

The progress of medicine during the last score years—covered by the life of the University of Oklahoma school of medicine—has been phenomenal, as so ably described in the article by Dr. M. M. Wickham, M.A. '20, M.D. '26. Doctor Wickham, now practicing in Norman, was a member of the university faculty during 1920-21 and 1922-26. He has been a former newspaperman, has a variety of interests including zoology, was executive secretary of the University club of Oklahoma City during the period of that club's greatest growth, was secretary of the Oklahoma Institute of Arts and Sciences of Oklahoma City, which for years was the lyceum of the capital, was president of the Oklahoma Academy of Science and of the Cleveland County Medical association

Medical advances and modern trends

BY M. M. WICKHAM

THE annals of medicine record no period of progress comparable to that of the past few decades in discovery, research, refinement, education, and application in the healing art. More has been accomplished in the past fifty years in the science of medicine, than in the two thousand years preceding.

So great is the magnitude of fact, theory, and detail that in reviewing only the more trenchant and salient facts of its progress and trend in recent years, the essayist, must perforce, omit mention of innumerable names and details, as well as near-discoveries, and near-applications. Limited thus by a synoptical flight, one may take a kaleidoscopic vista-view of the peaks of medical progress the past two decades leading to our present time.

Fundamental principles, in most cases, were laid down before the beginning of the past two decades, though there have been many added discoveries, and extensive checks and researches begun.

The modern era of medicine, based on anatomical studies of Harvey and many others, had its inception in the studies of Pasteur, himself, not a physician. The foundation of modern medicine and surgery, turning from empirics, was laid on a scientific basis when, in 1858, Pasteur announced that he had proved experimentally that all fermentations were caused by living cells. In its application to surgery, the great step was taken by Lord Lister in 1869, when

through antiseptics he led onward to asepsis.

In medicine, Koch in 1882, applied these same principles to other than surgical diseases in announcing his discovery of the tubercle bacillus, and proving by his postulates that this microbe is the cause of tuberculosis. These discoveries explain Jenner (1749-1823) whose empiric discovery of vaccination has not to this day been improved upon.

Anatomy is, of course, the same, but the work in histology the past twenty years has added considerable to the knowledge of anatomy. While Bichat, over a hundred years ago, laid the fundamentals, histopathologists are still making discoveries of importance.

Claude Bernard (1813-1878) did the pioneer work which has become the basis of modern physiological chemistry, rich in discoveries, and initiated problems, and shedding light upon metabolism and the deficiency diseases.

Pain stood with his flaming sword to ward off the surgeon from his Eden of possible achievement until the era of anaesthetics—the term "anaesthesia" being proposed by Dr. Oliver Wendell Holmes. Long, 1842, first used ether, and Morton, 1846, gave ether to a patient in the Massachusetts General hospital, being operated upon for the removal of a tumor from the jaw. Thereafter, with this talisman in conjunction with asepsis, surgery in America and Europe leaped forward by bounds, through the modalities of local, block,



sacral, spinal, and gas anaesthesia in use today.

Development of refined surgical technique practiced by Murphy, Kelly, and others of the preceding generation has made possible gastro-intestinal and neuro-surgery of our times. Leube developed the sero-serous suture, and Billroth laid the foundation for surgery of the stomach.

Roentgen, 1895, extended the field of visibility in opaque structures by the discovery of the X-ray. In 1910 the X-ray was used for demonstration of fractures. Rapidly thereafter it began to be of value in examination of lungs, intestines, and other soft structures. More recently it is now employed in examination of function of the gall-bladder, urinary tract, generative organs, blood vessels, tumors of the brain, spinal cord, mammary glands, and the heart.

Radium, discovered by Madame Curie (1899) has, along with Roentgen ray, and the primacy of surgery, formed a triumvirate in the modern crusade against cancer in all its forms. Perfection of the Coolidge tube, now represented by the Westinghouse (American) and the German tube give reliable radiographic and radiotherapeutic results, notably in the last two decades.

The ultra-microscope leading up to 2000 diameters or more has added precision to the morphological concepts in bacteriology, and paved the way for visual determination of specific organisms hitherto known only by cultural or indirect reactions.

In the field of immunology and serology diphtheria and scarlet fever immunization have been established; and prophylactic immunization secured in

gas gangrene and tetanus. This period records improvement in technique and curative value of sera for Type I Pneumonia.

Allergy having its rise, and finding its acceptance in the latter half of this period, began its observations with asthma, and hay fever. Latterly the principle of sensitization has been extended to the study of migraine, urticaria, dermatoses, and gastro-intestinal reactions specifically, and on a Mendelian basis. Desensitization is the principle of therapeutics.

Obstetrics and gynecology have shifted to more conservative methods. Maternal and pre-natal care have been emphasized along with special hospitalization. Morbidity has been reduced, but maternal mortality remains statistically higher. Other factors explain this.

Salvarsan was the keystone in combating syphilis at the opening of this period, and remains so today, advancement being markedly featured in the refinements of the drug and related adjunctive arsenicals, as well as the technique employed. In this field a more cautious attitude has been developed regarding "cures," and emphasis placed on checks and follow-up. The World war advanced the education of millions in the utility of syphilis therapy, which was reflected among the civilian masses, provoking a rational popular co-operation in combating this disease.

Urology, of all the specialties, has probably advanced to the position most nearly approaching that of an exact science in recent years with employment of cystoscopy, dye visualization, and instrumentation, making differential diagnosis of inflammatory, Dietl's neoplastic, and stone conditions possible.

Psychiatry has in recent years completely remolded public conceptions regarding mental diseases, and launched upon extensive revision in methodology both in private practice, and institutionalism. Greater attention will be accorded this field with opening days.

To epitomize briefly chief advantages and departures during the past twenty years, must be mentioned: the discovery of insulin for treatment of diabetes-mellitus, by Banting; parathormone, the active principle of parathyroids, for treatment of tetany, or impaired parathyroids, by Collip; the discovery of thyroxin, by Kendall; the better understanding of goiter, and the rationale of iodine in its treatment, especially in the preparation of patients for surgical operation, by Plummer; the Whipple treatment for pernicious anemia—the administration of liver and liver extracts; the remarkable development of knowledge in connection with the endocrine system, which has a bearing on practically every department of medicine; radiotherapy; the revival of rational physiotherapy; the work of d'Herelle on bacteriophage; uro-selectan

for visualization, especially in the kidney; cholecystography; Ascheim-Zondek test for pregnancy; the isolation, determination, and use of vitamins in the newer dietetics based on bio-chemistry; the refinement of the arsenicals; the common use of blood transfusions; the substitution of opiates by a large number of non-narcotic and non-habit forming derivatives; the rise of industrial surgery in America, formerly more advanced in Europe; and surgery of the chest, especially in connection with tuberculosis, "collapse therapy" being the most notable advance, along with phrenic nerve operations, and thoracoplasty; the advancement of public health education; improved hygiene and sanitation; the establishment of social service departments, clinics, both private and public, and both special and general; and increased attention devoted to maternal and child welfare, in all of which there has been a shifting from curative to preventive methods.

The National Association for the Study and Prevention of Tuberculosis, organized in 1905, under the leadership of Osler and contemporaries, and hospitalization under Trudeau with the first sanitarium for tuberculars in America at Saranac Lake have lowered this plague to sixth place in mortality, with a fifty per cent reduction in the past two decades. While the incidence is virtually the same today, education of the public in living conditions and improved methods of treatment, especially in advanced cases, in the use of sanatoria, beds, and later technique in surgery and medicine, have placed it under measurable control.

Cancer remains one of the outstanding challenges today. There is a virtual increase in its incidence in the civilized world. In continental United States there will be 120,000 deaths from this cause alone, in 1932. Never before were there so many trained minds, or millions in money placed at the disposal of research on this problem both in Europe and America. The nature of cancer in its many forms, is relatively better understood today, so that time and money are being diverted to better purpose through abandonment of many false trails.

In combating this menace, chief reliance today, on the one hand, is placed on educating the public in the necessity of co-operating early in the initial or suspected stages, by consulting competent physicians trained in this work for the prevention of morbid states—and for curative measures, on the other hand, chief dependence is placed in surgery, radium, X-ray, or combinations of these.

The American Society for the Control of Cancer leads the way in the program of education of the American public on matters of the cancer problem. Consen-

sus of trained opinion points to the strategic necessity of instituting large cancer clinical centers equipped with the latest scientific aids, as probably the most feasible mode of attack on this rising scourge of civilization.

Medical organizations, not to omit mention of Continental societies, finds its most extensive representations in the British Medical association, about one hundred years old, and the American Medical association, which is numerically the larger, and organized in its present form from pre-existing societies, about 1904.

The American Medical association, organized on the county unit plan, has brought about advanced academic and clinical education in medicine, establishment of medical research centers, rating of schools and hospitals, in conjunction with the American College of Physicians and Surgeons, refinements in nursing, and the registration of nurses.

In medical education, shift has been made from didactic to clinical teaching. Elevation of pre-entrance requirements and limitation of enrolment has served to restrict matriculation to a more fitted and selected type of individual, better calculated to receive and carry on the high scientific advances in the medical practice today. As the fathers have served well the demands in their day, so must the sons of Aesculapius meet the newer demands of tomorrow.

With standardization initiated by the American College of Physicians and Surgeons, and the American Medical association there followed standardization of the teaching hospitals, in which the clinical laboratory has been made an indissoluble and indispensable part. Along with this organizational reform came the great wave of advancement in modern hospital architecture, and grouping, which now bids to become universal.

With growing urban populations and relatively declining rural numbers; with the advent of good roads and rapid means of transportation, and the rise of medical and industrial centers, medicine of the future will be practised more and more by groups, clinics, and collaborating specialists, following the natural law of the "physiological division of labor," in keeping with the march of social evolution. This, not to the disparagement of the personal and family physician who will always remain the ideal contact and intermediary to the clinics or specialists when indicated.

Dobbin and the saddle-bags have given way to the radio and airplane. Yet, despite all these changes of *modus operandi* nothing will ever displace qualified fitness for this beneficent human service, or the deep obligation to its ethics, and a broad and fundamental training and understanding, in that most

Plenty of fresh air, sunshine and an indoor swimming pool for exercise are considered basic ingredients for happy childhood, at the same time their use as curative measures has been utilized at the Crippled Childrens' hospital. The large carefully equipped swimming pool is shown here.

Under the Oklahoma crippled children's law of 1927, the school of medicine is given the responsibility in conjunction with the state health department of conducting free general clinics each year for the purpose of examining crippled children.

The rehabilitation work among crippled children in the state has grown with such rapidity that it was necessary to build the hospital several years ago. It stands on the school of medicine campus, an imposing tribute toward the earnest work the state and the Crippled Childrens' Society are doing. For the calendar year 1931 to 1932 there was a total turnover of 2,674 patients in the hospital. Patients committed under the crippled childrens' law numbered 1926.

Despite the fact that the Crippled Childrens' hospital has a monthly turnover of more than two hundred children, there are usually on the waiting list approximately 250 children. There are about twenty colored youngsters awaiting admission to the colored ward of University hospital. Rotary and Lions clubs throughout the state give their whole-hearted support toward the work of the society. The Hospitality club of Oklahoma City, as well as many other organizations, has done much toward making hospitalization of youngsters pleasant at the hospital.

A large swimming tank has been completed at the hospital, and according to Miss Ella Smith, curative play teacher, the medical staff is availing itself of the water tank as an adjunct to other kinds of curative measures. "The greatest factor in bringing about improvement in the case of a small child is the pleasure he derives from the various play stunts. Many infantile paralysis cases, with weakened muscles in arms, legs, and backs, have, while with us, learned to swim without assistance, and are continually trying to perform feats of unusual swimmers," explains Miss Smith.

School is conducted at the hospital, too, in order that the little patients will not be lacking in mental poise, on their release from the hospital.

A complete program for crippled children has been outlined as follows:

Locate crippled children continuously. Get expert diagnoses to them in all parts of the state promptly. Secure a proper distribution of beds for acute, convales-

cent, and custodial cases. Furnish adequate social welfare and follow-up service, and parent co-operation. Provide specialized medical and surgical care. Make proper use of special therapies and appliances. Safeguard the quality of all types of service rendered. Educate all at home, in school, in special classes, in convalescent institutions, or wherever they may be. Make available vocational guidance and training as well as placement service which will secure and safeguard remunerative employment. Provide the funds to pay the costs of all services. Keep the general public interested through the human touch which enlightens and enlivens everybody to the importance of the rights of crippled children and the economy represented in fitting them into normal life.

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GRIDIRONERS

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seems better than the last one when a survey is made of the five successive performances "The Bells of St. Murray's" totals the best entertainment of all. This can be accounted for by the elaborate use of music—theme songs, quartets, ditties, choruses, and even a *grand finale*. Music furnished by Bonnie Spencer's orchestra, familiar to many Sooners, and especially adapted to skits. Music which added to the revue quality of the performance and which revealed quite surprisingly good vocalizing on the part of the newspapermen, trained to write rather than sing.

That it was too good for Oklahoma City to enjoy alone was the decision of the Tulsa Press club and after hearing their scouts' reports on the opus they sent such an invitation to hospitality as could not be refused. A whole floor of the Mayo hotel was reserved for the newspaper men and their bus was escorted in and out of town by a police escort.

Newspaper comment on their performances tells best how they were received:

If 600 weary Oklahomans are chuckling over their breakfast coffee this morning there's ample excuse. "The Bells of St. Murray's" are still ringing in their ears. It was the Tulsa Press club's first gridiron dinner and it was a howling success—ask any of those 600 howlers who jammed the Mayo hotel's Crystal ballroom last night! They fought for seats and then they fought to stay on them as the banquet wise-chucked its way through three uproarious hours of a convulsive program. *Tulsa World*.

Our best bow to the working newspaper men in the cast who presented the most delightful evening of comedy that will be experienced in Oklahoma City until the same gang gets together next year to deflate some of the as yet uncertain happenings of the young year 1932. . . . Back of the night's show was a month of hard work on the part of the cast. Beyond that was the genius of the authors, Mike Monroney and Dave Shackelford, whose hard labor and clever results ought to produce them something more than love and affection. It was grand entertainment, a long evening packed with laughter. . . ."

Walter Harrison in *Oklahoma City Times*.

It was a swell party, from canape to curtain call, and it was hard to tell which had the best time, the cast or audience. The oft-thronged chamber of commerce dining hall bulged to encompass something like 800 people, and there were about 200 others who didn't get there quite on time, seated in an "overflow" room. Those amazing young men, Dave Shackelford and Mike Monroney, the authors, had a cinch in writing the 1932 show. The year which they passed in review has been of such almost-comic opera quality that it was only necessary to put the entire business in rhyme and there was your perfect program. *Oklahoma News*.

They enacted the show which was a sensational success in Oklahoma City last month. A Tulsa act or two was added, putting a top to the clever main show that delighted the biggest banquet hall of guests in the city's history. *Tulsa Tribune*.

Alumni who were members of the cast were: Merwin Eberle, Merle Blakeley, Dick Pearce, Paul Kennedy, Frank Wilkins, Ed Mills, Dan Delaney and Larry Sisk.

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intimate and most responsible of relationships which by nature exists between the faithful physician, and his trusting patient.

In summarization, then, it may be said that amplification of medical education, with emphasis on clinical training, standardization of schools, hospitals, nursing, and medical organization, together with development of medical centers and research, and the establishment of bureaus for detection and prosecution of frauds, the analysis and approval of drugs, the suppression of unethical advertising in first class journals, together with the decline of quackery, and waning of the cults, and self-medication, marks the status of the parent body of medicine today in its turn from empirics to scientific research and preventive methods of the Twentieth century, well begun.

In the compilation of this brief medical survey, the essayist is wholly obligated to his colleagues for the better part of the facts and phraseology, among whom is to mention: Dr Leroy Long, Dr L. J. Moorman, Dr A. L. Blesh, Dr Lea A. Riley, Dr W. W. Rucks, Dr Everett S. Lain, Dr Gayfree Ellison, Dr Wann Langston, Dr Ray M. Balyeat, Dr Rex Bolend, Dr John A. Hatchett, Dr John E. Heatley, and Dr N. Price Eley.

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"The Paradox of Russell" an article written by Dr Charles M. Perry, head of the department of philosophy, appears in the March issue of *Standard*, publication of the American Ethical union. It is based on the lectures and discussions of Bertrand Russell, British philosopher, who visited the university in November.