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THEN AND NOW :

A

DISCOURSE INTRODUCTORY

TO THE

FORTY-THIRD COURSE OF LECTURES

IN THE

JEFFERSON MEDICAL COLLEGE

OF PHILADELPHIA.

BY

S. D. GROSS, M.D.,

PROFESSOR OF THE PRINCIPLES AND PRACTICE OF SURGERY.

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PHILADELPHIA:

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1867.

## CORRESPONDENCE.

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JEFFERSON MEDICAL COLLEGE,  
*Thursday, October 17th, 1867.*

At a meeting of the Students of the College, held Tuesday evening, October 15, it was unanimously

*Resolved*, That a Committee be appointed by the President of the meeting to wait upon Prof. Gross, and tender him the thanks of the Students for the profit derived from his Introductory Address, and to solicit the manuscript for publication.

WILLIAM EKWURZEL, *President.*

HENRY W. STREETER, *Secretary.*

PROFESSOR SAMUEL D. GROSS,

DEAR SIR: It is with great pleasure that we, the undersigned Committee, convey to you, on behalf of the Students of the College, the high appreciation with which they received your Introductory Address. Desiring to preserve it for future reference, and also for the archives of the College, the Committee beg that you will furnish them with a copy of the manuscript for publication.

With high esteem, we remain

Your obedient servants,

ALONZO L. LEACH, N. J.	R. M. RHEA, Tenn.
M. ALBERT RHOADS, Penna.	W. W. GRANT, N. C.
T. D. MYERS, Md.	J. STRAWN, Cal.
J. C. GORDON, Ohio.	M. H. CASSEL, Illinois.
N. B. SPRATT, Miss.	S. H. DICKSON, S. C.
H. L. LAW, Conn.	M. D. SCANLON, N. Y.
C. R. MANN, Georgia.	H. H. HUNT, Maine.
JNO. KINNIER PATTERSON, Va.	J. S. LEWIS, Vt.
S. L. BROOKING, Mo.	W. F. VANKIRK, W. Va.
L. M. LOVELACE, Ky.	A. SCHOTT, Prussia.
A. H. SCOTT, Ark.	W. BOTSFORD, New Brunswick.
H. O. OGLE, Del.	A. MAXWELL, Nova Scotia.
L. BAXTER, Ind.	J. M. QUILEZ, Cuba.
WM. S. S. GAY, Mass.	J. JIMENEZ, Costa Rica.
W. H. UNDERWOOD, Fa.	

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S. E. COR. 11TH AND WALNUT STS., PHILADELPHIA,  
*October 18th, 1867.*

GENTLEMEN: I have the honor to acknowledge the receipt of your communication of the 17th instant, requesting a copy of my Introductory Address. As the Address was prepared expressly for your benefit, I take great pleasure in placing it at your disposal; and am, with best wishes for yourselves and the gentlemen whom you represent,

Very truly,

Your friend and obedient servant,  
S. D. GROSS.

Messrs. LEACH, RHOADS, MYERS, GORDON, SPRATT, and others, Committee.



*Recd Decem 4 12 1867 by post from the  
author*

## THEN AND NOW :

*Edmund G. Hille*

A

TWO-AND-FORTY years have elapsed since this school, named in honor of the immortal author of the Declaration of Independence, was opened for the instruction of medical students; and how well it has repaid the pains, the cares, and the labors of its founders, its faculties, and its guardians, every one acquainted with the progress of medical teaching in this city is aware. That it had, as all similar institutions, to some extent at least, must have, its early struggles, its trials, and its difficulties, nay, even its dissensions and domestic broils, is a matter of history; how it triumphed over them, and eventually, at no distant day, achieved its proud and commanding position, is also known. From the time of its reorganization in 1841, the date of its permanent stability and glory, its classes rapidly increased in numbers until 1860, when there were assembled around us 630 pupils, representing the different States and Territories of the Union, the British Provinces of North America, and several of the proud States of the Old World. War is hostile alike to the peace of nations, and to the prosperity of scientific and literary institutions, and it would indeed have been strange if the Jefferson Medical College had altogether escaped its late malign influences. The surprise is, not that it should have suffered, but that it suffered so little. Of the founders of the school, the original faculty whose names are attached to my diploma, not one is left; while of the faculty which came into power in 1841, and to which the College owes so much of its present renown, only two remain to adorn their chairs, and to cheer on their younger colleagues in their efforts to perpetuate its prosperity and to extend its usefulness. Of these, one, the honored Nestor of the school, will, as usual, greet you with his presence this winter, and enlighten you with the riches of his knowledge; the other, unfortunately, is absent, seeking in a foreign clime the repose which he so much needs after the toils and fatigues of more than twenty-five years faithfully spent in the service of the Institution.

My colleagues, whose representative I am on this occasion, have imposed upon me the agreeable duty of welcoming you to the Halls of my ALMA MATER, and of speaking to you a few words of advice and comfort; of advice, as a guide to your stu-



dies and to your conduct in the lecture-room; of comfort, to encourage and solace you during the period of your separation from your homes and friends. But before I proceed to this subject, I desire to call your attention to another, replete, if I mistake not, with interest and instruction, and therefore well calculated to serve as an introduction to a course of medical studies. I allude to the changes and improvements which have taken place in medical science since my entrance into the profession in 1828. The merest glance at these topics is all that can be attempted within the brief space allotted to my discourse.

The advances in our knowledge in medical science within the last forty years are without a parallel in any age. Never was the medical profession so busy and industrious, so zealous and enthusiastic, so honest and exact in its views and its results, as it is at the present moment. It would almost seem as if the millennium were actually close at hand. Look where we may, progress, rapid and brilliant, nay, absolutely bewildering, literally stares us in the face, and challenges our respect and admiration. One is almost ready to exclaim, "Behold, all things are new!"

The age is proud of its knowledge. It boasts of it in the public prints, in the workshop, in the social circle, in the street, everywhere, in season and out of season. It has a hundred Newtons, a thousand Franklins. An age which has tamed the lightning, bridged the ocean with steamships, girdled the earth with telegraphic wires, and made everything, organic and inorganic, subservient to its convenience and enjoyment, has just cause to be proud of its achievements; and yet it would ill become it to be arrogant and conceited, or unmindful of the fact that much of this knowledge, so much boasted of, is an inheritance, a reflection of the past, a legacy transmitted from sire to son, an accumulation of the industry, the genius, and the wisdom of other days, crowned with glory and sometimes even with martyrdom. We are too much disposed to look with contempt at the knowledge of our predecessors, as if, in reality, they had worked and lived in vain, as if all true science had been reserved as a kind of special gift to the present generation. If a thick veil could be suspended between the past and the present, separating them completely from each other, it would be easy to see where we should be. Utter darkness would cover the face of the earth. The giant would be a dwarf. The sun of science would be overhung with clouds and shadows, without one star to guide and direct us in our labors. All the experience of Hippocrates, of Sydenham, of Hunter, and of Bichat would be lost to us; the Newtonian system would be blotted out; civilization would be thrown back a thousand years; and the human mind would lapse into barbarism of the worst kind. Knowledge is progressive; it marches by slow degrees; the seed that is sown to-day may not germinate, much less fructify, for centuries. It may lie dormant in the earth until chance or accident brings it forth in full vigor and perfection. The fall of the apple had been witnessed thousands upon thou-



sands of times, but it required the genius of a Newton to deduce from it a great law, pervading all matter, all space, from the most minute atom to a world, the abode of millions upon millions of human beings. The human body had been dissected for ages, but no one, until the time of Bichat, the apostle of general anatomy, had studied the tissues, and applied the knowledge thus acquired to the elucidation of pathology and practical medicine. Linnæus, in the last century, was the first to offer a rational classification of plants; and it was not until a much later period that Cuvier gave us the first idea of the nature of the vast chain which connects, in one unbroken whole, the animal kingdom. The discovery of the cell is the work of our own day.

We look at this curtain as it is waving faintly in the distance, and thank God that it cannot shut out from us one ray of light. The past and the present are one and indivisible. Individuals perish and pass away, generation succeeds generation, but mind and its products live forever.

Commencing our examination with the great department of descriptive anatomy, it will be found that fewer additions have been made than in any other branch of medical study during the last third of a century. The treatises of Boyer, Hildenbrandt, and the two Cloquets, published shortly before, or soon after, the commencement of my pupilage, almost exhausted the subject; and any gaps which they left have since been thoroughly filled by the unrivalled, classical works of Cruveilhier and Quain; works which are an honor alike to their distinguished authors and to the nations which they respectively represent. Descriptive anatomy has, in fact, attained its ultimate limits of perfection. Like Alexander, the dissector may weep that there are no more new conquests for him.

What is true of descriptive anatomy is equally true of surgical, relative, regional, or topographical anatomy, founded by Desault and John Bell, in the latter part of the last century, and so thoroughly worked up in this, especially by Velpeau, Maclise, Malgaigne, Morton, Richet, Jarjavay, and Hyrtl. It is questionable whether the most painstaking man, however earnestly or zealously engaged in dissections, could add one particle of real value to the knowledge which now, thanks to the labors of these and other anatomists, exists upon this subject. The exploration has been most complete in every direction.

The anatomy of the tissues, commonly known as general anatomy, or histology, first systematically studied and described by Bichat, at the dawn of the nineteenth century, has also nearly, if not entirely, attained its highest degree of perfection. Future observers may correct some portions of our knowledge, but it is not probable that any very important additions will be made to it, however patiently and earnestly they may prosecute their investigations.

When we reflect upon the vast importance of this science, and upon the great revolution it has effected in physiology, pathology,



and practical medicine, we are struck with wonder and amazement to find that it was, in great measure, the result of the labor and genius of a single individual, and our surprise is not a little increased when we learn that that individual perished at the early age of thirty years, a victim to excessive toil and boundless enthusiasm.

Marie Francis Xavier Bichat, the founder of this science, was one of the great master spirits of his age. His gigantic mind grasped, with equal power, anatomy, physiology, pathology, medicine, and surgery. The fire of his composition, often, like that of his great prototype, John Hunter, neither elegant nor correct, his profound knowledge of the structure and functions of the human frame, and the novelty and boldness of his enunciations, left him without a rival. Evoking order out of chaos, he enriched and fertilized the commencement of the nineteenth century with the great variety and vast extent of his discoveries, and accomplished in a few short years the work of a long lifetime. Prior to his time histology had no veritable existence. If it had, as some have alleged, been foreshadowed by the labors of Bordeu, Pinel, and Carmichael Smith, it lacked the proportions and finish of the stately science which it assumed in the hands of the illustrious Frenchman.

The death of Bichat was a national calamity. Corvisart, in announcing the sad event to Bonaparte, then first consul, observed: "Bichat has fallen on a field of battle which numbers many a victim; no one has done in the same time so much and so well." Besides his great work on general anatomy, written and published within less than two years, he left a monograph on life and death, a system of descriptive anatomy in four volumes, and a number of valuable papers as contributions to the periodical press. He also edited, with notes and commentaries, the surgical tracts of Desault, and composed a small treatise on pathological anatomy, which was given to the world after his death. Such was Bichat, who, had his life been spared a few years longer, would have become the most illustrious physician and medical philosopher the world has ever produced.

The only work on pathological anatomy, accessible to the American student, in my early professional life, was that of Dr. Mathew Baillie, who for many years stood at the head of the medical profession of London, where, after a life of great usefulness and honor, he died in 1824. It was comprised in a small octavo volume, illustrated by an atlas of plates, the former of which was republished in this city soon after its appearance in Great Britain, and served for a long time as the only guide to the study of morbid anatomy in this country. The work of Baillie was succeeded, in 1829, by the treatise of Dr. William H. Horner, Professor of Anatomy in the University of Pennsylvania, and this, in turn, by the *Elements of Pathological Anatomy* by the present incumbent of the Surgical Chair in this College. Since that time works, almost without number, some of them, as those of Cru-



veilhier, Carswell, and Lebert, of the most magnificent and costly character, have appeared, and have served to elevate the study of morbid anatomy to the highest position among the kindred pursuits. If Bonnetus and Morgagni, the founders of this science, could rise from the dead and witness the astounding progress which this department of human knowledge, so essential to a correct interpretation of the nature and seat of disease, has made within the last thirty years, they could not accuse their successors either of neglect or indifference in this respect. Although the field is still open, inviting further research, the clouds which so long overshadowed it have been effectually dispersed, and have revealed a glorious sunlight, the rays of which have pierced every recess of the healing art with their benign and renovating influence.

The most curious and interesting discovery in anatomy in modern times is that all animal and vegetable substances essentially consist of cells, of variable size, shape, and structure, and so minute as to be visible only with the aid of the microscope; an instrument first applied as an aid to anatomy by Leeuwenhoeck in the seventeenth century. A number of observers had long ago suspected the existence of such bodies, but it was not until the researches of Schleiden, in 1837, and those of Schwann, a little later, that the fact was fully and satisfactorily established. This discovery, with the progress of which the name of a young American physician, long since deceased, Dr. Waldo J. Burnett, of Boston, is honorably associated, has led to vast changes in our anatomical and physiological knowledge, and to the adoption of certain views in pathology, the extent and importance of which no human sagacity is at present able to penetrate. The cellular pathology has already, under the plastic genius of Virchow, of Berlin, awakened a vast deal of inquiry, rapidly pushed on by men of the highest capacity in all parts of the civilized world. The cells of the human body exist not only in the natural tissues, but also in abnormal growths, and one of their characteristic features is their wonderful power of proliferation, by virtue of which they multiply with extraordinary rapidity, both in health and disease. The doctrine of the schools now is that everything emanates from a cell—*omnis cellula e cellula*; that is, where a new cell is there must have been a cell previously, "just," to use the language of the German Professor, "as an animal can spring only from an animal, a plant only from a plant." These researches, the result of the successive improvements of the microscope, and of a more careful application of that wonderful instrument, which has endowed man almost with a new sense, have clearly demonstrated the cellular nature of all vital processes, vegetable and animal, physiological and pathological, and the unity of life in the elementary forms of all organized beings, if not also the unity of disease in all organs and tissues.

If, at the commencement of my professional life, there was any one department of medical science in a more unsettled and unsatisfactory condition than another that department was physiology,



and it cannot be denied by any one at all familiar with the subject that much of the uncertainty which then enshrouded it still continues, notwithstanding the vast amount of labor, talent, and genius expended in the efforts to elucidate it. It is a department which, to borrow the language of Lord Bacon, in reference to medical science in general, has been more labored than advanced. Nor need this at all surprise us. The secrets of nature are not easily unlocked. She is slow in unveiling herself to the gaze even of the most patient, zealous, and philosophical inquirer. Her modesty shrinks as the maiden at the approaches of her lover. She loves to flirt and to coquet with her votaries, and not unfrequently blinds and disappoints them upon the very threshold of some grand discovery.

Our knowledge of certain portions of physiology was as perfect thirty years ago as it is at this moment. No real light, for example, has been thrown upon the mechanism of the circulation of the blood in the heart and large vessels as disclosed by William Harvey in 1629. He literally exhausted the subject. Concerning the circulation of the blood in the capillaries, and even of the structure of these tubules, our knowledge is to-day very little, if any, in advance of what it was a third of a century ago. Of the functions of digestion, respiration, calorification, and generation, not to mention others, a similar remark may be made.

The greatest advances that have been made in recent times in physiology relate to the functions of the nervous system. Within the last twenty years many facts have been explained that were formerly entirely unknown. When I attended my last course of lectures in this school, the brilliant discoveries of Sir Charles Bell and Magendie just began to attract the attention of the medical teachers of this country, and I well remember with what enthusiasm the professor of anatomy and physiology dwelt upon the genius of the two men who were thus gradually opening to the gaze of their professional brethren a mine of incalculable riches to medical science. It required the labor of ages to determine the interesting and important fact that the two sets of nerves, emanating from the brain and spinal cord, are endowed with different functions, one with the faculty of motion, the other with sensation, and yet the very arrangement of these nerves, and their peculiar mode of origin, would, one might now suppose, have, generations ago, furnished a satisfactory clue to this fact without any necessity for the elaborate experiments that were performed by the English and French philosophers. Of the nature of reflex-motor action, first brought under notice by Dr. Marshall Hall, and a knowledge of which is of such vast consequence in a practical point of view, nothing was known thirty-five years ago.

In 1847, Schröder Van-der-Kolk discovered the wonderful law, of so much value in the application of electricity to the cure of muscular paralysis, that "whenever a mixed nerve furnishes fibres to a group of muscles, its sensitive fibres are distributed to the corresponding portion of the skin." Another valuable discovery



has been made by Schiff. By a series of well-conducted experiments he has proved that the "gray substance of the posterior fibres transmits the sensation of pain, while the white fibres are devoted to the transmission of tactile impressions." The knowledge thus elicited enables the practitioner at once to explain, in any particular case, the nature and seat of what is called locomotor ataxy, a peculiar affection of the spinal cord, liable to occur at all periods of life, both as the result of disease and accident. The discovery of the reflex-secretory action of the nervous system, a discovery almost as brilliant as that of Marshall Hall, above alluded to, was the work of our distinguished countryman, Professor Campbell, formerly of Georgia, now of New Orleans, by whom it was originally announced, in an able and elaborate paper read before the American Medical Association, in 1857.

If time permitted, reference might here very properly be made to many other recent discoveries in this department of anatomy and physiology, the value of which it is impossible even now to conjecture. The names of Brown-Séquard, Pannizza, Longet, Claude Bernard, Van Deen, Ludwig, Stilling, and Volkmann are indelibly identified with these important advances in this interesting branch of biology. Much of what is now obscure, and consequently imperfectly understood, will, no doubt, ultimately be cleared up, not so much, probably, by experiments upon the inferior animals, at present so much the rage, as by careful clinical study, or, in more comprehensive language, by a more enlightened interpretation of the phenomena of morbid action, a method of inquiry which accomplished so much in the hands of Sir Charles Bell and Marshall Hall in unravelling the functions of the nervous system.

It is only a short time since the vitalists and the chemists vied with each other for the ascendancy in physiology, the former referring all the processes in the animal economy to the operation of a living sentient principle, the latter almost exclusively to the effects of chemical agency. Here, as in nearly all other extremes, the truth lies in the middle. Nevertheless, there are, even now, notwithstanding our increased light, some who assert that the human body is a mere machine, wholly independent of vitality; that the circulation of the blood is a mere hydraulic operation, explicable by the ordinary laws of physics; that the lungs are nothing but a furnace for the consumption of oxygen and the generation of carbon; that the stomach is a mere laboratory, and digestion a purely chemical process; in short, that the brain is a storehouse for the manufacture of Dutch toys and Yankee notions.

In chemistry, how vast the changes since the time of Gay-Lussac and Thénard, the founders of modern chemistry! Forty years ago organic chemistry had a vague and undefined existence; its facts were comparatively few and undetermined. To-day it presents a bold and majestic front, with the word "Progress" inscribed upon it in large and indelible letters, its destiny being indissolubly connected with industry, agriculture, medicine, the fine



arts, and humanity. It is, in fact, the great lever of human progress. To two men, more particularly, is the world indebted for the salutary impulse communicated to organic chemistry within my time—Baron Liebig, who made the little town of Giessen for years a centre of intellectual attraction, and Mons. Chevreul of Paris, a man who has established for himself an imperishable reputation as a profound thinker and an original investigator.

My colleague, Professor Rand, has been so kind as to give me a synopsis of the more important improvements that have been made in chemistry since 1830. From this it appears that nearly all the apparatus now used consists of glass, cork, and caoutchouc. Volumetric and spectral analyses have been introduced; the former of marvellous rapidity and great accuracy, the latter of a delicacy before unthought of. By it the new metal *cæsium* was detected in a mineral water of which it could not have formed more than the 100,000,000 part by weight. It is the agency now employed for studying the composition of the sun and stars. An immense number of new compounds have been discovered, and the synthesis of over one thousand organic compounds effected. Chemical preparations, of uniform strength and efficiency, and of small bulk or slight taste, have, in many cases, replaced the cumbersome and uncertain Galenical preparations of the Pharmacopœia, as, for example, the alkaloids and their salts, now so much used in the treatment of disease. Iodine and bromine, although previously known, were not generally employed. Chloroform, discovered almost simultaneously in America and France, is of later date. The cause of contagion has been studied, and a rational system of disinfection established.

The manufacture of matches, gun-cotton, collodion, and gutta-percha goods, the vulcanization of caoutchouc, and the invention of the telegraph and of photography are all due to the recent progress of chemistry. The application of chemistry to agriculture and physiology, by Liebig, Dumas, Mulder, Lehmann, and others has completely changed the face of these two departments of knowledge. The researches of Von Meyer, Joule, Grove, Helmholtz, and others have established the great doctrine of the correlation of force, and given the mathematical relation between heat and work. The undulatory theory of light has been physically proved by Fizeau and Foucault. The inquiries of Ohm have brought the laws of voltaic electricity within the domain of mathematics.

The *materia medica* has been purged of many of its crudities, and attained a more exalted position. The vast accessions which it has received consist, not so much in the addition of new articles, properly so considered, as in new combinations of many of those long known and accredited. Some idea of the remarkable changes that have been effected in this department, within the last thirty years, may be formed when it is stated that my learned colleague, the Professor of the Institutes of Medicine, has written a large octavo volume of upwards of seven hundred closely printed pages upon what are called new remedies. Every vegetable and mineral



has been laid under contribution; chemistry has lent its power of analysis and refinement; and physicians, in quite a number of instances, as in the cases of Fountain and Hammond in our own country, have not hesitated to perform dangerous experiments upon their own persons to test the virtues of the new candidate for favor and adoption into the family of medicines. Time would fail me if I were to attempt even an enumeration of the more important additions to our modern Pharmacopœia. The most valuable, unquestionably, are the preparations of iodine, potassium, bromine, iron, aconite, and veratrum viride, of the efficacy of which, in controlling morbid action, no one not familiar with their use can form any just estimate. The discovery of cod-liver oil has been a great boon. Employed freely in the earlier stages of phthisis, there is probably no remedy which exercises so salutary an influence over that ruthless disease in warding off the fatal issue.

One of the most remarkable discoveries of the age is that medicines introduced into the subcutaneous cellular tissue act much more speedily and forcibly than when taken by the stomach or the rectum. The operation is performed with a small pocket syringe, the nozzle of which terminates in a very sharp point, so that the skin may be easily penetrated without pain. A patient racked by sciatica, gout, or cancer is relieved in a few minutes by the hypodermic use of a third to a half grain of morphia. One grain of quinine thrown under the skin makes a much stronger impression in warding off an attack of malarial fever than five times that quantity introduced into the stomach. The probability is that we shall be able, ere long, to purge and vomit our patients by this simple and elegant method of medication, whose practical history extends back no further than 1859, when attention was first directed to it by Mr. Charles Hunter, in the London "Medical Times and Gazette" for that year.

In no department of the healing art has there been greater progress, with sound, healthful improvement, during the period under review, than in the treatment of diseases of the uterus, a class of affections really very little understood, even by the most enlightened practitioners, in the first third of the present century. The change has, indeed, been marvellous. Our knowledge of these disorders, so frequent in their occurrence, and in their consequences so harassing and distressing, was, until within a comparatively recent period, in a great degree conjectural. The only aid invoked in their investigation was the sense of touch, and even that was often rejected by the over-sensitive female from motives of false delicacy. The result may easily be guessed. As was the diagnosis, so was the treatment; if the one was erroneous, how could the other be correct? It is an axiom in medicine not to prescribe for a malady before we have ascertained its true nature and seat; and although this is not always practicable, yet the rule is not the less true.

The marvellous changes here referred to are all due, mainly, if



not wholly, to the employment of the speculum, an instrument well known to the ancients, but long lost and forgotten. Delineations of it were found upon the walls of Pompeii and Herculaneum; and Paul, of Ægineta, alludes to the dioptra, a form of speculum, as an instrument in general use in his time for examining the vagina and uterus. Ambrose Paré has given an account of a uterine speculum, accompanied with several drawings, in his great work on Surgery, published towards the close of the sixteenth century. Mention of it also occurs in some of the older treatises on midwifery. Through false notions, however, of professional delicacy it had fallen into disuse until restored in 1822, by Professor Récamier, of the Hôtel-Dieu, of Paris. In this country the speculum was first employed by Dr. Sharpless, of this city, in 1835, soon after his return from Europe, where, especially in the large venereal wards of Mons. Ricord, he enjoyed ample opportunities of witnessing its application, and of appreciating its great value as an aid in diagnosis. The practice met for a while with much opposition and even abuse. Now every one employs it.

Sounding of the uterus, as a means of ascertaining the existence of disease in its interior, is of still more recent date, hardly thirty years having elapsed since attention was first directed to it by Mons. Lair, of Paris. When we reflect upon the great value of these examinations, now universally practised, it is amazing that they should have been so long overlooked and neglected.

Dr. James H. Bennet, of London, nearly a quarter of a century ago, justly remarked that the discovery of auscultation and percussion by Avenbrugger and Laennec had hardly produced so great a change in thoracic pathology, great as that change has been, as the application of physical exploration in uterine diseases was destined to effect in this extensive and important department of medical science. This prediction, made in the true spirit of enlightened progress, was years ago amply verified. No educated physician now attempts to diagnosticate a disease of the uterus or vagina without the aid of the speculum. This instrument, so simple in construction, and so easy of application, has brought to our aid an additional sense in the investigation and treatment of this class of maladies. It has, in fact, produced not merely a change but a thorough revolution, alike honorable to the profession and of inestimable value to poor suffering woman.

The only monograph on female diseases, thirty-five years ago, accessible to the American student, was that of Dr. Dewees, even then far in arrear of the existing state of the science. On inflammation and ulceration of the uterus, as revealed by the speculum, the work was entirely silent; nor did it contain any information respecting the operative surgery of that important organ, a subject so admirably handled by Sir James Y. Simpson, Dr. I. Baker Brown, and, above all, by our distinguished countryman Dr. J. Marion Sims, whose excellent treatise is far in advance of any work of the kind ever published. To him, and to Dr. James H.



Bennet the world owes an immense debt of gratitude; to the former for the important services which he has rendered to the operative surgery of the genito-urinary apparatus of the female; to the latter for his masterly work on inflammation of the uterus, originally issued in 1845, in which he was the first to make known to the physicians of Great Britain and the United States the diagnosis and treatment of the organic diseases of the womb, until then very imperfectly understood, and for the most part wretchedly mismanaged. To my former colleagues Professor Charles D. Meigs, for many years one of the chief pillars of this school, Professor Henry Miller, the distinguished obstetrician of Kentucky, and Professor Gunning S. Bedford, the able teacher and writer, great credit is due for their exertion to popularize the use of the speculum in this country. Professor White, of Buffalo, a gentleman ever alive to the progress of science, and the interests of humanity, also deserves honorable mention in connection with this subject.

Ovariectomy, a conquest of modern times, is an American operation, first practised in 1809, by Dr. Ephraim McDowell, of Danville, Kentucky. He performed the operation altogether about thirteen times with a success highly flattering to his skill. After a Rip-van-Winkle sleep of nearly a quarter of a century, ovariectomy woke up one morning and found itself suddenly famous. Revived by Mr. Clay, of Manchester, it has, mainly through the influence of his labors and writings, become one of the most common of the capital operations, and is almost universally acknowledged as one of the greatest triumphs of modern surgery. The mortality, now that the after-treatment is so well understood, is much less than formerly, the ratio being about one death in three cases and a half, thus comparing most favorably with the results of many of the more severe operations.

Valuable improvement has been effected in the treatment of puerperal peritonitis. Instead of copious abstractions of blood with the lancet, thereby draining the system rapidly of its vital fluid at a time when it can be ill-spared, most practitioners at the present day place their chief reliance upon the exhibition of opium in large and frequently repeated doses, and upon the application of leeches and of stupes of turpentine and laudanum to the abdomen. For the introduction of the opium treatment of this disease we are mainly indebted to Professor Alonzo Clark, of New York.

The practice of midwifery, properly so called, has experienced many salutary changes. The use of anæsthetics, and a better comprehension of the powers of nature, have greatly simplified the duties of the accoucheur, and have furnished him with more enlightened views of the mechanism of parturition. The forceps, that "noble instrument," to use the designation of Chapman, the original inventor, were seldom employed thirty-five years ago, except in cases of very tedious labor, and even then comparatively infrequently, nature being generally regarded as fully competent to the task of expelling the child without such aid. In a long practice of this kind, at one time quite extensive, I never



had occasion to use the forceps in a solitary instance among my own patients, and a still-born child, from protracted retention of the head, was one of the rarest of occurrences. Now, almost every physician, young or old, ignorant or educated, applies the instrument if the labor is at all tedious. In a recent medical journal Dr. Hardie, of Scotland, is stated to have applied the forceps in 28 out of 100 cases of labor simply to abbreviate anxiety and pain. Of the propriety of such a procedure it is not my business here to express an opinion. The able gentlemen in charge of this department will, during the course of the winter, afford you all the light you may require upon the subject. I may, however, be pardoned for expressing my conviction that a more cautious reserve in the use of this instrument—an instrument that may be wielded for evil as well as for good—would conduce alike to the interests of humanity and the credit of obstetric practice. The advocates of the employment of the forceps, as a prophylactic measure, to save the child, and thus prevent the ill effects that might arise from delay, constitute, unfortunately, as it seems to me, a very numerous and influential class at the present day.

Until recently, great difficulty was frequently experienced in effecting reduction of the umbilical cord in cases of prolapse. The operation is now, thanks to Professor Gaillard Thomas, of New York, a very easy one, all that is necessary being to place the parturient female upon her knees and elbows, so as to throw the breech beyond the level of the rest of the body, when, by a little manipulation, the object may promptly be attained. By a similar expedient Dr. E. R. Maxson, of the State of New York, has readily succeeded in converting shoulder into natural presentations.

Midwifery, in the latter part of the last century, was taught by Smellie, of London, in four lectures at 10s. A paper lantern, suspended at the door, served to direct the young aspirant after obstetric honors to the amphitheatre of the learned professor. When the University of Pennsylvania was organized in 1764, no special provision was made for teaching this dignified and important branch of the healing art, and it was not until 1812 that it was considered worthy of holding a distinct place in the curriculum of the institution, known as the mother of American Medical Schools. The fact is, the practice of midwifery was long regarded by many of the leading medical men of the country as a positive degradation.

Great improvement has taken place in the physical and medical treatment of children. I well recollect the time when these little creatures were looked upon, apparently, as if they were absolutely destitute of the ordinary qualities of our nature; as if they were hardly human beings. Their early education was shamefully mismanaged; and their diseases, generally ill-understood, were treated in the most harsh, cruel, and unscientific manner. Overdosing, ill-ventilation, and underfeeding were the order of the day. It often made one's heart ache to see these little starvelings in their mothers' and their nurses' arms, looking like so many



picked chickens, destitute of flesh and blood, fed upon calomel, and deprived of proper food and drink. One of the greatest discoveries of modern times is that children have stomachs!

In surgery, in all its branches and ramifications, not only great advances, but vast improvements have been made; improvements as brilliant as they are honorable to the genius, intelligence, and enterprise of their authors. A mere glance at this subject must suffice for this occasion.

In 1824, Civiale performed, for the first time, the operation of lithotripsy—improperly called lithotritry by our cousins across the waters—and from that period until his death, on the 13th of June last, he employed it upon upwards of sixteen hundred persons, with what result has not, thus far, transpired. Although Gruithuisen, a Bavarian physician, had, in 1813, called the attention of the profession to the practicability of crushing stone in the bladder without a resort to the knife, yet to the French surgeon, who was for upwards of a third of a century the acknowledged leader in this field of practice, is mainly due the merit of having brought the operation to its present degree of perfection. This is not the place for an account of the manner of executing the operation, for a comparative view of its statistics, or of the estimation in which it is held by the profession. It is sufficient to add that its claims have been fully settled, and that it justly ranks among the acknowledged triumphs of surgery.

In lithotomy, the gorget, the favorite instrument of Physick, Gibson, and Dudley, has been superseded by the knife, and the operation, as now generally performed, is, in every respect, more simple than it was forty years ago.

The treatment of aneurism has been much improved, and rendered less dangerous to limb and life. The Hunterian operation, which, taking all the arteries together, furnished an average mortality of about one in four, is now comparatively seldom performed; mechanical and digital compression, forced flexion, and other processes having taken the place of the ligature. For the revolution—for so it may justly be termed—which has been thus effected, all honor is due to the Dublin surgeons, particularly to Hutton and Bellingham, the latter of whom, in a short tract issued in 1847, was the first to point out, upon correct and scientific principles, the manner in which compression acts in curing the disease.

Acupressure, devised a few years ago by Sir James Y. Simpson, as a substitute for the ligature, which has so long enjoyed the confidence of surgeons as a means for preventing and arresting hemorrhage, is a contrivance the precise value of which is still undetermined. Much has been said and written in commendation of it, especially by its ingenious inventor; and in a monograph published within the present year by Professor Pirrie and Dr. Keith, of Aberdeen, numerous cases are related illustrative of its great advantages, with an expression of the hope that it will, ere long, come into general use. I have myself, however, no idea



that it will ever entirely, or even in any considerable degree, supersede the employment of the ligature. When the prejudice incident to the introduction of all novelties shall have subsided, the profession will be better able to form an unbiassed judgment of its real utility.

There are, as is well known, various articles of the *materia medica*, endowed with hemostatic properties, but all these are as nothing compared with the wonderful effects of subsulphate of iron, or Monsel's salt, so-called after a chemist of Bordeaux, who was the first, a few years ago, to call attention to the subject. Having employed this substance in numerous instances, I am thus able to bear testimony, from personal experience, to its astonishing virtues. It has already saved many lives.

The treatment of syphilitic diseases has undergone many changes. Mercury, formerly so generally and so copiously administered for the relief of primary and secondary symptoms, is now rarely given, except in the hard variety of chancre, in which the induration obstinately resists the ordinary measures, or the phenomena are such as to justify the belief that the virus is still insidiously at work. The secondary accidents, at least in my own hands, commonly yield to the ordinary antiphlogistic remedies. For the cure of the tertiary variety of the complaint the iodides, as they are denominated, introduced to the notice of the profession by Mons. Ricord, of Paris, have proved most effectual, especially when, as has long been my practice, they are combined with a minute quantity of bichloride of mercury, the very mildest and most innocuous of all the forms of that important salt. The inoculable character of secondary syphilis, formerly so strenuously denied, is now generally admitted, while the duality of chancre, a subject of so much angry discussion during the last fifteen years, is still a mooted question.

The treatment of cancer stands precisely where it did forty years ago. While our knowledge of the histological and microscopical characters of the disease has been vastly extended by modern research, our means of arresting and curing it are as impotent as ever. The treatment of cancer by the hypodermic injection of acetic acid, introduced a short time ago by Mr. Broadbent, of London, and from which so much benefit had been anticipated, has signally failed; and there is at present no reason to believe, from what is known of this horrible malady, that science, in its onward progress, will throw any useful light upon its mode of management.

The management of fractures of the leg and thigh is much better understood than formerly. The treatment by adhesive plaster, pulley and weight, recently utilized by Dr. Swinburne and Dr. Buck, of New York, and now commonly known as the American method, is rapidly gaining confidence, and will probably, at no distant day, meet with general approval. Its simplicity is only equalled by its efficacy. The anterior splint, introduced by Professor N. R. Smith, of Baltimore, deserves



favorable mention in connection with the treatment of fractures of the lower extremity, as its merits are no longer questioned by any one acquainted with its character and mode of application. Its utility was amply tested, in numerous instances, during the late war, especially in the treatment of gunshot and other complicated fractures of the thigh and leg. Of the value of adhesive plaster, as a means of effecting extension and counter-extension and securing quietude to the parts, I shall have occasion to speak fully during the course of the winter. It is sufficient here to say that I was the first to describe and recommend this method of treatment as early as 1830, and that it is one of the greatest additions to practical surgery of the present day. Another valuable improvement, in the treatment of fractures of the lower limbs, is the starch bandage; or, what is still better, the plaster-of-Paris bandage, originally used by the Moors of Spain, and reintroduced to the notice of the profession, in 1829, by Professor Klüge, of Berlin.

Within the last twelve years the subject of subperiosteal resection of entire bones, or of portions of their shafts, and even of joints, has attracted considerable attention, the operation being founded upon the well-known agency exerted by the periosteum in the regeneration of osseous tissue. Koehler, Troja, Weidemann, and many other of the older surgeons, were well acquainted with this property of the periosteum, and numerous cases are referred to in their writings in which entire bones were reproduced after necrosis. Professor James R. Wood, of New York, has recorded an instance of the complete regeneration of the lower jaw after its removal for phosphorus disease, the periosteum being left intact. If we may credit the assertions of certain writers, as Ollier and Sédillot of France, Creus of Spain, Larghi of Italy, Langenbeck, Neudörfer, and Lücke of Germany, the procedure has already achieved wonders. I have myself, in all the numerous operations that I have performed during the last thirty years for the removal of dead bone, scrupulously respected this envelope, and I presume that there is not an enlightened surgeon anywhere who has not pursued a similar plan of treatment. The subject of the transplantation of the periosteum, so thoroughly worked up by Ollier, who lately published a large and costly treatise upon it, is comparatively new in this country, but will no doubt soon seriously engage the attention of the profession. For my own part, I am disposed to place very little confidence in the merits that have been ascribed to it.

The reduction of dislocations by manipulation, a plan of treatment popularized by Dr. Reid, of Rochester, has superseded the brute force by the pulley; and chloroform, the employment of the lancet, the hot bath, and tartar emetic.

The treatment of diseases of the joints has experienced important changes; pus is freely evacuated with the lancet by direct incision; coxalgia is treated by perfect quietude of the corresponding limb, by what is, absurdly enough, styled elastic extension; and permanent ankylosis, even in some of its worst forms, is



readily remediable by comparatively safe and simple measures. The names of Davis, Taylor, Sayre, and Bauer merit honorable mention in connection with these improvements.

The wire suture, concerning which so much has been said and written of late years, although a valuable addition to our armamentarium, is now less frequently used than formerly, and the opinion seems to be gaining ground that metal possesses little, if any, superiority over ordinary silk. If it is less irritating than silk, it has the disadvantage of being less easily removed from the wound. Where long retention of the suture is required, as in the operation for vesico-vaginal fistule, the wire suture is, in my opinion, justly entitled to preference.

The perineal section, devised by Desault, and revived by Mr. Syme, has been proved to be the only trustworthy method of treatment for the relief of very tight and obstinate strictures of the urethra, especially when complicated with perineal fistule, and great local and constitutional suffering. The operation, which requires an accurate knowledge of the anatomy of the parts for its successful execution, seldom disappoints expectation, and, thus far, the mortality has been very slight.

In ophthalmology vast progress, if not great improvement, has been made. Of the immense activity at present going on in this interesting department of surgery, some idea may be formed, when it is stated that in 1865 one hundred and thirty-seven tracts were published upon it, and not less than two hundred and twenty-four in 1866. In some of the schools, ophthalmology enters into the regular curriculum of a medical education. Paris, Berlin, and Vienna are the great centres of this kind of teaching, to which students from all parts of the world flock to avail themselves of its supposed advantages. It is, however, worthy of remark that many of the operations recently introduced into this department are still on trial at the bar of public opinion, and that a long time must necessarily elapse before their actual value can be fully determined, notwithstanding the great attention they are everywhere receiving. With the advances of ophthalmology are honorably associated many distinguished names, but for the first great impulse our acknowledgments are mainly due to Von Graefe, the celebrated oculist of Berlin, who, as an ingenious and accomplished operator, enjoys an unrivalled reputation.

Orthopædic and conservative surgery are modern creations. Dr. Louis Stromeyer, of Hanover, in 1831, proved, by a series of well-conducted experiments upon the inferior animals, that tendons, divided subcutaneously, readily unite without the intervention of serious inflammation, and he thus founded a new department of surgery, known ever since as orthopædic surgery. All the operations for clubfoot and analogous distortions, performed prior to this period, had signally failed, because they were not based upon correct scientific principles.

Thirty years ago conservative surgery had hardly an existence, not for the want of conservative teaching and practice, but be-



cause the professional mind was not prepared for its reception. Dr. Physick, justly styled the Father of American Surgery, was an eminently conservative practitioner, and he spared no efforts, in his lectures, to inculcate the importance of the subject. He was himself, however, no writer, and at that time there were neither clinics nor clinical reporters to disseminate his doctrines. Hence his teaching fell upon barren soil, and the merit of founding conservative surgery has been awarded to other laborers. Formerly thousands of limbs were sacrificed which would now, under the more rational and enlightened treatment, be preserved. Amputations are much less frequently performed, while resections of the joints, the origin of which dates back to the latter part of the last century, are very common, especially in pathological cases; and the powers of the system to endure disease and operations are vastly better understood.

Plastic surgery, founded by Taliacotius in the sixteenth century, has been greatly extended and improved in this, chiefly through the labors of Graefe, Carpue, Dieffenbach, Zeis, Serre, Von Ammon, Liston, Labat, and Blandin. My predecessor in the chair of surgery in this school, the late Dr. Thomas D. Mütter, performed some very creditable operations of this kind for the relief of the horrible deformity of the face and neck so often witnessed after burns and scalds; and my distinguished colleague, Professor Pancoast, devised, early in his professional career, an excellent suture for effecting accurate apposition and maintenance of the transplanted integuments in the construction of new noses. Some of the very finest noses ever manufactured in this city were made with the aid of this suture.

Staphyloraphy is of modern origin, having been first successfully executed, in 1819, by Professor Roux, of Paris. For some very important improvements in the mode of performing this operation, claimed, singularly enough, by a distinguished foreign surgeon, the profession is indebted to the late Dr. J. Mason Warren, who published an account of the procedure in the "American Journal of the Medical Sciences" for 1843. At the time of his lamented death, hardly two months ago, he had operated nearly one hundred times for cleft palate, with a degree of success highly honorable to his dexterity and scientific knowledge. The same surgeon was the first to devise an operation for closing abnormal openings in the hard palate, by raising a flap of muco-fibrous structure on each side of the fissure, and uniting them at the centre.

The operation for hare-lip has been much simplified, and the fact established that it may often be successfully performed within a few days after the birth of the child. Numerous plans have been devised for the radical cure of hernia, but not one, so far as I am able to comprehend them, of an entirely unobjectionable character. The one now generally practised is that of Mr. Wood, of London, a modification of that proposed by Wutzer, of Bonn, in 1838. Dr. Agnew, of this city, has also of late years practised



a method peculiar to himself, with what success I am not informed; and Professor Pancoast, many years ago, effected some cures by the subcutaneous injection of iodine.

Surgery shares with medicine the honor of the invention of a number of instruments, due to a knowledge of the science of physics, some of which have already rendered invaluable service to the diagnosis and treatment of disease. These instruments, which are merely natural outgrowths of the stethoscope, the offspring of the fertile genius of Laennec, in the early part of the present century, are the ophthalmoscope, laryngoscope, and rhinoscope, by means of which the practitioner may explore the most hidden recesses of the eye, windpipe, and nose, thereby enabling him to extend the sphere of his observation, and to obtain more accurate information of the disorders of those important structures. To Dr. Desormeaux, of Paris, we are indebted for the invention of the endoscope for inspecting the urethra and urinary bladder; and no doubt some ingenious physician will before long construct a gastroscope, an instrument, as the name implies, for looking into the stomach.<sup>1</sup> In this enumeration we must not lose sight of the sphygmograph and the thermometer; the former for measuring the force and frequency of the pulse, the latter for determining the heat of the surface of the body in disease; a subject now earnestly occupying the thoughts of numerous observers in different parts of the world, and destined, it is said, to throw much light upon the nature and treatment of morbid action, especially the various kinds of fevers. With the value of the microscope, as a means of diagnosis, every one is familiar. Without the aid of this instrument, the practitioner would be utterly at a loss to distinguish even some of the more common maladies, while the science of medical jurisprudence would literally be deprived of its right hand. In the great work of Professor Wormley, of Columbus, Ohio, on the Micro-Chemistry of Poisons, just issued, it is asserted that with the aid of the microscope, applied in accordance with the methods therein suggested, it is comparatively easy to detect, with unerring certainty, the 100,000th part of a grain of arsenic or mercury. Another contrivance, of incalculable value to the medical jurist, devised only within the last few years by Mr. Sorby, of England, is the spectroscope, a small mirror attached to the microscope, which, by reflecting the light as it falls upon a spot of blood, however minute, instantly discloses the peculiar nature of hematin. It is said that the characteristic spectrum of a single blood-disc may be thus obtained.

Instruments, denominated atomizers, have recently been invented, and are now much used for throwing medicated and other fluids into the nose, throat, and air-passages for the cure of inflammation and other affections. A very excellent account of

<sup>1</sup> Since the above was written, Dr. Milliot, of Kiew, has published an account of an instrument which he calls the stomatoscope, and which consists of a glass tube, containing a platinum wire, connected with an electric apparatus as a means of illuminating the œsophagus, stomach, or lower bowel.



this method of treatment, interspersed with a good deal of personal observation, will be found in an elegant little brochure, published during the past summer, by your teacher of clinical medicine, Dr. Da Costa. Contrivances of a similar kind, employed for the production of local anæsthesia, will be shown to you at the surgical clinic, in connection with some of the minor operations, to which alone ether, rhigoline, and other sprays are applicable.

I have purposely abstained, until this moment, from mentioning, in connection with the more important advances in surgery, the grandest of them all—a boon of inestimable value to the human family. I need hardly say that I allude to anæsthetics. In 1846, the people of this continent were startled by the announcement that a dentist of Boston had discovered an agent which, if properly inhaled, was an effectual preventive of pain in surgical operations, however severe, or protracted. The name originally given to this agent was “*letheon*,” and, unfortunately, for the honor of the discoverer, its true nature was for some time kept a profound secret. It was soon ascertained, however, to be nothing but sulphuric ether, an article long known to the profession, but not as possessing such virtues. The first trials with this agent were made in the extraction of teeth, and it was not until after its success was perfectly established that it was used in the more severe operations, the first of which, consisting of the removal of a vascular tumor of the neck, was performed, while the patient was under its influence, at the Massachusetts General Hospital, on the 16th of October, 1846, by the late Professor John C. Warren.

Although the discovery of anæsthetics had been foreshadowed by the experiments of Beddoes and Sir Humphrey Davy, in the latter part of last century, to Dr. W. T. G. Morton, an ingenious and accomplished dentist of Boston, is unquestionably due the merit of having first applied sulphuric ether, now so extensively employed in this country, for the prevention of pain in surgical operations. Nitrous oxide gas, the article with which the late Dr. Wells, of Connecticut, performed the experiments which immediately preceded the discovery of Dr. Morton, is now almost universally employed in the extraction of teeth. The anæsthetic properties of chloroform were detected by Professor Simpson, of Edinburgh, in 1847.

Of the vast benefits of anæsthetics in surgical practice, I shall frequently have occasion to speak this winter. Meanwhile, it may be stated that anæsthetics are employed not merely to prevent pain, but also as aids in determining the diagnosis of various affections, as, for example, in sounding for stone in the bladder; in searching for the presence of foreign bodies in wounds; and in the reduction of dislocations and strangulated hernia. Midwifery, too, comes in for a share of the blessings of anæsthetics; and cases occasionally arise in which they may be advantageously employed in medical practice.

Among the most remarkable changes that have taken place



in the treatment of diseases within my time, changes amounting to a positive revolution, is the abandonment of emetics, active purgatives, and venesection. Until within a comparatively short period these agents were the great remedies for combating morbid action, and it is therefore not surprising that their employment should for a long time have been universal. To be sick, however slightly, and not to be freely vomited, purged, and bled was an anomaly; to permit a patient to die without subjecting him to these ordeals was a crime. If a man had a headache, an irritable stomach, or any disorder of the digestive organs; or if, in the language of the day, he was "bilious," a very common and popular expression, the very first medicine that was generally prescribed was an emetic of tartrate of antimony and potassa, followed, within a few hours, by an active cathartic, of which calomel, or calomel and jalap, formed the principal ingredients. The object of the emetic was to rid the stomach of bile and other impurities; of the cathartic, to correct the secretions, especially of the liver, and to effect thorough evacuation of the bowels. If there was any arterial excitement, and if this excitement was not subdued by these remedies, blood was next freely drawn from the arm in a full stream, so as to produce not only a powerfully depressing but also a decidedly spoliative effect. If the arterial action was very considerable, the lancet, instead of following, preceded the emetic and cathartic. The repetition of this course, of which this is a rapid outline, was of common, I might add, of constant occurrence. There were few patients whose ailments were at all severe or obstinate who, on their recovery, if they were so fortunate as to survive this practice, could not boast of at least two or three pretty copious bleedings, and of having swallowed twice that number of emetics and cathartics. This treatment prevailed both in city and country, though in the former, as the patients, from their peculiar habits and modes of life, were less able to bear very active depletion, its employment was less frequent.

The abandonment of this treatment, a treatment well entitled to the term heroic, has for years past been complete. An emetic of any kind is now rarely given, no matter what may be the nature of the disease; drastic cathartics are less frequently administered; and as to venesection, even in the treatment of the more violent and dangerous affections, as, for example, pneumonia, pleurisy, gout, and rheumatism, in which it is said to have once been so beneficial, every one looks upon it with a sort of holy horror. The lancet, formerly the inseparable pocket companion of the physician, now rests quietly in its case, incrustated with rust, a thing of the past, an object of curiosity and reproach. The divorce is complete. Young Physic boasts that he has never seen a lancet, and expresses surprise that such a weapon should ever have been in such universal use. Taking the practice of the present day as his standpoint, he cannot see why such a sanguinary operation should ever have been necessary. He looks with disgust at the conduct of his predecessors, loudly declaims against their



want of judgment, and, like the Pharisee in the Bible, devoutly thanks God that he is not like other men. Scrupulously abstaining from the spilling of blood, he entrenches himself behind his wine, his whisky, his brandy, his milk-punch, and his beef essence, bids defiance to disease, and, in the triumph of his pride, regards himself as the very god of physic, to whom alone are confided the secrets of the healing art. He parades his statistics, counts few, if any, losses, and is not only a benefactor to the state, but a positive clog to the undertaker and the resurrectionist.

This change of practice reminds one forcibly of the story of Sganarel, the mock doctor, in the comedy of Molière, who, upon a doubt being expressed by Geronte that the heart was on the right side, and the liver on the left, replied, "Yes, it was formerly so; but we have altered all that, and we now practise medicine after quite a new method."

Whence, and wherefore are all these mighty, these astounding changes in our method of dealing with disease and death? Are they due to some radical alteration in the condition and habits of man himself, to a change in the type of disease, or to the improved knowledge and increased wisdom of the modern physician, and to his more intimate acquaintance with the virtues of certain remedies? These are momentous questions, upon the proper solution of which must depend much of your success, or want of success, as practitioners of the healing art.

If there has been any material physical degeneracy of the human race, as it manifests itself to me in my daily intercourse with the people around me, I have not been able to perceive it. They seem to me to be as tall, as hardy, as well-proportioned, as healthy, as capable of enduring labor and fatigue as the people were forty years ago. They have not, so far as there is any outward evidence of it, undergone any essential change in their habits or modes of life. They use similar food and drink, follow similar occupations, breathe a similar atmosphere, indulge in similar amusements. If they eat beef and mutton, terrapin, croquets, oysters, and chicken-salad, fortified with champagne, whisky, and brandy, so did the people a generation ago. If we go into the rural districts, we shall find the same remarks to be applicable. Nowhere is there any evidence whatever of deterioration of the race. During the late war the most abundant proof was furnished on both sides of the line of the extraordinary power of endurance among the soldiers, in the astonishing marches which, on more than one occasion, were performed, feats which were never surpassed, if, indeed, equalled, by any armies either in ancient or modern times. If the races of the Old World are deteriorating in stature and muscle, I repeat that I know nothing to justify the belief that such changes are occurring among the inhabitants, native and foreign, of this mighty continent, the best fed, the best clothed, the best housed people on the face of the earth.

It has been asserted that the change in our treatment has been caused by a change in the type of disease. This, indeed, is the



prominent doctrine of the day, endorsed by many of the most enlightened physicians, surgeons, and accoucheurs throughout the civilized world. It is based upon the assumption, at first sight plausible enough, that disease has lost much of its inflammatory character, and that, owing to some peculiar condition of the system, hitherto not satisfactorily explained, it has a strong tendency to run into a typhoid state, thus absolutely forbidding the use of the lancet and other depletory measures, formerly so much in vogue, and imperatively demanding the employment of alcoholic stimulants and a generous diet. This doctrine of a change in the type of disease is not new. Distinct mention of it is made by some of the older writers. As a matured plan of treatment, however, it was originally enunciated by John Brown, of Edinburgh, generally known as the founder of the Brunonian system of medicine, a pupil and afterwards a rival of Cullen, who, in order, apparently, to bring discredit and contempt upon his master and the celebrated school of which he was the chief ornament, taught that there were two distinct classes of diseases, the sthenic and asthenic, the former, as the name implies, being attended with over-action, the latter and the more frequent of the two, with debility or exhaustion. Brown discarded active depletion altogether, and trusted wholly to opium and alcoholic stimulants, of which he himself was a habitual consumer, for the cure of diseases. Although he was a mere sot, and finally perished, at a comparatively early age, from the effects of his intemperance, his doctrines rapidly spread over Europe, and, for a time, completely enchained the minds of many of the most distinguished physicians, especially in Italy and Germany, the field of its greatest and wildest luxuriance. A lull, however, at length ensued, and for upwards of a quarter of a century Brunonianism was nearly forgotten, when it was revived by the late Dr. Robert Bentley Todd, Professor of Physiology and Pathological Anatomy in King's College, London. Connected with a large hospital, the inmates of which were, for the most part, of a broken-down, dilapidated constitution, he was forced, despite the prejudices of his education and the habits of his early life, to abandon depletory measures, and to rely solely upon the use of stimulants, tonics, and a generous diet. As he was a fascinating teacher, and an able writer, his views rapidly spread from Europe to this country, where they were soon received by the great body of medical men as sound and reliable guides in practice.

Todd, it will thus be perceived, went a step farther than his Scotch prototype; for, while the latter taught that one class of cases required depletion and the other stimulants, the London physician abandoned himself entirely to the latter, zealously maintaining the doctrine of a change of type of disease, and the consequent inability of the patient to bear the loss of blood, generally even by cupping and leeching. That a man of the transcendent ability of Dr. Todd should have fallen into such an astounding error is not a little surprising; the circumstances can only be



explained upon the assumption that he had a very limited private practice. This, at all events, is a reasonable construction. Seeing chiefly hospital patients, enfeebled by neglect, intemperance, and starvation, he could hardly have reached any other conclusion. His patients had no blood, no muscle, no life-power. Stimulants and tonics were necessary at the very outset of the treatment. The system required to be upheld; not depressed and depleted. The class of cases attended by Dr. Todd were such as are to be found in every eleemosynary institution in every crowded city in the world. The Philadelphia Hospital, as you will see by and by, is filled with them, and there is hardly, at any time, summer or winter, spring or autumn, an individual within its wards, whatever may be the nature of his ailment, who could bear the loss of ten ounces of blood with impunity, or one whose condition would not be rendered materially worse by an active emetic or an active cathartic. In promulgating his doctrine, one of the most pernicious in the annals of medicine, Todd forgot that there is in every community a class of patients the very opposite to that just referred to—the well-fed, the plethoric, the comparatively robust—those whom Brown designated as the sthenic. Will any one who knows anything of the nature and treatment of acute disease affirm that such patients would not be benefited, vastly benefited, by a little leaven of the “old practice,” the lancet and at least an active cathartic? Will any one contend that inflammation—pneumonia, pleurisy, gout, and dysentery, to which such persons are particularly subject—is less active, less severe, less destructive than it was a generation ago? I imagine not; at all events there is no evidence of it. Already the doctrine, with the practice based upon it, is tottering to the ground. Some of its ablest advocates have already renounced it as false and dangerous, as an *ignis-fatuus*, only calculated to mislead the thoughtless and the unwary.

Three circumstances, so far as I am able, from much observation and reflection, to form an opinion, lie at the foundation of these extraordinary changes:—a more comprehensive knowledge of the efficiency of certain remedies; a greater reliance upon the powers of nature; and the influence of fashion in shaping the conduct of physicians.

1st. Every one familiar with the progress of *materia medica* within the last quarter of a century, is aware of the valuable additions that have been made to the stock of our knowledge. It is only necessary here to refer to aconite and *veratrum viride*; the former a European, the latter an American remedy. Both of these articles are most powerful depressants, daily employed in the treatment of inflammatory affections. A few drops of either, repeated every hour or two, will speedily reduce the force and frequency of the pulse, open the pores of the skin, lessen pain, and relax the system. These agents, of which the teachers and writers of my student-days were entirely ignorant, are among the most potent and trustworthy antiphlogistic remedies at present known, and they have effectually, in the hands of most practi-



tioners, usurped the place of the lancet, the emetic, and the cathartic.

2dly. Experience has shown, especially since the introduction of homœopathy and various kindred illusions, that Nature alone, without any aid whatever from medication, properly so called, is often competent to cure disease, particularly if very mild, and the patient do not, by any indiscretion, interfere with her operations. This fact is now so thoroughly established as not to require any elucidation. It is the platform of Young Physic. The older a practitioner grows, the less medicine he generally gives; for he well knows that perfect rest of mind and body, and abstinence from stimulating food and drink, are frequently more effective in arresting and dislodging morbid action than the most potent article of the Dispensatory. Radcliffe, in his old age, pithily said, "When I was young I had fifty remedies for every disease, now I have hardly one remedy for fifty diseases." Hippocrates, Galen, Sydenham, Boerhaave, Cullen, Hunter, Rush, were all believers in the healing power of Nature. A knowledge of this power, which deserves to be profoundly studied, is the basis of the success of the practice of Hahnemann and his disciples. Globules which can be swallowed with impunity by the ounce, cannot exert any positive curative agency. While they soothe the patient's mind, Nature does the work.

3dly. Fashion has often much to do in moulding the practice of physicians. It is as much of a tyrant in our profession as it is in millinery, in mantua-making, and in the cut of one's coat. Eugenie introduced the crinoline, simply because she desired to conceal a temporary defect in her person—a defect of which most ladies who love their lords are proud—and the "skeleton" speedily found its way into every house in the civilized world.

It is impossible to account for the whims and caprices of the human mind. Weakness is its great essential characteristic. There is nothing, however absurd, that it will not believe. We express surprise when we hear that a great medical luminary has succeeded in attaching his name to some particular theory or mode of practice, and is thus completely revolutionizing the sentiments, not merely of the lesser lights of the profession, but of men who, in point of talent, judgment, and skill, are in all respects his equal. It is still more curious to find that certain diseases have been, at times, fashionable. When Louis XIV. suffered from anal fistule, that loathsome disease became at once the fashionable ailment of his debauched court. Dukes and duchesses, counts and countesses, virtuous women and courtesans, all either had the disease, or affected to have it. "'Tis a distemper," says Dionis, "grown in fashion since that which the king had, and on which the surgeons were forced to perform the operation in order to its cure. Several of those who before that time carefully concealed their having it, are not now ashamed to publish it, and some courtiers have even chosen Versailles for the place where they will undergo the operation, because the king should be in-



formed of all the circumstances of their indisposition. Those who have only a small draining run immediately, and turn up their posteriors to a surgeon for him to make incision. I have seen above thirty who desired to have the operation performed, and whose folly was so great that they seemed angry when they were assured that they did not at all want it."

There are even fashionable physicians. A handsome face, bland manners, and an elegant dress, with a stylish carriage and groom, have often done more in securing practice than the most profound talent and attainment. When Dewees was in the heyday of his glory, as an obstetric practitioner, there was hardly a fashionable woman in Philadelphia who would consent to be delivered without his aid. In one instance, recorded by the distinguished accoucheur himself, the lady actually went nearly one month beyond the ordinary term, purposely, it may be imagined, to have the gratification of his attendance.

It is within the recollection of the older members of the profession, both in Great Britain and in this country, how fashionable liver complaints were forty years ago, in consequence of the influence of the writings of Faithorne and Johnson. All cases of dyspepsia, intercostal neuralgia, and chronic cough were referred to disorder of this organ, which, in most instances, was as innocent of their causation as the babe in the womb is of the sins of its mother. When Corvisart, physician to Napoleon, published his treatise on diseases of the heart, cardiac affections became at once exceedingly prevalent. Twenty-five years ago all the women of America labored under spinal irritation. Mr. Teale, of England, and the late Professor John K. Mitchell, of this city, had each published a tract upon the frequency and importance of this affection, and for a number of years it was the dominant complaint. The late Dr. Horace Green, of New York, popularized throat diseases, and, for a time, the tyrant, fashion, ruthlessly sacrificed every tonsil and uvula that had the misfortune to come in the way of the physician. At present, diseases of the uterus are the fashionable disorders. Not to have an ulcer upon the womb is to be beyond the pale of the sex. Every chronic complaint to which women are subject is at once referred to this malady, and they are as angry when told that there is nothing of the kind, as were the courtiers and others in the time of Louis XIV. when informed they had no fistule. Doctors and patients alike have womb on the brain.

Dr. W. D. Buck, of New Hampshire, in an address before the Medical Society of that State, has so admirably hit off this proclivity, that I cannot forego the pleasure of quoting some of his remarks. Speaking of the uterus as a harmless, inoffensive little organ, stowed away in a quiet place, "it furnishes," he jocosely says, "a capital field for surgical operations, and is nowadays subject to all sorts of barbarity from surgeons anxious for notoriety. Had Dame Nature foreseen this, she would have made it iron-clad. What with burning and cauterizing, cutting and



slashing, and gouging, and spitting and skewering, and pessarying, the old-fashioned womb will cease to exist, except in history. The Transactions of the American Medical Association have figured one hundred and twenty-three different kinds of pessaries, embracing every variety, from a simple plug to a patent threshing-machine, which can only be worn with the largest hoops. They look like the drawings of turbine water-wheels, or a leaf from a work on entomology. Pessaries, I suppose, are sometimes useful, but there are more than there is any necessity for. I do think that this filling of the vagina with traps, making a Chinese toy-shop of it, is outrageous. Our grandmothers never knew they had wombs, only as they were reminded of it by the struggles of a healthy foetus, which, by the by, they always held on to. Nowadays, even our young women must have their wombs shored up, and if a baby accidentally gets in by the side of the machinery, and finds a lodgment in the uterus, it may, perchance, have a knitting-needle stuck in its eyes before it has any."

Within the last few years, diseases of the larynx have been rapidly rising into distinction, and are likely, for a time, to exert an extensive influence upon the credulity of the people and the practice of the profession.

What is true of diseases is equally true of medicines. I need only refer, as an evidence of the fact, to the mania which at present prevails in regard to the use of bromide of potassium, carbolic acid, and some other articles. I have witnessed the rise and downfall of a hundred panaceas.

That this fashion in medicine had its influence in times past as it has in the present, no sensible man can doubt, else it would be impossible to account for the large evacuations formerly practised in the treatment of disease. The bleeding was often not only excessive, but ill-timed and wholly improper. I quote some cases in illustration. A young woman, the subject of acute pleurisy, was bled by Professor Gregory, of Edinburgh, 230 ounces in a few days; and in a case referred to by Dr. Blundell, of London, the quantity removed within the same period was a gallon and a half. Both patients recovered. In the memoirs of the French Academy, examples are related of 300 ounces. The late Dr. John W. Francis, of New York, one of the most distinguished physicians our country has ever produced, was bled early in life nearly ten quarts in a few days, for a violent attack of croup. Mr. Cline, of London, drew 320 ounces of blood in twenty days from a man in St. Thomas's Hospital, on account of a contusion of the head. Dr. Physick abstracted 90 ounces, by weight, from Dr. Dewees, at one bleeding, in a sudden attack of congestion of the brain, while laboring under fever. Dr. Rush, in his "Defence of Bloodletting," declares that it is much better not to bleed at all in fever, if the quantity drawn is disproportionate to the violence of the disease. "If," says he, "the state of the pulse be our guide, the continuance of the inflammatory action, after the loss of even 100 ounces of blood, indicates the necessity of more bleeding, as much as it did the first time a vein was opened."



Rush and his followers bled in all classes of diseases, even in smallpox and the so-called malignant fevers, as well as in all conditions of the system, in anemia as well as in plethora. He bled a medical man, the subject of an attack of autumnal fever, which continued for thirty days, twelve times before he succeeded in arresting the disease. He bled one lady for a pleurisy, in her pregnancy, eleven times in seven days, another thirteen times, and a third sixteen times, while in a similar condition, and all three recovered, without any detriment to their children. Old age constituted, in the opinion of this great man, no barrier to the operation. He bled a lady, in the eighty-fourth year of her age, twice in an attack of pleurisy; and from a man, ninety years old, the subject of bilious fever, he abstracted thirty-six ounces of blood at three bleedings, recovery following in both instances. "I bled," he says, "my eldest daughter when she was but six weeks old for convulsions brought on by an excessive dose of laudanum, given to her by her nurse; and I bled one of my sons twice, before he was two months old, for an acute fever which fell upon his lungs and bowels." "I have used this remedy with great success in every case of consumption attended with a hard pulse, or a pulse rendered weak by a laborious transmission of the blood through the lungs." In one instance, he bled fifteen times in six weeks, and in another, eighteen times in two weeks, in this state of disease, with, as he declares, the happiest effect. "Mr. Tracey, of Connecticut," says Dr. Rush, "informed me, in the spring of 1802, that he had been bled eighty-five times in six months, by the order of his physician, Dr. Sheldon, in the inflammatory state of this disease. He ascribed his recovery chiefly to this frequent use of the lancet."

I well recollect that the first case of disease I ever saw in this city, after I became a pupil of the late Dr. George McClellan, the founder of this school, and its first Professor of Surgery, was one of pleurisy in a young man whom I was sent to bleed, and in whom the operation was afterwards repeated daily until the pain and fever left him. This was at that time the usual practice. Occasionally, indeed, not unfrequently, the bleeding was repeated twice and even thrice on the same day, generally by re-opening the same orifice.

An anecdote, related to me by my colleague, the distinguished Professor of Medicine, will better illustrate the sanguinary practice of former times than anything I can tell you. An old friend and patient of his, a gentleman of unbounded hospitality and luxurious habits, generally spent his summer months at Saratoga for the benefit of his health. As he labored under a chronic ophthalmia, aggravated by the high living of the winter, he always stopped a few weeks at Philadelphia to profit by the advice of Dr. Physick. He was, of course, in consonance with the practice of the day, placed upon low diet, consisting chiefly of mush and milk, and, as he was quite plethoric, was further reduced by bleeding and purging on alternate days. One gloomy, wet, and



chilly June morning, while sitting despondingly by the fire in his chamber, Dr. Physick made his regular call. He did not enter, but stood at the door, and asked his patient how he felt. "Quite uncomfortable," was the reply; "my eyes are very sore." "Send for the bleeder, then," said the Doctor, "and lose eight or ten ounces of blood." "But it is my rhubarb day!" exclaimed the sick man, "and I have already taken my dose." "No matter," was the rejoinder, "you must be bled." "I be d—d if I will," said the patient. "If you had touched my pulse I would have followed any directions you might have given me; but no man shall prescribe for me across the room." "Good morning," said Dr. Physick, coldly; and they parted, never to meet again.

Dr. Rush, meeting unexpectedly an old friend during the height of the yellow fever in 1798, asked him why he had not left town. He replied that he had sent his family away, but could not leave himself. "Then," said Dr. Rush, "go home and be bled immediately."

The great physician had evidently studied Molière, in whose time, when the practice of bleeding was in full force, high health was a thing to be feared, and to be subdued with the lancet and "dulcifying clysters." If the person remonstrated, the reply was: "The method is salutary; and as one drinks for thirst to come, one must likewise be bled for illness to come."

The practice of bleeding and purging in the spring, as a means of purifying the blood, and thus protecting the system against disease in the hot summer months, prevailed almost universally for ages, and was abandoned only when bleeding and active purging became unfashionable in the treatment of inflammation. I recollect it was the custom thirty-five years ago, in the spring, for scores upon scores of people, especially in the rural districts, to go to the doctors to be bled. Sometimes non-professional men performed the operation on a large scale. The late Mr. Hazard, one of the founders of Mauch Chunk, in the early days of that settlement, when physicians were scarce, had quite an extensive practice of this kind. One day a stout, hale-looking Irishman came up to be bled. "Mr. Hazard, and how much do you charge for takin' a pint o' blood?"—the quantity usually drawn. "Nothing," was the reply. "Then, by St. Peter," said Pat, "you may take a whole quart from me."

It was but yesterday, as it were, that cold water was scrupulously withheld in the treatment of fevers, especially if the patient had taken calomel, then so fashionable a remedy; and that an unconquerable prejudice existed even against ventilation or the ingress of cold air into the sick chamber. Cold water, now so extensively employed as a local remedy in wounds and external diseases, was formerly looked upon either as an inert or dangerous application.

Now, who, in looking at this practice of Rush and his contemporaries, from our stand-point of conservatism, would not pronounce it to be grossly absurd, if not positively criminal? The modern physician, uninfluenced by prejudice, and governed by sound knowledge and judgment, instinctively asks himself the



question: Could such a practice as this have ever been necessary? If we answer affirmatively, one of three things must be assumed, either that our predecessors were fools, that there has been a great change in the nature of disease, or that the march of science has put us in possession of remedies which have very properly superseded the heroic practice of former times. I have already expressed my disbelief in the change of type of disease, as well as alluded to the fact that we are acquainted with certain remedies of which no one had any knowledge thirty years ago. As to whether Rush, his disciples and his contemporaries were fools—reckless, ignorant men, without science or judgment—I leave others to determine. It is easy to see that a judicious use of aconite and veratrum viride in the hands of those practitioners would have enabled them to dispense with this frequent employment of the lancet, and to conduct, with the aid of these active agents, their cases to an equally favorable issue, as is done at the present day. It is evident that these knights of the lancet labored under a most extraordinary delusion in regard to the efficacy of general bleeding; they bled largely in all stages of disease, and under all circumstances and conditions of the system, and thus committed the most flagrant errors. Had they limited the operation to the incipient and gravescent stages of disease, before there was any serious structural change, the product of abnormal deposits, much less mischief would have been done, and many more lives saved. They forgot, as most men now forget, that there is a bleeding point, which, if properly interpreted, may often be seized with infinite advantage, especially in the treatment of acute disease of the more important organs and tissues.

Who does not see in this excessive bleeding, and vomiting, and purging, and abstinence, the influence of fashion, the crinoline of society, the autocrat of medicine?

In thus assigning what I conceive to be the true causes of the extraordinary changes that have taken place in the treatment of disease and injury within the last quarter of a century, I am not unmindful of the fact that morbid action of every description is liable to be temporarily influenced by peculiar extraneous circumstances. During the prevalence of severe epidemics all intercurrent maladies, of whatever nature, wear, as Dr. Rush long ago so justly remarked, the livery of the dominant disease, thus materially weakening the system, and proportionately interfering with the employment of depletory measures. At such times the surgeon often finds that wounds unite with difficulty on account of the imperfect vitality of the plasma, and that it is not safe to perform any of the more severe operations. But these changes always rapidly disappear with the prevailing distemper; they do not impress themselves permanently upon the constitution, and do not, therefore, lead to what are properly termed changes of type of disease.

Extremes, whether in science or in politics, are dangerous, and, in general, short-lived, errors; and it does not require the prevision



of prophecy to determine that the present mode of treatment, which has so completely enslaved the medical mind throughout the civilized world, must, in a comparatively short time, undergo important changes. It cannot be otherwise. The difference is too appalling; it is a chasm, not a bridge. Nature takes no leaps. In so great a problem the truth always lies in the middle, not at the outskirts. The lancet will again come in play, not so extensively or indiscriminately as in former times, but moderately and philosophically; and the present terrible system of stimulation, which sends its victims daily by thousands prematurely to the grave, and which fills our land with drunkenness and crime, cannot much longer maintain itself in the confidence and esteem of the reflecting members of a great and learned profession. A modified, improved, regenerated practice, based upon common sense, and a more sound clinical observation must take its place, and thus carry healing and blessings upon its wings to the nations of the earth. Those of us who have lived to see the workings of these two extremes, the extremes of excessive depletion on the one hand, and of excessive stimulation on the other, are living witnesses of the power of endurance of the human system, often under the most adverse circumstances. We can testify from personal observation, which many of the younger members of the profession cannot, to the fact that a man, burdened with disease, may live with hardly any blood in his body, on the one hand, and, on the other, that he need not necessarily perish when his system is saturated with alcohol.

The last third of a century has witnessed the downfall, if not also the rise of a number of systems of medicine. Solidism, which in the hands of Boerhaave and Van Swieten, had in great degree been supplanted by humoralism, had still, early in my professional life, a firm hold upon the minds of some of our most distinguished teachers and writers, who could discover in the human body nothing but a mass of material, acted upon and influenced mainly by sympathy, without any positive agency of the blood. Everything, even conception, was explained through the action of this mysterious power. The fact that medicines could enter the circulation, and thus affect the solids, was sternly denied. The last and most distinguished champions of this doctrine were Chapman and Caldwell, names well known to the American student. The researches of Andral and Gavarret, Müller, Gulliver, Jones, Gilbert, and others, on the blood, effectually dispelled these antediluvian reveries, and opened a mine of knowledge, from which has issued a vast flood of light upon the nature and treatment of disease. The reign of solidism is ended, and humoralism is, as it was a century ago, the dominant idea. A fluid so complex in its composition, the basis of nutrition and growth, pervading and fertilizing every atom of living matter, must necessarily be closely connected with many morbid changes, and must itself be a prolific inlet of disease. Indeed, there is a class of affections, universally recognized at the present day, as dependent mainly, if not



exclusively, upon a morbid condition of the blood, and hence denominated blood-diseases. These affections were well portrayed by Andral and Gavarret thirty years ago, in their work on Hæmatology, and they have since been more elaborately and correctly described by other observers.

Broussaism is another of the idols that have been broken by the onward march of science. This doctrine, so called after Francis Joseph Victor Broussais, its founder, born at St. Malo, in 1772, exercised a powerful influence upon the practice of medicine, in the early days of my professional life, on account of its extreme simplicity; for it referred almost all diseases, especially the different forms of fevers, to inflammation of the mucous membrane of the alimentary canal, and the practice which he suggested for the cure of his patients consisted mainly in the use of ptisans, gum-water, a non-stimulant diet, and a few leeches to the abdomen. The author of this system, or the New Doctrine, as it was more generally termed, which aimed to revolutionize the practice of medicine, was a voluminous writer, and it is a singular fact that all his more important works were translated in this city by gentlemen who have since, although not followers of his school, occupied a high position in the medical world. He died in 1838, and was interred, with great pomp and ceremony, at Père-la-Chaise, his pupils dragging along the hearse to the grave, as a mark of respect and devotion to their illustrious master. Five years after this event a statue was erected in his memory at the Hôpital du Val-de-Grace, of which he had long been chief physician and professor of military surgery, and a discourse pronounced upon his life and character, in the name of the Royal Academy of Medicine, by Mons. Pariset, the permanent Secretary. Whatever may have been his merits as a zealous laborer in the cause of medical science, it is evident that Broussais was a very indifferent observer, as well as a very unsound and unphilosophical practitioner; in a word, a mere medical enthusiast, whose doctrines are now remembered only as matters of history, no one attaching any importance to them. He has not one follower at the present day, and even his name is almost forgotten.

Cookeism not long ago wielded an extensive influence in the medical practice of the United States, especially in the southwest. Dr. John Esten Cooke, its author, taught that nearly all diseases had their origin in disorder of the portal circulation, and that all that was necessary to cure them was to administer a pill composed of rhubarb, aloes, and calomel; hence called the R. A. C. pill. Occupying the exalted position of Professor of Medicine, first in Transylvania University at Lexington, and afterwards in the University of Louisville, this doctrine was eagerly seized upon by the numerous pupils who attended his lectures, and for nearly a quarter of a century his name was a household word with the physicians of the valley of the Mississippi. The R. A. C. pill slew its thousands of victims, and caused the destruction of innumerable lips, cheeks, teeth, and jaw-bones, the result of



the horrible ptyalism so common in those days. I recollect the case of a young lady, the subject of an atrocious neuralgia, brought on by injury inflicted upon the nerves at the bend of the arm in venesection, who, in the course of three months under the direction of one of the disciples of Cooke, had swallowed 155 of these pills with no other effect, apparently, than a very pallid face and a worn-out stomach. During the prevalence of the Asiatic cholera at Lexington Cooke recommended and prescribed calomel in enormous quantities. I have it upon the most reliable authority that a specimen dose, weighing one ounce and two drachms, ordered for one of his patients, is still preserved in the chemical laboratory of Professor Peter of that city. His colleague, Dr. Dudley, on the contrary, was a great advocate for the use of emetics, especially in chronic scrofulous affections of the joints, spine, and eye, in which he not unfrequently gave daily tartrate of antimony and potassa in emetic doses for weeks and even months together, with bran gruel as the principal article of diet.

Dr. Cooke was born at Boston, Massachusetts, in March, 1783, during a visit made to that city by his parents, who were residents of the Island of St. George's, one of the Bermudas. He died in October, 1853, at the age of seventy years. One of his former colleagues, Professor Lunsford P. Yandell, who had known him long and intimately, thus speaks of him in a recent communication to me: "Dr. Cooke was one of the most scrupulously truthful, honest, brave, and true-hearted men I ever knew; a man of the greatest strength and depth of conviction. What he believed he believed entirely. He was a sincere Christian, and most exemplary in all the relations of life." Dr. Cooke was the author of a work on Therapeutics, in two volumes, long since out of print. He was an acute reasoner, and a man of great intelligence, but a poor lecturer.

The numerical method, introduced by Louis, of Paris, thirty-five years ago, was warmly embraced by many of the leading physicians of Europe and America, as likely, if carefully and systematically pursued, to be productive of much practical benefit, in testing and determining various methods of treatment in particular classes of diseases; but no good seems to have resulted from its adoption, and for the last ten years the subject has apparently been entirely lost sight of. The author of the system still lives; the system is defunct.

There were many things believed in medicine in former times that are utterly discredited in the present. It is only necessary here to refer to what were called crises in febrile diseases, a doctrine firmly maintained by the ancients and even by many of the moderns. These crises, which were supposed to be characterized by certain prominent changes in the nature of the malady, occurred, according to Hippocrates, on the 3d, 5th, 7th, 9th, 11th, 14th, 17th, 21st, 27th, and 34th days; Galen, on the contrary, regarded the 7th, 14th, 21st, and 28th days as the critical days. Cullen was led to believe that there were no critical days beyond



the 20th, which he considered as the true critical one. All this nonsense, concerning which a great deal used to be said, even by apparently sensible physicians, when I entered the profession, is now thoroughly exploded.

The day of polypharmacy and of large doses is passed, never, it is fondly hoped, to return. The practice, in this respect, is totally changed. Physicians not only give medicine in much smaller quantities, but much less frequently, and the consequence is that their patients recover much more rapidly, and with much less damage from the prostrating effects of disease and injury. The art of prescribing is much more simple; diagnosis is more thoroughly understood; and the practitioner has learned to place more confidence in the resources of nature.

These changes and revolutions in the practice of medicine, this upheaval of old systems, occurring within so short a period, are well calculated to startle the sober-minded and reflecting physician, and to engender a spirit of skepticism in regard to the certainty of the healing art. Men indulging in hasty generalization would hardly fail to arrive at any other conclusion. Those of a calmer judgment, on the contrary, will reason differently, and, despite these changes, retain an unshaken faith in the value of medicine. It is easy for them to see that these changes are essentially due to the influence of the writings and teachings of a few brilliant men, who, from time to time, rise in the profession, and who, by their dazzling genius or pernicious example, mislead and misguide its less thinking and less enlightened members. Observation is confessedly a difficult art. "In medicine," says a distinguished author, "there are various circumstances which render it less easy to ascertain the facts than in most other cases. These depend partly on the nature of the subject, and partly on the situation and character of the observer. It was the shrewd remark of a learned professor that in medicine there were more false facts than false opinions. On all topics, either historical, scientific, or literary, mankind possess a strong avidity for the marvellous. From the constitution of the human mind, the love of novelty is one great principle by which the attention is excited and the intellectual powers are called into action." Physicians, like other men, naturally love change, and it is not casting any imputation upon the character of the profession to assert that few of its members are capable of close analysis, of calm investigation, or of strict philosophical induction. It is much easier to jump at than to reason out conclusions; much easier to theorize correctly than to observe correctly. The anecdote of Charles II. and the Royal Society of London, familiar to every student of history, furnishes a striking illustration of the truth and force of this remark. The monarch, soon after the incorporation of this learned body, requested of them to know why it was that a live fish thrown into a basin of water did not affect the weight of the vessel and the fluid, whereas a dead one would precisely in proportion to its own weight. After much discussion, and the pre-



sentation of a number of elaborate essays explanatory of the circumstance, a member, more skilled than the rest in the Baconian philosophy, rose, and inquired whether there really existed such a difference as that alluded to? Great excitement thereupon ensued, and some even asserted that to doubt his majesty's word was not only an insult to his dignity, but treason to the state. The question, however, after due investigation with a live and a dead fish, was finally decided in the negative, the king having merely desired to hoax the philosophers.

Many years ago it became my duty to examine the body of a woman, who, the night previously, had, as was supposed, been killed by her lover. Her countenance exhibited a congested, livid appearance, and there was a well-marked indentation on the right side of the larynx as if it might have been made with a thumb nail. When the trial came on a number of witnesses, some of them of great respectability and intelligence, testified that the face looked perfectly natural, and that the abrasion in question was situated on the left side instead of on the right, as I had described it. The prisoner was convicted wholly upon circumstantial evidence, but the day before his execution he confessed he had choked the woman to death with his hand.

These cases are types of a thousand others of daily occurrence, and they serve to remind one of the man, who, seeing a donkey for the first time, exclaimed that he had found "the father of all the rabbits."

Much of the healthful progress of the medical science of the present day is due, first, to a better acquaintance on the part of the physician with the nature of disease; secondly, to the knowledge that very frequently little or no medication is required to afford relief; and, lastly, to the fact that every case of morbid action must be managed upon its own merits, or, in other and more comprehensive language, that, while there are certain general principles which should not be disregarded, every case must be treated according to the peculiar features by which it is distinguished.

Disease is not, as it was formerly imagined to be, a special entity, a particular essence, a something vague, intangible, mysterious, but simply a departure from the normal standard, a change in or of a part brought about by a perverted action of its circulation, innervation, and nutrition. Nearly every disease, whatever its name or site, is essentially an inflammation. Even in what are called the neuroses, or nervous affections, inflammation generally plays a conspicuous part.

Another well established fact is that disease is materially modified by structure and function; a discovery mainly due, at first, to the labors of Bichat, and afterwards to the careful study of pathological anatomy and clinical observation.

These two propositions, thus briefly stated, comprise the germs of a revelation in medicine of the most stupendous character; a revelation which has swept away with one fell swoop the whole



system of nosology, and has done more than all that preceded it in laying its foundation, broad and deep, as a grand science, to be viewed and studied as an object of natural history, in the same manner and upon the same principle precisely as an animal, a plant or a mineral is viewed and studied, apart from all hypothesis and speculation, as something tangible and existent, not vague and undefined, without form or substance.

The fact that nature is often capable of curing disease is now universally admitted, and has led to many most salutary changes in the practice of medicine. This doctrine is not, as has already been stated, new; but for the diffusion of a general knowledge of it the world is mainly indebted to two men, the late Sir John Forbes, of London, and Dr. Jacob Bigelow, of Boston. Similar views have long been ably advocated by the learned professors of physiology and medicine in this Institution.

That every case of disease, whatever its origin, location, symptoms or complications, should be treated upon its own merits, or according to the peculiar features by which it is characterized, must be evident at first sight; but, unfortunately, this principle is seldom recognized at the bedside, and the consequence, as may well be imagined, is often most pernicious. The universal employment of this or that treatment, in consonance with the fashion of the day, cannot be too pointedly condemned.

Among the singular delusions which have crept into medicine during the present century, and which have served to confound the judgment even of many educated and otherwise enlightened men, it will suffice to enumerate homœopathy, Thompsonianism—better known as “Lobelia and No. 6”—hydropathy, the grape and whey cure, isopathy, electro-pathy, clairvoyance, Baunscheitismus, negropathy, and other sects too numerous and absurd to be mentioned. The fate of some of these is already sealed, and the downfall of some of the others it is easy to foresee. No system that is not founded upon common sense can long withstand the scrutiny of the public, however greedily it may seize upon any novelty that promises relief from pain and suffering.

The establishment of colleges for the education of female physicians is another feature peculiar to the present age. Whether such institutions are really needed, I leave to others to decide. My own opinion has always been that medicine is not an appropriate sphere for woman, unless she confine her attention solely to the practice of obstetrics, in which she might, doubtless, often be of great service. There must necessarily be a vast amount of ordinary business for which females are wholly unfitted by education and habit, not less than by their natural sense of delicacy and refinement.

Asiatic cholera was not known in this country until 1832. Since that time it has made several visitations, and in some districts literally decimated the population. To the catalogue of maladies, already sufficiently extensive at the period adverted to, have been added Bright's disease, diphtheria, pyemia, osteo-mye-



litis, leucocythemia, pelvic cellulitis, and pelvic hematocele, trichiniasis, uræmia, aphasia, Addison's disease, locomotor ataxy, and cerebro-spinal meningitis, the latter of which is probably simply the "spotted fever," which prevailed so extensively in the early part of the present century in New England, and which has been so graphically described by Gallup and by Miner and Tully.

Forty years ago there were few American physicians, even in some of the larger towns, who did not, when occasion required, extract teeth, using generally for this purpose the pullikin instead of the forceps now so universally employed. In 1820 the number of practicing dentists in the United States was only 30; in 1850 it had increased to 3000, and at present it is fully 5000. Dental colleges, supplied with all the means and appliances for the delivery of efficient courses of instruction, exist in various parts of the continent, and America may justly claim the proud pre-eminence of having the best educated and most scientific dentists in the world.

Great improvement has been effected in the construction of surgical instruments, apparatus, and appliances. Our pocket and operating cases possess a degree of neatness and compactness unknown in former times, while the delicacy and finish of many of the instruments are in striking contrast with the awkward and clumsy character which distinguished them a third of a century ago. For these important changes the profession is mainly indebted to Messrs. Charrière, of Paris, and Weiss, of London, two manufacturers of unrivalled excellence in their day, whose pupils are to be found in all parts of the civilized world. As beautiful and perfect instruments are now made in Philadelphia, New York, and Boston, as in any of the great cities of Europe.

Medical colleges have multiplied in a ratio altogether disproportionate to the wants and requirements of the country. If the number now in existence were reduced to one-fourth, no one can doubt that it would be a great gain to the interests of the profession and of humanity. Many of these institutions are, from their unfavorable situation, destitute of anatomical and clinical facilities, upon which so much stress is justly placed in a course of medical education. Even the best and most favored schools are far from what they ought to be as great seminaries of medical science. Hardly any change in the curriculum of instruction has occurred in any of them since my entrance into the profession. The number and character of the chairs, the length of the session, the period of study, and the preliminary education of the student are, in most of the colleges, the same as formerly. The principal improvement has been in the addition of clinical teaching, rendered indispensably necessary by the demands of the age. It will be a proud and happy day for medicine and humanity when the principal medical institutions of the United States, adopting the suggestions offered by the recent medical teachers' convention at Cincinnati, shall be placed upon the same footing in regard to the amount and character of their instruction, and the requirements



of their pupils. The only difficulty now in the way is the want of concert of action, which, however, will no doubt eventually—probably at no distant day—be brought about.

The improvement in medical literature has kept strict pace with the improvement of medical science. I can speak here only of what has taken place in our own country. Thirty-five years ago, American medical literature was not only very meagre, but it could hardly be said to have had an existence. We had not yet answered the sneering remark of Sidney Smith: "In the four quarters of the globe, who reads an American book, or goes to an American play, or looks at an American picture or statue? What does the world yet owe to American physicians and surgeons?" If the celebrated Edinburgh Reviewer—who paid one of our countrymen, Daniel Webster, the high compliment of saying that he was a steam-engine in trousers—could rise from the dead, and walk into our bookstores and into our academies of fine arts, he would, if he could divest himself of prejudice, behold books, and pictures, and statues, the production of American genius, many of which would do honor to any country. The works of Rush, Wistar, Dorsey, Coxe, Thacher, Chapman, Beck, Dewees, Gibson, Hare, and Eberle, constituted the chief bulk of our native authors at the period in question. The college text-books were, for the most part, foreign works, many of them edited, with notes and emendations, or notes and additions, as the phrase then went, by American physicians, usually teachers in medical schools; for, unless the editor occupied some distinguished position, no publisher was likely to undertake the reprint, as there was a great risk of failure. In a word, a responsible endorser was necessary. Now and then, a translation of a French or German work by an American appeared. I, myself, performed some labor of this kind early in my professional life, and there are still living among us a number of distinguished men who busied themselves in a similar manner, rendering thus, at a period when it was much needed, an important service to the profession.

The native works which now grace the libraries of our physicians, and which have contributed so much to exalt the character of the medical literature of the country, have been of later growth. Commencing with the "Human Physiology" of Professor Dunglison, a treatise of vast labor and ability, issued in 1830, and worthy, in point of erudition, systematic arrangement, and elegance of diction, to rank with the immortal "*Elementa Physiologiæ Corporis Humani*" of Haller, published two-thirds of a century earlier, there followed in succession, though by no means rapidly, the works of Silliman the elder, Bigelow, Horner, Hosack, Wood, Paine, Dickson, Pancoast, N. R. Smith, Morton, Meigs, Bell, Gerhard, Draper, Drake, Condie, Bartlet, La Roche, Henry H. Smith, Bedford, Hamilton, Stillé, Hodge, the two Flints, Dalton, Richardson, Bumstead, Leidy, Maxson, Da Costa, Wormly, Warren, with many others which my limits will not permit me even to enumerate. Many of these works are productions of the highest order of



excellence. The treatise on the Practice of Medicine, by Dr. Wood, formerly Professor of Medicine in the University of Pennsylvania, has been not only largely circulated at home, but used extensively as a text-book in some of the British schools; the Elements of Medical Jurisprudence of Dr. Beck, repeatedly reprinted in England, as well as translated into the German language, is one of the most erudite and elaborate works that have ever appeared upon the subject; and The Medical Dictionary of Professor Dunglison is without a rival in any country, as the offspring of a single individual. These works, while they shed imperishable lustre upon the American nation, have made foreigners familiar with our ability as observers, our acuteness as diagnosticians, and our skill as practitioners, and have procured for us a distinguished rank as scientific and literary men. Foreign medical works, although many are still republished, as, indeed, they ought to be, have almost ceased to appear with that curious caudal appendage, the name of an American editor; and comparatively few of them are now employed as text-books in our medical colleges.

Our periodical literature is not only highly respectable, but it compares most favorably with that of Europe; less solid than that of Great Britain, but quite equal, in the aggregate, to that of France, Belgium, Germany, and Italy. The stately quarterly, the "American Journal of the Medical Sciences," edited by Dr. Hays, of this city, is unquestionably the ablest work of the kind in the world. As critics, we are inferior to the English, if not also to the writers of continental Europe, but the time is not distant when we shall redeem ourselves in this respect; for what, it may be asked, is there that the American mind cannot accomplish if it sets about it?

I have, thus far, in accordance with the design of this discourse, spoken of matters and things in general—of the glorious progress and present condition of our profession as an art and a science; let me now, in conclusion, offer a few words personal to yourselves.

It would be absurd in me to ask, what has brought you here? The place in which we are assembled is a sufficient answer. The object is to prosecute your studies under new auspices; to avail yourselves of new means and opportunities for extending and perfecting the knowledge you have brought with you. Many of you never were in a medical college before, never performed a dissection, never witnessed a chemical experiment, never saw a great surgical operation, never even listened to a medical lecture. You suddenly enter, as it were, upon a new life. Hitherto your studies were carried on under serious difficulties. The office of a private physician, with here and there an exception, offers few facilities for the acquisition of a knowledge of a science so vast and so diversified in its character as that of medicine. In a well-conducted course of lectures, more may be learned in a single month than in three years, as ordinarily spent, in private read-



ing; for there are a thousand things in anatomy, chemistry, materia medica, surgery, midwifery, and medicine, which can be taught only by an appeal to demonstration, such as no private teacher can supply. In the new life into which you now pass, the professor reads and thinks for you; your business is to listen, to see, to receive, to digest; in a word, to be crammed with knowledge.

To-morrow, bright and early, you will buckle on your armor of industry; throw your knapsack across your shoulders, and begin your work right earnestly, like men determined to surmount obstacles, clear away rubbish, and fulfil their great mission, as honest, diligent students. The road will, at first, be somewhat difficult; there will be frequent need of the spade and the pick-axe; but your progress will gradually become more and more easy, and thus, step by step, with patience and perseverance, you will steadily mount up higher and higher along the steep hill of Science, until, at length standing upon its lofty summit, you may calmly and leisurely survey the majestic scenery around and beneath you, and take a longer breath in the consciousness of having done your duty. We too—I mean your teachers—men who, like yourselves, once sat upon hard, backless benches, in quest of knowledge—we too will be students; we will accompany you in all your journeyings; point out, with lamp in hand, your way; assist in removing obstacles; encourage you by our presence; and thus, workers and laborers together, share your toils and pleasures.

The studies of the medical pupil are of a most singularly diversified character, far more so than those of any other profession; and hence, unless they are systematically pursued, his progress, despite the best endeavors of his teachers, will be painfully slow and difficult. You must, therefore, spare no effort to make a fair beginning. With this end in view, I would earnestly advise you, before you come here in the morning, to clear out the bins of your brains. If you will carefully examine this organ you will find that it is composed of many compartments, with a wonderful faculty of accommodation. These compartments, I shall, for the sake of illustration, denominate bins, of which one should be exclusively devoted to anatomy and physiology; another to chemistry and materia medica; a third to midwifery; a fourth to medicine; one to surgery; and, lastly, another to miscellaneous matters, picked up here and there in your walks to and from the College, and in your intercourse with your friends and acquaintances. Unless your studies are conducted upon some such plan as this, in the most orderly and systematic manner, you will have the mortification to find, at the close of the session, that you have made no substantial progress, and that, what little knowledge you have attained, is, practically, of no avail. Keep your bins, then, clean and separate, not mixing and jumbling up their contents, so that, when you wish to get at them, you will be obliged to toil and dig anew.



Although it will be the duty of each of my colleagues to inform you of the best method of studying his own particular department, yet, I cannot refrain from referring, in general terms, to the subjects which should more especially engage your attention during the first session of your attendance.

Anatomy is justly regarded as the corner-stone of the grand edifice of medicine. To it, therefore, you should devote much close study—not learning from books, but from nature—tracing out, with scalpel in hand, every important structure, and thus thoroughly photographing it upon the mind, so that, to use an Irish bull, with your eyes shut, you may see it as clearly as if it were reflected from the surface of a broad mirror. In carrying on your dissections, you will often be ready to exclaim with Galen, pausing in the midst of an autopsy, “It is not a lecture on anatomy I am delivering, it is a hymn in honor of the Creator!”

Chemistry, one of the elementary branches, can only, as your able professor himself will inform you, be learned in the laboratory, just as anatomy can only be learned in the dissecting room, or operative surgery upon the cadaver; but you will, nevertheless, find a great deal of nice picking in a well-conducted course of lectures, such as you will be sure to obtain in this school. You will be daily reminded, in the presence of my excellent colleague, of the story of the Englishman, who, looking with surprise and disgust at a Scotchman eating a singed sheep’s head, was asked what he thought of that dish? “Dish, sir; do you call that a dish?” “Dish, or no dish,” rejoined the Caledonian, “there is a deal o’ fine confused feedin’ aboot it, let me tell you.” While chemistry is the most abstruse and difficult of studies, it is at the same time the most sublime and captivating, one which is better calculated to establish a closer relation between man and his Creator than perhaps any other, inasmuch as it associates him more intimately with the various works of His hands. To give you an idea of the importance of a knowledge of this science, in the practice of medicine, it is only necessary to point to the examination of the animal fluids, as the blood, urine, and semen; the analysis of poisons, in cases of suspected crime; and the avoidance of incompatibles in the daily prescriptions of the physician.

In studying *materia medica* you will learn how greatly our science is indebted to the vegetable and mineral kingdoms for the supply of our remedial agents. Flora, which ravishes the senses with the beauty and variety of her products, and scents the air with the fragrance of her blossoms, furnishes man with the bark for the cure of fever, opium for the relief of pain, aconite and veratrum viride for the subduction of arterial excitement, and the juice of the grape for the support of the system when exhausted by disease and injury. The earth supplies him with alkalies and acids; the sea with chlorine, iodine, and bromine; the air with oxygen and electricity.

Under the guidance of your able teacher you will learn what estimate to place upon the more important articles of the *materia*



medica, how to combine and prescribe medicines to the greatest advantage, and how to prepare food and drink for the sick. You will find, as you proceed in your studies, what a vast amount of farrago underlies this department of medical science, and how much need there is of winnowing the wheat from the chaff.

Of the fifteen hundred articles to be found in what are called well-regulated drug stores in this city, hardly three hundred, as I was recently informed by a highly intelligent apothecary, are ever employed. The rest lie idle in their bottles and drawers. From thirty-five to fifty is probably the highest number prescribed from one year's end to the other by physicians of the largest practice.

Midwifery holds out every incentive that can rouse the energies, or excite the ambition, of the student. Woman, the noblest work of God, and her tender offspring, are the objects with which this department of medical science busies itself. Your professor will conduct you over a course of study of the most delightful and absorbing interest. He will unfold to you the secrets of conception, describe the sufferings incident to the pregnant state, and initiate you into the mysteries of the lying-in chamber, pointing out the various presentations, the mechanism of labor, the use and abuse of instruments, and the proper method of carrying his sacred charge safely through her trials and difficulties. In studying this vast subject, so replete in objects of the dearest interest to the human race and the welfare of society, you will not be troubled with any doctrines of a change of type. The process of conception and the nature of parturition are the same they were forty years ago. Here, at all events, there has been no improvement. Good Old Dame Nature permits no encroachments upon her prerogatives.

Medicine and surgery are so closely allied, so intimately interwoven, that they constantly trench the one upon the other. They are, in fact, one and indivisible, recognizing the same pathology, the same treatment. You may be good physicians without being good surgeons; but you cannot be good surgeons unless you are good physicians. The teachers who preside over these two departments will spare no pains to qualify you for the arduous and responsible duties of practitioners, the great aim and object of all your studies and inquiries. Clinical instruction will constitute a special object of attention. Every opportunity will be seized to illustrate the principles enunciated in the didactic course. The subject of diagnosis will claim more than ordinary consideration. The object will be to teach you how to observe at the bedside, how to investigate cases, how to connect symptoms with pathological changes, how to form a correct prognosis, and, finally, how to prescribe with judgment and advantage for the sick. The clinics of this Institution have long been distinguished for the great extent and variety of their material, and you cannot fail, if you be at all attentive, to be greatly benefited by them.

I have said nothing here of the study of physiology, hygiene,



and medical jurisprudence. Your acquaintance with anatomy, chemistry, and the practice of medicine, will furnish you a ready key to these interesting and seductive branches of medical science.

Thus, gentlemen, you see what is before you. Work steadily, arduously, systematically, but work also rationally, as it respects your health and comfort. We hear much of the midnight lamp. Upon this point you need not be particularly ambitious. As a general rule, the midnight lamp is a very bad lamp, emitting a lurid light and foul vapors, prejudicial to sight and health; not at all promotive of advancement in knowledge and wisdom. Sleep is essential to health and comfort, and I perfectly agree with Sancho Panza that it was a blessed invention. The Sabbath, too, was a great invention; a great blessing alike to man and animal. Thank God for it, and see that you spend it wisely; partly at church, partly in wood and field, in wholesome exercise, and in the contemplation of Nature, partly in writing to the dear ones at home. Be strong in your resolve to withstand temptation. Do not disregard the admonitions of parental affection and friendship. The last words of a fond and doting mother, whispered into your ear, as she sobbingly pressed your hand, and imprinted her last kiss, were, "My son, shun the ways of the evil-doer, and neglect not the church and your Bible!" Cities are sink-holes of iniquity; vice and temptation meet one everywhere, often in their most alluring forms, alike in the retired alley and in the most crowded thoroughfare; and happy, thrice happy, is he who can successfully resist their blandishments. You need not be anchorites; youth is the season of hilarity and gayety; a certain amount of relaxation and amusement is indispensable to a student. "All work and no play make Jack a dull boy." A mind that is constantly exercised is like a tool that is never ground, or a bow that is incessantly bent. It is blunted by labor, and, if it be not occasionally unstrung, becomes unfit for the discharge of its multifarious functions. A sound, hearty, wholesome laugh is medicine for the soul, and is one of the peculiar prerogatives of our nature. A student who never rests is like a camel that lies down at night under his weary burden.