Journal of the American Medical Association.

EDITED FOR THE ASSOCIATION BY N. S. DAVIS.

PUBLISHED WEEKLY.

VOL. II.

CHICAGO, MARCH 22, 1884.

No. 12.

ORIGINAL ARTICLES.

THE NEW SCIENCE OF MEDICINE.

[Being the Doctorate address delivered at the Forty-first Annual Commencement Exercises of Rush Medical College, February 19, 1884.]

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Graduation day is an epoch in the life of a man. To the reflecting mind it is crowded with suggestions for thought, while to many it is full of the romantic and of castles in the air. To all who graduate this thought comes, that the world still has for us subjects for study, which, up to this point, we have been unable to touch.

The undergraduate's experience in a medical college is sober and fatiguing. In acquiring the medical degree we have studied the science and art of medicine as represented in certain books; by means of lectures and quizzes, by laboratory exercises and practical work; and by the observation and contact of the sick. So far our work has been one of preparation in a very direct and practical way for a particular present object and for a larger ulterior purpose in the labor of life.

Necessarily many subjects of great interest and quite essential to the fully equipped man have been neglected. One of these is the history of medicine.

The several branches of medicine and surgery have been given to us out of condensed text books or out of the mouths of teachers, and as to portions of them, whether they are new or old, we might often be in doubt.

Both the text-books and the teacher have been obliged to be, in the main, silent as to when and where all this mass of facts became known, how the science grew and developed; where it came from: whether it did not, some of it, drop down from the clouds full grown.

No one can even approach the study of the history of medicine, without being forcibly impressed by the great number of differing views and theories that have been held in the past.

Even before our pupilage began we knew—no observing person fails to know—that doctors disagree, and that there have been so-called schools or sects of

medicine for a very long time. In our early studies too it was a perplexity to our minds how there could be so much disagreement and yet any truth or foundation facts in medicine at all. And we may have been even worried by some lack of agreement among the faculty who taught us.

It is only by mental growth that we appreciate fully that on every subject on which men think there are and must be various opinions. Men thoroughly agree on no subject that seriously engages their study. This is a fact in the history of thought and in the composition and physiology of the mind. Brains and minds differing, men who think must disagree more or less. Religion, politics and all the arts and sciences have, since the beginning of history, been perpetual examples of this truth.

When a man reaches the serene belief that his views are past improvement, he ceases to reason further, and gives himself up to the exercise of faith and is happy.

There is an innate property of the mind, varying in different individuals, which manifests itself in a desire for more knowledge and better methods, both for the love of innovation and for the practical results that may follow. In a few minds among the multitude this is a dominating impulse. These are restless spirits; experimenters, innovators, who hate present ways and things, if better are possible. It is through the labor and thought of such minds that the arts and sciences and all thought have progressed through the ages.

In many directions the progress has been slow, and successive contributions have added to what already existed and a gradual moulding and a steady growth have ensued. Politics, the law and religion are examples in point. In the arts and sciences, however, progress has been made in a very different way. Here growth has been marked by occasional long strides, and a single step has often changed a science or revolutionized an art. Each great step has added something and destroyed much. The record is one long story of iconoclasm. An important discovery has often been less startling to the minds of men than the crash of cherished idols which it has caused. A new fact disturbs the foundations of existing ideas and theories and compels the recasting of a science. Thus chemistry, physiology and pathology have with fresh additions, become new sciences. The discovery of oxygen destroyed a hundred beautiful theories. The Copernican theory threw into commotion the old philosophers who saw their doctrines of the construction of the universe tottering.

The discovery of the circulation of the blood had a hard struggle, against the beliefs of the time, for recognition. It was necessary to surrender all the accumulation of alleged science with which it conflicted. This was sacrilege to the old doctors and they fought against the innovation, automatically. Every discovery that has run against any long held notions has encountered the same mental automatism on the part of those who ought to welcome every new truth. But with hesitation and haltings, and in the face of difficulties, progress has been made, step by step, in all sciences, and not least in that of medicine.

Of old, when medicine was mostly theory and hypothesis, all the doctors naturally ranged themselves into sects and schools, each held together by some dogma. As the inductive method of study came into vogue gradually the sects became fewer, till now they have, among the real students, nearly disappeared.

The schools, as well as the laity, have thought they found it necessary to designate by some name the students of medicine who, since they study this as they would any other science, can belong to no sect. As these are of the race of the seekers after demonstrable truth through all time, they have been called the "*old school*." Physicians who believe the science of medicine is too broad and grand to be labeled by the name of a sect, are continually referred to as the "*old school*," as though they must be ancient in thought and practice—the very type of fossilization.

But the public is not alone in confusing the profession of to-day with that of a period long past. Many within the profession are unable to free themselves from the notion that they belong to some ancient order, in thought as well as name. They worship the past. Writers of medical books affect erudition by a familiarity with the medicine of the ancients, and quote what Hippocrates and Galen believed on a particular point, as though it was of the smallest practical consequence to us what they believed. We all regard with pride the honorable position of our profession at times in the past, and applaud its fidelity to the cardinal principles of ethics. We point to the oath of Hippocrates and say: "behold what manner of man the physician was before the Christian era." For more than twenty centuries the rules of conduct of our guild have not changed.

But human nature and weaknesses are the same in all ages, and the principles of ethics endure forever. Plato and Emerson sang the same song, only in different tongues and to different listeners.

The glory of the ancient profession is that it did grope after truth, and that it was loyal to the ethics of all time and loyal to the sick. The few facts of science which the ancient doctors gathered are but a handful to the harvest of this later day, while their errors about disease and their good-intentioned, but awful inflictions upon the sick for their supposed benefit, make a chapter that is positively sickening to contemplate. Volumes have been written to show the wisdom and knowledge of the ancient profession. I ask

you to-day to contemplate how much of the science of medicine is the product of the closing century.

I would not say a word to lessen the glory of the early profession for its actual attainment and work. But it is a fact that the science of medicine as an agency that actively and forcefully aids mankind to live longer, with more comfort and less pain, and to recover from disease, is new. A hundred years ago the circulation of the blood had been known more than a century. Gross anatomy was well understood; this study had been advanced to a laudable degree. A few of the drugs of that day are among the most valuable in our *materia medica*, but most of them have long since fallen into neglect, and the few had not been studied systematically or scientifically as to their action.

When the idea originated that a substance to be medicinal must be disgusting I do not know, but it was early in the history of medicine. For the ancients vied with each other in search of things horrible to be called medicine. Down to the eighteenth century, in acknowledged use were the teeth of boars; the jawbones of fishes; powders of blood from various animals; excrements of animals and people; flesh of human beings and animals, and from particular parts of the body for particular diseases.

The appearances and symptoms of many diseases were well described many centuries ago. Ignorant of pathology, the ancients had devoted the most patient study to symptoms, and in this particular some of their descriptions are masterpieces.

The practice of medicine in early times was based almost entirely upon absurd theories of the nature of disease. Disease was due to the astral influence of the planets, Saturn, Jupiter and Mars. Or it was a depraved condition of the humors, called *cacoehymia*—a humoral pathology that was like the play of fancy to children. Another theory was that all diseases had their origin in the soul.

The doctors were divided into contending sects, each of which generally had a single potion or measure of treatment, which was its only resource. One sect tried to cure all complaints by cataplasms; with another wine was the only remedy; plasters and ointments constituted the armamentarium of another; a fourth used oils and wool externally, various potions internally, and charms generally; while a fifth are said, by way of contrast, to have been "ignorant practitioners" and "silly old women." But, as already shown, it is not possible to break away entirely from what we are pleased to call the delusions of the ancients. Mental tendencies were the same a thousand years ago as now, and promise to remain the same through all time, and nothing shows this more than that men *tend* to think and believe in the same fashion in all ages. Thus a great and learned physician of the fifth century recommends for epilepsy a charm consisting of the nail taken from the arm of a malefactor who had been crucified. To cure a stye, "the points of nine barleycorns were to be rubbed upon the part," and on each application were to be uttered the words, "*Fuge, fuge, Koithe se diokis*." But if the stye was on the right eye it was to be rubbed with three fingers of the left hand, three

times the patient was to spit, and three times to utter: "*Nec mula porit, nec lapis lanam fert*," etc. The educated "veteran leader" of a modern sect of physicians, writing less than ten years ago, says that in typhoid fever, if a patient desires to get out of bed, give him bryonia; if to change beds, arsenicum; if to escape from bed, belladonna; if to jump out of bed, hyoscyamus; but if he springs up from bed suddenly he must have bel. and nux. For "pain in the joint of the lower jaw give baptesia; for dropping of the jaw, lachnau; for falling of the jaw, arsenicum; for hanging of the jaw, lycopodium, mur. ac., etc.; and for sunken jaw give secale." Thus the fifth century and now!¹

Medicine, as a consistent, coherent science, could not exist till the nature and composition of substances could be intelligently studied and the minute structure of bodies explored. It had been patiently waiting for two aids, the key to the science of chemistry and the means of seeing the universe of the minute. One of them came a little over a century ago in the discovery of oxygen. This explained a thousand problems, opened a vast field for research, and was the key to the chemistry of the animal body. The atomic theory came naturally after the discovery of oxygen, and from this point chemistry made rapid growth. Chemistry is so vital a part of our medical science that it may truly be said that without it the science of medicine of to-day would be non-existent; nor will it do to compare modern chemistry with ancient chemistry. The ancients had no chemistry. Modern chemistry is all there is, and it can only be contrasted with the midnight darkness of the days of alchemy.

The gross anatomy of the eighteenth century had left little to be added in that direction. But the minute anatomy of the human body, of animals and plants, was well-nigh a sealed book. This field was waiting for the perfection of the microscope, and this instrument, for effective use, may almost be said to have been born in the present century.

The medicine of to-day depends upon histology, and the microscope was the road and the way to this study.

Take away from medicine the achievements of the microscope, and we should lose our knowledge of the structure of the tissues, the function and behavior of the cell in all its manifold forms, mutations, and migrations; the vast subject of cellular pathology; all the parasites and parasitic affections; the history and behavior of the micro-organisms of disease, and many other quite as vital parts of the science.

Within the century our knowledge of nearly every disease of common occurrence has been greatly enlarged by microscopical and chemical study of the organs involved, and their products, and by comparison with conditions of health.

Before the microscope we were in deep ignorance of nearly all the diseases of the kidneys, and of many disorders and symptoms which they produce. The discovery by Dr. Bright of the true nature of some of the disorders known by his name, and other dis-

coveries in the same direction, have given us a fair insight into the diseases of these organs.

The present practice for the relief of these maladies is all based on recent discoveries. None of it is ancient, or even old. By practical hygiene, another modern department of medicine, many cases of Bright's Disease are relieved or held in dormancy for years.

A century ago, typhoid fever was confounded with several totally different affections, one of which was the contagious and very fatal typhus fever. Now it is established that typhoid fever is not contagious at all; that it is a disease of the intestines, and that it runs its course as regularly as does small-pox, in the main, regardless of treatment.

With the better understanding of this disease has come treatment that is more rational and more successful. Formerly the mortality was very high; forty years ago it was probably 18 to 20 per cent. of the cases. Now the per cent. of deaths is 10 to 12.

More than fifty parasites attack the human body. Each variety produces symptoms which we call a disease. Nearly all the knowledge we have of the parasites and of the symptoms has been acquired since the advent of the microscope, and is thus thoroughly modern.

The sickness produced by the trichina spiralis has existed for two centuries—probably much longer. It was confounded with typhus fever; it was called dropsy, epidemic erythema, epidemic oedema, and other names quite as unintelligible. Twenty years ago the microscope swept away the fog, and we behold a little worm coiled up in a muscle. Following closely upon this discovery came, most naturally, the annunciation: Cook your pork in every part, and no trichiniasis. In the study of other parasitic diseases, quite as much progress has been made as in this.

Almost the whole of the now most formidable department of cutaneous medicine—which deals largely with these parasites—is the growth of the present century. It could not be the product of a time before the microscope.

The achievement with which the century began was the discovery of vaccination.

In every civilized community the world over it has entirely changed the practice as to the *variolous* diseases. Its benefits have been incalculable. Although attacked by all shades of fanatics, it has saved and is destined to save thousands of lives, and it has relieved mankind from measureless anxiety and regret.

Near the middle of the century artificial anæsthesia was accomplished, by the use of nitrous oxide, ether, and chloroform.

This must remain through all time a marvel of discovery and invention. That it is possible to produce such a phenomenon as anæsthesia artificially is a marvel, and it is amazing that, being possible, the means for its easy, controllable and safe accomplishment should have been found. The lessening of suffering and the saving of life which this discovery has induced have been the talk of a generation. Not only is the current practice of surgery and medicine adapted to the use of anæsthesia, but, what is frequently overlooked, anæsthesia has broadened the

¹ Russell, p. 96.

field of operative surgery, by making many operations possible which without it could never be made.

Hygiene or sanitary science, the most beneficent in saving life, and in prolonging it the most potent, is a thing of comparatively recent years. It is a new revelation. Most of its facts and laws are the fruit of years that living men remember.

It has reduced the danger of death from certain diseases; with it alone certain diseases, formerly thought dangerous, are self-limited and without danger, and it has caused the average human life to increase in length.

Through organized efforts in society it has lessened the ravages of epidemics in many cases, and warded them off in others.

Never before did it enter so intimately and so thoroughly into the daily practice of the doctor as it does now.

If there is a single feature that, more than another, distinguishes the practice of the present from that of a former time, it is the use of numerous instruments of precision. Nearly all these instruments are the product of the present period.

The stethoscope and pleximeter, and the use of them in auscultation and percussion, are all modern, and these methods of study of the diseases and conditions of the thorax and abdomen are now everywhere used. Nobody now even professes to prescribe intelligently for diseases of the chest without the aid of auscultation and percussion.

The clinical thermometer was known three centuries ago. It was neglected till about ninety years since, and has of late grown into such favor that now it is used by the profession almost without exception. Whether it is of as much value as is claimed may well be questioned, but it has grown into the methods of thought and into the literature of the profession to such a degree that now no man would think of reporting a case of acute sickness for a first-class medical journal without giving the records of the thermometer.

The ophthalmoscope, invented a few years ago for the study of diseases of the eye, and now quite indispensable in that branch of work, has overstepped its original field, and is fast coming to be indispensable in any thorough study of diseases of the brain.

The diseases of the ear cannot now be diagnosed without the otoscope, yet this instrument is not fifty years old.

The laryngoscope and rhinoscope are the newest of modern inventions, and have made a new art of the treatment of the larynx and nasal cavity.

The hypodermic syringe as an instrument of exploration is emphatically one of precision, and it is refreshing to see it coming into vogue in this direction.

The dynamometer and æsthesiometer are in daily use, while we have to aid us as occasion demands; the sphygmograph and the cardiograph, the thoracometer, stethograph, spirometer and pneumatometer, the hæmacytometer, the perimeter, the palorimeter, the sacchorimeter, and never to be omitted, the urinometer, the test-tube, and the microscope, to say nothing

of a half dozen others occasionally used, and a multitude of specula for exploration of the internal organs of the body.

Hypodermic medication has come into general use within our own memory, and now nearly every practitioner carries his hypodermic syringe. It enables him often to give relief and comfort more promptly and surely than by other methods, and it has enlarged the field of his resources, for it frequently happens that by this means he can give a remedy and save a life when all other expedients have failed.

In 1850 and afterward, Dr. Bowditch, of Boston, compelled the profession to believe, what they believed with reluctance, that serum and pus in the thoracic cavity may be safely evacuated. He employed for the purpose a trocar and tube to which was attached a pump. Thus we have amplified in the aspirator of to-day, which is extensively used for evacuating fluid from all sorts of natural and unnatural cavities to the saving of manifold valuable lives. Few instruments ever invented have in the same time had the fortune to accomplish so much for good, while doing so little harm, as this.

The expression, abdominal surgery, has a meaning that is entirely modern.

To have learned that the abdominal cavity may be opened with comparative safety, and to have done ovariectomy thousands of times, as well as other formidable operations upon the abdomen, with a large majority of successful results, would appear to be glory enough for a century. But the splendor of the achievement cannot be appreciated till we attempt to compute the saving of life in years. It was probably fully ten years ago that the scholarly Peaslee wrote these words: "It may be shown that in the United States and Great Britain alone, ovariectomy has, within the last 30 years, directly or indirectly, contributed more than 30,000 years to the active life of woman, all of which would have been lost had ovariectomy never been performed." And it reads like a fairy tale or the story of a dream that Keith, of Edinburgh, has done this operation a hundred times successively with only three deaths, and more than sixty times successively without a fatal case.

Before the modern period, the reduction of some of the more formidable dislocations was clumsy, difficult and often barbarous. The surgeon, with his retinue of robust assistants and his block and tackle for multiplying power, as he went to a case of this kind, suggested a gathering in the olden time for raising the timbers of a building. The tackle and block were used for pulling the joint into place, and the performance resembled a refined form of ancient torture by which the victim was torn asunder.

Now, by the simple and rational method of manipulation these dislocations are reduced by the easy movement of the surgeon's hands, without ado, without pulleys, and without torture:

Two pictures are brought to my mind vividly by this topic—one of childhood, the other of the present. The first is the picture of an aged and beloved woman who had sustained an injury of the hip. Just the nature of the lesion was uncertain, but it was recent, and she received the delicate attentions of the

pulleys for an hour or more without anæsthesia, when, from sheer pity, those responsible for her, begged that she be allowed to die if she must without being rent in twain. She was a cripple the few remaining years of her life.

The other picture is of an humble woman here in Chicago, and of her eloquent tribute to rational surgery. Her child had received some injury of one of its bones. She sent for a surgeon. It was night; and he returned word that she must call some other doctor. Again she sent, begging him to come; again he refused. She did not call another attendant, but watched by her charge till daylight, and then made her way to the surgeon's house, and with ineffable pathos begged him "for the love o' God" to come to her child. Prompted by curiosity, he asked her to tell him why she had allowed her child to go unattended all night rather than call another surgeon? "When I was a girl," said she, "I saw enough of common doctors for bones. My poor father put out his hip, and the doctors came and nearly killed him a pulling him with ropes all night, and then could not set it. In the morning a doctor o' the name o' Brainard came. I s'pose you never heard of him; he died a long time ago, but he was a great surgent, and he took the leg in his hands and turned it first one way and then the other, and so easy all the time, and it just went in with a snap."

In the departments of ophthalmology and otology the most remarkable advances have been made within fifty years.

Till the invention of the ophthalmoscope by Helmholtz there was only a misty sort of knowledge of the diseases of the inside of the eye, and it was impossible to diagnose any of them. Now their discovery is easy and certain.

The subject of errors of refraction and their corrections has, chiefly by the labors of Donders, been placed on a "basis of mathematical demonstration" that seems unlikely to be disturbed by future researches.

No branch of medicine has grown more in favor and usefulness in a hundred years than dentistry. Preservation of the teeth has come to be almost synonymous with preservation of health, and the converse is strictly true, no good health with bad teeth. Dentistry is all modern; it cannot even plead age for the sake of respectability.

Antiseptic surgery is the last great achievement and the present wonder of medicine. It is all so recent and fresh in the minds of all students that either a description of it, or extended reference to its advantages, is not called for here. To a friend who, a few weeks ago, visited Prof. Nussbaum of Munich, the latter said, that during the forty years preceding 1876, at all times there was pyæmia in the Hospital of Munich, and during 1875, of the surgical cases 87 per cent. had hospital gangrene, and a large percentage died. From the introduction of antiseptic surgery in 1876, they have not had a case of gangrene, and pyæmia is almost unknown.

Dr. Weir, of New York, only last month called attention anew to the fact, that formerly the mortality from compound fractures was from 26 to 60 per cent.

Now, by antiseptic management, the death rate from these injuries is reduced to 6 per cent., and by some surgeons this figure is even lowered.

Litholapaxy is a surgical procedure, introduced very recently by Prof. Bigelow of Boston, which threatens to supersede other methods of dealing with vesical calculus.

Bloodless surgery is another new realization whereby, with the rubber bandage, the surgeon is enabled to do many operations more easily, quickly, and successfully than formerly, as well as to avoid the loss of blood.

More different splints and appliances than could be named in an hour have, within my memory, been invented for the purpose of giving comfort to surgical patients and efficiency to their treatment.

One of the most beneficent and humane departments of surgery is that which deals with deformities of the body. Orthopædic surgery has hardly attained its majority in years, but it has accomplished a work in the relief of the crippled, and correction of deformities, as well as in the saving of life, that deserves the perpetual gratitude of mankind.

Electro-therapeutics is each year more and more becoming a recognized and necessary aid in the practice of medicine and surgery. Of course it is not new, but its recognition as having a legitimate field of usefulness, and the careful survey of that field, are the work of the last thirty years. In the hands of the profession it is, then, a new science.

The practice of medicine and surgery was never before on so rational a basis as it is now. Never before were practitioners so careful to do those things for the sick that are known to be helpful, and to refrain from everything else. Meddlesome practice—which means unnecessary, if not harmful practice—was never in such disfavor as it is to-day, to the unutterable gain of suffering humanity.

The most common condition of sickness that physicians are called to is that of fever. The modern methods of treating this state differ from the old very widely, in ministering more to the comfort of the patients, in attempts to reduce excessive heat, and in the free use of water for both of these purposes.

It is a recent discovery—and one made possible by modern means of investigation—that high temperature alone is a source of danger to the tissues, and puts the patient in peril if long continued. By various means, only lately well established, most high temperatures may be reduced without harm, and usually without discomfort, and by these methods the mortality from febrile diseases is perceptibly lessened.

Rest of the disordered organs, now rapidly growing in favor, as a systematic process in treatment to be emphasized, is quite new. Modern methods enable us to know much more exactly than formerly the organs diseased, and physiological chemistry and mechanical ingenuity have put us in possession of means not previously known whereby the labor of an organ may be dispensed with.

Now, dyspepsia, inflammation of the stomach, intestines, lungs, pleura and liver, Bright's Disease, typhoid fever, all the results of injury and many other

conditions of sickness are powerfully alleviated by this process.

How to put the sick part at rest as far as is possible, and cause the other organs of the body to still carry on the processes of life with the diseased organs out of duty, is a new art, as it is a very grand one.

Within a century a multitude of medicinal agents now in constant use, have either been discovered or come into favor for purposes that are new. Quite as many have been consigned to forgetfulness. Quinine, ether, chloroform, chloral, salicylic acid, ipecacuanha, the bromides, cannabis indica, carbolic acid, iodoform, corrosive sublimate, podophyllin, jecquirity, duboisia, eserine, nitrite of amyl, veratrum viride, aconite and ergot, with a hundred more have swelled the resources of the art.

Probably in the choice of medicines on which to rely the profession has not always been wise, but the choice has been made, and fixes on the therapeutics of the day the stamp of newness.

In many more directions than I have cited may medicine, as it is now practiced, be shown to be modern. In science it is recent, in methods it is new. Verily it is a new profession into which you, gentlemen, have to-day been inducted.

Let it not be inferred from these laudations of the work of this century that we have occasion to rest or be satisfied. There is a great, undiscovered country in science. That misty domain holds a thousand secrets of the cause, nature and remedy of disease. The whole class of zymotic diseases, often now referred to as preventable diseases, because, I suppose, we *ought* to be able to prevent them, and many others which cut us off early and refuse to let us die of old age—all these have waited long and still wait a solution.

Medical education partakes of the spirit of progress and is modern. It differs widely now from what it was formerly. Among us the change has been greater than in the older countries. There innovations come slowly, but change has come everywhere. Of old the writings on medicine were all in Latin. Every liberally educated physician was obliged to spend years in study to become able to read and write this language readily. The literary was the major part of his education; it was the least useful directly, and it took the place of science. Science was poor in facts worth knowing, and yet the student must learn a new language before he could read the little of science there was. No northern tongue was fit to be the bearer of such knowledge. Now we reverse the order. Science is rich and nothing can usurp her place; any language is fit to convey her treasures to us, and it is wastefulness of human energy and time to learn science by a hard method and a rugged road when there are easier ways.

Literary studies are only blessed tools and instruments. I know a great discussion of the last decade in this country has been medical education, and that there are plentiful complaints that it is defective. Both in and out of the profession the question has been widely agitated, and the complaints are, many of them, just. The standard ought to be raised, particularly in the matter of study and drill preparatory

to the medical college course. The medical course itself ought to be improved by the addition of more practical work and observations.

The agitation has provoked an improvement, so that to-day the curricula and requirements of the best colleges in this country are higher than they were ten years ago. But the claim that because the undergraduate period of the last century was longer than ours, therefore these modern times have fallen into degeneracy, is not good. The educational methods of the ancients can be no guide for us. With them the term of study was long by reason of the literary incubus already referred to. There never was a time before when so much of the *science* of medicine was taught and learned during the undergraduate period as now.

The medical heroes of antiquity wrote medical books by the hundred. Beyond the anatomy and some descriptions of disease, they are most of them as truly rubbish as the stories of the alchemists—to be read by those who have the leisure as historical curiosities. In a single term of college now, a student learns more of the essential science of medicine than all the medical tomes of antiquity contain.

Bad as our course of study may be, if a long course was ever exchanged for a short one to the unspeakable advantage of everybody concerned, it was in this instance.

As to the course of study in your Alma Mater, she does not pretend that it is perfect; she does not believe any course can be perfect, and therefore does not even undertake to establish one that will be permanent and not change. In the past her course of study has changed, and it will doubtless change in the future, as the needs of the public and the profession seem to require.

The college has had in your behalf a higher purpose than merely to have you earn and receive the degree of Doctor of Medicine. She has worked, and wished, and hoped, and hopes to-day that you may become good practitioners and successful men. Hence the course of instruction has been practical in the extreme. It has been shorn of speculation and confined to demonstrated paths as far as possible, and it may have been barren of some fascinations on this account. But, mindful that the consummation of our efforts is to be useful doctors, and therefore true servants of the public and proper professional men, it has been the constant purpose of Rush College to make her courses of study contribute to this end. The experience of her alumni has completely vindicated this position. Scattered over many States and Territories of the Union, and in other lands, your fellow alumni have met with a success as physicians and surgeons that is phenomenal. No higher test of usefulness than this can be possible.

May the class of 1884 add to the honor and high standing of the alumni of the college! You, gentlemen, have as a class a peculiar responsibility, for, measured by the usual standards, your Alma Mater has found that your aggregate of attainments is higher than that of any recently preceding class. Cultivate a pride in your classes, in all that is best in the profession. Create for yourselves an ideal, and strive to

realize it in your lives. Let a few qualifications and adornments be indispensable. Your ideal is a constant student; his life at college has only intensified his ambition to study. He can observe a phenomenon on himself and know it as well and truly as though he read of it in a book. Fertile in resources, he is never surprised or disconcerted. He is patient, attentive, and upright in his intercourse with his patients. He is a student outside of the field of medicine; a lover of literature and all the ennobling arts; a many-sided man, indeed. The public know him, not only as the highest type of good breeding, but as one who, throughout the years of life, is steadfast in rectitude and immovable in a high purpose; who is exemplary in industry and patient in waiting.

Such an ideal is possible, and it is possible for you to realize it.

TREATMENT OF RINGWORM WITHOUT EPILATION.

A CLINIC BY JOHN V. SHOEMAKER, M.D., IN THE
PHILADELPHIA HOSPITAL FOR SKIN DISEASES.

[Reported by Charles S. Means, M.D.]

GENTLEMEN:—At the close of the last clinic, I pointed out to you the circular patches on the heads of these three children. The girl has two spots, the younger boy one, and the scalp of the older boy is entirely involved. The appearance and symptoms of these patches, together with the cause of their development, the pathological changes which had taken place in the hairs, their follicles and the skin, as well as the diagnosis, all received due consideration.

Before proceeding to the treatment of these patients, let me again recall the appearance of the fungus of this disease—the trichophyton in the specimens beneath the class microscopes, which will again be passed around for your inspection. Beneath the first microscope you will again see a hair filled with this growth, and under the second and third instruments are sections of the skin, showing how the epidermis, as well as the hair follicles deep down, are also invaded. The hair in the first specimen was taken from the acute case of the young girl, while the sections of skin in the other two were made from the older boy, having the ringworm for the last four years. Now that I have recalled an important part of this affection, the removal and thorough destruction of the parasite which has brought about these lesions should command our attention. In beginning the treatment these children should, if possible, be isolated, in order to prevent them from spreading the contagion. Constitutional treatment should next be administered, as the experience of several years has taught me that care and attention to the general system is a great factor in bringing about a more speedy change with topical remedies. Proper hygienic surroundings and the use of good, nutritious food are essential and necessary

for their systemic effect. As the first two cases appear to lack nourishment, the following tonic and nutritious combination will no doubt be very advantageous: Compound syrup of the phosphates and the fluid extract of malt, two ounces of each, mix; two teaspoonfuls in water three times daily, after meals. In the third case, the boy is especially anæmic, and will respond to treatment much better by using one of the salts of iron internally. A most excellent preparation, particularly well borne by children, is the syrup of the lactate of iron, which will be ordered in two teaspoonful doses after meals. It is also of equal importance that the local treatment should be carefully and persistently carried out.

The failure of many local remedies to act is due often to the negligence and careless manner in which they are used by patients and attendants. Special apparel, towels, bed linen, combs and brushes, should be used, provided they can be obtained by these patients. During and after the treatment every thing used by the patient should be thoroughly cleansed by an anti-parasitic remedy. The hairs upon and around the diseased patches should never be disturbed either by cutting, shaving, epilating or endeavoring to extract them. I desire to refer especially to these points, which I have again and again dwelt upon for some years in my clinics, in the treatment of all vegetable parasitic affections of the skin.

While cutting the hair in this girl's case might expose more of the diseased surface, yet it would also make the hair shafts shorter, and the movement of applications over these short hairs will often add to the irritation. It will be no especial advantage to cut the hair to expose the diseased surface, as the same purpose can be accomplished by separating the hairs and making the application. Shaving the hair is for the same reason a disadvantage, and will often cause cuts and abrasions of the skin which will increase the ravages of the parasite. Epilation is even more useless, and is painful and tedious to perform. I have ceased to resort to it, and find that vegetable parasitic affections improve much better without it. I believe I was the first to treat ringworm and other parasitic diseases of the same class *without epilation*. I commenced my new departure from the old method of extracting the hair laid down in all the text-books some years ago in a discussion before the Philadelphia County Medical Society, which can be found in the proceedings published by that organization. Look at those microscopic specimens now passing around the class, see how the hair and follicles are invaded with the fungus growth, and tell me if you could successfully extract such diseased hairs. The fungus has made the hairs brittle, and they will break off upon an attempt to extract them either on the surface or beneath in the follicle. The diseased hair or a part of it remains, and the parasite continues its ravages, even more active, owing to the irritation set up by an attempt to remove the hair. The wisest and best course in all cases will be to leave the hair undisturbed.

I will recommend that the heads of these children be washed every day or two with the following anti-parasitic mixture: One ounce and a half each of