




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SMITH

PRINCIPLES AND PRACTICE OF SURGERY

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 Syracuse, N. Y.  
 Stockton, Calif.

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A Professional Visit to London and Paris.

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INTRODUCTORY LECTURE

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TO THE COURSE ON THE

PRINCIPLES AND PRACTICE OF SURGERY.

DELIVERED IN THE

UNIVERSITY OF PENNSYLVANIA,

October 9, 1855.

BY

HENRY H. SMITH, M.D.

PROFESSOR OF SURGERY.

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At a meeting of the Medical Class of the University of Pennsylvania, held Oct. 18, 1855, for the purpose of requesting a copy of Prof. Henry H. Smith's Introductory Lecture, Mr. Albert H. Smith, of Pennsylvania, being called to the Chair, and Mr. Benj. F. Lennard, of Georgia, appointed Secretary: On motion, it was resolved, that a Committee be appointed to carry out the intention of the meeting, consisting of one from each State, Province, and Country, as follows:—

FREDERICK J. BUCK, <i>Maine.</i>	W. H. HAWKINS, <i>Arkansas.</i>
JOSEPH S. HILDRETH, <i>Massachusetts.</i>	XENOPHON X. XAUPI, <i>Missouri.</i>
JOSEPH BIEGLER, <i>New York.</i>	J. S. ROWLAND, <i>Kentucky.</i>
E. B. VANDYKE, <i>New Jersey.</i>	W. J. MCNAIRY, <i>Tennessee.</i>
AMBROSE H. RITZ, <i>Pennsylvania.</i>	JAMES H. DUER, <i>Ohio.</i>
CALVIN P. MARSHALL, <i>Delaware.</i>	B. P. DUFFIELD, <i>Michigan.</i>
R. B. TYLER, <i>Maryland.</i>	L. T. BOWERS, <i>Illinois.</i>
C. PENDLETON TUTT, <i>Virginia.</i>	C. B. JENNINGS, <i>Iowa.</i>
H. L. BOWDEN, <i>North Carolina.</i>	PETER RIDORDO, <i>Spain.</i>
D. G. COIT, <i>South Carolina.</i>	T. W. JOHNSON, <i>Bahamas.</i>
W. E. LUNDAY, <i>Georgia.</i>	C. GRAY, <i>Nova Scotia.</i>
J. W. WITHERS, <i>Alabama.</i>	A. H. CHANDLER, <i>New Brunswick.</i>
W. W. WHITE, <i>Mississippi.</i>	G. T. SANDIFORD, <i>England.</i>
J. M. R. WESTBROOK, <i>Texas.</i>	R. DE MAZEREDO, <i>Cuba.</i>

## CORRESPONDENCE.

UNIVERSITY OF PENNSYLVANIA,  
October 22, 1855.

DEAR SIR: The members of the Medical Class having listened with pleasure to your highly instructive Address, we, the undersigned, have been appointed a Committee to solicit from you a copy for publication.

Replete with valuable information, it will be read with interest by the profession. Hoping that you will accede to the wishes of the Class, to which we desire to add our own,

We remain, with feelings of esteem and respect, truly yours, \*

CHAS. PENDLETON TUTT,  
JOSEPH S. HILDRETH,  
ALBERT H. SMITH,  
E. BOGARTS VANDYKE,  
HIRAM L. BOWDEN.

TO HENRY H. SMITH, M. D.  
*Professor of Surgery.*

PHILADELPHIA, October 26, 1855.

Messrs. CHAS. PENDLETON TUTT, JOSEPH S. HILDRETH, A. G. SMITH, H. L. BOWDEN, E. B. VANDYKE—

GENTLEMEN: The Introductory Lecture of which you have requested a copy for publication, was written for the benefit of the Class, and is therefore at their service.

I beg you to express to them my appreciation of the kindly feeling which has dictated their request, and receive for yourselves my acknowledgment of the polite manner in which it has been conveyed.

I am, very truly, yours,  
HENRY H. SMITH.

# LECTURE



## LECTURE.

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THERE are moments, gentlemen, in the lifetime of each individual, when the concentration of feeling creates an impression which is never afterwards effaced; and though time may dim its freshness, naught but death can eradicate its influence on the character. To the reflecting mind such periods are presented in bold relief, as points which, like the mile-stones on the roadside, stand prominently forth to mark the traveller's progress towards his journey's end. The present occasion, in which I assume for the first time the duties of the Chair of Surgery in the University of Pennsylvania, is one which naturally excites such sentiments. To me, it is a source of very mingled emotions. As an honor, the post is one capable of gratifying the highest professional ambition; as a duty, it develops responsibilities of no common order. In these halls, memory, with its varied associations, recalls the talents of the worthy dead who, from this chair, expressed the aphorisms that have created so many of our best surgeons. In this school, during the period of nearly one hundred years, have assembled those ardent spirits who now constitute its Alumni; men who, whilst rejoicing in a high professional reputation, yet delight to revert to the moment when, as its pupils, they first sought the honors of the Doctorate.

Standing as we now do, upon ground which has been rendered memorable, as the scene of the labors of Physick, Dorsey, and Gibson, it requires no prophetic vision to trace the line of future generations, who, from all sections of our wide spread country, will continue to seek in these halls the honors which have adorned the brows of their parents and grand-parents; nor of those who, judging of the future by the past, will yet look upon its diploma as the surest evidence of their early devotion to the cause of sound medical education. Who, in such a position, could fail to be moved; and

who, among the band that are to aid in maintaining the high reputation gained for the school by such men, can fail to feel deeply the responsibility which the position entails upon him?

In your lives, gentlemen, the present period, as marking the commencement of your connection with the medical profession, will ever be regarded as an eventful one. The trammels of the school or college are now cast aside; parental or friendly guardianship has in a great measure ceased, and you are about to start upon your route, unshielded by the vigilance of friends, and dependent chiefly on your own watchfulness to keep you in the true path of duty. With the view of obtaining suitable guides to your course, you have now sought this ancient university, and it has fallen to my lot to present the precepts that are to aid your progress in the course of Surgery.

I desire, therefore, at this early period of our acquaintance, to express to you my interest in your welfare, as well as my earnest wish to diminish the difficulties that surround your path, whilst laboring to promote your progress as well as that of a branch of science to which I have been long devoted. The subject of surgery is one which from its tangible character and evident practical utility is generally a favorite study with the members of a medical class, and I shall regard it as a duty to endeavor to add to its natural attractions, the additional one of ample illustrations. In a strictly demonstrative branch, the teacher who merely talks of that which he can show to the eye, or make palpable to the touch, fails to develop the clearness of idea and permanency of mental impression of which the subject is capable. The collection of a proper cabinet becomes, therefore, the first step in the performance of his duty, and, as this chair was entirely devoid of all such aids to instruction, it became necessary to seek them promptly elsewhere. Having, by a residence in Europe, in 1839, obtained a personal knowledge of the extent and variety of the preparations in their museums, I was not long in deciding to draw upon them for your benefit. Accordingly, I have recently spent many weeks in both England and France, in the prosecution of this object, and am now happy to tell you that I have under my control everything that could be desired in this respect. With the beautiful collection of my distinguished colleague, the Professor of Practice, most of you are familiar, and it will be my effort not only to follow in his footsteps in this particular, but also to strive for the production of such a course of instruction in Surgery, as he has so admirably presented



to you in the kindred chair of medicine. As my recent trip has enabled me to revisit the London and Parisian hospitals, and examine points of European Surgery after an interval of sixteen years' practice in our own country, I have thought that it might not prove uninteresting to you to give a brief account of what I saw, as well as of the opinions based on these observations. Belonging as surgery does to a branch of science whose progress is intimately connected with many of the scientific and mechanical contributions of each year, the surgical teacher should always strive to become personally acquainted with the results obtained by those who, though distant from him, are yet well known in the various departments that they have cultivated. It is hoped, therefore, that in this respect the interests of the school will be found to have been advanced by the free devotion of time which has been accorded to this tour of observation.

Sailing from New York on the 16th of May, the facilities furnished by steam navigation placed me in London in thirteen days. Through the kindness extended to me by Professor Sharpey, of University College, and others, I was soon actively engaged in studying the collections and examining the wards of the various hospitals of this large metropolis. Familiar as I had been from my former visit with their arrangements, I could not but be struck with their condition at the present time. Their museums have evidently been carefully superintended and augmented, and the activity of their hospital staff has not been diminished by the changes which time has created.

The impressions made upon us in early youth by the names and presence of men who have been for years regarded as the lawgivers of their respective departments, are apt to induce the feeling, that the wheel of improvement will cease to advance, when death removes the power they exerted in keeping it moving. The experience of more matured life proves, however, the contrary, and the youthful observer is soon taught that there is no one whose place can be left void by death, whilst new generations are being vigorously thrust forward by the active hand of time. In London, as elsewhere, this is certainly true. Many of those, who were most noted for the performance of their hospital duties in my first visit, had now retired or been removed by death; yet the new incumbents were not less energetic, nor had they failed, by their services, to make the proper impression on the public mind. The prominent surgeons of the present hospital staff in London, are, Messrs. Cock, Callaway, Birket,

and Hilton, at Guy's; Fergusson and Partridge, at King's College; Erichsen, Quain, and Sharpey, at the University College; Lawrence, Stanley, Paget, Skey, and McWhinnie, at St. Bartholomew's; Pollard, Hawkins, and Cutler, at St. George's; Simon, at St. Thomas's; Hancock, at the Charing-Cross; and Messrs. Ure and Coulson, at St. Mary's. The rivalry in good works, which has been so often noticed among these institutions, yet exists, and much of the progress of surgical science, in London, is, perhaps, due to the stimulus thus constantly acting upon the different hospitals. At present, conservative surgery is in the ascendant. Amputations are now much more cautiously advised than formerly; and, as the resection of joints has gained a very considerable share of professional confidence, many a poor fellow now walks on his own limbs around the streets of London, who, twenty years ago, would have been a cripple sweeping a crossing, or stumping about on a wooden-peg. In the upper extremities the progress of conservative surgery has also been satisfactory, and the resection of disabled elbow and shoulder or wrist-joints, is now regarded as the legitimate course of practice, in diseases that were formerly treated by removing the limb. Carious affections of the bones of the wrist, which formerly resulted in the loss of the arm, are now treated by the removal only of the diseased portion, and the patient is thus enabled to retain the use of the most beautiful mechanism in the human body as well as one which human ingenuity has never equalled. With all the progress of recent years, mechanical improvements have not as yet produced a perfect hand.

The London hospitals are generally clean, though they are not well arranged for the purposes of ventilation; the system of a common entry to several wards, with the high windows, low ceilings, and badly constructed chimneys, yet show the influence of the erroneous architectural arrangements of a past age. Many of their institutions are of ancient date. St. Bartholomew's Hospital goes back to the time of Henry VI., who endowed it munificently. St. Thomas's was founded in 1553. Guy's is of the same period, and was endowed by a London bookseller, with the immense sum of seven millions of dollars. St. Luke's was commenced in 1751, and cost in its erection upwards of \$300,000. St. Thomas's was established in 1553, the Middlesex in 1746, the London University in 1827, and King's College in 1829. The last two, therefore, are the only institutions of recent date, and are consequently the only buildings which show the benefits derivable from the modern improve-



ments, though they do not embrace the advantages now enjoyed in this respect by our own hospitals. The smoke and fog of London evidently leave their stamp upon the interior, as they do upon the exterior of these institutions, and an appearance of gloom is thus created in their wards, which is very different from that produced by the clear atmosphere, white walls, and white coverings in those of our own establishments. But it is not only in general arrangements that the London hospitals struck me as inferior to our own; the constitution and physical character of many of their inmates are also defective, and the result of their operations proves that they are sadly wanting in the important item of success, furnished by good constitutions and fresh air. The wide-spread English habit of drinking malt liquors, the innumerable gin palaces, and the destruction of health consequent on their living in narrow alleys, and old, badly built houses, all tend to supply the London hospitals with a class of patients not favorable to successful results. The cures accomplished by their surgeons should, therefore, be regarded as indicating a less happy result than would ensue upon similar operations performed elsewhere; and their success in the operation of resection may, I think, be very readily attained in the United States, in any of our own charitable institutions, and with much greater certainty in private practice. But in the elegant museums attached to their institutions, London surpasses both Paris and the United States. The formation of pathological collections, in connection with their hospitals, is a custom which has given them inestimable riches, and is a practice which we might most advantageously follow. Guy's and the University College, each have their own curator, modeller, &c., and few cases of interest are presented, or operated on, in these institutions, without some tangible record being preserved in their now magnificent collections.\* To the artistic talents of Mr. Towne, of Guy's, and of Mr. Tuson, of the University College Hospitals, I am largely indebted for many beautiful and valuable duplicates, the truthfulness and natural character of which you will have occasion to notice throughout the ensuing winter. The work of the former gentleman is of the very highest order, and I can give you no better idea of it, than by stating, that I saw one preparation of the anatomy of the head and neck, the price of which was \$2000, and which I thought well worth the sum he asked for it.

\* King's College, the Royal College of Surgeons, &c., have also extensive arrangements of a similar character.

Several pleasant and profitable visits were occupied by me on this, as on the former occasion, in inspecting the admirable museum of the College of Surgeons. This institution is accommodated in a handsome building of the Ionic order of architecture, which was erected in 1836, and is the depository of the valuable anatomical and pathological collection of the celebrated John Hunter, for which Government paid \$100,000. No one familiar with the labors of this distinguished man, can look unmoved upon the various pieces on which he bestowed so much thought and labor, and which have elucidated so many imperfectly understood points of surgical doctrine. Although unaided by the far-seeing glass of the microscope, it is yet well known that there are few of his opinions in regard to the structure or function of certain portions of the body that have been proved incorrect by recent observers, with all the assistance furnished them in the recent improvements of optics and chemistry. To this day many of the patient, hard studying Germans, who have done so much to modify the doctrines of Hunter's time, yet view with distrust all results that differ from his conclusions; or when satisfied of their own correctness, yet find in his opinions the basis of a truth which nothing has been able to subvert.

Among the objects incidentally connected with a professional inspection of London, and well worthy of being noted, are the British Museum, and the Botanical Gardens of Chelsea and Kew. The museum, I dare not attempt to describe, it is too vast; but I cannot but allude to the gardens, if only in the hope of inviting attention to their utility. The garden of Chelsea owes its existence to the efforts of the Apothecaries' Company of London, who established it in 1676 as a "Physic Garden." It covers about three acres of ground, contains green-houses and conservatories, as well as a hot-house for aquatic plants. Two gigantic cedars of singular shape are pointed out to the visitor, which were planted in 1635. The Kew Gardens are much more extensive, and being of more recent date, present many beauties not seen in the former. This handsome spot is a favorite resort of the Londoners, who are desirous of fresh air and a change of scene, from the dirt and bustle of the overgrown city; and as all its plants are highly cultivated, and each one labelled with the botanical, as well as the common name of the species, the visitors, whilst enjoying the pleasure and recreation of a walk, are also enabled to gain much information of a useful and refining character. No American who visits it, will fail to be struck with its neatness and well arranged plots; nor can he



avoid the wish that some of our now rapidly increasing cities should make some such provision for the pleasure and instruction of the generations, who will perhaps hereafter suffer, as the Londoner now does, from the evils of a thickly inhabited town, where everything is sacrificed to the grovelling spirit of trade, whilst health and recreation are overlooked.

Twelve hours of pleasant travel carried me from London to Paris, and again settled me in the old and familiar wards of the Parisian hospitals, in which I had formerly spent fifteen months. Time had left its stamp even in gay Paris. The surgeons of the former period were even more changed than those of London. My old preceptors, Lisfranc, Roux, Marjolin, and Breschet, were numbered with the dead. Velpeau and Civiale alone remained, and yet continue to perform actively and well the duties of their wards. Malgaigne, Nélaton, Chassaignac, Robert, Maisonneuve, Barth, &c., the young teachers of that period, are now the prominent clinical instructors of the present day, and are extending to the younger generation the benefits of those precepts which they had received from their predecessors. The hospitals, with one or two trifling exceptions, seemed to have remained stationary; even the physiognomy of the incumbents of certain well-remembered beds were unchanged, and it was difficult at first to think that No. 21 of the Ward St. Martha was not the patient of a former period, so much do the sufferings of certain diseases give the same impress to the features of different patients.

In comparing the present position of Paris, as a residence for the young American student, with that which it held in 1839, I am sorry to say that its advantages appeared to me to have diminished. Its anatomical theatres, with the facilities for the practice of operative surgery, seem, it is true, unchanged, but its private clinical courses have been much impaired by a decision of the Dean, which has forbidden the formation of private classes under the charge of the hospital *internes*. Formerly it was the custom for four or five young Americans to unite in a class, and under the direction of the house-physician to visit, at a private hour, the new patients who each day entered the wards, examine them carefully, and express an opinion of the nature of their complaint, this opinion being subsequently verified or disproved by the future visit of the clinical professor on the next morning. Such facilities furnished opportunities for practical instruction and experience in diagnosis, which rendered Paris the

great centre of medical attraction, and caused hundreds to seek its hospitals after the completion of their preliminary courses elsewhere; but now it is forbidden, and the student is limited to the public visit of each morning in connection with the crowds who follow the rounds of the surgeon. The cause of this change did not seem to be well understood, though it was said to be owing to an abuse of the privilege formerly allowed to the *internes*, and which it was thought had resulted in injury to the patient. Like every other point of clinical instruction, it was liable to abuse; but it is to be hoped that, under proper restrictions, these private courses of clinical experience may be again presented to those who can truly appreciate them. The prominent clinical lecturers on Surgery at present in Paris, are Velpeau, who yet retains his old wards at the Hospital of La Charité; Civiale, who is as usual at the Necker Hospital; Jobert, who has Roux's former wards in the Hôtel Dieu; and Nélaton, who occupies Cloquet's chair at the Hospital of the Clinic. The lectures of Velpeau continue, as formerly, to be attended by numerous pupils, who assiduously collect the sentiments which are the results of the observation of an active surgical experience of thirty odd years. Of all the teachers of the present day, none appeared to me to offer so much valuable matter in so few words, as this Nestor of Parisian Surgery. No opinion was uttered that was not evidently the result of a deliberate judgment, based on an experience only obtainable by one who, like him, has had the vast opportunities presented in the wards of La Charité. In all of the many visits which I paid him, I am free to confess that I was always impressed by some wise opinion, or learned some new course of reasoning; feeling, whilst listening to him, as if diagnostic accuracy was certain. So easy and natural did it seem to him to arrive at a correct conclusion, that all who heard him doubtless felt as Longinus has said of one who listened to a perfect piece of writing—as if they would have written precisely the same thing, or uttered the same words. Owing, I think, chiefly to the fact that he has an active participation in the final examination of the student, and that he illustrates his remarks by diagrams and pathological pieces, the clinical lectures of Nélaton are more crowded than those of Velpeau. Possessed of a clear judgment, and speaking in a calm and dispassionate voice, Mr. Nélaton certainly is entitled to a high position as a clinical teacher; but, in giving the preference to Velpeau, all must admit that his age and experience give him a weight and authority which others who are younger have yet to establish.



Mr. Civiale, at the Necker Hospital, seems to have remained untouched by the hand of time, and yet presents a picture of operative skill, on which most of the American students are pleased to look. His admirable dexterity in the speciality to which he has been so long devoted, has in no way deteriorated, and his polite and courteous bearing yet distinguish him from the generality of his compatriots. At present, his wards are very much filled with cases of stricture, and this subject is now engaging much of his attention. The present is not the time to discuss his plan of treatment, but I hope, on a future occasion, to be able to give you a condensed statement of his doctrines and practice. Jobert, who is so celebrated for his plastic operations, is also followed by a large number of students in his clinical lessons at the Hôtel Dieu. Among these I noticed a student of the gentler sex, who seemed to be quite at home in the wards, and took care to obtain a good position near a bed, by very much the same means as the members of the class who might be thought to be made of coarser materials. Being desirous of seeing a case of plastic surgery, which interested me, I went a little in advance of the class, and stood by the bedside awaiting the approach of Mr. Jobert. When the class had assembled around the patient, and the surgeon was exposing the face, I felt a heavy hand on my shoulder, as of some one desirous of obtaining room to look over me, and turning partly round, found that the anxious observer was the female student, who, I was told, had so long and regularly followed the visits and operations of this surgeon. With the deference of an American to her sex, I endeavored to aid her position, though I must confess that I am not sufficiently impressed with the rights of women in such places, to be able to regard her anxiety to obtain a sight of the patient as in any way commendable. She was spoken of by some as being an American, but I felt quite pleased, before leaving Paris, to learn she was neither English nor American, but of Polish origin. In the wards of Mr. Jobert, I saw the benefits of cold water, as applied to burns, scalds, &c., and was told by him that the success of this simple dressing was quite satisfactory, whilst it preserved the purity of the wards, and added much to the comfort of the patients. Those of you who have seen cases of extensive or deep burns, can easily appreciate the improvement made in the plan of treating these injuries, which removes almost entirely the very disagreeable odor that usually pervades them.

At the Hospital of St. Louis, I had an opportunity of exchanging sentiments with Mr. Malgaigne, a surgeon who is,

perhaps, better known by his excellent "Manual," to the young American students who have not been in Paris, than any other. M. Malgaigne was suffering from an affection of his eyes, and looked much older than on my previous visit. As usual, he was active and energetic, and though evidently out of health, seldom failed to be at his hospital by eight o'clock in the morning, where his arrival was hailed by numerous students and practitioners. It is very evident that he is highly esteemed at St. Louis, and he deserves to be so, as few of the Parisian surgeons have done more than himself to introduce sound views of practice, especially in complaints requiring operations. His statistical tables of the results of operations for cancer, and his work on Regional Anatomy, as well as on Fractures and Dislocations, show the practical tendency of his mind. Although he has paid much attention to fractures, he is yet too thoroughly indoctrinated with French ideas of practice to please an American, few of his cases resulting as fortunately as those constantly sent off of the wards of our own hospitals. In 1839, I had seen him treating fractures of the patella by means of an iron clamp, which he hooked into the two fragments through the skin, and then drawing the plates closely together, retained them in position by means of a screw. In reply to my question, he stated that this mode of treatment was yet a favorite one with him, and made excellent cures. At present, he is applying the cold steel to the treatment of fractures of the leg, and I noticed under his care a patient with a simple fracture of the tibia, in which the upper end of the lower fragment, which tended to project forward, was held down by the pressure of an iron pin or nail, made to act directly on it by a screw. The instrument fully answered its purpose, but American surgeons would accomplish the same thing, simply by keeping a good pillow under the heel.

Among the medical novelties noticed at present in Paris, was the new hospital of Laraboissiere, formerly known as that of Louis Philippe, the name having been lately changed in accordance with the change of dynasty, a practice often followed in the names of streets, &c., in Paris, when the government is desirous of obliterating all public traces of its predecessors. The Hospital Laraboissiere is a decided mark of progress in French hospital architecture. It is capable of accommodating 612 patients, and has the medical services of Pidoux, Heurteloup, Pelletan, Becquerel, and others, with those of Messrs. Voillemier and Chassaignac as surgeons. Its wards are spacious, well ventilated, heated by hot air, and furnished not



only judiciously, but with considerable attention to ornament. Mr. Chassaignac, formerly so well known at the Parisian dissecting rooms, was quite as amiable and attentive to the American students as ever. His wards are ample and well filled, but presented nothing of special interest.

Among the objects at present attracting the attention of the professional man as well as of all visitors to Paris, might be mentioned the Industrial Exhibition, or the collections of objects of manufactures, fine arts, &c., now made through the influence of the Emperor. The many points of interest which it presented, the beauty of its articles, and the varied thoughts which such a collection would naturally excite, might all be found worthy of description, but I must limit myself to the mention of one article, which, from its great influence on the progress of scientific medicine, as well as the other departments of learning, may be regarded as coming more properly within the limits of the discourse of the present occasion. I allude to the improvements in printing. With all the additions that have recently been made in this important and universally useful art, it has yet been felt that the progress of machinery had not been brought to bear sufficiently on the composition and distribution of type, to enable the printer to set an author's thoughts to letters, with a rapidity which should correspond with the rapid progress of the age. The telegraph, it is true, prints our words almost as rapidly as uttered, and sends them flying to the four quarters of the globe with lightning speed; whilst steam strikes off its thousand impressions per hour, and traverses oceans in a few days to expedite the dissemination of useful learning. Still, this is not fast enough. The extension of knowledge has been delayed, and the mighty torrent of ideas has been checked, by the fact that between the outpourings of an active mind, and the impression of its ideas on paper, there stood the slow, heavy, lumbering mass of human hands in the persons of compositors, who, though wonderfully nimble, are yet unequal to the task thrown upon them. This obstacle, it is now apparent, is about to be removed, and mechanical ingenuity begins to indicate sufficiently clearly its power of multiplying the rapidity of action, if it does not supplant the compositor's fingers. The machine that is to accomplish this has now assumed a tangible shape, in the ingenious invention of Christian Sorenson, of\* Copenhagen. Eight years since, this mecha-

\* No. 274, Grønnegade.

nician, brought into notice his "machine compositoire," which enables him to set up type with considerable rapidity. Like most primary inventions, it was, however, not perfect, and required the improvements which time and experience always add. Now, he has brought it to such a condition that one man can, by a very simple mechanism, set up sixteen lines in four minutes, or four lines in a minute, or about one letter in a second, and then, having done this, can slide all the type into a common receptacle, and rearrange, or distribute them, letter by letter, in their proper places. Those of you who are familiar with printing will readily understand the wonders of this, and those who are not, need only remember that, in printing, all the letters are united indiscriminately, yet require to be subsequently so arranged for future use that all the A, B, C, &c., should be assorted by themselves, and this is now done by the machine compositoire with great accuracy and rapidity. Without entering into a minute description of it, I would mention that its general appearance and arrangement is as follows: A small mahogany case, about half the size of a piano, presents at one end a number of keys, which, like those of the musical instrument, represent certain letters. These, when played on by the compositor's fingers, are so arranged as to open little slides beneath boxes in which the type have been slid by the machinery, and whence they readily slip into their position in the "stick," or into the formation of a word. The means by which this is accomplished is as follows: Each type, including stops, &c., has a notch or groove on its side, which corresponds with the perforations in a revolving plate. Thus A has one notch, B two, &c.; these type being once placed indiscriminately in a large funnel-shaped piece on the top of the machine, are shaken so that they slide to the end of the funnel; where, by means of a series of little grooves, they are gradually made to assume the vertical position, with such certainty that the letter end of the type comes uppermost. The flat plate with perforations corresponding to the grooves in each type, is constantly revolving beneath the end of the funnel, and as the valve underneath each opening is touched by the piano key as played on by the compositor, the proper letter at once slips into its place on the stick, the stick becomes filled, or one line is set up; it is pushed out of the way and another takes its place, until a whole page or form is ready for the press. This machine, as far as its composing powers, is, I believe, pretty generally known; but the difficulties attendant on the distributing or rearranging of the type



when in "pi" according to the letters, has seemed insuperable until the attempt of Mr. Sorenson. A very slight modification of the composing arrangement now enables it to distribute with equal facility, and bids fair to give him a reputation as wide spread and lasting as that of the letters he seems to have imbued with the instinct of knowing their proper place, either in a word or in a "case." The cost of the machine with 200 kilogrammes of proper type, was, he informed me, 7000 francs, or \$1400. The advantages derivable from the perfection of which this machine is capable, can hardly be conceived, nor the influence that it is capable of exerting in various ways. See, for a moment, how it would reduce the perfection of phonographic reporting to the position of an art behind the age. Suppose that a series of type are prepared and carried by the compositor into the legislative hall, the court of justice, or even to the medical lecture-room. The speaker would take his stand, and the compositor his seat, and as fast as any one could dictate to an amanuensis, so fast would the compositor, playing on the keys of his instrument, place in type the words as they flow from the speaker's mouth. Let us suppose him in the position of a lawyer in a court of justice; his speech, slowly delivered, would be set up as spoken, the form quickly transferred to the printing-office, placed upon one of "Hoe's last fast presses," ten thousand impressions struck off per hour, and actually circulated in extra Ledgers before the honorable counsellor had dined and prepared himself to read it. In fact, it is hardly possible to see the limits to which such progress must lead. One evil will of course arise and exist, until speakers become more careful, and that is, that the word once spoken, no matter how crude or hastily uttered, will be irrevocably beyond control, working its influence for weal or woe, upon the thousands who read the rapid impressions thus promulgated. Although this subject may not be strictly regarded as purely a medical one, yet it is so cognate with professional topics, that I cannot omit a passing allusion to it. Nor can I but indulge the hope that the day is not far distant when some such machine will be employed in facilitating the production of a native medical literature. A very brief review of the labors of our countrymen will show the inquirer that American surgery participates largely in our national characteristics; that is, in invention, boldness, and independence of thought. Many of the most ingenious and original operations of our art are due to American surgeons. Witness the operations upon anchylosed joints, by Barton, of Philadelphia; the ligature of the innominata, by Mott,

of New York; the removal of the lower jaw, by Deadrick, of Tennessee; the extirpation of the parotid gland, by McClellan; the extirpation of the clavicle, by Warren; &c. &c. Yet how few of our transatlantic brethren are fully aware of their opinions or mode of proceedings. The engagements of practice keep the surgeon too constantly and actively employed, to leave him time for the labors of composition, and our medical teachers are generally too much overtasked to be able to present in print their views on many subjects, which might with great advantage be much more widely disseminated than it is possible to do through their pupils individually. Bring the "Machine Compositoire" into the lecture-room, and print the words as uttered; let the speaker have an opportunity of revising his remarks, and then let them pass forth into the world, to extend his opinions, perhaps give rise to new trains of thought, and shower upon mankind the relief which their ills demand, and which it is the philanthropic object of the profession to accomplish.

After thus rapidly reviewing a few of the more attractive points of a professional visit to London and Paris, it may perhaps be useful to compare the present position of these cities, in reference to clinical experience, with the facilities now afforded in our own institutions.

Owing to the changes which, as stated, have been recently made in the arrangement of the courses of instruction in the Parisian hospitals, it cannot be denied that Paris does not now present the attractions which it once offered to the medical student, and whilst acknowledging the benefits to be derived from a young man's study and observation of the institutions of Europe, from an intercourse with those of different political tastes, as well as from an inspection of the numerous specimens of a highly cultivated condition of the fine arts, I cannot but express the conviction, as based upon individual experience, that a sound medical education is more certainly attainable in our own institutions. The fact of the instruction in France and Germany being conveyed in a foreign tongue, is a serious obstacle to the progress of most Americans. How few of those who visit Paris, and still more Vienna, are sufficiently familiar with the language to understand perfectly the somewhat rapid enunciation of a German, or more especially, a French lecturer! A misapprehension of his opinions is therefore very apt to ensue, and from this must arise incorrect views of practice. In the Parisian hospitals there is also often noticed such an intense devotion to mere scientific investigations, as causes the prescriber to forget the cure of the



patient, in his anxiety to study the pathology of the complaint; and there is frequently more interest apparent on the part of their students, in noticing the post-mortem appearances, than there is in observing the restoration to health. In the English hospitals, as in our own, the love of science does not show itself in the same way, and autopsies are more frequently thought of rather as means of overcoming the defects of the healing art, than as presenting opportunities of exhibiting the diagnostic accuracy of the medical attendant. I am well aware, gentlemen, that in expressing these sentiments, I am running counter to the current of what might be termed the present fashion in medical opinions; but I should be derelict to the duty of an honest teacher, if I failed to express such convictions as might tend to your benefit, especially when based upon a careful and extended examination of the circumstances alluded to.

The changes now noted as having occurred in Paris, after it has been for years regarded as the great centre of medical attraction, is nothing new. At one period Edinburgh enjoyed the same repute; then it was transferred to London and Dublin, and now it seems disposed to settle in Vienna, the increased knowledge gained from the numerous translations of the German medical writers showing a decided taste among many for the cultivation of German opinions.

During this period, what changes have taken place in our own country! How rapidly has population, and with it many of the social and scientific habits of Europe, increased upon our own shores, and been engrafted in the rich soil of our own institutions! May it not soon come to pass, that in scientific as in mechanical progress, the United States will yet be able fully to supply her own wants and perhaps repay to Europe the aid which in her infancy she derived from the older country? In boldness and ingenuity our surgeons have already attracted the marked attentions of Europeans, and more than one has received distinguished honors as an acknowledgment of the foreign estimate of his professional skill. The wonderful discovery and application of that agent which has destroyed pain, and modified the original curse upon the woman, is due to the professional attainments of an American, whilst few European works on general science have attracted more universal commendation than those of one whom Philadelphia claims as her own son. The *Crania Americana* and *Egyptiaca*, are striking examples of the fact that something of a high order may be developed by an education solely confined within the limits of the United

States. With the view, however, of aiding the plans of those who may desire to receive the general advantages attainable in a visit to Europe, irrespective of mere professional education, I would state, that the expenses of living in either London or Paris, can be limited to very little more than the sums spent for the same purpose in Philadelphia or New York, and that the cost of travel in Europe is very much the same as that paid for the means of locomotion in the United States. Once settled on the continent, and any scientific taste may be gratified at a trifling expense; most of the galleries and courses of lectures being free to strangers; their support being due to the liberality of the government.

Gentlemen—You are about to enter in this school on a course of education which is to fit you for the very responsible duty of protecting your fellow-men from the evils consequent on diseased action. It is desirable, therefore, that you should start with correct ideas of the object that you seek, and especially of what that education should consist. A medical education does not differ in principle from that acquired in the other departments of knowledge, and the same rules are, therefore, applicable to it as to every other branch of information. The great object of all education is, it should be remembered, “not merely the instilling into the mind of facts, or the learning of certain opinions, but the development of the pupil’s reason or judgment, and the exercise of his mental powers in such a manner as will enable him to compare new facts with each other, and follow them to correct conclusions in all cases upon the data which they furnish. Reason or judgment, when thus duly exercised by education, generally guides the pupil towards the discovery of truth, by enabling him to assign to each circumstance its proper weight and influence in the conclusions which is correctly deducible from it.” In the process of a medical education, the teacher’s duty is to present the facts, and his judgment is alone answerable for the character of those presented. From these facts he deduces the causes, and this causation, or the general rules or principles which are evolved from them, is solely due to his mental powers. But it must subsequently be fully mastered by the pupil, if the latter is to benefit by the process. Hence, a good education must develop the faculties of the pupil’s mind, and bring into daily action his attention, memory, and powers of abstraction. Without the exercise of these mental qualities, he can make but little true or sound progress. If he simply exercises his powers of attention and memory, he may be able to recall, at a future day, most of the facts presented by his



teacher, yet fail to remember the conclusion deduced from them; and, without the development of that power of his mind which is termed abstraction, he will always fail to seize upon the correct general principle presented by such facts as his own experience may subsequently enable him to accumulate. In the practice of surgery as well as of medicine, the object of a practitioner's researches, and of all the interrogatories addressed by him to the patient, is the establishment of the correct "relations which exist between external things and the living body, as well as the relation of these powers to each other; and more particularly the tendencies of external things to produce such changes upon the body as will make them either causes of disease or remedies. The rules which experience establishes in this respect constitute the principles of medical science, and lead to a correct knowledge of the practical art by which the practitioner is able in one case to produce certain actions in the body, and in another to counteract or prevent such as would prove injurious to health."

You as students of medicine are, perhaps, now assembled rather with the idea of learning the art of medicine, or of acquiring a knowledge of the best plans of treating disease, than with a view to the development of such of your own powers of reasoning as will establish in your minds the principles that will always suffice for your guidance. But this is not your true course, though at first sight it may seem so to be. Were you to rest satisfied, simply with a knowledge of the practical rules of the medical art, without striving to obtain a knowledge of the science, you would never advance beyond the position of an empiric. The art of prescribing is certainly useful, and you can see its utility daily exhibited in the services rendered by the nurse, who has innumerable facts of a limited bearing calculated to furnish relief in certain cases of suffering; but let her list fail, and her utility is entirely destroyed. Not so with the well-educated practitioner; with the certainty given by the science of medicine he can, with facility and correctness, "ascertain the true relations of most external things to the living body, trace effects to their true causes, and causes to their true effects, and thus calculating upon the certainty of the actions which will arise out of their ordinary relations," promptly present the means required for the production of relief. When the cholera came upon us in 1832, although a stranger, it found our practitioners prepared to receive it, the general principles of their science indicating to them what would prove the most useful resources of their art. It was not long,

therefore, before the medical profession in this country were as familiar with the subject, and protected the interests of the communities in which they lived, quite as fully as those who had seen its ravages during preceding epidemics. Notice, also, the course of conduct of the scientific surgeon and compare him with the mere bonesetter or other empiric. No matter what varieties of circumstances complicate the case, he is never at a loss for the appropriate means of treatment. The bonesetter knows of but one plan of proceeding, and, when that fails, is unable to suggest any other. But place the surgeon in any position that you choose, whether in the camp amidst the horrors of wars, of famine, and of disease, or in the better regulated circumstances of civil life, and you will never find him at fault. All the usual plans of treatment may be unsuitable, from circumstances beyond his control, yet he is not at a loss for a suggestion. The broad principles of his science rise up brightly before his mind, and his reasoning powers soon create precisely the means which the circumstances chiefly require. The fracture, wound, or other injury, presents him only with a set of causes, and the clearness of his own well-tried judgment soon brings him to a correct conclusion, and enables him to adopt that course of proceeding which will best avert their evil effects.

Hold fast, then, in the courses now opening before you, to every principle of science, but only retain such facts as will aid your memory in the development of the general rules of conduct correctly deducible from them. In medicine, as in governments, or in the science of politics (using the term in its highest and most extended signification), the best motto is "principles, not men."

An introductory lecture, gentlemen, has been aptly compared to the ordinary letter of introduction, which serves as the commencement of an acquaintance either of pleasure or business. The remarks which I have now submitted will, I hope, prove the commencement of an intercourse which, on my part, will be one of pleasure, and I trust not without profit on yours. In referring as I have done to a few of the surgeons and institutions of Europe, as well as those of our own country, I have desired to show you the relative value of the latter, as well as call your attention to the fact that the sixteen years which have elapsed between my European trips, have proved, "That the steep where Fame's proud temple shines afar" has been rapidly climbed by many, whose professional studies have been chiefly devoted to surgery. A surgical practice is indeed the most rapid route to professional distinction, because



its results are readily seen by all. The fame of a distinguished surgeon rests not only upon his knowledge of his science, but also on the practical application of his art, as shown in the work of his hands. Like the lawyer, his acts are often judged by those who are not capable of determining, or even noting the correctness of the more private proceedings of the physician. As a means of professional advancement, the subject should therefore attract your attention. But the fame which the surgeon's skill confers upon him should not be your chief inducement for cultivating it. If you would exhibit the true beauties of such a position, you must be guided by higher motives, and never forget that a surgeon is but an instrument in the hands of Providence for averting those evils which recklessness or folly so frequently entails upon his fellow creatures. Exercise, therefore, every caution, lest the elevation of professional reputation should in after life tempt you unnecessarily to maim or mutilate God's noblest work. Not a week now passes away, that the surgeon's skill does not become the theme of conversation in communities whose sympathies are excited by the fearful injuries created by railroads alone. The army surgeon on the battle-field may be bathed in the blood of the wounded, but the performance of his duties is regarded by those who hear of it as exhibiting only professional coolness, and professional interest. Not so with the surgeon in civil life. Under such accidents as those just alluded to, he finds his skill demanded by his nearest neighbor, perhaps by his dearest friend, and feels that his practice as well as his countenance is watched, not only by the sufferer, but by others who will rapidly judge his merits. Under such circumstances, his position becomes one of much greater difficulty, and nothing but the influence of the noblest sentiments can, in any degree, give him that fortitude which will enable him to do his duty with the apparently stoical indifference which the circumstances call for. Let but the expression of a doubt as to the result be seen on his face, and hope may leave the sufferer devoid of that stimulus which is most essential to his preservation. How natural is it that, under such circumstances, the surgeon who properly meets the exigencies of the moment should be regarded by all who see him as a messenger of mercy, and rapidly rise in public estimation.

Gentlemen: The course of instruction that is to fit you for these duties is now open to your own action, and I need not assure you that the facilities for its prosecution, which this institution presents,

will be seconded by the best efforts of him who now addresses you. Aided as he will be by the well-tried talents of the colleagues who surround him, he cannot but indulge the hope that the future usefulness of the school will continue to be equal to that which it has heretofore maintained. An alumnus of this University, in both its collegiate and medical departments, its interests have been deeply interwoven with every intellectual association, from his youth to the present time. For twenty-five years it has retained a prominent place in his affections. In these halls, twenty-one years since, he first listened to the instructions of Chapman, Dewees, and Horner, all now passed away. Here he first learned the principles of the branch which he is now to teach; and here, he hopes to be able to extend to you those sound doctrines which he received from them, thus continuing the usefulness of the school, whilst endeavoring to sustain the confidence reposed in him by its authorities, and which he hopes to receive from you.



170  
21  
A Professional Visit to London and Paris.

INTRODUCTORY LECTURE

TO THE COURSE ON THE

PRINCIPLES AND PRACTICE OF SURGERY.

DELIVERED IN THE

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BY

HENRY H. SMITH, M.D.

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