Chapter 4

SURGICAL PATHOLOGY AT THE COLLEGE OF PHYSICIANS
AND SURGEONS OF COLUMBIA UNIVERSITY

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INTRODUCTION

To establish the chronology of the onset and evolution of the specialty that we now call surgical pathology, it is necessary to remember that the same term was used in Europe, beginning in the second half of the 19th century, to refer to the systematic teaching by university surgeons of the nature, diagnosis, and treatment of surgical diseases (figs. 4-1, 4-2). There were clinical departments, institutes, and chairs of surgical pathology. Some departments of surgery at universities had their own laboratories equipped for histology, blood counts, and bacteriology. These were used by young surgeons to conduct projects in experimental surgery, and were also often employed for the histological diagnosis of routine human surgical specimens. This was a result of the need felt by the surgery chairman to assert the complete independence of his department from faculty members of other departments, and the well-known lack of interest on the part of the then professors of pathology (referred to by Dr. George Humphreys as the followers of "the stiff necked Germanic Pathology of Virchow" [10]) to do anything less than a complete autopsy. These small research and diagnostic laboratories, incorporated in clinical departments of surgery, were the seeds around which the modern specialty of surgical pathology would later crystallize.

The beginning of the 20th century had witnessed the rapid development of what was to become the era of modern surgery. This was triggered by the discoveries of Pasteur and Lister, which led to the understanding of the nature and mechanism of infections and the possible methods of preventing and controlling them (asepsis and antisepsis). This, together with the progress of anesthesia and the beginning of the understanding of the physiological changes in the surgical patient, made it possible for the surgeon to start undertaking elective operations rather than limiting surgery to emergencies (trauma, perforations of viscera, abscesses, etc.). It was in this atmosphere that, out of necessity, the specialty that we now call surgical pathology was born. The surgeons wanted to know the nature of the lesions (tumors, granulomas, etc.) that they removed or biopsied in their patients but the pathologists of the old school, influenced by the famous European professors from Germany and Austria, showed little

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**Figure 4-1**

EARLY SURGICAL PATHOLOGY TEXTBOOK
1875 English translation of General Surgical Pathology and Therapeutics, by Theodor Billroth, Professor of Surgery in Vienna.
or no interest in studying surgical specimens. In particular, German pathologists disdained what they called "Stückchen-Pathologie," i.e., the pathology of small fragments or piecemeal pathology. It was because of this need that young surgeons (and a few young pathologists) became interested in the study of surgical specimens for the purpose of establishing the diagnoses of lesions removed by the surgeons and helping them to formulate a prognosis and appropriate treatment.

Because it was the surgeons who needed the information, it was natural that this budding specialty should be initiated and sponsored by departments of surgery rather than by pathologists. This is, by and large, was what happened in the College of Physicians and Surgeons of Columbia University (henceforth referred to as P & S) in New York City.

THE ESTABLISHMENT OF SURGICAL PATHOLOGY AT P & S

The original P & S building was located on 59th Street, between Ninth and Tenth Avenues (fig. 4-3) (6,9,12). Construction, completed in 1887, was made possible through the generosity of George W. Vanderbilt.

In about 1903, at the suggestion of William T. Bull, professor of surgery, a laboratory of surgical research was instituted at this site by Dr. Joseph A. Blake, professor of surgery from 1903 to 1913, and
described by Dr. Arthur P. Stout (who was a medical student at P & S from 1908 to 1912) as a brilliant, handsome, elegant, and successful surgeon (fig. 4-4) (5,8). This laboratory was originally intended for the study and practice of surgical techniques and for the evaluation of wound healing in animals (fig. 4-5). During the early years, research on surgical techniques (use of fascial graft to repair defects in hollow viscera, vascular anastomoses, techniques of gastric surgery) went hand in hand with pathophysiologic studies such as the role of osteoblasts in bone repair, as carried out by Dr. Fred Bancroft (2–4).

In 1905, the need was felt for a Laboratory of Surgical Pathology, in which studies on human tissues could be made. This started with a desk in the Laboratory of Pathology, courtesy of Dr. Prudden, head of the Pathology Department, where workers would have the opportunity of confirming (with the aid of the microscope) many of their gross observations.

Dr. Blake assigned the organization and direction of that laboratory to Dr. William Cogswell Clarke, one of the young surgeons on his staff (figs. 4-6, 4-7). The Laboratory of Surgical Pathology was expanded in
1910 through the generosity of several donors. Members of the Agnew family, who were friends of one of the surgeons (Dr. Hugh Auchincloss), contributed enough funds to erect over the roof of the medical school a penthouse housing a large laboratory, an office for Dr. Clarke, and an operating room for animal research. Another source of funds was a businessman, Clarence Mackay, who had an excision of a "squamous cell epithelioma" of the tongue performed by Dr. Blake. Clarke, on studying the histological specimen, determined that the excision had not been complete. Blake performed a reexcision and obtained a permanent cure. This dramatic demonstration of the importance of surgical pathology led Mr. Mackay to contribute the substantial donation of $12,000 per year. In passing, it should be noted that Mr. Mackay's postoperative course was complicated when Blake fell in love with Mackay's wife and eventually married her.

The non-medical staff consisted of a technician and a full-time secretary. A partition was built, with the laboratory and technician on one side, and the secretary and files on the other. The partition had a window through which the surgical pathologist could dictate his gross description to the secretary (fig. 4-8).

This laboratory received specimens from the Vanderbilt Clinic, from private doctors and, later, selected cases from Presbyterian Hospital for intensive study and photomicrography. They also processed tissues from animal experiments. From the beginning, specimens were fixed in 4 percent formalin, and most of the routine material was cut with the frozen section technique with the use of a Sartorius microtome (fig. 4-9). In 1910, paraffin embedding and sectioning was employed in selected cases. The routine staining was hematoxylin-eosin (figs. 4-10, 4-11).

In the same year, 1910, the New York Presbyterian Hospital, located on East 70th Street at Park Avenue, became affiliated with P & S, and a separate Laboratory of Surgical Pathology was established there (fig. 4-12). It started with a single room inside the operating building and was later moved into a new addition to that building.
The young surgeon describing a specimen is Dr. Bert Rullison. He was dictating his description through a window in a partition to a secretary at the typewriter.

The technician at the microtome is Esianda Goode, born in 1886. She had several college degrees and later married Paul Robeson, the singer, who was a Columbia Law School graduate. She died at age 68.
The two laboratories at the medical school and the hospital remained separate until 1928, when the new Columbia-Presbyterian Medical Center ("that pile of bricks and mortar," as Dr. Virginia K. Frantz referred to it) opened at West 168th Street and Broadway in Washington Heights, where it stands today. In this new location, the Laboratory of Surgical Pathology was located on the 16th floor of the P & S building. It remained there until 1951, when it was relocated to the 14th floor of the Vanderbilt Clinic. (The 10th to 15th floors, known as the Cancer Institute, were added in 1950.)

It must be remembered that from its beginning, in approximately 1905, until 1960, surgical pathology was a division of the Department of Surgery with a budget appropriated from that department. The appointments of the surgical pathologists were in the Department of Surgery, and the salaries of secretaries and technicians were paid by the Department of Surgery. In addition, the surgical pathology residents and fellows had an appointment at Presbyterian Hospital but not as pathology residents in the medical school. All of these arrangements changed in 1960 when Donald McKay became chairman of the Department of Pathology. Surgical pathology became one of the divisions of the pathology department, although it preserved its semi-autonomy for many years. It was only from 1960 on that the pathology residency training program included a rotation in surgical pathology. Before that time, the residents in surgical pathology were recruited from among physicians who had completed their residency in pathology at other institutions, but almost never at Columbia-Presbyterian Medical Center.
The slides of the first six cases processed in the Laboratory, all of which are still available and interpretable, albeit a little damaged. Case 6, a tumor of the index finger was, in effect, a benign giant cell tumor of tendon sheath, not a giant cell sarcoma. The diagnoses of the other five cases are perfectly acceptable today, including the pectoral fin of a goldfish (case 5).

When I joined the Division of Surgical Pathology in 1943, the Department of Pathology was headed by Dr. James Jobling as chairman and by Dr. A. Pappenheimer as vice chairman. My impression as a young resident was that the relationship between these two individuals and the surgical pathology staff was friendly and cordial but that no real scientific or professional interchange between pathology and surgical pathology existed.

THE EARLY SURGICAL PATHOLOGY STAFF

This section deals with the physicians who staffed the Surgical Pathology Laboratory, worked in it, and distinguished themselves with their professional and research activities.

Dr. William Clarke (P & S, 1899), the founder of the laboratory in 1905, was trained as a surgeon and always considered himself a surgeon, like all his colleagues and immediate successors (see figs. 4-6, 4-7). According to those who knew him well, Clarke was a fiery nonconformist and eccentric, even in his methods of teaching medical students. He was generally referred to as "Wild Bill Clarke," and is remembered either as "one of the most fascinating members of the surgical faculty," by Harry S. Mackler (P&S, 1924) or as a sadistic individual who enjoyed antagonizing students and colleagues. His teaching was aimed at making students and young surgeons think for themselves rather than parroting mechanically their seniors and the standard books. While teaching the course Introduction to Surgery (essentially a clinical and experimental course on wound healing), he started complementing gross observations with histological examinations, subsequently applying the same technique in a gradual fashion to the study and diagnosis of surgical specimens.

Clarke was also a born naturalist who liked to collect specimens from woods and streams. The fifth entry in the P & S Accession Book for surgical specimens is a goldfish. Another early entry is the "foetus of a Jersey opossum." At one point in his life he became interested in the hibernating gland (brown fat) of hibernating animals. On winter weekends, he often would take two or more surgical residents to his home in Connecticut to help him dig out hibernating woodchucks. Residents did not dare refuse the invitation (how times have changed!).

Dr. J. E. McWhorter was a classmate of Clarke's and a surgeon. He joined the laboratory soon after its creation and became a full-time surgical pathologist. Besides his duties as surgical pathologist, Dr. McWhorter did research with Dr. Allen O. Whipple, who became chairman of the Department of Surgery in 1921. McWhorter and Whipple were interested in growing tissues in vitro. They also developed instrumentation and methods for growing in vitro chick embryos and using the microscope to observe their development in chambers at constant temperature. As Dr. Stout later wrote in his memoirs (see chapter 10), this was no mean accomplishment in those days.
McWhorter later became surgical pathologist at the First Surgical Division of Bellevue Hospital, which at that time was part of the Department of Surgery of the College of Physicians and Surgeons.

Dr. Arthur Purdy Stout entered medical school at the College of Physicians and Surgeons in 1908. From his very first year he was interested in the work being carried out in the laboratories of surgical research and surgical pathology run by William Clarke, and managed to spend part of his summer vacations there through all four years of medical school (at that time medical students had about four months of summer vacation). During those working vacations, Stout was brought into contact with many of the young surgeons who frequented the laboratory to pursue their own studies or to learn the pathologic findings on tissues they had removed from their own patients. This led him to appreciate the diagnostic and research opportunities that existed in the field of surgical diseases, and greatly influenced his future career. He graduated from medical school in 1912 and became a surgical intern (house surgeon) at Roosevelt Hospital after a competitive examination. The training, which lasted two years, included six months in the Department of Pathology under the supervision of Dr. Mortimer Warren. According to Stout’s recollection, most of his work during this period was in surgical pathology, including the use of frozen sections, to which he had already been initiated during his volunteer work as a medical student with William Clarke. At the end of this training period, in 1914, Stout was appointed instructor in surgery at the College of Physicians & Surgeons and assistant attending surgical pathologist at Presbyterian Hospital. His activities, focused increasingly on surgical pathology, resumed after the interruption due to his participation in the First World War (fig. 4-13). He had learned early the importance of a close correlation between clinical and pathological findings (in his own words, “it is impossible to make an intelligent interpretation of pathology without a clear understanding of its clinical implications”). Stout was always particularly fascinated by the pathology of tumors, and this interest remained with him during his long career (1,7,11).

During those early years, Stout wrote his first article on human tumors, “Conditions of the Epididymis Simulating Carcinoma” (13). At that time he thought that the lesion he described in this article was a lymphangioma; later it became recognized as an adenomatoid tumor, and eventually as a benign mesothelioma. He presented this paper at a meeting of the New York Pathological Society in 1917. About that time, he also published a study of a ganglioneuroma of the posterior mediastinum, and a case of tumor of the ulnar nerve, which was probably the first recognized primary neuroepithelial tumor of peripheral nerves. This interest in peripheral nerve tumors and their histogenesis followed Dr. Stout throughout his life and resulted in many publications (some...
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HUMAN CANCER
ETIOLOGICAL FACTORS; PRECANCEROUS LESIONS;
GROWTH; SPREAD; SYMPTOMS; DIAGNOSIS;
PROGNOSIS; PRINCIPLES OF TREATMENT

BY
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ILLUSTRATED WITH 331 ENGRAVINGS

LEA & FEBIGER
PHILADELPHIA

Figure 4-13
ARTHUR PURDY STOUT
Arthur Purdy Stout, as a lieutenant in the U.S. Army Medical Corps, with the American Expeditionary Forces in France, 1917-1918. He served with the Presbyterian Hospital Surgical Unit but, on his return after the armistice, he soon decided to devote his career to surgical pathology.

Figure 4-14
HUMAN CANCER

of which included tissue culture studies done in association with Dr. Margaret Murray), and in the Fascicle, Tumors of the Peripheral Nervous System (AFIP, First Series). He single-handedly wrote Human Cancer (fig. 4-14) (14), authored numerous articles, and was the first editor-in-chief of the Atlas of Tumor Pathology (AFIP Fascicles). Over the years, he became a sought-after consultant for individual pathologists and institutions. A consultantship in which he was particularly involved was with the Veterans Administration Hospital in East Orange, New Jersey, where Oscar Auerbach was the chief pathologist. This association led to the famous study of the tracheobronchial tree and its lesions in cigarette smokers, which was based on serial sections from autopsy material.

Dr. Wilder Penfield, who later became an outstanding neurosurgeon in Montreal, joined the P & S Department of Surgery in 1921 and was given space in the Laboratory of Surgical Pathology, where he started a laboratory of neuropathology, with a technician and secretary assigned to him. Dr. William V. Cone was his junior associate. A number of special silver stains were developed by this team.
Dr. George Laidlaw (fig. 4-15) was introduced to the Laboratory of Surgical Pathology by Penfield around 1922. Laidlaw was a practicing cardiologist but, when he learned that he had papillomas of the bladder, he decided to abandon his clinical work and devote the rest of his life to tumor research using morphologic methods. After a year with Pierre Masson in Montreal, he came to New York to work with Penfield, devoting his time to developing better techniques for the silver impregnation of reticulin fibers. The method he developed was highly successful and widely used. It was employed in the Laboratory of Surgical Pathology at P & S until the early 1980s, when it had to be replaced because of a change in the fixatives used. Dr. Laidlaw worked in surgical pathology at P & S until his death in 1937, and became a great friend and collaborator of Stout.

Dr. Virginia Kneeland Frantz (fig. 4-16) was another lifelong collaborator of Stout’s and a pillar of the Laboratory of Surgical Pathology. She was a 1922 P & S graduate, and the first woman to become a surgical intern at Presbyterian Hospital. Influenced by William C. Clarke, who was in a
sense her idol, she became more and more attracted to surgical pathology and, together with Stout (who was ten years her senior), formed a team that for many years to come was considered the "establishment" in surgical pathology. In 1951, when requested to write a biographical note on Stout on the occasion of a Festschrift in his honor in the July 1951 issue of Cancer (Vol. 4, No. 4), Dr. Frantz accepted "because there is no one else who has, for more than thirty years, sat steadily, year in and year out in Dr. Stout's lectures, by his microscope, and at his feet." She never forgot that surgery was her first love, and remained a superb teacher together with H. D. Harvey in the course Introduction to Surgery, which had been started by Clarke in 1905 and which we all taught until it was discontinued in the 1970s. Virginia Frantz developed into a supremely skilled surgical pathologist and an outstanding teacher of the discipline. She constantly insisted on the clinical significance of each diagnostic decision, often personally visiting the patients whose cases she had studied and attending the majority of conferences and ward rounds of the surgical department. She collaborated with Whipple in the early studies of insulin-producing islet cell tumors. She also became an expert in thyroid tumors and started a thyroid clinic, attended for many years by surgeons, internists, endocrinologists, and pathologists. She was one of the first, if not the first, to use radioactive iodine in the detection of metastases from thyroid carcinoma and in the treatment of those tumors. Her fascicle on pancreatic tumors, published by the AFIP in 1959, was for many years the standard reference book in the field. During World War II, she and I conducted an experimental and clinical research project on the use of oxidized cellulose as an absorbable hemostatic agent. In addition to her activities as a surgical pathologist, teacher, and researcher, Virginia Frantz (or V. K. F., as we knew her) served for many years on the admission committee of the medical school. She retired in 1962 because of age limits but, in spite of a severe illness, remained active practically until her death in 1967.

Throughout her career she maintained a spirit of scientific curiosity. An episode I remember quite well will serve as an example. She owned a farm in Rutland, Vermont. One day, the farmer called to let her know that he had found one of the cows dead in a ditch. Frantz told him not to touch the dead animal; she rushed to the autopsy suite, took a large number of instruments and some jars with formalin, drove by herself to Rutland, autopsied the cow in the ditch, took specimens from all organs, and brought them back to New York. I do not believe that a satisfactory cause of death was arrived at, other than bronchopneumonia.

Margaret R. Murray, Ph.D. (see fig. 4-16) appeared on the scene on or about 1929 and made contributions of great importance to the Laboratory of Surgical Pathology. She was asked originally to join Dr. Clay Ray Murray, an orthopedic surgeon, in his attempts to induce bone formation in vitro with the use of calcium salts. Margaret Murray, who had learned the techniques of tissue culture as a National Research Fellow, set up a tissue culture laboratory at P & S. When Ray Murray's project proved impractical, she continued to work in surgical pathology until 1970, when she retired because of age limits (she died at her home in Virginia in 1986 at the age of 85). Margaret Murray had an enormous influence on Stout's studies of the histogenesis of tumors (fig. 4-17). Long after Stout's retirement, she continued to collaborate with the activities of the other members of the department by applying the tissue culture technique to the study of several different types of tumors, such as tumors of peripheral nerves, sympathetic nervous system, adrenal medulla, thymus, and others.

Dr. Cushman D. Haagensen, cancer researcher, surgeon, and surgical pathologist, joined P & S in 1931 to work in the Crocker Institute of Cancer Research (fig. 4-18). In 1933, he began his association with the Laboratory of Surgical Pathology and with Stout (its director at the time) as a fellow in cancer research. Haagensen was a remarkable, exceptional individual. Stout, in his biographical notes, defined him as a man with "a restless, inquiring mind, the ability to grasp problems and to express them clearly, and a caustic tongue which he never curbed if he encountered stupidity, cupidity, sham, or what he believed to be these traits in anyone" (15). Because of his uncompromising character, he had many friends (among whom I include myself), but also many critics and enemies.

Haagensen graduated from Harvard Medical School in 1923, and had two years of surgical training at Boston City Hospital under Harvey Cushing. He then became assistant resident in surgery under Samuel Harvey at Yale but he soon had to interrupt his training program because of the pulmonary tuberculosis that kept him out of the medical profession for two years. Subsequently, he
decided to devote his activities to cancer. He entered the surgical training program at Memorial Hospital in New York and followed this with a cancer research fellowship at the Crocker Institute of Columbia, where he studied the effects of various carcinogens in mice. At the same time he continued his surgical experience with Dr. George Semken, from whom he learned and perfected the Halsted radical mastectomy procedure. When he joined the staff of the Laboratory of Surgical Pathology, he already was an active clinical surgeon and accomplished cancer researcher. He established, exhaustively studied, and followed for many years a colony of mice with the milk factor (Bittner's strain). In collaboration with other researchers, he identified the milk factor as a virus-like particle. He performed thousands of breast surgical operations (among them more than one thousand radical mastectomies) and personally followed the status of many of these patients (some for over 50 years). He was an excellent surgical pathologist, who did not need any help in examining the tissues of his patients (including frozen sections) but allowed the surgical pathology residents to examine them "for
Alonzo Clark was the first Professor of Pathology at the College of Physicians & Surgeons (1847–1883). He became one of Stout’s best friends and collaborators, and co-authored with him several important articles, most of which dealt with breast diseases. His magnum opus was *Diseases of the Breast*, first published in 1956, which was translated into several languages, and saw its third edition in 1986. He was an excellent microscopist, and all the photomicrographs in his books and other publications were taken by him personally.

**E V O L U T I O N O F T H E D I V I S I O N**

When I started my residency in 1943, the Laboratory of Surgical Pathology was one of several more or less autonomous laboratories of pathology specialties that flourished outside the Department of Pathology. Others were the laboratories that had been first chaired by Alonzo Clark (1847–1883) (fig. 4-19) and Francis Delafield (1883–1893) (fig. 4-20). William G. MacCallum (1909–1919) (fig. 4-21) was the chairman of pathology at the time that Stout was a medical student. Other autonomous laboratories were those dealing with eye pathology, orthopedic pathology, urological pathology, neuro-pathology, and pediatric pathology. Stout discussed this unfortunate state of affairs in his autobiographical notes (15).

At that time, the Laboratory of Surgical Pathology covered the following clinical services: general surgery (which included orthopedic surgery, or "fracture service," as it was called in those days), plastic surgery (which provided a large number of benign and malignant skin tumors), otolaryngology, oral surgery, and all the biopsies originating in the Department of Medicine (10). Throughout the following years, urologic pathology (with Dr. Meyer Melicow), orthopedic pathology, eye pathology, and pediatric pathology (the latter having acquired national and international recognition under the leadership of Dr. William G. MacCallum (1909–1919) (fig. 4-21) was the chairman of pathology at the time that Stout was a medical student. Other autonomous laboratories were those dealing with eye pathology, orthopedic pathology, urological pathology, neuro-pathology, and pediatric pathology. Stout discussed this unfortunate state of affairs in his autobiographical notes (15).

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Dorothy Anderson), were amalgamated with the original Laboratory of Surgical Pathology. As mentioned earlier, the Laboratory of Surgical Pathology was transferred from the Department of Surgery to the Department of Pathology in 1960. At present, dermatopathology, gynecological pathology, and neuropathology are still somewhat autonomous. However, for the past thirty-five years the pathology residents and fellows have rotated regularly in these specialized laboratories, and there is a continuous interchange of consultations, as well as frequent joint conferences between these services.

TEACHING ACTIVITIES AND EARLY TRAINEES

One of the most important characteristics of the Laboratory of Surgical Pathology at P & S has been its commitment to the teaching of surgical pathology to pathologists, surgeons, clinicians, and medical students. Stout, in particular, had an absolute devotion to this task, which he considered an almost religious mission. This activity was carried out in a variety of ways. The division participated in the weekly neoplasm clinic, which met every Wednesday in the Vanderbilt Clinic. This conference had begun in 1930 as a head and neck tumor clinic but soon expanded to include tumors of the breast and other sites. Stout, Frantz, Haagensen, and later myself attended it regularly, as did several surgeons and radiotherapists. Stout also attended regularly the skin tumor clinic and the gynecological cancer clinic.

It was in the 1930s that a true residency training program in surgical pathology began to take shape. In the beginning it was the surgical residents of Presbyterian Hospital who regularly rotated in surgical pathology for periods of six months. This rotation program lasted well into the 1960s, at which time it had to be discontinued because of time conflicts derived from the establishment of new specialized surgical rotations such as thoracic surgery and vascular surgery. While the rotation lasted it was mutually useful because the surgical residents learned a great deal about the pathologic findings on the surgical patients, and the surgical pathologists had easy access to clinical information on the specimens received in the laboratory.

The first residents in surgical pathology besides the surgery rotators were physicians who subsequently selected another specialty. Fred Smith, for instance, spent four or five years as a resident in surgical pathology until 1936, when he went into surgery and became one of the outstanding orthopedic surgeons at P & S. Likewise, Theodore Eberhard, who served as surgical pathology resident from 1936 to 1937, later became radiotherapist at Ellis Fishel Cancer Hospital and, after active military service in World War II, became chief of radiotherapy at Jefferson Medical School in Philadelphia (it was he who introduced Lauren Ackerman to Stout). Yet another was J. Vardeman Cockrell, a P & S graduate, who spent the year 1937–1938 as resident in surgical pathology before any other postgraduate training (it was more or less an experiment, Stout commented). Cockrell then went into surgery and in 1951 he became chief of surgery at the Veterans Administration Hospital in Jackson, Mississippi.

Another interesting teaching activity took place at Stout’s initiative at the end of World War II. It had become apparent to him that a large number of physicians who had served in the armed forces would have difficulty finding jobs. This was particularly true...
for the younger physicians who had not yet completed the training required by the various specialty boards (pathology, surgery with its subspecialties, radiology, radiotherapy, etc.). Knowledge of surgical pathology was at that time required by these boards. Stout organized a three-month surgical pathology course consisting of three weekly sessions of two hours each, which he gave twice a year. This hugely successful course also attracted many foreigners, especially doctors from China, the Philippines, Canada, and the South American and Caribbean countries.

RESIDENCY PROGRAM AND SECOND GENERATION SURGICAL PATHOLOGY STAFF

Beginning in the late 1930s, and with very few exceptions, the residents, trainees, and fellows in surgical pathology were people who were committed to a career in pathology. Stout had made an informal agreement with Shields Warren, of Harvard Medical School, to take his residents on a regular basis for additional experience and training in surgical pathology.

Alvin O. Severance (M.D., Johns Hopkins, 1929) was the first resident who came to P & S under this agreement (fig. 4-22). After having completed his basic training in pathology in Detroit and Boston, he worked with Stout and Frantz in 1938-39, first as a resident and then as assistant surgical pathologist. He became a lifelong friend of Stout and had a great influence on his subsequent career. Severance developed into an outstanding pathologist in San Antonio, and became a mainstay in the army training program in pathology at Brooke General Hospital, where he was a consultant. He organized yearly seminars in surgical pathology at this institution and invited Stout to run them on several occasions. It was mainly through these exercises that Stout started to become well-known nationally.

Robert P. Hill, who had also trained with Shields Warren, spent two years (1939-1941) in surgical pathology (1940-1941). Following the completion of his residency he went to Philadelphia, where he organized a division of surgical pathology. This soon developed into one of the leading surgical pathology centers in the United States and became known for its excellent training program and for the number of original publications by its members. In 1955, Horn left Philadelphia to become chairman of the Department of Pathology at Henry Ford Hospital, where he remained until his untimely death. Horn became one of the most prominent and visible pathologists in the various national societies of pathology. During his entire professional career, he remained a great personal friend of Stout and the rest of us. Stout wrote of him that he was “carrying on and spreading the gospel of surgical pathology” (15).

Vincent P. Collins was a Canadian who came to P & S following Horn, after having spent two years with Shields Warren in Boston. In 1943, Collins joined the army and served in the Pacific, where he
was decorated for bravery. When he returned from the war he married a radiologist on the staff of P & S and completed training in radiology and radiotherapy. He became chief of radiotherapy at the Francis Delafield Cancer Hospital (which was affiliated with P & S), and in 1952 he joined the faculty of Baylor University Medical School in Houston. During his years as a pathologist and surgical pathologist, Dr. Collins published several studies on the surgical pathology of the stomach.

Raffaele Lattes, the author of this chapter, was the next resident in surgical pathology (1943-1946), after having spent two years in the pathology department at Women's Medical College of Pennsylvania (figs. 4-23, 4-24). Born and educated in Italy and having completed my training there in general surgery, I visualized my job as resident in surgical pathology as an avenue to re-enter academic surgery, with the help of Stout and Whipple. However, I so much enjoyed my "temporary adventure" in surgical pathology that, after leaving and working for two years as assistant pathologist under Dr. Maurice Richter in the New York Postgraduate Hospital, I enthusiastically accepted the offer to return to surgical pathology at P & S in 1948 and, despite my official retirement in 1979, I am still there today. My association with Stout, Frantz, Murray, and Haagensen, the ever-changing residents and trainees, the contacts with the P & S medical students, and the pleasure of being one of their teachers and watching their interest in what they learn from us (or in spite of us) has been the most rewarding experience of my professional life.

During World War II, the surgical pathology staff consisted of Stout, Frantz, and myself (as the one resident). We did all the routine diagnostic work, helped by surgical residents who rotated in our laboratory. We also did a considerable amount of teaching. After the war ended, and with the increase in routine diagnostic work, a position for a resident in surgical pathology was created, as well as two National Cancer Institute traineeships in surgical pathology.

Throughout my professional life I have been interested in the study of new or rare entities, either through cases that I had the fortune to observe personally, by making new interpretations of lesions (generally tumors) already known in the past but classified differently, or through experimental study of new problems. This interest resulted in a considerable number of published articles; I will discuss those which I consider the most important.

While still in Italy I published one of the first cases of what had just been described as granular cell myoblastoma (1936), and I did an experimental study on the effects of an aseptic inflammatory stimulus on transplantable sarcomas (1933). During World War II, as an associate researcher at P & S, I participated with Virginia Frantz in an experimental study of absorbable oxidized cellulose as a hemostatic agent, and this resulted in several articles. In 1949, in collaboration with Jules Waltner of the department of otolaryngology, I brought attention to the existence of paragangliomas (identical to carotid body tumors) in the middle ear. I later extended those observations to the ganglion nodosum, aortic body, and orbit. In the early 1950s, in association with Charles Ragan and other members of the Department of Medicine, we conducted an interesting experimental study on the effect of cortisone on inflammation and repair. Also in the 1950s, I became interested in the study of thymoma and other tumors of the thymus and their clinical correlates. During that same period, in association with Nathan
Lane and James Malm, we analyzed a large series of malignant melanomas, correlating the pathological and clinical parameters and their prognostic significance. With John Conley, a head and neck surgeon, we introduced the concept of "desmoplastic melanoma" (1971), which, after some resistance from the establishment, is now widely accepted. In 1972, with Hector Santiago and others, we published the second study of epithelioid sarcoma, a new entity (Enzinger had gotten there first). With Haagensen and Lane we published several articles on so-called lobular carcinoma of the breast in situ (which we prefer to call lobular neoplasia). More recently (1983), with Carol Bodian, Karl Perzin, and Peter Hoffman, we completed a study on the prognostic significance of the various benign variants of proliferative breast disease. In addition to writing chapters on various types of tumors for other people’s books, I had the great honor of being associated with Stout in the preparation and publication of two AFIP Fascicles: *Tumors of the Esophagus* and *Tumors of Soft Tissues*.

Finally, during my more than fifty years of service to P & S, I have been an official and/or non-official consultant at more than thirty medical institutions mostly, but not all, in the New York, New Jersey, and Connecticut areas.

Space limitations prevent me from listing here the names of all of the residents and trainees who worked with us. I will limit myself to mentioning those who have had a particularly successful academic and/or professional career or who, after the completion of their training, continued to be in close professional and social contact with the P & S crowd.

William Lehman, a 1937 graduate of the University of Minnesota Medical School, became the resident in surgical pathology for two years (1946–1948) after three years of service in the navy during the war. He eventually became director of pathology at Good Samaritan Hospital in Portland, Oregon. Lehman was a great admirer of Stout and was one of the founders of the Arthur Purdy Stout Club. He remained a good friend of our department until his death in 1992.
Philip Flynn (M.D., University of California, 1944) was a surgical pathology resident at P & S in 1948–49 and a National Cancer Institute trainee during the same period. He was a remarkable man, truly self-made. In 1935, to be employed, he enlisted in the army as a laboratory technician. In 1942, he obtained a college degree, and in 1944, an M.D., both from the University of California. After an internship and residency in surgical pathology at P & S with Stout, who described him as “probably the hardest worker I have ever known, with charming manners, sterling character, interest in and devotion to his professional work” (15). After an interim period in Texas, Phil started a totally new private laboratory in Redding, California. Through the years, this has become probably the best-known pathology laboratory in northern California, with a large staff of first-rate pathologists, famous for its high standards and degree of accuracy.

Saul Kay (M.D., New York Medical College, 1939) served in the army in Europe between 1942 and 1945, where he took part in several military actions. When he returned to civilian life he became a resident in pathology at New York Postgraduate Hospital, and then resident in surgical pathology and a National Cancer Institute trainee at P & S in 1948. His training was interrupted by a mild attack of pulmonary tuberculosis. After successful therapy he returned to P & S, where he completed his training in July 1950. He then went to the Medical College of Virginia in Richmond, where he started a new surgical pathology service and reached the rank of full professor. He is still there, at the age of 83 (1997), taking part in daily diagnostic activities, studying, and enjoying it all. He is the author of a large number of important publications in tumor pathology. Saul is also a first-rate violinist and a member of the Richmond Symphony Orchestra. We have never been sure whether it is music or surgical pathology that he regards as just a hobby.

John W. Pickren (M.D., University of Arkansas, 1944) became a resident in surgical pathology and National Cancer Institute trainee in 1949 after an internship and residency in pathology elsewhere (mainly in Arkansas) and nearly two years in the navy. His period of training was interrupted by his recall into the navy during the Korean conflict. When he returned, he first worked at P & S as resident and then as assistant professor until 1955. During this period, Pickren developed a great interest in the pathology of neoplastic diseases. He perfected the method of clearing lymph node dissections performed as part of radical surgery for cancers (especially of the breast) in order to investigate the incidence and distribution of metastases. He also showed that serial sections of axillary lymph nodes originally reported as negative in cases of breast carcinoma will show microscopic metastases in more than 20 percent of the cases.

In those transitional years, in which Stout was officially retired and I had to assume new responsibilities in running the laboratory and performing other duties, especially teaching, Pickren was of invaluable help. Among other projects, we started a new teaching file of gross and microscopic transparencies, which eventually covered all the subjects that he had discussed in our lectures and other teaching sessions. That teaching set was used by myself and the other members of the faculty for many years. Even now, after all the changes in the teaching programs, many members of the department occasionally help themselves to slides for various conferences and seminars, and frequently “forget” to return the slides to the file. Pickren left P & S to become director of pathology at Roswell Park Memorial Cancer Hospital in Buffalo, New York. He died unexpectedly and prematurely in March of 1984.

Robert Totten (M.D., University of Pittsburgh Medical School, 1946), after internship and residency elsewhere, came to P&S in 1950 as resident in surgical pathology. He returned to Pittsburgh in 1952, where he had a brilliant career as a pathologist and teacher, rising to the position of full professor. Bob was also very active in national societies, and remained a good friend of our institution until his sudden death in 1974.

Nathan Lane (M.D., Columbia University College of Physicians and Surgeons, 1945; fig. 4-24) returned to his alma mater in 1951 as resident and National Cancer Institute trainee in surgical pathology, after internship and two years of pathology residency elsewhere. He completed his training in 1953, and continued his professional and academic career there until he retired in 1979. During the last two years of his active professional life, he shared the direction of the Division of Surgical Pathology with Cecilia Fenoglio.

Lane was one of the most outstanding products of the surgical pathology training program at P & S.
He developed into a superb diagnostician, an excellent teacher, an original researcher, and the author of many important publications, the most influential of which dealt with the colonic epithelium and its stroma in the genesis of the adenomatous polyp-carcinoma sequence. He was highly regarded, respected, and admired by colleagues and students, and was one of the pillars of the department.

Frank Vellios (M.D., Washington University Medical School, 1946) started his residency at P & S in 1951 after basic training in pathology at Barnes Hospital (1946–1950), interrupted by one year of military service. He was an intelligent and efficient resident. He left P & S in 1952 to become professor of pathology at Indiana University Medical School. He also spent one year as a professor of pathology in Bangkok, Thailand, in a program sponsored by the U.S. State Department. Vellios was always very active in national pathology associations, especially the American Society of Clinical Pathology, and for many years he was editor-in-chief of the *American Journal of Clinical Pathology*. He was also one of the most active members of the Arthur Purdy Stout Society.

Other outstanding individuals who have worked in more recent times in Surgical Pathology at P & S as trainees, attendings, or both, include Howard D. Dorfman, Marianne Wolff, Artemis Nash, Luciano Ozzello, Karl H. Perzin, Gordon I. Kaye, Paul P. Rosen, Robert R. Pascal, Virginia A. LiVolli, Cecilia M. Fenoglio-Preiser, Fred G. Silva III, and Daniel Knowles. Their story belongs to the next edition of this book.

**Figure 4-25**

**ARTHUR PURDY STOUT CLUB**


**APS SOCIETY OF SURGICAL PATHOLOGISTS**

During 1947, on the initiative of William Lehman (who was then resident in surgical pathology at P & S), the Arthur Purdy Stout Club was founded by a small group of former residents and admirers of Stout (fig. 4-25). Its purpose was to meet once a year in a city where one of the members of the club was located, and combine a slide tumor seminar conducted by Stout with a cocktail party and dinner attended by members and spouses. In the unpublished portion of his autobiography (15), Dr. Stout wrote "It made me happy that the Club is proving interesting to the members for I hope it will continue after I am gone and keep alive the ideals of constantly improving diagnostic service for which I have always striven." He was absolutely correct in his prediction. The "Club" became the Arthur Purdy Stout Society of Surgical Pathologists, and is now known nationally and internationally as the leading surgical pathology society. It consists of about 300 carefully chosen members, most of them pursuing academic careers. The APS Society meets regularly twice a year in conjunction with meetings of the United States and Canadian Academy of Pathology and the American Society of Clinical Pathology. The meetings, which consist of presentations of scientific papers at the former and the Arthur Purdy Stout Lecture at the latter, are extremely popular and are attended by large audiences.
EPILOGUE

In preparing this chapter I was fortunate to have access to Dr. Stout’s autobiography (an edited version of which appears in this book), in addition to other sources, including: The History of the College of Physicians and Surgeons in the City of New York, published in 1888 by John C. Dalton; four volumes of Studies from the Laboratories of the Department of Surgery (1903–07, 1910–17, 1918–20, 1921–27), Medical and Surgical Report of the Presbyterian Hospital in the City of New York, Vol. X, 1918, edited by Adrian V.S. Lambert; and a collection of written reminiscences by Virginia Kneeland Frantz on Clarke, Stout, and the early days of the laboratory.

Whenever I think of all the years I spent in this department, I am overwhelmed by the memories. Some relate to episodes witnessed by me personally, whereas others are more or less humorous anecdotes that I have repeatedly heard from staff members (mostly Virginia Frantz) who preceded me by many years. This situation has led to a strange feeling on my part of having been present since the beginning of the laboratory, and of having lived with the founders since the start of the century. Of course, from 1943 on, I was there in body and spirit, and what I write of the past fifty years is based on my personal experience and first-hand recollections of people and events. I have tried, and it was not easy, to give an idea of the birth, infancy, adolescence, and maturity of what has become one of the best-known centers of surgical pathology in the world. From the beginning of the laboratory, and for many years after I became a member, the staff was a closely knit group of colleagues who were also very close friends, united in great part by a commonly shared scientific curiosity and a great selfless human interest in the suffering patient. For about fifty years, the towering personality was that of Stout. Many years after his death his influence on the thought of surgical pathologists and on their approach to the interpretation of their findings in tissues removed from living patients is still enormous.

Despite the remarkable scientific developments in the cell biology of cancer and the myriad new techniques presently available, the meticulous morphologic study of tissues, supplemented by precise clinical information as practiced and taught by Stout remains the cornerstone of therapy and the best indicator for prognosis. By and large, his collaborators, former trainees, and successors have been successful in carrying out this message and this tradition.

REFERENCES