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LISTER

1827-1912

A HOUSE SURGEON'S MEMORIES

BY

STCLAIR THOMSON


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King's College Hospital Gazette
October, 1937

LISTER

1827—1912



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INTRODUCTION.

As Editor of the *King's College Hospital Gazette* I have had the pleasant task of preparing this separate Reprint. I regret some delay in completing it, but this has made possible the addition of several new illustrations and the correction of a few errors.

For his considerable help and patience I have to thank Sir StClair Thomson, who has throughout taken the greatest interest in the Reprint, and given me much useful advice on every aspect of the matter.

Captain Johnston-Saint, Curator of the Wellcome Historical Medical Museum, has given much valuable assistance in the obtaining of the pictures, and has very kindly given us copies of, and permission to reproduce, most of them. The Clarendon Press have kindly allowed us to reprint three pictures from Godlee's "Life of Lord Lister," and Messrs. T. & R. Annan and Elliott & Fry have each allowed us to reprint a picture of Lord Lister.

Finally, I must thank the Printers, Messrs. H. B. Skinner & Co., Ltd., who have been very considerate in keeping the type standing while these additions and corrections have been made, and Mr. Davey for his technical help at all times.

A. H. BAYNES.

April, 1938.

INTRODUCTION

A. H. Hays of the King's College Hospital, London, has been the constant task of preparing this general history. I regret some delay in completing it, but this was due to the addition of several new illustrations and the correction of a few errors.

For his considerable help and assistance I have to thank Mr. Alfred Thompson, who has throughout shown the greatest interest in the history, and given me much useful advice on every aspect of the matter.

Thomas Hodgkin Esq., Curator of the Wellcome Museum of Natural History, has given much valuable assistance in the obtaining of the pictures, and has very kindly given me copies of, and permission to reproduce, most of them. The Canadian Press have kindly allowed me to reprint their pictures from Mr. Hays's "Life of Lord Lister," and Messrs. T. & R. Bland and Elliot & Fry have each allowed me to reprint a number of Lord Lister's letters.

I must, I now thank the Publisher, Messrs. H. K. Lewis, Ltd., who have been very co-operative in getting the book printed, while their editorial and production staff have been kind, and Mr. Dwyer for his personal help in all times.

A. H. Hays

1915



(1877—1893.)

LONDON.



(1861—1869.)

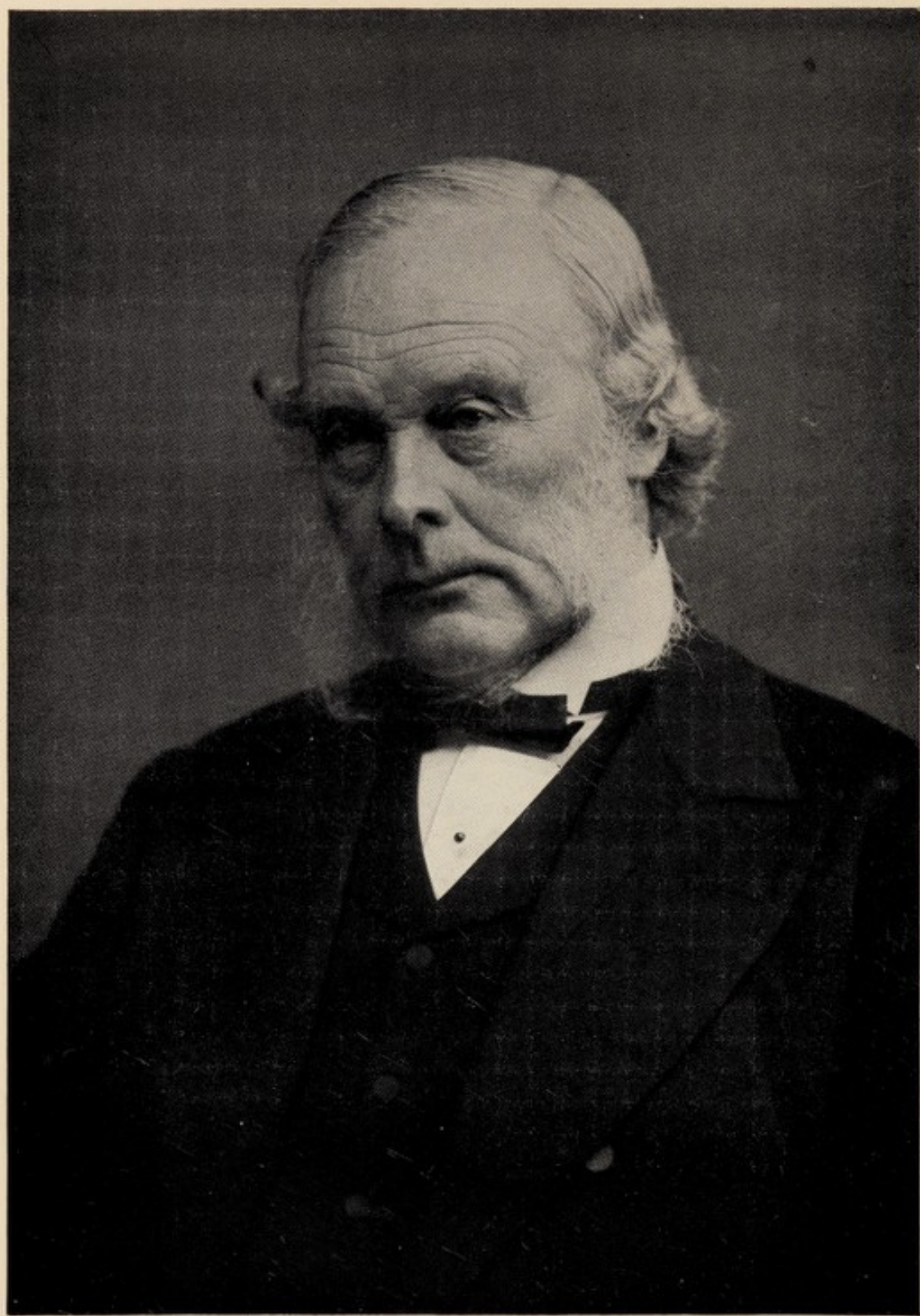
GLASGOW.



(1869—1877.)

EDINBURGH.

LISTER.



Lister, aged 69.

JOSEPH LISTER.

1827—1912.

CHRONOLOGY.

Born April 5th, 1827, at Upton, Essex.

London, 1st Period : 1844-1853.

Entered University College, London, 1844 (*aet.* 17).

Graduated B.A., University of London, 1847 (*aet.* 20).

Commenced the study of Medicine, 1848 (*aet.* 20).

House Physician and House Surgeon, University College Hospital, 1851 (*aet.* 24).

Graduated M.B., University of London, 1852 (*aet.* 25).

Fellow of the Royal College of Surgeons of England, 1852.

Edinburgh, 1st Period : 1853-1860.

House Surgeon to Professor Syme, 1854-1855 (*aet.* 27-28).

Fellow of the Royal College of Surgeons of Edinburgh, 1855.

Lecturer on Surgery, Edinburgh School of Medicine, 1855.

Assistant Surgeon, Royal Infirmary, 1856 (*aet.* 29).

Glasgow : 1860-1869.

Regius Professor of Surgery, University of Glasgow, 1860 (*aet.* 33).

Surgeon to Royal Infirmary, Glasgow, 1861 (*aet.* 34).

Edinburgh, 2nd Period : 1869-1877.

Regius Professor of Clinical Surgery, University of Edinburgh, 1869 (*aet.* 42).

Surgeon, Royal Infirmary, Edinburgh, 1869.

London, 2nd Period : 1877-1900.

Professor of Clinical Surgery, King's College, 1877-1892 (*aet.* 50-65).

Surgeon to King's College Hospital, 1877-1893.

President of the Royal Society, 1895-1900 (*aet.* 68-73).

President of the British Association for the Advancement of Science, Liverpool, 1896.

Died February 10th, 1912, at Walmer, Kent (*aet.* 85).

JOSEPH LISTER :

PERSONAL MEMORIES *

OF

SIR STCLAIR THOMSON,

House Surgeon to Lister in 1883 in King's College Hospital.

1870. "During the siege of Paris (1870-71), Nélaton, in despair at the sight of the death of almost every patient after operation, declared that he who could conquer purulent infection would deserve a statue made of gold" ("Life of Pasteur").

1894. "Suppuration occurring in a wound made by a surgeon through unbroken skin is due to some oversight on his part" (W. Watson Cheyne).

As we all know, Robert Browning spent many years of his life in Italy and died there. Some years previously another great poet, Percy Bysshe Shelley, had been drowned off the coast of Leghorn. His body was cremated on the shore at Viareggio, but his heart—which the fire did not consume—was buried in the Cimitero degli Allori, inside the ancient wall of Rome. All this occurred in 1823. A good many years afterwards Browning met a friend who had known Shelley well, and he was so impressed with the thought that he was looking into the eyes of a man who had actually gazed on Shelley, in his daily habit as he lived, that he wrote of it in these lines :

*"And did you once see Shelley plain,
And did he stop and speak to you?
And did you speak to him again?
How strange it seems and new!"*

Introductory.

Now it seems to me that as I am one of the few, the happy few, the band of fast disappearing pupils of Joseph Lister, it is very meet, right, and my bounden duty to put on record some memories which remain after being his pupil, dresser, clerk, and house surgeon more than fifty years ago. Indeed, the very day in 1877 that Lister took up the office of Surgeon to King's College Hospital I entered King's College as first-year student and so I had, in a modest position, the opportunity of observing his reception on his arrival in London and his career during the most strenuous and dramatic part of his life. In these years it chanced to me to be closely associated with the evolution of the Listerian

(* Read before the Listerian Society of King's College Hospital, October 14th, 1936.)



Fig. 1. Lister Memorial in Portland Place, London.



Fig. 2. Upton House, shorn of its lawn and orchards, as it still stands in the County of Essex. Birthplace of Joseph Lister, April 5th, 1827.

principles which ended the dark ages of surgery and medicine and ushered in this golden age of our science and art. As I started my studies in the days before this great renaissance, I may be able, by contrasting the condition of our calling before and after the coming of Lister, to bring out the immensity of his work in the world's history. As this boon to humanity was largely evolved within the walls of King's College Hospital, this story, if I can make it interesting, must always appeal to the pupils of this school, particularly if I succeed in showing that, apart from his great work as a scientist, the personality of Lister may well serve for ever as the great example for us to follow.

The surgical purulent infection, of which Nélaton spoke, was conquered for all humanity and for all time by Joseph Lister. But, alas, the "statue made of gold" has never been erected. The only public memorial of him is a bust in the middle of Portland Place, close to where he had lived. (*Fig. 1.*) Still, it might be said of Lister as Byron said of himself: "My name shall be my epitaph alone," for every patient who is able to lie down in confidence on an operating table anywhere in the world to-day is a living monument of his greatness.

Family History and Birth.

Let me briefly sketch his history before he came to King's. Lister was of pure English stock; his people came from Yorkshire. His father was a prosperous wine merchant in the City of London. In these days, when the landed families of England were numerous and prosperous, and when the limitations of travel made visits to London few and far between, the wine merchant had an important position in that port and claret-drinking age. His business required that he should journey round the country to inspect and renew the cellars of his clients and, as he frequently stayed with them, he was an important and, no doubt, a welcome social personage. Lister's father married the daughter of a widowed lady who lived near Pontefract. For the first three years after marriage they lived in Tokenhouse Yard, in the very heart of the City and in an area now chiefly associated with the Bank of England and the Stock Exchange. Then they moved to Upton House, a capacious and charming old Queen Anne building, surrounded by fields and its own large garden, at Upton in Essex, in what is now the Borough of West Ham. (*Fig 2.*) The house survives to-day and is still intact and unaltered. It is to-day the Vicarage of St. Peter's Parish, somewhat shorn of its grounds and orchards, but still an oasis in the desert of mean streets which now connect it, by thundering trams and murderous motors, to the macrocosm of London.

Here on April 5th, 1827, there was born to Joseph Jackson Lister, and his wife Isabella, their fourth child and second son and they called his name Joseph.

In these days Upton House was ten miles by road from the City, and lay amidst the fields and woods where Lister learned

that love of botany, and of the ways of birds, which gave him so much happiness during his long life. (*Fig. 3.*)

From his father he inherited other things besides a competence. Amongst them was a taste for scientific pursuits: the wine merchant was deeply interested in the science of optics; he helped to perfect the microscope and was a Fellow of the Royal Society. He was also a good classical scholar and skilful with both brush and pencil.

Student Days.

After attending private schools in Hitchin and Tottenham, Lister entered University College, London, in 1844 at the age of 17. University College would appeal to him as a Quaker, for it had recently been founded as a non-sectarian institution. King's College had also been started about the same time, to maintain the tenets of the Church of England. It is interesting to remember that Lister began his academic career in one college and finished it in the other; he is gratefully remembered in both.¹ Also we might remember that he was born a Quaker, but that, after his marriage, he joined the Church of England. He matriculated in 1845 and in 1847 he took his B.A. It is worth noting that, in gaining this degree, he did not secure either medals or honours. He had taken out the Arts Course at his father's suggestion, but we may conclude that he did not possess the gifts to shine in any of the subjects, although he himself always recommended the same course to any young men entering the medical profession—if the time and money required for doing so could be spared. But this was not the happiest time of his life: he worked very hard in gloomy surroundings, he had an attack of smallpox, and he returned too soon afterwards to his studies with redoubled energy, so that it is not surprising that he had a serious nervous breakdown necessitating a long holiday in the early part of 1848. Hence he was twenty years of age when he entered the Medical Department of University College in 1848. But, in contra-distinction to his record in the Arts department, when he took his M.B. in 1852 he not only obtained distinctions in other subjects, but he secured the Gold Medal and Scholarship in Surgery. In the same year he passed his F.R.C.S. He was then 25 years of age, but had already served as House Physician and House Surgeon in the Hospital. So, at the age of 25, he had finished a long studentship of no less than nine years (1844-1853). His hospital days were no doubt happy ones. He joined with zest in the affairs and the debates of the Students' Medical Society. He contributed a paper on "Hospital Gangrene," a disease which he himself was later on to extinguish; and also one on "The Use of the Microscope in Medicine," showing his early scientific bent.

First Operation in England under Ether.

While a resident in University College Hospital he saw the first operation ever performed in this country under a general



Fig. 3. Lister, aged 13. A silhouette by his father.

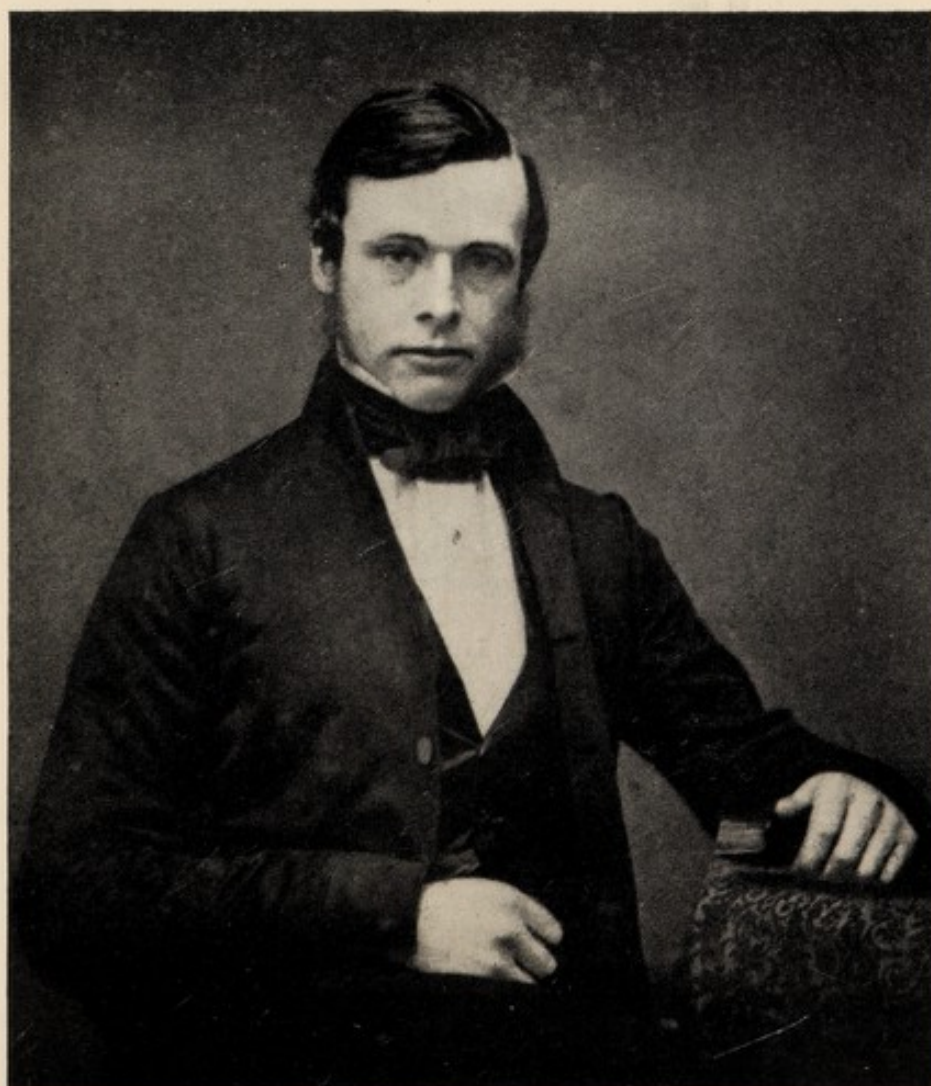


Fig. 4. Lister, aged about 28.

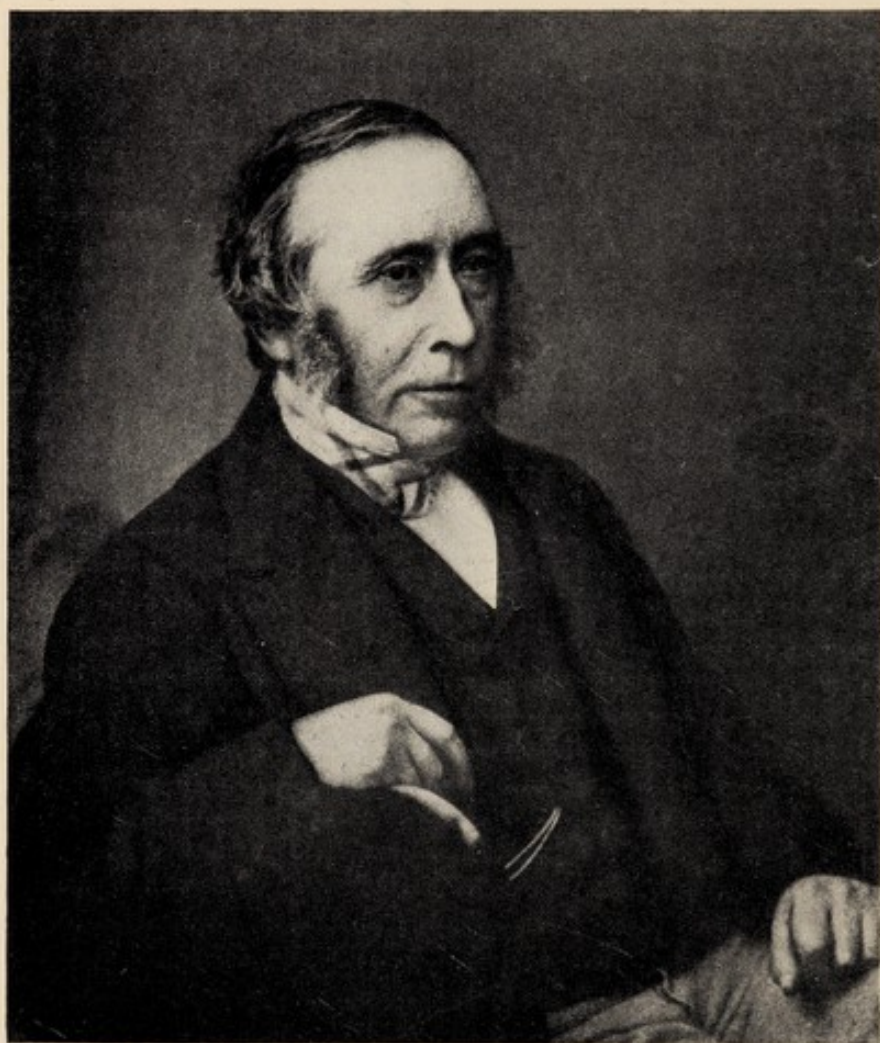


Fig. 5. Professor James Syme, Edinburgh.

anæsthetic, on December 21st, 1846, not a hundred years ago. (Fig. 9.) It was performed by that brilliant operator Liston, who, to spare the patient pain in these pre-anæsthetic days, had acquired such dexterity that it is recorded that he could amputate a limb in less than half a minute. On this occasion ether was administered by Mr. Squire, of the old-established firm of chemists which still flourishes in Oxford Street. In a picture of that historic occasion, Lister is shown alongside of Erichsen, with whom he was House Surgeon. Amongst other spectators in the same picture who afterwards became well known in their profession were Russell Reynolds (later President of the Royal College of Physicians), Cadge (the well-known surgeon in Norwich), Graily Hewett (the obstetrician), and Clover, who became one of the first leading anæsthetists. The operation was an amputation through the thigh; its duration was timed by Squire and three of the assistants, and their records varied between 28 and 25 seconds!

Edinburgh : First Period.

As chill penury did not repress his anxiety to see and know the best in the surgical world, he was advised by Professor Sharpey to visit Edinburgh for a few months, before making a round of the Continental medical schools and settling in London. So, at the age of 26, he journeyed to Edinburgh to study under Syme, at that time one of the leading surgeons of Europe. This great surgeon—to whose memory and teaching Lister always remained devotedly attached—was the man of whom it was said that he never wasted a word, a drop of ink, or a drop of blood. (Fig. 5.) Syme evinced a special interest in his English visitor : at once made him one of his clerks; and in January, 1854, had formed so high an opinion of his capabilities that he appointed him House Surgeon, with considerable freedom in operating and in the care of his two hundred beds. Lister entered on his duties with eagerness and pleasure, accepting the responsibility of teaching his twelve dressers, who, in their turn, developed such a regard and admiration for him that they spoke of him as "The Chief," a term by which he continued to be known until the end of his sojourn in Scotland. In the following year (1855) Lister took his Fellowship of the Royal College of Surgeons of Edinburgh and was appointed a Lecturer on Surgery. In 1856, at the age of 29, he was elected Assistant Surgeon to the Royal Infirmary. In the same year he had the good fortune to marry Syme's eldest daughter.

Glasgow.

At the early age of 33, Lister was elected a Fellow of the Royal Society and in the same year was called to fill the Chair of Surgery in the University of Glasgow (1860). He already had a world-wide reputation as a scientific man and a practical surgeon. When he went to Glasgow hospital—gangrene, erysipelas, septicæmia, pyæmia and tetanus were scarcely ever

absent from the wards of the Royal Infirmary—or from those of any other large hospital in the world. At times these "hospital diseases" became so epidemic that whole wards had to be closed. As there was no certainty of knowledge as to the causes of these disasters, so there was no sure means of avoiding them. There was no satisfactory explanation why some wounds would close by "first intention" in a few days, while others required months of suppuration to obtain "healing by second intention," if the patient was not meantime worn out with hectic fever and amyloid disease, or carried off by septicæmia or pyæmia.

The mortality from wounds after all surgical operations was recorded in Glasgow as "enormous." Lister's own statistics in his early days there showed a mortality of 45 per cent. As these "wound diseases" were attributed to the oxygen in the air, and as it was impossible to exclude this, these terrible disasters were regarded as an "Act of God" and as inevitable as any other catastrophe.

It was during his Glasgow period that it might be said that antiseptic surgery was "born."² (*Fig. 6.*)

When the Glasgow Royal Infirmary was being rebuilt in 1924 an appeal was made from many quarters, including the British Association and the Académie de Médecine, to preserve the two wards which had been the cradle of antiseptic surgery. It is a lasting disgrace to this country to remember that this appeal was disregarded. However, we owe it to the generous founder of the Wellcome Historical Medical Museum that an exact replica of these wards, as they existed in Lister's day, has been made in miniature and can be studied in the Museum in the Euston Road.

Edinburgh : Second Period.

In 1869, at the age of 42, Lister returned to Edinburgh as Professor of Surgery in the University, and there he passed the eight years of his life which he afterwards described as the happiest, as they certainly were the fullest and most flowing.

The Coming to London.

In 1877, exactly sixty years ago, Lister was invited to leave Edinburgh for London to take the place vacated at King's College Hospital by the death of another surgeon of the Edinburgh School. Sir William Fergusson was a brilliant operator and has been described as having the eye of an eagle, the heart of a lion and the hand of a lady. He used to perambulate the ward followed by a nurse carrying a towel and basin, into which he dipped his fingers after examining each case. Later on, it was jocularly remarked that the difference between the surgeon of the old school and one of the modern days was that the former washed his hands after examining a patient, while the latter did so before examining one! But Fergusson was a poor teacher and was unable to attract a large number of students to King's. The school in those days was described as

"small, though select." The annual entry of new students had fallen to 25 and the total number in all the four years (the curriculum was then a four-year one) only amounted to 142, while the average annual entry in the Faculty of Edinburgh was 180.

Why did Lister come south? Edinburgh most certainly did not want to let him go. Seven hundred students of the University signed an address begging him not to leave. Then 230 practitioners, all former students of his, presented a petition entreating him to remain in Scotland. It could not have been to find a larger field of practice; in Edinburgh he had between 60 and 70 beds, while at King's he had only 24. It was certainly not to hunt for honours and distinction; his Quaker character thought little of such adornments. It was not due to any mercenary attractions. The Chair of Surgery in Edinburgh was alone worth more than £1,000 a year; he was the possessor of a sufficient private fortune, and the commercial side of our profession never had any attraction for him. All who knew him are convinced that he accepted the invitation to London simply because he felt that on the larger stage of the metropolis he could so demonstrate his work that he would sooner fulfil his mission. As his biographer records: "the antiseptic doctrine had been accepted in every part of the world that counted except London, where alone it had made little way." In taking leave of his class in Edinburgh he announced that it was only a sense of duty which impelled him to leave a school where he had received great kindness, and to take "a cold plunge into what," he said, "might prove to be a sea of troubles."³ He was indeed right; a cold and stormy sea of trouble was awaiting him in London—sixty years ago. Lister returned from his Professorships in two Scottish universities to his own southern people, and to the city of his birth; he returned to his own and his own received him not. Many peoples, in all times, have been addicted to stoning their prophets. England and London half a century ago were not backwards in demonstrating that a prophet was not without honour except in his own country.

King's College : Introductory Lecture, 1877.

His first function was the Introductory Address of the Session, which I listened to on Monday, October 1st, 1877. Lister, to most people's astonishment, announced the title of his address to be "Experiments on Fermentation," and said he was going to record some experiments he had made "during his holiday(!) to obtain some positive and definite knowledge of the essential nature of a class of phenomena which interest alike the physician, the surgeon and the accoucheur, viz., the changes in organic substance which are designated by the general term of Fermentation."⁴ This address was delivered, in the College, from behind a table covered with test tubes, pipettes and flasks, showing tubes and plates of culture, as we should call them nowadays, but

that term was not then in common use and not a student present had ever seen anything like them before. He then proceeded to recount some of his recent researches to demonstrate the conditions under which blood remains unchanged, or undergoes decomposition, and others which showed that milk has no inherent tendency to ferment and that it only turns sour when contaminated by the bacterium lactis. Amongst other demonstrations were two flasks, with waved nozzles, which had originally been filled with urine in Glasgow (1867), whence they had moved with him to Edinburgh (1869), and from there had travelled up with him to London (1877). In this last flitting they had made the eight hours train journey, safely protected from any jolting, by being carefully kept unshaken while resting on the knees of Mr. and Mrs. Lister.⁵ One flask demonstrated the clean and uncontaminated contents of what we should nowadays term a "sterile" condition, which had persisted for more than ten years, for although air easily entered through the waved nozzle, the dust-borne contamination could not make its way past these waved zig-zags.

This lecture was delivered to demonstrate the scientific basis of his "antiseptic method." Lister naturally thought that such a demonstration, explaining so much that was obscure at that time, would be of the highest interest to the audience. But it was looked on as a bad start and altogether unsuitable, for it was generally agreed that such an abstract subject as lactic acid fermentation was no concern of the surgeon. The surgeons who had come from many of the teaching schools of the Metropolis looked utterly bored. They had probably come, like the "practical men" they doubtless prided themselves on being, to collect hints as to how they should "apply"—that was the word—this new fangled antiseptic method which would "make" their operation wounds heal quickly by first intention. They looked contemptuous at being invited to sit still for an hour listening to details of lactic acid fermentation, and they could not understand what the curdling of milk had to do with surgery! We students did not even sit still. We showed our boredom, as was the manner of those unregenerate days, by shuffling our feet. Whenever Lister referred to a cow we tried to imitate the "Boo" of that animal; each time that he mentioned the contaminating hand of the dairy-maid we said "tut-tut"; when 5 o'clock struck we reminded him audibly that it was "tea time"; and, far from realizing our ignorance and bad manners, we thought ourselves very funny fellows. One amongst these new students certainly felt ashamed of himself some years later, especially when he read of the reception Lister had met with from his Scottish students at an analagous and earlier introductory address given when he took up his Professorship at Edinburgh exactly eight years previously.⁶ It was thus described by one who had been present: "A Glasgow professor translated by the Crown to Edinburgh was, to many who were present, hardly a

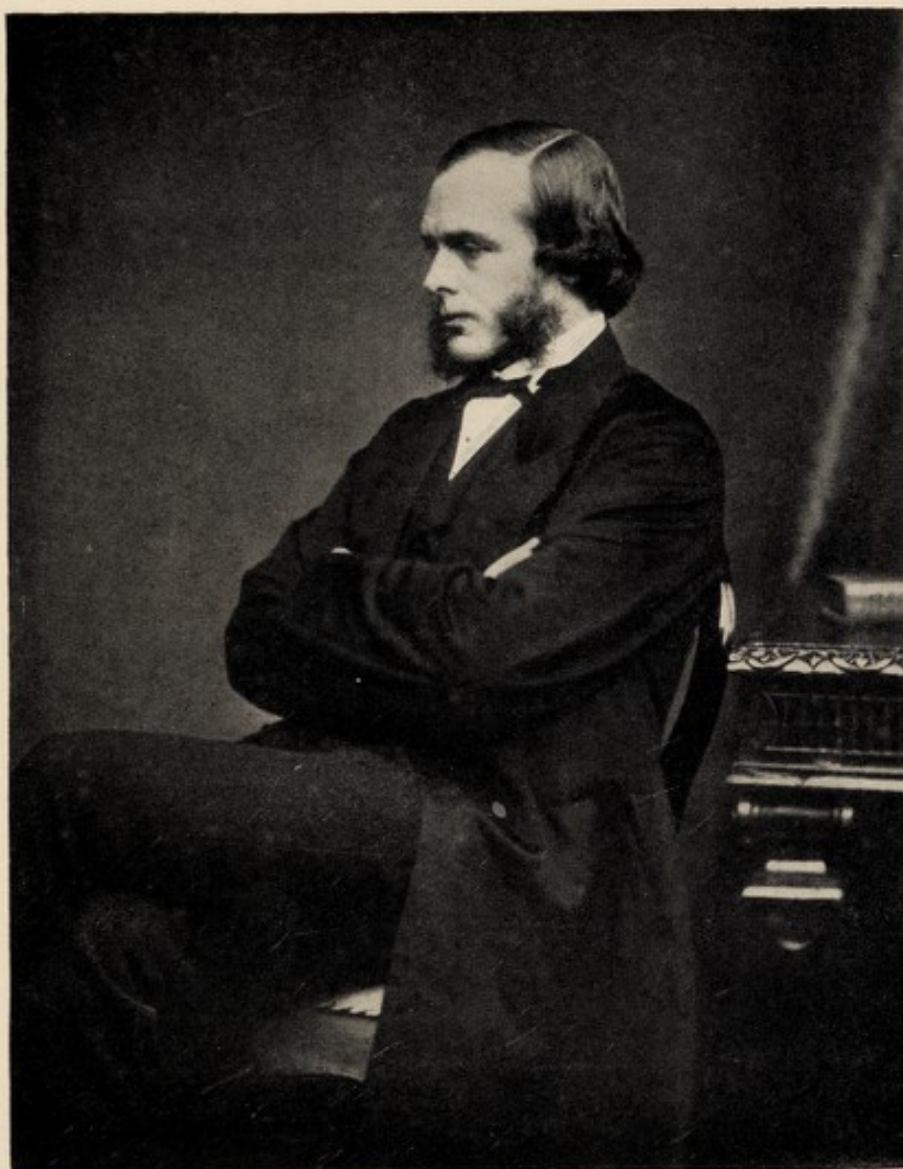


Fig. 6. Lister, about the age of 40.



Fig. 7. King's College Hospital, 1861-1913.



Fig. 8. Lister and his Resident Staff, in the old King's College Hospital.

persona grata; yet his work on antiseptic surgery was being noised abroad and the students, at any rate, more numerous than usual, were desirous of hearing about it. I remember well the procession into the classroom, the marked quiet during the delivery of the lecture and the close attention given to it. The facts were so clearly and logically set out that I thought there could hardly be any other side to the question. Lister was then about 42 years of age, just in his prime, with a commanding figure and a beautiful, thoughtful face. The earnestness with which he spoke increased the slight hesitancy of speech peculiar to him, yet adding force to his words. I think all who heard him speak felt that a new era of surgical work and teaching had opened in Edinburgh. He claimed to be endeavouring to treat surgical cases in such a manner as to prevent the occurrence of putrefaction in the part concerned. 'If this is done,' he said, 'injuries formerly regarded in the gravest light, become comparatively trifling, and some diseases, rarely admitting of cure, terminate most satisfactorily in perfect recovery. The guiding principle of its practical detail is the germ theory of putrefaction.'⁷

Surgeon to King's College Hospital.

But it was at the hospital that Lister encountered his full sea of troubles. (Fig 7.) Here some offence was given by the fact that Lister had stipulated that he should bring with him from Edinburgh four assistants already trained in his methods and attached solely to his service. The name of one of these, whom I used to call afterwards his chief apostle to the Gentiles, will always remain associated with King's, *viz.*, Sir William Watson Cheyne. These Scotch invaders were most courteously received by their fellow dressers; in fact, one of them records that the only embarrassment they felt was that they were all bearded, while their English colleagues were all shaven!⁸

The peace-loving Quaker spirit of Lister was much distressed by the opposition he met with at the hospital from the Nursing Sisters of St. John—a religious body to whom the nursing was then entrusted. In the days of Sir William Fergusson the teaching was entirely in the wards; he passed from bed to bed followed, as recorded, by a Sister with a basin of water, in which he dipped his hands after examining a patient. Lister upset the pious Sisters by copious ablutions and by purifying of several pairs of hands before a patient was touched, and many of his cases were carried or wheeled into the theatre as subjects for clinical lectures. These Sisters were opposed to Lister and all his ways, and dealt him those pious and smiling stabs in which women, particularly good women, are so skilful. Lister only showed how he felt them by the little gasping sigh we all learned to know and to respect as his only sign of sorrow or annoyance.

But worse than this gale in his sea of trouble was what John Stewart, a devoted pupil, describes as the "colossal apathy," the

"monstrous inertia to the force of new ideas," the inconceivable indifference shown by the students and surgeons of London. Sixty years ago the surgical wards of most of the hospitals in England reeked with the smell of putrefaction: just as, all over the world, they had done for centuries. But Lister's wards were free from what was then accepted everywhere as the recognized "hospital smell"; his dressings, when taken off, were free from pus and feter; they were handed round for confirmation, and I well remember the surprise and the approving sniff with which the visitor—generally a foreigner—confirmed Lister's frequent and pleased remark: "You will notice, gentlemen, that any discharge is only serous and quite sweet." Yet Londoners did not come to see this epoch-making change, to hear, to smell, and to be converted by the demonstration of results which were being attained in King's College Hospital, with certainty and security and for conditions which previously, in this world's history, had been universally regarded as untouchable. Not only were these new truths neglected, they were rejected and opposed. Bland-Sutton, who was a student at Middlesex at that time, records in his biography that "The opposition to the gospel of Anti-septic was astonishing—almost unbelievable."⁹

"A Humiliating Experience."

In Edinburgh Lister's class frequently numbered two or three hundred students; in London, at first, some ten or twenty might turn up, but these gradually fell off. Ten years after his arrival Lister referred to his small classes at King's as "a humiliating experience." Yet he had previously, in Scotland, the evidence that it was not due to any defect in his own method of teaching. Hundreds of students in Glasgow and Edinburgh used to listen to him, yet I have seen his ward visits followed by only a company of seven—his house surgeon, his two clerks and four dressers. (Fig. 8.) In part this was because Lister did not hand out the stock questions and answers, or the stereotyped "tips," required for examinations. His teaching did not greatly help a man to pass these and secure a diploma—the main but, too often, the only interest of the average student. While he had a poor opinion of examinations, he urged that to work and study merely to pass an examination and to be satisfied with a modicum of knowledge was to debase the noblest of callings. "You must always be students," he would say, "learning and unlearning to your life's end, and if, gentlemen, you are not prepared to follow your profession in this spirit, I implore you to leave its ranks and betake yourselves to some third-class trade."¹⁰

The medical schools of London at that time were little more than bodies for coaching students "how to dodge the examiners." While Lister was neglected by the average student, he was casting a life-long spell over those who came under the potent power of his personality, while his teaching was laying for them

the foundations of the guiding principles of surgical physiology and pathology.

Last century there was no attempt at organized teaching by the University of London. It was principally an examining body. Lister used to deplore that absence of the thirst of knowledge for its own sake, and that esprit de corps, which he had noticed so abounding in the northern universities and which had made Edinburgh the leading medical school of the British Empire. The London students had, indeed, some affectionate pride in their own particular hospital, but they had and still have little for their city or its university. London itself used to be very parochially minded, and the separation into twelve small medical schools—instead of being combined in one university as in Paris or Berlin—seemed to foster still more the insular spirit. Lacking a more vitalizing spark, the majority remained utilitarians, not seeking knowledge except to gain a licence to earn a livelihood. The examination hall was a torture chamber where they dreaded being tested by absolute strangers, and where they missed the friendly encouragement of the presence of some of those who had taught them, who could help in assessing their good points and who might aid in mitigating their deficiencies. Lister maintained that the London system of examination encourages cramming, stifles the spirit of interest and enquiry, and tends to reduce the teacher of medicine to the dead level of a coach, preparing students to supply the answers to a set of questions framed by a particular set of examiners. Indeed, in my day, King's men were apt to fare badly when up for "the College and Hall" (i.e., the College of Surgeons and the Apothecaries' Hall), which were the usual licensees before the introduction of the conjoint diploma of the two Royal colleges. Our recommendation of available operations and our views on "surgical fever," "hectic fever," "amyloid disease" and other septic conditions were very different to what was considered orthodox by the examiners of these days. Fortunately things are changing in London; our university now has a habitation as well as a name, and has become a teaching body. The examining bodies are working hard to make examinations—in spite of the large increase of knowledge—comprehensive, proportionate, complete, equitable and reliable as tests both of knowledge, skill and intelligence. The amalgamation of the medical schools still remains for the future.

Neglect and Opposition.

It is more difficult to suggest the reasons why London surgeons neglected or belittled Lister's work. There was at first a good deal of curiosity to know what was this so-called "system" for making wounds heal without suppuration. I say advisedly "so-called system," for through almost his whole life Lister was chiefly concerned in explaining and defending the principles on which he based his methods of wound treatment. The methods

employed, while searching for the simplest and best, were, of course, subject to constant revision, alteration and improvement, and so had not solidified into a fixed system, though the principles remained settled. But the crowd cared nothing for principles and only wanted to learn empirically the technique of the system. Hence his wound dressings was frequently called "the Carbolic treatment," or the "spray and gauze system." In his efforts to find an effective and yet non-irritating antiseptic he changed from carbolic to boracic lotion, or made trial of corrosive sublimate, or reverted to carbolic. Or he saturated his gauze with carbolic, or iodoform, or eucalyptus, before finally settling on double cyanide of mercury. These changes were all causes for stumbling to the average individual who wanted finality and a ritual he could carry out. Another reason was that the surgeons of the late Victorian period—just like John Hunter, Astley Cooper or Abernethy—were without Lister's scientific training and Pasteurian knowledge, and looked upon his methods as only another variant of many centuries of previous empiric efforts. Lister himself realized this, for in one of his addresses he said: "I venture to assert that no one who has not a belief in the germ theory of putrefaction can ever perform satisfactorily the antiseptic treatment of wounds." How far the London surgeons were from being able to appreciate this is shown by an annotation in *The Lancet* in 1877 (Vol. I., p. 361), which said: "In many quarters Mr. Lister has acquired the reputation of a thoughtful, painstaking surgeon, and has done some service to practical surgery by insisting on the importance of cleanliness in the treatment of wounds, although this has been done for the glorification of an idea which is neither original nor universally accepted."

At the International Congress in London in 1881, foreign surgeons must have marvelled among themselves when they heard British surgeons still attempting to cast doubts on the principle on which Lister founded his methods, or belittling his results. But let us, in parenthesis, project our attention forward to the following International Congress in London. It was the last of these gatherings and was held in 1913, with Sir Thomas Barlow as President. Lister had died in the previous year, but the light of his good work was shining before all men. As is well known, Congresses and such-like events are generally commemorated by the issue of a medal. The medal of 1881, when Lister's work was still being slighted by his own countrymen, bore the features of Queen Victoria. But in 1913 it was felt in Britain that the one effigy worthy of being stamped on the medal of an International Congress in England was the head of Joseph Lister.

My audience will hardly believe me when I tell them that, in my student days, the surgeon of one of the largest teaching hospitals—a Fellow of the Royal Society and a President of the Royal College of Surgeons—frequently raised an appreciative

laugh by telling anyone who came into his operating theatre to shut the door quickly, in case one of Mr. Lister's microbes should come in!

Yet, sad to relate, the discovery of the principles of all surgical infection was first welcomed and accepted outside the country in which they were being evolved. While I was House Surgeon a board was hung up in the hall of the Hospital with the notice "Smoking is Forbidden," and with a translation in French and German. What was the necessity for this polyglot warning? It was due to the fact that our lecture theatre and wards used at one time to be crowded with foreigners and, while waiting in the entrance hall of the building, they were wont to make the air thick with tobacco smoke.

The Opening of Joints and Cavities.

How slow this country was to accept the new evangel may be shown by the following. The first case in which Lister wired a fractured patella was in 1877. While I was his House Surgeon I had the honour of bringing together six of his first seven cases which he showed before the Medical Society of London on October 29th, 1883.¹¹ I well remember the astonishment with which Fellows of the Society tried to feel the buried silver wire. Some were aghast at the unwarrantable danger incurred in opening a healthy knee joint. One hospital surgeon, Morratt Baker, asked, "Had not ankylosis, amputation, and death been heard of after its performance?" Another surgeon said that, if the next case died, Lister should be prosecuted for malpractice; while one exclaimed dramatically, "C'est magnifique, mais ce n'est pas la chirurgie."

To understand this horror at the idea of opening a healthy knee joint, I must explain that in pre-Listerian days, and as late as 1874, no less a person than Erichsen, whom Lister had served as House Surgeon in University College Hospital, committed himself to the prophecy that: "The abdomen, the chest and the brain would be for ever shut from the intrusions of the wise and humane surgeon." Another surgeon had pronounced that "an abdominal operation should be classed amongst the methods of the executioner."

Nearly a hundred years ago, in 1840, Tilanus, a famous Professor of Surgery in Amsterdam, said: "Surgical art is at present within measurable distance of being perfect." In the century which followed this prophecy the distance travelled was greater than that in all the centuries put together since the beginning of history. Again, six years ago, the late Lord Moynihan ventured on the statement that "surgical accomplishment has reached its limit."¹² Yet, in these six years, to refer to only one department, we have seen most of the triumphs of thoracic surgery.

It may be difficult for this generation to appreciate that what I call the "miracles of healing" which were being demonstrated

in the wards of King's College Hospital, were miracles then, when I was a house surgeon. They are miracles no longer now that every newly qualified doctor can to-day relieve pain, arrest disease and save life by perfectly safe proceedings which no man knew of, or if knowing, dare not venture on, when Lister came to King's sixty years ago.

My friend and neighbour, Sir Buckston Browne, writes to tell me that when he was house surgeon to Erichsen in 1873, in the old University College Hospital and in the very room where Lister had preceded him, his wards were apt to be almost decimated by "hospital gangrene." And yet Sir Buckston's own son-in-law Mr. Hugh Lett, Surgeon to the London Hospital, has never seen a single case in his life-time! In his biography, published in 1930, Bland-Sutton records that "fifty years ago post-operative scarlatina was a scourge; it was a common complication of compound fractures and surgical wounds." And he adds that this dread sequel of operation had become such a rarity that he had not seen a case of post-operative erysipelas for forty years.¹³ Such are the changes in one life-time.

Mortality before Lister.

The operative death rate before the coming of Lister was from 25 to 40 per cent; in other words the chances in a surgical ward were that one out of every three or four patients would die. In his own hands, in Lister's early years, as already mentioned, the death rate from amputation might average 45 per cent. Sometimes in military hospitals the proportion would mount up to 75 to 90 per cent. At one time in the Krankenhaus of Munich "eighty per cent. of the wounds became affected with gangrene and filled the surgical ward with horror." In the American Civil War almost all abdominal and head wounds proved fatal and, when the driver of an ambulance wagon was asked if he knew how to treat wounded men, he replied: "Oh, yes, if they are hit here," pointing to the abdomen, "knock 'em on the head; they can't get well." The results in military surgery before the coming of Lister had shown little improvement since the days of Ambroise Paré (1517-1590). A story is told that one day during a battle he saw three desperately wounded soldiers placed with their backs against the wall. An old campaigner enquired: "Can these fellows get well?" "No," answered Paré. Thereupon the old campaigner went up to them and cut all their throats "gently and without wrath" (*doucement et sans colère*).

No wonder that the public dreaded the mention of an operation, and shrank and shuddered at the suggestion of entering a hospital. Admission to a surgical ward was looked upon as the entrance to the valley of the shadow of death. Sir Frederick Treves used to tell how he had been deputed, when House Surgeon, to secure the consent of an East-End mother for the admission of her daughter for some trifling operation. "That's

all right," said the parent, "it's easy enough to give my consent, but what I want to know is: who's going to pay for the poor girl's funeral?"

Nor was the terror of death limited to surgical operations. In these days patients under treatment for such a simple affair as a whitlow might die from pyæmia. It is not a century since Velpeau (1795-1867) said that "a pin prick might be the door of death." The heavy death toll paid by parturient women is a tragic remembrance. In Budapest Lying-in Hospital the usual death rate of 3 to 9 per cent. might, at times, reach a monthly average of 25 to 30 per cent. Yet, after I had been House Surgeon to Lister, when I became Resident Medical Officer at Queen Charlotte's Lying-in Hospital, and there introduced antiseptic methods, not a single mother or infant was lost during my term of office; a record, I believe, previously unknown in that institution.

During the years that I was a student I never saw an operation for appendicitis, nor even an abdomen opened. The death rate from ovariectomy had been so serious that the Committee of Management had forbidden the operation. An ovarian cyst was tapped and tapped until the patient died. That a calculus could be removed from a ureter or bile duct never entered the imagination of any one. Compound fractures until the advent of Lister were looked on as so inevitably fatal that they were generally treated by amputation.

Hopelessness and Triumph.

In these early days a little personal recollection will illustrate how slowly Lister's evangel spread, and yet how courageously confident he was of his mission. One day in 1883 I was standing beside him on the steps of the Hospital waiting, like a dutiful House Surgeon, for his carriage to pull up. This was soon after the attack made upon him for daring to open a healthy knee-joint. He began by quietly remarking that the day must surely come when the profession would accept the principles of his methods, "and," he added with much warmth, "if the profession does not recognize them, the public will learn of them and the law will insist on them." Then, in one of those serious and always arresting little speeches into which he occasionally and unexpectedly dropped, he placed his hand on my shoulder and added pathetically: "Thomson, I do not expect to see that day, but you may."

Soon afterwards I went abroad. When I returned just ten years later, in 1893, the whole atmosphere of surgery in London had changed and, as Treves wrote later on, "it is a question if any change in human affairs, or any disturbance of human creeds, had ever been so striking, thorough and unexpected." Many of the old obstructionists had disappeared. A younger generation with a more scientific training, particularly in the then new science of bacteriology, had come along and others covered up

their late conversion by lauding "Asepsis" and depreciating "Antisepsis," still too mentally myopic to recognize that Lister had always contended for principles and not for methods of technique, that sound surgical technique entails both antisepsis and asepsis, and that the only word to differentiate his great gift to mankind is to call it "Listerian Surgery."

Peerage.

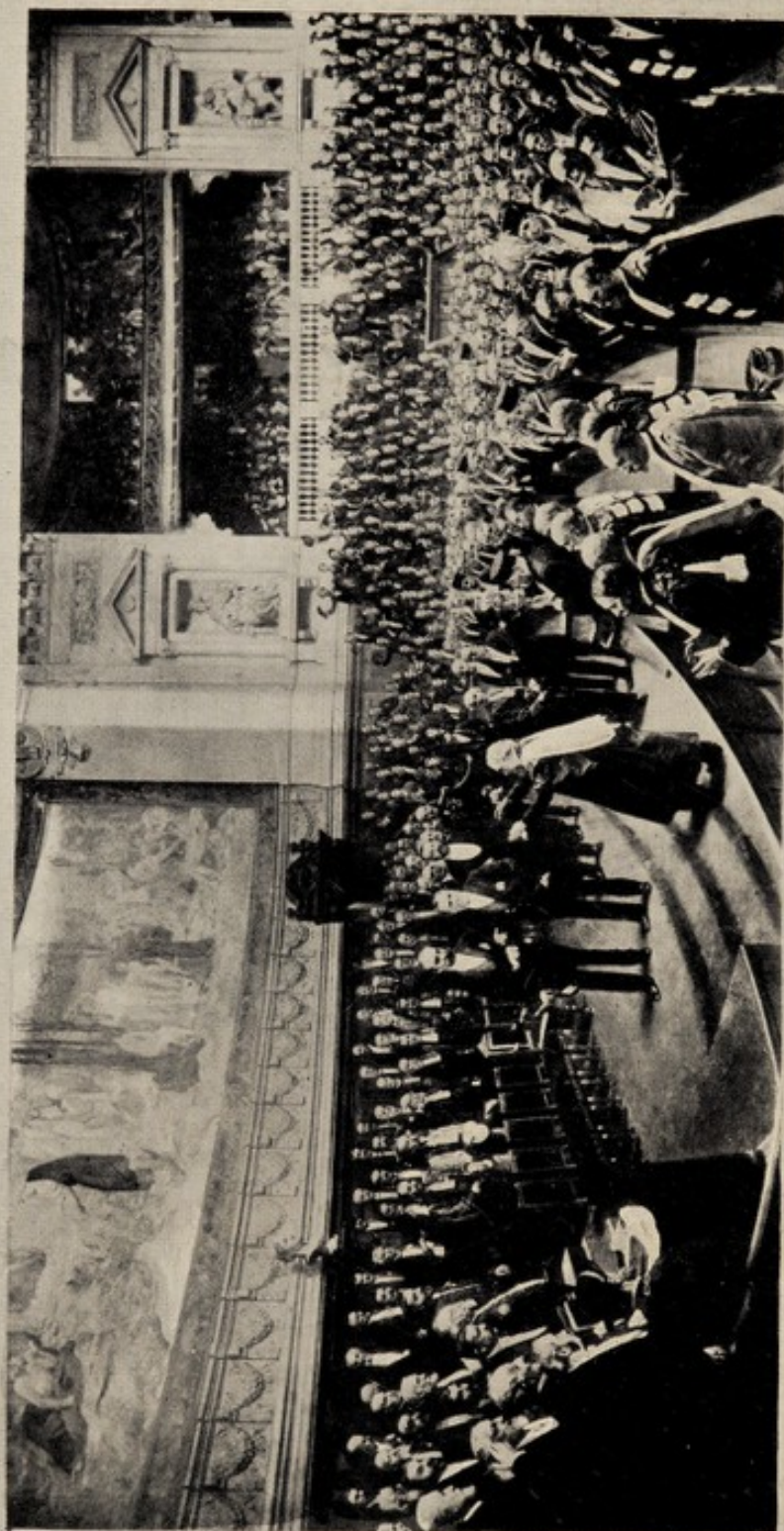
In 1897, the year of Queen Victoria's Diamond Jubilee, Lister was made a Peer, his peerage being the first ever conferred upon a surgeon. In the following May an address and the usual dinner was offered to his old pupils, and I had the honour of being the secretary on that occasion. No less than thirty old house surgeons and a hundred dressers gathered together, some of them coming from South Africa and South America for the event. As secretary I had to say the usual "few words." I took the opportunity of reminding the Chief of his remarks to me on the steps of the Hospital fourteen years previously, and I pointed out that he had not been imprisoned like Galileo, nor burnt at the stake like Giordano Bruno, nor crucified like other pioneers of truth, but that not only I, but he also, had lived to see the day when his principles were universally accepted. Then, drawing from my pocket a newspaper of that very day, I called attention to the fact that another part of his prognostication had, however, been fulfilled, for a paragraph recorded that a midwife in Germany had been sent to prison for manslaughter as she had attended a confinement without providing herself with a proper antiseptic outfit! I doubt if ever a toast had been received more enthusiastically within the walls of the Café Royal than was that of Lister's health forty years ago. It was drunk with "Highland honours." For those who do not chance to know what this custom is, I might explain that it entails that each guest, when drinking the toast, should stand with one foot on his chair and the other on the dining-room table! If I remember aright, out of respect to our southern surroundings, a later part of this ceremonial was not completed. It consists in each guest tossing his empty glass over his left shoulder on to the floor, where it is broken to pieces in token that it can never again serve for any less worthy toast!

Pasteur and Lister.

In 1892 Pasteur's jubilee was celebrated. Lister was the predominant personality amongst all who collected to honour that great French scientist. The meeting was held in the great hall of the Sorbonne, well known for its acoustic qualities and for its being able to seat 2,500 persons. (Fig. 10.) When Lister rose to give his address he was enthusiastically greeted with "un ban"—that rhythmic hand-clapping which, in France, takes the place of cheers or the shouts of "Hoch" or "Eviva" of neighbouring countries. Speaking in French he enlarged on the wonder that



Fig. 9. First operation in this country performed under general anaesthesia. University College Hospital, 1846. Lister is indicated by an arrow.



Les "viveurs" du nouveau tableau
 hommage officiellement rendu
 à Pasteur. D'ici la
 Rixens

Fig. 10. Pasteur's Jubilee, 1892. The painting represents Lister greeting Pasteur at the Sorbonne.

a man who was neither physician nor biologist had, by his researches on fermentation, changed the treatment of wounds from an uncertain, empirical and often disastrous business into a scientific and beneficent art. He continued: "La Médecine ne doit pas moins que la Chirurgie à vos études profondes et philosophiques. Vous avez levé le voile qui avait couvert pendant les siècles les maladies infectieuses; vous avez découvert et démontré leur nature microbienne. Grace à votre initiative et, dans beaucoup de cas, à vos propres travaux spéciaux, il y a déjà une foule de ces désordres pernicieux dont nous connaissons complètement les causes.

Felix qui potuit rerum cognoscere causas!"

The dramatic scene which followed the conclusion of his address is well portrayed in a most striking picture which not only suggests the one-sided feebleness of the hemiparetic Pasteur, leaning on the arm of Carnot, the President of the Republic, but the artist, Rixens, in a remarkable manner, gives a life-like representation of Lister's features, his figure, and even his gestures and gait. It has thus been described: "M. Pasteur se lève pour embrasser M. Lister. L'étreinte de ce deux hommes était comme la représentation vivante de la fraternité de la science dans le soulagement de l'humanité."¹⁴

Retirement and Death.

Lister retired from the active staff of King's College Hospital in 1893 at the age of 66. (*See frontispiece.*) He was President of the Royal Society from 1895 to 1900. In 1903, for the first time, his stalwart frame was shaken by a threatening of the infirmities of age and he retired early in July, 1908, to the little fishing town of Walmer, a sleepy old Cinque Port, where his house was only separated by a narrow lawn from the wide stretch of sea. He hoped at first—he was always hopeful—that he would recover his strength. It is very touching to remember that even when he became weaker and weaker, and the months lengthened into years, yet his horses during the four years that his life lingered on still stood in the stables in London ready to take him home. But this was not to be. He died peacefully on the 10th of February, 1912, in a room looking out on the English Channel.

Personality.

What was the personality of this the greatest of the great masters of surgery? He was nearly six feet in height, upright, well knit, compactly built, deep-chested. His bearing was dignified and his manner always restrained, ever courteous and constantly considerate. His voice was soft and musical, but a trifling hesitation in his speech had persisted from childhood. It was very transitory and never embarrassing. Some thought that the extra effort and emphasis required in overcoming this occasional hesitancy added a little charm to his speech; but he himself was very conscious of it and referred to it as "a severe

thorn in the flesh." His touch in manipulations was delicate and he taught the importance of avoiding any roughness or any bruising of the tissues. We possess, in the school library, one of the earliest X-rays done in this country, showing the bones of Lister's right hand. But there was nothing characteristic or attractive about his quite ordinary hand. It was square and thick and his fingers were rather short and not very graceful. Doubtless delicate handling depends chiefly on the directing brain and nerve, for Lister's hands served him well in the completeness, neatness and certainty of his operations and in the delicate manipulations of the laboratory. They were always rough, as were those of all his dressers, owing to their frequent "purification," as we termed it, with one in twenty carbolic lotion. His dress was the habitual wear of the late Victorians—a black frock-coat and waistcoat of the smooth broadcloth only used nowadays for evening wear, light grey trousers, and an upright collar of which the turned-down points kept in place the bow-knot of the invariable, narrow, black neck-tie. I never saw him wearing any other hat than the habitual "chimney-pot" silk hat of the period. But in those days all the students at the Hospital wore the same style of hat, with either frock-coat or morning coat. So long as we were only at the College in the Strand, we were allowed to wear black bowler hats!

His manner had a certain aloofness in it. His life-long disciple, Watson Cheyne, confesses that Lister always inspired him with a certain sense of awe. Others, even those who came closest to him, felt this. One of his pupils has written of "the strange atmosphere of inaccessibility that always enveloped him," and how "he seemed to be surrounded by an atmosphere of indefinable separation that forbade familiar approach."¹⁵ He was invariably courteous and polite, but his manners were natural and had no tinge of being forced, artificial, or affected. He was very responsive, but had the natural restraint and dignity of a sincere soul. It encouraged no familiarity. Others teachers used to address us shortly by our surname; but, except to a favoured few, his pupils were always addressed as "Mr. —." I think it was well; it discouraged levity and silliness; it held our attention and he made us, raw young students, behave with the consideration and restraint due to the presence of the poor and the suffering.

Far from having that doubtful gift of being "a good mixer," I cannot imagine Lister being on easy or familiar terms with anyone who was not a colleague or a pupil, or one with whom he was sharing common interests in science, art or nature. He was never impatient or angry. He was generally serious and somewhat formal. He never scolded; any little correction required was made gently and, if at all serious, was made in private. I cannot imagine that he was ever idle or bored. The nearest approach I ever noticed was at the one and only "evening party" at which I ever met him. He then, indeed, seemed like

a fish out of water. He appreciated wit, but he was seldom humorous and was never what might be called funny or jolly. It might be more truly said of him than of the race to which it is generally applied that "he joked wi' deeficulty." This natural dignity and reserve, which never left him, largely explains why he never had a large, much less a fashionable, practice. He had a steady, average surgical connection, but it was furnished largely by practitioners who had been his pupils and who all, without exception, remained his life-long disciples and admirers. Others, and the public generally, preferred less eminent but more genial surgeons who were easier of approach. I, myself, always felt that his soul "was like a star and dwelt apart," but I can only add that no teacher, no friend, no man I have ever known has left his impress on me as Lister has done. To none of them do I feel the debt I owe to him for his example of veracity of thought and word, his patience and constancy in the pursuit of truth, his eagerness to instruct his pupils, his long-suffering with stupidity, his tenderness to the poor, and his gentleness to the sick and maimed.

Every student recognized that he was in the presence of a great personality, but, looking back, it is astounding that we never realized then that his principles were creating a new world of medicine. Even his favourite House Surgeon, Sir Hector Cameron, said, "we little realized how great their value was (*i.e.*, his lessons), or what was to be their unspeakable fruitfulness in the fullness of time." It might be asked what then did we think about it? I would answer that we thought we were in the presence of a great and good man who taught us the foundations of physiological surgery, and who had evolved a technique of wound dressing, based on demonstrable scientific tests, which would ensure their healing by first intention and so abolish suppuration, septicæmia, pyæmia and other "wound diseases." But we never foresaw that this would safely open up to the surgeon all the cavities of the body and, within little more than a decade, enable him to carry out as many new and undreamt of life-saving operations in one afternoon, in any operating theatre of the world, than were wont to be performed or attempted in a month when I was a student.

He was a slow, careful, and deliberate operator and was accustomed to point out that general anæsthesia had abolished the need for the speed of Liston and those before him, when students used to look on at operations with watch in hand, so as to time and contrast the records of various surgeons. Although muscular and well-built, untiring and never ill, he had the odd characteristic of perspiring freely with any extra physical exertion. When operating his head and neck would stream with perspiration. It was therefore the regular custom for a nurse to stand always at attention with an out-spread clean towel in her hands. Lister might use up two or three during a long operation.

Pains Taking.

His capacity for taking pains was almost incredible. This statement can be verified by referring to the records of his experimental laboratory work, as published in the two quarto volumes of his "Collected Papers," issued in 1909 to celebrate his eightieth birthday. Sometimes when this scrupulous care was applied clinically, it might seem to some onlookers to be meticulous and even pernickety. For instance, in connection with the dressing of a mammary abscess he was wont to insist on the importance of our seeing that the horizontal turns of the bandage which passed across the breast, from side to side, did not tend to slip away, upwards or downwards, over the hemispherical surface and so allow the dressing to become displaced. To protect against such a possibility he pointed out the importance of securing together the overlapping turns of the bandage, particularly along the axillary border, with a good safety pin, so that they did not slip apart. To illustrate this he narrated a personal experience which many men might have considered derogatory to their reputation or even as savouring of snobbishness. During his Edinburgh career he was summoned, in 1871, to Balmoral to operate on Queen Victoria, for an abscess of the breast. All went well. After one visit he had driven away from the Castle to the railway station at Ballater. Arrived there he suddenly remembered that he had forgotten *the* safety pin! Instead of thinking first of his own amour propre, and leaving the event to chance, he drove back the eight miles to Balmoral and there faced the embarrassing duty of displaying his own oversight and asking Her Majesty to undress so that he might secure his handiwork by the one single, forgotten, safety pin! In parenthesis it might be recalled that Lister's work on the importance and the methods of wound drainage were never sufficiently appreciated during his life-time, that he was the first in this country to make use of a rubber tube, and that the first case in which it was ever employed was in the above case of Queen Victoria! The case was not reported on till long afterwards—in 1908—and then only in a cryptic fashion and, of course, without mentioning the name of the patient.¹⁶ The contretemps with the safety pin does not appear in the publication of the article on drainage nor, do I believe, was it ever spoken of publicly except to students. This great and selfless man was only anxious that we should learn by his own mistakes, as the following incident will also help to show. Before Lister's day an inguinal hernia was not infrequently operated on by a method of complicated subcutaneous sutures, so as to avoid the usual dangers of that period of an open wound, particularly one involving the peritoneum.¹⁷ One foggy day Lister was going to try, probably for the first time in the world's history, a radical treatment by an open operation on a somewhat emphysematous subject. When he arrived at the hospital I thought it right to call his attention to the onset of some bronchitis. After examin-

ing the patient and finding that pulse and temperature were normal, Lister decided to go on with the operation. The patient died a few days later from congestion and œdema of the lungs. The following week the Professor chose as a subject for his clinical lecture "The Medical Care of Surgical Cases." Taking this particular case as a text, he delivered a carefully prepared lecture in which he expressed his deep regret that he had not given more attention to the warning of his house surgeon. Few in such a position would have been so magnanimous.

Just as his pioneer work on the drainage of wounds never obtained the consideration it deserved, neither did his laborious investigations in regard to the preparation and use of cat-gut ligatures. Without these two aids, chiefly perfected by Lister, our modern methods would have been retarded and imperfect.

His Scientific Spirit.

Lister was imbued, I need hardly say, with a truly scientific mind. He urged the necessity of experimental and laboratory research. In 1875 Queen Victoria, to whom only one side of the question had been presented, wrote requesting him to take action for the suppression of vivisection. Although he held a Court appointment he had the courage to decline an invitation he could not conscientiously accept. He wrote to her private secretary as follows: "I should deeply regret that I cannot see my way to comply with this request were I not persuaded that my doing so would not promote the real good of the community, which I know to be Her Majesty's only object in the matter."

Lister's Humanity.

Another trait of his character was his invariable gentleness and sympathy with the humblest or roughest of his hospital patients. He seldom referred directly to a patient as "a case," but introduced his remarks with such kindly terms as "this poor fellow," or "this good woman," or "this little chap." To demonstrate this, there is hung up in our library a letter written by Lister to the House Surgeon who preceded me, the late Dr. R. G. Lynam of Oxford. It will be noted that this letter is entirely concerned with the interests of his students and of a hospital patient for whom he shows a touching consideration. He sent the letter to the hospital by special messenger; there was no telephone in these days. In reading his *ipsissima verba* you will not "see Lister plain," but you will come into close touch with his noble character. (See facsimile.)

The letter was signed but, like nearly all his letters, had been written by his wife, who had adopted such a similar caligraphy that many people did not notice the difference.

It is interesting to visit the surgical block of the great hospital in Rome, the Policlinico Umberto I. (Fig. 11.) In the tympanum over the main entrance there is a group showing the figures of distinguished surgeons, and the central one is that of Lister operating

and wearing a white gown. Now, Lister never wore a white gown, nor a mask nor gloves; these came after he had retired from practice. Frequently he never even removed his coat, but simply rolled his sleeves back and turned his coat collar up, so that his white starched collar would not be made limp by the cloud of carbolic spray in which we then operated. Sometimes he removed his black frock-coat and an ordinary towel was pinned across his chest. I myself, for operations, put on an old blue frock-coat which I had worn previously in the dissecting

12 Park Crescent
Portland Place
12th March 1883

My dear Syman,

I shall not be able to
be at Hospital till 3 today.
Will you therefore please have
notices put up in College
& Hospital to the effect
that I am not able to
meet my class today;
& also, if the emphysema patient

has telegraphed that he
will be at the Hospital
today, will you please
telegraph again to him
putting him off till
Wednesday, so as to
avoid his exposing himself
in vain this cold day.

Yours very truly
Joseph Lister

room. It was stiff and glazed with dry blood. Yet so careful were we of any local contamination of the operation area that our wounds healed as rapidly and smoothly as they do with all the ceremonial and ritual of sterilization and asepsis nowadays.

When anything went wrong with a patient, and when a patient died, Lister was touchingly cast down and sorrowful.

Holidays.

Still, although he felt things very keenly at the time, a certain buoyancy soon restored his equanimity and forward-looking temperament. He writes as follows when on a holiday: "I have the happy faculty of being able to throw off all thoughts of work



Fig. 11. Tympanum of the Policlinico Umberto I., Rome.
The façade in bas relief shows Lister operating.



Fig. 12. Lady Lister.

for the time being." Real idleness was not congenial to him. He fished, but as his biographer says, he was a diligent amateur but never an expert. His efforts at skating were more like a scientific pursuit, he could do 8's and 3's—but of small dimensions! He took a good share of vacations and, on his holidays, like all large-minded men, he could be light-hearted and boyish. But complete idleness never appealed to him. On his holidays there were usually proofs to correct, or addresses to prepare. On the Continent he practised and improved his very good French and German; during winter visits to Spain between 1887 and 1889 he acquired a certain amount of Spanish; he was devoted to walking and excursions, was much interested in bird-life and botany, and could always fall back on a pocket volume of Horace, Dante or Goethe.

Lady Lister.

Lister was blessed with a loving and devoted wife who appeared to have no thought or interest beyond her husband. (Fig. 12.) She not only loved and shielded him in every way, but entered intelligently into all his work and researches; helped him in his studies; worked in his laboratory; wrote his letters and, when I arrived at his home in Park Crescent early in the morning to go with him to a private operation, I would find Mrs. Lister preparing and checking off his instruments spread out on the sofa. In their pleasures, as in their work, they were united. They were inseparable companions on all his holidays and in the numerous Continental trips he loved to make. It was while on a spring holiday at Rapallo, on the Italian Riviera, that she was stricken with pneumonia. In that country of rapid atmospheric changes in late winter time from the wind-sheltered and sun-baked wide streets to the narrow wind-swept and sunless alleys, pneumonia not infrequently manifests itself in a form which I have seen will kill a patient in less than forty-eight hours. The natives call it *pulmonite fulminante*, i.e., thunderbolt pneumonia. One morning, while arranging some dried flowers and apparently in the best of health, Mrs. Lister had an attack of shivering. She was dead in four days. This was in 1893; they had no children and for the rest of his life Lister was a lonely man. He is buried beside her in West Hampstead Cemetery.

His Work.

Lister, this genius, created anew the ancient art of healing. He did more for surgery and mankind in his life-time than all the surgeons of all the ages had been able to effect since the days of Hippocrates. I venture to say that Lister wrought more for the relief of bodily suffering, for the security of life, for the prevention of anxiety, for the conversion of fear into joy, for the promotion of happiness and for the enrichment of the life of mankind than any one man who has ever trod this earth. The

history of our world is divided into the two periods, before and since the coming of Christ—B.C. and A.D. The history of Medicine and Surgery, and of human bodily suffering, will always be divided into the times before and after Lister. He was our countryman; we have lived in the golden age when he evolved this miracle of healing which had waited for centuries for his coming, and now can be wrought by every surgeon in every country in the world.

His Portrait in Verse.

Those who came near this great master caught glimpses of such a spirit as is seldom revealed to us. We are fortunate in possessing a perfect portrait of him in imperishable verse. It was written by W. E. Henley who, in 1873, was his patient in the Edinburgh Royal Infirmary, and was often visited there by Louis Stevenson. Henley had lost one foot from tuberculosis. The other was affected and was threatened with amputation. From this he was saved by "The Chief," whom he describes as follows:—

" His brow spreads large and placid, and his eye
Is deep and bright, with steady looks that still.
Soft lines of tranquil thought his face fulfil—
His face at once benign and proud and shy.
If envy scout, if ignorance deny,
His faultless patience, his unyielding will,
Beautiful gentleness and splendid skill,
Innumerable gratuities reply.
His wise, rare smile is sweet with certainties,
And seems in all his patients to compel
Such love and faith as failure cannot quell."¹⁸

As illustration of his noble spirit I will quote a few sentences from two of his addresses. As a young Professor of 33 he told the Glasgow students in his inaugural lecture in 1860 that the two great requisites for the Medical Profession were: "First, a warm, loving heart; and, secondly, truth in an earnest spirit." Eighteen years later, in a graduation address to newly qualified students, he said:—

"If we had nothing but pecuniary reward and worldly honours to look to, our profession would not be one to be desired, but, in its practice you will find it to be attended with peculiar privileges, second to none in intense interest and pure pleasure. It is our proud office to attend the fleshly tabernacle of the immortal spirit and our path, if rightly followed, will be guided by unfettered truth and love unfeigned. In the pursuit of this noble and holy calling I wish you all God-speed."

A Public Funeral Service.

Lister would have been buried in Westminster Abbey had he not left clear instructions that he wished to be laid to rest beside his wife in West Hampstead Cemetery. Before this took

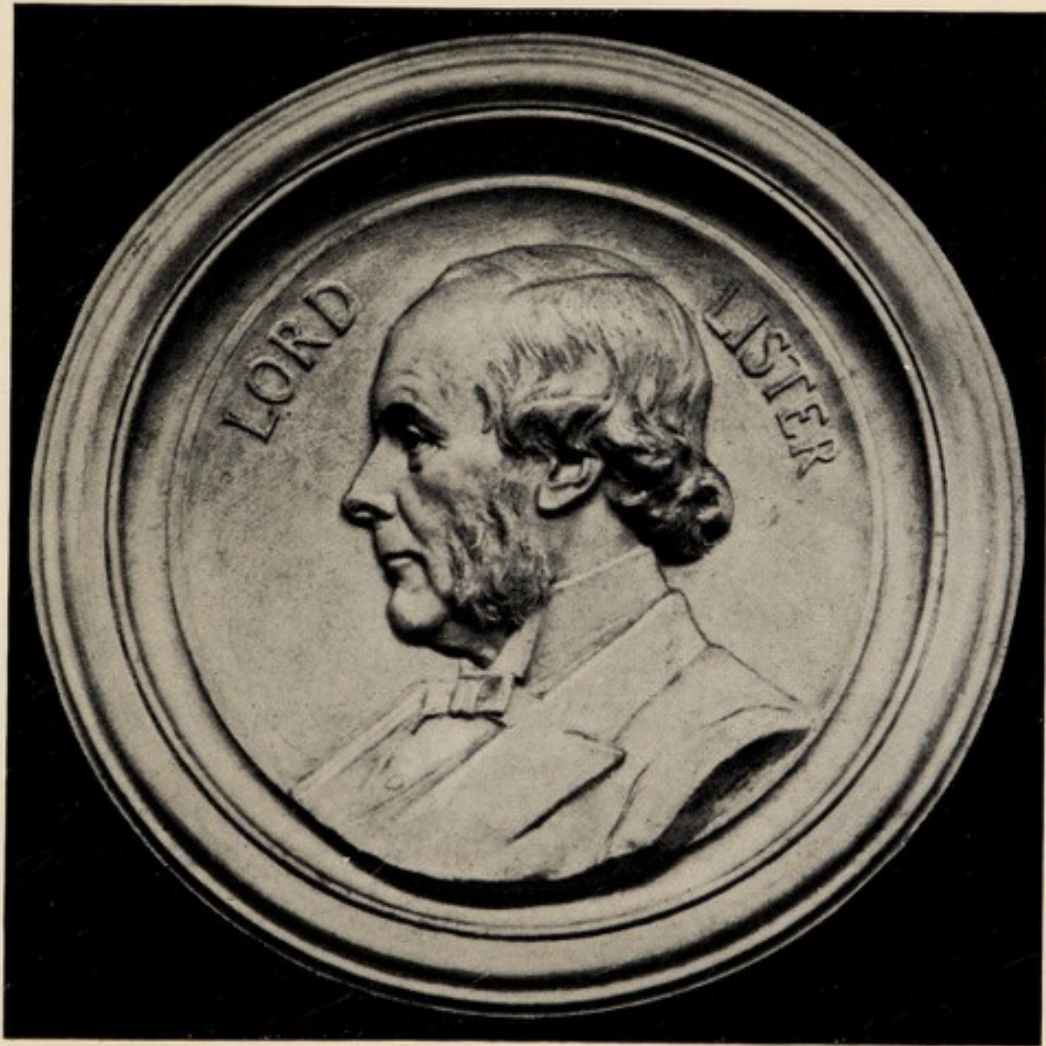
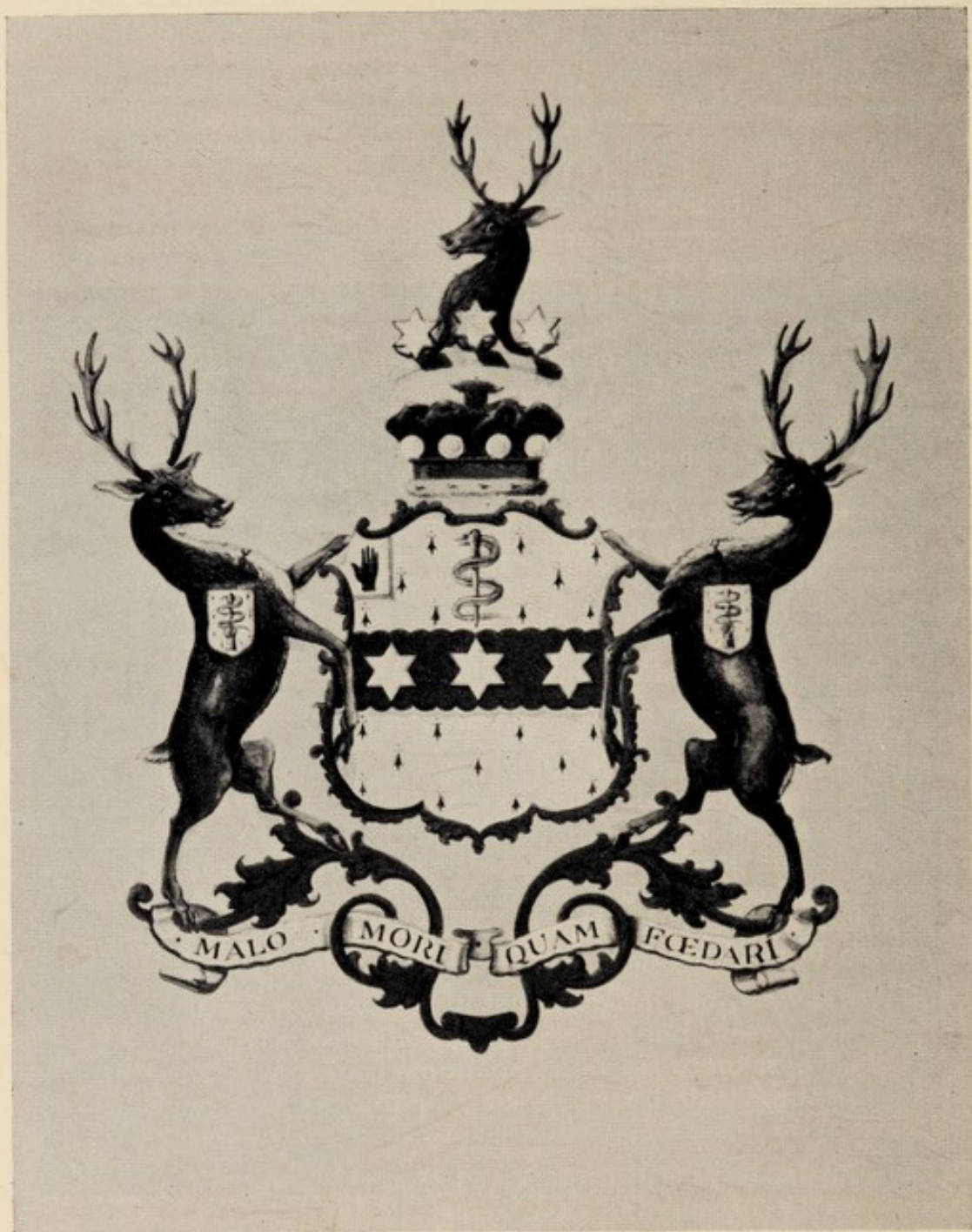


Fig. 13. Memorial medallion of Lister by Sir Thomas Brock,
in Westminster Abbey.



Armorial Bearings of Lord Lister, the serpent of Aesculapius appearing for the first time in the shield of a Peer of the Realm.

place a public funeral service was held in Westminster Abbey on February 16th, 1912, the pall-bearers being representatives of the Order of Merit, the Royal Society, the Royal College of Surgeons, the Universities of London, Edinburgh and Glasgow, the Lister Institute and King's College Hospital. In the north transept of the Abbey there is a marble medallion of Lister's bust, placed near to those of the great scientists Darwin, Stokes, Adams and Watt. (Fig. 13.)

Those who attended that impressive requiem remember the stately pomp and circumstance of a public funeral service, when not only the nation's representatives but delegates from all over the world, manifested their mourning for a man who had made humanity his debtor. More soul-stirring were the words of Handel's Anthem, so peculiarly applicable to our dear Master as the music of it rolled through long-drawn aisle and fretted vault :—

"When the ear heard him, then it blessed him, and when the eye saw him, it gave witness of it; he delivered the poor that cried, the fatherless, and him that had none to help him. Kindness, meekness and comfort, were on his tongue. If there was any virtue, if there was any praise, he thought on those things. His body is buried in peace, but his name liveth for evermore."

Such are some of my memories of Lister. This genius, the great master of surgery, one of the greatest benefactors of mankind was a Professor in the Medical Department of King's College and completed his life's mission within the walls of King's College Hospital, where he worked for sixteen years. Although the fruition of his work is freely enjoyed by the whole world, it is our particular privilege to be the inheritors of the personal traditions of one who, according to our motto, lived "holily and wisely." Lister, for all time, will be the greatest inspiration to our school.

"Not myself, but the truth that in life I have spoken,
Not myself, but the seed that in life I have sown,
Shall pass on to ages—all about me forgotten,
Save the truth I have spoken, the things I have done."

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1. In his will Lister bequeathed £10,000 to King's College Hospital and the same amount to University College Hospital—nearly a third of his fortune. The rest was all, except a small amount, bequeathed to public uses.

2. "A New Method of Treating Compound Fractures." *Lancet*, 1867, Vol. I., p. 326. "On the Antiseptic Principle in the Practice of Surgery." *British Medical Journal*, 1867. Vol. II., p. 241.

3. *British Medical Journal*, 1877. August 4th. p. 145.

4. *British Medical Journal*, 1877. October 6th. p. 465.

5. These historic flasks were afterwards deposited in the Lister Institute where, unfortunately, they were destroyed by a fire. Exactly analogous preparations were prepared by Captain Johnston-Saint, the Custodian of the Wellcome Historical Medical Museum, ten years ago and can be viewed there, still sterile.

6. "The Causation of Putrefaction and Fermentation." Edinburgh, 1869. November 1st. Published in Lister's *Collected Papers*.

7. Joseph Lister. Centenary Volume, edited by Logan Turner. 1927. p. 109. Reminiscences of "The Chief," by F. le M. Grasett, Professor of Surgery, Toronto.

8. John Stewart, House Surgeon in 1878, afterwards Professor of Surgery, at Dalhousie University, Nova Scotia.

9. The Story of a Surgeon. By Sir John Bland-Sutton. London, 1930.

10. J. R. Leeson. op. cit. p. 102.

11. "Treatment of Fracture of the Patella." *Pro. Med. Soc.*, London, 1884, Vol. VII., p. 8. and *British Medical Journal*, 1883, Vol. II., p. 856.

12. *British Medical Journal*, 1931. February 28th.

13. loc. cit.

14. Jubilé de M. Pasteur, Paris, Gauthier-Villars et Fils, 1893, p. 16.

15. John Rudd Leeson. "Lister as I Knew Him." London: Baillière, Tindall & Cox, 1927.

16. *Lancet*, 1908. I. p. 1818. *Collected Papers*, Vol. II., p. 367.

17. "A System of Practical Surgery." By Sir W. Fergusson, London: 1870, 5th edition, p. 646.

18. A Book of Verse. By William Ernest Henley, London: David Nutt, 1888.

