

**The Hunterian oration delivered February 14, 1883 at the Royal College of Surgeons of England / by T. Spencer Wells.**

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Wells, Spencer, 1818-1897.  
Royal College of Physicians of Edinburgh

**Publication/Creation**

London : J. & A. Churchill, 1883.

**Persistent URL**

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THE  
HUNTERIAN ORATION

DELIVERED FEBRUARY 14, 1883

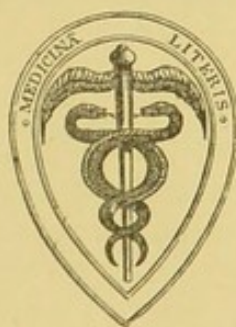
AT THE

Royal College of Surgeons of England

BY

T. SPENCER WELLS

PRESIDENT OF THE COLLEGE



LONDON  
J. & A. CHURCHILL  
11 NEW BURLINGTON STREET  
1883



# THE ALBERTUS

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TO THE  
FELLOWS AND MEMBERS  
OF THE  
ROYAL COLLEGE OF SURGEONS OF ENGLAND  
THIS ORATION  
DELIVERED AND PUBLISHED BY DESIRE OF THE COUNCIL  
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1895

NEW YORK

1895

## HUNTERIAN ORATION.

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MR. VICE-PRESIDENT, MY LORDS, AND GENTLEMEN,

Just seventy years ago, Matthew Baillie and Everard Home, being, to use their own words, 'desirous of showing a lasting mark of respect to the memory of the late Mr. John Hunter, which shall at the same time express the very high sense they entertain of the very liberal conduct of the Royal College of Surgeons, in supporting and preserving the Hunterian Collection,' agreed with Sir William Blizard and Mr. Cline to endow 'an *annual* oration, to be called the Hunterian Oration, which shall be read or delivered in the theatre of the said College on the 14th day of February in each and every year (being the birthday of John Hunter). They devised that such oration 'shall be expressive of the merits in comparative anatomy, physiology, and surgery, not only of the said Mr. Hunter, but also of all such persons as are or shall be from time to time deceased, whose labours have contributed to the improvement or extension of chirurgical science.' After the first oration in 1814, one was delivered every year until 1849. Since that year it has been biennial, and the indefinite phrase, 'from time to time deceased,' has been interpreted as applicable to the Fellows and Members and other distinguished men who have died since the delivery of the previous oration. This custom I shall follow; and, before



alluding to any other subject, I will endeavour to bring before you some account, necessarily very brief, of a few of the men who have died since February 1881, 'whose labours have contributed to the improvement or extension of chirurgical science.'

Were I to attempt to do more than make a passing allusion to such men as Schwann, and Bischoff, and Darwin, and Rolleston, and include comparative anatomy and physiology in the term 'chirurgical science'—which in the home of the Hunterian Museum I should almost be bound to do—the short space of one hour would be so fully taken up as to exclude any other subject. And even if I were to include some of our countrymen who have rather advanced the *medical* department of chirurgical science, and allude to such veterans as Christison and Billing, or Alderson, or Watson, whose loss is so recent, and to whom personally I shall always be grateful for kind encouragement in the earlier years of my practice in London; or to our Scotch brethren, as Pirrie and Spence; or Thompson, of Lisburn, who did the first ovariectomy in Ireland; or McClintock, a leader among our Dublin brethren—any notice must be so brief as to be useless. Still more so were I to include those of our brethren abroad or in America, like Pirogoff, Busch, Hueter, Davaine, Atlee, who now 'rest from their labours,' and whose 'works follow them.' I am compelled, therefore—not from want of respect or appreciation of such men, but simply from want of time—to limit my remarks to those Fellows and Members of this College who have died since Mr. Holden's eloquent oration was delivered here two years ago.

Three hundred and sixty-eight Members and Fellows are included in this death-roll of only two years. A



hundred years ago, in 1783, when Hunter had just bought the house in Leicester Square, which in its altered form of Alhambra was burnt down last year, the Members of this College numbered 835. In a hundred years we have increased in number more than twentyfold, for we have now 16,093 Members and 1,186 Fellows—a total of 17,279 men associated in our work. In the two years which have passed since the last Hunterian Oration, 368 of the Associates have died. The average age of the Fellows was about 66 years, and of the Members 57 years. One Fellow and four Members attained the age of 90 years and upwards, and other 13 Fellows and 20 Members ages upwards of 80. A few Members died within five years of obtaining their diplomas, and we lament the loss of one Fellow who was only admitted last year.

Two of our deceased Fellows—Luke and South—had attained the highest position in our College. Both were Members of Council, both Examiners, both had been President twice, and both had been teachers of surgery in large metropolitan hospitals.

Mr. LUKE was twice President of this College—in 1853 and 1862. He delivered the Hunterian Oration in 1852. For many years he was one of the Examiners, and he was connected with the London Hospital from 1816, as a pupil, till his death at the age of 82, when, after having long retired from private practice, he held the office of Consulting Surgeon. He attended the lectures of Abernethy and Astley Cooper, and was one of the personal links connecting these great Masters of our Art with the surgeons of our time. Luke's work as Hospital Surgeon and as teacher certainly contributed to the advance of surgery. In his operation for femoral hernia, by small incision and division



of the stricture without opening the sac, his success was very remarkable. In his Hunterian Oration Mr. Luke refers to a letter of Hunter's urging upon this College the establishment of a library, which he 'would consider one of the happiest events of his life,' as a proof that he regretted his own deficient early education; and Mr. Luke strongly insisted upon the necessity of a good general education for all medical men, and upon the study specially of French and German, and he spoke with great satisfaction of the examinations in the classics recently instituted by the Council of this College. Turning to the study of Hunter's character as an example to ourselves, he noted the 'perfect honesty and integrity of all his scientific and professional acts,' his indifference to money—except as enabling him to promote his favourite objects—his beneficence, his wonderful industry, and his careful subjection of all his doctrines to the test of fact or experiment.

SOUTH was one of the last surviving relics of the staff of the then united hospitals of Guy's and St. Thomas's; apprenticed to the younger Cline of St. Thomas's, and, after very many years' service as assistant surgeon there, succeeding too late in life to the full surgeoncy. He was a Member of our Council from 1841 to 1871; was an Examiner for many years; was Arris and Gale Professor; delivered the Hunterian Oration in 1844; and twice, in 1851 and 1860, was honoured by the highest distinction his colleagues on the Council could bestow. His works are translations of Otto's well-known Compendium of Anatomy and of Chelius's Surgery, which he greatly enriched by his own notes. His text-book on the Bones and his Household Surgery have both done useful service. When Frank Buckland discovered the coffin of John



Hunter in St. Martin's Vault, it was owing to the exertions of South that the body was removed to Westminster Abbey, and the inscription on the tablet which has been placed over the grave in the Abbey was written by him. For many years he had been engaged on a history of this College and of the Barber-Surgeons. His widow has permitted me to read the manuscript volumes—most beautiful specimens of neat and careful handwriting, and very extraordinary evidence of industrious research. One extract from these volumes I may now use as illustrating the advancement of the College since Hunter's time.

A former President—then styled Master of the Corporation, Mr. Gunning—wrote as follows, on retiring in July, 1790, from the office of Master. John Hunter was one of those present when these remarks of the Master were read. After some complaints of the imperfect way in which the College books were kept, and the unnecessary expenditure on dinners, Gunning said—‘Your Theatre is without lectures; your Library room, without books, is converted into an office for your clerk; and your Committee-room has become an eating parlour. . . . If, gentlemen, you make no better use of the Hall than what you have already done, you had better sell it. . . . I am sorry to observe that you have instituted lectures neither in Surgery, nor indeed in Anatomy of any degree of importance, nor have you held out any gratification or reward for rising merit.’

Now our library contains about 39,000 volumes, and every year becomes a more complete library of medicine and the auxiliary sciences. Our museum is our chief possession—the most complete of its kind in the world—and the offices of Assistant-Conservator are valued as rewards



to rising merit. Our hall is not only used for the lectures of Flower, Parker, Power, and Eve, and of a succession of our leading practitioners, but for the examinations of the young men who will become the surgeons of the future. The Council has already taken the first step for providing additional accommodation for the examinations by securing the services of one of the greatest architects of our time—Mr. Waterhouse—to report upon different plans, which will have to be carefully considered. I am also hopeful that, by a judicious outlay of part of our accumulated funds—assisted, perhaps, by contributions or legacies—we may supply what is now felt to be a great want—I mean such a complete central pathological laboratory as may assist the men who are leading the advance of Experimental Physiology and Pathology. Dr. Ogston's work at Aberdeen on micrococcus poisoning has already proved how very useful such a laboratory may be, and more than justifies the most sanguine hopes of the good to be expected from the endowment of a Chair of Pathology in the Northern University by the munificence of my predecessor in the Presidency of this College—Sir Erasmus Wilson.

GEORGE GULLIVER, who died last year in his 78th year, was a pupil of Abernethy, dresser to Lawrence, surgeon in the Guards, one of the first Fellows of the College under the new charter—elected 'in recognition purely of scientific merit'—for twelve years a Member of our Council, and Hunterian Professor of Comparative Anatomy and Physiology. In 1863 he delivered the Hunterian Oration in this place, warmly criticising some who had said that the material for these orations is 'nearly exhausted.' He maintained that 'there is perennial interest and instruction in reviewing the works of a man



of genius, in the now steady and now fitful lights and shadows of advancing science,' and he warmly upheld, against what he believed to be unfounded claims of French and German physiologists, the just merits of the British School of Physiology, instancing the labours of Hunter and his disciples, especially of Hewson, as 'fairly entering that prolific field of cells and endosmosis which was left utterly forgotten and barren for upwards of half a century afterwards, until new minds, with the aid of better instruments, found in it such a variety of rich fruits, and confirmed so many of his long-neglected conclusions.'

In one of Gulliver's lectures he asserted that a moderate quantity of beer may promote the formation of a chief product of digestion—the chyle. His illustrations of the molecular base of the chyle, of the intimate structure of tubercle, of the softening of fibrine, and his investigations into fatty degeneration of tissues and their relation with arterial changes and apoplexy, were all in advance of the pathology of his day. He argued that the modern 'protoplasm' is but a synonym of the old 'coagulable lymph,' and that a delicate shut sac might be formed by coagulation of fibrine without any cell agency. His demonstrations that the red blood corpuscles in the mammalia are non-nucleated, while in the oviparous vertebrates they are nucleated, was a distinct addition to the knowledge of the age; and his experiments upon the conditions under which fractures of the patella are united by bone or only by ligament, as well as his observations upon shortening of the neck of the thigh bone in young persons, were important additions to surgical diagnosis and pathology. Gulliver's life affords another proof that the career of an army



surgeon is far from being unfavourable to the cultivation of science. His son, now Assistant Physician at St. Thomas's, has already shown that he is worthily following in the path which earned honour for his father.

The name of GEORGE CRITCHETT recalls, to many who hear me, meetings for several years at our Council table, and his pleasant companionship at many less serious gatherings; and it would be difficult to name one whose loss has been more sincerely regretted. His life and work are remarkably illustrative of the recent extraordinary progress of ophthalmology in this country. It has been said of him that his career commenced in the 'pre-scientific period of ophthalmology.' But it must not be forgotten that the foundations for the most important of the advances of the German school were laid in England by Hunter, in ground prepared by Isaac Newton and Thomas Young. The anatomy of the eye was well known before Hunter's time; and Haller and Hunter, with Newton and Young, had done much to increase our knowledge of the physiology of vision. Daviel's extraction of cataract, Cheselden's iridotomy, and the treatment of diseases of the lachrymal sac, were already proofs of great progress. But it was not until after the beginning of this century that well-educated surgeons in any country devoted themselves to the study of diseases of the eye. Hunter's papers on the use of the oblique muscles, on the colour of the pigmentum of the eye in different animals, and his investigations into the structure of the crystalline lens, are proofs of his interest in the subject. The foundation of special hospitals in London in 1808 and 1810, followed soon after in other large towns and in Scotland and Ireland, and the works of such great surgeons as Travers, Lawrence, Guthrie, and Tyrrell—of such an



anatomist as Jacob, and such an oculist as Mackenzie—did much to increase the general knowledge of diseases of the eye. In Germany, until about thirty years ago, the school of Vienna occupied the most important position. Then the school of Berlin entered upon the path which has led to as great, as rapid, as extraordinary a progress as ever has been recorded in the history of any other branch of medicine, equalled only by the advance gained during a still more recent period in abdominal surgery, surgical gynæcology, and the use of antiseptics.

It was in 1851 that the great physiologist Helmholtz invented the ophthalmoscope, and thus enabled us to investigate some diseases of the eye which before were completely hidden in darkness. Just at this time Albrecht von Graefe began his brilliant but short career; and in twenty years he worked out all the most difficult and complicated questions in ophthalmology for the aid of the practical surgeon. Graefe called to his side many able men to assist in his great work. Heinrich Müller worked out the microscopical and pathological anatomy of the eye; Donders, the affections of refraction and accommodation; and one distinguished German, who joined this College after a brilliant career in Berlin and Paris—Liebreich—devoted himself mainly to the study and teaching of the ophthalmoscope. I well remember, when in 1853 I brought from Berlin almost the first ophthalmoscope which was tried in this country, with what delight Critchett watched its earliest trials. When some called it a 'toy,' and others feared its possible dangers to a sensitive retina, Critchett eagerly tested its utility. He, and a fellow-workman happily still among us, beloved by many and honoured by all, who had done much to increase knowledge of the 'parts concerned in the opera-



tions on the eye,' and whose microscopical researches had greatly increased our knowledge of ocular histology (even to our visitors I need not name Bowman), side by side, with generous rivalry and throughout a long and useful career, either by improvements in practice or by clinical teaching and additions to our literature, greatly assisted in the recent progress of the science and art of ophthalmic surgery. How much of this progress is due to the teaching and example of Critchett at Moorfields and the Middlesex Hospital, it is perhaps difficult to say. But it is certain that no one could see him operate without admiration, or without some desire to be able to imitate his perfect coolness, his delicate touch, and his exact precision; while all might learn how a successful operator, by attention to every detail which can influence the result, deserves and obtains his success and his reputation. A junior colleague, Soelberg Wells, had studied in Berlin under Graefe, and his Handbook became a valuable guide for our students. His faithful and fertile work at Moorfields and King's College will not be forgotten in the annals of those institutions. Liebreich will be remembered by his enthusiastic and successful work for ten years at St. Thomas's, and the translation of his 'Atlas of Ophthalmology' (equally distinguished by artistic skill as by a faithful and trustworthy interpretation of intra-ocular changes), will always be valued as a notable contribution to the literature of modern ophthalmology. Our public schoolrooms have also been greatly improved by the seats and desks suggested by his endeavour to remove some prevalent causes of defective vision. He now enjoys artistic leisure in a sunnier clime. George Critchett's labours are over, but his son remains, and we may rejoice in the continued accession of able workers in



this special field. And while we have so many special hospitals, and eye departments in so many general hospitals, and such men as work in all—there is no fear for the future of ophthalmic surgery in the country where its foundations were laid, in optics by Newton, and in physiology by Hunter.

Probably no man in the whole world, during the last twenty or thirty years, has done so much with his own hands to prevent or relieve severe pain as JOSEPH CLOVER. As an administrator of chloroform, or of some other anæsthetic, his services were in almost constant demand. For many years resident in University College Hospital, then extensively occupied in general practice, he became so well known for his careful and precise mode of administering narcotic vapours or gas, that little time was left him for other pursuits. In some respects, although he supplied a real want in daily practice, this limitation of his work is to be regretted; for the valuable improvements he made in several surgical instruments, especially in the double-current exhausting syringe, so useful in lithotripsy, afterwards improved by Bigelow, prove that with less delicate health and more leisure, his many friends would have been able to record more numerous and enduring memorials of the life-work of a singularly industrious man. Now they must be content with thinking

On that best portion of a good man's life,  
His little, nameless, unremembered acts  
Of kindness and of love.

I should hardly do more than mention the name of Dr. PEACOCK, though one of our Members, as he was so purely devoted to the practice of a physician, if he had not been one of our Examiners. And now I can do



little more, for want of time, than allude to his valuable gift to our Museum, in recognition of which, in 1876, he received the Honorary Gold Medal of the College. He died when visiting St. Thomas's Hospital, in a ward which had been under his own charge during his years of active work and teaching.

Few men were better known in our Medical Societies from ten to thirty or forty years ago than EDWARDS CRISP. His Jacksonian Prize Essay on the Structure, Diseases, and Injuries of the Blood Vessels remains a sufficient proof of the industry and attainments of a very active man. In his later years he spent much time in investigating diseases of the lower animals, and the natural history of parasites. He obtained the Astley Cooper Prize for his Essay on the Structure and Use of the Thyroid Gland; a second time the Jacksonian Prize, on 'Intestinal Obstructions'—besides others on Croup and Diphtheria, and Disease in Lambs. He first demonstrated the existence of valves in the splenic vein. He is said to have accumulated a museum of comparative and pathological anatomy exceeding 5,000 specimens. He was a remarkable instance of a man who, busily employed in the daily work of a large general practice, also took an active part in medical politics, while assisting usefully in the advance of zoological science and human and comparative pathology.

Still without passing from our London brethren, I have to record the loss of five veterans:—

GRIFFITH, of Gower Street, died at the age of 90, after having honourably carried on a very large general practice for more than sixty years.

GEORGE MACILWAIN, so well known at the Medical Societies and the Royal Institution for so many years,



who wrote the Life of Abernethy, and a thoughtful book entitled 'Medicine and Surgery one Inductive Science,' reached the age of 85.

FRANCIS GODRICH, after practising at Brompton for sixty years, died at the age of 85. He was one of the founders of the Medical Benevolent College, and he took a leading part in all the improvements and charities of the districts in which he practised. He greatly assisted Mr. Wakley in his successful conduct of the Medical Witnesses Bill through the House of Commons.

Another octogenarian, JOHN MERRIMAN, was one of a very old medical family. Samuel Merriman the elder attended the lectures of William Hunter, and practised in London all through John Hunter's career. Having attended 12,000 cases of labour, he took for his motto—'Terar dum prosim,' which the family have retained ever since. He died in 1818, aged 86. His nephew, the second Samuel Merriman, author of 'Difficult Parturition,' died in 1852. These two were uncle and cousin of John Merriman, who began practice in Kensington the year after the death of John Hunter. He was the father of the second John Merriman, whose death I have just referred to. He was attached to the household of the Duchess of Kent, and of our Queen, attended the Princess Sophia, was consulted by the Prince Consort, and received many proofs of the gratitude of these royal persons. He carried with him into pleasant retirement the good wishes of all classes in the 'old Court suburb,' and he is succeeded by a son and grandson who worthily maintain the traditions of the name they bear.

FREDERICK TOULMIN died in his 85th year only ten days ago. He had practised for nearly fifty years in Clapton, where he and his brother succeeded their father.



He was a kindly, genial man, a charming companion, and his anecdotes of the leaders of the Profession in his early days were many and very interesting. Mr. Toulmin's great-grandfather was a surgeon. His brother and his nephew are the fourth and fifth in direct family succession in the Profession during a period of more than fifty years. He was a dresser under Sir Astley Cooper, and the testimonial which Sir Astley gave him, when a candidate for a dispensary surgeoncy, was so gratifying to him, and is so characteristic of the great surgeon, that I venture to read it here. Sir Astley wrote: 'When I look around me and observe the number that I have had a share in educating, I find no individual to whom I am more sincerely attached than to Frederick Toulmin. If I be asked the reason of this, my answer will be that his knowledge in all the branches of his profession is most extensive, and his character as a man the most amiable. My best wishes will ever accompany him. His prosperity will always be next my heart. Astley Cooper.'

DONALD NAPIER was a surgeon who inherited mechanical genius, and though he devoted himself specially to Dental Surgery, he constructed and improved many ingenious surgical instruments. The Association of Surgeons who practise Dental Surgery owe a great deal to Napier's zeal, and he did very much, although he died at 50, to improve the position of dental surgeons.

Although he lived a little beyond the metropolitan district, the noble figure and grand head of HECKSTALL SMITH were almost as well known to us in London as in Kent where he practised for more than fifty years. He was a general favourite—did much useful sanitary work—and has left a church, which was built and endowed almost entirely by his exertions, to perpetuate his memory.



Among the general practitioners around London I may mention STEPHEN ALFORD, of Hampstead, who took an active and useful part in the attempts made for several years past to protect and reform habitual drunkards; HEMMING, who worked hard at diseases of the ear; and DUKE, of Clapham, who after more than forty years' work in very varied and large practice, and continual struggles with parochial authorities when fighting the cause of the sick poor, has left the best of all legacies to the many sons who follow their fathers' profession—the 'good name' which is 'better than riches.'

It is to such men as these that Johnson's portrait of his friend Levett would apply:—

When fainting Nature called for aid,  
 And hov'ring Death prepared the blow,  
 His vig'rous remedy display'd  
 The *power* of art without the show.  
 \* \* \* \* \*  
 No summons mock'd by cold delay,  
 No petty gains disdained by pride;  
 The modest wants of every day  
 The toil of every day supplied.

Nor should we forget HARDWICKE, who left practice on being elected Coroner for Central Middlesex, and died at his post.

Turning from London to the Provinces, I again speak first of men who reached old age.

THOMAS RADFORD, who attained the age of 88, and for sixty-three years had been associated with St. Mary's Hospital for Women, in Manchester, enriched that Institution by presenting to it a library said to be one of the most complete of its kind in Europe, and by founding a museum. His work on the Cæsarian section is too well known to call for more than mention here.



STEPHENS, of Shields, was an octogenarian whose services to the town he served were gratefully acknowledged. GREENHOW, of Newcastle, was one of the original Fellows of the College. At his death, at the age of 90, there was only one Senior Fellow on the list. He was a bold, skilful, and successful operator. He had unusual success in lithotomy, and repeatedly excised the os calcis for caries. He had a very large experience in Ophthalmic Surgery; and invented a very useful fracture bed. During the cholera epidemic in 1832 he laboured incessantly; and, twenty years afterwards, foretold the second epidemic, which arrived as he predicted. And he pointed out how, by overcrowding, by burial of the dead within the town, by bad drainage, bad water, and impure air, his townsmen were prepared to fall victims to the pestilence.

GORE, of Bath, also an octogenarian, was of great service to that town in the improvements he obtained in its water supply and general sanitary administration. GREEN, Superintendent of the Birmingham Lunatic Asylum, died at 81. WILLIAMS, of Swansea, who died at the age of 79, was the son of a surgeon who practised nearly a century ago, and was at that time the only member of this College in South Wales. Two Surgeons of Provincial Hospitals—SYMONDS, of Oxford, and NUNN, of Colchester—were old friends of mine. In many anxious cases they have shared with me serious responsibility, and I am indebted to both for much assistance. SYMONDS was one of a representative medical family—son of an Oxford surgeon, brother to the eminent physician of Clifton, and father to the present able and active Surgeon to the Radcliffe Infirmary. He well maintained the social position of our Profession in the University and the county where he was so popular.



NUNN thoroughly deserved the place he held for so many years as the most fully employed surgeon in his town and district; a trusted consultant by his brethren, and a warm supporter of the Hospital, where he earned the gratitude of the poor.

JOHN POSTGATE was a most successful teacher in Birmingham, and did much to prevent adulteration of food, drinks, and drugs. Several bills were introduced into Parliament by the Members for Birmingham, influenced by Mr. Postgate, and the Amended Acts of 1872 and 1875 are mainly due to his exertions.

DREWRY OTTLEY, who died last month, aged 80, joined this College thirty-six years ago. He was the author of the best Life of John Hunter—that published with Palmer's edition of Hunter's works. After many years' practice in London he settled at Pau, where he remained for more than twenty years, but for several years past has lived in retirement near London. His loss is regretted by many old friends. His son Walter, one of our Fellows, died only a few days after his father.

Time alone prevents me from alluding to many other of our deceased brethren whose average age at death represents for each about thirty-five years of professional work. Pray consider for a moment what that work is. Walter Scott wrote, 'I have heard the celebrated traveller Mungo Park, who had experienced both courses of life, rather give the preference to travelling as a discoverer in Africa, than to wandering by night and by day the wilds of his native land in the capacity of a country medical practitioner.' Only a small proportion of our brethren have acted purely as consultants or operating surgeons. By far the larger number, some without, but more with, some *medical* qualification in addition to our diploma,



have been the general practitioners, or 'family doctors' of the people—the trusted medical attendants of at least nine-tenths of the population. Wherever their lot may be cast—in town or country—they instruct both rich and poor how to preserve health, and remove or avoid known causes of disease. And although little may be recorded of many, we do know that the nation is as much indebted to them as to any other class of public servants. By night and by day, at the service of any one who may require help in sickness, at the opening or the close of natural life, in mental aberration or in bodily suffering, injured by wound or accident, at almost any distance, in any weather, sometimes suffering themselves from illness or over-fatigue, the members of this College, often without expectation of reward—perhaps bestowing money, hard earned and ill spared, as well as affording surgical aid to the needy—ungrudgingly, cheerfully, gladly do their duty day after day and year after year, until they rest in peace, 'unhonoured and unsung,' perhaps, but not 'unwept.' There may be no monumental epitaph, no biography nor memoir, nothing beyond the erasure of a name from the College Calendar, and yet the nation has lost a good and faithful servant, whose place must be filled by others, who in their turn pass through our portals and enter upon the work which is prepared for them.

And it is the most important duty of this College, while maintaining the scientific value and character of its diplomas, to guarantee to the public useful and skilful practitioners, really fitted for the daily practice of the healing art. In order to ensure the value of the diploma as a proof of education and knowledge and skill, the Council and the Examiners, recognising the necessity that



the surgeons of the future must be well-educated gentlemen, and that their scientific and practical knowledge shall fit them for their daily work, have been earnestly endeavouring to fill up our ranks by attracting, as far as possible, young men who, before they begin professional studies, have had the advantage of as high general culture as can be obtained in our best schools. In this desire we have the hearty concurrence of the Medical Council and of the College of Physicians; and I trust the day is not far distant when, without either aid or interference from the State, the two Royal Colleges will correct mistakes in the working of the Medical Act, prescribe a common course of study for students, and agree upon a mode of examination which shall secure for the country a body of well-educated medical men, who, either as teachers or as students, in the Metropolis or the Provinces—as army or navy surgeons or as civilians, at home or abroad—by observation, by research, by experiment, by improvements in the practice of our art, by additions to our literature, by daily attempts to relieve the sufferings of others, may emulate the best of their predecessors, and, like them, while living be honoured and loved, and when dead, not forgotten.

So far I have spoken of deaths among our brethren at home. In India, in our Colonies, at sea in our Navy, or in our Mercantile Marine, other losses might be deplored. But I must pass on to speak of some of the Army Surgeons, who in India, at the Cape, and in Egypt have done honour to their country and their calling. Brigade-Surgeon Martin, who died in India last March, was mentioned in despatches as ‘attending to the wounded under heavy fire.’

Forty years ago, one of our oldest Fellows, whom we



all congratulate upon continued vigorous health and continued interest in the progress of Modern Surgery—a teacher of many who are now themselves teachers—Mr. Arnott—when delivering the Hunterian Oration, spoke of the great French Army-Surgeon, Larrey, who had recently died, as ‘the first Military Surgeon who dressed the wounded under the very fire of the batteries,’ and said that to him we ‘owe our place of honour on the field of battle.’ The Army Surgeons of our day well maintain their reputation, not only for gallantry, but for self-sacrifice to duty. What can be finer than the conduct of Shepherd, who, riding away from the bloody field of Isandhlwana, with a good chance of escape, dismounted to assist a wounded man, and was killed by the assegais of the Zulus; or of McCrea, who, severely wounded in the chest himself in the first charge, continued to attend the other wounded, as he was the only doctor on the field.

In the military operations on the Transvaal frontier against the Boers, the courageous devotion of Army Surgeons to their duty was conspicuous. At Lang’s Neck, ‘as the 58th regiment advanced and the men were falling rapidly, Surgeons King and McGann moved up behind the advancing column, and, on its retirement, remained, amidst a hail of bullets, attending to the wounded. . . . At the final disaster at Majuba Hill, the officers of the Medical Service remained faithful to their duties even unto death. Dr. Cornish was shot as, with a piper of the 92nd Highlanders, he was carrying a wounded man on a stretcher. . . . Landon, always keen for duty in the field, and taking a special pride in his Army Hospital Corps, met his fate at the final rush of the Boers. . . . The ruling passion strong in death, he called Dr. Babington’s attention, shortly before he expired, to the meri-



torious conduct of his men.' I have copied this from a colonial newspaper, the *Natal Witness*. Let me say something more about Landon. He was kneeling, attending to a wounded soldier, when a bullet wounded him in the loin, and Longmore writes: 'He at once fell forward. The lower half of his body became completely paralysed, and Landon told Corporal Farmer he must die. Farmer was almost immediately struck by a bullet in both his forearms, and was suffering excessive pain from injuries to the ulnar nerves. Landon had a field case with him containing morphia and syringes, and he had the upper part of his body propped up against a boulder of rock, and in that position administered the morphia injection in both Farmer's arms in succession. The Corporal was so relieved that he fell asleep, and remained so for several hours.' Well may Longmore write: 'It is difficult to imagine a more perfect example of professional heroism than was afforded by the conduct of Surgeon Landon, from the time when the Majuba fight commenced to that when death put an end to his own sufferings.' And well have the men of St. Bartholomew's done by placing a tablet in their chapel, to keep in memory his bright example, by a record of his last words—'I am dying; do what you can for the wounded.' And not Bartholomew's men only—not only this College—not Army Surgeons only, but the whole Profession, the whole nation, will rejoice with me when it is made known that Her Majesty the Queen was so much impressed by the story which I have just read to you of Landon's noble conduct, that the report has been preserved among her private records—another proof of the Queen's interest in her soldiers, and in the men who are devoted to them.



The last Egyptian campaign has added another to the list of Army Surgeons killed in action while attending to the wounded. GEORGE SHAW had served in cholera camps in India, in the field in Afghanistan, and in the advance through the Khyber. He was a very gentle, amiable man, most devoted to the soldiers. He went to Egypt with the Bearer Company, and at Kassassin, while dressing wounded under fire, was shot through the head.

It is gratifying also to be assured that in Egypt, as in South Africa, the men of the Army Hospital Corps worked as bravely and as well as the examples of the Medical Officers led them to do. My old comrades, the Naval Surgeons, also deserve full credit for the way they did their work during the Egyptian campaign—on board ship at the attack on the forts of Alexandria, or on shore with blue jackets and marines, alike under fire with the fighting line, or in the armoured train, or combating disease in camp, or on the march. We have been assured by everyone in a position to know—from the Commander-in-Chief downwards—that the Naval Surgeons were always ready, willing, and cheerful. And while we speak with pride and satisfaction of the manner in which our brethren, both in Army and Navy, who served at the seat of war acquitted themselves, we must not forget those who laboured at home: the heads of both the Medical Departments and those under them have well merited a generous recognition of their forethought and good service.

And what a change for the better has taken place in the practice of Army and Navy Surgeons since Hunter's time! Military surgery, before the publication in 1794 of his last work, so far as the treatment of gun-shot wounds is concerned, was influenced by the false doctrine of the



poisonous nature of the wound—the necessity for the escape of the poison—and therefore for the dilatation of the wound and the keeping up of suppurative discharge. Hunter served as Staff Surgeon in the army in the expedition against Belleisle in 1760, and in Portugal in 1763. In 1776 he was appointed Surgeon-Extraordinary in the army, in 1786 Deputy Surgeon-General, and in 1791 Surgeon-General—as Longmore says, ‘a laborious office, corresponding with that of the Director-General under existing arrangements.’ He held this office during the early part of the war with France which was declared in February 1793. After Hunter’s death the simpler treatment of gun-shot wounds which he taught has been generally followed, and other great improvements in military surgery have been accomplished. Secondary amputations have been shown to be more fatal than those performed soon after the wound. Amputations have been often avoided by excision of joints or of injured portions of bone. The use of anæsthetics, and latterly of antiseptics, in spite of the much larger number of wounded after modern battles, have greatly lowered the death-rate; while, thanks to our experience in the Crimea, and the perfection of the system of ambulance transport in our Indian army (all admirably worked out by the indefatigable perseverance of one of our own Fellows—the Professor of Military Surgery at Netley)—the transport of our sick and wounded in time of war is so perfect as to have been copied by other armies; while all the administrative arrangements for the care and treatment of sick and wounded, the organisation of military hospitals in time both of peace and of war, and the service in the field, were proved in the late Egyptian expedition, under all the disadvantages of a rapid and



unexpected change of base, to have been most creditable to the Army Medical Department. As one proof of this, let me say that during all this campaign the one dreaded disease of Egypt, contagious ophthalmia, did not lead to the blindness of a single soldier. In 1801-2, among the English and French troops in Egypt, one man in 54 lost one or both eyes. Last year, although there were 1,783 admissions to hospital for inflammation of the eyes of various types, the treatment was so successful that *in not one instance* has there been loss of sight; and the sanitary precautions taken against the spread of contagion were so prompt and rigorous, that the disease was stamped out. Surely this is a service worthy of record, and one which reflects the highest credit on the Medical Officers of the expedition. And if the Army Medical Department obtains such a control over its own affairs as other branches of the army, we need not fear for its future efficiency. To insure this efficiency the Medical Officers and the Army Hospital Corps should be made one Royal Corps—placed on a perfect equality with other Corps, and receive a fair share of honorary distinctions. The Director-General and the Principal Medical Officer of a Division should be secured rank and pay proportionate to their arduous and responsible duties, and be provided with a subordinate for secretary's duty. A field-hospital fully equipped for the field should be maintained at Aldershot, or elsewhere; and the whole Corps be frequently exercised during peace in all the duties they may be called upon to perform in war. Let us trust that this may be the result of the Commission which has been sitting under the presidency of Lord Morley, and of which one of our Fellows, Sir William MacCormac, is a member. Under their own head—a united body—having



entire control over and command of their own Department, subject only to the General Officers commanding—our Army Surgeons will cheerfully accept the responsibility of collecting, removing from the field of battle, and attending to the first wants of the wounded, and for their subsequent care and treatment; as well as for the equally important duties of sanitary officers in preventing disease, and maintaining the physical condition of our army. And if the Corps desire a motto, let me suggest one, well deserved by their conduct in the past, and encouraging to good service in the future,

‘FAITHFUL UNTO DEATH.’

## II.

I must now obey the other direction in the trust deed, and endeavour to express something as to the ‘merits in comparative anatomy, physiology, and surgery,’ of John Hunter. The direction seems a happy one, for Hunter based his Surgery upon Physiology, and his Physiology upon Comparative Anatomy. What can more strikingly illustrate this than his greatest improvement in practical surgery?—the abolition of amputation for popliteal aneurism, and the practice of tying the artery in a sound part at a distance from the seat of disease. This has already saved thousands of human lives; and it has been well said that if Hunter had done nothing else, ‘on this account alone he would have a right to be classed among the principal benefactors of mankind.’

One who perhaps more than any other of our contemporaries resembles Hunter in completing the union



of thought with action—the wisdom of the Philosopher with the skill of the Surgeon—Sir James Paget—says: ‘It was really a splendid achievement; and its utility is not half told by counting the thousands of lives that it has saved. Its higher value is that it still abides as a great testimony of the power of the scientific mind in Surgery. I think it has done more than any other of Hunter’s works to make, not only Surgeons, but Surgery, scientific.’ And observe how Comparative Anatomy and Physiology led to Surgery—how thought and experiment prepared the way for action. It was probably without any idea of Surgery that Hunter was first led to investigate the phenomena of the annual growth and shedding of the antlers of the stag or buck. But he did so, and tied the artery which supplies the growing antler, and the soft covering called the ‘velvet,’ which conveys the vessels supplying the material of growth. Pulsation in the vessels in the velvet ceased, and the antler soon became colder. A week afterwards the vessels were again pulsating, the velvet was warm, and the antler growing. The buck was killed, the tied artery found to be obliterated, but the circulation was carried on by vessels above and below the ligature, ordinarily very small, but enlarged under the new conditions.

Now I am well aware that some modern misanthropical zoophilists have said that Hunter had no right to make this experiment—that human morbid anatomy had taught him that when the current of blood ceased to flow into an aneurismal sac, the blood clotted and was absorbed. But it is quite indisputable that Hunter was doubtful whether, after the supply of blood to a part had been cut off by obliterating the main arterial trunk, the circulation would be kept up by other vessels, or the



part would die. And it is certain that his experiment on the deer removed his doubts, for—as Professor Owen tells us—there was a coachman in St. George's Hospital, with popliteal aneurism, who had consented to amputation. But Hunter thought that if the anastomosing vessels in the man would carry on the circulation after obliteration of the femoral artery, as they did in the antler of the buck after obliteration of the carotid, he could cure the aneurism and save the limb. Professor Owen emphatically says that Hunter explained to his assistant and pupils the results which he believed would follow a repetition on the man of his experiment on the deer. And, just as he predicted, there was the same stopping of pulsation, the same cooling of the part from which the supply of blood was cut off, the same return of natural warmth, and in six weeks the man walked away cured. This account Professor Owen tells me was given to him by Mr. Clift.

In this and two subsequent cases artery and vein were both tied; but in his fourth case Hunter tied the artery only, not the vein. This was in the year 1787. The patient was then 37 years old. He lived till he was 86, and died in 1837. At his death, Mr. Wormald obtained the limb from his widow, and found the femoral vein pervious, the artery obliterated, the tortuous anastomosing vessels as you see them in this specimen which Mr. Wormald presented to our museum, and the aneurism represented by the small calcareous body not larger than a filbert.

This association of Surgery, Physiology, and Comparative Anatomy is manifest in the leading idea or plan of Hunter's museum, which is to show each step from the most simple conditions in which life can be traced



upwards to man himself. We are told that, observing that in the advanced stages of successful incubation, eggs did not putrefy, he was first led 'to recognise LIFE as a POWER, and ORGANISATION as the mechanism by which life operates.' Observing some snails drowning, and noticing the effects produced upon lizards if they were brought too early in winter out of their lurking-places, he ascertained some of the facts 'which guide and encourage us in our attempts to restore suspended animation.' Here we see the man who both observes and thinks. 'For one person who can think,' says Buckle, 'there are at least a hundred who can observe: an accurate observer is no doubt rare, but an accurate thinker is far rarer.' Can anyone look up to this portrait of Hunter, by Reynolds, and not agree with Lavater, who, when he saw it, said, 'This man thinks for himself'? Hunter used to say that 'he delighted in thinking;' and the great artist who is said to have peculiarly excelled in *painting the mind* of his sitters, has caught Hunter in the attitude of meditation. In that absorbed and upward gaze 'from earth to heaven,' 'as imagination bodies forth the forms of things unknown,' we can trace the hoped-for explanation of some of the mysterious phenomena of nature by the application of some great leading principle, the elucidation of some physiological problem, the unravelling of some as yet unfolded revelation. Home, and others who knew Hunter, have said that this portrait gives a very faithful representation of his countenance, person, and manner. While painting the portrait, Reynolds induced Hunter to have a cast taken from his face. From this cast, which has been preserved in our museum, and is here before you, Flaxman's marble was sculptured. He and Chantrey studied both cast and portrait, for the College is fortunate



in possessing two busts of our great master as well as the full-length sitting figure in the museum by Weekes. And we have a second portrait, by Sir Nathaniel Holland, which was said by Mr. Clift, and by Sir John Dorat, Hunter's last surviving pupil, to be better as a mere likeness than the idealised portrait by Reynolds. Perhaps Reynolds's portrait is more suggestive of the man who thought, and Flaxman's bust of the man who observed, experimented, acted.

Though Hunter loved to think, he followed Bacon in insisting on observation and experiment as the only foundations of true science. 'If you check experiment you stop discovery' is one of his aphorisms. And he once wrote to a friend, 'I think your solution is just. But why *think*? Why not try the experiment? Repeat all the experiments as soon as you receive this, and they will give you the solution.' Thus in Hunter we find the mind which investigates the laws of disease, and the hand which improves the art which cures disease; not only philosopher and pathologist, but surgeon—as rare a combination as that of a profound jurist and an eloquent advocate—an agricultural chemist and a farmer—an astronomer and a pilot. We have a combination of Faraday investigating the laws of electricity and magnetism, and Swan or Edison applying the knowledge in the electric lighting of towns.

It is unnecessary to repeat now, what Mr. Wormald proved in this place twenty-five years ago, that Hunter was well aware of the possibility of curing aneurism by pressure on the artery as well as by tying it—in this, as in so many other instances, anticipating recent improvements in practice supposed to be new. Just as we find that modern views of phlebitis and pyæmia had been advanced by Hunter; and Burdor Sanderson, in his lec-



tures on inflammation, acknowledging that 'we find ourselves once more coming back to the notions, which at one time were thought obsolete, of the great father and founder of physiological pathology;' so we may be certain that Hunter foresaw much of that progress in abdominal surgery in which it has been my own pride and pleasure to assist. In 1762 William Hunter distinctly suggested that it might be advisable to expose an ovarian cyst by a small incision,—'tap the bag and draw it out.' In 1785 John Hunter said, 'I cannot see any reason why . . . . we should not make an opening into the abdomen and extract the cyst itself. Why should not a woman suffer spaying without danger as well as other animals do?' The influence of Hunter's teaching upon John Bell, of Bell upon McDowell, and the history of ovariectomy since McDowell's first operation, is a theme which I have treated at length in this theatre and elsewhere; and however strongly tempted to enlarge upon it, and upon the more recent extensions of peritoneal surgery—the removal of uterine tumours, of the spleen, of one kidney, of hydatids, of gall-stones, of omental and mesenteric tumours, of fibro-plastic and fatty tumours of various origin from the abdomen, of the entire uterus, or of part of the uterus with the foetus, of an extra-uterine foetation, of the pylorus, and of portions of diseased intestine—all operations which have been performed with increasing success—I regret very much that I have not time to do more than point to the preparations on the table, which show how our younger hospital surgeons are assisting the most recent advances of abdominal surgery. Mr. Treves's specimens show how perfectly union between two portions of intestine may be effected after the removal of an intervening diseased portion; and the three large gall-stones removed from the gall-bladder of a woman in the



Samaritan Hospital by Mr. Meredith are gratifying evidences of boldness and skill. Both Mr. Treves and Mr. Meredith, at my suggestion, were desirous of experimenting on some of the lower animals as to the best mode of uniting divided edges or surfaces of peritoneum. But the trouble and delay of the present system of licensing has hitherto restricted these operations to men and women. I wish I could say more of this ; but I am compelled to devote the very few minutes allotted to me to a hasty sketch of what we hope may be gained in the not very distant future by combined association for the advancement of medicine, in its higher sense, by research.

And first let me say with how much pleasure I can state, that the Association lately founded under the auspices of all the leading men in our profession in the United Kingdom has already begun useful work. On the part of the Association, Mr. Watson Cheyne visited Dr. Koch at Berlin, and Professor Toussaint at Toulouse, and has since carried on investigations, the results of which enable him to explain their opposite statements with regard to the micro-organisms associated with tubercle. Mr. Cheyne has also made experiments with reference to the specific nature of tubercle, which tend to confirm the view of the specific nature of tubercle first promulgated by Villemin, and so strongly supported by Koch's observations. Mr. Cheyne's further observations lead him to the conclusion that the bacilli of tubercle multiply by preference in the epithelium of the alveoli of the lungs, and lead to inflammatory exudation in the walls of the alveoli. According to the number and rapidity of growth of the bacilli in the alveoli, we have the two conditions of fibroid phthisis or caseous pneumonia, which by many have been looked on as different



processes. On this view is also explained the difference in the effects produced by these organisms in man and rodents. Rodents, when inoculated subcutaneously, always develop general acute tuberculosis. That disease is extremely rare in man when compared with the frequency of pulmonary tuberculosis; because in man the bacilli are not inoculated, but are received into the bronchial tubes by inhalation, and their entrance into the circulation is prevented in the first instance by the inflammatory changes which occur around the alveoli in which the bacilli grow. If man were inoculated as we inoculate rodents, all analogy would lead to the conclusion that acute tuberculosis would probably be developed. Mr. Cheyne is carrying on these researches, the animals experimented on being kept under exceptionally favourable hygienic conditions, and it is not too much to hope that they may lead to a successful mode of treating phthisis. However strongly tempted to say more on this immensely important subject, I must leave it for a future Hunterian orator, and pass from tubercle and its bacilli to other diseases, more commonly classed as contagious or infective.

Of all the discoveries of modern times, perhaps the most important is that of the dependence of fermentation and putrefaction upon microscopic organisms; and of a number of communicable diseases upon specific MICROBES—a convenient word to include the micrococcus, the bacterium, the bacillus, the vibrio-microzoa, or microphytes whichever they may be.

At Cambridge, eighteen years ago, I attempted to show the relation between the work of Davaine and Pasteur, and the causes of excessive mortality after surgical operations. Allow me to read one sentence from my address in 1864, partly to allude to advances



gained since that year, and partly to point out some lines of future research. I said: 'Applying the knowledge for which we are indebted to Pasteur of the presence in the atmosphere of organic germs, which will grow, develop, and multiply, under favourable conditions, it is easy to understand that some germs find their most appropriate nutriment in the secretions from wounds, or in pus, and that they so modify it as to convert it into a poison when absorbed—or that the germs after development, multiplication, and death, may form a putrid infecting matter—or that they may enter the blood and develop themselves, effecting in the process deadly changes in the circulating fluid.'

In the history of this discovery we find Davaine discovering bacteria in the blood of animals suffering from charbon. Then, having studied Pasteur's researches on butyric fermentation, Davaine found that he could propagate a fatal disease, not only by a purulent virus, but by a drop of infected blood. It was left for Pasteur to separate and identify the microbe, to propagate it through successive generations, and to arrive at a general rule that a whole series of contagious diseases could be produced artificially, and that the microbe which was the cause of each disease could be so modified by successive cultivation, some with, some without access of oxygen, as to be rendered almost inert—nay, more, even to protect the recipient for a time from a second invasion, and secure immunity to the offspring of infected mothers.

I must not go back to the history of vaccination as a protective against small-pox, nor remind you that Jenner was a pupil of John Hunter, nor refer to many of the letters which passed between them; but I may notice a resolution of the Council of this College carried sixty years ago—'not to inoculate small-pox, but to pursue,



and to the utmost of our power promote, the practice of vaccination.' We persevere in this course. We require every candidate for our diploma to produce proof of practical knowledge of vaccination. We support the law which protects the many from the danger to which a few ignorant opponents of compulsory vaccination would expose the whole population. And as we glory in the life-saving work of our countryman, Jenner, so we welcome the teaching of the illustrious Frenchman, Pasteur, and his extension of the protective influence of vaccination to other diseases—every year adding to the list of new vaccines which protect man and animals against virulent diseases.

When I first thought of the subjects for this oration, I had a very exaggerated idea of what it might be possible to do in sixty minutes. I hoped that (in addition to what I must say of our deceased brethren, and of John Hunter himself, of recent additions to our museum and of the new Pathological Catalogue) I might be able to indulge in a review of the progress of modern surgery, and perhaps compare the present state of medical practice in London with that in Hunter's time, or even to take a hasty review of the progress of the nation since his death, and refer to the rapid increase of population and wealth, the discovery of steam, the influence of railroads and steamships, the use of gas, of the electric telegraph, the spread of education, the effects of newspapers and cheap literature, of reforms in our laws, improvements in our habits, and many other things which tend to make a people wiser, happier, and better. I even thought it might be possible to sketch very rapidly the share which the Medical Art, in its larger and wider sense—not only as curing but as preventing disease—has had in assisting national progress, and to prove that neither medicine nor surgery has lagged behind the general advance. I hoped



I might be able to prove beyond dispute that since active sanitary work has been undertaken in this country, death rates have fallen very greatly; and fallen most in those places—the great towns—where sanitation has been most active.

I was very anxious to show how the knowledge gained by the statistical work begun by Dr. Farr, and since carried on by Dr. Ogle at the General Register Office, had led to sanitary legislation; and how sanitary work has been followed by a lower general death rate and smaller mortality in single forms of disease, as in typhoid fever, as well as after wounds, injuries, and surgical operations. I wished also to show how statistics lead to the saving of life by throwing light on the natural history of disease, on the prevalence of various zymotic diseases at different seasons, and on the indisputable proofs that small-pox has declined considerably with the extended use of vaccination; that it is false to attribute that decline to general sanitation, exclusive of vaccination; and, what is a more novel or less generally known fact, that we have statistical proof that the preservative effects of vaccination wear out more rapidly and surely than the preservative effects of small-pox itself. I imagined also that I might be able to sketch what the nation might gain if State-medicine were really administered by a well-organised department of the Government, if politicians of both parties could be roused from their indifference to social or domestic legislation, and give some small share of their attention to the health-interests of the people—to their food, drink, occupations, house accommodation, care of infants, prevention of infective diseases, local sanitary administration; and many details of sanitary reform, such as a permission or encouragement of cremation as a substitute for the present mode of burying the dead.



My intentions, sir, may have been good, but their fulfilment is impossible; and in conclusion I can only refer to the prospect which expands before us as we are shown that more than thirty destructive diseases—including tubercle and typhoid fever, ague and yellow fever, scarlatina, diphtheria, erysipelas, syphilis, and septicæmia in man; in the lower animals, splenic fever, fowl-cholera, cattle plague, glanders, hydrophobia—all depend upon specific microbes. In many of these thirty diseases, the specific microbe has been identified beyond dispute. In some, the process of attenuative culture has transformed a poisonous virus into a protective vaccine. In others, we may confidently hope that the same happy result will soon be reached; and as we have already acquired the knowledge of certain specifics, it is not illogical to infer that if we can in one instance command the good results we see with mercury, in another with sulphur, and in a third with quinine, we may before long obtain such a knowledge of the various microbes which are the cause of communicable diseases, as may teach us how to destroy these organisms, or to arrest or mitigate their morbid influence, and so check, if not stamp out, some of the diseases which are now our most formidable difficulties. We may then congratulate mankind that the science of our own time has conferred not only upon man, but on the whole animal kingdom, benefits equalling any which it owes to the lucky empiricism of past ages, or to the philosophic genius and marvellous industry of JOHN HUNTER. And we his followers may be encouraged by the conviction that we so cultivate our science and our art (devoted as they are to the public good) as to justify us in keeping our old motto,

‘QUÆ PROSUNT OMNIBUS ARTES.’



