Chapter 3

Education at Last

(1890–1900)

The portrait of him which appeared in our July number hardly did him justice. The doctor is blessed with a strong physical organization, none other could stand the tremendous drafts made upon his nerve force by such an active and hard worked brain.”

Daniel’s Texas Medical Journal on Professor Allen J. Smith, MD, in 1892.103

MOMENTOUS CHANGE was in the wind when the Texas State Medical Association convened at the Fort Worth Opera House in April of 1890. The association adopted three “important” resolutions. Two dealt with proceedings: selecting a competent stenographer/typewriter and assuring that presentations remained under twenty minutes.

The third resolution signified something more pertinent to Texas pathologists. The association, in essence, “gave full recognition to the microscope and the part it had come to play in Texas medicine.” It did so by establishing a standing Committee on Microscopy and Pathology “to the end that these branches of study be thereby fostered and the wants of the profession in these directions met by competent investigators.”104

Dr. George Dock was named chairman, Drs. J. W. McLaughlin of Austin and E. J. Ward of Waxahachie, members.

At this same meeting, Dr. McLaughlin also presented a paper
on immunity and contagion, and in 1892, would expand his concepts
in a book entitled, Fermentation, Infection, and Immunity A New
Theory of These Processes, Which Unifies Their Primary Causation
and Places the Explanation of Their Phenomena in Chemistry, Biology
and the Dynamics of Molecular Physics

There were other views at the 1890 meeting, and Dr. J. H. Sears
of Waco railed against “the influence ascribed to ‘so-called germs.’”
Another physician, Dr. C. M. Ramsdell of Lampasas, declared, “The
profession of medicine in the United States is sick; it is very sick.”

While there was a tug between forward thinking and skepticism,
and perhaps an honest assessment of an ailing profession, the
country itself was in malaise. The new decade began with the nation-
al economic panic of 1890, to be followed by another panic in three
years. Texans, who had long suffered economic hardships and po-
litical turmoil, were to endure more. There were problems related to
the railroads and insurance companies, Governor James S. Hogg
cracking down with strong regulations. And the state’s cotton price
dropped below five cents a pound. Even during reconstruction,
when it was the only cash crop and had dropped drastically, the low-
est price had been thirteen cents a pound, then “savaging” the small
farmer.

Yet, there were mixed blessings for Texans in the 1890s. Med-
cal education was laying cornerstones that would draw many great
minds to the state, but Texas physicians also bid adieu to the living
cornerstone of Texas pathology, Dr. George Dock. He had enjoyed
his years in Galveston, but left when The University of Texas Med-
cal Department opened in 1891. He first joined the faculty of medi-
cine at the University of Michigan, and later would be on the facul-
ties of Tulane University in New Orleans and Washington Univer-
sity in St. Louis. He also would be the author of many articles,
including works on protozoan diseases of the blood, pernicious anem-
ia, ductless glands, and hookworm. Fortunately, Dr. Dock would
not say a permanent goodbye to Texas, returning often as a lecturer
at meetings.

As Dr. Dock left, the state would say hello to his successor.
“One September day in 1891 a tall, broad-shouldered, well
dressed blonde young man got off the train in Galveston,” Anne
Brindley writes. “One noticed him particularly because of an un-
usual look of friendliness in his blue eyes and an infectious smile
which a small mustache failed to hide. It was good, Allen J. Smith
reflected, as he helped his beautiful young wife and two-year-old son down the steps, to be at the end of that long trip from Philadelphia and at the beginning of a new life.

“The little family stood for an instant and looked about them at the town that was to be their new home. It was odd, Dr. Smith thought, that no one had mentioned the dreary aspect of the place, the high-raised houses. But small matter. Husband and wife turned to each other and smiled enthusiastically as they climbed into a carriage, for, was not he at twenty-seven, a full professor in the newly organized University of Texas School of Medicine? True, he always had expected to be a professor someday. That is why he had been serving as a demonstrator in the department of pathology of the University of Pennsylvania, where he was graduated. But even in his wildest dreams he had never thought of attaining it so soon. Probably his discovery of the Bacillus coeruleus, the year after he finished medical school, had influenced the regents to offer him the Texas chair.

“As he drove through the busy streets of Galveston for the first time, Dr. Smith made a pledge to himself that neither the men who selected him nor the State of Texas ever should have cause to regret the youthfulness of their choice (he was to learn later that five of his eight colleagues were also in their twenties). He would give Texas his best.”

Called to the chair of Pathology, Microscopy and Bacteriology at The University of Texas, Dr. Smith’s arrival as a faculty member of the long-awaited Medical Department meant that pathology would not lag after Dr. Dock’s departure. He, in fact, had studied in the same department as Dr. Dock at the University of Pennsylvania and had been demonstrator under Dr. John Guiteras. At his new school, Dr. Smith would not only lecture on pathology, but on histology, mental and nervous diseases, tropical medicine, inorganic chemistry and medical jurisprudence. He also would bring to his new assignment a “genial charm and sincere interest in people,” a “strong physique that could stand up under long, strenuous hours of teaching and research,” and “a brilliant mind which had won the coveted Medical News and Anatomic prizes and already had made a definite contribution to medical science. . . . and was to go on to greater achievements.”

The announcement for the School of Medicine for the 1892-1893 session stated that the school had opened on October 5,
1891, and that the Board of Regents felt “pride in announcing that the institution has been organized upon a plane that will gratify the high requirements of modern medicine.” The brochure further extolled the attributes of the college building “erected at large expense in modern and imposing architecture, large and commodious, complete in all its departments, and constructed with reference to the health, comfort and convenience of students.” The attributes of the John Sealy Hospital were praised as “unsurpassed by any similar institution in the United States” with room for 180 patients, and Galveston as an “admirably situated” place.

“With a refined and hospitable people, mild and equable climate, and freedom from malaria and epidemic diseases,” the notice said, “it would seem to afford the most favorable conditions for the performance of mental labor.”

The cost of living for students was described as moderate “as in other cities.”

To obtain admission to the school, students had to write an essay of about three hundred words, as a “test of orthography and grammar,” and to pass an examination in elementary physics. Those with a college degree or equivalent or who had a certificate covering the required subjects from a recognized high school or a “duly organized county medical society” that had instituted a preliminary examination could enter without examination. Others, such as students who had attended one course in a non-homeopathic or eclectic school, could be admitted to the second year course upon passing satisfactory examinations, among which was “Elements of General Pathology, including Bacteriology and Helminthology.” There also were provisions for certain candidates to be admitted in the third year, including those who had attended two courses or were graduates of regular medical schools. Interestingly, graduates of colleges of pharmacy in good standing could be admitted to the second year upon passing the entrance examination of the first year in anatomy, histology and general pathology.

The announcement described the pathology course for the School of Medicine as follows:

The course in pathology extends over the entire three years of instruction, and includes didactic, demonstrative and laboratory teaching upon the subjects embraced in this department.

The didactic teaching of the first year is devoted to the ele-
ments of pathology, especially including the subjects of the causes, development and classification of diseases. The laboratory instruction during this period is applied to the study of bacteriology. . . . consideration of animal parasites is also included in this course.

During the first year also the study of normal histology is conducted in the Pathological Laboratory. . . .

In the second year didactic instruction covers the subjects usually included under the term General Pathological Anatomy, the elementary pathological processes and those of inflammation and regeneration, of tumor formation and of the infectious granulomata. In the laboratory the clinical uses of the microscope as applied to the blood and various excretory substances of the body are demonstrated at length, opportunity for personal practice being given each student.

During the third year the application of pathological study to the individual organs, with special reference to the pathological physiology of each and the development of symptoms, is taken up systematically and at length.

Throughout the year laboratory exercises in the microscopic study of pathological anatomy are offered to the class; and demonstrations and practical work in the performance of post-mortem examinations constitute a feature of plan of instruction.

Throughout the course the laboratories and equipments are available to such students as may desire to prosecute special lines of study or investigation, without further expense. . . .

Especial mention should be made of the pathological museum, which has been started with the idea of creating a large collection of gross specimens of pathological interest for the use of the class. This collection is in charge of the professor of pathology; each specimen is kept in spirits, in clean and well labelled jars; and a record of the clinical history as well as the description is kept in a specially prepared catalogue, for reference by the students and the profession. Contributions to this museum are solicited from the physicians of the state, the professor of pathology making himself responsible for their care and proper description the museum catalogue. Due credit will always be made upon the labels and in the catalogue for any contributions.

The textbooks for pathology were Wagner’s General Pathology, Green’s Pathology, and Ziegler’s Pathology. For bacteriology, there were Abbott’s Principles of Bacteriology and Klein’s Micro-organisms and Disease. Klein’s also was named for histology, and, for anatomy,
Gray, Ellis’s *Demonstrations of Anatomy*, and Heath’s *Dissection Guide*.

With money scarce during the medical school’s opening year, Dr. Allen J. Smith performed his own janitorial work. “In fact, washing bottles was his chief relaxation,” Brindley reports. “One day he met an interesting ambulatory case of [patient with] leprosy at St. Mary’s Hospital and hired him as janitor. This was an ideal arrangement for years. The man did satisfactory work and Dr. Smith had an opportunity to study the disease daily. (He later produced evidence proving that bedbugs were conveyors of leprosy.) Finally, a zealous student, with a nose for news, recognized the janitor . . . and gave the story to the newspapers. Consequently, the janitor was fired and confined to St. Mary’s Hospital. He was so chagrined at the loss of both his job and his freedom that he reneged on his promise to Dr. Smith of an interesting future autopsy.”

“Dr. Smith,” continues Brindley, “believed that the first duty of a teacher was to teach; and he carried this doctrine to its ultimate conclusion. He and his classes in pathology habitually became so engrossed in their findings as to forget the classes to follow and thus trespassed on the time of the other departments. He always was disarmingly contrite when the injured professors protested; but, at the next class meeting he and the students again became oblivious to all except pathology.”

In 1892, Daniel’s *Texas Medical Journal* noted that Dr. Smith had done a review of cholera in India for the journal, and would “contribute to its pages during the coming year, a part of the rich clinical material falling under his observation as a Microscopist, Pathologist and Bacteriologist” at the Medical Department in Galveston. . . .

It appeared that Dr. Smith would be a creditable successor to the admired Dr. Dock, whose arrival and presence had signified the true beginning of modern pathology in the state.

During the first blush of the decade, the Medical Department of The University of Texas was not alone in opening a new school with a professor of pathology. The Fort Worth Medical School, the medical department for the nonexistent Fort Worth University, also began classes in the early 1890s, with William Howard, MD, the professor of pathology. Dr. Howard also ran the Fort Worth Laboratories at Cannon and College Streets, a forerunner of Ter-
rell's Laboratories, between 1886 and 1912. His focus was on pathology and microbiology.\textsuperscript{115}

Pathology thus began to propagate ever so subtly across the Lone Star State. There were at least two professors in the specialty, and modest diffusion of knowledge among practicing physicians. One of the early papers on laboratory techniques was presented at the 1891 meeting of the Texas State Medical Association in Waco. Dr. J. H. Wysong of Galveston reviewed "Some Points of Interest in the Clinical Examination of the Urine," including observations in the naked-eye appearance of urine, description of the Fehling test for sugar and the heat and nitric acid test for albumen. He also demonstrated a comprehensive chart of "many laboratory methods of urinalysis."\textsuperscript{116}

Dr. Allen J. Smith spoke "authoritatively" at the 1893 meeting of the state association in Galveston. Under the title, "Generalization of Cancer of the Stomach," he reviewed the literature on the known modes of metastasis, direct extension, transference by the blood, and transference by lymph vessels.\textsuperscript{117}

Microscopic examination apparently was done in Austin in 1893. Doctors there posted a detailed fee schedule. Microscopic examination of urine cost from $5 to $10 and examination of pathological specimens was $10 to $25. In addition, examination of urine for albumen and sugar cost from $2.50 to $5. Interestingly, the fee for "venereal practice, in advance" was from $5 to $50. Consultation and written opinions ranged from $5 to $25.\textsuperscript{118}

A special section for pathology

THE YEAR 1893 is distinct in the history of pathology in Texas. Until then, there had been no special section for pathology in conjunction with meetings of the Texas State Medical Association. Instead, the Section on Practice of Medicine, Materia Medica and Therapeutics had been used "as a depository for pathology, pathology being a caudal appendage." This year, the association established the new Section on Microscopy and Pathology, naming Dr. Smith the chairman. Under various names, the new section would meet uninterruptedly until 1918.\textsuperscript{119} Contrastingly, the American Medical Association would not create its section on pathology until after the turn of the century. In a friendly way, could the Texans be slipping ahead of their peers on the national front?
Some might say they were, judging by the quality of Dr. Smith's talk and the composition of the program. Dr. Smith "ably reviewed the status of pathology, the most significant feature being the early stress on what we now call clinical pathology." Andujar writes, "Even before this twentieth century, the morgue-and-armchair pathologists of Texas did not dominate the interested-in-the-living pathologists! The pioneer Section on Microscopy and Pathology discussed a wide variety of subjects, including parasitology, microbiology, cancer, and other fields. . . ."\(^{120}\)

Dr. Smith continued his imposing presence in Texas medicine during 1894, speaking before the Texas State Medical Association in the Senate Chamber in Austin. It was another powerful landmark for Texas pathology. Nixon writes that Dr. Smith, "in his notable address on 'The Relative Importance of Pathology in the Medical Curriculum,' proceeded to place pathology in its proper position and to convince his auditors that 'pathology deals with living, moving questions, as well as with the dead and offal of disease.' He saw this subject as an introduction to the study of diseases which every doctor would meet in his everyday practice. Pathology . . . was more than the study of abnormal tissues; it was more than the study of bacteria and effects on tissues: it comprised also the field of pathological physiology, which concerned itself with altered function of organs as well as the reasons for symptoms of disease. Knowledge of true pathology 'makes of a man an intelligent practitioner of medicine,' and ignorance of it 'makes of him the routine follower of other men's methods.' Dr. Smith's many students at the University of Texas and the University of Pennsylvania will recall his deep sincerity as they read his words, 'The failure to thus acquire the habits of pathological reasoning, of comparing the diseased with the normal structure, the diseased function with the normal function, of seeking for the influences such changes may have upon the rest of the body, and their probable sequences; the failure to thus acquire the habits of study of the natural history of disease, leaves a man hampered in his medical life to a degree that years of study, even a lifetime may never overcome.'\(^{121}\)

During the 1894 graduating ceremonies of The University of Texas Medical Department, Dr. Smith spoke on one of his other favorite topics, the influence of medical studies upon religious thought. Seven students graduated, and a first-year student, John T.
Moore, was awarded the prize in histology, offered annually by the professor of pathology. This year's prize was a copy of the last edition of Carpenter on the Microscope and its Revelations.122

In 1895, the Fort Worth Medical School also graduated five students.

About this time in Washington, D.C., a subtle change was taking place at the Army Medical Museum, an appointment that would propel the focus of American pathology beyond the Civil War. Walter Reed became Curator of the Army Medical Museum, and at the first session of the Army Medical School, was professor of clinical and sanitary microscopy and director of the pathological laboratory.”123

Across America, pathology had made dynamic progress in medical schools, in research, and in hospitals. “The last quarter of the nineteenth century proved extraordinarily rich for the development of pathology,” Long writes, “not only through the extension of pathological histology and the closer approach of physiology and pathology through experiment, but particularly through remarkable discoveries on the cause of disease. The new science of bacteriology solved some of the major problems which had puzzled medicine for twenty centuries.”124

In 1896, there were other discoveries paralleling the advancement of pathology. Wilhelm Roentgen announced his discovery of x-rays and A. H. Becquerel discovered radioactivity. There also were issues that would continue for at least another century. Scientific experimentation brought on apprehension about animal cruelty, and such a charge was made against the Army Medical Museum, which it felt was not true. Nevertheless, Congress considered a bill that “in the opinion of most doctors, would have so restricted animal experimentation as to have the practical effect of prohibiting the use of this avenue to increased medical knowledge.”125

Yellow fever was of growing concern to the medical profession in Texas, but in the fall of 1897, doctors were divided on the subject, some believing the disease was dengue.126 At the 1898 Texas State Medical Association meeting in Houston, Dr. H. A. West of Galveston reported a thorough study of the epidemic that had begun in late July in Galveston, Houston, and San Antonio, and spread rapidly over 100 miles in every direction. The epidemic reportedly affected 60 to 90 percent of the population, and the Marine Hospital
Service had sent Dr. John Guiteras, professor of pathology at the University of Pennsylvania, to Texas to help.

Dr. West feared widespread effects from the epidemic, including "paralysis of commerce, the wheels of industry arrested, enforced idleness with consequent poverty and suffering of thousands, enormous depreciation in property values of every kind, universal fear and panic, and the possibility of widespread death and desolation." He traced the history and progress of the epidemic, detailed the symptoms contrasting the symptoms of yellow fever and dengue, and "quoted all available authorities." Observing that the epidemic subsided with cold weather, he theorized that the diseases were transmitted "by persons and things to other persons." He concluded that both yellow fever and dengue were present in Texas, with which Professor Guiteras agreed. At least one autopsy had been confirmed by Professor Allen J. Smith.

Nevertheless, Dr. West's views were "vigorously opposed for eight pages of the Transactions and, indeed, over the state generally."

It seemed that Texans always would remain stubborn about changes in medicine. It also seemed that they never would overcome hardship. To compound the problem of yellow fever, the Spanish American War loomed over the country, and during the conflict there would be nearly seven times as many deaths from disease as from bullets. More than half the deaths would be from typhoid fever.127

Walter Reed and his commission were put to work to resolve the spread of typhoid in army camps, revealing flies as carriers, and dust and uncleanness as mechanisms facilitating the spread of the disease.

There were other findings exposing insects as vectors of disease, and, in the final year of the decade, after several years of work, Theobald Smith and others established the tick as the vector in the transmission of Texas cattle fever.128

Beyond seeking solutions to such overwhelming challenges demanding concerted teamwork, individual physicians sometimes experimented on a smaller scale with their own research. Dr. Rudolph Menger of San Antonio did "some very creditable work," publishing it under "Photo-Micrography as Related to Medical and Scientific Research."129

With such bright minds at work during the final decade of the nineteenth century, could there be anything but optimism for the future of medicine and pathology in the state?
Texas doctors were on the brink of building a respectable medical profession. They now enjoyed the camaraderie of meetings, the exchange of information through a few publications, and the accessibility of medical education institutions on Texas soil. A more fertile medical milieu permitted the nucleus of a new pathology specialty.

It was a time to be reflective, to look back at the century gone by—at the amazing eighty years since Texas had been barely a gleam in Stephen F. Austin’s eyes. What perilous, unforgettable hardships the Texans had endured! Yet, somehow, out of the raw frontier, they had indeed forged a state. There was much for Texas physicians to appreciate in the closing days of the century but there were great challenges ahead. Medicine in the new century would demand excellence—it would cater to no less. Education would be the key to success, and the “doctor’s doctor” would play an important role in helping physicians understand the “how’s and why’s” of medicine. In Allen J. Smith’s words, that meant demonstrating first that the pathologist’s work dealt “with living, moving questions, as well as with the dead and offal of disease.”

Already the hardy successors to Drs. George Dock and Allen J. Smith—some born of and molded by the rugged Texas frontier—were in the wings, waiting to take on the challenges of the new century.
Chapter 4

Acceptance is Slow

(1900–1910)

It is well within the memory of many of the Association when this branch was not regarded as of sufficient importance and practical value to the active physician to require its adoption in the school curriculum; and even today, there are more schools than one, of well-recognized merit, in which it is represented by a lectureship, whose instruction is open to the voluntary attention of the student, but of which a trial of his knowledge is not regarded as essential to graduation. . . .

Allen J. Smith, MD, in 1901, speaking to the State Medical Association of Texas Section on Pathology.¹³⁰

GALVESTON WAS IN CHAOS, thousands dead from the powerful hurricane that surprised inhabitants on September 8 and 9, 1900.¹³¹

Amid the debris and shock, two men stood in front of the Romanesque, red brick building housing the nine-year-old University of Texas Medical Department. Like every building in the city, the school had been damaged, much of its "adventurous architecture" and the great dome gone. A huge gap was left in the middle of the roof. Inside, rubbish of chemical tables, bottles, and apparatus lay twisted and tangled. To the north, the dead-house had been unroofed, and under the debris its inhabitants, once scheduled for dissection, rested strangely, unfit for further use.¹³²,¹³³
As Dean Allen J. Smith and Dr. Edward Randall, the city's new health officer, conversed, a third man arrived. The president of The University of Texas, William L. Prather, had rushed to Galveston with military officials on the first boat from the mainland.

"I've just telegraphed Beauregard Bryan," Prather announced, "there's five feet of water in the basement. . . . school should not open this term."

Judge Bryan, chairman of the Board of Regents' medical committee, however, did not see eye-to-eye with the president. He soon wired back. "The University of Texas can't stop for a storm. School must open." Two weeks later, the Board of Regents appropriated funds for repair, and school opened on November 15.

The turn of the century had brought its first great shock to Texas, the worst single natural disaster in American history. But the century also brought a second, more pleasant shock—one perhaps to be handled less stoically. Spindletop, the great oil gusher, erupted near Beaumont in 1901, creating a world-wide sensation and stirring dreams of unimaginable wealth pumping from the earth. It was followed soon by the Humble and Goose Creek discoveries, promising dramatic change for the leisurely business style of the cotton economy.

In this generally quiet post-Victorian era, change of another kind also fermented. Already the telephone was becoming widely used—there were 2,000 of them in Houston in 1900. Wealth pumped from the minds of great scientists, arriving in the form of radio, quantum theory, discovery of the laws of radiation, and solutions to historically destructive diseases. Dr. Walter Reed of the Army Medical Museum had headed two national commissions, finally resolving the method of transmission of yellow fever, and reporting the findings in Havana on February 6, 1901.

Reed's team also sustained English physician William Budd's 1874 declaration that typhoid was a "perfectly preventable plague." Flourishing in the filth too commonly prevalent in Army camps, flies became vectors of the disease that was disseminated by transfer of alimentary canal excretions. Further, in 1907, the "Typhoid Mary" report would identify the presence of carriers.

Colonel William Crawford Gorgas, who had overseen the eradication of mosquitoes transmitting yellow fever in Cuba, turned his sights on the Panama Canal Zone, tactically attacking and wiping out the fever there by 1906 and also eliminating rats carrying bu-
bonic plague. His efforts would allow Army engineers to build the long-awaited canal connecting the Atlantic and Pacific Oceans.\textsuperscript{143,144}

The first decades of the twentieth century, recalled San Antonio pathologist Dr. B. F. Stout, were to bring to medicine “the glorious days of the Big Four at Baltimore [William H. Welch, pathology; William Osler, medicine; Howard A. Kelly, obstetrics-gynecology; William S. Halsted, surgery] and they, with their contemporaries in other great American medical centers, were to transform American medicine and transfer premier medical science from Europe to our own land. Clinical pathology was practiced only in medical schools and in the larger hospitals attached to these schools; therefore, large sections of the country were without such services and to fill this need volunteers began to explore the field. Formal training was obtainable only in Europe, which was remote and expensive. Those who took these courses were in great demand as teachers and in the larger hospital centers.\textsuperscript{145}

Yet, early in the century, the science of pathology clearly was expanding rapidly, bringing a true scientific base to medicine. In 1900, the American Medical Association marked the growth, forming its Section on Pathology and Bacteriology.\textsuperscript{146} Seven years earlier Texas had created its Section on Microscopy and Pathology.\textsuperscript{147}

No medical science could have been more needed than pathology. Many branches of medicine were undeveloped, and only a dozen drugs were in common use. Despite systematic approaches to medical education, physicians too often had to rely on their empirical experiences to diagnose and treat. Too often, they could only provide attentive bedside care—and simply hope for the best.\textsuperscript{148,149}

In the aftermath of the horrifying hurricane that had struck only a few months earlier, Texas physicians resolutely held their planned annual meeting in Galveston in May 1901. Dr. Allen Smith addressed his colleagues attending the Section on Pathology, speaking “in unhurried and beautiful English.”\textsuperscript{150,151,152} He summarized the status of pathology, recalling the days when it was considered not practical enough to be in the school curriculum, and commending members of the state association for supporting the section.

“The medical training of the first three quarters of the past century presents a curious gap,” he said. “The student was carefully instructed in those matters of normal life, anatomy and physiology, which were and are appreciated as basal to the understanding of dis-
eased condition; and then immediately, without present 'hows' and 'whys' the student was led to the clinical picture of the symptoms, memory of a more or less defined group being demanded without reason for their manifestation. This gap is sought to be filled by the special study of pathology."

Nevertheless, Dr. Smith also predicted that pathology probably never would, "clear up all the mists from our power of recognizing the principles of disease and their bearings."

Another paper at the post-hurricane Galveston meeting came from Marie Charlotte Schaefer, MD, who would become the first woman faculty member at UTMB and was the first woman appearing on a State Medical Association of Texas program.\textsuperscript{153,154} Her manuscript, entitled, "Anchylostoma Duodenale in Texas," arose from her work as an intern in Dr. Allen Smith's laboratory where she had become interested in intestinal parasites.

"The subject of hookworm infestation in Texas and in the South was new," writes Nixon. "In 1893, Dr. Smith had demonstrated the ova of the parasite in a specimen of stool taken from 'the general closet [toilet] of the Medical School,' but had been unable to find the person who was host to the parasite. One year later, Dr. Ferdinand Herff had found the parasites at autopsy." The patient reported by Dr. Schaefer was a sailor who had been in the Orient and had lived in Mexico. The ova were found in the stools, and after the administration of thymol, more than one hundred parasites were expelled. Following this experience, Dr. Smith again found hookworm ova in a mixed specimen of stool which he was using for the purpose of class demonstration. He examined the blood of all the students and found marked eosinophilia in two individuals. With this as a clue, he examined the stools of these two students and was able to demonstrate ova of Anchylostoma duodenale."\textsuperscript{155}

Private Texas physicians also studied hookworm disease in their laboratories. Among them was Dr. Beecher F. Stout, who "read a most scientific paper upon Hookworm Disease with a demonstration of the worm and eggs under the microscope," at a meeting of the Bexar County Medical Society in 1904.\textsuperscript{156}

The world of medicine in Texas was pulsating. Medical schools rapidly proliferated, stirring conflict as the desperate need to raise standards juxtaposed against sometimes well-meaning entrepreneurial efforts. Texas also was "plagued" by diploma mills attributable to its lax regulations.\textsuperscript{157} Before the turn of the century, only The
University of Texas Medical Department in Galveston and the Fort Worth University Medical Department provided substantial medical education in Texas. Suddenly, scores of schools, including at least ten in Dallas, emerged. Accounts of their beginnings vary, but indicate not only intertwined and swiftly changing alliances, but a considerable amount of competitiveness. The American Medical Directory carries the following scenarios. In 1900, the University of Dallas Medical Department opened its doors, affiliating in 1903 with Baylor University at Waco to become Baylor University College of Medicine. Organized also in Dallas were the Physio-Medical College of Texas, 1902; Southwestern University Medical College, 1903; College of Physicians and Surgeons, (organized as Bell Medical College in 1903), and Dallas Medical College, 1900. The latter school merged in 1904 with Baylor University College of Medicine. Also in Dallas was Gate City Medical College, which had been organized in Texarkana, Arkansas, in 1902, then an outgrowth of a school previously formed in 1898.\textsuperscript{158,159,160}

Who taught pathology in most of these schools is not always clear, and most faculty taught several subjects. Dr. A. C. Bell at one time taught pathology at the Dallas Medical College, and Drs. David Davidson and A. E. Blount taught at the University of Dallas Medical Department.\textsuperscript{161} From 1903 to 1908, Dr. Joe Becton taught surgical pathology at Baylor University College of Medicine, Dallas.\textsuperscript{162}

Baylor University College of Medicine, Moursund writes, considered the pathology chair one of its most important areas, and planned a course similar to that of Johns Hopkins. Students were taught by lectures and demonstrations directed toward practical needs; clinical microscopy included blood and urine examination, and the laboratory was said to be supplied with “modern centrifuges, hematocrits, hemocytometers, and hemoglobinometers.”\textsuperscript{163}

Hospitals for both students and patients, however, were scarce and separated by distance in 1901. Dallas, with a population of 50,000 in 1903, had perhaps 100 hospital beds. Although Parkland Memorial Hospital had been organized in 1884 as the Dallas City Hospital,\textsuperscript{164} students at the new University of Dallas Medical Department considered it too far to travel by wagon. Charles Rosser, MD, founder of the school, then bought a two-story, fourteen-room house and converted it into the twenty-five-bed Good Samaritan Hospital. In 1903 Texas Baptists initiated plans for a larger hospital, opening the Texas Baptist Memorial Sanitarium on November
5, 1904, and launching what would become Baylor University Medical Center.165,166

In 1900, the state had abandoned an earlier plan to have a joint board of medical examiners, and had passed an act calling for three boards, keeping allopathic, homeopathic and eclectic physicians separate. Christian Scientists and kindred practitioners were exempt, as were all physicians practicing medicine in Texas before 1885; those recording diplomas since 1891 issued by "medical colleges of respectable standing," and those from other states with requirements equal to those of Texas. Applicants who were examined had to know the following subjects: anatomy, physiology, chemistry, materia medica, therapeutics, histology, pathology, practice of medicine, surgery (including diseases of the eye, ear, nose and throat), obstetrics, gynecology, hygiene, and medical jurisprudence. Texas continued its system of having physicians record their diplomas with district clerks.167

Despite the inadequacy of the state board, medical practice in Texas did begin to improve, and at least some awareness of laboratory tests was evident at the 1903 meeting of the State Medical Association of Texas. There, Major Charles F. Mason reported on Malta fever in a soldier at Fort Sam Houston, stating that a positive agglutination test with Micrococcus melitensis had clinched the diagnosis. Quinine and potassium iodide apparently did not influence the course of the disease, but the patient recovered slowly. Asked whether the physician cured the patient or whether he just got well, the Major replied frankly, "He got well."168

"The most notable paper at the 1903 session," Nixon attests, "was by Charles Wardell Stiles, chief of the Division of Zoology, United States Public Health and Marine Hospital Service, who spoke on 'The Significance of the Recently recognized Hookworm Disease for the Texas Practitioner.' Although not a physician, Stiles "had almost singlehandedly impressed the physicians of the South with the prevalence of this disease. Giving Dr. Allen J. Smith of Galveston full credit for his pioneer work, Stiles took up the subject from every angle, using many illustrations and charts. Those who were fortunate enough to hear his eighty-seven-page paper must have realized they were listening to a master."169

In 1903, Dr. Smith left The University of Texas for the University of Pennsylvania, and was succeeded by A. E. Thayer, MD, of Meridian, Mississippi. Dr. Thayer served until 1907, leaving because
of his wife's ill health. In 1908, he became a professor of pathology at Baylor University College of Medicine in Dallas, and would serve until 1912. Graduating from Williams College in 1881, he had undertaken medical training at The New York College of Physicians and Surgeons, and received his medical degree from Columbia in 1884. He had taken further work in New York, Germany, Austria, and at Johns Hopkins, where he had been an instructor in anatomy. He also had been a statistician at the New York City Health Department; assistant surgeon of the Marine Hospital Service; assistant professor of materia medica, pathology and bacteriology at the University of Virginia, and instructor in pathology at Cornell University.

"Dr. Thayer was an excellent teacher, according to Dr. Edward Randall, who described him as being a 'polished and cosmopolitan gentleman who played the piano well and invited his intimate friends into his kitchen, where he liked to prepare odd, foreign dishes for their enjoyment.'"

Since 1901, the American Medical Association, Association of American Medical Colleges, and state medical licensing boards had been cooperating on medical education reforms. In 1904, efforts to raise medical education standards—including pathology—intensified across America as the AMA created its Council on Medical Education with surgeon Dr. Arthur Dean Bevan as chairman. Dr. William T. Councilman, a pathologist on the council, conducted an exhaustive study of pathology, establishing a pattern for the first class schools. He specified the best time for the subject in the curriculum, the proper number of hours, and emphasized the importance of full-time tenure for professors of pathology and close clinical associations for the assistants.

First private pathology laboratories in Texas

OUTSIDE THE REALMS of medical education, there was considerable activity in the private sector of pathology. In 1904, Beecher F. Stout, MD, established the state's first private laboratory for clinical pathology in San Antonio. Others soon followed: In 1907, W. F. Thomson, MD, in Beaumont and J. H. Black, MD, in Dallas; in 1909, E. F. Cooke, MD, and in 1911, Martha A. Wood, MD, both in Houston; in 1912, J. E. Robinson, MD, in Temple; in 1913, Willis Waite, MD, in El Paso; in 1915, Truman C. Terrell, MD, in Fort
Worth, and in 1917, W. W. Coulter, MD, at Southwestern State Hospital in San Antonio.\textsuperscript{173,174}

Interestingly, during this era, physicians in other fields also practiced clinical pathology. A dermatologist and professor at the original Southwestern University Medical College, J. B. Shelmire, MD, was intrigued by the fields of mycology and histopathology and was said to have brought the first microscope to Dallas in 1902. Since few physicians in Dallas at the time had any knowledge of clinical pathology, “before long Shelmire was the clinical pathologist, performing urinalyses and examining blood smears for his colleagues.”\textsuperscript{175,176,177} Matthew Ferdinand Kreisle, MD, lectured in pathology at The University of Texas Medical Department in 1912-1913, the year after he graduated. He opened a general practice in Austin, had a microtome, stains and microscope in his office and did tissue studies for his and other physicians’ patients, quitting only after becoming too busy.\textsuperscript{178}

Clinical pathology and much more

“When I arrived in San Antonio,” Dr. Stout recalled, “there were a few microscopes owned by physicians, but most of these were kept under glass for exhibition purposes.”

Reflecting on his acceptance by the medical profession, however, Dr. Stout admitted, “The doctors were rather slow to accept either me or the services which I had to offer, so I added the title of ‘professional anesthetist’ to that of clinical pathologist. It must have had some measure of success because the late Dr. T. T. Jackson then made his famous statement that previous to this time, ‘Anesthesia consisted of either doing artificial respiration or chasing the patient around the house to get him back on the table.’” That same year, Dr. Stout said, came his first “claim to fame”—he reported the first case of hookworm infection in Bexar County.

Pathologists often had to function in many capacities. Claudia Potter, MD, faced this and one other challenge on June 23, 1906, when she arrived at Temple Sanitarium, the sixth woman to have graduated from UTMB, Galveston. In the absence of Raleigh R. White, Jr., MD, she was interviewed by Arthur C. Scott, MD, and it was agreed she would remain until White returned. “I was to be an anesthetist, and thrown in for good measure with this position, would also serve as pathologist, house doctor, stretcher boy and
Acceptance is Slow

general flunky. For all this service I was to receive $25 per month, room and board. I would only be on probation until Doctor White returned and such a contract met his approval."

When Dr. White heard the news, he replied to Dr. Scott, "I will be home soon, for I know you have lost your mind if you have employed a woman doctor."

Nevertheless, upon his return, he asked her to report monthly to him and kept her on a month-to-month probation. During the fourth month, he advised her she no longer had to report to him, but added that she was still on probation. Dr. Potter thus became the first pathologist at what was later Scott and White Clinic and Hospital. She spent her mornings giving anesthesia at the Temple Sanitarium and her afternoons in the city offices of Drs. Scott and White working in the small laboratory located there. She examined specimens which she brought from the sanitarium and specimens left by patients at the city offices. Her "probation" would last until retirement on July 31, 1947, Dr. White never telling her she was a permanent staff member.179,180

For Texans, the year 1905 had been a thrilling one. In the spring, President Theodore Roosevelt, on the way from Denison to San Antonio for a reunion of his Rough Riders, received continuous ovations along the way. In Dallas, he paused for a memorable banquet at the grand Oriental Hotel, an important site in the future of Texas pathologists.181

There was another tool this year to help convey basic knowledge of pathology to medical colleagues. A new medical journal founded in July 1905 by the State Medical Association of Texas—the Texas State Journal of Medicine—carried in its first issue, "The Value of Leucocyte Count in Appendicitis," by W. L. Brown, MD, of El Paso.182 In August, John T. Moore, MD, of Galveston published, "The Differential Diagnosis of the Type of Malarial Parasites by the Microscope."183

There also was other scientific progress in Texas. After being ridiculed by the Texas Legislature, the Texas anatomical law, designed to obtain cadavers for education of first-year medical students in anatomy, was passed in 1906.184

Of global importance, there was promising news on the diagnosis of syphilis. In 1901, Jules Bordet and Octave Gengou had discovered the phenomenon of complement-deviation; in 1905, Fritz Schaudinn and Eric Hoffmann, the Treponema pallida, and in 1906,
August von Wassermann developed his sero-diagnostic test for syphilis, building upon the earlier work and that of Paul Ehrlich on immunity and serum reactions.\textsuperscript{185,186,187}

It was an energetic period. "Emerson published his first edition of \textit{Clinical Diagnosis} in 1906," Stout writes. "The contents were devoted to the chemical and microscopic examination of urine, sputum, feces, blood, gastric contents, and other body fluids. In the daily routine of present day work [1948], pathologists have added remarkably little to what was then done. The physical aspects of these various substances were studied in the most minute detail. Blood chemistry was, of course, unknown and only came into general use at about the time of World War I. Uric acid was carefully looked for in the urine, it being the era of 'the uric acid diathesis.' The leukocyte count and differential and the red cell count and hemoglobin were done almost as accurately as now but the Schilling count came much later . . . Landsteiner in 1900 discovered the blood groups. It was not until 1914 that the citrate method for blood transfusions was made available, rendering the use of transfusions more feasible . . ."

One of the most interesting books of that time, Stout writes, was Palmer Finley's \textit{The Diagnosis of Diseases of Women}. And because of that "magnificent book by Cullen published in 1900, and illustrated by paintings made by the first great medical artist, Max Brödel," he recalls, "we were able to diagnose the malignant tumors of the uterus more accurately." Further, he adds, "We were not pressed for fine distinctions because the surgical approach and roentgen-ray treatment were also in a state of evolution."

"Then, as now," Dr. Stout lamented later, "inadequate histories were sent to us with tissues for examination. The fixatives for biopsies were . . . sent in unknown strengths of formalin—some too weak, some too strong, and always too little in amount. In addition, I have received biopsy specimens in plain water, dried, in commercial wood alcohol, and even in Listerine. Physicians seem to believe that the pathologist should be able to identify sufficiently any tumors without any knowledge of the patient's history. I recall that one of my colleagues sent me a biopsy specimen which puzzled me quite a bit, and on asking him by telephone the source of the specimen, his reply was, ‘A Mexican woman.’"\textsuperscript{188}

Autopsy work during the early years of the century was not only frustrating, but fraught with danger. Dr. Stout mused, “We had
considerable difficulty in obtaining permission to perform post-mortem examinations, sometimes being discouraged by cold eyed gentlemen with ten gallon hats, boots and spurs, and a Winchester rifle carelessly displayed." Often during this era animals were sent in for autopsy, and hunters cleaning their kill would send in odd specimens. 189

Again, in 1906, there was an appeal for better medical education in Texas. This time it came from John T. Moore, MD, the Texas representative to the AMA Council on Medical Education. Whereas nationally, Johns Hopkins and Harvard were the only schools requiring college degrees for admission, 190 most Texas schools now required only a high-school education for admission; The University of Texas Medical Department, one year of college. The state, in some ways, at least on paper, was approaching AMA standards, which called for a high-school education as a prerequisite. The AMA also called for medical training in a medical college having four years of not less than thirty weeks per year and thirty hours per week of actual work. Further it called for graduation from an approved college to entitle one to a state examination board, and a satisfactory examination before the licensing board. According to Dr. Moore, the AMA also felt the entrance examinations should be taken out of the hands of the medical schools, whose examinations then often were "but a farce." It was noted that The University of Texas already had taken over the examination for the Medical Department in Galveston, and that the exam now was "practically the same as for admission to the Main University." 191

Soon, a new Texas Board of Medical Examiners would honor the AMA recommendations, requiring that all applicants come from schools with curricula approved by the Association of American Medical Colleges.

Dr. John T. Moore of Galveston apparently was quite active in medical affairs and in clinical pathology. In June 1906, he published, "The Laboratory of Clinical Pathology and Its Relation to the Practice of Medicine and Surgery," in the new medical journal of the State Medical Society of Texas. 192 In the same issue, Dr. Wm. R. Howard of Fort Worth wrote, "The Examination of Sputum by Expert Laboratory Methods and Its Clinical Significance," 193 and Dr. Albert Woldert of Tyler wrote, "The Diagnosis of the Different Forms of Nephritis and the Unreliability of the Nitric Acid Tests."
Socioeconomic issues were becoming more contentious, and during the 1907 meeting of the State Medical Association of Texas, the insurance committee wrestled with an issue that might have been pertinent to pathologists. "For several years," Nixon writes, "individual physicians had been skirmishing with life insurance companies about examination fees. Three dollars was the usual fee, and the companies insisted that some of the doctors were overpaid at that. It seems that the 'sink test' for urine was not unknown at that time."194

The "stepped-up tempo of medical progress," nevertheless, was evident, and at that same state medical meeting in 1907, among the papers presented were "The Microscopic Diagnosis of Diseases of the Uterus and Cervix Uteri from Scrapings and Sections," by James J. Terrill, MD; "The Spirochete Pallida," by John T. Moore, MD, and Martha A. Wood, MD; "Historical Review of the Microorganisms of Syphilis," by A. E. Thayer, MD, and "Pathology of Colica Mucosa," by Wm. R. Howard, MD.195

Finally, in 1907, the State of Texas adopted its strengthened, One-Board Medical Practice Act, supplanting and merging the allopathic, homeopathic, and eclectic boards into one.196 It was this board that would try to erase the poor Texas record regarding the quality of medical practitioners in the state.

Despite the struggles to assure high standards in medicine, life in general was pleasant in Texas during "the dawn of the motor age." Dr. Stout later reminisced about his first years of practice.

I drove a motor car, a snappy one cylinder job, in 1907, with thrills that cannot be known now, such as being arrested and fined $15 for driving fifteen miles per hour, and driving as far as twenty miles without a puncture or other minor incident.

We could buy a porterhouse steak large enough for the family for two bits and have a pound of liver thrown in for the cat. The dollar was a dollar then and the income tax had not yet been dreamed of. Our wives and sweethearts wore clothes that are now [1948] back in style except for the bathing suits. Radio was not yet known, but we were spared the crooners, and the golden voice of the politician could not hypnotize an entire nation.

In 1907, at The University of Texas Medical Department in Galveston, Dr. James J. Terrill succeeded Dr. A. E. Thayer as professor of pathology. He had graduated in 1902, served as an instructor under Dr. Thayer, and now became the first graduate of the school to head its pathology department.197,198
“Jimmie Terrill, as he was generally known,” writes Brindley, “was beloved by all his associates; but in 1913 he went to Scott and White as chief of laboratory services.”

“Dr. Potter,” reports Robert F. Peterson, MD, of Scott and White, “characterized him as a natural born teacher, a great diplomat, and an unsurpassed storyteller . . . stated that it was under his guidance that our Pathology Department became a real Pathology Laboratory.” At the time, Dr. Peterson adds, the Scott and White laboratory also did outside work for other doctors—marking the hospital’s first recorded venture into the laboratory referral service business.

In 1917, Dr. Terrill moved to Dallas where he and Dr. Guy F. Witt established Timberlawn Sanitarium, a neuropsychiatric hospital. In 1921, he reportedly gave “a flowery speech” nominating Dr. C. M. Rosser of Dallas as president-elect of the State Medical Association of Texas.

With more stringent rules coming from the Texas State Board of Medical Examiners, many Texas medical schools suddenly had to close their doors—resulting in a number of suits and threats of harm to the state board. Disappearing in 1908 were two Dallas schools—the Physio-Medical College and the Gate City Medical College.

Also in 1908, the AMA Council on Medical Education, concerned about the quality of education and stung by criticism from certain schools receiving low grades in their surveys, invited the Carnegie Foundation to conduct a study of U.S. schools. Abraham Flexner headed this famous study, which evaluated four Texas medical schools in November 1909. It highlighted the status of Texas medical school laboratories at the time.

The state then had a population of 3,789,574, with 5,789 physicians, a ratio of 1:563. The first two schools studied were in Dallas, a city with a population of 56,119.

Fifty-three students attended Baylor University College of Medicine, which required three years of high school or the equivalent for admission. It had twenty-nine teaching staff including sixteen professors, and all teachers were practitioners. The school’s new laboratory adjoining the hospital seemed “quite bare,” but the dissecting room apparently was in good condition. There was a
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"fair" chemical laboratory, but a meagerly-equipped laboratory for pathology and bacteriology.

"There was nothing else," the report declared, "and no assurance of funds with which to provide additional laboratories or to maintain those already in part provided."

Adjoining the laboratory building was a new hospital of some 200 beds, and the school had access to two free wards containing thirty-two beds and an additional "negro" ward of twenty-two beds in "a pavilion close by."

There was no clinical laboratory at the hospital. Clinical opportunities were obtained at two other institutions, but infectious diseases and little obstetrical work was obtainable. The reviewers concluded, "The clinical opportunities are thus decidedly inadequate."

The other school in Dallas was Southwestern University Medical College, organized in 1903 nominally as the medical department of Southwestern University, Georgetown. It had sixty-eight students with thirty-two on the teaching staff, including seventeen professors. A three-year high school course or its equivalent was required for entrance.

The Flexner report commented that the "school possesses a new building, externally attractive, but wretchedly kept. It contains a disorderly and incomplete chemical laboratory, a small amount of new physiological apparatus, a single laboratory fairly well equipped for pathology and bacteriology, and an ordinary dissecting room." There is a 'reading room' with nothing to read. The lecture-rooms are bare, except for chairs; in a corner of one of them is an abused manikin." The school held amphitheatre clinics in surgery once weekly at an institution across the street, where "perhaps" fifty beds, mostly surgical, were accessible, and one afternoon a week at the City Hospital "one and a half miles distant." No infectious diseases were obtainable and neither hospital had a clinical laboratory. "Clinical opportunities are therefore decidedly inadequate," the report declared.204

In Fort Worth, which had a population of 27,096, the Fort Worth University Medical Department had been organized in 1894 as a nominal department of a nonexistent local "university." A three-year high school course or its equivalent was required for admission; 100 students attended, and there was a teaching staff of forty-seven, including fourteen professors, all of whom were practitioners. Laboratory facilities included a dissecting room, ordinary
laboratories for chemistry and bacteriology, and a single laboratory
with “routine outfit” for pathology and histology, and there had
been a recent small-scale provision for physiology. The classroorns
were bare except for a reflectoscope and a defective skeleton. There
was a small museum of unlabeled specimens and a small library.

The clinical facilities in the basement of the school building, the
report attested, made “a wretched hospital of fifty beds, twenty of
them free.” There was no clinical laboratory, and one surgical clinic
was held weekly at a private hospital two miles away.”

Galveston at the time had a population of 37,834, and on that
island was located the only existing state-supported medical school,
The University of Texas Medical Department. Entrance require­
ments included a four-year high school education, “passed on” by
the state university. Attending were 206 students. There were
twenty-six members on the teaching staff, nine of whom were pro­
fessors. Three professors and seven instructors were full-time, and
all instructors were on salary.

The report was complimentary to The University of Texas in
one area. “The school has a complete series of admirable teaching
laboratories, covering anatomy, physics, chemistry, physical chem­
istry, pathology, bacteriology, histology, and embryology. There is
a large pathological museum, beautifully kept, every specimen clas­
sified, labeled, and indexed; and a notable anatomical museum in
which special preparations are most advantageously arranged for
teaching use. The library is good and is in regular receipt of foreign
and domestic journals; animals in abundance are on hand. Compe­
tent helpers are provided for each floor. No effort, however, is made
in the direction of research.”

The clinical facilities included a university hospital of 155 beds
adjoining the laboratories, whose “organization is along sound lines
—the service with a single chief being continuous, but students have
not as yet been actively utilized in the wards. As elevated standards
improve the student body, this innovation will become more fea­
sible. . . .”

Flexner concluded: “Texas is indubitably a state destined to a
great development; its educational institutions must from time to
time be readjusted to take account of its expanded needs. It is neither
wise nor possible to provide now for requirements that will a genera­tion
hence become imperative. Sufficient for the people of Texas to­
day to meet in the most effective way possible their own needs.”
"There is now," he said, "only one educational institution in the state capable of maintaining a medical school whose graduates deserve the right to practice among its inhabitants; there is only one medical school in the state fit to continue in the work of training physicians. That institution is the state university; the medical school is its department at Galveston. The other three schools are without resources, without ideals, without facilities, though at Baylor the conjunction of hospital and laboratory might be made effective if large sums, specifically applicable to medical education, were at hand,—which is not, however, the case."

He further declared, "There is no indication on the face of things that any of the three inferior schools can live through the dry period to the opportunities of the future. Their enrolment (cq) is small; and the state is badly overcrowded with just the kind of doctor that they are engaged in producing. Should the loopholes in the present state standard be stopped up, all three would quickly disappear.

"The course of the state university needs to be carefully considered. Whether a college requirement will soon be wise is a question to be pondered. The institution has not yet exhausted the possibilities of the high school standard; its laboratories—admirable for undergraduate teaching—need further development on the productive side; its hospital must be enlarged; more effective teaching methods can be introduced into it; the dispensary is not yet effective. It is worth asking whether from the four-year high school basis the university will not be wise to get complete control of the field, driving out the low-grade schools, educating the people of the state to regard it as their main source of supplies in the matter of doctors and the active conservator of public health, before endeavoring to push ahead to a higher standard, which may not be so well adapted to local conditions in a relatively new country."

The annual budget for all Texas medical schools at the time equalled $63,342, all of which went to The University of Texas Medical Department. The department was carried by the general funds of the university, Flexner wrote, and of the budgeted monies, $6,500 was derived from fees. In addition, the hospital budget required $39,611. Budgets were not cited for the other schools, whose sole income came from fees of slightly more than $7,000 to $10,500 for the Fort Worth University Medical Department.

Medical school standards were then led by Johns Hopkins in
Baltimore, which required a college degree, but Flexner noted that the Texas state board had dealt vigorously with the worst of the Texas schools. Commenting generally about the Southern states, he said, “Thus far, Texas alone has made an effort to keep pace.”

Flexner thoroughly condemned many pathology museums. “Such specimens as one meets are often putrid, rarely labeled properly, and still more rarely catalogued. But a few exceptions may be fortunately noted: the great anatomical and pathological museum at McGill... To the same class belong the excellent collections made by Souchon at Tulane and by Keiller at Galveston (University of Texas)...”

“None of the southern state universities, indeed, is wisely placed: Texas has no alternative but a remote department, such as it now supports at Galveston...” Flexner made it clear he thought the state should have placed its medical school in Austin.

Pathology came in for considerable additional discussion by Flexner, who concluded by saying that pathology’s “greatest contribution to the comprehension and mastery of disease” had been illuminating its causation or etiology.

Flexner’s call for standards was to have a profound influence on medical education—and the teaching of pathology—throughout the United States and Texas. Historian Esmond R. Long, in his review of pathology programs during the first quarter century, cited several colleges in Texas among schools of distinction.

The chief centers of teaching and research in pathology in Texas in this period were at the Medical Branch of the University of Texas in Galveston and Baylor University in Dallas. In Galveston the most prominent was A. J. Smith (1863-1926; tenure 1891-1903), a student of parasitology, who initiated investigations on tropical medicine in Texas and continued them at the University of Pennsylvania... He was succeeded by the peripatetic Alfred E. Thayer (1863-1953; tenure 1903-07), who had headed the Department of Pathology at West Virginia (1899-1900) and was to fill the position later at Baylor in Dallas (1908-1912) and Alabama (1912-1913). At Baylor the chief pathologist up to the time of George T. Caldwell (1882-1947) was W. H. Moursund (1884-1959; tenure 1913-17), noted for his organization of the Department and the school, of which he was Dean from 1923-1953. Caldwell, trained by H. G. Wells at the University of Chicago, was recognized as
one of the most energetic and progressive teachers in the Southwest. He did much to promote high standards in pathology throughout the region. 212

At the close of a phenomenal decade, Texas pathologists in private practice and in medical schools indeed were ready to extend the proud heritage that Virchow so remarkably defined for them. Eagerly absorbing new scientific information, they experimented in their own laboratories and applied their new knowledge to patient care. They also continued their roles as teachers, sharing their knowledge with colleagues. 213

Acceptance by their peers sometimes was slow, and, over the horizon, there would be more challenges. With dogged persistence, however, the leaders of Texas pathology would continue their quest to infuse science into the practice of medicine throughout the Lone Star State.