EUROPE'S TRIBUTE TO THE
AMERICAN SCHOOL OF OSTEOPATHY.

This prize is conferred by the Society of Science, Letters and Arts, London, upon that member who is judged to have made the most worthy contributions to science for the year. The honor for 1896 has just been awarded to Dean J. Martin Littlejohn, Ph. D., LL.D., D. D., F. R. S. L. and F. S. Sc. (London). This work comprised, in the main, text books on "Physiology, Exhaustive and Practical" and "Physiological Psychology" which he prepared from the Osteopathic standpoint for use in the American School of Osteopathy.
School of Osteopathy, from that beginning, has an enrollment of more than 600 students, is represented in the field by over 300 graduates and has witnessed a dozen institutions spring up as humble imitators of its work. Its faculty comprises men who have won a good share of the catalogue of learned degrees and fellowships from the best known universities of America and Europe. The dean of its faculty was this year singled out for distinction by the Society of Sciences of London which has bestowed upon him the gold medal awarded once a year to that member making the most notable contribution to science for the year. This contribution, be it added, was textbooks in physiology and psychology which he prepared from the Osteopathic standpoint for the use of students of the American School of Osteopathy.

Can any parallel be found for such incredible growth from such beginnings, to such achievement, among the educational institutions of the world? This, too, in face of the fact that the institution started without a dollar and was built by Dr. Still wholly upon an idea—a philosophy, which at the outset possessed hardly a sympathizer in the world! The stories of Leland Stanford, Jr., University springing up in a night out of the Stanford millions, or of J. D. Rockefeller and Dr. William R. Harper reviving Chicago University with thousands of alumni and the Standard Oil money back of the enterprise become common place beside it, for these only bought what is always to be had for a price, while Dr. A. T. Still created everything out of nothing—the science itself, the money to erect a magnificent building and give it equipments, to secure the best trained men in the world to assist him in his teachings. These shining lights in medicine, surgery and university work came to Dr. Still, also, not merely as employees, but to believe in him and his system as a distinct advancement of medical science, far and away in the lead of every existing school of medicine, and containing within itself the principles of evident, demonstrable truth which in our time must reconstruct the teachings and practices of them all.

The American School of Osteopathy, wonderful as it is, is not the most wonderful institution created by Dr. Still. Back of the school for teaching the science and art of Osteopathy are the wonderful cures which the system has wrought in these eight years. This introduces the A. T. Still Infirmary where these marvels have been done, which has been conducted independently of the school and yet as a close adjunct to it. To understand what figure this infirmary has cut in the world of medicine one must look in retrospect at the line of more than 100,000 patients who have during this time come to its portals for treatment. These have included all the better known and many of the rarer griefs of flesh and mind. Fifty per cent of these sufferers have been cured, another thirty or forty per cent have been benefitted. And a hundred Osteopathic institutes have been started over the land in imitation of this House of Miracle.

Such revolutionary and far-reaching ideas and works could not fail to
bear fruitage in other lines. Besides winning the educated, the rich, the renowned and the powerful to his cause by thousands as friends, patients and champions, and having money, preference and distinction without stint offered him to carry out his noble work, Dr. Still has seen the laws of the land modified to give to himself and his followers standing in court and his system of therapeutics placed on equality by statutes with all the other systems of medicine. Today Osteopathy is recognized by general legislation in Illinois as one of the orthodox schools of medicine and is protected by special statutes in Vermont, Michigan, Missouri, Iowa, North and South Dakota and Tennessee, while bills have been up for consideration in ten or fifteen state legislatures the past winter to achieve the same object.

It is patent that Osteopathy challenges the world for a development of institutions as unaccountably marvelous.

When all this has been said—when the records have been read of incredible cures of disease and deformity by Osteopathy, the so-called "incurable" cases which other medical schools have abandoned being the ones that have been treated in the main—when, indeed, the investigator has come to Kirksville and learned all and witnessed all for himself, there is yet excuse for a scratch of the head and a dazed look upon reflection and this question to one's self:

"How can it all be true?"

Let the progress of medical science for the coming decade answer.

But the fact of the situation will abide with the sick as a star of hope through previous utter darkness that "Osteopathy offers the best chance of restoration to health of any branch of medical science," while the young man or woman seeking a profession, an avocation in life—will find it hard to overlook the chances which Osteopathy offers as a future.

The school building is built after the plan of modern medical colleges, in the main. It is a three-story and basement structure which is utilized in the two upper stories and basement for lecture rooms, laboratories, demonstration, dissection and officers' rooms, while the first floor is devoted to operating rooms, the offices of the institution and the ladies' and gentlemen's reception rooms. The site of the building is on the border of a wooded ravine which secures beauty of landscape and easy natural drainage and makes the locality healthful. Just opposite the building is the little house where Dr. Still first wrought out his miracles of healing upon the basis of the new truths he had discovered and where he first taught the little band of disciples—among whom were his sons—Charles, Harry, Herman and Fred—who were to become pioneers with him in the new science which he named Osteopathy.

Entering the institution as a new student one visits the officers on the main floor. An inquiry at the desk window causes an introduction to Mr. Warren Hamilton, treasurer of the institution, who furnishes the applicant with whatever information he needs, duly enrolls him as an applicant for
admission as a student and in turn introduces him to Dr. Andrew Taylor Still, president of the school and infirmary, to Dr. Charles E. Still, vice-president, Dean J. Martin Littlejohn and the professorial circle.

In Dean Littlejohn's office on the second floor the new student is instructed in his immediate duties for entrance. He is admitted to study upon duly qualifying with certificate or diploma showing the required preparation or upon examination before a committee of professors. Dean

WHERE TREASURER HAMILTON MEETS THE FRESHMAN.

Littlejohn gives the candidate all the information and advice he requests, and then presents him to the professors under whom he will pursue first term studies.

The dean is a mild-mannered, promptly-courteous, reassuring sort of a
man who at once inspires the new arrival with confidence and regard. His gentle dignity and broad attainment mark him as a man among thousands. He is as deferential to a boy of sixteen as to any brother scientist; and there is nothing he can do for a student from his entrance to his graduation which he leaves undone. Dean Littlejohn types the discipline of the school—every consideration and every liberty is guaranteed the student in his work, but when he crosses the border line of insubordination, there is prompt visitation of discipline.

Once a first term student, the neophyte goes to the amphitheater on the third floor where he makes the acquaintance of Professor William R. Laughlin who will be his father-confessor for one term on the architecture and mechanics of bone, ligaments, muscles, nerves and blood vessels. Dr. Laughlin impresses his classes with three ideas from the start—he is a fine anatomist, a conscientious instructor and a “good fellow” and he knows how to make many a hard road smooth.

From the roof of the “First Termer” then goes to the basement, where Dr. C. W. Proctor greets him in the lecture room and laboratory of the Chemistry department, straightway to beguile him with the song of acrobatic atoms and molecular marvels. Dr. Proctor’s face beams with pleasure when he unfolds to his classes the mystery of matter—this tells the secret of his success as an instructor. In the laboratory Miss Clara Proctor is always present with classes to advise and help as to quantities and qualities, fix apparatus and get results.

With anatomy and chemistry scheduled as duties, the new student is then presented to Dr. J. B. Littlejohn for a microscopic introduction to all bodily tissues. In pursuing the histological course the student comes into contact with a personality as fine and deep as the subject studied. Dr. J. B. Littlejohn is frank, patient and painstaking in exploring the land of protoplasm, modest in putting opinions, deferential to every one's idea, dogmatic in nothing. His lectures in histology to the first class are illustrated by excellent day-light stereopticon views made from actual mounted specimens. This feature is not duplicated in any college in America.

Classes arranged, the new student next visits the skeleton agent to look over the assortment of skeletons and picks one to hang in his own closet. “Every house has a skeleton in its closet,” must have been prophetic of Kirksville, for few houses, indeed, can be found here without them. From skeletons the student turns next to a consideration of text books, reference books, dictionaries, charts and mannikins—things which delight the student-heart and point out mile posts along the “royal road of learning.” With his anatomy, dictionary, skeleton, and notes on chemistry and histology finally secured as a foundation stone, the new student is prepared to build a structure of knowledge that shall win him rewards immeasurable by the opportunities now offered in any other profession.

Second term work brings students into genial comradeship with Dr.
William Smith whom Dr. A. T. Still says has not his superior as an anatomist in the world. It is also certain that his equal as a teacher would be hard to locate. His work in regional anatomy by demonstration, lightning-chalk-art diagrams, day-light micro-stereopticon views and quizzes cannot be found we think, anywhere else in the world. In the dissection room Dr. Smith is "one of the fellows"—big hearted, impulsive, full of enthusiasm, a court of appeal in every conflict of fact or opinion, a friend of the faithful, an inspiration to every student. Dr. Smith in this term lectures in symptomatology also. Dean Littlejohn's lectures in physiology, which begin with this term, are beyond comparison with the best work done in other medical schools since he develops the field from the standpoint of Osteopathy and therefore introduces much that is new in the way of the therapeutic application of ideas until now scarcely developed or else regarded merely as interesting experiments.

The study of the principles of Osteopathy in the second term adds Dr. Carl P. McConnell to the close acquaintance of the student and here the fire of incentive for work begins to burn with new ardor. Dr. McConnell's work is earnest, impartial, broad and sincere. His close tutelage under Dr. A. T. Still and his sons, with his work in the infirmary for a term of years, have given him exceptional opportunities in Osteopathy which render him especially fitted to be the mouthpiece of the Founder of the Science. He takes infinite pains with his classes and no man is more popular among the students.

Clinic demonstrations become an important feature of the curriculum in third term, and in this work the "Old Doctor" can always be counted upon for his original methods of aid, both didactic and Socratic, for one of his characteristic methods of imparting instruction is by questioning his disciples in order to direct their efforts towards original fields of activity. It is in this term also that students come under the instruction of Dr. Charles E. Still, and his clinic demonstrations are remembered by graduates as among the most valuable connected with actual Osteopathic work. A finer, truer, stronger, more generous or more sympathetic nature than possessed by Charles E. Still, or an abler Osteopath does not live. He is the "Old Doctor's" personal and authoritative representative in all executive details and the students are lucky in becoming closely acquainted with him. Students in the third term do actual clinical work in the operating rooms under the direction of the Doctors Still and staff.

Dr. McConnell continues the work in Osteopathic instruction in the third and fourth terms. Clinical demonstrations are daily features of class work.

Dr. J. B. Littlejohn in pathology is a feature of this term.

The Senior class adds to its corps of instructors Judge Andrew Ellison, LL.D. and Dr. David Littlejohn of the surgical staff. Judge Ellison retired from the Circuit court bench the first of the year, after continuous
service for twenty-two years, in order to devote himself more closely to his
duties as lecturer on medical jurisprudence and legal adviser. His advice
is shaping much of the legislative work for Osteopathy and has directed
the defense for more than one practitioner in the field who found the phy-
sicians of other schools of medicine anxious to block promising careers.

Dr. David Littlejohn wears plaids of the same intellectual and profes-
sional stripe as his distinguished brothers. In addition to his work as as-
stant in microscopy and surgery he has personal charge of the department of
X-Radiance.

Fourth term work includes symptomatology, minor surgery, didactic
and laboratory work in pathology, psycho-pathology, gynaecology, obstet-
rics, sanitation and public health, venereal diseases, medical jurisprudence,
clinical demonstrations and actual clinic practice where that practical train-
ing of the hands is fairly well begun which leads eventually to finished
Osteopathic work.

With these four stages of work done faithfully by the student of aver-
age good sense who, less than two years before, entered the building to
shake hands with Mr. Warren Hamilton, asking how to begin the routine of
duty—and a career opens out to this fledgling Osteopath such as practitio-
ers of drug medicine have long since ceased to hope for and only the phi-
lanthropists and financiers of the world may rationally dream of. It is a
career of fellowship with success, of scientific bread and meat as one's daily
professional rations, of certain wide and even measureless good to fellow
man, of possible, yea probable distinction and the grateful consciousness
of duty well done.

Where in the world is a young man or woman of this generation offered
as much?

It will be seen that the course in Osteopathy embraces all that is included
in the best medical schools with the exception of materia medica, which is
not credited as scientific, therefore not practiced, and not wanted. To take
the place of materia medica the student learns Osteopathic theory and
practice which requires longer and harder study and application than the
medical student gives the pharmacopoeia. With this distinction the other
great difference between Osteopathy and drug schools of medicine is that
the Osteopathic student pursues anatomy and physiology until he under-
stands how to use them to rout disease and conserve health. The maximum
term of study in the standard medical schools is four terms of six months
each, thereby compelling by law medical students of allopathy, homeopathy
and eclecticism to loaf six months of each year, or dispose of their time as
they please, which arrangement was enacted confessedly by the older physi-
cians to limit competition. The Osteopath has the advantage of being
able to pursue the twenty month's course required of him in two years so
that starting at the same time the student of the drugless science will be in
practice two years before the student of drug systems.
The building is well adapted for school and infirmary purposes. "Memorial" hall and "North" hall are spacious lecture rooms which on public occasions are opened into one auditorium capable of seating a large congregation. These rooms are used by Dean Littlejohn, Dr. McConnell, Dr. Hazard, and Judge Ellison in lectures and Dr. Charles E. Still and staff in clinic demonstrations. Dean Littlejohn's office is on this floor. The histological laboratory with its valuable equipment of powerful microscopes and other appliances for work in that department and one of the smaller class rooms occupy the rest of the second story.

The X-Ray department is on this floor also. It is under the direction of Dr. David Littlejohn and contains one of the finest and largest sized Van Houten-Ten Broeck static machines made. This department does much of the delicate diagnosing for the infirmary and as good radiographs can be made at very few places in the world. Indeed the radiographs of injected bodies made by Dr. Smith and Dr. David Littlejohn, showing the entire circulatory system and details of viscera, are marvels of progress over anything yet accomplished by science. Full details of this work will appear soon in current periodicals.

In the third floor are Dr. Smith's amphitheater, office and dissecting rooms. The amphitheater is shared by Dr. Laughlin and some of the other professors for lecture purposes.

The Original Infirmary of Osteopathy.

The A. T. Still Infirmary occupies the main floor of the building. On entering the building the patient sees spacious reception rooms on both sides of the corridor which are always animated in day hours. The ladies' room is to the left. Patients apply at the office desk of Mrs. F. H. Smith for registration and upon interviewing Mr. Hamilton are assigned to operating rooms where Dr. Charles E. Still or Dr. Harry M. Still and staff conduct the diagnosis.

Perhaps there will seem to be some sort of mystery in an Osteopathic examination in the minds of the public. It is not mysterious at all. It is very simple. The diagnosis is based on an accurate and exhaustive examination of bodily structures anatomically to determine normal and abnormal relations with a view to readjusted displacements and removing "lesions" of any tissue—bone, ligament, tendon, muscle, nerve or blood vessel. To allow the freest examination and insure the best treatment patients need to remove outer clothing as far as the waist and if women don some thin garb loosely fitting, while men usually lay aside coats and vests and perhaps linen shirts. The patient takes a reclining posture on a narrow hard padded table with slightly elevated pillow which serves as a firm level base upon which every part of the skeleton rests normally. The skilled eye and hand of the Osteopathist readily detects correct or incorrect anatomical lines through a loosely fitting robe, as a rule, while deft Osteopathic fingers up and down the spine are quick to detect even slight abnormalities in the position of vertebrae. Except in treatments of the head and neck the hands seldom come in contact with the surface of the body—indeed, the usual treatments are better applied through slight clothing. With the examination of the patient ended, the Drs. Still assign him to that operator of the staff whom they deem best fitted to care for the disease in question or he is taken under personal charge by one of the Still's.

The staff of Infirmary operators is made up of the best students and most successful operators who have been turned out by the American School of Osteopathy. Besides Dr. A. T. Still and his sons there are Dr. Charles L. Rider, Dr. Marion E. Clark, Dr. Carl P. McConnell, Dr. Charles Hazard, Dr. William E. Laughlin, Dr. Georgia Carter and Dr. Esther Whittaker.

Operating rooms are arranged so as to secure each patient privacy before and after treatments for arranging toilets and each operator has four rooms assigned to him where his patients are assigned to receive attention. Treatments are given as a rule in the morning and can be received early or late as patients elect. The visiting staff attends patients unable to come to the Infirmary.
Unequaled Facilities for Surgery Here.

The Surgical Sanitarium has been added to the Infirmary to take care of all cases which have passed the boundary of Osteopathic help and must take the last resort to surgery. In nine out of ten cases, generally speaking, the surgical operations of the day are rendered unnecessary if Osteopathic treatment is secured in time; but there is the boundary where it is unavailing and provision has been made at this institution to afford patients in that situation the very best care and attention that may be commanded anywhere. A corps of the best trained and best endorsed surgeons to be found on either side of the Atlantic is in charge. Dr. J. B. Littlejohn is a graduate in surgery from the University of Glasgow, Scotland, and held for three years the position of Surgeon under the British government. Dr. William Smith is a licentiate of the Royal College of Surgery, Edinburgh; a licentiate of the Royal College of Physicians and Surgeons, Glasgow; a licentiate in Midwifery of both Edinburgh and Glasgow. Dr. David Littlejohn is also highly qualified as a surgeon.

All the appliances are at hand for the most delicate surgical operations. The Sanitarium is newly fitted up with modern furnishings; the bed rooms are cheerful, home-like and cozy; experienced trained nurses are in attendance; and patients will find here more opportunities for advanced surgical work, considering the co-operation of Osteopathy, to be found in any of the large cities.

A tower of strength in Infirmary practice and Clinic demonstrations is Dr. Harry M. Still whose broad shoulders and sympathetic heart have been the refuge of many an invalid whose cares he bore until brought back to health. He is framed for almost any degree of hard work and no amount of fatigue in emergencies has ever caused him to neglect a patient or forget their needs. Among graduates Dr. Harry Still is remembered for his faith in active work on the liver and perhaps his patients remember that too.

Dr. Charles Hazzard, who instructed the second term class in principles of Osteopathy will discontinue work in the educational line after this term to devote himself to a general practice. He is an earnest student of the science, a capable Osteopath and the notes which he prepared for his classes have been of great aid to students.
THE AMERICAN SCHOOL OF OSTEOPATHY.

Sketch of the History, Philosophy and Practices Included in Medicine's Latest Chapter of Development—"Away from Drugs and Back to Nature!" is the Slogan of all Advanced Physicians.

J. MARTIN LITTLEJOHN, PH. D., LL. D., F. R. S. L. (LONDON.)

The world is continually changing, and in the upheavals following revoluntary movements the new is in science, discovery and truth is constantly the center of attraction. Health is an implanted principle and the desire for it an innate craving of all humanity. In health, the body is constantly renewing itself and restoring what is lost by the wear-and-tear of life. When the body mechanism gets out of trim through deformity, disease or exhaustion, the desire for health comes to the front. This arouses interest in the patient, and the patient seeks the best skill which modern science has developed in the effort to gain renewed health.

It is this desire on the part of the afflicted and suffering that has created the demand in the present age for natural physicians who shall treat the body as an organism, in which is deposited and stored up curative and restorative powers, forces and processes sufficient to cure body diseases. In order to satisfy this demand, Dr. A. T. Still, the discoverer of the new system of healing, founded the American School of Osteopathy as a college for teaching the new diagnostic and curative science. He believed that a God sufficiently wise and powerful to make a human being was sufficiently wise to exercise forethought and foresight in putting within the body all those principles of vitality necessary for the control of the mechanism and the development of its functions and capacities. Recognizing these facts and principles, Dr. A. T. Still began to teach the new science to his own sons in 1887. The American School of Osteopathy is the outgrowth of Dr. Still's discoveries, and his attempt to give to others the knowledge of this science and art of healing as formulated by himself. The American School is thus the only true STILL SCHOOL OF OSTEOPATHY.

In 1892 a charter was taken out, and the first regular class was formed, consisting of eighteen students. It had a small beginning meeting in a one-story frame building with two rooms. It very soon grew and a new three-story brick was erected opposite the first frame school. Since then, three large additions have been made to the building to meet the growing necessities of the Institution. It has grown to be a large scientific college with every appliance, apparatus and scientific method available, fully utilized in teaching the science and art of healing.

In 1894 a new charter was obtained according to the laws of Missouri providing for educational institutions. The aim and object of the College on its present basis is to reform Medicine and Surgery so as to bring the true science of Medicine and Surgery into harmony with the teachings of nature and thus establish a true natural medical school of healing.

From this little school started about seven years ago, there have been sent forth about 335 graduates who are practicing their chosen profession all over the United States with marked success. With every school year the American School of Osteopathy grows apace. The new term, opened February 1st, 1899, is one of the most prosperous and auspicious terms ever begun. Over 600 students are in attendance, the new class numbering 130. The work being done this term is in advance of any heretofore done in this school. Demonstrations of Anatomy, Obstetrics, as well as Histology and Pathology, are taught in connection with stereopticon and micro-stereoptican views of the parts under discussion in the lectures. Dietetics has been added, so that the students may get a correct idea of diet in general, and the application of dietary principles in health, disease and convalescence. Osteopathic Therapeutics is taught in small sections on the tutorial principle of personal instruction to each student in this most important branch of Osteopathic work.

THE A. T. STILL SURGICAL SANITARY.
Other schools are claiming that they have superior facilities and are giving superior courses. This school does not attempt to criticise other schools or their methods. It claims to be the parent school, founded and at present presided over by the original founder of the science of Osteopathy. Dr. A. T. Still is the founder of Osteopathy and the father of the plan of organization of the American School. It is the aim of Dr. A. T. Still, his sons, and the members of the Faculty to teach Osteopathy in its entirety. They realize that in doing so a beginning must be made in Chemistry, Anatomy and Physiology, so that the student may be thoroughly familiar with the human body in its most minute structural and functional relations, so that Osteopathically they may be able to examine the body as a mechanism would a mechanism, to diagnose the condition of the body, and apply the prophylaxis and therapeutics of nature in the normalization of the animate human mechanism.

While this school recognizes Osteopathy, it realizes that students cannot apply Osteopathic measures without an adequate knowledge of anatomy, histology, chemistry, physiology, pathology, symptomatology, dietetics, psychology and surgery. The claim is made by some Colleges that Osteopathic practice is the main feature of an Osteopathic education. Every one realizes that if a student has a thorough knowledge of the anatomy and physiology of the body, before attempting to apply what he does not understand until he has this knowledge, the application of Osteopathic principles in practice becomes comparatively easy. Two terms, therefore, of clinical and practical work, founded on this thorough grasp of the anatomy and physiology of the body, represents more to the genuine Osteopath than any number of terms of mechanical action without such a preparatory course of instruction.

From a business standpoint, the Osteopathic profession is the leading one in demand at the present time. Comparatively few graduates of reputable colleges are in the field. The field is covered with "fakes," and these will ultimately be crowded out of the "assumed profession" when the really professional practitioners take the field. The people are demanding thoroughly qualified practitioners and those who have gone out from this school have made their profession a success from a financial as well as a professional standpoint. Even the old-school physicians are coming to take a post-graduate course in Osteopathy, realizing that to be successful they must keep up with the progressive advancement of the science and art of healing. No profession offers inducements to the men and women of to-day equal to those offered by Osteopathy.

What Osteopathy Is.

Osteopathy is a science or method of treating diseases first discovered by Dr. A. T. Still about 1874. Dr. Still reasoned "that a natural flow of blood is health; that disease is the effect of local or general disturbance of blood; that to excite the nerves causes the muscles to contract and compress the venous flow of blood to the heart; and that the bones can be used as levers to relieve pressure on nerves, veins and arteries."
order, every body tissue and structure performs its part without interruption, the body structure representing the frame-work upon which the other tissues of the body are built and to which they are attached. Hence, Osteopathy makes use of the bone frame-work in establishing land-marks for physical examination, and as a means of restoring misplaced parts of the body. According to Dr. Still, the bones become the basis and medium of operative manipulation, so that Osteopathic manipulation represents the medium of therapeutic action.

The essential principles of Osteopathy have been set down as two-fold, (1) "Health is natural; disease and death between the time of birth and old age are unnatural." (2) "All bodily disorders are the result of mechanical obstruction to free circulation of the vital fluids and forces."

Osteopathy has passed the experimental stage. It is now a demonstrated system of healing, and it is in results that the practitioner of Osteopathy finds his justification. Osteopathy gains results because it uses and aids nature. All nature is pregnant with force and nature's force is the most remedial, because it is natural. The powers of the body are all self-restorative to such an extent that what is necessary from an Osteopathic standpoint is not massage or drug medication or any kind of artificial treatment, but simply the utilization of what lies hidden in the laboratory of life. In this way assimilation is possible without alienation, so that remedial measures can be adopted that are native to the organism, having a close affinity to life, with the subtle force of vitality, without any of the imimical properties of foreign substances.

Osteopathy is based upon accurate knowledge of the anatomical structure and physiological functions of the body organism. Nature has placed within the body certain vital forces, vitalized fluids and vitalizing processes, and activities which in harmonious accord with one another maintain the normal equilibrium of the body mechanism; any disturbance of these forces, fluids or processes and any interference with their activity, circulation or distribution involves the absence of harmony and interference with the body order. Osteopathic manipulations aim to restore these to their normal condition, so that the body may regain its normal functional equilibrium and form. In this way Osteopathy claims that life is re-vitalized and strengthened by vital forces, vitalizing fluids and processes, disease being removed or overborne by getting rid of an abnormal structural alignment that produces dis-harmony in the body and prevents normal functional activity.

What Osteopathy Includes.

The name Osteopathy was applied by Dr. Still to the new science on account of the fact that the displacement of bones occupied the first place in the catalogue of causes or "lesions," in the order of discovery by himself, producing diseased conditions. Like every other name given to a new science, it does not include all that the new science embraces, but indicates the germinal point from which the new science started. Osteopathy represents a new science of pathology, and a new science of therapeutics. The practice of medicine in not covered by symptomatology and the prescription of some medicinal drug or drugs.
Osteopathically it means the discovery of the cause or causes of a disease and the correction or removal of the cause or causes of the disease. Pathological conditions may be summarized under three heads, first, misplacement of bone, cartilage, ligament, muscle, etc.; second, disturbance of the fluids of the organism, including the blood and lymph; third, disorders or derangement of the nervous system. Corresponding with these in Osteopathic therapeutics we find, first, scientific manipulations that aim to correct displacements in the bony or tissue structures of the body; second, scientific manipulations that are designed to rectify disturbances in the circulation of the body fluids and to restore their normal condition; third, scientific manipulations that utilize the nervous system with its fibers and centers with the view of correcting the nervous disorders and thereby restoring order and harmony to the system.

Hence the science of Osteopathy regards the human body as a perfect mechanism, all the parts of which must be in harmonious relation to one another and so united together as to form a perfect unit; otherwise the body is in a diseased condition. To apply the scientific principles of Osteopathy it is necessary to have an exact knowledge of the structure, the functions and relations of the different parts of this mechanism and of the mechanism as a whole from the standpoints of chemistry, mechanics, anatomy, physiology and psychology, as well as the pathology and morbid anatomy of the diseased tissues of the body and its organs. Only in this way are we able to find out the laws that govern the normal conditions of the body and the resources of nature available at the call of Osteopathic treatment. Osteopathy recognizes that within the body are found those natural remedies, those human principles applicable on the basis of mechanics, those bioplastic and metabolic processes which in normal equilibrium form the basis of health and furnish the means of correcting misplacements, derangements and disordered conditions.

To meet these scientific requirement the school has laid down the following course of study:

First Term—Descriptive Anatomy, Inorganic Chemistry and Physics, Toxicology, Histology. Illustrated by micro-stereopticon.

Second Term—Demonstrations in Anatomy, Physiological Chemistry, Histology, Urinalysis, Physiology and Physiological Demonstrations, Principles of Osteopathy.

Third Term—Demonstrations in Anatomy, Physiology and Physiological Demonstrations, Physiological Psychology, Pathology, illustrated by stereopticon, Bacteriology, Symptomatology, Osteopathic Therapeutics and Clinics.

Fourth Term—Symptomatology, Psycho-pathology, Psycho-therapeutics Pathology, Surgery, Hygiene and Public Health, Gynecology, Obstetrics, Medical Jurisprudence, Osteopathic Therapeutics, Venereal Diseases, Dietetics, Osteopathic and Operative Clinics.
Dr. McConnell's work is divided into twenty-four chapters including the classification of diseases as infections, constitutional, those of the digestive, respiratory, urinary, circulatory, nervous and muscular systems; of the blood and ductless glands; hemorrhages, hemorrhoids and varicose veins, deformities, etc., etc. Special chapters deal with Osteopathic gynecology obstetrics, treatment of the rectum and coccyx, eye and ear, skin diseases, vaso-motor and sensory nerves, etc. Diagnosis and Osteopathic regional treatment occupy separate chapters.

The scope and purposes of the work are set forth in Dr. McConnell's introductory chapter, most of which we quote for its excellent presentation of the principles underlying Dr. A. T. Still's system and their relationship to the science of medicine. The introduction says in part:

Dr. Andrew Taylor Still, the discoverer of the science of Osteopathy, has been working for nearly three decades in perfecting the science and art in all its branches. It is to him that we owe all that has been accomplished in the Osteopathic work. He has ever been and still is working and delving into the mysteries of the human body to give to the world the philosophy of Osteopathy. He is without doubt the foremost researcher in the Osteopathic field; and the work that he has accomplished—especially in the last ten years—has brought Osteopathy into such form that it can be taught intelligently to the student. Naturally, there are many disconnected points and various regions of the field that have not been thoroughly investigated. It will be many years before the science will assume a definite form and place in the scientific world. By that I do not mean to be understood that the world of science will not recognize it and give it a standing as a therapeutic science; but it will be many years before sharp lines can be drawn including or excluding certain points in the science and differentiating sharply between this and other systems of medicine. The Osteopathic field is such a wide one, covering as it does the entire area of therapeutical work, that I dare say it will revolutionize the healing art of the future. It could not be otherwise; for Dr. Still and his followers are demonstrating day after day the efficacy of Osteopathy as a remedial science. If there is any one point that should be convincing to the public it is the fact that Dr. Still has succeeded in establishing the reputation of Osteopathy by curing the so-called incurable and discarded cases of other systems of medicine. If the Osteopath is now able to cure a large per cent of the "incurable" diseases, what may not be accomplished when the time comes when an even opportunity will be given Osteopathy to demonstrate its work beside other schools of medicine with the class of curable cases.

Another point that appeals strongly and is particularly gratifying to the Osteopathic practitioner is that, not a certain line of diseases only is treated more successfully by Osteopathic work than other schools, but that the entire field of medicine is covered by Osteopathic therapeutics.
The aim of the introductory part of this work is to give the reader a few ideas along the line of Osteopathy as a therapeutic science by drawing a comparison between drug therapeutics and Osteopathic therapeutics. It is not the purpose of this article to give a historical sketch of Osteopathy, nor to enter into the history of medicine. The one can be readily obtained from reading some of the magazines on Osteopathy and the other by a perusal of various literature on the history of medicine.

Osteopathy includes all that is reliable in the therapeutics of medicine, strange as this statement may seem to some; nevertheless this is the true conception of Osteopathy. For many years and even centuries Osteopathic principles have been employed in the alleviation of human suffering but it remained for Dr. Still to discover and bring together the underlying principles of Osteopathy and to apply such principles scientifically in the prevention, alleviation and cure of diseases. Osteopathy is not exclusively a treatment of mechanical therapeutics, although manipulation enters very largely into the work. It is a system that includes all methods of healing that have been found trustworthy and scientific, whether it be mechanical correction of the tissues of the body, the giving of proper food, the use of antidotes, care and attention to hygienic rules, or nursing and various aids to prevent and relieve the ravages of disease. I wish it to be clearly understood that Osteopathy is on a broad basis and that in a liberal sense it includes all that is good and in accordance with natural laws of the human body and is not confined to narrow channels of thought or bigotry. Our students receive teaching in all branches of medicine save one—materia medica. When I use the term medicine I mean it in its broadest sense—not merely drugs, as many people erroneously think.

The refusal to teach materia medica in Osteopathic colleges constitutes one of the cardinal points of Osteopathy. I may say here there are two differing points between the science of Osteopathy and medical science: (1) The cause of diseases. (2) The cure of diseases. Naturally the second is quite dependent upon the first. A word more in regard to the reputable colleges of Osteopathy. These are not colleges where a smattering of anatomy and physiology is taught with a few Swedish movements and massage-like manipulations. They are colleges that teach each and every branch taught in our best medical colleges, except materia medica and drug therapeutics. These colleges of Osteopathy court the closest investigation from all classes of people, in fact, it is the desire of our colleges to be closely investigated. We have nothing of which we are ashamed and wish honest help to unfold the details of our treatment. If we are wrong, then we are willing to stop; if not, we shall win. Our results must speak stronger than words.

We believe and demonstrate daily that diseases are many times due to simple anatomical derangements; and that, the body being subject to many external influences, disorders of the tissues from an anatomical standpoint occur. Such belief is attacking the very foundation of medical science, as taught by the thousands of medical colleges throughout the world. To an outsider it may seem presumptuous for us to make the statement that we believe the causes of diseases are oftentimes different from those taught in our best medical colleges. So I am obliged to refer such critics to any and all medical literature wherein they must at once see that such a statement is not an outrageous one after all. Take any practice of medicine and one will be obliged to look over several pages before he can find a positive statement as to the exact cause of this or that disease. Not that we claim exactness or to know all in our Osteopathic work but we do claim that we are a step in advance in knowing the causes of many diseases. Neither do we hesitate to give credit to the work of our medical brethren for if it were not for them we would not be where we are to day. It would be preposterous to state that all their work for many centuries has been in vain. The larger part of their work has been scientific, without a doubt, but explorations into the therapeutics of drugs have been largely for naught and I hope to prove it by a writing from the ablest medical pens before this article is finished. Ideas from ancient days still abide with medical men and from
this fact, aided by the demands of the public on account of the public's habits and customs, drugs are given and daily experimentation is the rule. We are not differing from other schools of medicine to any extent more that our work follows closely anatomical, physiological and chemical principles. We are differing from an etiological, and especially from a therapeutical, point of view. We are willing to clasp hands with other practitioners except for this. Fortunately or unfortunately their ethics and dogmas are really born in them. They, as well as the public, will have to be educated along new lines of thought.

As has been stated the real essence of differentiation of Osteopathy from other systems of medicine is in the cause of disease and dependent upon the cause is the cure of disease. We hold that if every tissue of the body is anatomically correct, practically health, must ensue. Thus the real cause of disease is displacement of the tissues—not necessarily a bone, as the name Osteopathy might imply, but any tissue of the body—chiefly bones, muscles, tendons and ligaments. The various atmospheric changes, overwork, strains, slips, falls, blows, etc., are certain to a greater or less extent to affect these tissues and displace them partially or completely, or to strain or contract them to such an extent that they interfere with the flow of blood, lymph, nerve force or other fluids, so as to cause an unequal or abnormal distribution of these fluids. All persons are subject to the effects of atmospheric changes, whether about work during the day or resting peacefully in bed at night. A draft of air, on a damp day, whether one is warmly clad or not, has a greater or less effect upon the musculature of the body. Muscles being contracted at once interfere with the cutaneous circulation, with superficial nerve filaments; and moreover when severely contracted they produce traction upon the bones, especially the vertebrae and ribs, and tend to draw them from the normal position. When so drawn from the normal position they directly interfere with vascular channels and nerve fibers and this is the starting point of the cause of many diseases. The strains, falls, slips, etc., to which all are daily subjected have a similar action upon the tissues but more directly upon the framework (bones) of the body, causing a strained position of the tissues, thus again interfering with the various fluids of the body. Naturally, it repeatedly occurs that these contracted muscles, strained positions of bones, etc. do not amount to anything; no ill effects being derived from them; but how often do they affect us? Just as often as they are deranged to such an extent that nature is unable to cope with the disorder and set them right. That is when vix mediatrix naturae is unable to meet the demand. Then the Osteopath steps in and aids nature to set right these disorders. He is unable to do more, nor can he do less. He is simply an assistant to nature in the capacity of a mechanical engineer of the human body. * * *

We must not lose sight of the importance of many exciting and predisposing causes as given in medical literature. That is, such predisposing causes as heredity, insanitary conditions, disobedience of hygienic rules, the various micro-organisms and scores of causes that simply lead to a disturbed function or a disordered tissue of the body. The Osteopath takes all of these into consideration, but oftentimes they are not the real cause. The Osteopath differs chiefly in that he adds derangements of the tissues of the body to his etiology of diseases.

The all important questions now arise—how do these lesions affect the organs of the body, and how are these lesions removed? I wish here to apologize to all for the free use I make of the word "lesion." I have employed it in the most liberal manner, for I include all structural changes, displaced ribs or vertebrae and contracted muscles as lesions—in fact any anatomical disorder or change that would cause an ill effect. I know of no better word to use.

Exactly how these anatomical disorders affect internal organs hardly comes within the province of this book, but I will state a few ideas along this line. This is one feature of Osteopathic work that is going to require years of study to develop to a point of perfection. That these lesions do affect various organs and cause disease there is not the slightest doubt. The first essential rule is to remove the lesion, whether it be in the bones, cartilage, ligament or
muscle. The second is to regulate the general health of the patient, exclusive of correcting disordered tissues, by attention to modes of living, diet, etc. The removal of the lesion relieves the pressure from nerve fibres and vascular channels, and one can readily see that a fibre or vessel may be impinged upon at a point quite remote from the effect. A nerve being irritated at a certain point by a rib or vertebra may by reflex irritation produce various symptoms in another part of the body. Thus the Osteopath works chiefly along the spine and ribs, correcting these lesions which have effects upon centers in the brain or cord, and correcting also tissues that are influencing nerve fibres and vascular channels directly. Consequently the work is simply to replace tissues so that nature may assume the normal. The Osteopath is able to stimulate or inhibit nerve force but very little; the work is to locate deranged tissues in detail and to correct them. Nature equalizes the forces when they are relieved of their irritating and obstructing influences.

Features to remember concerning Osteopathic therapeutics are that correcting the lesion stands paramount; that the Osteopath does not hesitate to apply methods that are reliable outside of manipulation; that he does not use drugs on account of their ill effects upon the tissues and because they are unscientific.

The point has been made that drug therapeutics is not scientific and that Osteopathic therapeutics is scientific. I quote from Allbut's system of medicine:

"We give drugs for two purposes:

"(1) To restore health directly by removing the sum of the conditions which constitute disease. Here we act empirically with no definite knowledge—often, indeed, with little idea of the action of our drugs, but on the ground that in our hands or in those of others they have restored health in like cases.

"(2) To influence one or more of the several tissues and organs which are in an abnormal state so as to restore them to or toward the normal; with the hope that if we succeed in our purpose recovery will take place. The purpose we effect by means of the influence which the chemical properties of the drugs exert on the structure and function of the several tissues and organs. Minute information therefore of the nature of drugs and their action is essential for their proper employment."

reason why such a tissue or organ is abnormal. He uses the symptoms and morbid conditions presented as clues to find the cause and does not treat these symptoms and morbid states as primary causes. He of course knows that if he can find the real causes and correct them secondary conditions will be remedied. Consequently he examines closely the nerves and vascular supply to the diseased region and removes impingements and irritations found to the forces that govern the area diseased. This is why the principles of Osteopathic therapeutics are applied scientifically. The various strains, falls, etc., which impair the tissues by derangements to the anatomy are carefully located and removed and a cure results, providing a cure is possible. The action of micro-organisms, toxic substances etc., are secondary to disturbed anatomy. If the tissues are correct anatomically health must ensue."
A LESSON LEARNED IN SUMMER AND FALL DISEASES.

ANDREW TAYLOR STILL, M. D.

OSTEOPATHY has made rapid progress in showing its efficacy as a successful system of curing the diseases coming to North America and has been largely recognized in nearly one-fourth of the states of this great nation and Europe also; still out of the 80,000,000 people less than one-fourth of them have heard that there is such a science as is taught and practiced with such satisfactory results as by the American School of Osteopathy, and since the reader is kindly disposed to give all discovery an attentive hearing before giving judgment, we think it is due the inquirer to give all the information we can through the JOURNAL OF OSTEOPATHY.

In the summer and fall, we have fevers and bowel complaints. Our summer complaints generally begin late in the hot weather with running off of bowels, which looseness keeps up from a day or two to a week with pain in the bowels before stool, and with head-ache and back-ache in the lumbar regions; there is generally an aching and soreness of the muscles of the body, and limbs and some fever with chilly feelings; great thirst and loss of appetite; the tongue is generally dry with a crust, as the frequency of the stool increases, pain in the head, spine, limbs and body also increases with an increased temperature to 100 and upwards, which becomes continuous day and night. Now is the time that the patient wants "no cut and try" work, but that the Doctor is worthy and qualified to conduct the management of his cases wisely.

Just at this time the father begins to goad himself keenly to act wisely and leave no chance for rue in case of the death of child, wife or whoever it is—that the best had not been done. If he calls in an Osteopathic Doctor and he should fail, the parent reflects, "how can I go for the old family Doctor? What if he won't come?" and all the "ifs" and "buts," troop in to worry him; lastly he will say to himself—"how can he cure fevers without giving some medicine to cool fever and ease pains?"

These things an Osteopath must meet. He is now among people of good general intelligence on all subjects, except Osteopathy, having fevers and other diseases. This parent will say to him "Osteopathy may be true and can do all and more than is claimed for it, or it may be a total failure and only worth to be set down as a dangerous humbug, but I cannot afford to run any risks in this child's case, as it is a very dangerous and doubtful case;" the sick one dies but fortunately it did not die in the hands of an Osteopath; the parent is free, he has done all that he thinks is his duty and he has no ground for remorse nor sore reflection for the child did have the best of care and all the medicine that Dr. Clarke had ever used before for the flux and many new medicines that the Doctor found in his new book; but they all failed to save the child's life.

The father still feels kindly to the Osteopath and opens out with inter-
ested curiosity and wants to know if the Osteopath honestly believes that Osteopathy can do anything with bloody flux? At this time the way is open to reach the bereaved father's reason; then the practitioner tells him what flux is and why it kills both old and young; in the afternoon of this day's reasoning with the father another son of five summers takes with vomiting and purging mixed with blood; the Osteopath is now asked to go to his house with him and give an opinion in the case; the Osteopath walks over and finds a bad case of acute bloody flux of a violent and very dangerous type and so reports to the parents; they ask the Osteopath if he will try to relieve the child of his misery and suffering; he tells them he will try and will do the best he can; he takes the little boy in his lap and gives the little fellow a treatment first to stop the fever, and the headache; then he treats to relieve the bowels of fever, pain and running off; he comes back next day and finds a well boy, but weak; no drugs were used and there is a house full of friends made happy converts to Osteopathy by results only.

At this time all are so happy and hopeful not only to have heard of the wonder but to have seen its claims proven by curing a child of flux in the worst
form in a family that has just lost a boy while under the best medical skill of this day and age. The Osteopathic doctor now enters a new field of troubles since he has proven to an anxious people that diseases can be cured without drugs. He finds he has placed himself in a position where he must talk to the people and tell them some things of how an Osteopath can cause the human body to become warm when cold, and how to take fever down and how to stop pain and soreness without medicine, either noxious or pleasant. He can easily say "man is a living engine and is driven by brain force; and the lymphatics pour water on a fevered body and put out the fire; and the blood builds up the waste tissue and wasted energy; and the excretions carry off the poisons from the body" and all of that kind of talk. He finds that an Osteopath flourishes better with the wise than with the ignorant for he must tell them how and why he cures all kinds of fevers, diphtheria, croup, pneumonia, and all diseases as he meets them, and gives birth without forceps and almost no pain at all; he finds he must send a dozen or two to our school to learn Osteopathy or be talked to death.

For the good of the stranger who may desire some knowledge of why a Doctor of any school or rank thinks or presumes to reason that Nature can throw off its burdens and be free from all diseases and enjoy good health again, which questions are wisely sent forth from the cautions man or woman, we will say Osteopathy only means a knowledge of the "on" and "off," the "in" and "out of place;" when speaking of curing diseases, Osteopathy cures no disease —no, not one; a skillful and wise Osteopath proceeds to see if every bone is in its place; if he finds it is not, then he knows it is out of place; he sees what mischief is being done by that condition and his duty is to stop and search abnormal mischief. He adjusts everything to its normal position only and leaves the work of curing to be done by the physiological power to heal.

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**SO-CALLED X-RAY INJURIES.**

DAVID LITTLEJOHN, PH. B., M. D., F. S. SC. (LONDON.)

FEW discoveries in recent years have given rise to such universal discussion as the X-Rays. This discussion arises not only from the fact that they afford an opportunity for studying facts and causes in a way that never could have been conceived of previously, but also for the reason that there are phenomena developed in the production of these rays which are the source of much varied speculation.

One of these phenomena is the effect that is sometimes produced upon those who are subjected to the influence of the X-Rays for a long time. This condition is popularly known as "X-Ray burns," but no more misleading term could have been applied. I maintain it is incorrect for two reasons, (1) because the condition is not produced by X-Rays but simply in associa-
tion with them, as I shall try to show later; (2) because it is not a burn, for burns are only produced as a result of the action of excessive heat in connection with some of the tissues of the body. In this case there is no action of heat for there is no evolution of heat from the Crooke's tube, at least not in sufficient amount to have any burning action upon tissues close to it. When the tube is working in a proper manner and emitting the maximum radiance, the temperature of the tube should never be appreciably higher than that of the human body. So that the injury cannot be the direct result of the direct action of heat on the body. Again, if we consider the evolution of the lesion we see that it does not in any way correspond with the evolution of the lesion produced by the direct action of heat.

Whatever be the exact nature of the lesion which is produced, it is a fact that these injuries sometimes do result under certain conditions, after the prolonged exposure of the subject to the influence of the rays. The question which naturally presents itself to us is "what is it that produces these injuries in one case and not in another?" There must be some difference somewhere, or else we would always have the same results. This supposition is in line with the axiom that "like produces like," that is, given a cause, we get a certain result, and if from a similar cause we get a different result, it stands to reason that there must be a difference somewhere in the cycle of events to account for this difference in the effects produced. So the question resolves itself simply into this, "What produces this difference?"

In order to answer this question various theories have been advanced along this line of research, but unfortunately the majority of these theories will not stand the test of practical investigation. One observer holds that the injury is due to the action of ozone on the tissues, this ozone being generated at the point of contact where the X-Rays meet the skin. As a result of experiments made along this line we cannot believe this a satisfactory explanation of the cause of these injuries. Another has placed the blame of occasional injury on the supposition that the X-Rays acting upon the solid particles floating in the air drive them with such force into the skin as to produce injury in these cases. Many other observers have advanced widely conflicting opinions. Among these we find Elihu Thomson stating that the injury is due to certain rays which are emitted and which are absorbed by the skin. He further states that these absorbable rays are produced when we have a tube of low vacuum. We do not believe that considerable experience justifies the acceptance of this as entirely satisfactory. We do know that it is when using a tube of low vacuum that these injuries are most liable to occur. I am inclined to believe that the reason for this is not that there are absorbable rays produced under these conditions, but that it is due to the fact that there is surrounding the Crooke's tube a zone of statical electricity, and that the tube being of low vacuum this statical field is increased in extent, and in consequence of the low grade of radiance which 

is emitted, the subject has to be brought nearer to the anode in order to get the best results, so that in this way the body of the patient is brought into direct contact with this statical field. I am thus compelled to believe that injuries when received are the result of the direct action of this statical zone of electricity on the tissues and are not caused by certain of the rays being absorbed.

My reasons for this conclusion are:

(1) We know that the injuries which are produced are not true burns, but are due to devitalizing action of some kind on the tissues of the body. Now the prolonged application of the electric current has this effect, as those who are familiar with its use as a therapeutic agent can testify. If the electric current be applied for a short time only the result will be a stimulation of the tissues to which it has been applied. If the period of application be prolonged beyond the action of stimulation, we then get over stimulation—irritation is produced. By still further prolonging the time of application a devitalizing effect upon the tissues is produced, and if continued long enough, death of the tissues will take place as the ultimate result. This corresponds with the evolution of the so-called X-Ray burn. We have as
the result of the prolonged exposure to the rays in these cases a devitalizing action on the tissues, and as a result of this devitalization there is death of the tissues produced. This is what occurs in those cases where there is sloughing off of portions of the tissues involved. In the cases where we have simply a dermatitis the condition has not been carried to the same extent, there has only been produced a condition of over-stimulation, or irritation. As a result of this irritation there is an inflammatory change produced in the tissues of the skin.

(2) We know that the further away the body of the subject is from the Crooke's tube, the less liable is the injury to be produced. This indicates that as the body gets away beyond the range of this statical field, the liability of injury being produced is minimized. This would not be the case were it due to the absorption of certain of the rays, as distance from the tube would not lessen the absorbability of the rays, but would be more likely to increase this power did it exist, because the power of penetration of the rays diminishes as the square of the distance from the tube increases. So we see that the penetrability of the rays become markedly lessened the further removed is the body form the tube, so in this condition the rays would be more liable to accumulate on the surface of the body and thus be more likely to be absorbed and in this way increase the liability to injury. This, however, is not the case; therefore we cannot believe that the injury is produced by the absorption of certain rays.

(3) By coating the portion of the body exposed with a thick layer of oil or some other insulating medium, we find that these injurious effects are not produced, even in cases seemingly similar to those in which injury was previously noticed, when the body was exposed without protection. The same result can be attained in another way besides this method of insulation. By interposing between the body of the subject and the tube some conducting medium which does not obstruct the passage of the X-Rays and connecting this conductor to a grounded wire we also prevent the production of these injuries. The object of this conductor is to gather the current of electricity which surrounds the tube under certain conditions and convey it away from the body, thus preventing the current from acting on the tissues of the body and producing this devitalizing action. Now, were the injuries due to the action of the X-Rays themselves, the coating of the body in this manner would be of no benefit, because the rays penetrates these substances without difficulty and consequently the injury would be produced. The action of these insulating media is to cut off the electric streamers which surround the tube and so prevent them from coming in contact with the body and producing the irritant action. This is the only effect that these insulating materials could have. So, for these reasons, I believe that these injuries, when they do occur, are due to the action on the body of this statical zone which surrounds the tube under certain circumstances.

This is sufficient to say in regard to the nature and cause of these injuries. While we admit the fact that injuries of some kind do sometimes result while using the X-Rays, I do not believe that injury was ever produced by the X-Rays themselves. It would indeed be difficult for us to believe otherwise, when we consider the fact that there are now every day hundreds of operators exposing themselves to the action of the rays, and since the discovery of X-Rays thousands have been subjected to the action of these rays and yet how few are the cases of injury which have been reported!

Dr. N. Stone Scott in the American X-Ray Journal of August, 1897, makes an exhaustive report on the subject of X-Ray injuries and gives a synopsis of all the cases of injury that were reported up to that time. The total number of these cases is only sixty-nine. Of this number we find that four were mistaken and of the balance, twenty-three were professional exhibitors who had exposed their hands for several hours a day to the action of the rays, in close proximity to the tube. Even with this they continued their occupation for several months at a time before they complained of any injurious results. This leaves but forty-two who are supposed to have had injury produced by the simple X-Ray examination. Would it be rational to suppose that this injury was due to the action of the X-Rays in these cases
when we consider that during the same time there must have been many thousand X-Ray examinations made? No; the injury is not caused by the X-Rays for, if it were, the cases would have reached up far into the thousands, instead of being numbered by a few dozens.

I believe that even the cases of injuries which have occurred could be avoided. If we use proper apparatus and use it properly it is my opinion that injury not only will not, but cannot result. The question of what is a proper apparatus might be a matter of discussion, but in my opinion there is no doubt in regard to this. I have used both the coil apparatus and the statical machine and unhesitatingly say that the statical machine is not only the best form of apparatus to use, but that it is the only one which should be used in the generation of X-Rays. The advantage of the statical current over that produced by the coil apparatus in the generation of X-Rays is that we get a current of very high voltage and of infinitely small amperage, so that there is no chemical or electrolytic action on the tissues of the body with this current. In this connection I might quote from Dr. S. H. Monell of Brooklyn, N. Y.: "While there is no mechanical device which can not be abused, yet if any physician with a Holtz machine and one of the author's tubes would start out in the morning with the deliberate purpose of inflicting upon himself a 'dermatitis Roentgeni,' by nightfall of a long summer's day he would be baffled in the attempt if he employed the proper method."

My own experience in this connection enables me to reiterate the statement made by Dr. Monell. During the past nine months I have used exclusively a ten-plate machine, and in my examination of the patients of the A. T. Still Infirmary I have had daily opportunity to test the truth of the statement. Of the hundreds of patients who have been examined during that time, many of whom have been exposed for over an hour to the influence of the rays, never one of them has suffered even the least degree of inconvenience as a result. So in view of these facts we must come to the conclusion that the X-Rays never produce injury, and that injury need never accompany their use if we employ proper apparatus in a proper manner. This conclusion is verified by two of our best authorities on X-radiance.

Carl Beck, M. D. says: "Although having made more than 300 skigrams since February, 1896; and knowing of many others, I have never observed any ill effect that could be traced to the rays. I once exposed myself to the rays for more than five successive hours, and did not note the slightest reaction."

Dr. W. J. Morton, author of "The X-Rays, or Photography of the Invisible", in Items of Interest writes: "Never in my experience—and I have continuously taken X-Ray pictures of every sort since the first announcement, more than a year ago—have I seen the slightest injury to a tissue result."

The object of this article will be attained if it serves to drive from the minds of the readers of the Journal of Osteopathy the idea that it is dan-gerous to subject patients to examination by the X-Rays. Not only is there no danger attached to their use, but at the present day no other method is known by which we can reveal the hidden things in the body which produce disease with a shade of the same exactitude.

THE USE OF DRUGS.

H. H. McIntyre, M. D.

THE Osteopathist believes that the internal administration of drugs is useless. He goes further and asserts that infinite harm has been done and is being done, by them. He knows, too, that with all our boasted liberty, we are bound within very narrow limits by tradition and conservatism. It is, therefore, with very great pleasure that he finds his heavy contention against the use of drugs supported by one of the best and most recent of the regular, orthodox, allopathic medical books. No medical practitioner or other person familiar with current medical literature will question the authority when told that the following quotations are from the last edition of Osler's Principles and Practice of Medicine (by William Osler, M. D., Fellow of the Royal Society and of the Royal College of Physicians and Surgeons, London; Professor and Physician-in-Chief to the Johns Hopkins College and hospital, Baltimore, Md.) If it is objected that short quotations isolated from the context do not fairly represent an author, it is replied, that from the beginning to the end of his work Osler deprecates the drugging propensities of the profession, and has reached the great success attained by him in his practice, upon hydrotherapy, hygienic surroundings, good nursing, and above all, upon the rest cure for which the illustrious Hilton so ably pleaded. How much better he might have done under Osteopathic practice he, perhaps, will never know.

The adage of equity law that "Every wrong has its remedy," finds its counterpart in the field of medicine, that "Every disease has its cure." It is the belief, founded on this aphorism, that some specific has been, or will be, discovered for every bodily ailment, and that such specific will take the form of a compound eliminated from nature, that has led all races above the barbaric, in all ages, to demand of the medical man some substance in tangible form as an antidote for disease. The doctor is but one of the people from whom he springs. He can depart no more widely from their standard without condemnation than can the clergyman or the lawyer. With the desire, therefore, to conform to the traditional and expected, nothing obtainable from the heavens above, or from the earth beneath, or from the waters under the earth has been left untried as medicine; and when, at last, the futility of his quest has been demonstrated, he has turned, if intelligent and wise, to bread pills, grass tea and colored water simply in obedience to a demand which he knew not how to withstand. Now, however, we have
reached a plane of higher enlightenment, and from this vantage ground the world is saying to the medical profession with an emphasis which even the most obtuse cannot fail to understand, that something better, something more worthy of the close of the most wonderful century in all time, is expected from it.

Osteopathy as taught by Dr. Still and his co-workers is founded on rational principles and in accordance with the results of modern research in the fields of anatomy, physiology, chemistry and psychology. It teaches that a flow of healthy blood to bodily tissues in normal position means health. It has been tried and proved through many years of active practice in all classes of disease. Its practitioners and students are numbered by thousands. Their success is marvelous.

The conclusions of Osler, whom alone we quote in the following paragraphs, and of the best of the profession throughout the world, are rapidly hastening the abandonment of internal medication. Osler says of typhoid fever:

"A great majority of my patients do not receive a dose. * * * The profession was long in learning that typhoid is not a disease to be mainly treated by drugs."

As to typhus fever:

"Medical antipyretics are even less suitable than in typhoid."

In relapsing fever:

"The paroxysm can neither be cut short nor its recurrences prevented. Quinine does not seem to have the slightest influence. * * * The disease must be treated like any other continued fever by careful nursing, a regular diet and ordinary hygienic measures." Concerning scarlet fever:

"The disease cannot be cut short. Medicinal antipyretics are not of much service in comparison with cold water."

As to measles:

"Confinement in bed and a light diet are the only measures necessary in uncomplicated cases."

Of whooping cough:

"The medicinal treatment of whooping cough is most unsatisfactory."

In influenza (la grippe):

"The medicinal antipyretics should be used with caution."

In dengue (break-bone fever):

"Quinine is stated to be a prophylactic, but on insufficient grounds. Antipyrin may be tried for the pain."

Concerning pneumonia:

This "can neither be cut short nor aborted by any known means at our command. How natural, when on the third or fourth day the crisis occurs and convalescence sets in, to attribute the happy result to some special medicine. How easy to forget that unexpected recoveries occur under other conditions. * * * The young practitioner may bear in mind that patients are more damaged than helped by the promiscuous drugging which is still only too prevalent."

As to rheumatism:

"It is not probable that medicines have any influence upon its duration or course."

Rheumatic fever:

"Medicines have little or no control over the course or duration of the disease, which, like other self-limiting affections, practically takes its own time to disappear."

Yellow fever:

"Careful nursing and a systematic plan of treatment probably give the best results."

Contrast this with Rush's Practice in which he writes concerning a case of yellow fever:

"I took 144 ounces of blood at twelve bleedings in six days. I gave within the same six days 150 grains of calomel with the usual proportion of jalap and gamboge."

Of chronic rheumatism, Osler says:

"Internal remedies are of little service."

As to dysentery:

"It is, in its slighter grades, at least, a self-limiting disease. Its treatment by topical application is by far the most rational plan."

Of erysipelas:

"The disease is self-limited and a large majority of the cases get well without any internal medication."

Diabetes mellitus:

"Medicinal treatment is most unsatisfactory."

Diabetes insipidus:

"The treatment is not satisfactory."

Pericarditis (heart disease):

"Drugs given for this purpose [to reduce the heart's action] such as acouite and digitalis are of doubtful utility."

Endocarditis (heart disease):

"We know of no remedies which will definitely influence valvular lesions."

As to acute Bright's disease:

"No remedies, so far as known, control directly the changes which are going on in the kidneys."

Of chronic Bright's disease:

"Medicines are not required, except for certain special symptoms:"

Progressive muscular atrophy:

"I have never seen the slightest benefit from drugs."

Diphtheria:

"Medicines given internally are of very little avail. * * * 'We are still without drugs which can counteract the toxaemias of this disease, and we must rely on general measures of feeding and stimulants to support the strength."

Of smallpox:

"These measures [cold sponging, cold bath, cold poultice, etc.] are much preferable in smallpox to the administration of antipyretics. Of these called specific, or the internal antiseptics, which have been advised in such numbers, so far as I know, those who have had the widest experience with the disease do not favor their use."

Tuberculosis:

"No medicinal agents have any special or peculiar action upon the tuberculous processes."
Appendicitis:  
"There is no medicinal treatment for appendicitis. Give less opium and trust to the persistent use of ice to relieve pain."

Constipation—causes of:  
"Under this heading may appropriately be placed that most injurious of all habits, drug taking."

Many more extracts of this kind could be adduced from Osler's excellent textbook. Unfortunately the bulk of the profession, not yet educated to this standpoint, still uses drugs, and will, perhaps, continue to do so until its diminishing clientele gives warning that the better practice of the Osteopathic school has been fully recognized by an intelligent public.

In view of the wide-spread and increasing use of the derivatives from coal-tar, such as salol, salicin, antikamnia, antipyrin, antifebrin, phenacetin, etc., the warning sounded by Dr. Hughes, Physician-in-Chief of the Philadelphia hospital, in his recent hand-book on the Practice of Medicine, ought to be repeated here. He says, "I have slowly become convinced that the large increase of nephritic cases (Bright's disease) can be attributed to the widespread use of drugs of the salicylic order."

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**FIVE REASONS WHY AN OSTEOPATH SHOULD KNOW CHEMISTRY.**

C. W. Proctor, Ph. D.

In the first place, an Osteopath is a representative of a learned profession, and can not afford to be ignorant of a subject of which every high school graduate in the country has some knowledge. He is not a street-corner fakir who lives one night in a place: nor is he a so-called specialist, that advertises in great posters that he is prepared to work miracles and moves in a month; but he is to make a permanent home among a people, and win their confidence and regard by his good work, by his intelligence, and by his culture. He is to take a part in the social life of his community, and he does not want to refer all questions concerning chemistry to a medical doctor for an answer. He should be able to point out the superiority of Osteopathy to drugs and convince intelligent people that he knows what he is talking about. To do this he must know Chemistry and Physiology.

In the second place, he cannot understand the simplest processes of digestion, or tissue building, without a knowledge of this subject. What processes form the constituents of the fluids of the body, how urea, uric acid and a score of other waste materials are produced, are impossible to the comprehension of a person who has not studied chemistry. He may memorize what some book says about it, but he will then have no conception of the processes. He may be able to name every nerve, muscle and blood vessel and give the relations of the same, but there is still a great deal about the machine which he does not know, and can not know, without the aid of the chemist. And the better he knows the chemistry the better he knows how useless drugs are as a cure for disease. If he really knows chemistry, he knows that it has its limitations, and that drugs will not do what nerve force and good blood can do. Drugs were begun as medicines, when absolutely nothing was known about the chemistry of the human body; they never have been based upon a knowledge of it. The Osteopath ought to know that fact, for he meets any number of people who suppose that drugs have a magical force such as was ascribed to them in the middle ages.

In the third place, we recognize antidotes for poisons as necessary, for nature cannot possibly provide, unassisted, against a dose of carbolic acid. Of course, the list of poisons is not great, and yet it is almost as extensive as the materia medica. Poisoning by accident and intent is more common these days than small-pox. Indeed five persons are known to have taken poison in this town within one year; and four cases were fatal. There have not been as many cases of small-pox in half a dozen years. In a recent case two children were accidentally poisoned by an overdose of belladonna. Suppose an Osteopath had been called to take the case when the terrified parents sent for another doctor. Such a case is not unlikely to happen. The symptoms and the chemicals are not strangers to the student who has had a course in chemistry and toxicology.

In the fourth place, the analysis of wine is a recognized aid to diagnosis. It is an easy matter to test for sugar or albumin, but a much more extensive application of this method of diagnosis is possible, if the preparation for it be carefully made. The system of urinalysis, which is not based upon a knowledge of chemistry, is a very frail support for an Osteopath.

The time has come when students of Osteopathy demand a strong course in chemistry. And the requirements of the future will call for an increase rather than a decrease of attention in this department.

In the fifth place, future legislation is apt to be similar to that recently passed in Illinois, and examinations in the principles of chemistry are sure to be included in the requirements of the examination before state boards. This also will strengthen the claims of this department. Chemistry is too important in its bearings on all departments of life to be neglected.

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**SURGERY—PAST, PRESENT AND FUTURE.**

J. B. Littlejohn, A. M., M. D.

The history of Surgery is one of the utmost interest to all who would aim to understand the nature of the subject. It has had a very chequered career, and after the years of struggle which have only made its stability more secure, it now stands as a tower of strength far above the power of man to undermine. The history of the science dates away back to the ages long since past; we can go away to the early writings of the world's
history and there we find mention of some of the things which Surgery did, the like of which it is hard to surpass to-day. The world was always the same in its opposition to progress; it was the same history that surgery had to record that the most modern science of to-day has to allow to become recorded in the role of her better development; should we tremble when we hear the opposition and insult that may be heaped on the present when we look back and find that all that is good and true has had the same history, and is to-day triumphant while the scourers are no more? Let us go on and, like the Apostles of the science of Surgery which is with us to stay, choose the best and push it forward with no uncertain hand, but with no attempt at self-adulation.

The first period in the history of Surgery may be said to have existed in fable. This period terminates at the advent of Hippocrates, than whom no worthier hero has ever lived. He was born in the year 450 B.C., the son of a priest, and a priest himself. He wrote the first book of medicine that ever appeared and it lasted with undisputed sway for a period of two thousand years. His great theory was that Nature had a considerable power of repair within herself, and that Nature should be assisted to accomplish it. One of his maxims was: "In cases where choice of remedies existed, choose the simplest." He was very methodical in his manner of reasoning, he always tried to find the history of his cases and judged accordingly. Following him came a number of men who were quite out of harmony with one another and with Hippocrates, and undoing to a very great extent what Hippocrates had done. It was at this period that what we now know as clinics became established, the diseased of all conditions lined themselves along the waysides, and every one who passed by was required to give an opinion in regard to the cases that were similar to cases that they had seen before, and the nature of the remedies resorted to in the treatment of them.

The next important event in history is the appearance of Celsus. He lived in the first century of the Christian era, and the most that is known of him is that he was a distinguished scholar and writer. It is said that the term "Celsus" is simply a term applied to a group of men seeing that so many works have been ascribed to him—more, it is said, than one man could possibly write in a life time. He was the first who is known to have made any reference to the ligation of vessels for the control of hemorrhage, and described a method for the removal of dead bone from the nose which is considered by many to be a modern operation—the splitting of the cheek to remove it. In the second century Galen flourished, and he, living as he did at the time that Rome was in the zenith of her magnificence, was in the position best suited for its accomplishment. He being also a scholar and a writer, is credited with many works, some of them being very valuable. After this, the whole science was in the hands of slaves for nearly five hundred years, superstition and ignorance being rampant. About the close of that period directly the opposite condition resulted. Five years were required for education, and the Roman Emperors paid physicians a large salary and pensioned them off on retiring. After the fall of the Roman empire the science passed into the hands of the Saracens and Arabians, simply because the writings were found by them. The Arabians translated them into their own dialect and so we have the next epoch among those who are familiar with the Arabian tongue, chiefly the Jews. After this, it spread to France and Britain.

About the thirteenth century the profession was still intimately blended with the church, so much so that in order to study medicine a man must be a priest. The consequence was that the pope being opposed to the drawing of blood the servants of the priest were educated to do that part of the work. At the same time leaving their masters the opportunity of drawing the fees. These servants at the same time acting as surgeons or "cutters" were acting as hair dressers and barbers, hence the term, "Barber Surgeon." This condition of affairs created quite a disturbance and it was elaborately discussed as to whether these men should act as "cutters" or "curlers." The signs seen at the door of barbers to-day are the original signs of barber-surgeons, the red and the blue being the color of the blood and the white the bandage, the brass dish the bleeding bowl, and the pole the representative of the piece of wood that the individual held during the operation of bleeding. These men traveled about the country much as the "itinerant doctors" do to-day with their instruments and remedies—I will not say drugs. This is the lowest period on record in the history of Surgery.

The next star that shone in the horizon of progress is Ambrose Pare. He was a barber-surgeon and well did he unfurl to the world his thoughts and investigations. He it was that first attempted to treat wounds by non-irritating dressings. True it was by accident that he became familiar with the benefits of the method, but that is no objection to the fact that he found it, and actually had courage to follow the results of what he had found by accident. He also used the first antiseptic methods that are known to us, using a mixture of alcohol, turpentine and aromatic substances for the purpose. His works are still extant, one being in the congressional museum at Washington entitled, "Chirurgery" and published in the year 1579. After Pare came the Anatomists, John Hunter being the most famous of all. He was born in 1728. It has been said that Surgery was originally a trade in the middle ages. Petitt raised it to an art, but John Hunter raised it to a science, and, as Sir James Paget has said, raised us, its exponents, also to gentlemen. Perhaps no man has ever done so much for the progress of any science as did Hunter. He founded a school with his own money, prepared about 14,000 specimens for a museum with his own hands and gave his own life as a sacrifice that progress might be assured. He is said to have paid $3,500 for a skeleton that he might study and dissected the limb of a dog that he might understand what he studied.
Following his advancements came the most needed and perhaps the most frequently used of any of the modern scientific developments, the knowledge of what we now speak of as Anesthesia. To the United States of America belongs the honor of the introduction, in 1845, of that chemical substance which we speak of as ether and which was followed in 1846 by the introduction of chloroform. These have been the best that have yet been found for alleviating the sufferings of those required to pass through the hands of the Surgeon; and truly fortunate it has been to the world and humanity that science has led up to such attainments. Since their introduction greater fields are open and greater possibilities present themselves to the skilled surgeon. Since that time, aseptic Surgery has made rapid strides and it has now been possible to undertake Surgical methods of treatment which were until the periods of Anesthesia and Listerism impossible. Surgeons now have no fear in making incisions into the different cavities of the body, removing organs in whole or part, and allowing patients otherwise doomed to death, years of life and happiness. It requires but moderate experience even among practitioners to look back to their earlier history and see the lives sacrificed from the want of appreciation of these facts with which we are now so familiar. It is even the beginning only of what is yet in store for the progress of that science which has done so much for mankind.

It is hardly possible for us, in the light of modern scientific developments, to anticipate where the end may be; but there is one thing sure—come when it may—that even these may be supplanted. Perhaps I ought to explain that my argument is to prove that the production of Anesthesia by chemical means is simply artificial, but that there is without doubt a possibility of the production of anesthesia by methods entirely different and which can come after years of study only and a thorough comprehension of the Physiology of the human body! By this we mean that it is possible, by a better comprehension of the function of the nervous structures of the body, not merely in their distribution to the tissues, but in their higher centers, to be thoroughly controlled by physical forces so that Anesthesia, either local or general, may be possible.

When this epoch is reached we shall have reached a stage, where "heart diseases" will cause the Surgeon no apprehension, but when he may with all reasonable expectations of success undertake surgical treatment in patients affected by diseases of that description. Neither is it only along the line of Anesthesia that better results are possible, because we can hardly think it possible with a better knowledge of the human body, with a better comprehension of the life-history of micro-organisms and with the thorough knowledge of the results of micro-organic life, that aseptic Surgery is simply in its infancy.

We are even now on the border line of better things. We are passing away, or at least we ought to pass away, from the scenes of butchery and disfiguration and are reaching to the point where humanity and disease are the principles of attention, and not the attainments of wealth and position of those who have hitherto held the sway. We have now long since passed the day when it is necessary to experiment before we know what treatment to adopt, or what chance we have of patients' lives when suffering from certain forms of diseases. We know, or we ought to know, what organs are involved, what structures are diseased, and what treatment is necessary.

The close of the century is nearly reached and it remains with those who would face the passing years to leave behind their ignorance and to reach forward to that better day when they can conscientiously and honestly treat the sufferer to give relieve and expect to rescue the dying.

THE DIAPHRAGM.

WILLIAM R. LAUGHLIN, A. M., D. O.

The word diaphragm is a Greek word meaning a partition wall. It is a musculo-fibrous septum, situated between the upper one-third and the lower two-thirds of the trunk. It separates the thoracic cavity from the abdominal cavity. It is the floor of the former and the roof of the latter, its general shape is somewhat like that of an umbrella or an irregular dome. The upper surface of it is covered with the right and left pleura, between the two pleurae it is covered with the pericardium. Its circumference is elliptical in form, highest at the ensiform cartilage. The highest part of all the diaphragm is on the right side immediately above the liver. This is a little higher than the left side, the lowest part of it is the right crus which reaches to the fourth lumbar vertebra. The under surface is covered with peritoneum. It is one of the so-called double bellowed muscles. It has its origin in front from the ensiform cartilage, from the sides, from the under surfaces of the cartilages and bony portion of the six or seven lower ribs interdigitating with the transversalis muscle, also from the two aponuoretic arches called the ligamentum arcuratum externum et internum. The first one is the covering of the psoas magnus, the other is the covering of the quadratus lumborum. Behind it connected to the spine by two crura or legs, the right one is the longer extending from the anterior surface of the bodies and intervertebral substance of the three or four upper lumbar vertebrae; the left one from the anterior surface of the two upper ones. From this origin it passes to the central or cordiform tendon which consists of three leaflets, the right one is the largest, the left one the smallest and the middle is intermediate in size. On each side of the ensiform attachment there is a weak place which may be broken; then we may have what is called a phrenic or diaphragmatic hernia. Some of the contents of the abdomen may protrude into the chest, or pus in the mediastinum may descend through it into the abdominal cavity. The diaphragm has three large and several small natural
The one most posterior is really not in the diaphragm but between the two crura, however it is spoken of as being in the diaphragm, and is when the two crura are joined posteriorly by a tendinous band. This is called the aortic opening, and transmits the aorta, vena asygos major, the thoracic duct and sometimes the left sympathetic nerve, when this nerve does not pass through this opening it goes through the left crus. The vena asygos major occasionally goes through the right crus. The second large opening is in front and a little to the left of the aortic opening, it transmits the esophagus and the pneumogastric nerves. The left pneumogastric passes in front of the esophagus. The right one which passes behind it goes into the solar plexus which is situated behind the stomach. The third large opening is farther in front than the others and lies in the central tendon. It is somewhat quadrilateral in form and is called the foramen quadratum, the inferior vena cava passes through it.

The smaller openings are through the crura. Those in the right crus transmit the greater and lesser splanchnics and the sympathetic nerves of the right side, occasionally the vena asygos major. The left crus transmits the vena asygos minor, the greater and lesser splanchnic nerves of the left side and the sympathetic nerve of the left side when it does not pass through the aortic opening. The blood supply of the diaphragm is derived from the two phrenic, the internal mammary and the lower intercostal arteries. The phrenic arteries are two small arteries which may arise separately from the aorta above the coeliac axis or by a common trunk which may come either from the aorta or coeliac axis. Often one is derived from the aorta and the other from the renal arteries. They very rarely arise as two separate vessels from the aorta. The nerve supply is the phrenic which comes from the 3rd, 4th and 5th cervical nerves. The phrenic plexus also helps to supply it. This plexus is made by the phrenic nerve and branches from the semilunar ganglion of the solar plexus. The laity call the diaphragm the midriff which comes from two Saxon words which mean the middle of the belly. Not long since I was reading a piece where a pugilist was telling how he intended to dispose of his opponent. He said "I will hit him in the midriff, that will get his wind." The solar plexus or abdominal brain and the phrenic plexus are situated near the diaphragm. The former behind the stomach and the latter formed by branches from it. These plexus or plexuses belong to the great sympathetic system, which governs the involuntary actions. A severe blow upon the head may knock a man senseless but he still lives. His heart and lungs still act, being governed by the sympathetic system, but if he receives a severe blow upon the diaphragm it may produce instant death. The pugilist has learned this much about anatomy and if he were not trained to the hour more would be killed than are by this so-called solar plexus blow. The diaphragm is the chief muscle of respiration. The lower ribs may fall down thus drawing the diaphragm out of its natural position, in this way somewhat obstructing the passing of the blood through the aorta. I have known of one case in which the diaphragm was pulled down by the lower ribs causing an irregular action of the heart. As soon as they were replaced the heart acted in a natural manner. Tight lacing or any cause whatsoever which will impair the natural action of the diaphragm will cause much pain.

Man is the only animal in which the transverse diameter of the diaphragm is greater than the antero-posterior. It begins to be developed about the ninth week of foetal life and grows from the circumference to the central tendon. All mammals or milk-giving animals have a diaphragm. Man and the horse are examples of land animals, the whale and the sea-cow are examples of water animals which have diaphragms. Birds possess a rudimentary form, which is best shown in the abyerx.

ILLINOIS AND TENNESSEE ACT.

Laws Enacted in Both States that Secure Osteopathic Services to their Citizens-

Two more states have been added to the Osteopathic column. A general law providing for the new drugless school in Illinois and a special law similar to Missouri's in Tennessee show a good month's advancement. The Illinois statute is:

A BILL.

For an act to regulate the practice of Medicine in the State of Illinois, and to repeal an act therein named.

Section 1. Be it enacted by the people of the State of Illinois represented in the General Assembly: That the State Board of Health shall organize within three months after the passage of this act; it shall procure a seal and shall receive through its secretary applications for certificates and examinations. The president and secretary shall have the authority to administer oaths, and the board to take testimony in all matters relating to its duties.

Section 2. No person shall hereafter begin the practice of medicine or any of the branches thereof, or midwifery, in this State without first applying for and obtaining a license from the State Board of health to do so. Application shall be in writing, and shall be accompanied by the examination fees hereinafter specified, and with proof that the applicant is of good moral character. Applications from candidates who desire to practice medicine and surgery in all their branches shall be accompanied by the proof that the applicant is a graduate of a medical college or institution in good standing, as may be determined by the board. When the application aforesaid has been inspected by the board and found to comply with the foregoing provisions, the board shall notify the applicant to appear before it for examination, at the time and place mentioned in such notices. Examinations may be made in whole or in part in writing by the board, and shall be of a character sufficiently strict to test the qualifications of the candidate as a practitioner. The examination of those who desire to practice medicine and surgery in all their branches shall embrace those general subjects and topics, a knowledge of which is generally and commonly required of candidates for the degree of doctor of medicine, by reputable medical colleges in the United States. The examination of those who desire to practice midwifery shall be of such a character as to determine the qualification of the applicant to practice midwifery. The examination of those who desire to practice any other system or science of treating human ailments who do not use medicines internally or externally, and who do not practice operative surgery, shall be of a character sufficiently strict to test their
JOURNAL OF OSTEOPATHY.

589

official duties, or to any person who
ministers to or treats the sick or
suffering by mental or spiritual
means, without the use of any drug or ma-
terial remedy.

Section 8. That any itinerant vendor
of any drug, nostrum, ointment or appliance
of any kind intended for the treatment of
diseases or injury, who shall vend or sell
any such drug, nostrum or appliance or
who shall, by writing or printing, or any
other method, profess to the public to cure
treat disease or deformity by any drug,
nostrum or appliance, shall pay a license
fee of five dollars for the privilege of
serving a notice thereof in the manner
required by this act.

Section 9. Any person practicing
medicine or surgery or treating human
ailments in the State without a certificate
issued by this board in compliance with
the provisions of this act, shall be fined
not less than one hundred dollars for
each offense, and such certificate or,
otherwise, shall be deemed guilty of a
violation of this section, and upon conviction
shall be subject to the penalties hereinafter
provided.

Section 10. Upon conviction of either
of the offenses mentioned in this act, the
court shall, as a part of the judgement,
order that the defendant be committed
to the common jail of the county until
the fine and costs are paid, and upon failure
to pay the same immediately the defendant
shall, in addition to the foregoing order,
order first offense not more than thirty (30) days,
and for each subsequent offense not more
than ninety days; PROVIDED, that
both parties may appeal in the same
time and manner as appeals may be taken in
other cases. But that where an appeal is
prayed in behalf of the people, no appeal
bond shall be required to be filed, whether
the appeal be from a justice of the peace
or from the county or circuit courts, or
from the appellate court. But it shall be
sufficient in behalf of the people of the
size, or by any other method, to pray
a petition to the legislature of the
State Board of Health, to pray an appeal and
thereupon an appeal may be had without
bond or security. On the 30th day of
September of each year the State Board
of Health shall make a report of its pro-
ceedings and of all money received and
disbursed in the enforcement of this act
and

Section 11. All funds in the treasury
of the State Board of Health on the 30th
day of September of each year which have
been received in the enforcement of this
act shall be paid by the board into the
State treasury.

Section 12. An act to regulate the
practice of medicine in the State of Illinois
approved June 17, 1887, in force July
1, 1887, and all provisions of acts inconsistent with this act are hereby
repealed.

The Tennessee Law.

AN ACT
Regulating the practice of Osteopathy in
Tennessee.

Section 1. Be it enacted by the General

Assembly of the state of Tennessee that any person having a diploma regularly issued by the American School of Osteopathy at Kirksville, Mo., or any other legally chartered and regularly conducted school of Osteopathy, who shall have been in personal attendance as a student in such school for at least four terms of not less than five months each before graduation, shall be authorized to treat diseases of the human body according to such system, after having filed such diploma for record with the Clerk of the County Court in which such person resides, and having filed with such clerk an affidavit that such diploma is genuine, and that he or she is the person to whom the same was issued, and that all the provisions of this act were complied with before the issuance of such diploma whereupon the clerk shall record such diploma in a book to be provided by him for that purpose, and shall endorse on such diploma the date of filing the same, for which he shall receive from such person a fee of $1.00.

Section 2.—Be it further enacted that any person who shall attempt to practice or use the system, method or science of Osteopathy in treating diseases of the human body without having complied with the provisions of this act, shall be deemed guilty of a misdemeanor, and upon conviction thereof be fined in a sum not exceeding $100 for each offense, provided that nothing in this act shall be construed as prohibiting any legally authorized practitioner of medicine or surgery of this state from curing or relieving disease with or without drugs, or by any manipulation by which any disease may be cured or alleviated.

Section 3.—Be it further enacted that this act take effect from and after its passage, the public welfare requiring it.

REPORTED BY TRAIL & RENNINGER, WASHINGTON, D.C.

Terrible Headache. Case No. — Mr. E. R., aged 32, employed at War Department, came for treatment Feb. 20th. History: From boyhood has been afflicted with terrible frontal headache, coming on as a paroxysm, leaving a dull pain lasting until the next attack which would be induced by some extra fatigue or excitement. Had taken every remedy known to the pharmacopoeia, prescribed by numerous doctors in many cities with only temporary relief. At last his heart become so easily affected by the various causal tar alkaloids he was obliged to stop them. About a year ago he began to have severe pain in lumbar region which alternated with the frontal pain, causing complete prostration, while it lasted, which would be from two to three days. Was subject to malarial seizures and fits of deep depression with a strong inclination to give up at first sign of an attack. The trouble with the head was supposed to come from over work in school by some, while others diagnosed it hydrocephalus.

Examination: Patient 5 feet, 7 inches, weight 135, head very large with prominent frontal development, mind active.

The cervical region showed no lesion other than a muscular contraction on the right side. The dorsal region anterior in upper half, good in lower half, excepting the eleventh which was badly twisted to the left and posterior, causing rather frequent attacks of polyuria. Lumbar region tendency is posterior with the 2d prominent and the 5th very much so, with a lateral tendency. The sacrum is tilted forward thus increasing the peculiar lesion at the lumbo-sacral articulation. The left innominate was slipped, lengthening the leg.

These lesions have been corrected with good results, especially the headache which has disappeared entirely. The slipping of the 5th lumbar is noticed at once by the patient now as it causes weakness and pain in that region but does not seem to affect the head. The back is strengthening with each treatment and he now rides a bicycle with little fatigue which had been an impossible exercise heretofore. He has regained his nerve, is cheerful, his general health much improved and although, when beginning the treatment he was a skeptic, he now firmly believes in ultimate recovery. Doubtless the stopping of all medication has helped much. In the absence of any specific lesion in the cervical region the question is, was the headache extending over all these years caused by the lumbar displacement via the hypogastric plexus and sympathetics?

REPORTED BY R. M. HUCKMASTER & SON, D. O., HENRYVILLE, NEW HAMPSHIRE, NOW OF BUFFALO, N. Y.

These affidavits are furnished by patients: MONCTON, N. B., Feb. 7, 1898.

Asthma.—To whom it may concern: I hereby certify that I have been afflicted with asthma a greater part of the time for the last three years. It was probably the result of a fall and injury received in a runaway. Before receiving the injury to my back I was in the best of health and my weight was 150 lbs. For the following two years and a half it would be impossible for me to give the faintest idea of what I endured. For months at a time I was unable to get a night's rest or do a day's work. During
this time I consulted a number of physicians and tried nearly every asthma cure I heard of, but all to no avail. I grew steadily weaker and was reduced in weight to 130 lbs. Hearing of Osteopathy and the wonderful cures effected by Dr. Buckmaster I put myself under his care. I began to improve from the first. I was able to sleep soundly from the first treatment. My appetite increased and I steadily gained in weight. I have been out in the cold and roughest weather every day during the winter and have had no return of the asthma. I have every confidence in Osteopathy and Dr. Buckmaster and I firmly believe, were it not for Osteopathy, I would be confined to the house at the present time.

FRED R. LYNCH.

Testimonial No. 2.

Feb 28, 1899.

It is now one year since I was cured of asthma and I am still feeling well and anticipate no more trouble. Thanks to Osteopathy.

FRED R. LYNCH.

The following testimonial was published in THE DAILY TIMES OF Monton, N. B.:

Nausea, Chronic Constipation and Partial Paralyzis:—"I take pleasure in stating to the public the wonderful results of Osteopathy as a remedial agency. On the morning of the 18th I became suddenly ill with nausea and vomiting accompanied by great weakness. I sent for Dr. Buckmaster who gave me an osteopathic treatment which immediately relieved the sickness, and in a very short time I was easy and comfortable. Dr. Buckmaster has been treating me for chronic female trouble and I am much improved and expect complete restoration to health. My husband has also been cured of a very stubborn case of chronic constipation for which he has taken powders and pills every day for thirty years. My husband was also practically helpless from partial paralysis. He has been completely cured, notwithstanding he received a severe injury in a railroad wreck while taking Osteopathic treatment.

MRS. ALICE S. CARSON.

REPORTED BY JOSEPH H. SULLIVAN, D. O.,
504 MASONIC TEMPLE, CHICAGO.

La Grippe.—An osteopathic patient here, Mrs. T., was taken down with the dreaded la grippe in its worst form. Contrary to the advice of her friends she sent for her Osteopathic attendant. Next day three more of the family were taken down and it looked very much as if they were all destined to have the usual run of fever, aches and pains. Osteopathic attention altered the symptomatology however, and the entire party are now out of bed within a week. Did they need medicine? No. They needed only an engineer to keep Nature's wheels running in their proper places, to keep the automatic governing centers of their nervous systems free and untrammeled. Thus all came through much easier, they now believe, than would have been the case with quinine and whisky. We do not need medicine.

REPORTED BY M. E. HUFFETT, D. O., COLUMBUS, OHIO.

Dysentery—Dysentery finds its master in Dr. Still's drugless science. A child, passing its second summer and "teething," was for several days burning up with fever; stools—green and slimy—an average of every ten minutes. The parents were much comforted (?) by the expressed sympathy of would-be kind neighbors for the poor little sufferer who "would surely die if it was not given medicine." But they had wisely concluded that if the child succumbed, it might die naturally and not through the agency of poisonous drugs. Under the treatment the little sufferer was relieved in a few days and made rapid recovery. From theory we are taught that Osteopathy will handle every curable condition of disease to better advantage than drug medication, and from what little observation and experience that I have had I believe the results will sustain the theory. Our practice continues to grow here, perhaps from the fact that we get results, although we have run against some of the most stubborn (from the medical standpoint) chronic disorders; but Osteopathy is equal to the emergency.
Osteopathy is creating a sensation in Brooklyn and New York City in the excellent results being secured by Dr. Herman T. Still who located there less than four months ago. The Brooklyn Infirmary of Osteopathy at 88 Garfield Place has already won unanimous reports of success. Upon its roster of patients appear the names of some of Gotham's best known people. Dr. Herman Still is the youngest son of the discoverer of Osteopathy and he has enjoyed unexcelled opportunities for equipping himself for the practice. After July 1st Dr. Charles F. Bandle will be associated with the Brooklyn Infirmary.

Dr. Harry Still Returns to Kirtksville.

Dr. Harry M. Still, second vice president of the American School of Osteopathy, has returned to Kirtksville out of regard for the urgent demands for his services at the A. T. Still Infirmary. In the short time of his association with Dr. A. G. Hildreth at 708 Commercial Building, St. Louis, a large practice was built up and many new friends were won over to Osteopathy. Dr. Hildreth will remain in St. Louis to take care of this practice. An interesting cure of chorea is reported by Dr. Hildreth in this issue and he has promised additional reports of like value for June. Dr. Harry Still's extensive circle of friends and local patients are glad of his return.

Dr. Effie Sisson is at Oakland, California.

A queer chain of events have taken Dr. Effie Sisson, one of the best students of the June '88 class, from Belvidere, Ill., where she was recently engaged in practice, to Oakland, California. Her sister, Mrs. A. J. Guilford, of Calio, Cali., was on the point of submitting to a dangerous operation for tumor. Dr. Sisson wired against it and started to her. She found the diagnosis incorrect and in a surprisingly short time had the patient well. The drug doctor, an unusually clever man, watched the advancement in the popularity of Osteopathy among the people of Texas and says the southwest is a good field for graduates.

Dr. Herman T. Still's Success in Brooklyn.

Dr. C. L. Rider and Dr. Marion Clark are now meeting the senior class in an extra quiz with demonstrations in Osteopathy five times a week as an additional help to the candidates for graduation.

Dr. Joseph H. Sullivan left Osteopathy's interests at 504 Masonic Temple, Chicago, in the hands of Dr. Mary Kelly long enough to come to Kirtksville after the cycle to see if his friends needed him. While here the Atlas Club corralled him and he wore a gold atlas bone back to Chicago.

Osteopathy in Northern Michigan.

Dr. Samuel R. Landes, whose practice at Grand Rapids, now includes a score or two of the most influential families in Michigan, will conduct offices for the summer and early fall at Mackinac and Petoskey, Michigan's famous resorts. Dr. Landes reports that Osteopathy is signally successful in the treatment of Asthma which is the prevailing disease among the summer visitors of Northern Michigan.

Dr. C. L. Rider Joins the Infirmary Staff.

In response to the increase of Infirmary patronage Dr. C. L. Rider has been recalled from Sherman, Texas, to resume his duties as an operator on the staff of the A. T. Still Infirmary. Dr. Rider and Dr. H. T. Still sold out their practice at the Sherman Infirmary to Dr. D. L. Clark who will continue to represent Osteopathy in Northern Texas. Dr. Rider reports steady treatment without boiling and at its successful termination turned over fifteen of his other patients to Dr. Sisson and said he was going back to school to learn Osteopathy. After doing more good work at Delano the patients insisted on Dr. Sisson locating in the Pacific slope so she selected Oakland where a number of her Delano patients have followed her. She is enthusiastic over her new field and reports having all she can do to take care of her practice.

Dr. W. J. Conner in Kansas City.

Dr. Washington J. Conner, one of the earlier disciples of Dr. A. T. Still, has located permanently for general office practice at 294 New York Life building, Kansas City, Mo. He entered upon practice here May 15th and is pleased with the showing made by the friends of Osteopathy in that city. Dr. Conner was for years on the staff of the A. T. Still Infirmary and has good experience in the practice. For two winters he has been associated with his brother, Dr. D. L. Conner, in conducting the Phoenix Infirmary of Osteopathy in Arizona where he had close acquaintance with pulmonary and bronchial diseases. He reports an exceedingly successful winter's work among Arizona's invalids and says that Osteopathy has revealed, after two seasons of application, that many of the supposed tuberculous patients who look to that climate do not have tuberculosis at all, often presenting simple cases to cure. Many of Dr. Conner's old patients dwelling in Kansas City will welcome him to their city.

"Crutches for Sale" As a Novel.

"Crutches for Sale" the successful Osteopathic Drama by Dr. William Smith and Robert Dutton, has been written as an interesting novel by John R. Musick and is now in the presses of Tennyson Press, Chicago. It will make an attractive book bound in both cloth and paper. Special rates to Osteopaths for wide circulation.

ON SINCE APRIL 30.

THE "KATY" FLYER.

The A. A. A. O. Convention.

"The Board of Trustees have decided that the next meeting of the National Association of Osteopaths shall be held in Indianapolis, Ind., July 5th and 6th, 1890.

"I am informed that the Associated Colleges of Osteopathy have also decided to hold their annual meeting at the same time and place. The location is central. The time is such that both teachers and students from all Colleges may be present, which should insure a large attendance, an attendance from all states and from all schools.

"At this meeting there is much that should be done. The present officers of the Association have received scores of letters, with reference to matters over which they have no control. Several members have thought proper to criticise the organization and perhaps these criticisms were not without just grounds. If, therefore, there is something which I believe there is—it is in our constitution—it lies at the very foundation of our organization. In 1786 the Articles of Confederation were found to be unequal to the demands, and as a result, a constitution was drafted which was not without just grounds. If, therefore, there is something which I believe there is—it is in our constitution—it lies at the very foundation of our organization.

"The present constitution is not equal to the exigencies of such an organization as ours—if it is weak, if it is uncertain and not calculated to endure, let us at the coming meeting draw up and adopt a constitution that is fully equal to the demands of the hour. Let us be generous. "All things in their place are best." The present constitution has at least served us for a time. It has served to show us what we really need, and what we should really do.

"Then let us have a full meeting at Indianapolis, July 5th and 6th, and frame a constitution that will be equal to any and every emergency. Let us frame a constitution that will be strong, that will be abiding, that will protect, defend and unify.

"Let us make, if necessary, a sacrifice to be present—let us meet not to debate but to act."

"S. C. MATTHEWS.

"President."
Dr. Belle F. Hanna, secretary of the state reception committee, writes that every preparation is being made at Indianapolis to receive the guests. She urges a full attendance of the membership. The convention will be held in the Propylaeum. This program is announced:

**WEDNESDAY, JULY 5.**

**Invocation.**
8:45-9:00 Opening Address, Dr. S. C. Matthews, President.
9:00-9:20 "The A. A. A. O.,” Dr. F. W. Hannah.
9:20-9:45 Discussion, Dr. A. G. Hildreth.
10:30-10:50 Discussion, Dr. H. E. Patterson.
11:15-11:35 "Courses of Study," Dr. Dain L. Tasker (P. S. O.).
11:35-1:00 Discussion, Dr. J. H. Shackleford.
1:00-1:25 "State Organizations," Dr. D. Ella McNicoll.
2:05-2:30 Discussion, Dr. M. F. Hulett.
2:50-3:15 Discussion, Dr. Wm. J. L. Laffing.
3:35-4:00 Discussion, Dr. J. S. Gaylord.
**INTERMISSION.**

**THURSDAY, JULY 6.**
8:45-12:00 Business Meeting.
1:45-4:45—Unfinished Business, (if any.)
Reports from Osteopathic Schools.
Short Articles on Varied Topics.
Association Talks (General).
Exchange of Experiences.
Next Annual Meeting Discussed.
Adoption of Resolutions.
**INTERMISSION.**
8:30 Public Address and Banquet.

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**OSTEOLOGY AT MACKINAC AND PETOSKEY.**

During the months of July, August, and September, Dr. S. R. Landes, of Grand Rapids, with assistants, will divide time between Mackinac and Petoskey, northern Michigan, for general and specialty practice. Dr. Landes is a graduate of the American School of Osteopathy.

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