his premature death at the early age of thirty-five. Having volunteered for service in the Crimea he died of cholera in September 1854, shortly after the battle of the Alma. His place as acting surgeon was filled by the promotion of James Spence: "a tallish, slightly stooping figure with a slow semi-swinging walk, his rather pronounced features, with their thoughtfully anxious, half-sad expression, earning for him the soubriquet of 'dismal Jimmy.'" "I shall never forget," writes one of his contemporaries, "when walking on one occasion with William Walker, the ophthalmic surgeon, we

<sup>1</sup> Diseases peculiar to women in 1850.



The forecourt of the Old Surgical Hospital, formerly the High School, with the carriage shelter in the centre of the picture: on the left is the spire of the Tron Church, on the right that of St. Patrick's Roman Catholic Church. The tall house stands at the corner of High School Wynd and High School Yards

(Reproduced from a water-colour sketch lent to the author by Professor Sir John Fraser, K.C.V.O.)



## ALLOCATION OF SURGICAL BEDS

met Spence with his most dismal expression, all clothed in black and crape, 'Seeing some of your work home, Jamie,' said Walker, and a grim smile illuminated his features as he shook his stick at us and passed on." As a demonstrator of anatomy with Alexander Monro, *tertius*, for seven years, and afterwards as a lecturer on anatomy at Surgeons' Square, Spence laid the foundation of a perfect knowledge of anatomy which pre-eminently distinguished his work as an operator in later years.

The projected arrangement of beds in the New Surgical Hospital was slightly modified before the house was actually ready for occupation, in consequence of a petition in 1849 from the medical faculty of the University requesting that James Miller, the professor of systematic surgery, should have beds permanently committed to his care, an application which met with considerable opposition in more than one quarter and which was refused on more than one occasion.<sup>1</sup> James Miller, a son of the manse and a native of Angus, had studied Arts at St Andrews and afterwards, as a medical student at Edinburgh, had been a pupil of Liston and his private assistant. Appointed assistant surgeon to the Infirmary in 1840, he was promoted acting surgeon in 1842 and, in the same year, succeeded Sir Charles Bell as professor of surgery. Handsome in appearance, a fluent and eloquent speaker, he was a popular and attractive lecturer and as a hospital surgeon a bold and dexterous operator. Having completed his period of five years as surgeon and having thrice been given an extension of one year, the managers then resolved that in justice to the other surgeons on the staff no further extension could be allowed: they accordingly elected him consulting surgeon. In the autumn of 1852, James Miller renewed his application for beds on the ground that it was necessary for the efficient discharge of his duties as a teacher that he should have patients in the hospital, whereby he might quote to his pupils examples of surgical diseases. He made no claim to act as a clinical teacher in the hospital or to interfere with the

<sup>1</sup> Minutes, Royal Infirmary, 31st December 1849, 14th October 1850 and 20th September 1852.

## EXTENSION OF THE ROYAL INFIRMARY

duties of his colleague, the professor of clinical surgery. After considerable discussion the Board of Management finally resolved by a majority to grant the request, allotting to the professor of surgery three wards or eighteen beds in the New Surgical Hospital, twelve being deducted from the charge of his professorial colleague and six from the senior acting surgeon-in-ordinary.

This action of the Board of Management was adversely criticised by some of the Fellows of the Royal College of Surgeons and, at a subsequent meeting of the College, it was decided by a majority of those voting to memorialise the managers of the Infirmary.<sup>1</sup> In their memorial attention was drawn to the fact that the three wards allotted to James Miller would no longer be available for clinical teaching and that the permanent establishment in the hospital of the two professors of surgery would tend to injure the interests of the extra-academical school. But the managers, conscious that there was nothing in the old agreement of 1738 between the Infirmary and the Incorporation of Surgeons to prevent their making any reasonable change which they deemed advisable, considered that it was within their power to appoint the professor of systematic surgery to the charge of a small number of beds. No further action was taken and the professors of systematic surgery continue to enjoy the privilege of the charge of wards during the whole tenure of their professorship. Many years later, in 1905, the University Court on the recommendation of the faculty of medicine and the Senatus appointed the professor of systematic surgery as a lecturer in clinical surgery, thus enabling him to give a separate course of clinical lectures in the Infirmary qualifying for graduation. The managers gave their approval to this step.<sup>2</sup> In 1854 the period of office of the acting surgeons-in-ordinary was extended from five to eight years, and subsequently in 1860 to ten years.

A few years prior to the opening of the New Surgical Hospital two events occurred almost simultaneously, neither of which can be omitted from the history of the Infirmary.

<sup>1</sup> Minute, Royal Infirmary, 11th July 1853.    <sup>2</sup> *Ibid.*, 4th September 1905.

## CHLOROFORM ANÆSTHESIA INTRODUCED

After Liston's death in London in 1847, Syme was offered the vacant chair of clinical surgery at University College. It was a great honour and the position presented many attractions, but it was not without a struggle that Syme with his unrivalled position as a surgeon in Scotland finally accepted the offer. He left Edinburgh on 13th February 1848, only to return, however, five months later. Although warmly welcomed by his colleagues and students in London he found that, in addition to his duties in the chair of clinical surgery, those of the chair of systematic surgery were also to be imposed upon him. Consequently he tendered his resignation, returned to Edinburgh on 3rd July and was reappointed to the chair of clinical surgery. In a letter, dated 6th July, to the Managers of the Infirmary he wrote, "If reinstated in the Royal Infirmary it will be my earnest and increasing endeavour to prove deserving of your confidence." As the arrangements made in the hospital after his retirement had been merely of a temporary character his request was immediately granted and he was reappointed surgeon to the Infirmary.

The other event exercised a much wider influence on the future course of the practice of surgery involving, as it did, the introduction of the use of chloroform as a general anæsthetic. In the first half of the nineteenth century surgeons were giving considerable thought to the problem of relieving or preventing pain during operations. The effect produced on the mind of the youthful onlooker at some of these grim scenes may be gauged by quoting the impression left on Charles Darwin while a student of medicine at Edinburgh in 1828. In his autobiography he relates how he "attended on two occasions the operating theatre in the hospital at Edinburgh and saw two very bad operations, one on a child, but I rushed away before they were completed. Nor did I ever attend again for hardly any inducement could have been strong enough to make me do so; this being long before the blessed days of chloroform. The two cases fairly haunted me for many a long year." In 1798 Sir Humphry Davy experimented upon himself with nitrous oxide, "the laughing gas,"



## EXTENSION OF THE ROYAL INFIRMARY

and believed that it might be used to deaden pain in surgical operations. In 1828, Henry Hickman a young practitioner in Ludlow successfully anæsthetised animals with the same gas, but his work being disregarded no further advance was made, until in America in 1844 Horace Wells employed nitrous oxide in dental surgery. In 1842, Crawford W. Long and Charles T. Jackson independently recognised the anæsthetic property of the vapour of sulphuric ether and, in 1846, William T. Morton of Boston extracted teeth painlessly under its influence. Early in the century chloroform as a chemical compound had been discovered by several observers and in 1847 Flourens, the French physiologist, demonstrated in his experiments on animals that it could induce general anæsthesia by inhalation. In the same year, James Young Simpson, in his endeavour to find a drug free from some of the inconveniences and objections pertaining to ether, which he had been using following Morton's success, experimented on himself in his house, 52 Queen Street, with the vapour of chloroform along with his assistants, James Matthews Duncan and George Keith.

Satisfied that in chloroform he had obtained a drug which would serve his purpose in maternity practice, Simpson administered chloroform on a pocket-handkerchief to the first patient anæsthetised with the vapour in the Royal Infirmary, with James Miller as the operator. Amongst those in the crowded theatre on that memorable occasion was Professor Dumas of Paris, one of the French chemists who had established the chemical composition of the drug. The patient, a boy about five years of age, after a few inspirations ceased to cry or struggle and passed into a sound sleep. The shaft of one of the bones of the forearm—the necrosed radius—was removed through a long incision without the slightest evidence that pain had been inflicted. The child was then removed to the ward, sleeping quietly and, half an hour afterwards, he awoke “with a clear merry eye and placid expression of countenance wholly unlike what is found to obtain after ordinary etherisation.” The boy, who could speak only the Gaelic, on being questioned by a Gaelic interpreter found

## CHLOROFORM AS AN ANÆSTHETIC

amongst the students, stated that he had felt no pain nor was he conscious of any on awaking.<sup>1</sup> Robert Liston, who had performed the first painless operation in England under ether anæsthesia, thus wrote to James Miller in November 1847, “The chloroform is a vast advance upon ether. I have tried it with perfect success. . . .”

<sup>1</sup> *Memoir of Sir James Y. Simpson, Bart.*, by J. Duns, D.D. Edinburgh : Edmonston & Douglas, 1873.