stanford
university
school of
medicine

The First Hundred Years

Florence M. Stevens
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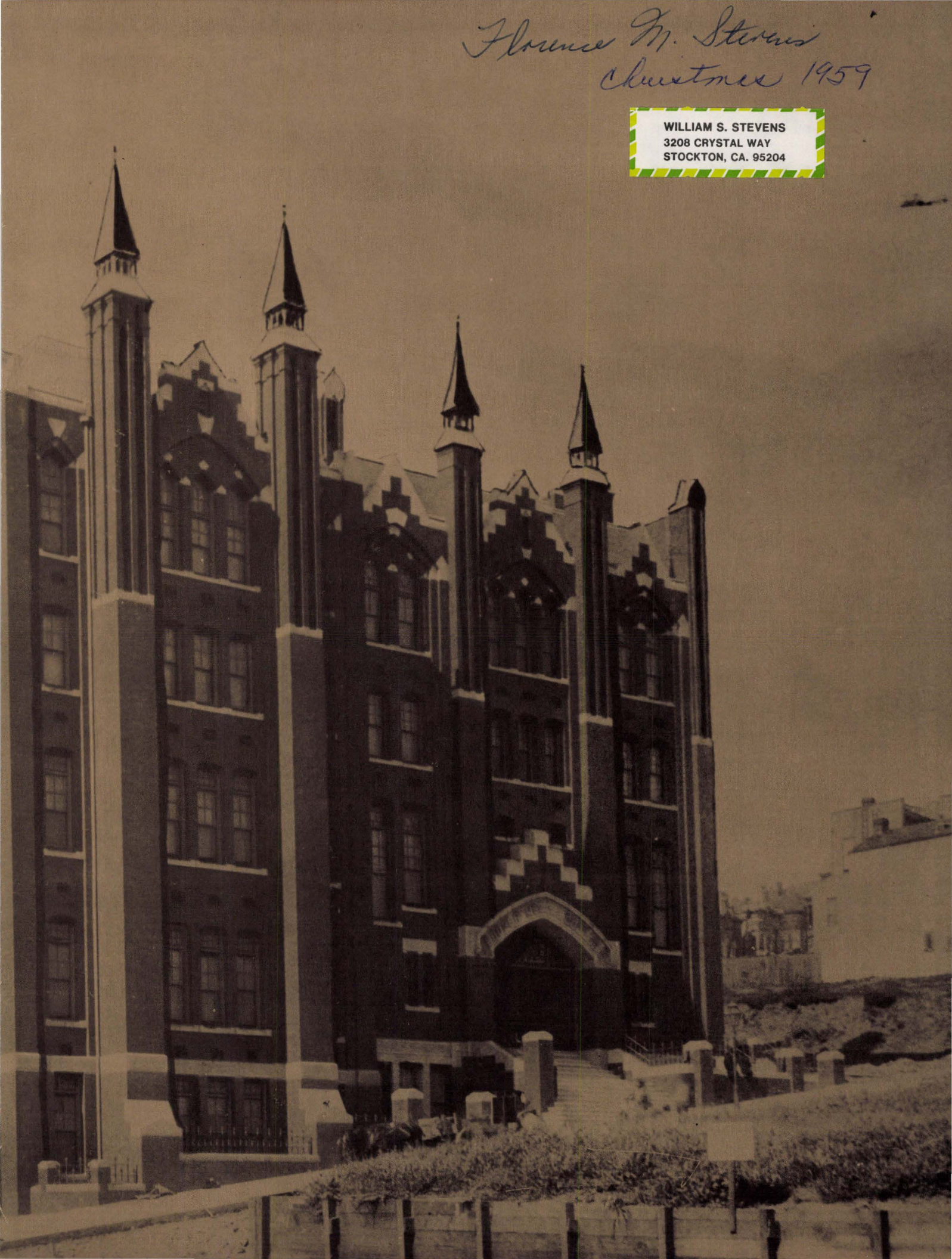


The opportunity to work and to teach at Stanford Medical School during the last twenty years has been an interesting and rewarding experience. Not only has it offered contact with stimulating clinicians and investigators—it has presented an advantage point from which to observe a revolution in medicine.

Diagnosis was a highly refined art in 1939 but treatment was limited to surgical attack, a few active drugs, and to supportive techniques that were especially designed to interfere as little as possible with natural processes of recovery. Prepayment of the costs of medical care was almost unknown and the indigent patient and free hospital were the principal sources of material for teaching and research. Within this setting Stanford was highly effective and productive. A senior faculty strongly oriented to the study and care of sick people did a superb job in the preparation of young men and women for careers in medicine.

The ancient plant, with limited and inefficient facilities for research and patient care, and the separation of the basic sciences left the school inadequately prepared for the years to come. The age of pharmacologically active chemotherapeutic agents had just begun. A great war, followed by the outpouring of public and private money for research in medicine, enormously increased the production of new knowledge and of new remedies. The emphasis in research shifted from clinical observation to the intensive application of the basic sciences in the study of disease. The new clinical investigator was required to have an extensive background in these disciplines and to be able to associate with non-medical scientists with related interests.

These events were accompanied by an explosive increase in the availability of prepaid medical care, and indigent patients gradually disappeared. Medical schools everywhere discovered that they must compete for teaching material on an entirely different basis.

All of these factors clearly demanded a reorientation and rehabilitation of Stanford Medical School. The decision was made to create a new school fully capable of taking every advantage of the scientific and social revolution of the previous two decades within the body of the University.

This book commemorates 100 years of the school that became Stanford and the last year on Clay Street. A new concept of medical education, supported by a productive faculty and courageous administration, should make certain that future Stanford medical students will have an experience which will be as rewarding as had those who preceded them.

LOWELL A. RANTZ, M.D.

Dr. Lane operating in the old amphitheater.

WINDSOR CUTTING, M.D.

Dr. Cutting, former Dean of the Medical School, received his AB degree in 1928 and his MD degree in 1932 — both from Stanford University. Following a residency at Stanford, he was a Fellow of the National Research Council at the Courtauld Institute of Biochemistry in London in 1935-36, and from 1936-38 he was a Fellow in Experimental Therapeutics and Medicine at the Johns Hopkins Hospital. Recently he was elected to the New York Academy of Sciences. He resigned as Dean of the Medical School last year in order that he could continue his research work in Experimental Therapeutics.

THE FIRST HUNDRED YEARS

The story of the Medical School starts with Elias Samuel Cooper, pioneer surgeon. He was born in Ohio in 1822 and commenced his medical studies at the age of 16. These were at first with his older brother Essais in Ohio, and later at the University of St. Louis, Missouri. This was apparently an institution of doubtful quality, but here Cooper, at the age of 19, was given the MD degree. He immediately started to practice in Southern Illinois and for the next 14 years was a vigorous figure, at one time president of the county medical society, but at another scourged in the newspapers for exhuming dissecting material from the graveyard. A combination of pressures, particularly his own restless spirit, took him then to San Francisco.

Cooper arrived in San Francisco in 1855 and in the following seven tempestuous years of life started the first State medical society, the first two medical publications in California and the first medical school in the West. He was strongly liked and disliked, praised for ligating the innominate artery and removing ovarian tumors and condemned for extensive advertising. Although controversial in his own times, it is his extraordinary energy and vision which are now remembered.

Doctor Cooper's school, The Medical Department of the University of the Pacific, was organized in 1858, and in May of 1859 instruction was started in Cooper's own office at Mission Street near Third. The faculty numbered six, and the students thirteen, of whom two constituted the first graduating class at the end of the term. The University of the Pacific, the first chartered college of the Pacific Coast, was then at San Jose. Now it is the College of the Pacific at Stockton. In 1861 two men who were to bring much to the school were added to the faculty, Henry Gibbons and Cooper's nephew, Levi Cooper Lane. Also, in addition to the teaching facilities at Cooper's Ear, Eye and Orthopedic Clinic, St. Mary's Hospital and the City and Marine Hospital were used to some extent.

In 1862 Cooper died, still only 39 years of age. Nevertheless, the school, with 7 graduates by 1864 and public announcement of a move to larger quarters for the next session, ran smoothly until Dr. H. H. Toland, long antipathetic to Cooper, announced that he was starting a rival school.

Instruction started in the Toland school in November, 1864, and the Cooper school quietly closed its doors, its students and faculty for the most part moving over to the newer school. Apparently this move to Toland reflected the feeling that the city did not need two medical schools as much as it needed cooperation. The Cooper element proved to be not easily assimilable, however, and although Lane delivered the Valedictory Address to the graduating class in 1869, the Cooper group left to reestablish the old school in 1870. The lapse was thus six years.

Toland Medical School had in the meantime entered into negotiations with the University of California and in 1870 the degrees were granted under the auspices of the latter institution. Relations, however, were not harmonious and Toland withdrew his faculty; then in 1872 a satisfactory agreement was reached and the Toland school became the Medical Department of the University of California. It is interesting that this university affiliation preceded that of the Cooper school by 36 years. The Toland school admitted the first woman student in 1873, Cooper the first in 1877.

Levi Cooper Lane (1828-1902), the nephew who succeeded Cooper as the dominant figure in the medical school, was also born in Ohio, in 1828, six years after the birth of his uncle. At the age of 16 he started to teach school and then after three years went to Union College from which he was graduated. He next studied with his two uncles Essais and Elias and finally attended Jefferson Medical College in Philadelphia for a year, graduating in 1851, aged 23, with the MD degree. His collegiate and medical educations thus lasted four years. After interning at the New York State Hospital on Ward's Island he took the competitive examination for assistant surgeon in the Navy. He placed first, perhaps because after writing the required essay in 30 minutes, he filled out the time by translating it into Latin. The next 4 years he was in the Navy although furloughs allowed brief study in

Gottingen and a visit to San Francisco. In 1861 he joined his uncle in San Francisco and served as professor of physiology in the school. As he lived until 1902, many still alive remember him well, though only his later years. It is recalled that it was a nurse's duty in the morning to help him into rubbers as he came into the hospital. He wanted to track in no germs. Another evidence of his germ consciousness was the bichloride of mercury he had incorporated into the wall plaster of Lane Hospital. Patients came to him from far and wide because of his reputation as a surgeon, even after his eyesight and hands were failing. At this time he would make the first incision and then a strong arm, often Emmett Rixford's, would somehow slide in front of him and Dr. Lane would finish the operation a presumably grateful spectator.

The Cooper school, when first revived by Dr. Lane in 1870, continued as the Medical Department of the University of the Pacific, but the sessions were held in the Chapel of the University (City) College then on Stockton Street near Geary. Two years later by friendly agreement the medical school changed its affiliation to the latter university and became the Medical College of the Pacific.

Upon revival of the school, Henry Gibbons (1808-1884), the Quaker physician who had joined the first Cooper school in 1861, became Professor of the Practice of Medicine. He was the son of a physician and the first of four generations of Gibbons who have served the medical school faithfully. In addition to his support of the new school the senior Gibbons was instrumental in the formation and operation in the early years of the State Board of Health and the Board of Medical Examiners. Henry Gibbons' son, Henry Gibbons, Jr., became the dean of the school upon its restoration in 1870 and continued in this position for an amazing 41 years, until his death in 1911, three years after the union with Stanford. He also was Professor of Materia Medica and Therapeutics in the earlier years and Professor of Obstetrics and Diseases of Women and Children in later years.

Another long-time family devotion is that of the Barkans. The first, Adolph Barkan (1845-1913), a native of Hungary, came to San Francisco in 1869 and became the Professor of Ophthalmology and Otology in 1873. He was the first in San Francisco to remove foreign bodies from the eye with the aid of a magnet but is now remembered particularly as the founder and benefactor of the Historical Collection in Lane Library. Although he had retired from active practice and had returned to Europe, he was elected president of the college in 1911 just before its affiliation with Stanford.

The Fall of 1882 marked the last graduation of the Medical College of the Pacific. Dr. Lane, who had been president, invited the faculty to join him in a new building and under a new name, Cooper Medical College. With $125,000 he had built a splendid new medical school on the corner of Sacramento and Webster Streets. To this building he added in 1890 a second, containing Lane Hall, and in 1894 opened the adjacent Lane Hospital. His benefactions then totaled about $600,000 and had been supplemented by land and money from Captain James McDonald in the amount of $58,000 as well as substantial gifts from Claus Spreckels and several others. In the vestibule of the hospital Dr. Lane placed the following plaque: "This hospital, erected in the year 1893 by Levi Cooper Lane, physician and surgeon, with money earned by himself in his profession, is given by him to suffering humanity and to the healing art in the hope that the former may here find refuge and relief; the latter exercise of human skill and intelligent sympathy."

As Cooper Medical College the school entered a long period of productive life. Many of its graduates are still alive though few are still in practice. From the first it was strong as a surgical school. The recently abandoned "E" Ward in Lane Hospital was for years the "Emergency" ward, and house officers lived conveniently nearby in what was in later years the Women's Medical Ward. Clinical teaching at the San Francisco Hospital, to which full access was obtained in 1872, continued; although not until more recent times did it become a principal teaching adjunct.

Dr. Lane inaugurated two sets of lectures. The first, the Lane Popular Lectures, started in 1883, suggest that like his uncle he did not mind being somewhat in the public eye and ear. This series was abandoned only in the last five years when other means of public entertainment and instruction competed for that eye and ear. The second set, the Lane Medical Lectures, started in 1895 with Sir William Macewen, Regius Professor of Surgery of the University of Glasgow as guest speaker. These have continued usually in alternate years with only brief lapses during the Ellinwood affair, discussed later, and during World War II. Names like Allbutt, Senn, Foster, Welch, Manson, Fitz, Fuchs, Billings, Flexner, Aschoff, d'Herelle, Straub, Drummond, Drinker and Dodds have made these the outstanding medical lectures on the Coast.

In 1898 an event occurred which was an indication of how the school would meet the reformation in medical education which would come in the next ten years. These were the years just preceding the Flexner report which finally pointed out that hospital-trade schools were about through, and that schools must embrace academic changes of the university type to survive the entrance of science into medicine. The significant event was the appointment of the first full-time, salaried professor in the medical school. He was William Ophuls, professor of pathology. Born in New York and educated in Germany, Dr. Ophuls was a shy, diffident man whom the nurses were wont to tease when he first came to Lane Hospital where he lived in the attic. He became a widely recognized pathologist and was the dean of the school from 1916 to 1933.

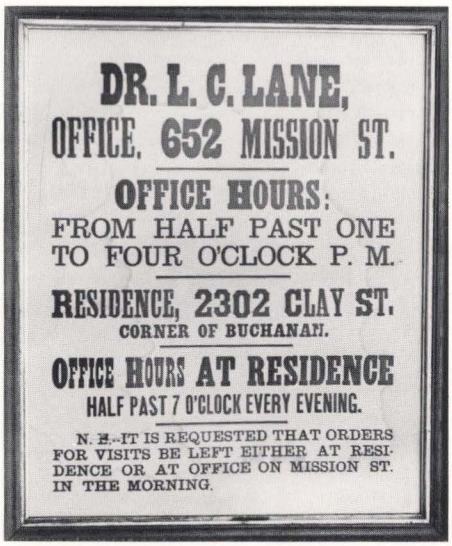
Cooper Medical College about 1882

Dr. Lane died in 1902 leaving still two more outstanding legacies, a surgical succession and the endowment of a library. Of the former, two men stand out for especial remembrance. Both had long periods as assistants to Dr. Lane and after his death became outstanding surgical leaders for the next generation. One was Stanley Stillman, passionate, volatile, fiery and knuckle-rapping, for many years the professor of surgery at Lane. The other was the massive, gruff, but kindly Emmett Rixford, remembered by all the middle-aged and older Stanford graduates with much affection. Rixord was like the last of the bare-fisted fighters who wore gloves only when it became the rule. He thought nothing of turning from an operation, drawing on the blackboard, and then with a dash through bichloride returning to the operation. When Stillman was in trouble, he would shout for Rixford who would bring calm to the emergency. Dr. Rixford was a scholar of literature, a collector of fossils, a sailor, and a Sierra mountaineer. Mount Rixford is a rugged granite peak just south of the Rae Lakes which he probably first climbed.

In the second legacy, the library, Dr. Rixford also played a major part. Mrs. Lane died soon after her husband. One third of the Lane estate of about $600,000 was left to establish Lane Medical Library. The balance was bequeathed to Dr. C. N. Ellinwood, then president of the College, presumably in trust for the Library, as the law precluded leaving more than one third of the estate directly to the library. Dr. Rixford has recounted the sad deterioration of the next 5 years during which Dr. Ellinwood came to consider the bequest a personal one and finally in 1907 was removed from the presidency and from further association with the school. The library, however, was formally created in 1906 with 8000 volumes and had become the nucleus of the outstanding medical library of the west. This growth resulted almost entirely from Dr. Rixford's personal efforts. He got large numbers of duplicates from the Surgeon General's library, boxing them for shipment himself, then more duplicates from the New York Academy of Medicine, and finally arranged the purchase of the New York Hospital Library. Dr. Barkan's gifts increased the number and the special value of the library. The collection now contains some 150,000 volumes housed in a handsome building built in 1912. One other person is to be thought of in connection with the library, Miss Louise Ophuls, Dr. Ophuls' sister, who was for 30 years the patient and helpful librarian.

Beginning in 1901, there was discussion of a union of the Medical College with Stanford University. The desirability was apparent to Dr. Lane when he faced the increasing costs of full-time faculty members and before he died he released the trustees from any restrictions which might prevent such a union. However, Stanford was then not ready to entertain the expense of a salaried medical faculty, although Dr. Jordan, the president of Stanfard, wrote that he would favor the union if it became practicable. By 1906 Jordan recommended to his trustees that they accept Cooper Medical College on the condition that it be used for the time being as a school of medical research. This, however, was not entirely satisfactory to the Cooper faculty. Finally, in 1908, the Stanford trustees adopted a transfer agreement but with a stipulation that costs should not exceed $25,000 yearly. The classes at Cooper continued until all the students then enrolled were graduated in 1912. In the meantime instruction was planned for a first Stanford class, on the Stanford campus, in 1910.

Instruction at Stanford actually began in 1909, a year earlier than scheduled, with John M. Stillman, the brother of Stanley Stillman, as acting executive of the new "Department of Medicine." Of the 15 men who made up the first Stanford medical faculty (7 on the campus; 8 in San Francisco), two are still alive and full of recollections of these early days. The first, Robert E. Swain, who then was an Associate Professor of Chemistry, later served as acting president of the University and now lives on the campus. The other, Arthur W. Meyer, Professor of Human Anatomy, lives in Palo Alto. Amongst his remembrances is the occasion on which he was offered the entire Stanford Museum for his department of anatomy. He thought it was too ornate, however, and preferred to remain in the rear portion, a partially restored relic of the 1906 earthquake which still houses the department. The other campus names were Jenkins (Physiology), McFarland (Histology), Price (Zoology), and Snow (Hygiene); the San Francisco names were Barkan (Eye), Gibbons (Obstetrical), Hirschfelder (Medicine), S. Stillman and Rixford (Surgery), Ophuls (Pathology) and Cheney (Medicine). Ray Lyman Wilbur was appointed as Professor of Clinical Medicine and Executive Officer, but was on leave during the first year of instruction. Of these 15 pioneers, five continued to teach medical students until well into the 1930's and a legion of California physicians speak of them with affection, sometimes still mixed with awe, from their student days. The next year (1910-11) two outstanding newcomers were added to the faculty, both joining Dr. Meyer in the long building on the campus. These were Albert C. Crawford, Professor of Pharmacology, whose work on epinephrine had marked the first isolation of a hormone, and Hans Zinsser in Bac-



Left to Right: Arthur W. Meyer, Professor of Anatomy, Emeritus; Ray Lyman Wilbur, Dean 1911-16; William Ophuls, Dean 1916-1933; Thomas Addis, Professor of Medicine.

teriology, later to be famed as an investigator of typhus and as a literate author. Others who started to teach that year included James R. Slonaker in physiology, whose revolving cages for rats were widely used, Clara Stoltenberg, whose problems in neurology thrilled many a patient-hungry student, and Earnest C. Dickson, about whom a special note is in order. He started in pathology, later was the chairman of the department of medicine, and then for many years was the head of the Department of Public Health. His original work on botulism and later on coccidiomycosis brought the new school wide attention. One more member, who came in 1911-12, must be added to this recounting of near-charter members of the faculty. This was Thomas Addis, trained in Edinburgh, who, as a young man, was interested in diabetes and then in renal disease, subsequently becoming an international authority in the latter field. He and Charles Danforth, who followed Meyer as executive in anatomy, were the two first century members of the medical faculty recognized by membership in the National Academy of Sciences. Dr. Danforth, who was elected to the Academy in the early twenties for his work in genetics, is still actively working in the same field although it is several years since he retired from his post in anatomy. These were the men who set the pattern which the medical school has now followed for another 50 years. It has been a pattern of harmony between preclinical and clinical, each respecting the other. It has also been one in which the ideal has been to combine teaching and research, with a premium on both.

Dr. Wilbur was dean of the Medical department from 1911 until 1916 when he succeeded Dr. Branner as president of the university. Enlargement of the physical plant, as well as of the faculty, was undertaken during his office. In addition to the restoration (1911) of the building for anatomy, pharmacology and bacteriology, and the building of Lane Library (1912), the medical school building in San Francisco was remodeled to provide out-patient clinics, and pharmacology was moved in 1913 to this building. Stanford Hospital was started in 1916, and plans were laid for the Nurses' Residence, which, however, was not started until 1920, when the assistance of the nursing alumnae made it possible. Other innovations were the requirement of an interne year before the M.D. degree was granted (1913) and a decrease in required course-work, allowing time for electives. The modern association with the San Francisco Hospital began in 1915 when two wards in the newly finished hospital were assigned to Stanford.

Dr. Ophuls' deanship began with the disruptions of staff caused by World War I, but in spite of these the hospital and nurses' home were built and the school entered a long productive period.

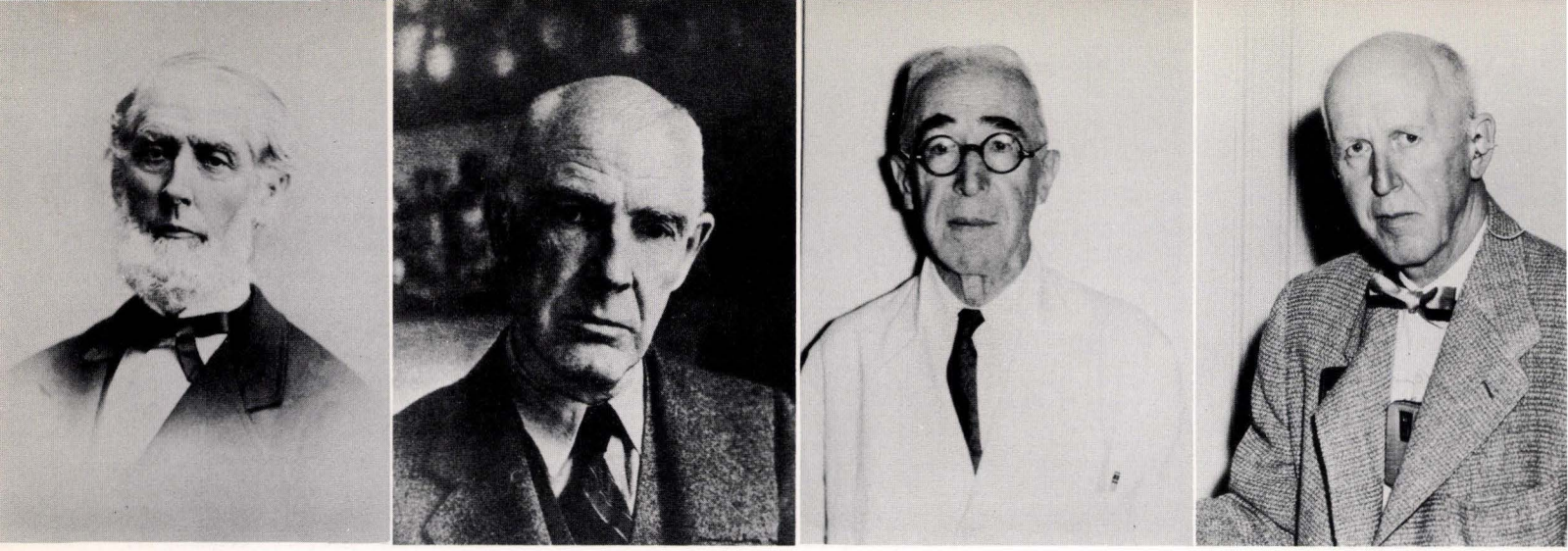
It is not practicable to list here the many new faces in the faculty, some growing up within the school and others coming from other schools, especially Johns Hopkins. Each student would have his own select list of heroes, probably biased by his interests, but a few must be mentioned from anyone's thinking.

In medicine, Walter A. Hewlett's unfortunately brief but brilliant career was followed by the long term of Arthur L. Bloomfield. A generation of students learned from this superb teacher whom they still call "the professor" with merged affection and respect. Dr. George Barnett, Dr. Bloomfield's counterpart at the San Francisco Hospital, was also a much loved teacher. The Bloomfield and the Barnett Professorships will carry their names in the future. In surgery Dr. Holman, Dr. Eloesser and Dr. Reichert, in obstetrics Dr. Emge, in pediatrics Dr. Faber, in radiology Dr. Chamberlain and Dr. Newell, in pathology Dr. Oliver, in psychiatry Dr. Mehrtens, and in pharmacology Dr. Hanzlik — all these made strong and lasting impressions on the students in San Francisco. On the campus, Dr. Martin and Dr. Weymouth in physiology and Dr. Schultz in bacteriology join this list of emeriti no student will forget.

Building hopes were centered in the late 20's on a splendid new structure planned for the Buchanan Street frontage but the stock market crash quelled these hopes completely. However, 1929 saw the Hertzstein bequest founded; this Lectureship, like the Lane Lectureship, has brought speakers from far parts of the world: Orbelli from Russia, Braun-Menendez from Argentina and many another.

To sophomore students coming up to San Francisco from the campus in January 1929 the medical school was a wonderful world. Recollections come of Dr. Barnett reading from Candide and one's "first" patient in the big ward at the County Hospital; of Dr. Reichert, sterile in dog surgery, brushing students so that he could have a pointed example of contamination; of Dr. Wyckoff's beautiful slides, but a sleepy, dark Room 311; of Dr. Hanzlik's love for the small print; of classmates now old friends. Thoughts of the next years run from the rapid fire of William Dock to the old-school gentleness of William F. Cheney, and from the urbane Walter Schaller to the sartorial Leonard Ely. These times were perhaps the equivalent of a sort of end-Victorian era, but they have led to a famous answer as to what was a good medical school: "Oh, Stanford, about 1929."

After Dr. Ophuls died early in 1933, Henry G. Mehrtens was appointed acting dean. Dr. Mehrtens, professor of psychiatry in the early days before psychoanalysis was a religion, had what would now be a very modern attitude to psychiatry. Analytic psychopathology and biochemical psychopathology were both of intense interest to him. He



Left to right: Henry Gibbons, Professor of the Practice of Medicine; George Barnett, Professor of Medicine; Arthur L. Bloomfield, Professor of Medicine, Emeritus; Robert R. Newell, Professor of Medicine, Emeritus (Biophysics).

had no closed sectarian doors. This telling aphorism was his: "To understand a patient you have to roll on the floor with him." Unfortunately Dr. Mehrtens died at the early age of 48 before his real influence could be felt in his new position.

Loren R. Chandler, one of the wisest and most respected men in Stanford's history, followed Dr. Mehrtens. He was graduated from the school in 1923 and after further surgical training, was a practicing San Francisco surgeon until called to the dean's post. His administrative talent, however, was his greatest endowment, continually called on during the 20 years he was in office. First there were the stringencies of the depression, and then medicine became big business. Research also became big business with governmental support bringing new complications. Lastly the second world war, and the accelerated program of teaching it required despite a curtailed staff, demanded much organizational skill. In 1939 the Ruth Lucie Stern Research Laboratory which houses several departments was added and allowed some relief to the insistent need for more space, particularly for the increased research. Dr. Chandler's long service is fortunately not yet over and he is still teaching actively in the school.

The last five years of the first century were, in a way, really the first five of the next. In 1953 the university administration decided that the time had come when all the medical school should be moved from San Francisco to the campus and the wheels were set in motion to accomplish this end. The great academic strength which this move will bring will be the theme of the second century of the school's history. Thus the old school has ended and the new one begins.

Source credits for the facts in this recounting of the school's history are gratefully acknowledged: Robert Whitfield's thesis; Hans Barkan's fascinating account (S.M.B. 12:145, '54); the talks of Emmett Rixford and many conversations with Clara de Forest; finally, the stories I have heard since boyhood from my mother.

WINDSOR CUTTING, M.D.

Left to right: Dr. Hirshfelder, Dr. Lane, Dr. Barkan, Professor McEwen (Glasgow), Dr. Stillman.

Class of 1873

San Francisco County General Hospital

Faculty Dining Room

C. H. DANFORTH, Ph.D.

Dr. Danforth, member of the faculty of the Department of Anatomy at Stanford from 1922-1953 and Executive from 1945-1953, received his AB degree from Tufts in 1908 and MA degree in 1910. He was awarded the Ph.D. degree from the Washington University of St. Louis in 1912. In addition to these he was awarded an honorary Sc.D. degree from Tufts in 1941. In spite of the fact that he retired from active teaching in 1953, he still is very much interested in research and maintaining his labs in the department building where he spends much of his time.

ANATOMY

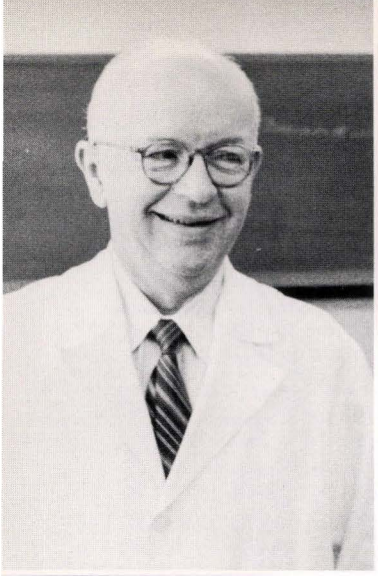
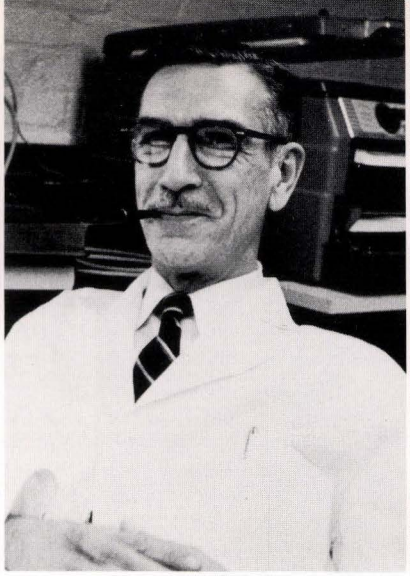
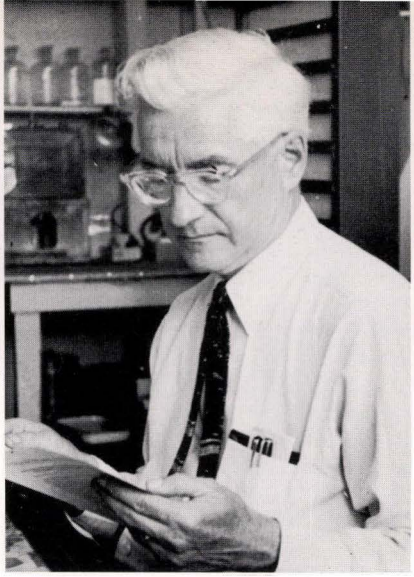
During the hundred years since Elias Samuel Cooper gathered a nucleus of physicians to form the first medical faculty on the West Coast there have been many teachers of anatomy in the institution which in time came to bear his name, and still later that of Stanford University.

It is clear that from the first anatomy held an important place in the estimation of these early teachers of medicine. In 1858, when the University of the Pacific, then located in Santa Clara, took the new group under its wing in order to give it legal status and authority to grant the M.D. degree, we find Elias Samuel Cooper listed as Professor of Anatomy and Surgery in their newly created Department of Medicine. Thus we may count Dr. Cooper as the first of our anatomists. With him the teaching of anatomy was neither incidental nor perfunctory, for even before coming to California he had opened a dissecting room in Peoria, Illinois, with lectures and demonstrations for medical students and practitioners. His nephew, Levi Cooper Lane, tells with reverence of his uncle's unremitting devotion to anatomy and other matters of medical interest.

In 1861-'62, while Dr. Cooper was still Professor of Anatomy and Surgery, Levi Cooper Lane became Professor of Physiology, and about a year later succeeded his uncle as Professor of Anatomy. For six or eight years after the temporary suspension of the school and its reorganization in 1870, he continued to be listed as Professor of Surgery and Anatomy, this time in the Medical School of the Pacific, which was in fact the same school as before, but now operating independently. That Dr. Lane, like his uncle, attached great importance to what we now call the pre-clinical sciences is indicated, for example, in his opening lecture in Physiology for 1861-'62 in which he made the comment that "The science of Physiology is most intimately associated with that of Anatomy. Without a knowledge of Anatomy, the principles of Physiology can never be well understood." "Anatomy and Physiology," he went on to say, "are twin diamonds in the hilt of the scalpel that illuminate its blade." Perhaps he was recalling at the time that anatomy and physiology have traditionally been associated with each other, as witness the early founding of journals devoted to these two subjects in the English, French, German, Russian and other languages.

In the faculty roster for 1873 William Douglas appeared as Demonstrator of Anatomy, and a year later Edwin Bently was listed under Dissection and Microscopic Anatomy. This same year we first encounter the name of Joseph H. Wythe at the beginning of his long period of service in the Medical College of the Pacific and its continuation as the Cooper Medical College. Dr. Wythe (M.D., LL.D. F.R.M.S.) was an interesting personality. Born and trained in England, he served as an assistant Army Surgeon during our Civil War, after which he completed a course in divinity and taught histology and microscopy here on the Coast. His major interest seems to have been hematology, but he wrote a comprehensive manual of histology and two companion laboratory guides. He also contributed various articles on surgical procedure, including the description of a method for successful mastectomy. One of his poems, "The Lifted Veil," can be found in the Stanford Library. It has been said of this gifted Englishman that he could preach an inspiring sermon on Sunday, give an illuminating lecture in histology on Monday, and perhaps skillfully remove a fibroid on Tuesday . . . Perhaps some former student of this versatile Englishman could fill in the schedule for the rest of the week.

In 1881, Dr. Douglas was teaching Clinical Surgery and Anatomy and Richard H. Plummer had appeared as Lecturer in Anatomy. In 1884 Dr. Plummer became Professor of Anatomy and continued in that capacity for ten or more years. As president of the California State Medical Society, he made a strong plea for increasing entrance requirements and strengthening the pre-clinical subjects. It seemed to his students, so one of them has written, that he had committed the whole of Gray's Anatomy to memory and, if need be, could repeat it verbatim—a feat credited to many another anatomist in days when didactic teaching was in vogue.

Left to right: William W. Greulich, Professor; Donald J. Gray, Professor and Executive; Hadley Kirkman, Professor; Robert S. Turner, Professor. Below: David L. Bassett, Professor.

Dr. Charles E. Farnum was Demonstrator of Anatomy in 1882 and later succeeded Dr. Plummer as Professor. We hope it was an unfair critic who wrote that Dr. Farnum was too good an anatomist to be a good surgeon. Like Senator Stanford, who was of about the same era, Dr. Farnum was much interested in race horses and, among other things, did important original work in the artificial insemination of these animals. Suspecting that the proportion of the contractile to the tendinous parts of a muscle might bear an important relation to its efficiency, he is said to have had the carcass of one of his animals hoisted to the roof of his office building at Third and Mission, where he worked at its dissection whenever the wind was favorable.

Dr. Farnum, continuing as an active anatomist until 1899, was followed by Dr. Albert H. Taylor, who had begun as assistant Demonstrator several years before. Dr. Taylor remained until the earthquake and fire of 1906, when he moved to Fresno. Later, however, he returned to San Francisco, where he continued in practice for many years. At least during a part of Dr. Taylor's incumbency, Joseph L. Howard, M.R.C.S., Eng., served first as Assistant Demonstrator and then as Instructor in Anatomy.

From 1895 to 1900, Thomas George Inman, with degrees in pharmacy and medicine, appeared first as Assistant Demonstrator in Anatomy and later as Instructor in Surgical Anatomy. Dr. Inman later turned his attention to other phases of medicine. Emeritus now for many years, he is the last anatomist of the Cooper era whose name still appears in the current Stanford Register.

Another man who came to the fore in the final years of the Cooper Medical College was Frank Ellsworth Blaisdell. He headed the list of anatomists from 1907 to 1909, when he was followed by Arthur William Meyer, the first anatomist to be appointed by Stanford. Dr. Blaisdell taught various aspects of anatomy, including applied and surgical, for many years; then ultimately, like so many of his predecessors, became a member of the surgery department.

For the pre-clinical departments, the transition between Cooper and Stanford was not so abrupt as might be imagined. For a number of years Professors O. P. Jenkins and F. M. McFarland of Physiology and C. C. Price of Zoology had been assisting with courses at Cooper and they, with Dr. Blaisdell, provided a very satisfactory liaison between the old and the new. It is interesting to note in passing that in the course of his career Dr. Blaisdell became widely known as an outstanding student of the **Coleoptera** and Dr. McFarland was perhaps the world authority on **nudibranch mollusks.** After retiring from teaching both of these men rendered valuable service to the California Academy of Sciences, the former as Research Associate in Entomology, the latter as its President and guiding spirit for many years.

The final merger of Cooper with Stanford had been contemplated for a number of years, but President Jordan of Stanford was reluctant to assume the responsibility of a medical school unless he could feel assured that it would take its place in the front rank of such institutions. If Stanford were to have a medical school at all, it must be of the first quality. When the die was finally cast and the decision to join had been made, against the indications of the Flexner survey and the advice of a number of leading medical educators of the day, Dr. Jordan lost no time in starting to build up a strong medical faculty. The changes which were made in the then existing faculty are not to be interpreted as a reflection on the men who were already here, but as an indication of a change in orientation that was taking place not only on the West Coast but in medical schools throughout the country.

Probably few, if any, of the teachers who helped provide the professional foundations for men who would become eminent practitioners of medicine in San Francisco and the State of California regarded themselves as primarily anatomists. Rather, it is more likely that they all thought of themselves as medical men who, as a labor of love, gave of their time to present that aspect of their subject which can most nearly be approached from a strictly objective point of view. Those who are old enough to remember a few men of that era, either here or elsewhere, can not fail to retain fond memories of their foibles and their greatness, nor be unaware of our profound debt to the contributions which they made toward lifting medical education from what historians tell us was its lowest ebb in American history. It is a matter of regret that the writer of this note is not in a position to provide more

complete and accurate accounts and give more personal glimpses of those early teachers of anatomy who helped pave the way for its further and more impressive development.

When President Jordan started out to strengthen the faculty in medicine, his very first appointment was Dr. Arthur William Meyer whom he brought here from the Department of Anatomy at Northwestern University Medical School. In commenting on this appointment Dr. Jordan remarked, "In bringing in Professor Meyer, one of the ablest teachers of anatomy in the United States, we set a standard which made it become necessary that other work should be equally well done." Dr. Jordan's reputation as a judge of teachers was well sustained by this appointment. Indeed, it is doubtful if a better man to meet the needs of the time and place could have been found anywhere in the country. Throughout the some thirty years during which he directed the affairs of the department, and even subsequent to his retirement, Dr. Meyer has been a zealous and uncompromising defender of thorough scholarship and whatever he deems best in medical education. At Johns Hopkins he had been a student and colleague of Mall, who probably trained more professors of anatomy and heads of department than anyone before or since. In Dr. Meyer, Mall found a follower responsive to many of his methods and ideals. But while Mall was notorious for giving few lectures and taking scant interest in any but exceptional students, Dr. Meyer did do a great deal of didactic teaching, but not of the conventional type, and he preferred to call them meetings of the class, conferences, or discussions. These meetings were highly stimulating and, to the class as a whole, almost equally terrifying. Few questions were answered directly by the professor, who usually preferred to "leave that one with you." Years later, one would sometimes learn from a visiting alumnus that one or more of these questions was still with him. It was a provocative method of teaching.

Unlike Mall, whom some students claim to have seen only on the day when he announced that there would be no lectures in the course, Dr. Meyer was meticulous and exacting in his conduct of the laboratory work. With long forceps which had an uncanny affinity for poorly displayed parts, he moved from table to table, like a clinician on ward rounds, bringing out essential points through searching, often disconcerting questions. Occasionally he would stop at one of the tables and view the whole dissection with some such remark as, "That **was** a beautiful body." He had scant patience with careless work or fuzzy thinking. If, for example, in demonstrating his dissection a flustered student happened to say, " . . . and this is your femoral nerve," Dr. Meyer would retort, "Not mine!" in a tone that seemed to imply that an unpardonable sin had been committed. His visit to successive groups was always awaited with an element of apprehension; one currently well known physician actually fainted when he looked up and saw the Professor at his elbow. The method was good for those who could take it and very effective in bringing many a careless freshman out of the "happy hooliganism" which his professor so much deplored. Few of them recognized at the time that in later years they would look back on these days with amusement and something like nostalgia. That on the whole it was good medicine is shown by the number who were eager to do additional work under Dr. Meyer's direction.

After Dr. Meyer, the next appointment to the department was Ruskin M. Lhamon who came from Washington University School of Medicine in St. Louis. He participated in teaching several of the courses, but did not stay with the department long. Following a brief interim after Dr. Lhamon's resignation, Edgar Davidson Congdon of Cornell was appointed Assistant Professor in 1913, a position which he held until 1922, when he resigned to become Associate Professor at Peiping Union Medical College. Dr. Congdon, who had enjoyed excellent training in this country and abroad, was the first man without an M.D. degree to be appointed to the Department. (Professor McFarland, with a Ph.D. from Wurzburg, was at the time still in the Department of Physiology.) In Dr. Congdon's appointment, as in the policy of employing full time teachers which was instituted when Cooper was absorbed, we see another sign of the changing times. For several years Drs. Meyer and Congdon, with the assistance of advanced students and technicians, handled the affairs of the Department alone.

At this point it might be noted that from the first, histology had been considered at Stanford, as in England, to be a natural subdivision of physiology. Dr. Meyer, however, had consistently opposed this alignment and advocated the inclusion of histology in the Department of Anatomy. His goal was finally achieved in 1917, when suitable laboratories were fitted up and Professor McFarland (Histology) and Associate Professor Stoltenberg (Neurology) were taken out of Physiology and transferred to Anatomy. With this accomplishment, Anatomy at Stanford fell completely in line with its position in other leading medical schools.

From here on, the number of persons participating in activities of the Department becomes too great to permit even casual mention of many who have contributed materially to its activities and growth and have left enduring impression in the memories of those who were fortunate enough to work with them. It would be a pleasure, if space permitted, to record them and their achievements individually. Suffice it to say that among local clinicians and among teachers in medical schools across the country are many who got part of their training, and, it is hoped, some of their inspiration while assisting in the Department of Anatomy at Stanford. Through the years there have also been a considerable number of visitors with short time appointments, or none at all, who have contributed to the research and esprit de corps of the department. Only three or four of them can be mentioned.

During the year 1921-'22, while Dr. Congdon was on leave, Dr. Robert Bennett Bean from the Medical Department at the University of Virginia, and Dr. Edward Allen Boyden from Harvard Medical School held temporary teaching appointments. Both of these men, with their keen and stimulating approach to phases of physical anthropology and visceral anatomy, made a deep impression on the students, some of whom probably remember this as the year of the "mesomorph" and pancreatic diverticula.

Another visitor (1924) was Ernst Huber, who came from Zurich by way of Johns Hopkins. Dr. Huber's absorbing interest was in the facial nerve and muscles of expression. There are subjects which ordinary classes approach with no marked increase in enthusiasm, but the year Dr. Huber was here many of the class seemed to feel that the facial nerve was the most important subject in anatomy, if not in the whole field of medicine. It was a striking illustration of what personal interest and enthusiasm can do for a man's teaching. In the course of his research Dr. Huber had one branch after another of his own facial nerve cut or cocainized until an increasing number of neuromata forced him to discontinue this

phase of his work. Probably some students of that year remember his bout with poison oak. He had rubbed a liberal amount of foliage over his hands and face to make doubly sure that he was immune to this, as previous experience had indicated he was to a related species in the east. The answer was unequivocal. Huber was enchanted by the beauties of a California spring and until his red beard or the material on which he was working attracted the attention of non-medical students he enjoyed taking a well preserved human head for study out under the oaks where "die Luft der Freiheit weht." As a happy culmination of his stay at Stanford, Dr. Huber met a fellow countryman, Miss Yolonde Holdereque of the first year medical class, and they were married before the end of the quarter.

Dr. Maurice Sheehan, an excellent young anatomist from Manchester, followed as another transient member of the Department, but one who did not share Dr. Huber's enthusiasm for California. Viewing the West Coast from a distance, he had apparently fancied that he might possibly live in San Jose and ride to and from the school on horseback. When he arrived, however, the Gold Rush days were over, few cowboys were drifting about and the glamor of the Old West had departed. There was little reason why he should remain in California when all his needs could be met at home.

Thinking of the mid-twenties as a time when the past was beginning to blend into the present, we may content ourselves with little more than a mere listing of the major permanent appointments since that time. The University Register for 1925-'26 lists Arthur William Meyer, Frank Mace McFarland and Charles Haskell Danforth (who had come into the Department from Washington University Medical School in 1922) as Professors; Clara S. Stoltenberg as Associate Professor; Earl Theron Engle as Instructor; Herlwyn R. Green and Sophie B. de Aberle as Assistants in Instruction. Dr. Engle left soon after for Columbia University, where his recent death shocked his many friends throughout the country. Dr. Green, only casually in private practice, has for many years generously made his services available whenever extra assistance has been needed in the dissecting room. Mrs. de Aberle, after acquiring Ph.D. and M.D. degrees from Stanford and Yale, has done extensive clinical and anthropological work among the Indians of the Southwest and became the first woman to serve on the Board of the National Science Foundation.

The following year (1926-'27) Dr. Philip E. Smith, coming from California, held the position of Associate Professor of Anatomy. It was during this year that he and Engle, working together, discovered simultaneously with Ascheim and Zondek what has come to be frequently referred to as the "Ascheim-Zondek" phenomenon, and demonstrated the possibility of inducing superovulation by implantation of pituitary tissue. At the end of the year Dr. Smith received a flattering offer from the College of Physicians and Surgeons at Columbia University and, taking Dr. Engle with him, left to continue their important work in New York. Happily, Dr. Smith is again in this Department as Research Associate, and still actively engaged in Endocrine research.

In 1930 Professor Stoltenberg, after having effectively taught neurology and anatomy of the sense organs for nearly thirty-five years, retired to become the first emeritus member of the Department. The same year Homer Newton Violette from Yale and Joseph Eldridge Markee from Chicago entered the Department as instructors. Violette was a conscientious and hard-working morphologist, but withal a perfectionist who could never quite bring himself to publish his results, however important. Moreover, he took no special pains to ingratiate himself with the students, and after five years and one promotion thought

Dr. Stilwell teaching surface anatomy.

Anatomy Building

it best to resign. Dr. Markee, on the other hand, remained for thirteen years during which he rose to the rank of full professor and took a very active part in teaching and research, as well as in extra-curricular affairs. He left in 1943 to become head of the Department of Anatomy at Duke University.

After Professor Stoltenberg's retirement, Dr. Joseph Clarence Hinsey came from Northwestern University School of Medicine to take charge of the course in neurology. Hinsey, like Markee, with whom he quickly associated himself in neuro-endocrine research, presented his subject from a dynamic point of view and soon assumed an important position in the Department and in the School. He left in 1936 to become head of the Department of Physiology and later Physiology and Anatomy at Cornell University Medical School where he soon became dean, and in this and other capacities has become an influential figure in American medical education.

Dr. McFarland retired in 1934 after forty years with the University, which he served conscientiously in many capacities, including membership on the committee that drew up the original plans for organization of the Medical School. As already mentioned, he was the leading authority on nudibranch mollusks of which he made many delicate dissections, and on which he had been working up to the day of his death.

In 1932-'33, we not that William Walter Greulich was Assistant in Institution, and with him a year later Kendall Brooks Corbin appears in the same capacity. Dr. Greulich later became head of this Department and Dr. Corbin, after several years as instructor here and then as head of the Department of Anatomy at the University of Tennessee, joined the Mayo Clinic as Professor of Clinical Neurology.

Among those appointed to the rank of Instructor during the next few years were Hadley Kirkman (1936), Ernest Dean Gardner (1937), Robert Stuart Turner (1938), David Lee Bassett (1939), Charles Henry Sawyer (1941), Robert Lewis Bacon (1943). Dr. Donald James Gray had been appointed Assistant Professor in 1939 and Dr. Malcolm Ray Miller in 1949. The latter is now in the Department of Anatomy at the Medical School of the University of California; the former is in charge of gross anatomy here. Of those just mentioned, Drs. Bassett, Gray, Kirkman and Turner are now full professors in this department; Gardner is head of the Department of Anatomy at Wayne University Medical School; Bacon and Sawyer hold similar positions at Oregon and the University of California at Los Angeles. Dr. Bassett, just completing a sterescope atlas of human anatomy, leaves at the end of the year to take charge of gross anatomy at the University of Washington. Drs. Gray and Gardner are cooperating in a study of articulations in the fetus and in the preparation of a new text in anatomy. Dr. Kirkman, who has done significant work in oncology, has been spending the past two years at the Chester Beatty Research Institute in London. Dr. Turner, an especially stimulating teacher of neurology, is conducting studies of factors determining the pattern of branching blood vessels and those affecting the shapes of cells. The two most recent additions to the staff are Dr. Donald Stilwell, who is currently working on the finer ramifications of cutaneous nerves and on the blood supply of the spinal column, and Dr. F. Thomas Algard who, as an embryologist, is interested in the culture of developing organs **in vitro**.

It may be noted at this point that Mrs. Bacon is the former Irene Anderson who for several years did fine work in this department with the instruction of Physical Education and Physiotherapy majors, while Mrs. Turner (Margaret Linday) was doing comparable work as Instructor in Physiology.

Dr. Meyer retired to become emeritus in 1938. He was succeeded by Charles Haskell Danforth, who continued as department executive until his own retirement in 1949. Danforth in turn was succeeded by William Walter Greulich, who had returned to the Department in 1944 after having served as Associate Professor of Anatomy and Physical Anthropology at Yale University School of Medicine and Professor of the same subjects at Western Reserve School of Medicine. He had been director of the Adolescent Study Unit at Yale and of the Brush Foundation in Cleveland, a position which he continued to hold for some years after coming to Stanford. Among his numerous interests, problems of growth and development in children have taken him to many places in recent years: our own Southwest, Japan, Pacific Islands, Australia, New Zealand and Africa. From 1952 to 1954 he was Scientific Advisor to the U. S. High Commissioner in Germany. With the assistance of Miss Idell Pyle, he has just completed a revision of his valuable "Radiographic Atlas of Skeletal Development of the Hand and Wrist."

During almost the entire period under review most medical schools in the country have suffered from chronic shortage of dissecting room material. In this respect Stanford has been more fortunate than some because of a California law in the formulation of which Dr. Meyer was an active participant. The law provides that unclaimed bodies shall become the responsibility of the State Board of Health, which has the power to assign them as needed to recognized medical schools. If consistently enforced, the provisions of the law might have proved fully adequate, but there were some uncertainties and ambiguities which came to the fore when eye banks began to be

established and their legality questioned. Largely through the effort of Dean Chandler and others, including members of this department, new laws were finally secured which give the invidual authority to will his eyes or, if he chooses, his whole body to an appropriate institution. The law has met with a generally favorable reception and the number of bodies willed to this department since its passage has become considerable. One citizen of a nearby community even proposed the formulation of a club, each member of which would be pledged to will his body to Stanford. Dr. Gray has shown great skill in handling such matters, involving as they do delicate and unusual public relations. He also meets successfully the slow but steady stream of (possibly sometimes honest) would-be speculators who hope to sell their bodies to the school and collect in advance.

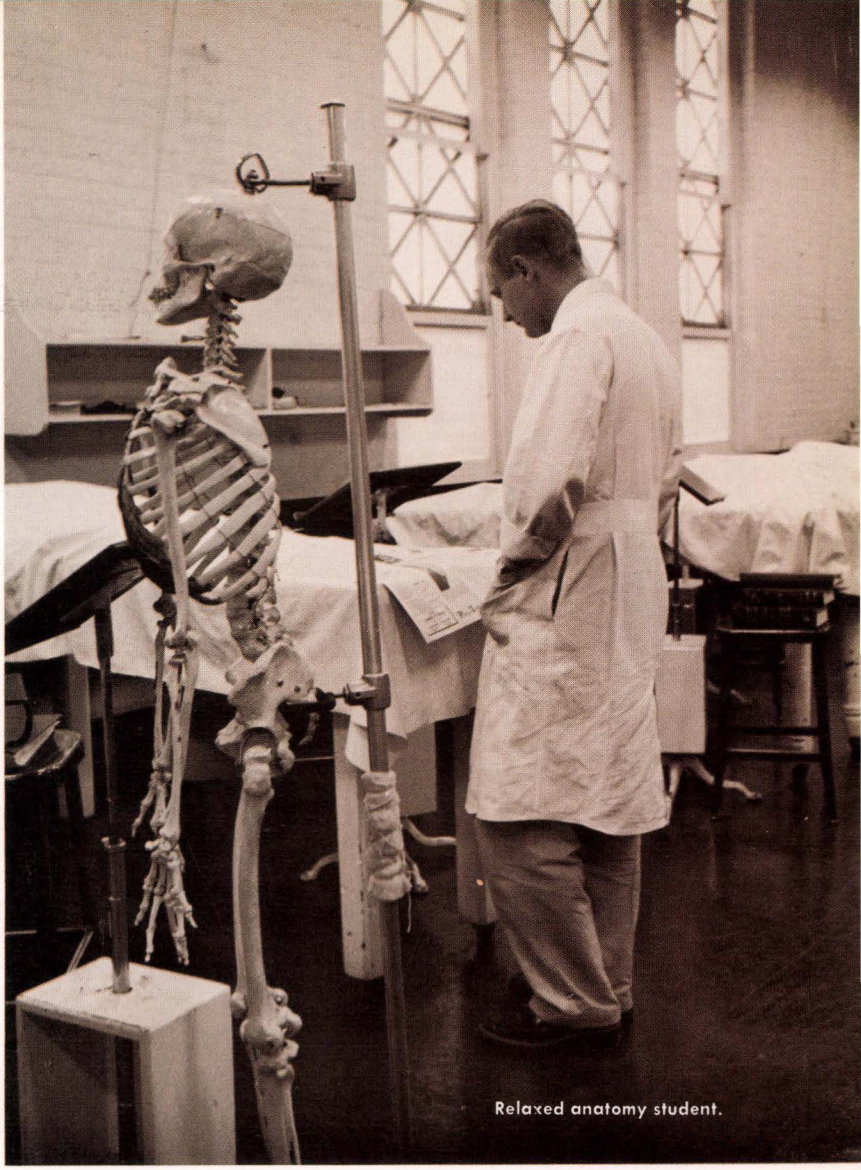
There is no room in this brief note for discussion of research activities of the Department, nor more than a passing reference to its teaching. A survey of an entire file of the American Journal of Anatomy or of the Anatomical Record would show a close parallelism through the years between what was going on in the rest of the country and what was being done at Stanford. The field covered has been a wide one, and some of the material presented at meetings or in the journals might appear to the uninitiated as scarcely anatomy at all. But recalling that "anatomy is what anatomists work at," this is not necessarily an adverse criticism.

The teaching of a department is largely a reflection of the interests of its personnel, and those in this department have usually been sufficiently diversified to meet the needs of students in medicine, nursing and physical education as well as those of a number of biology majors with special problems of their own. Commonly, our teaching for medical students is supplemented by the voluntary assistance of radiologists, pathologists, surgeons, and internists, whose services are of a very real value so long as no one forgets that it is anatomy and not this or that specialty with which the Department is concerned. This is an area where great skill is needed on the part of instructors, for the eager student is always trying to get the cart before the horse, or even to forget the horse. Some have suggested occasionally that miracle drugs and antibiotics are beginning to render the teaching of anatomy superfluous. But perhaps we should not forget that some of the temporarily frustrated pathogens may yet stage a comeback, and if medicine in the future is to deal with real human beings instead of disembodied functions there will probably be a place for anatomy till the end of time.

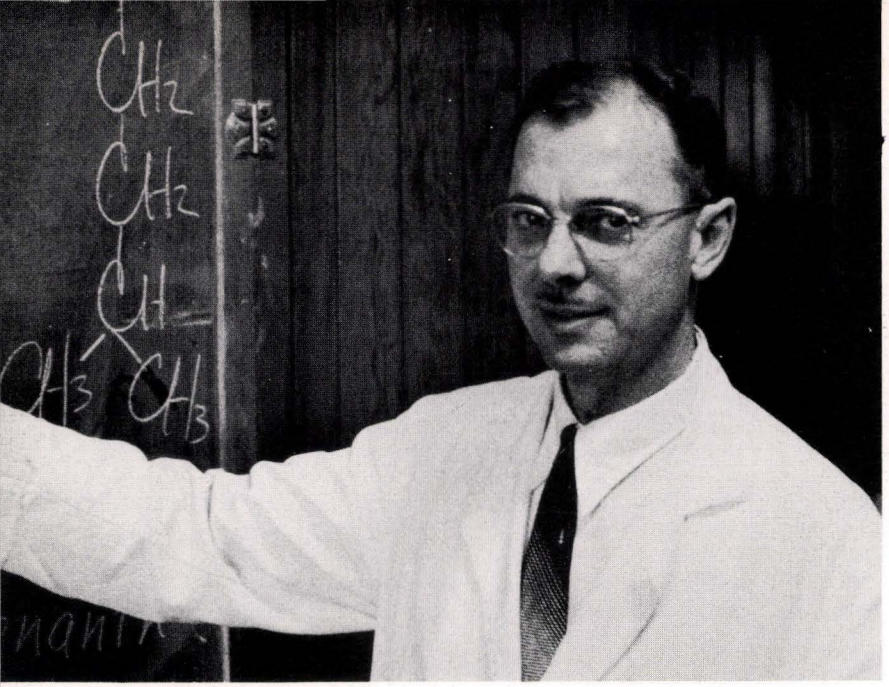
One other item should be mentioned in reference to the position of Anatomy in the University. While anatomists themselves have had few misgivings as to their place of function, the University authorities might seem to have experienced some difficulty in deciding just what to do with them. From the time Stanford took over the medical school until 1925, anatomy was listed in the President's Report and elsewhere as an independent department coordinate in rank with other departments in the University. In the mid-twenties, however, when for administrative purposes departments were being brought together into schools, Anatomy, Physiology, Bacteriology and Experimental Pathology, as well as the commonly recognized biological subjects, were brought together to form a School of Biology, later called the School of Biological Sciences. For about twenty years anatomy was listed in this school, and members of the Department enjoyed a kind of dual citizenship, with voting privileges in both the School of Biological Sciences and in the School of Medicine. During this period, the staff was listed under both schools but description of courses and similar material was always published under the School of Biological Sciences with only a cross reference under the School of Medicine. Bacteriology and Physiology were similarly treated. It was not until 1945 that the President in his annual report listed anatomy as exclusively a medical school department no longer in the School of Biological Sciences. It has been so listed from that time on. But as the rest of the School of Medicine moves down to the campus, where Anatomy and some of its sister departments have been waiting these many years, there will be opportunity for a degree of effective collaboration between its various departments and between it and the rest of the University which was not previously possible, and which, if wisely utilized, will operate to their mutual advantage.

Whatever the future might hold for it, the School of Medicine enters its new century with problems which, for Anatomy at least, are no less challenging than were those of a hundred years ago.

CHARLES HASKELL DANFORTH



Relaxed anatomy student.



HUBERT S. LORING, Ph.D.

Dr. Loring received his AB degree from Pomona in 1929, his masters and doctorate from Illinois in 1930 and 1934 in Biochemistry. Before coming to Stanford he was an instructor in Biochemistry at George Washington University and a Fellow at the Rockefeller Institute at Princeton. He came to Stanford in 1939 but did further work as a Fellow at the Rockefeller Foundation in 1948 and taught at the University of Washington as the Walker-Ames Professor of Biochemistry in 1952 and at UC in the summer of 1953 as Professor of Biochemistry. He is currently Professor of Biochemistry in the Department of Chemistry.

BIOCHEMISTRY

The first course in biochemistry, then called physiological chemistry, was started in the Department of Chemistry in 1902 by Robert Eccles Swain. Dr. Swain had received his Doctor of Philosophy degree in this subject a few years before at Yale University in the Sheffield Scientific School, the first school organized in the United States to provide graduate training and to grant the Doctor of Philosophy degree in the new field of biochemistry. Professor Swain continued offering courses in biochemistry during the next several years, and when Cooper Medical College affiliated with Stanford University in 1908, there was available in the Department of Chemistry an experienced and successful teacher of biochemistry. Responsibility for instruction of the new medical students in biochemistry was assumed by the Department of Chemistry and placed in Professor Swain's hands. One might wonder why a separate Department of Biochemistry in the School of Medicine was not created at that time. The prevalent philosophy, however, to quote from the writings of Ray Lyman Wilbur after he had become President of Stanford University was that " . . . these basic sciences (e.g. biochemistry) need to be set free from the limited claims of the medical curriculum. The men in them need to go into their respective fields in the broadest possible way, using all related information in the hope that advances may be made which can later be brought into medicine." It seems probable, therefore, that the early objective of the biochemical education of the medical student at Stanford was to provide an understanding of biological phenomena in basic chemical terms. Under the administration of the Department of Chemistry this philosophy has been maintained up to the present year. It should be realized, however, considering the growth and importance of the subject over the years, that teaching and research in biochemistry have been performed during only a few years with a maximum staff of only three full-time members and over many of the later years with a full-time staff of only one.

Professor Swain taught both the main lecture and laboratory courses as well as graduate courses in biochemistry for many years. After he became Executive Head of the Department of Chemistry in 1917, he gradually relinquished his biochemistry teaching duties at first to Norris W. Rakestraw, 1918 to 1920, and in 1920 to Florian Cajori who was appointed Instructor in Physiological Chemistry. Dr. Cajori served in this capacity until 1922, and in 1925-26 Meyer Bodansky was appointed Acting Assistant Professor of Biochemistry.

In 1926 James Murray Luck joined the staff of the Department of Chemistry as Assistant Professor of Biochemistry. Professor Luck continued the tradition begun by Professor Swain of providing biochemical training for the medical students, for graduate students in chemistry and biochemistry, and, in fact, for all Stanford students who wished to learn about this subject. At first there were only moderate numbers of students in the main courses, e.g. 49 for the Autumn quarter of 1928-29, but the number soon increased and in the year 1935-36 over one hundred students were registered for the first course. It is of interest that it was in these early years of Professor Luck's association with Stanford that an annual review of biochemistry was started, for in 1929-30 Professor Luck first offered an advanced course under the title "A Review of Recent Contributions to Biochemistry." In 1932 the Annual Review of Biochemistry, Ltd., was organized as a non-profit corporation in the State of California by J. M. Luck, C. L. Alsberg, D. R. Hoagland and C. L. A. Schmidt with Dr. Luck as Editor. In 1938 the corporation was reorganized as Annual Reviews, Inc. and the publication of reviews in Physiology was begun. This was followed over the years with the Annual Review of Microbiology in 1947, and with annual reviews of Plant Physiology, Psychology, Medicine,and Physcial Chemistry in 1950.

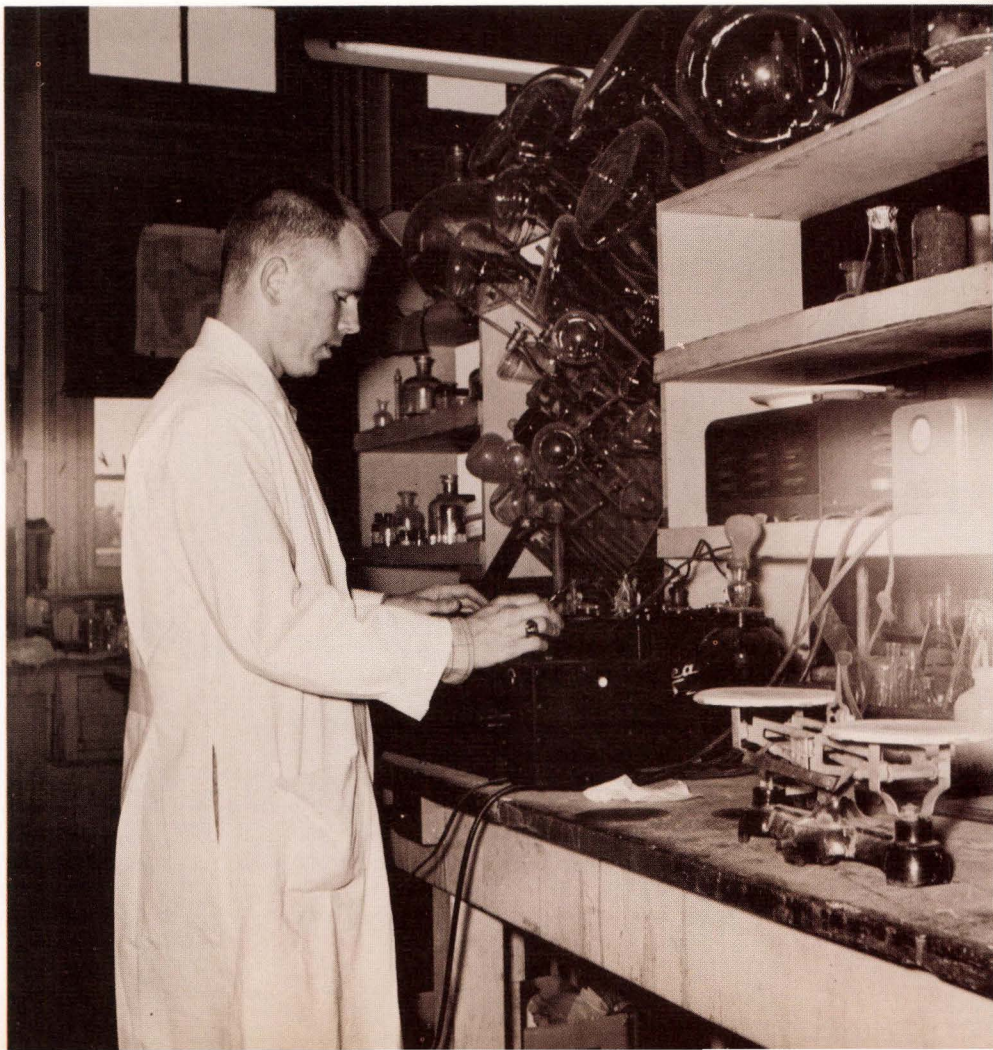
In 1933-35 Alton C. Kurtz assisted Professor Luck in the laboratory as Acting Instructor in Biochemistry and during the period from 1935 to 1939 William C. Gordon served similarly as Instructor in Biochemistry. In 1939, a year before Professor Swain became Emeritus, Hubert Scott Loring was appointed Assistant Professor of Biochemistry and provided laboratory instruction in the main biochemistry courses for both the medical and non-med-

ical students during the subsequent seven years. In 1946 Edward L. Duggan was appointed Instructor in Biochemistry and the teaching was reorganized with all three staff members participating in the main lecture and laboratory courses as well as providing graduate and postgraduate training in biochemistry annually for an average of 10 to 25 students and associates. E. L. Duggan was succeeded by A. Clark Griffin first as Instructor, and later as Assistant and Associate Professor of Biochemistry. Professor Griffin, as did the other permanent staff members before him, carried the main responsibility for laboratory teaching until 1954 when he left the Department of Chemistry to assume the post of Chairman of the Biochemistry group at the M. D. Anderson Hospital and Cancer Institute in Houston, Texas. He was succeeded on an acting basis by Assistant Professor James Mc. T. Ploeser (1954-55), who was followed by Assistant Professor Lawrence O. Pilgeram (1955-57), and he in turn by Instructor Gordon L. Nordby (Autumn and Winter, 1957-58), and Acting Instructors Saad A. Al-Rawi, Autumn 1958 and William C. Gillchriest, Winter 1959. Professor Loring taught the main lecture courses from 1948 until 1959 and was responsible as well in 1958-59, with the assistance of the individuals mentioned, for the laboratory courses taken by the medical students. Since 1954 Professor Luck has taught the laboratory course taken by the non-medical students.

While instruction of medical and non-medical students in fundamental biochemistry has been the main teaching function (in terms of numbers) performed by the biochemistry group, an important service to the profession and to the University has been the training of graduate students in biochemistry. Thus graduate seminars were conducted each quarter and advanced and graduate courses were offered at various times under the following titles: Biochemical Preparations (Luck, Loring); Food Chemistry (Boyer); Biochemistry of Vitamins and Hormones (Loring); Nutrition Luck); Amino Acids and Proteins (Luck, Loring); Amino Acids and Peptides (Luck); Proteins (Luck); Biochemistry of Cancer (Griffin); Nucleoproteins and Nucleic Acids (Loring); and Biochemistry of the Water Soluble Vitamins (Loring). Each staff member has directed the research of several graduate students and associates each quarter, and over the twenty year period during which the writer has been associated with Stanford University, approximately 30 candidates received the Master of Science degree and about an equal number the Doctor of Philosophy degree in Chemistry (with majors in biochemistry). Many such Stanford graduates now hold important teaching and research positions throughout the United States. The names, dates when the Ph.D. was awarded, present titles and affiliations of those who have been admitted to membership in the American Society of Biological Chemists are as follows: Norris W. Rakestraw, '21, Professor of Chemistry, University of California, Scripps Institute of Oceanography; Alton C. Kurtz, '35. Professor of Biochemistry, University of Oklahoma Medical School; Frederick H. Carpenter, '44, Associate Professor of Biochemistry, University of California, Berkeley; John G. Pierce, '44, Associate Professor of Biochemistry, University of California at Los Angeles; Carlton E. Schwerdt, '46, Associate Professor of Medical Microbiology, Stanford University; Paul M. Roll, '47, Associate Professor of Biochemistry, Marquette University School of Medicine; James L. Fairley, '50, Associate Professor of Chemistry, Michigan State University; Elizabeth P. Anderson, '51, Chemist, National Cancer Institute; Don W. Kupke, '53, Assistant Professor of Biochemistry, University of Virginia School of Medicine.

The research activities of the biochemistry staff have been well supported financially by agencies outside the University. These include the Rockefeller Foundation, the National Foundation for Infantile Paralysis, the Nutrition Foundation. the Associated Women of the American Farm Bureau Federation, the American Cancer Society, and the United States Public Health Service. Over the past twenty years a total of several hundred thousand dollars was provided in support of the research conducted in biochemistry.

Professor Swain, still in good health and vigor at 85 years of age, has continued his interest in chemistry, and more particularly since his retirement in air pollution control. He was appointed to the Hearing Board of the Bay Area Air Pollution Control District in 1957 and has served on this board since that time. In June 1959 because of important contributions to the subject he was awarded the annual Robert Chambers National Award for outstanding and distinguished work in Air Pollution Control.



Chemistry Building

Professor Luck was made a Fellow of the General Education Board of the Rockefeller Foundation for work in England and Denmark in 1935. He has served on many national and international committees such as the Panel on Proteins of the Committee on Growth of the National Research Council, 1945 to 1948 and the Fellowship Board in 1947. He was the American delegate to the Royal Society Conference for Scientific Information in 1948. He served as the Secretary of the Biochemistry Section of the International Union on Pure and Applied Chemistry from 1951 to 1953. In 1954 he was elected President-Elect and in 1955 President of the American Society of Biological Chemists. He has served as Editor of Annual Review of Biochemistry since it was founded in 1932 and since 1938 as Managing Editor of Annual Reviews, Inc.

Professor Luck has been interested in the general field of protein chemistry and more particularly in recent years in the chemistry of the proteins of the cell nucleus. He has published over a hundred papers dealing with physical methods of protein characterization, including ultracentrifugation, electrophoresis, and end group studies as well as with many other subjects of biochemical interest.

Professor Loring was awarded a special Rockefeller Foundation fellowship for travel and work in Europe in 1948. He was made Walker-Ames Professor of Biochemistry at the University of Washington in 1952 and was Visiting Professor of Biochemistry at the Virus Laboratory, University of California, during the First Summer Session in 1953. During the period from 1949 to 1956 he served on the Protein and General Biochemistry Panels of the Committee on Growth of the National Research Council. He was Associate Editor of the Annual Review of Biochemistry for the ten-year period from 1946 to 1955 and served as a member of the Editorial Board of the Journal of Biological Chemistry from 1950 to 1955.

Professor Loring continued his interest in viruses and nucleic acids after coming to Stanford and has published some seventy-five papers dealing with various aspects of these and related subjects. A recent discovery of considerable probable importance was that traces of iron, copper, magnesium and calcium occur in purified tobacco mosaic virus probably as integral components. It appears that these elements may play a unique role in binding smaller nucleate and protein subunits into the large nucleoprotein particles characteristic of viruses in general.

HUBERT S. LORING

DAVID RYTAND, M.D.

Dr. Rytand received his BA degree from Stanford University in 1929. He attended Stanford Medical School and was awarded the M.D. degree in 1933. He continued his training at Stanford as a medical resident in 1935 and 1936 and has remained on the teaching staff to the present. He was made a Professor of Medicine in 1954 and has served in the capacity of Executive of the Department of Medicine since 1956. Always an inspiration to students in medicine, Dr. Raymond was recently appointed the Arthur L. Bloomfield Professor of Medicine.

MEDICINE

By the time "The Professor" came to Stanford in 1926, the Department of Medicine had been established by Ray Lyman Wilbur and Albion Walter Hewlett along broad lines common a generation ago. Pediatrics, Neuropsychiatry and Radiology had not yet become separate Departments, and Thomas Addis, George Barnett, Ernest Dickson, Henry Mehrtens, Harold Faber and W. Edward Chamberlain were Professors of Medicine.

Addis was well started with his studies of Bright's disease in man and of the kidneys in animals. As the more mathematically minded George Barnett pointed out to him, the Addis "urea ratio" represented that amount of blood freed of urea per unit of time, and was thus the first of the modern renal clearances. A succession of colleagues and assistants, initiated by Jean Oliver, Douglas Drury and Eaton MacKay, came and went while Mrs. Addis and a few others were permanent fixtures in the laboratory. Afternoon tea was a regular and remarkable hour, in which the range of topics discussed by Addis, Arthur Bloomfield and William Dock was seemingly limitless.

Barnett became Chief of Service at the County, a post he held for many years. He came to know well hundreds of students during his long assignment on the Admissions Committee, and no student ever forgot his reading from Zadig during that exciting first week as a sophomore in the City. Barnett was succeeded by J. K. Lewis, who earlier had been in charge of the EKG lab. There he had made incredibly thin and tough membranes for use in recording heart sounds, and with Dock utilized these in the study of the genesis of the first sound and gallops. As he himself put it, Dock was a "guest worker" not only in this but in many other laboratories on Clay Street. Lewis, Addis, Holman and Hanzlik were among his hosts as he studied heart sounds, hypertension, blood flow, digitalis, specific dynamic action, etc. Emphasis was placed on abnormal physiology, a field which in its early development owed much to Hewlett and which has remained one of the Department's strong points.

Men of the current generation also have national and even international reputations. In succeeding Addis, Luetscher has become established as an expert in aldosterone, the adrenal and the nephrotic syndrome. Rantz, following the valley fever work of Dickson, contributed heavily to the cause and prevention of rheumatic fever. Other areas of research by department members include cyanosis, bacterial endocarditis, peptic ulcer, chronic hepatitis, latent syphilis, hemophilia, thrombocytopenia, hemolytic anemia, multiple sclerosis, alcohol, muscular dystrophies, edema, discoid and systemic lupus, hypersensitivity, leukoagglutinins, the work of breathing, cardiac arrhythmias, malignant melanoma, thyrotropic hormone, hypoglycemic agents, etc.

In great contrast to certain other medical schools, the professors here have maintained a busy teaching schedule. Dr. Bloomfield made ward rounds four times weekly with students and house staff in addition to Friday's fabulous Staff Rounds on the ward, gave each Tuesday's Set Clinic, attended X-ray Conference on Monday and regularly served as the clinician at CPC. In addition, he personally aspirated stomachs while studying gastric secretion and anacidity, with Polland published a monograph on the latter, served on various committees and found time for consultations while remaining a scholar. It is doubtful that many others have equaled this or will ever do so.

The wards were especially active in the days before insurance became so widespread, and sometimes a clinical clerk was assigned patients in medicine, pediatrics and psychiatry on one day. Somehow, he saw them all. A greater proportion of patients were San Franciscans then than now, were followed longer and were more intimately a part of the Department. One spent his vacations on the men's ward, reading Westerns while Doctor Bloomfield removed his stomach juice. It was he who inquired about Friday's "grand round-up"; subsequently "Grand Rounds" gradually supplanted "Staff Rounds."

Above, left to right: Eugene M. Farber, Clinical Professor (Dermatology); H. Corwin Hinshaw, Clinical Professor (Diseases of the Chest); Henry W. Newman, Professor (Neurology); William H. Northway, Professor (Physical Medicine). Below: John K. Lewis, Professor; John A. Luetscher, Jr., Professor.

Under either name, the exercise continued on the ward and the audience grew until, finally, it was moved to Lane Hall and the wards themselves were declared unsafe (structurally speaking) for patients.

Nearly omniscient otherwise, the house staff never found it possible to account for the disappearance of a demonstration specimen of hemorrhagic chylous fluid from a bedside table between patients in the line during rounds; some believed it became confused with tomato juice. Nor could anyone ever account for the appearance of a caricature of a face in gentian violet on an abdominal wall following paracentesis but before

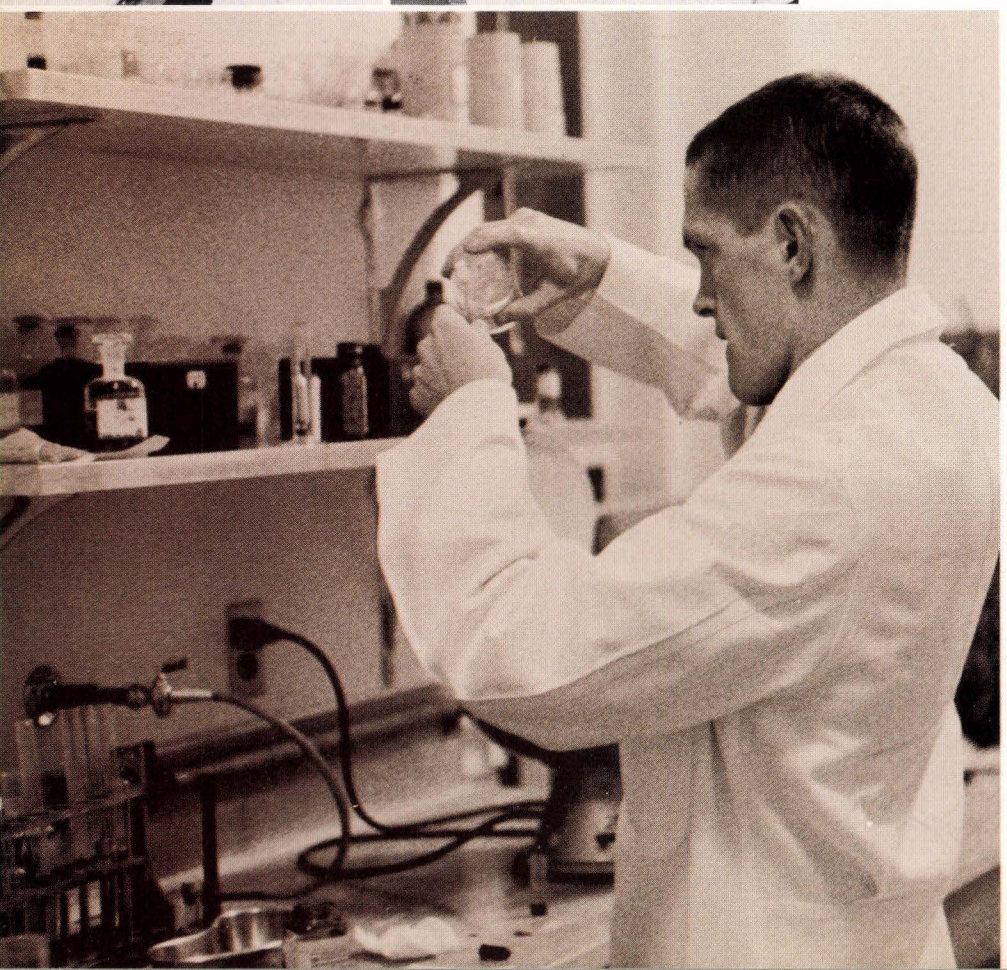
Ward at San Francisco Hospital




Above, left to right: Charles W. Barnett, Professor; George B. Robson, Clinical Professor; Dwight L. Wilbur, Clinical Professor; William P. Creger, Associate Professor. Below: Herbert N. Hultgren, Associate Professor; William W. Hofmann, Assistant Professor.


Doctor Bloomfield's rounds. Until about twenty years ago, the staff was composed almost entirely of Stanford graduates. Now it is recruited from many schools and places; two years ago, notices went to prospective residents in Baltimore, Oxford, Heidelberg, Greenland and Texas. As one measure of success, at least fourteen interns or residents have become full professors. With growth of the house staff, research fellows began to appear after the last war and now number seven.

Departmental members have been selected as Markle Scholars in Medical Science, and have been elected as presidents of the American Society for Clinical Investigation, American College of Physicians, Western Society for Clinical Research, California Academy of Medicine, Western Association of Physicians, San Francisco Medical Society, etc. Some of these so honored are voluntary faculty members. For years, the small core of full-time staff has been aided immeasurably by many voluntary faculty, research associates and assistants, and postdoctoral fellows who really should be mentioned individually and with gratitude but whose names alone fill two pages in the annual School of Medicine Bulletin.



The active full-time staff includes the following: Professors C. W. Barnett, J. K. Lewis, J. A. Luetscher, Jr., H. W. Newman, W. H. Northway, L. A. Rantz and D. A. Rytand; Associate Professors W. P. Creger, H. N. Hultgren and J. P. Kriss; Assistant Professors F. L. Eldridge, W. W. Hofmann and B. B. Johnson; Instructors R. M. Kivel and L. P. White.

Bulging at the seams on Clay Street, we recognize that numerical growth and improved quality are not always synonymous. The Department has had many excellent days in the past and hopes to do even better on the Stanford campus.

DAVID RYTAND, M.D.

"The Professor" ends another day.

SIDNEY RAFFEL, M.D.

Dr. Raffel did his early work at the Johns Hopkins University where he received his AB degree in 1930 and his ScD degree in 1933. Following this he received the MD degree from Stanford University in 1943. He has been a member of the Department of Medical Microbiology since 1935 and is well known for his research work on the tubercle bacillus and in the field of immunology where he has published a textbook. He is currently Executive Professor of Medical Microbiology.

MEDICAL MICROBIOLOGY

During the closing quarter of the last century bacteriology began to develop as a science, especially in France and Germany, and before long some of the younger men of this country brought back from their studies there the beginnings of courses in our own medical schools. Perhaps the first to do this was Dr. William H. Welch who introduced the then extant knowledge of infectious agents into the young Johns Hopkins Medical School in Baltimore in the early 1890's. Stanford was not far behind in this; there was as yet no medical school in the University as such, but in 1897 the first elementary course of which there is record was given by Professor George J. Pierce, a botanist, and at about the same time courses in hygiene were instituted by Dr. William F. Snow.

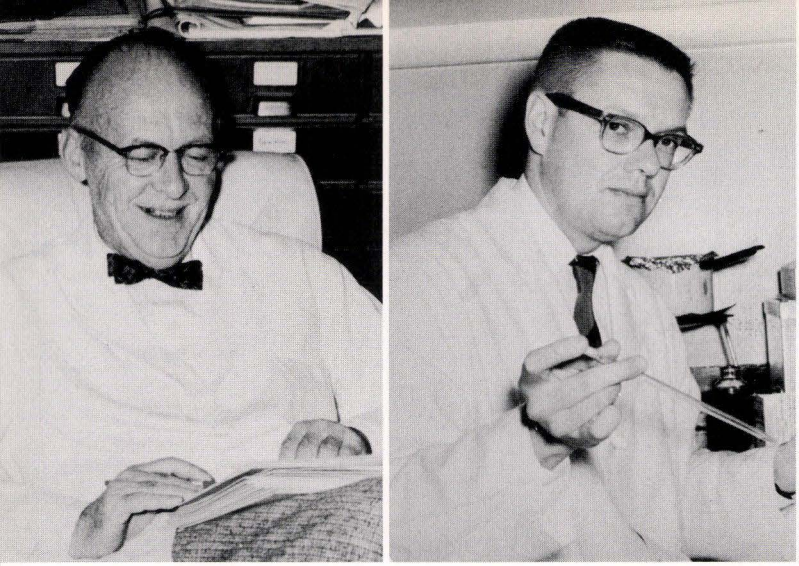
In 1908 the Cooper Medical College became part of the University, and forthwith a course in bacteriology for medical students was instituted by Professor Robert E. Swain of the Department of Chemistry. Dr. Swain was for many years head of the Department of Chemistry, for several years acting president of the University, and he continues to live here on the campus and to take an interest in University affairs.

Three years later, in 1911, a Division of Bacteriology was established with Dr. Hans Zinsser as its head. He came here from Columbia, and he instituted courses in general as well as medical bacteriology, in immunology, and in the relation of bacteriology to public health. At the same time a course in applied bacteriology was started in the Division of Pathology by Dr. Ernest C. Dickson who was in subsequent years to contribute a great deal to our understanding of Valley Fever.

Dr. Zinsser's stay here was only for something over two years, but his recollections of this phase of his career as recalled almost thirty years later in his autobiographical "As I Remember Him" were happy ones, and his recounting of his initial interview with Dr. David Starr Jordan in a small hotel room in New York is worth retelling. During this talk Dr. Jordan was getting dressed and struggling to get his arms and head through a dicky while describing the beauties of the Stanford campus. As Zinsser tells it, "I think I won his heart by tugging down on the shirttail, meanwhile holding up the trousers. It may well be that I owed my first professorship to the holding up of a president's pants more than to my scientific achievements — which, if not too dignified a manner of getting a job, is still far less ignominious than many things that have been done in similar regions of presidential anatomy for worse positions." He came as assistant professor of bacteriology under the Division of Pathology and Bacteriology, but by 1912 he was made full professor. During this time many of the ruins of the 1906 earthquake were still underfoot, and Zinsser's department was in a portion of the recently resuscitated anatomy building, contiguous to some of the still warped and jagged remains.

In 1913 Zinsser left to become head of the department at his alma mater, the Columbia School of Medicine, and was replaced by Dr. William H. Manwaring who had graduated with the first class at the Johns Hopkins Medical School and had then worked at the Rockefeller Institute. Dr. Manwaring was assisted in instruction by Drs. Harry J. Sears, Marcus C. Terry (pathologist at the local veterans hospital), and John T. Connell. Dr. Manwaring served in this capacity until 1920, and during this period instituted additional courses in applied bacteriology, bacteriological chemistry, and pathology. The medical classes were small at this time, numbering less than twenty students, and it was possible to teach pathology on an experimental basis, the students creating various lesions for the study of their development and sequelae. Dr. Manwaring was himself widely recognized as an experimentalist in immunology, particularly in the field of hypersensitivity and the relationship of various organs to its mechanism.

In 1920 Dr. Edwin W. Schultz was made head of the department. He instituted advanced graduate study, the M.A. and Ph.D. degrees being offered. Instructional



Left to right: Charles E. Clifton, Professor; Robert J. Roantree, Assistant Professor.

assistants in the 1920's included Drs. John E. Blair, Claus W. Jungeblut, Albert P. Krueger, and Paul J. Beard, the latter associated also with the Department of Civil Engineering and concerned with a course in sanitary bacteriology. Dr. Beard served in this capacity until his death in 1944. Drs. Charles E. Clifton and Earl E. Dewey also became instructors, in 1929; the former remains on the staff at the present time. During Dr. Schultz's years of leadership, between 1920 and his retirement in 1953, the present housing of the department was greatly developed through the extension of research laboratories and animal quarters into the basement, and an auditorium endowed by Mr. E. B. Noble was added to the building. Dr. Schultz introduced a course in viruses, and he devoted a number of years to studies of poliomyelitis. In the 1930's he was one of the leaders in this country in the investigation of pathways of infection and mechanisms of immunity in poliomyelitis, and in efforts to block neural routes of the virus to the central nervous system by means of chemical astringent agents. Since his retirement from the University, Dr. Schultz has been chairman of a commission charged with the development of the medical school at the University of Indonesia, in Djakarta. This activity is partly under the auspices of the University of California, and constitutes one of our country's significant efforts to provide educational assistance abroad.

In 1936 the writer joined the staff as instructor, and since 1953 has been executive head of the department. The general area of instruction has remained the same as in the past, but the methods have been evolving in the past several years toward a small group-conference level. Research interests of the department at this time include various aspects of immunology and hypersensitivity, viruses, and bacterial metabolism. Several books have come out of the department in the past few years; two by Dr. Clifton concerned with general bacteriology and bacterial physiology, and one by the writer on immunity.

The present staff consists of Drs. Raffel, Clifton, and Cutting, professors; Dr. Carlton E. Schwerdt, associate professor; Dr. Robert J. Roantree, assistant professor; and Mrs. Helen S. Thayer, instructor. The clinical staff includes Dr. Emmett J. Durrum, associate clinical professor, and Dr. Edwin C. Custer, assistant clinical professor.

During the years since 1920, something over thirty Ph.D. degrees have been awarded by the department, and a larger number of master's degrees. In addition to offering the major course for the medical students and other courses for graduate students, the department has for many years, with some remissions, also offered work for undergraduate majors, many of whom have later gone into medicine or concentrated on completing work for their medical technological training.

With the coming of the clinical departments to the campus, with the addition of new departments with related interests, and with a proposed expansion of our own pre- and postdoctoral fellowship program and the opportunity to offer elective courses to medical students, we are anticipating entering into a most stimulating era in teaching and research.

SIDNEY RAFFEL, M.D.

Bacteriology Laboratory

C. FREDERIC FLUHMANN, M.D.

Dr. Fluhmann received his BA degree from the University of Bishops College in 1917. He attended McGill Medical School and was awarded the MD degree in 1922. He was a junior intern at the Montreal General Hospital in 1922-23 and in 1923-24 served as a senior intern in the Department of Gynecology. He completed his residency training in obstetrics and gynecology at Johns Hopkins Hospital during 1924-25. He has been on the clinical staff at Stanford since 1926, and is presently Clinical Professor of Obstetrics and Gynecology.

OBSTETRICS

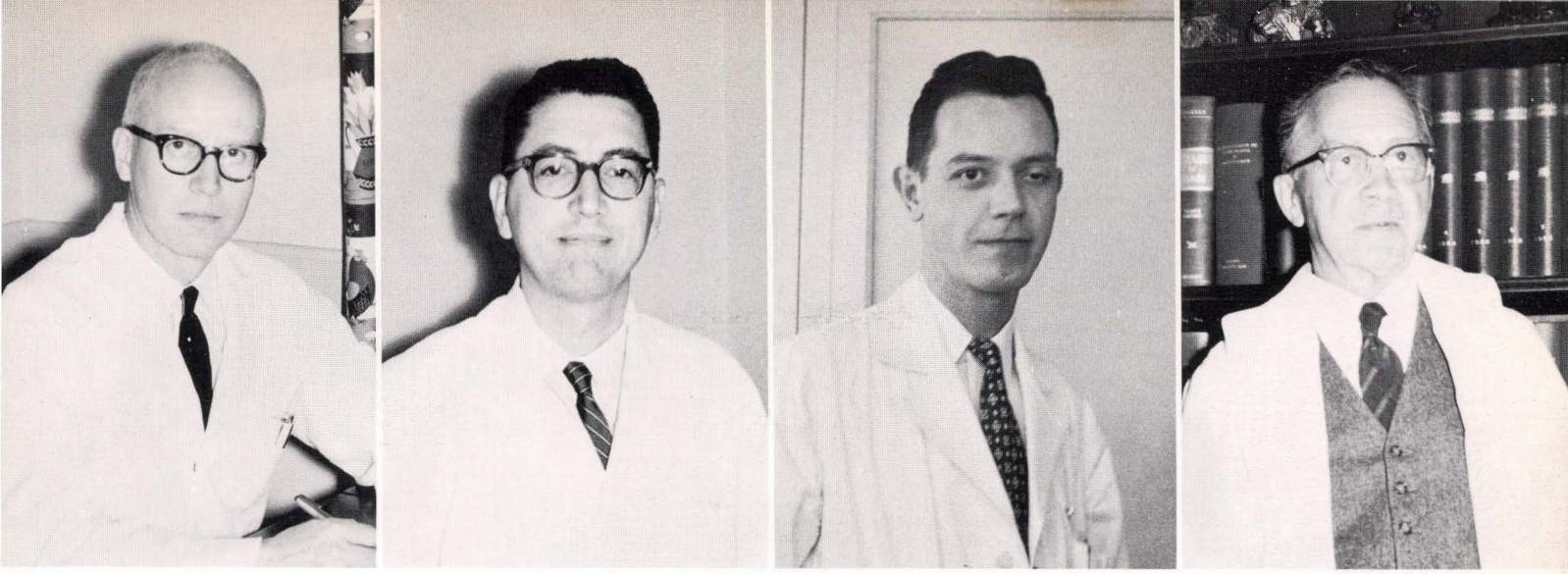
In 1858 a few "medical gentlemen" from San Francisco "earnest in their desire for mutual improvement; anxious to increase their store of knowledge; and, like the true scientist the world over, ever willing, even eager, to impart their knowledge to others," obtained a charter from the University of the Pacific and founded the organization which eventually became Cooper Medical College. The announcement for the session of 1859 stated in regard to the teaching of obstetrics that "In this course there will be no lack of effort to bring everything pertaining to this department as clearly and practically before the mind of the student as the present state of the science will admit. The lectures will be amply illustrated by colored drawings, many of which have been taken from nature, and also by wet preparations. The different operations in obstetrics will be performed upon a manikin, and the student will be instructed and practiced in the use of obstetrical instruments."

The Professor of Obstetrics and Diseases of Women and Children and Physiology was Dr. R. Beverly Cole, who was truly a medical pioneer in the early days of San Francisco. In 1864 the young institution saw fit to suspend its teaching but when in 1871 it was reorganized the Professor of Obstetrics and Diseases of Children was Dr. Clinton Cushing. The following year further changes were made and Dr. Henry Gibbons, Jr., who had graduated in 1863, became Dean as well as Professor of Obstetrics and Diseases of Women and Children, a post which he filled until 1912. A clear-cut separation of the two divisions of Obstetrics and Gynecology never occurred, but in 1881 a "special professorship" of Gynecology was instituted, and Dr. Clinton Cushing was given the chair. In 1899 the teaching assigned to this position was taken over by Dr. George B. Somers, first as lecturer and later as professor, while Dr. Cushing became Emeritus in 1901.

In November 1908 Cooper Medical College transferred its allegiance to Stanford, and in 1912 Dr. Alfred Baker Spalding assumed control as Professor of Obstetrics and Gynecology, and his term of service saw the development of a well-organized department devoted to the care of patients, teaching, and research. Under Dr. Spalding served three successive Associate Professors who came to Stanford from other shcools, namely Henry A. Stephenson, Ludwig A. Emge, and C. Frederic Fluhmann, but soon Stanford graduates, notably Karl L. Schaupp Sr., Albert V. Pettit, Hans von Geldern, Gertrude F. Jones, Paul E. Hoffman, Donald A. Dallas, Dorothy L. Morse, and Chester L. Cooley, remained associated with the Department and contributed to its activities. At this time Female Urology was a departmental division under William E. Stevens, who is now Associate Clinical Professor Emeritus.

Because of ill-health, Dr. Spalding was forced to retire prematurely in 1933 and Dr. Emge served as Executive from this time until 1947. He did much to enhance the department's activities and a new generation of teachers, also mostly Stanford graduates, joined the staff and among these were Harry A. Somerfield, Seymour F. Smith, Frederick J. Northway, Frank Norris, W. Dayton Clark, Harold M. Lyons, Karl Schaupp Jr., Albert E. Long, and John B. Schaupp. Since 1947 the Department has progressed under the able leadership of Dr. Charles E. McLennan.

Since its earliest days, the Department has been known for its sound clinical teaching both at the Lane and at the



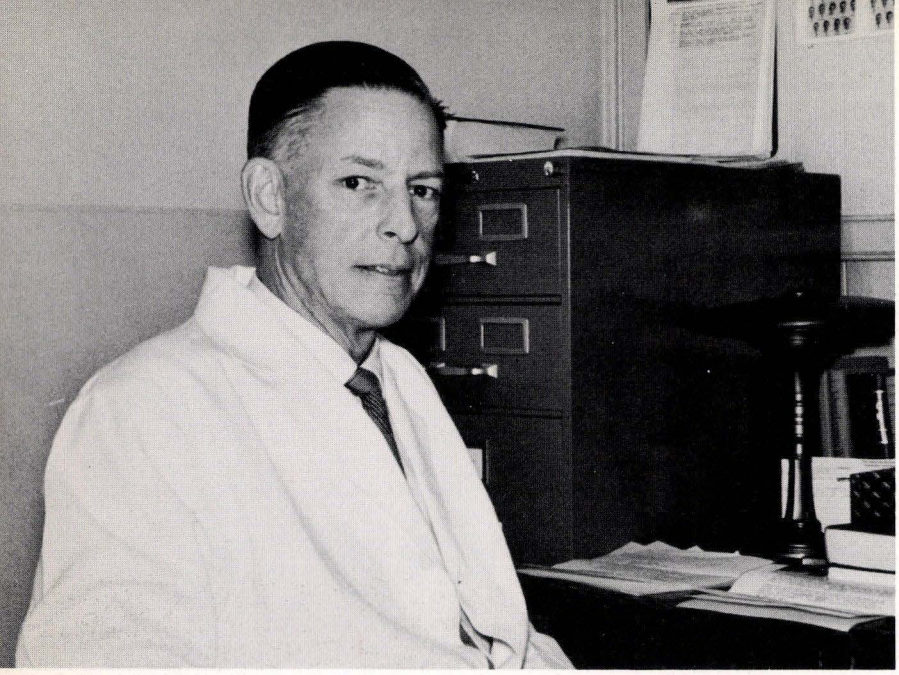
Left to right: Charles E. McLennan, Professor and Executive; Robert W. Noyes, Associate Professor; Eugene C. Sandberg, Assistant Professor; Ludwig A. Emge, Clinical Professor Emeritus.

San Francisco Hospital. It should be mentioned, however, that it was also one of the first in this country to expand its laboratory facilities and provide the means for animal experimentation. The tissue laboratory was organized by Dr. Spalding so that the staff members always have been closely interested in gynecologic pathology. In the thirties a rat colony was developed, and L. A. Emge conducted a long program of research on transplantable rat tumors while C. F. Fluhmann did some basic studies on ovarian and gonadotropic hormones. Dr. Robert W. Noyes is now continuing an extensive program of animal experimentation.

The exigencies of life will not allow the San Francisco obstetricians and gynecologists to take a very active part in the new school in Palo Alto, but with happy memories of a full and successful past all send heartfelt wishes for an even greater second century.

C. FREDERIC FLUHMANN, M.D.

Manikan session with Dr. von Ge[illegible] and Dr. Morse.



ALVIN JOSEPH COX, M.D.

Dr. Cox is a Professor of Pathology and Executive of the Department of Pathology. He began his higher education at Stanford and received his AB in 1927. He continued at Stanford Medical School and was awarded his MD in 1931. From then until the present he has been associated with the Stanford Medical faculty, taking leaves in 1935-36 to do special work in Pathology at the University of Frieberg at its Pathological Institute and again in 1957-58 to spend a year at Harvard as a Research Fellow in Chemistry.

PATHOLOGY

Pathology as we know it today is not a very old subject. Its age can be fixed at about 100 years, the same as that of our Medical School. It was in 1858 that Rudolph Virchow published his **Cellular Pathology,** a synthesis of a new approach to the study of disease — the approach that has dominated pathology through the last century. Our Department of Pathology, therefore, has reflected the development of modern pathology from its inception.

In the original precursor of Stanford Medical School, associated with the University of the Pacific, pathology was not a separate department. The first professor was a Dr. J. Morison who held the title of Professor of the Principles and Practice of Medicine and Pathology. During the early years others also taught pathology while conducting clinical practices. It was not until 1898 that Dr. William Ophuls became the first full-time specialist to head the Department of Pathology. Dr. Ophuls was trained in Germany under Johannes Orth, who had been Virchow's successor in Berlin, and so Stanford received an important contribution directly from the country that had brought pathology to a peak of its development. It is interesting that Ophuls at first taught not only pathology, but also histology and bacteriology. Separation of the latter discipline at Stanford did not take place until 1911.

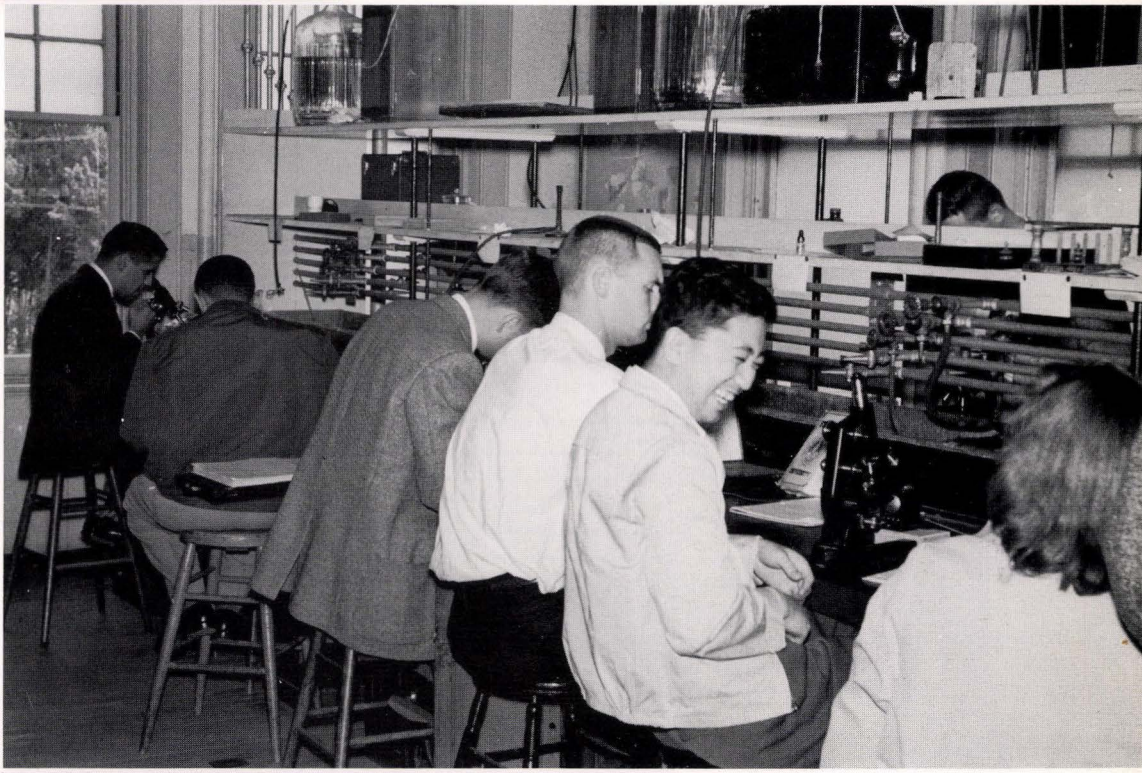
After the death of Dr. Ophuls in 1933 Dr. David A. Wood was acting executive until 1937, when the appointment of Dr. William Dock as executive served to stimulate clinical and physiological correlations because of Dr. Dock's background in internal medicine and clinical physiology. Dr. Alvin J. Cox, Jr., who followed Dr. Dock in 1941 had developed his interest in morphology under Dr. Ophuls at Stanford and Ludwig Aschoff in Germany. His attention to functional relationships was stimulated by the several years' association with Dr. Dock. A number of other pathologists from different parts of the country have joined the Departmental Faculty since then; currently associated are Dr. Lelland J. Rather, Dr. Glen B. Haydon and Dr. David Linder. Interests of this Faculty have continued to stress the importance of morphology in the study of disease, and to emphasize that this method can be applied as well to experimental problems as to descriptive ones.

That the Stanford Department of Pathology has played a significant role in the development of pathology elsewhere in the United States is indicated by the number of our faculty who have accepted executive positions in departments of pathology at other schools: Ralph H. Major, University of Kansas, 1914; Jean R. Oliver, Long Island College of Medicine, 1929; Ernest M. Hall, University of Southern California, 1929; William Dock, Cornell University, 1941; James B. McNaught, University of Colorado, 1945; David A. Wood, University of California (Oncology), 1951; William H. Carnes, University of Utah, 1956.

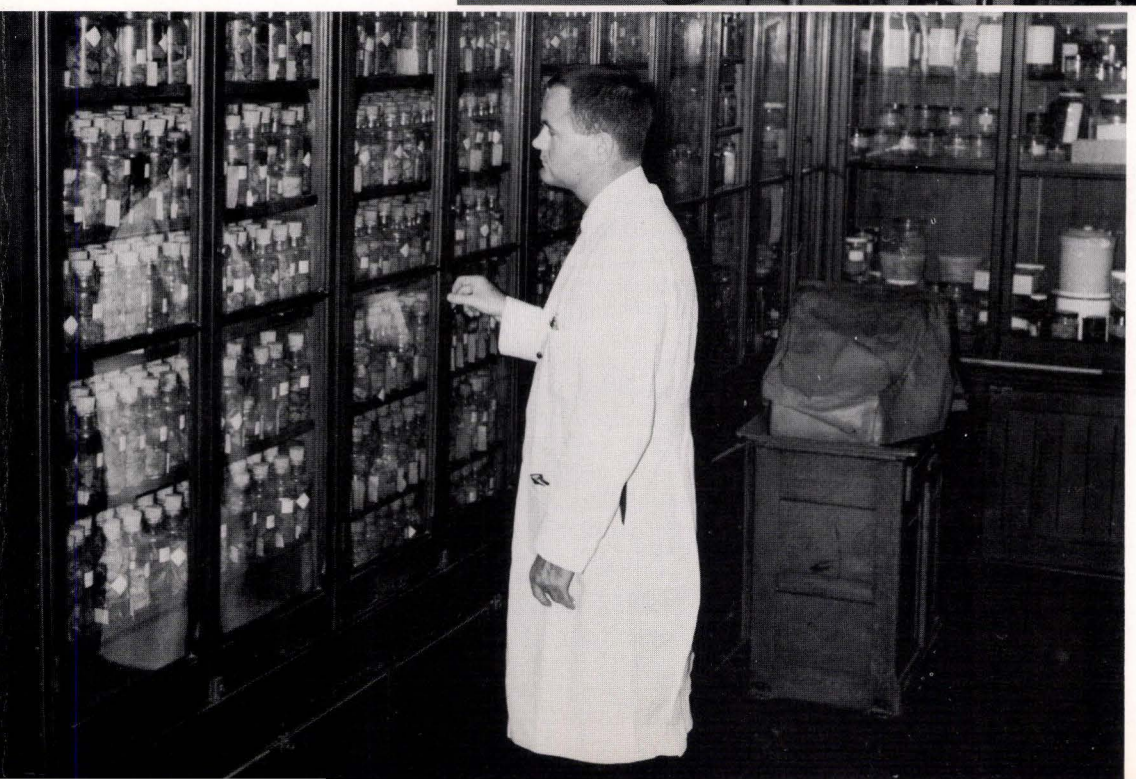
With the move of the Medical School to the campus the Department of Pathology will begin to have the advantages of University relationships enjoyed by the other laboratory departments which are housed on the campus. Because of the ease with which pathology lends itself to joint projects in teaching and in research, it is reasonable to expect that this subject will provide a continuing focus for cooperative work within the School of Medicine, and that this will encourage teaching and research interrelationships between Medical School and other parts of the University.

ALVIN J. COX, M.D.

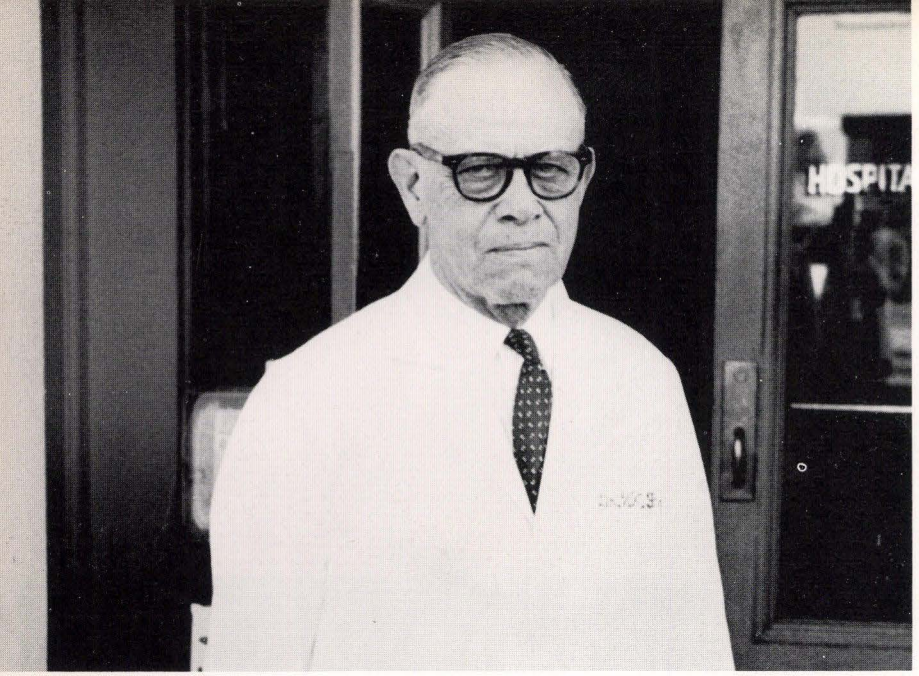
Left to right: Lelland J. Rather, Professor;
David Linder, Instructor.



Student Pathology Laboratory



Specimens in fourth floor hallway.



HAROLD K. FABER, M.D.

Dr. Faber has been associated with Stanford Medical School since 1915, coming here after having served as resident pathologist at Babies' Hospital in New York and as a research fellow at the Rockefeller Institute. He was appointed Professor of Pediatrics in 1923, continuing in that capacity for 26 years. In addition, in 1946-1947 he served as president of the American Pediatric Society. Since 1949, Dr. Faber has been an Emeritus Professor, but has continued to be very active during this time. He has contributed many important articles to the pediatric literature, particularly on the subject of poliomyelitis.

PEDIATRICS

In the first announcement of "The Medical Department of the University of the Pacific" dated 1859 a course of lectures on "Obstetrics and Diseases of Women and Children" by R. Beverly Cole, M.D., "Professor of Obstetrics and Diseases of Women and Children, and Physiology" was offered, which dates the beginning of fetal life of pediatrics in our institution. The versatile Dr. Cole continued to offer this course until 1864 when the Medical Department closed. Reorganized in 1870 as the Medical College of the Pacific its faculty continued to teach pediatrics in conjunction with obstetrics and gynecology, Drs. Clinton Cushing and Henry Gibbons, Jr. being in charge of the courses.

In 1870 an out-patient clinic known as the Morse Dispensary was begun, with a children's clinic as one of its chief branches, which was used for instruction of medical students. The announcement stated that "such a clinic is of special value as enabling them to gain practical experience in the diagonsis and treatment of the Diseases of Children which cannot be obtained elsewhere." — probably one of the earliest examples in this country of case teaching in pediatrics.

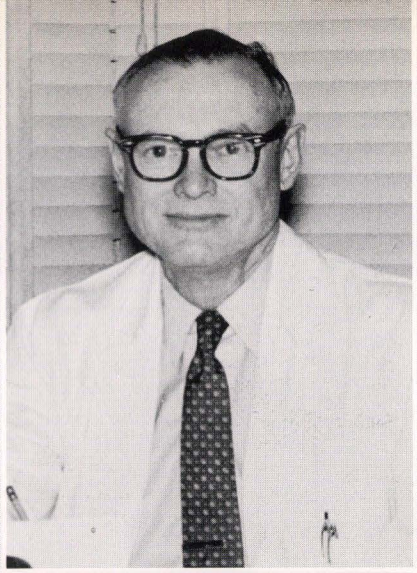
Class teaching of pediatrics as a separate discipline began in 1881 when Dr. Ellinwood, Professor of Physiology, offered a special clinic on "Diseases of Children." A year later Dr. Dorr, Professor of Materia Medica and Therapeutics, offered a series of lectures on diseases of children. His successor, Dr. Charles H. Steele, was chief of the Children's Clinic until 1894 when the late Dr. William Fitch Cheney took over and instituted several major improvements: systemic and detailed records of the history and physical examinations of every patient and such laboratory tests as were available. These records were continued from that time to this: bound copies of those from 1904 to 1910 are in the present pediatric library. Dr. Cheney, in his first annual report, mentions tapping the ventricle in two cases of hydrocephalus, a method revived about 18 years later by Dandy and Blackfan.

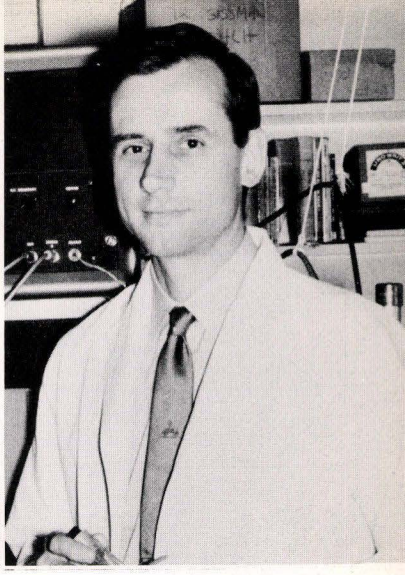
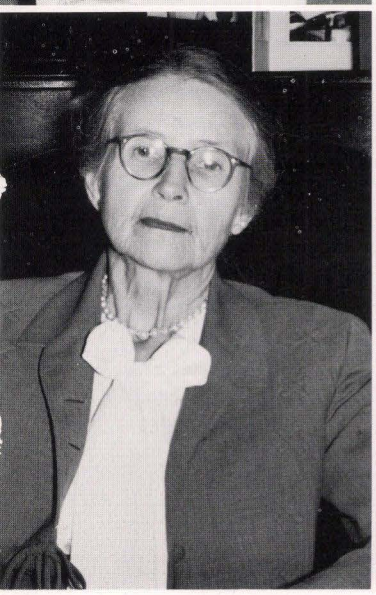
Pediatrics was a "minor" subject in the Cooper curriculum and remained in the Department of Obstetrics until the reorganization of 1908-9 when the Medical School was taken over by Stanford University. It was then made a division of the Department of Medicine under Professor Ray Lyman Wilbur, who became Dean in 1911 and served until his assumption of the Presidency of the University in 1916. This arrangement continued until 1927 when Pediatrics at last became a separate Department of the School of Medicine.

From 1907 until my arrival in 1915 the acting head of Pediatrics was R. Langley Porter, Clinical Professor of Pediatrics, who the next year transferred his services to the Medical School of the University of California, later becoming Dean and still later bestowing his name on the Psychiatric Hospital of that institution.

Dr. Wilbur initiated the so-called geographic full-time faculty plan under which men were expected to devote the majority of their time to teaching and research but were permitted a limited amount of private practice in the University Hospital (Lane and, after 1917, Stanford). Among those brought by Dr. Wilbur in those early days to the Medical School were Albion W. Hewlett, Thomas Addis and Ernest C. Dickson. Dr. Wilbur believed that this arrangement, under which his faculty men were expected to learn the problems and the responsibilities of private practice, made them better teachers of medical students, most of whom would themselves become practitioners. (It also was thought to justify a meager salary scale, and undoubtedly saved the University a great deal of money.)

In 1915, the pediatric facilities of the Department consisted of: an out-patient clinic with about 8,000 visits annually; an in-patient service of about 20 beds for clinic patients; a neanatal service of about the same number of bassinets (the exact figures for the last two items are not available); and a space on the fourth floor of the Medical School building assigned to research, but with no furnishings or equipment, and no allowance for tech-


ABOVE, left to right: Ruth T. Gross, Associate Professor and Acting Executive; Hale F. Shirley, Professor; Luigi Luzzotti, Associate Professor; John J. Osborne, Associate Professor. BELOW: Ann Peril Purdy, Clinical Professor Emeritus; Saul J. Robinson, Associate Clinical Professor.

nical assistance. A single grant of $1200 was allotted to supplying and equipping this laboratory.

The reorganization of the staff and the in- and out-patient services and the preparation of the research laboratory took most of the time of the new full-time man, but a series of three papers on experimental glomerulonephritis was published in 1917 in the Journal of Experimental Medicine as first fruits of the research program. In February 1918 I entered the Army Medical Corps and did not return until late in 1919. Following this the research program was gradually revived. The in-patient facilities were enlarged by taking over the south wing of Third West of Lane Hospital, adding a glass-enclosed porch and installing the cubicle system throughout, thus doing away with overcrowding and lessening the chances of cross-infection which had previously been a serious problem. The newborn babies of the Clinic service were placed under the Division of Pediatrics. In 1947 a gift of $10.000 was received from the late Ruth Heller Shainwald with which a new and modern nursery for both Clinic and private newborn infants was begun in Stanford Hospital. This was completed early in 1948 at a total cost of $22,993.44 and formally opened in February of that year.

In 1923 the first modern unit (McLaughlin Building) of the Stanford Convalescent Home was built and, having had an informal consulting arrangement with it since 1917, I was then appointed Medical Director, and the mutually advantageous close liaison with the Division of Pediatrics of the Medical School was thus established, which continues to the present time.

In the out-patient clinic, several subdivisions were established at different times. One of the earliest of these was the Well Baby Clinic begun by the late Drs. Herbert Yerington and George D. Lyman (later famous for his books on early California and Nevada history: Ralston's Ring; John Marsh, Pioneer, etc.). A clinic for Adolescent Girls was set up in 1916 by Dr. Amelia Gates. Dr. Lloyd B. Dickey, who joined the pediatric faculty in 1923 (of which he is still a member) conducted a clinic for tuberculous children (then a more numerous group than now) on which he based a number of scientific papers. The precursor of the present Child Psychiatry was already established in 1915 by a psychologist, not an M.D., named Arthur J. Ritter whose work was largely devoted to psychometry. In 1917, Dr. Mary H. Layman joined the staff and proceeded to develop a true child psychiatry clinic, almost entirely at her own expense, there being no University funds for the purpose at that time. It was not until 1939 that Dr. Johnson and I, responding to an appeal from Dr. Layman, interested the Commonwealth Fund in beginning and, for a period of three years, supporting an enlarged program with a full-time pediatrician psychiatrist (Dr. Hale F. Shirley) and an adequate ancillary staff, which the following year and since then had been quartered in a house on Webster Street across from the Medical School building. Until 1957 this Child Guidance Unit was under the joint direction of the Department of Pediatrics and the division of Neuropsychiatry, and since that time of the Department of Psychiatry, but keeping its close relation to Pediatrics.

A clinic for congenital syphilis was conducted for many years under various attending pediatricians until the virtual disappearance of the congenital disease made it superfluous.

A special clinic for cardiac disorders was begun by Dr. Ann P. Purdy about 1940, the work being energetically

prosecuted by her with meticulous case records. With the introduction in 1939 of ductus ligation by Gross and in 1945 of the Blalock-Taussig operation for the tetralogy of Fallot, and the many technical improvements in diagnosis, the work of this clinic became increasingly large and important. Close liaison with the Department of Surgery in cardiovascular problems has been attained by the appointment in both Departments in 1954 of Dr. John J. Osborn, while almost equally close relationships have been established with the Department of Radiology. The work of Dr. Saul J. Robinson who joined the Department of Pediatrics in 1948 in diagnosis of congenital heart disease is particularly noteworthy. All this expansion of outpatient services was chronically impeded by restriction of space. The adjoining entry to Lane Hall had to be used for the Well Baby Clinic, which in turn expanded into the dark and poorly ventilated space under the auditorium (sometimes referred to as the Black Hole of Calcutta). Here too, on other days, the Heart Clinic was housed. The Child Guidance Clinic has already been discussed.

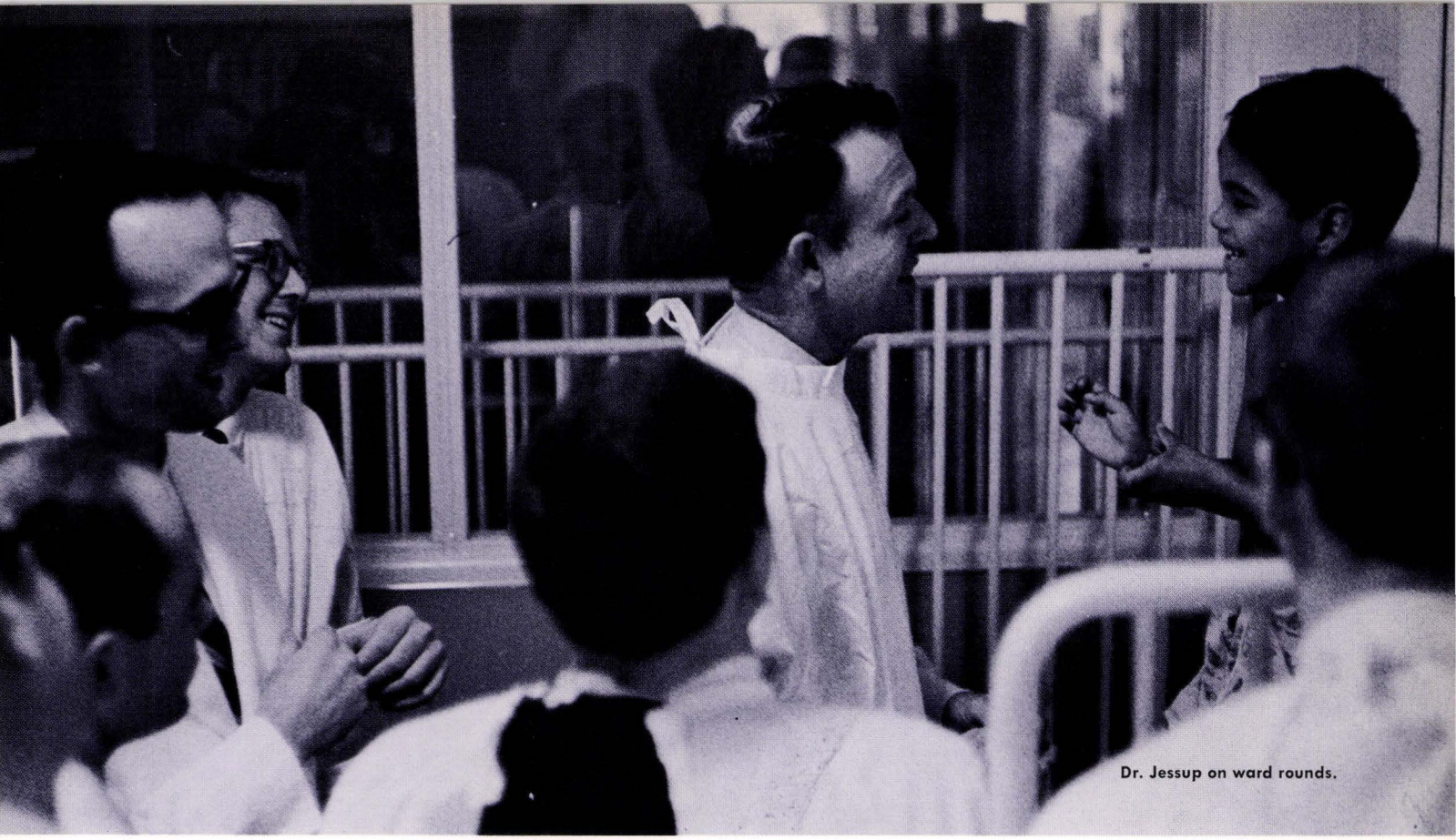
Until 1940 the space available for research work was even more limited — another converted hallway on the fourth floor of the Medical School building part of which had to be used for the office of the Executive Head. In 1940 the Stern Building was completed and most of the second floor was given over to the Department. In this year the first grant from the National Foundation for Infantile Paralysis was obtained, others being given annually until 1953, providing funds for the series of research studies on poliomyelitis mentioned below.

Since 1915 about 150 scientific papers have originated in the Department, of which roughly 35 percent have been investigative and the remainder clinical. Limitations of space prevent a detailed description of all of these, but the following have been selected as having some present interest.

Research papers. A series of 3 papers on the etiology of glomerulonephritis (1917); one on the use of rabbits for pneumococcus typing (1918); the effect of gentian violet in vitro on Candida albicans (1927); 2 papers on serum proteins and lipids in eczema of infants (1932-3); immunization for pertussis and tetanus, a series of 12 basic studies by the late John J. Miller, Jr. and his associates (1938-49); a series of about 30 papers on experimental poliomyelitis by Faber and his associates (1932-55). Other studies after 1949 will be mentioned later.

Clinical Studies. Amyotonia congenita (1917); a series of 8 studies of growth of infants and children with new charts and tables expressing the normal ranges of values for height and weight by age, and sex (1920-29) based on frequency distribution of data obtained in the well-baby clinic and the San Francisco public schools; food requirements of normal newborn infants based on spontaneous intakes; systemic and cutaneous leishmaniasis; a series of four papers proposing and later reporting the effects of linear craniectomy in premature synostosis of the cranal sutures (1924-43); an early report of megaloblastic anemia treated successfully with liver extract 343 (1928); relationship of iron deficiency anemia in children to gastric anacidity (1935); differentiation by serial quantitative Wassermann tests of true congenital syphilis from simple passive, transplacental transfer of reagin from treated mothers to their uninfected infants (1936) (before the recognition of this phenomenon, many infants had been unnecessarily treated for syphilis and, further, a false impression had arisen that congenital syphilis was quite easy to cure); acute coccioidomycosis with erythema nodosum in children (1939); localized absence of ganglion cells of the myenteric plexus in congenital megacolon distal to the dilated portion (1940); cerebral atrophy in

Well Baby Clinic



Dr. Jessup on ward rounds.

relation to pre- and post-natal anoxia (1942, 1947); prognosis of acute glomerulonephritis in children (1946); a metabolic study of the Butler-Albright syndrome of renal acidosis with nephrocalcinosis, etc. in which a deficiency of carbonic anhydrase was first postulated (1948), an explanation later applied to the related Lightwood syndrome.

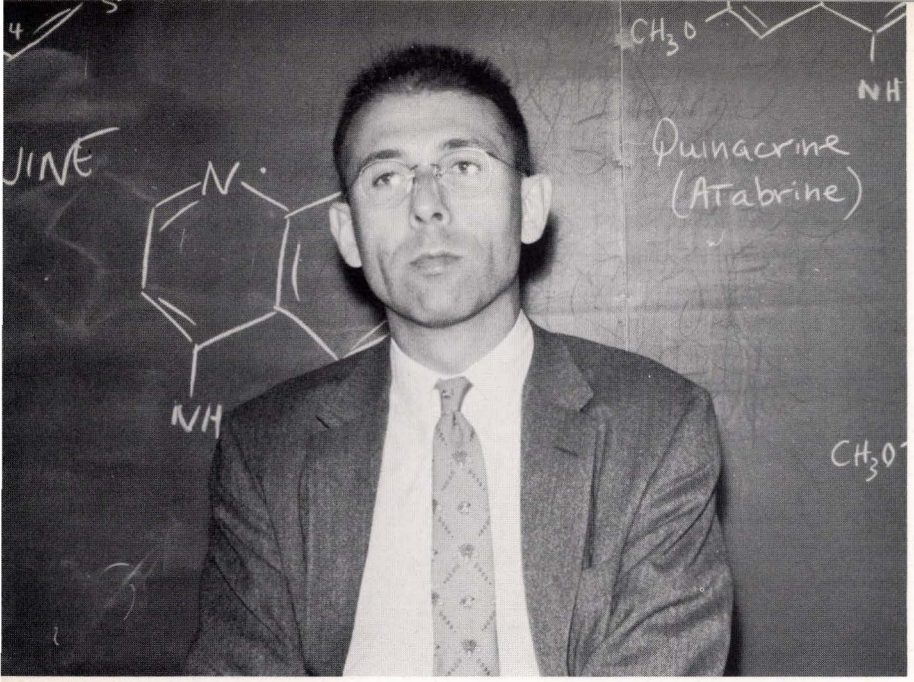
Only a few large-scale publications have come from the Department. In 1932 a monograph-size discussion was published in **Medicine** on the pathogenesis of poliomyelitis and a book on the same general topic in 1955, in which the results of many years of research were presented. The section on coccioidomycosis in Brennemann's Practice of Pediatrics was first published in 1943 and revised several times since then. The section on poliomyelitis in Tice's Practice of Medicine by myself and the late Harold L. Amoss was published first in 1952 and revised in 1955. Dr. Shirley has published two volumes: "Psychiatry for the Pediatrician" (1948) and "The Child, His Parents and the Physician" (1954).

Three of the Lane Lecture series have been given by pediatricians: L. Emmett Holt (1924) on "Food, Health and Growth"; Thomas M. Rivers (1939) on "Viruses and Virus Diseases"; and James L. Gamble (1949) on "Companionship of Water and Electrolytes in the Organization of Body Fluids."

On my retirement in 1949, John A. Anderson came from the University of Utah to succeed me, and remained until 1955 when he moved to Minneapolis as Professor of Pediatrics and Head of the Department at the University of Minnesota. During his term a considerable expansion of the budget made it possible to enlarge the full-time staff and both the teaching and the research program. Ruth T. Gross, who arrived in 1950, has investigated the thyrotoxic effects of cobalt, carbohydrate metabolism in the newborn, and an hereditary defect in red cells. Carolyn F. Piel began in 1951 a series of studies on nephritis and nephrosis. Luigi Luzzatti, who joined the staff in 1951 with duties divided between Pediatrics and Preventive Medicine, has specialized in endocrine problems. Robert H. Alway first joined the pediatric faculty in 1949, developed the teaching service at the San Francisco General Hospital and remained until 1952 when he moved to the University of Colorado as Professor of Pediatrics. On Dr. Anderson's departure in 1955 he returned to head the Department until in 1957 he became Dean of the Medical School and in active charge of the plans of the new Medical School on the Stanford Campus. Since then Dr. Gross has been Acting Head. Alan Done, of the School of Medicine of the University of Utah joined the staff in 1958.

With the move to Palo Alto the physical connections between the past of the Department of Pediatrics and its future again become tenuous. There will, however, be one item of liaison which brings me a personal pleasure and will, I trust, be of enduring value to the School: the Reference File, which I started in the early 20's and now contains references to over 45,000 original scientific articles. This, together with a library of pediatric and other medical journals, various texts, and a large number of reprints, is to be housed in a reading room in the Pediatric section of the new Medical School building, a room planned by Mrs. Faber and paid for from her personal earnings. Here, it is hoped, the staff will find an atmosphere favorable to study and reflection as the Department enters its second century and welcomes a new Chief, Norman Kretchmer.

HAROLD K. FABER, M.D.



AVRAM GOLDSTEIN, M.D.

Dr. Goldstein received his BA from Harvard University in 1940 and his MD from Harvard in 1943. He interned at Mt. Sinai Hospital in New York in 1944 and served in the army until 1946. He returned to Harvard where he began an academic career in pharmacology in 1947. He was appointed the Moseley Traveling Fellow of Harvard in 1949-50 and served as an assistant at the Pharmacological Institute in Berne, Switzerland, 1951. After attaining the assistant professorship at Harvard he came to Stanford Medical School as Professor and Executive of the Department of Pharmacology in 1955.

PHARMACOLOGY

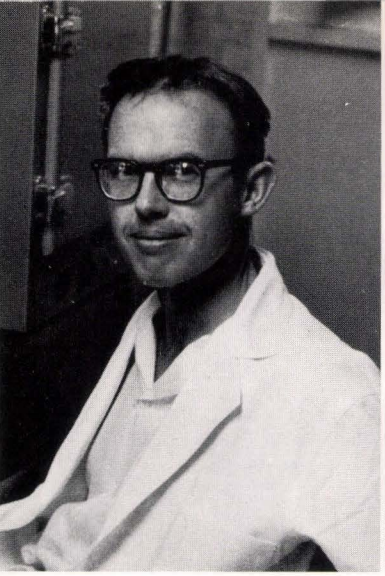
The Department of Pharmacology has been looking forward to "the move" for many years. We will have a new home large enough to accommodate all our faculty. We will have the opportunity for close daily contact with students that is so necessary and that was impossible these years of commuting for a once-a-week teaching day in San Francisco. But there are two things we anticipate eagerly above all else. These are, first, working out the role of pharmacology in a completely new curriculum; and second, involving more students than ever before in research activities.

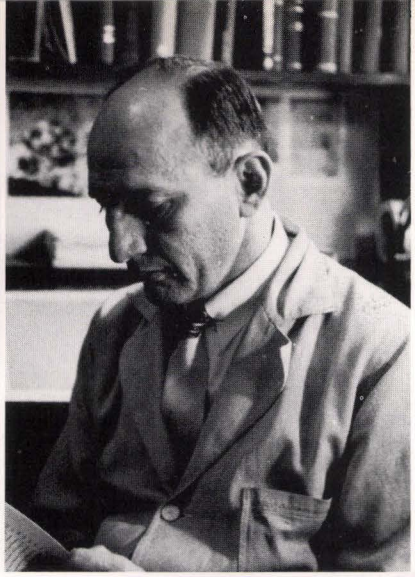
As to the first, we shall be teaching pharmacology, no longer as a compact unit, to be crammed and soon forgotten, but over the entire three-year preclinical period of the new curriculum. This new approach is forcing us to look at what we teach and how we teach it, much more from the student's point of view than ever before. At present we simply assume (how absurd) that our student knows and remembers all his anatomy, biochemistry and physiology when we teach any aspect of pharmacology. In the new program we will be teaching each phase of a subject sequence, at about the same time other departments do.

Anesthetics, analgesics, and other drugs acting on the central nervous system, traditionally the curtain-openers of a pharmacology course, will be referred to the third year, where neuroanatomy and neurophysiology will also be taught. Chemotherapy will be part of a block of time on Infection, in which microbiology, pathology, and preventive medicine will also participate. Naturally, we hope the new plan will make all the basic medical sciences, including pharmacology, more meaningful to the student. Like any new venture, this one will present problems as we go along, but it is a challenge that we welcome.

As to the second benefit we look forward to, the involvement of more students in research, this grows out of the new curriculum, for it depends upon free time as well as upon motivation. Students who enter the Stanford Program after four years of college will have about half of their time free during the three preclinical years. This they may spend as they choose. Many will take advantage of the opportunities for taking university nonmedical courses, perhaps winning a MA degree in a chosen field. But we hope many students will decide to have a fling at research, to find out what investigative work is like, perhaps to be "bitten by the bug" and find such satisfaction in the life of discovery that they will remain in the ranks of medical researchers. How many will actually alter the direction of their lives we cannot even guess. But we strongly believe that some research experience is an indispensable part of a doctor's education, whatever field of general practice or specialization he may enter. The physical amalgamation of the medical school with a university outstandingly active in research of every kind presents an opportunity we hope to exploit fully, for the benefit of our students.

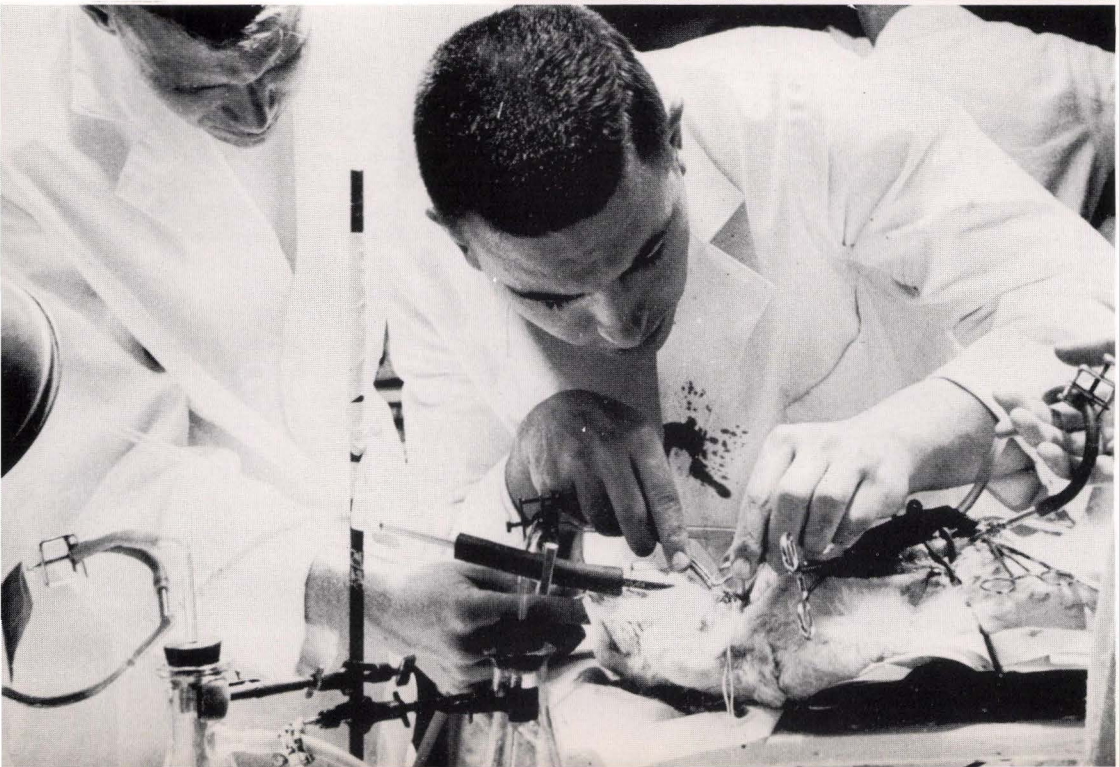
AVRAM GOLDSTEIN, M.D.





Left to right: Robert H. Dreisbach, Professor;
Arthur Furst, Professor.

Sophomores in Pharmacology lab.



Clamp that artery, doctor.

JAMES PERCY BAUMBERGER, Sc.D.

Dr. Baumberger, Professor Emeritus of physiology, received his B.S. from the University of California in 1914 and his M.S. and Sc.D. from Harvard University in 1916 and 1918. He came to Standard as an instructor in Physiology in 1919 and has been a full Professor since 1935. A few of Dr. Baumberger's other achievements are as follows: Comm. Relief Belgium Ed. Foundation Fellow—Brussels 1925-26, American Scandinavian Fellow — Lund and Copenhagen, 1926, Research Associate, Harvard, 1932-33, and visiting Professor at the Washington University School of Medicine (St. Louis).

PHYSIOLOGY

The Chair of Physiology was first occupied by R. Beverly Cole, Professor of Obstetrics, Diseases of Women and Children and Physiology in the Medical Department of the University of the Pacific in 1859. Levi Cooper Lane, who had studied physiological and toxicological chemistry with Woehler in Germany, occupied the Chair from 1860 to 1863, when J. P. Whitney took over, but was promptly followed by C. N. Ellinwood, who held it, while later Dean and President at the Cooper Medical College, until 1906. These four men were physicians and their principal contributions were to medical practice rather than to pure physiology.

It is interesting to compare the dates for these California institutions with the date of the first laboratory of physiology in the United States: H. P. Bowditch's at Harvard, 1871. The influence of Claude Bernard, Carl Ludwig and Michael Foster was still dominant, and the American Physiological Society was not organized until 1887. Beaumont's great book had been written in 1833 and Morton had demonstrated ether in 1846. S. Weir Mitchell was in his prime in 1860, but H. P. Bowditch was only twenty and H. Newell Martin was twelve and R. H. Chittenden only four. Austin Flint wrote his five volumes on "The Physiology of Man" and his text "Human Physiology" about this time and his text was used at Cooper in 1871. Physiology was, therefore, not lagging greatly in comparison with the rest of the United States and it is not surprising that laboratory work was not emphasized in San Francisco until about 1893.

There was no description given of the work in physiology in the Annual Announcements until 1878, except that it was included under the list of "Branches Taught" as "Theoretical and Practical Physiology." Anatomy, however, was described in some detail and was required, although physiology was not. In 1878 the following description was given: "Physiology—Professor C. N. Ellinwood, Surgeon at the U. S. Marine Hospital. The lectures and recitations in this important department will thoroughly familiarize the student with the established facts relating to the function of organs and the laws of life. Demonstration will be made upon living animals, of important functions when it seems necessary or beneficial to the student."

This description was used repeatedly until 1892, when the last line was omitted. At this time, A. W. Hoisholt, M.D., became Assistant to the Chair of Physiology. The next year he was promoted to Adjunct. In the meantime, Ellinwood had added the title of Acting Professor of Clinical Surgery. Hoisholt apparently put new life into the work in physiology for the description changed to: "Physiology—Professor C. N. Ellinwood; Adjunct, A. W. Hoisholt. The lecture in this important department will be illustrated experimentally as far as practical, and will familiarize students with established facts relating to the functions of organs and the laws of life."

"During the short term of the first year a course on physiological chemistry will be given; during the long term physiology of nerve and muscle and of the special senses will be taken up. The second year's lectures will, during the short term, 2/1-4/30, be on the subject of the brain, spinal cord and generation; during the long term, 6/1-11/30, they will be devoted to the circulation, respiration, digestion, absorption, secretion and excretion.

"A Physiological Laboratory has been equipped with the necessary apparatus for making experiments on animals in illustration of the subjects treated. The minute anatomy of each organ will receive special consideration in connection with its functions, and microscopical demonstrations will be made of the same."

This has a very modern ring and histology was then included with physiology, as was the custom. Hoisholt published some pure physiological papers, e.g. "Is the Nervous Impulse Delayed in the Motor Nerve Terminations?", Journal of Physiology VI (1883-6) 1-21. He later became Clinical Professor of Medicine (Psychiatry). It is interesting to note the texts used as these are listed for each year. They varied from Dalton; Flint; Draper; Marshall; and Kirkes in 1871 to Foster in 1884 and Landois in 1895 and the American Textbook in 1900.

There was no laboratory of physiology when Stanford University took over. In 1895 Oliver Jenkins, Ph.D., made

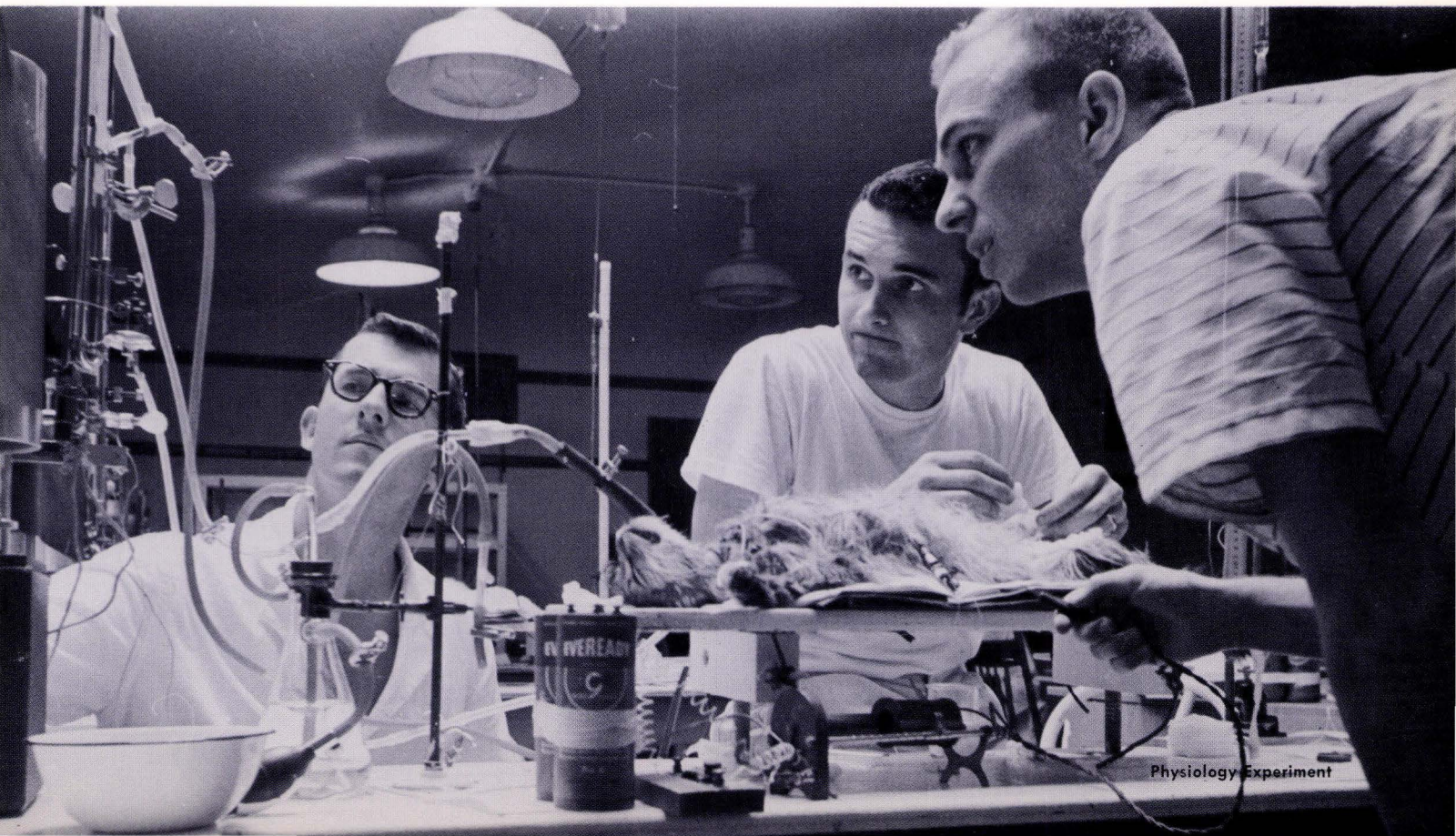
Left to right: Jefferson M. Crismon, Professor; George A. Feigen, Associate Professor; Frederick A. Fuhrman, Professor; Ronald Grant, Professor.

two trips a week from the "Farm," to lecture at the Cooper Medical School and then established a laboratory with $500 for equipment that was imported from Cambridge, England. He was assisted in the course by Ray Lyman Wilbur, then a medical student. Laboratory work was added and also a course in general Biology.

In 1901 W. E. Garrey became Professor of Physiology at Cooper, and held the post until 1909 on a full time salary. Garrey had taken his Ph.D. under Jacques Loeb at the University of Chicago and he studied also in Berlin and Paris, and came directly from Europe to Cooper. Later he took his M.D. at Rush. His principal contributions were to the understanding of cardiac fibrillation.

Garrey, inspired by the experimental approach of Loeb, emphasized laboratory experimentation and individual research. He required a laboratory notebook based on the six hours per week of laboratory work and a thesis in physiology from each student! The laboratory was open at all times and he was always available to help interested students with their research. He also added Physiological Chemistry to his teaching. F. E. Blaisdell gave the general Biology course in the "Department."

After 1909 the courses in physiology were transferred to the farm. There the head of the department was Jenkins, who was one of the first professors appointed at Stanford by David Starr Jordan. Courses in the Departments of Physiology-Histology at Stanford under Jenkins and F. M. McFarland were offered from the very beginning of Stanford University. They were very closely integrated with the Department of Zoology and with the Hopkins Seaside Laboratory (later to become the Hopkins Marine Station). The contributions of the early staff of the department were usually of a morphological-naturalistic nature. Jenkins and Anton J. Carlson's paper in 1904: "Physiological evidence of the fluidity of the conducting substance in the pedal nerve of the slug" was one of the first contributions in experimental physiology



Physiology Experiment

Students leaving physiology lecture hall.

from Stanford. Carlson was the first to receive a Ph.D. in Physiology. He later became famous for his studies of the physiology of digestion at the University of Chicago and was known amongst all physiologists as Ajax.

By the time Stanford took over the Physiology Department had added J. R. Slonaker and F. W. Weymouth to the staff, as well as Clara Stoltenberg, a histologist. In 1916 Histology was transferred to Anatomy and E. G. Martin, Ph.D., was made head of the department. C. D. Shafer was appointed to an instructorship in Physiology in 1918, and J. P. Baumberger in 1919.

Martin's chief contributions were in heart and skeletal muscle physiology and in industrial fatigue. Slonaker wrote papers on vision in birds and made extensive studies of the effects of nutrition and the estrus cycle on the spontaneous activity of rats. His research work was the first to receive extensive outside support, in this case from the National Research Council. During his investigation, the attic of the Physiology Department was a symphony of the noises of rotating activity cages at night when the rats became most active, sometimes running as much as 35 miles.

Weymouth and Martin wrote a textbook **The Elements of Physiology** which was used in the medical physiology from 1928 to 1933. Weymouth developed courses in the special senses and in statistics. He became head of the Department on Martin's death in 1934. Martin advocated the teaching of physiology as a biological science and was active in establishing the School of Biology at Stanford, of which Physiology became a part and physiology was taught at the Hopkins Marine Station each summer. The Department maintained a dual connection with the Medical School and with the School of Biology until 1944, when it dropped the latter.

The 20th Century trend was toward experimental biology and this affected the developments both in teaching and research. More physio-chemical concepts were brought into physiology. Shafer worked on muscle rigor, Baumberger on the respiratory function of the blood. Acid-bace equilibria, pH, oxidation-reduction potentials, etc., came into the picture. L. Irving took his Ph.D. and was added to the staff and J. J. R. McLeod came as exchange professor. Victor Hall, M.D. and John Field, Ph.D., made a team of teachers and investigators, the former in circulation, and the latter in cellular metabolism. In 1933-34 Baumberger had the support of the Rockefeller Foundation in developing apparatus for the study of biological sciences.

When Weymouth retired in 1949, J. M. Crismon, M.D., was appointed Chairman. George Feigen, Ph.D. and Ronald Grant, Ph.D., and Frederick Fuhrman, a Stanford Ph.D., took a large share of the teaching when Hall and Field left for UCLA in 1951. Baumberger retired in 1958 and I. J. Lichton, Ph.D. and B.E. Vaughan, Ph.D., have received appointments.

The teaching has become more and more directed specifically toward medicine; Biology, and Biochemistry, having prepared the students more fully in the fundamentals that are basic to general physiological concepts than in the early thirties. The research of the department is so extensive that it is not practical to describe it here. There are, however, four major fields that might be mentioned; Microcirculation studies (Crismon), cold injury (Fuhrman), hypothalamus (Grant), and heart (Feigen). Much of the research is **now** supported by government grants or contracts. Several of the faculty have served on editorial boards of physiological journals and as consultants to the government. Some of the recent Ph.D.'s are now heads of departments in important institutions.

The department has made a triple contribution of great importance: (1) the training of students of medicine, (2) the training of men for research in physiology and (3) the advancement of knowledge in the field of physiology.

J. PERCY BAUMBERGER

RODNEY BEARD, M.D.

Dr. Beard received his A.B. degree from Stanford University in 1932 and M.D. degree in 1938. Following this he received the M.P.H. degree from Harvard University in 1940. Since then he has been on the faculty of Preventive Medicine and Public Health at Stanford and is currently Executive Professor of the department. He is especially well known for his work in occupational health and in addition to his post at Stanford is Clinical Professor of Occupational Health at the University of California Medical School.

PREVENTIVE MEDICINE

Stanford was among the first medical schools to recognize preventive medicine as a specialized discipline. In 1908, the first year of the reorganization of Cooper Medical College as the Medical Department of Stanford University, it was recommended that "the teaching in hygiene" should be on a laboratory and field basis; that industrial hygiene and publice health administration should be required in the curriculum; and that epidemiology should be offered as an elective course. William F. Snow was first Professor of Hygiene and Public Health. Unfortunately for the development of the new department, Dr. Snow was called to a temporary position as operating head of the State Health Department in 1909. W. H. Kellogg of the State Health Department and others are listed as having given lectures on public health in the medical school, but no organized departmental activities are recorded. Dr. Snow went on to become a national leader in public health, particularly in the control of venereal diseases.

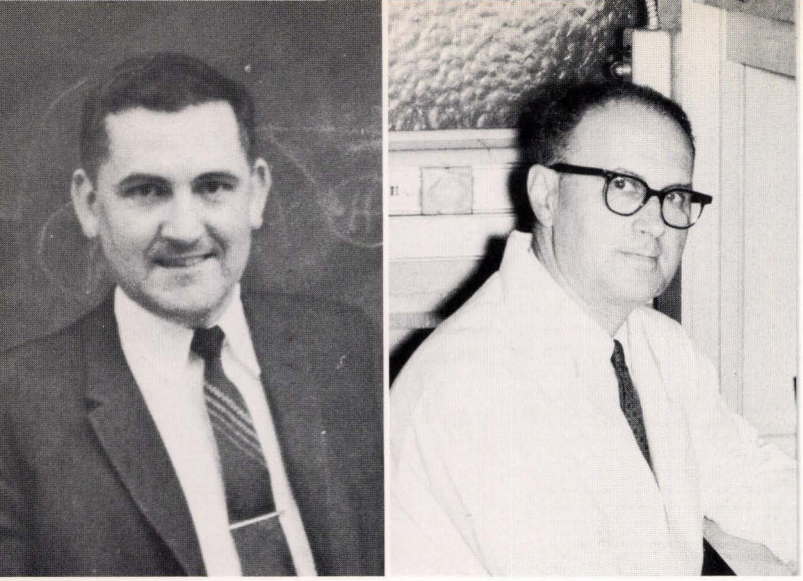
In 1920-21, the Medical Department was reorganized as a School, and Hygiene and Public Health was listed among its ten departments. There was more evidence of good intent than of accomplishment until 1925, when the Department was renamed Public Health and Preventive Medicine and E. C. Dickson was named Professor and Executive.

Dr. Dickson had come to Stanford in 1911, as an Assistant Professor of Pathology. He had his training at the University of Toronto. He at first worked on the nephritis caused by uranium. By 1916, he was engaged in studies of botulism. He collaborated with K. F. Meyer and J. C. Geiger of the University of California's Hooper Foundation, and by 1922 they had completed reports which revolutionized the procedures of food canning in the State. They were credited with "saving the industry." This was an accomplishment of major importance, as there had been widespread concern about the dangers of botulism from canned foods. Now, botulinus poisoning is almost unknown, and it has been many years since commercially processed foods have been involved.

Dr. Dickson developed an extensive teaching program. He brought in Professor L. B. Reynolds, Professor of Sanitary Engineering, to teach about water purification, waste disposal, and similar topics. This was the first recorded instance of continuing collaboration in teaching of medical students by faculty from University departments outside the medical school. Industrial medicine was taught by Morton Gibbons and W. P. Shepard, and tropical medicine by William Reich. W. H. Brown and John Sippy were among the great names of public health who took part in teaching. The Department operated the bacteriology laboratory for the hospital, and students were given opportunity to practice the application of bacteriologic methods.

Emmet Rixford, in Surgery, and William Ophuls, in Pathology, had in 1892 described a highly mortal new disease, coccidioidal granuloma. Dr. Dickson had become interested in it, and his laboratory had advanced the identification and characterization of the causative fungus, **Coddidioides immitis.** In 1929, Harold D. Chope (now Clinical Professor) acquired a pulmonary infection with the fungus, while working in the laboratory. To everyone's surprise, he did not develop progressive granulomatous lesions. This observation, together with some others made by Myrnie Gifford, one of our alumni in Bakersfield, led Dr. Dickson to suspect that the granuloma phase was only the conspicuous, severe manifestation of a widespread infection which was relatively benign. Charles Edward Smith carried forward this idea by extensive epidemiological studies, in which he was joined by Rodney Beard and others. Much of this work was done at Air Force installations in the San Joaquin Valley during World War II. They developed new diagnostic methods and demonstrated widespread inapparent infection, showed that dust control could decrease the incidence of infection, and that prolonged rest diminished the incidence of granulomas in those who developed clinical disease.

Dr. Smith succeeded Dr. Dickson as head of the Department in 1939. At this time, it moved its quarters into the new Stern Laboratory. The bacteriology service was transferred to the Department of Medicine. An innova-



Left to right: Charles R. Gardipee, Associate Professor; Quentin M. Geiman, Professor.

tion in the curriculum at this time was a course operated with the assistance of the Social Service of the Hospital, in which students visited patients in their homes, reported on environmental factors influencing illness, and learned of the community health and welfare agencies which were helpful in modifying these factors. At the same time, a program of guided field trips and seminar discussions concerned with public health and welfare agencies and industrial health programs was begun. In another year, required lecture courses in statistics and occupational health were introduced. Lectures in tropical medicine had been discontinued, but were shortly resumed by A. C. Reed in the Department of Medicine.

In 1949, Dr. Smith moved to the University of California to be Dean of the School of Public Health. Members of our faculty had a large share of leadership in the conception and growth of this School, which has always felt a considerable Stanford influence.

Rodney Beard was appointed as Head of the Department upon Dr. Smith's departure. He was joined by Charles R. Gardipee in 1951, and by Luigi Luzzatti in 1954. The latter was a joint appointment with Pediatrics, the fruition of plans for joint teaching by the two departments which had been discussed for several years.

Dr. Gardipee is particularly interested in medical care organization and has done research on union health and welfare plans. For two years, he worked on the development of demographic and medical service information in connection with planning the new medical curriculum.

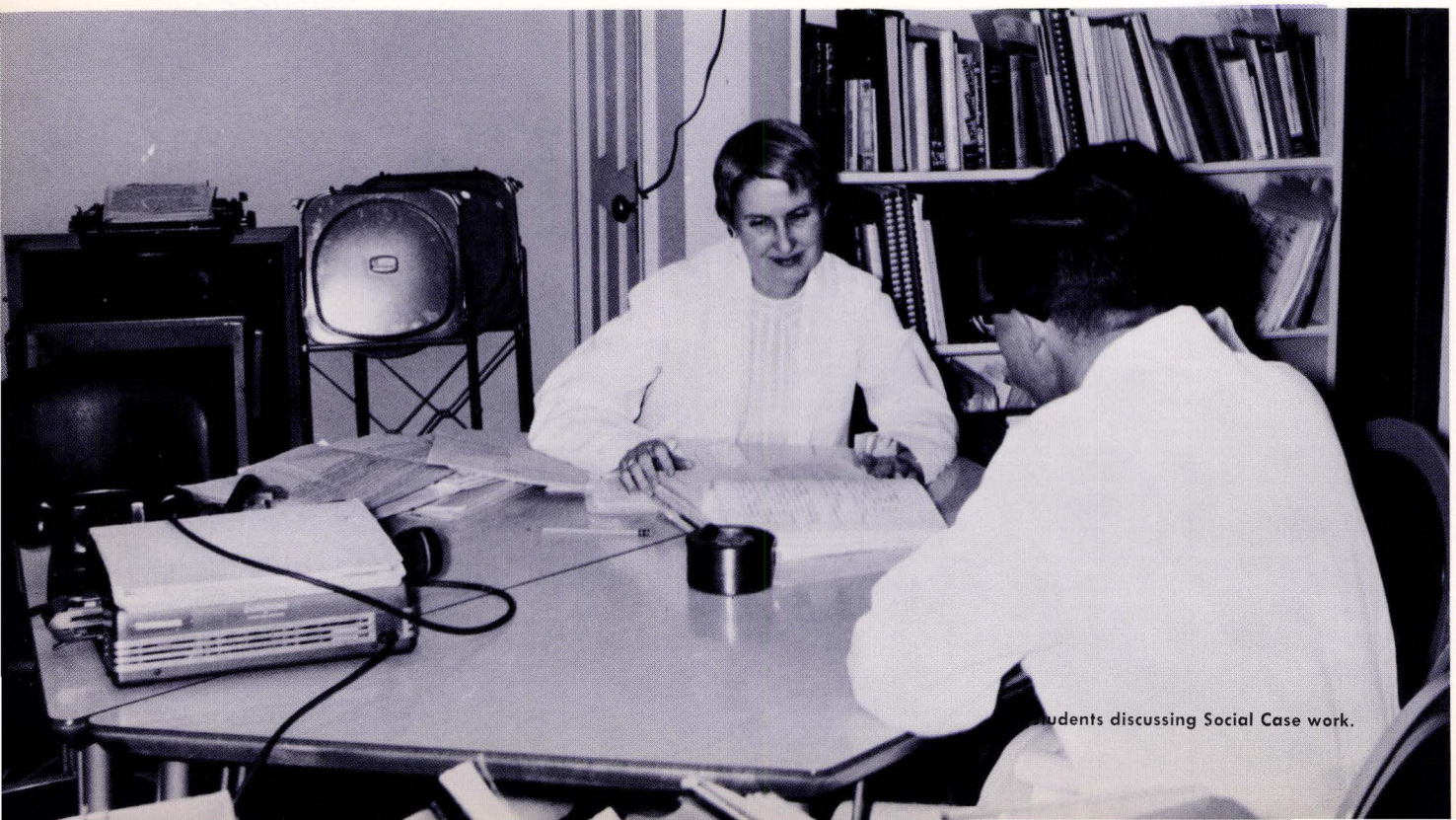
In 1955, the medical school received a grant from the National Foundation for Infantile Paralysis for the teaching of Rehabilitation. The administration of this was placed in Preventive Medicine, and added a social worker to our faculty, and teaching assistants in social work and vocational counseling.

We were also enabled in 1955 to obtain a Professor of Tropical Public Health, Quentin M. Geiman, Ph.D., who has built up a program of teaching and research in environmental hygiene, epidemiology, and parasitology.

The Department has had a large share in developing plans for the new medical school. We shall enter upon very extensive conjoint teaching in the new curriculum, with specific participation in each of the subject areas which have been designated.

Future plans envision work in planning of community health activities, studies in health education, and expansion of occupational health functions, while continuing most of our present functions. A program of residency training in preventive medicine is also under active consideration.

RODNEY BEARD, M.D.



udents discussing Social Case work.

GEORGE JOHNSON, M.D.

Dr. Johnson, Professor of Psychiatry, received his A.B. at the University of Nebraska in 1921, B.Sc. in 1922, and M.D. in 1924 from the same school. He had further training at the Philadelphia Hospital for Mental Diseases and Philadelphia General Hospital. He began teaching at the University of Colorado in 1926 where he remained until 1933, serving in many capacities, among them being Acting Head of the Department of Psychiatry. He has been with Stanford since 1933, serving as Executive of the Department of Psychiatry during that time.

PSYCHIATRY

It is a premise widely held in modern psychiatry that early life experiences are extremely important as determinants of the adult personality. It is further held that a life history, which considers all of the facts of a person's life in chronological order, gives us a better understanding of that person. In this brief review of the teaching of psychiatry at Stanford we will consider the premise and follow the procedure, recognizing that as in any life history, all the facts are never known.

In keeping with the procedure, a brief "family history" is in order. We quote largely from the Annual Catalogues. In view of later relationships it is noteworthy that the salutatory address to the trustees of the University of the Pacific, at the opening of the Medical Department, was given on May 5, 1859, by the Honorable George Barstow, Professor of Medical Jurisprudence. Subsequently, Medical Jurisprudence was taught along with lectures on Insanity. In 1870 it was announced that "the 9th annual course of lectures of the Medical Department of the University of the Pacific will commence on the first Monday in June, 1871, and continue until November." This college was established by "a few medical gentlemen, earnest in their desire for mutual improvement, anxious to increase their store of knowledge, and, like true scientists the world over, ever willing, even eager, to impart their knowledge to others." "Commencing with a merely nominal class, after 6 years it was able to number 24 matriculates and 28 graduates." "The Faculty refers with pride to the professional careers of these graduates, which have almost uniformly reflected credit on the Institution."

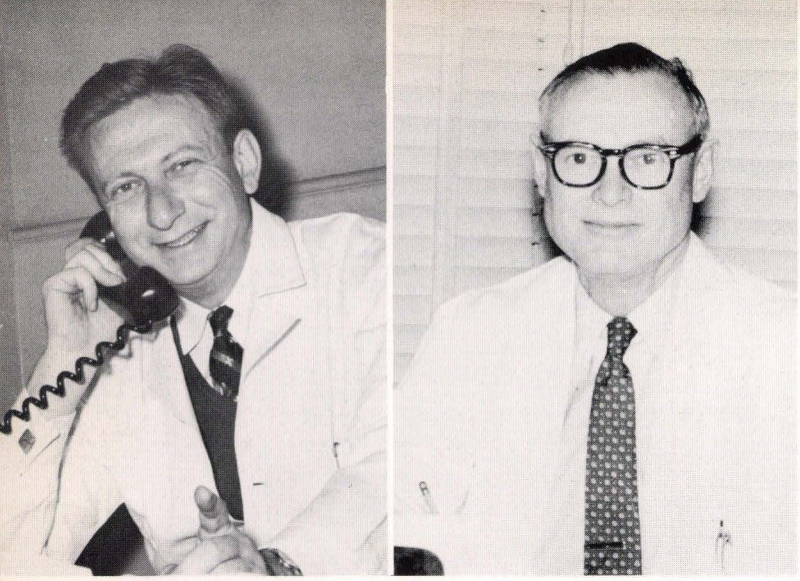
"For reasons very generally known and which it is unnecessary to repeat here (important, the death of Professor Elias S. Cooper), the Medical School was suspended in 1864, the Toland School taking its place. The latter, however, never fulfilled the expectations of the old faculty who accepted Professorships in it and finally, in 1870, they withdrew, and, uniting with other members of the old school and some newly elected Professors, the Medical Department of the University of the Pacific was reorganized."

"In making the announcement for the coming course, the Faculty desire to assure the Professors and the public of the permanency of the undertaking. Most of the Professors are tried and successful teachers, who take pride and satisfaction in imparting to others that knowledge which a large experience has given them. Students are assured that the liveliest personal interest will be taken in their welfare and progress."

Although the University was located at Santa Clara, the Medical Department was located in San Francisco. One reason for this, as expressed in the catalogue was "climate." "It will be observed that the regular course of lectures takes place in the summer and fall, contrary to the usual plan. The objections to a summer course, which obtain on the Atlantic border, are entirely absent here. The heat is never oppressive or enervating; on the contrary, the bracing summer winds conduce to mental activity. The atmosphere is dry, the temperature rarely above 70° and ranging considerably below this; and a strong breeze blows from the ocean from before noon until night. All the circumstances tend to retard decomposition, and to prevent in a measure, as well as to carry off, unwholesome effluvia."

In 1872, by affiliation with the University (City) College, the school became The Medical College of the Pacific. This affiliation continued until 1883 when "at the cost of about $100,000 (the college and the grounds), Professor L. C. Lane, from his private means — the accumulation of years of professional labor—constructed the noble edifice on the north-east corner of Sacramento and Webster Streets which became the home of Cooper Medical College."

Although it is indicated in the Catalogue beginning in 1871 that among the principal branches taught are "Histology and Diseases of the Nervous System" and "Hygiene and Insanity," it was not until the announcement of the session of 1879 that a person was identified with the teaching. In that year, an intermediate course was introduced. Professor Joseph O. Hirschfelder, Pro-



Left to right: Thomas A. Gonda, Associate Professor; Hale F. Shirley, Professor.

fessor of Materia Medica and Therapeutics, lectured on Diseases of the Nervous System and Dr. J. H. McBride lectured on "Insanity." Dr. McBride's name appears only once in the Catalogue, and in subsequent years "Insanity" and Medical Jurisprudence was taught by Professor Henry Gibbons, Professor of the Principles and Practice of Medicine and Clinical Medicine.

In 1884, it is reported that of 2056 new patients visiting the Morse Dispensary, 138 came to the "Nervous Disease Clinic." In the announcement for 1887 it is noted that Dr. W. S. Whitwell is adjunct to the chair of Obstetrics and Lecturer on Mental Diseases. The first reference to the nature of the course appears in the Catalogue for 1890, where it is noted that in the 3rd year 16 lectures in "Mental Disease" are given. In 1891 Dr. Whitwell appears as lecturer on "Mental Diseases" only. From this information, it appears that he was the first specialist in mental disease on the faculty. In 1892 the number of lecture hours was increased to 24. In 1893, Dr. A. M. Gardner, Superintendent of the Insane Asylum at Napa began giving the lectures on Insanity and Medical Jurisprudence. In 1896, Dr. Gardner was listed also as Acting Professor of the Principles and Practice of Medicine and in 1897, the dual appointment was changed and he became Professor of Legal Medicine, Mental and Nervous Diseases.

Items of general interest during this period were the opening of Lane Hospital, announced in 1895 ($2.50 per ward bed, $3-$4 for 2-4 bed rooms, $5-$10 for private rooms). In 1899-90, Dr. R. L. Wilbur appears as Lecturer on and Demonstrator of Physiology; the first Catalogue identification with Stanford is noted in the appearance of Oliver Peebles Jenkins as Acting Professor of Physiology at Cooper, Professor of Physiology and Histology at Leland Stanford, Jr., University; and Professor William Ophuls replaced Professor Albert Abrams as Professor of Pathology.

In 1899, Dr. Dreisback Smith of Napa appears as Assistant to the Chair of Legal Medicine—the first staff expansion. In that year, the first texts were recommended: Spitzka and Regis. In 1903-04, courses are described under departmental classification. Orphans in this departmental structure are Dermatology, Mental Disease with a sub-heading, Legal Medicine, Hygiene, and Medical Latin. We interpret this as indicating that these courses were so generally all inclusive that they should not be confined to a single department. Other interpretations are possible.

The program for teaching, one hour lecture each week during the senior year continued until 1909. In that year the first Catalogues published by Stanford University appeared. Dr. Gardner's name disappears and although the Catalogue indicates that Lectures on Psychiatry were given for 1 hour each week during the 4th year, the lecturer was "to be appointed" from 1909 to 1913 when the name Andrew William Hoisholt, Clinical Professor of Medicine (Psychology), Superintendent for the Hospital for the Insane at Napa, appears. Professor Hoisholt received an M.D. degree from Cooper Medical College in 1882, an M.D. from the University of Heidelberg in 1884, and served as adjunct to the Chair of Physiology of Cooper from 1891 to 1893. He was Assistant Physician at the Stockton State Hospital from 1889 to 1913 and became Superintendent at Napa in 1913. Dr. Hoisholt continued as Professor until 1921. During his period as Professor there is the first reference to a Psychiatric Outpatient Department in 1916. The lecture period was increased to 1½ hours weekly the same year. In 1917 began the rotation of interns for a 2-month service at the Napa State Hospital. Throughout this early period the field of neurology and neuropathology was developing in the Departments of Medicine and Pathology.

Dr. Walter Schaller was graduated from Cooper Medical College in 1902. After serving as Assistant in Pathology to Dr. Ophuls in 1905-06, he spent 1906-08 as Assistant Surgeon in the U. S. Navy, 1909-11 in study in European climes and in 1911 returned to San Francisco and Stanford Medical School. Over the next 35 years, until he became emeritus in 1947, he was a leading participant in the teaching and research programs interested in "nervous and mental diseases." In 1913 appeared Dr. Henry George Mehrtens. Graduated from Stanford Medical School in 1913, he served as intern and house officer at Lane. In 1919 he became Assistant Clinical Professor of Medicine (Psychiatry), house officer and medical advisor to students. In 1921 he first took over the lecture courses. During this time inpatient services for psychiatric patients were developed. Legend has it that these services, like Topsy, just grew. Interested in providing hospital care for the psychiatric patient in proximity to other medical services, Dr. Mehrtens utilized his position as house physician to rule on the suitability of patients for admission. Ruling further on the unsuitability of adjacent beds for non-psychiatric patients, he gradually extended the domain until II West became a unit which could be organized for the care of the psychiatric patient, the first and for many years the only such unit in a general hospital in the West.

In 1922, Dr. James Cutting from Agnews State Hospital became Chief of Psychiatry Clinic with Mrs. E. D. Whitmore, Assistant in Psychology, and Mrs. Grace Hunt, Assistant in Mental Rating. In 1922, an elective course was offered, in the summer, in Abnormal Psychology. This course included "actual work in mental rating so that the student may become quite accurate in the techniques of mental rating. He shall be required to develop facility in taking a psychological history in order to detect abnormal personalities. The examples of the various abnormal personalities will be demonstrated. Possibilities of therapy and re-education."

In 1926-27 graduate training was officially introduced with the appointment of Dr. Pearl Pouppirt as senior intern in Neuropsychiatry. Previously Dr. Walter Schilling had served as assistant after his graduation from Harvard Medical School. Many others assisted during this time, notably Dr. Edward Stadtherr who was shot due to mistaken identity—the patient thought he was a surgeon;

Dr. Kolko conducts seminar in psychiatry.

Dr. Julian Wolfsohn, for many years chief of the Stanford service at the San Francisco Hospital; Dr. Joseph Catton; Dr. Norman Gottbrath; Dr. Thomas Inman. Dr. Mehrtens died in 1933 at the age of 47, having contributed much in his influence on teaching and research throughout his association at Stanford.

The teaching of psychiatry at Stanford has always been characterized by a broad approach designed to relate the principles of scientific medicine to the problems of the disordered functioning of the human personality. As the range of the determinant factors has increased, so has the interest of members of the staff extended. We may properly say, in support of the premise of the influence of early experience, that after 100 years the staff continue "earnest in their desire for mutual improvement, anxious to increase their store of knowledge, and, like true scientists the world over, ever willing, even eager to impart their knowledge to others!"

GEORGE JOHNSON, M.D.

Neurology-Psychiatry Out-patient Department

HENRY S. KAPLAN, M.D.

Dr. Kaplan graduated from Rush Medical College in 1940, and served as intern at the Michael Reese Hospital the following year. In succeeding years, Dr. Kaplan served as a resident in radiation therapy at the Michael Reese Hospital and as a fellow in radiology at the National Cancer Institute and at the University of Michigan. Prior to coming to Stanford, he had been an Assistant Professor at Yale and a radiologist for the National Cancer Institute. Dr. Kaplan came to Stanford in 1948, and has remained here since that time as Professor and Executive of Radiology. He is an internationally known authority on cancer and has done pioneering work in the treatment of malignancies with the linear accelerator.

RADIOLOGY

The first radiologist at Stanford University Hospital, Dr. Walter Whitney Boardman, was appointed in 1912. He held the title of "Director of Actinography" in the Department of Medicine and his quarters were located in the old Lane Hospital. Radiology was established in 1920 as a Division of the Department of Medicine. Dr. W. Edward Chamberlain was appointed as the first Chief of the Division, with Dr. Robert R. Newell as his principal assistant. Together, they pioneered the development of new equipment for fluoroscopy and radiography, and made significant contributions to the early evolution of radiologic physics. The radiology service soon became noted as a center for the training of residents, and this enviable reputation has been maintained to the present day.

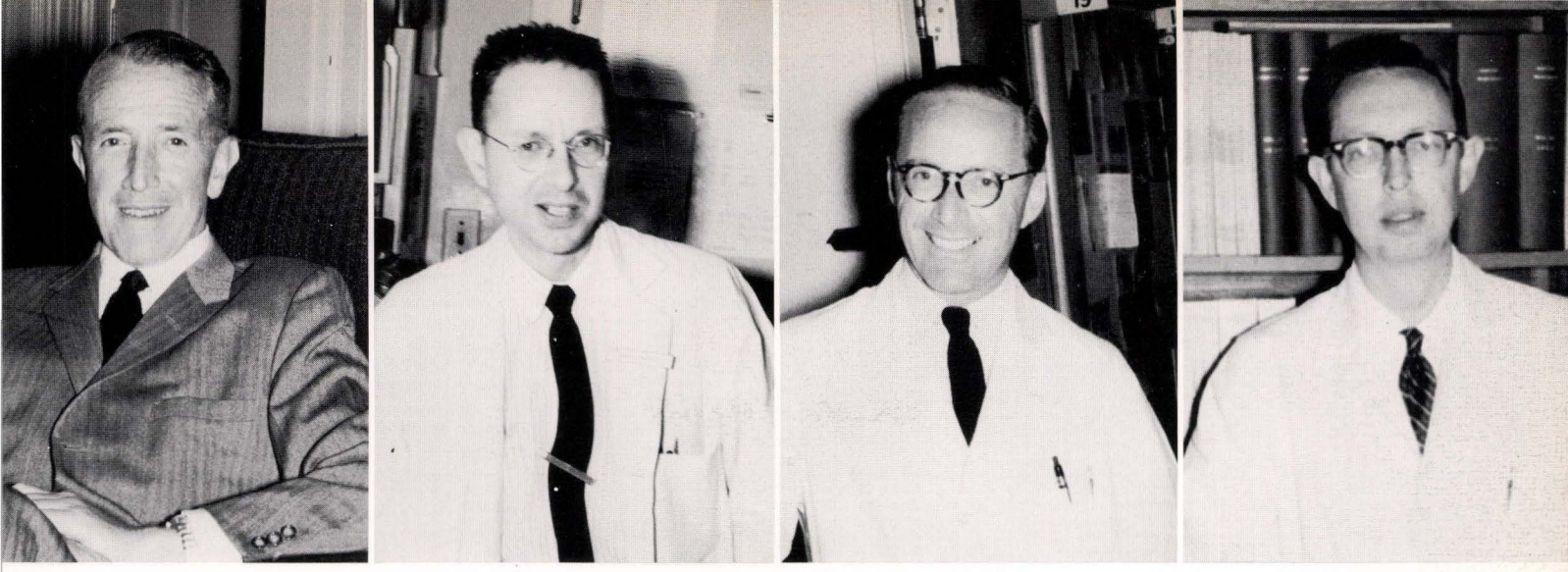
In 1929, Dr. Chamberlain resigned to accept the Chair of Radiology at Temple University School of Medicine and was succeeded as Chief of the service by Dr. Newell, under whose guidance the physical dimensions of the unit grew until it displaced the photographic laboratory, with which it had originally shared space on the first floor of Stanford Hospital. In the late thirties, the staff included such eminent diagnostic radiologists as Drs. Edward Leef and Frank Windholz, and a young radiation therapist, Dr. Eric Liliencrantz, whose untimely death in an airplane crash cut short a brilliant career. Meanwhile, an affiliated teaching service in radiology had been established under Stanford auspices at the San Francisco Hospital; this service, which has been supervised for many years by Dr. L. Henry Garland, has provided certain types of clinical material which complement that available at Stanford University Hospitals, and has therefore served to strengthen the residency training program materially.

In 1947, after a remarkable struggle to maintain a high level of clinical radiology despite extreme wartime shortages of professional and technical personnel, Dr. Newell wearily took a sabbatical leave to study the medical uses of radioactive isotopes, which were just being introduced as new diagnostic and therapeutic tools. He returned as Professor of Medicine (Biophysics) and first Head of the Isotope Laboratory, which was established as a unit of the Department of Medicine.

Radiology became a separate department in 1948, with Dr. Henry S. Kaplan as Professor and Executive of the Department, and Dr. Henry H. Jones as Instructor and sole other full-time staff member. The Department, which had become physically rundown during the war, was remodeled and equipped with modern radiographic apparatus, including one of the first rapid cassette changers for angiocardiography.

An intensive program of clinical research in cardiac radiology was inaugurated, which, under the direction of Dr. Herbert L. Abrams, is now of internationally recognized stature. This program, which has developed in close collaboration with the Departments of Pediatrics, Medicine, and Surgery, gained impetus two years ago when a large research grant to Dr. Abrams made possible the world's first installation of biplane 11 inch image intensifiers for cineangiocardiography. This equipment, which will be moved to the new Department in Palo Alto, provides a degree of detailed information about aberrations in cardiovascular physiology which is essential to keep pace with developments in open heart surgery.

In 1952, discussions were initiated with Dr. Edward L. Ginzton, Professor of Physics at Stanford and Head of the University's Microwave Laboratory, pertaining to the design and construction of a medical version of the linear electron accelerator, a new type of high energy device in whose development Stanford scientists had played a key role. With the aid of grants from the National Cancer Institute and American Cancer Society, Dr. Ginzton and his associates constructed the first medical linear accelerator in this country. This machine, which provides x-rays

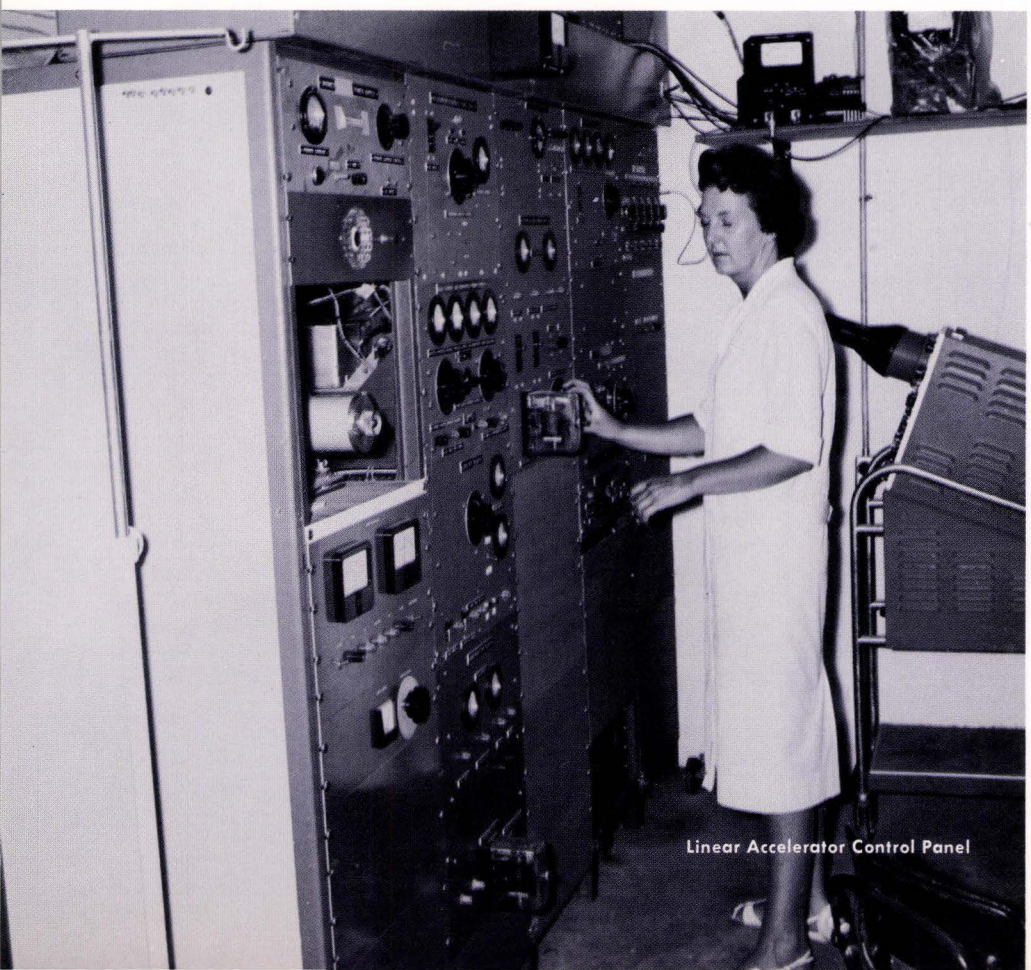


Left to right: Leo H. Garland, Clinical Professor; Henry H. Jones, Associate Professor; Herbert L. Abrams, Associate Professor; William L. Anderson, Acting Assistant Professor.

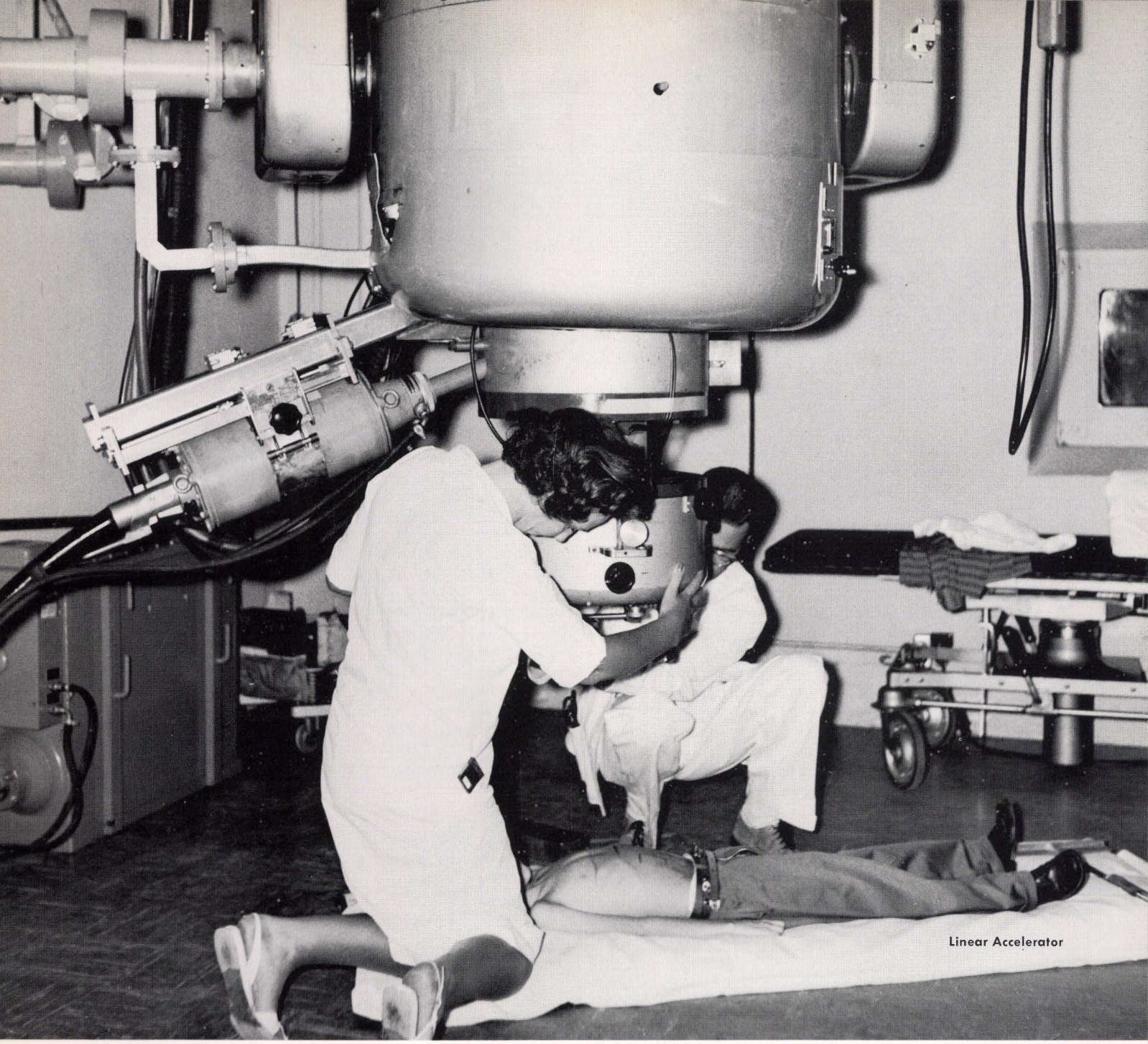
with a peak energy of about 6 million volts, was installed in 1955 in a radiotherapy annex building, constructed with the aid of a generous gift from the James Irvine Foundation. The installation and calibration of the machine was supervised by a team of physicians headed by Dr. Mitchel Weissbluth. On January 31, 1956, the first patient, a seven-month-old boy with retinoblastoma, was treated, launching a clinical research program in high energy radiotherapy of malignant disease which will now be transferred to the campus department under the direction of Dr. Kaplan and Dr. Malcolm A. Bagshaw. There, it is anticipated that an additional 6 Mev linear accelerator will also be available, and work will continue on an experimental program employing electron beams, at energies ranging from 8 to 50 Mev, using the Mark IV accelerator of the nearby Microwave Laboratory.

In 1948, experimental laboratories for the new department became available in the Stern Laboratory Building, and Dr. Kaplan's colony of highly inbred mice were flown out from Bethesda, Maryland, and housed in these quarters. Investigations on the fundamental mechanisms of radiation carcinogenesis, which are still a major activity of the laboratory, were its first concern. These studies have now established the fact that lymphatic leukemia, induced by systemic irradiation of mice, arises by a completely indirect mechanism which involves the activation of a latent virus-like agent, and the development of the disease may be prevented, after radiation exposure, by either the injection of the compatible bone marrow or appropriate hormone treatment.

In 1955-1956, the research laboratories of the Department were expanded, and several new full-time staff members were appointed in an effort to broaden the scope of the investigative program. In addition to the leukemia program, headed by Dr. Kaplan, current investigations pertain to experimental radiotherapy of spontaneous and transplantable tumors (Dr. Robert F. Kallman), the chromatographic fractionation of nucleic acids from normal and irradiated tissues (Dr. Kendric C. Smith), the influence of nutritional alterations on radiosensitivity of mammalian cells in vitro (Dr. J. Eugene Robinson), and the potentiation of radiosensitivity of mammalian cells by chemical agents in vitro (Dr. Malcolm A. Bagshaw). This diversified program in radiation biology and biochemistry, which will soon move to much-needed new and larger quarters, has also contributed to the training of residents in modern radiobiologic concepts, and serves as the base for a research training program, sup-



Linear Accelerator Control Panel

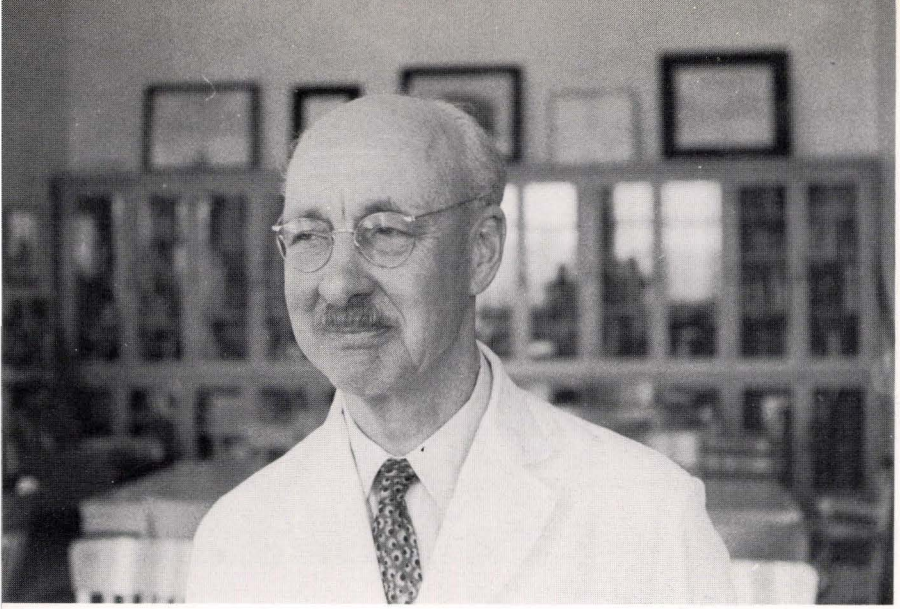


Linear Accelerator

ported by a National Cancer Institute Training Grant, for residents and postgraduate fellows interested in learning research methods and approaches in this field.

Dr. Robert R. Newell became Emeritus in August, 1957, and was succeeded as Chief of the Isotope Division by Dr. Joseph P. Kriss, who became a member of the full-time faculty on a joint appointment in the Departments of Medicine and Radiology. This Division came administratively under the jurisdiction of the Department of Radiology at that time. The Isotope Unit, which had had the dubious distinction of having perhaps the tiniest and most cramped quarters in the medical school, will enjoy moderately expanded facilities on the campus, including space for research laboratories. Meanwhile, new experimental studies have been launched into certain aspects of hematopoiesis, and the tradition of collaborative research assistance to other groups which Dr. Newell established has been maintained and extended by Dr. Kriss.

HENRY S. KAPLAN, M.D.



EMILE F. HOLMAN, M.D.

Dr. Holman received his M.D. from Johns Hopkins in 1918, after having spent three years at Oxford University as a Rhodes Scholar. In 1926 he returned to Stanford, where he had previously received his undergraduate education, to become Professor of Surgery and Executive of the department. He remained in this capacity until 1955, at which time he became an Emeritus Professor of Surgery. Besides teaching at Stanford, Dr. Holman has served as visiting Professor of Surgery at many of the leading medical schools in this country and abroad. He has been widely honored for his many basic contributions in surgery of the gastro-intestinal and cardiovascular systems.

SURGERY

OUR SURGICAL HERITAGE

The founder of the first medical school on the Pacific Coast was a young 36-year-old surgeon, who in 1858 announced as part of the curriculum of the new school an operative course on dogs: "Members of the class are permitted to assist in experiments upon animals and afterward expected to repeat them under the eye of the Professor of Surgery. This is an exercise above all others calculated to school the hand, the nerves and the eye of the pupil, and thereby give him the experience he at once requires in performing the duties of an operative surgeon; a feature in medical education, however, almost entirely neglected in many other medical schools."

This was undoubtedly the first serious attempt to train a surgeon not on bloodless cadavers but on living, breathing and bleeding animals — a life-saving venture that later paved the way for the phenomenal advances in general surgery, and found its ultimate fruition in the present-day development and training of the cardiac surgeon.

Elias Samuel Cooper, born in Ohio in 1822, graduated at 18 years of age from the University of St. Louis Medical School (now long defunct) and began the practice of medicine in Danville, Ohio, the following year. After four years he moved to Peoria, Illionois, where he built the first hospital and is credited with having been the first to use chloroform for anesthesia in the Mississippi Valley. His first paper was entitled "The Effect of Chloroform as an Anesthetic Agent in 79 Surgical Operations." He became president of the Knox County Illinois Medical Society at 33 years of age. The citizens of Peoria, however, were not so enthusiastic about his accomplishments since these included certain questionable practices in obtaining material for dissection. Accordingly, young Cooper sought other worlds to conquer and after a brief year in European clinics he set out for Portland, Oregon, with the avowed purposes of establishing a medical school on the Pacific Coast, but, through the influence of a fellow traveler, Captain James McDonald, he landed in San Francisco. Here, his bold, sometimes brilliant, surgical activities soon brought public renown — and the enmity of his colleagues who resented his brash advertising of free operations for patients presenting themselves on Wednesday and Saturday afternoons! He successfully sutured the fractured olecranon and patella with silver wire, without the complication of "laudable pus." Writing home to friends in Peoria, he ascribed these successes to the California climate, neglecting to mention that he washed his wounds with 25% alcohol — years before the advent of Listerism! He performed the first Caesarean operation in California on a mistaken diagnosis of interlocked twins. Although the patient recovered, (at a time when 50% died after this operation) Cooper had to defend himself against a suit for damages for alleged malpractice — the patient being goaded into such action by a Dr. Wooster who assisted Cooper at the operation! The jury stood 6 for conviction and 6 for acquital and the case was never retried!

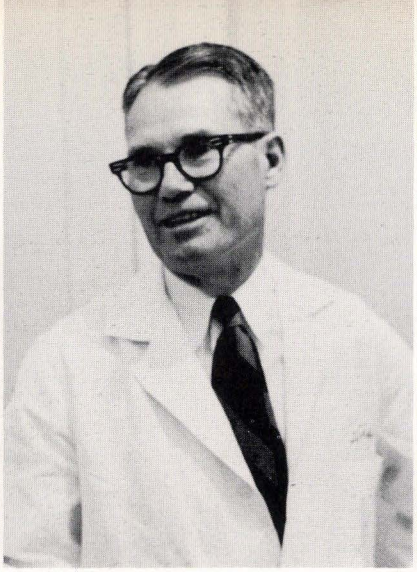
He treated refractory club foot by cutting the soft parts on the contracted side (as did Phelps of New York 40 years later) and held the foot in a splint of sheet lead molded to fit. He cured an aneurysm by cutting down on the tumor and sewing it up from the outside. Having accidentally torn the iliac vein when ligating the external iliac artery for femoral aneurysm, he ligated both vein and artery and observed that the limb retained its warmth. The man recovered with a serviceable leg. Cooper then made a series of experiments on the dog, in some ligating the vein alone, in others the artery and in still others both vessels; and found that the limb remained warmer when both vessels were tied than when only one was ligated. He devised an instrument for the gradual obliteration of the abdominal aorta and used it with some degree of success on the dog.

In his Operative Story of Goitre, William Stewart Halsted credits Cooper with having performed the 8th and 9th operations for goitre done in the United States, the first in the year 1860, (the patient died of Hemorrhage) and the second in 1861 (the patient recovered).

In reporting the first patient Cooper wrote: "Important surgical operations proving successful, should generally be reported to the medical world, but those terminating fatally should always have the widest range of publicity among the profession . . .

"Case: Mrs. M., aet. 24 years, consulted me on the 3rd of October, 1859, in consequence on an enlargement on the left






Left to right: Victor Richards, Professor; Loren R. Chandler, Professor; Donald E. King, Professor; Carleton Mathewson, Jr., Professor.

side of the neck, extending from the clavicle to near the chin. It was twice the size of a man's fist, and had been over four years attaining that size, and during the preceding year increased very rapidly. It pressed heavily upon the trachea, which was considerably flattened. Pulsation of the left carotid artery could be distinctly heard on applying the ear over it, while the sounds of expiration and inspiration could be as clearly heard over it as by applying the ear to the chest. There was distinct pulsation nearly all over the tumor. In the act of swallowing, it arose and fell with the motion of the trachea, and was much more firmly fixed over the region of the trachea than over the outer part of the neck.

"I was convinced that I had made a true diagnosis before operating, and that it was not aneurysm, but bronchocele, though some of my medical friends thought it might be the former."

Cooper was indeed a bold operator to attack this highly vascular tumor of the thyroid.

In 1857 Cooper reported an "Operation for Removing a Foreign Body from Beneath the Heart" which necessitated removing a portion of the fifth, sixth and seventh ribs, entering the chest and draining a large collection of pus (2-3 quarts) in the pleural space. The man recovered and was restored to normal existence — a truly remarkable achievement in the days without means to locate the exact site of a piece of metal projected into the chest from an exploding cannon. In describing his efforts Cooper wrote: "The space immediately above the diaphragm was considered the region in which the metal was most likely to be found, since the immense amount of suppuration which had taken place might have dislodged it, and gravitation carried it down to the bottom of the chest. The metal not being found here there was no longer any probable opinion to be formed as to its whereabouts, and to describe the difficulties of the search that followed would be difficult if not impossible. **No one can have any just conception of the degree of patience required to do what was done, save the one who did it.** This is not spoken boastingly, but it is simply the truth. It is sufficient to say that a general exploration of that side of the chest was made, and then it was taken by sections, occasionally passing through holes in the pleura, which latter appeared to have scarcely no normal relations to the surrounding structures, touching by lines the entire surface of the parts, and at last the sound appeared to encounter something of a metallic nature beneath the heart, but the pulsations of that organ were so strong against the instrument as to render it difficult to settle the matter definitely. At last, however, it became evident that the location of the iron was found . . .

Elias Samuel Cooper

"His subsequent astonishing recovery is attributed to his great cheerfulness, good constitution, and to the effects of our unparalled climate, in which it appears nearly impossible for a patient to die with almost any ordinary degree of injury, provided a reasonable share of attention is afterwards given him. San Francisco has the advantage of every other city on the globe, in regard to climate, for surgical operations, since, if owing to any peculiarity of the case, our coast breezes are not equally well adapted to all the stages of convalescence after an operation, it is an easy matter to obtain almost any desirable change by half a day's easy travel, which I think can be said of no other city." He was the first California booster!

Dr. Cooper died in 1862 at the early age of 40, only 4 years after the launching of his medical school, destined to become the medical school of Stanford University. In that time 8 students had been graduated, 2 in 1859; 1 in 1860; and 5 in 1861. In the beginning the faculty, consisting of 4 doctors and one lawyer, is said to have met by schedule in Dr. Cooper's office and lectured to each other in default of students!

Samuel Elias Cooper was indeed an intrepid soul.

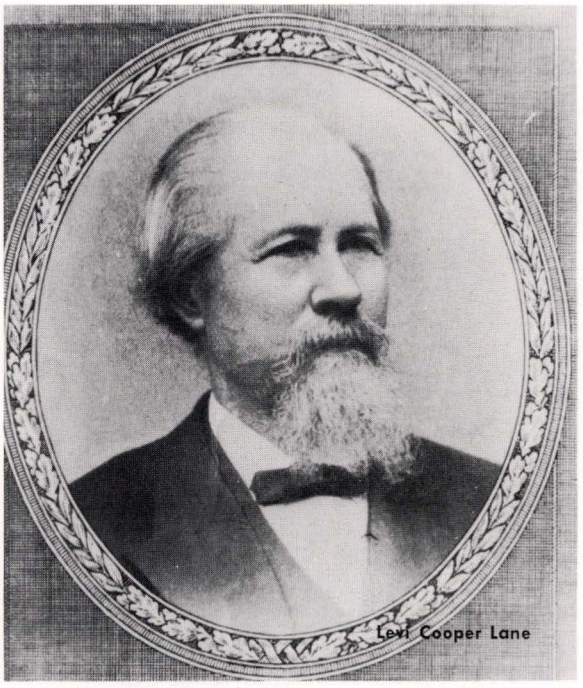
LEVI COOPER LANE (1830-1902)

Levi Cooper Lane, a nephew of Samuel Elias Cooper, joined the latter's newly founded medical school in 1859 as Professor of Physiology. With the death of Dr. Cooper, the school lost its energizing force but continued to graduate doctors until 1864 — the total number graduated being 28. In this

Left to Right: Roy B. Cohn, Associate Professor; Frank L. Gerbode, Associate Professor.

year Dr. Hugh Hughes Toland launched a new medical school destined eventually to become a part of the University of California. Enticed by Dr. Toland and attracted by his newly erected and commodious building of brick and stone, the undergraduate students of the Cooper school went over in a body to the new school, accompanied at the students' request by Levi Cooper Lane as professor of Physiology and Henry Gibbons, formerly Professor of Materia Medica and Botany in the Cooper School as professor of Medicine. The Cooper School then ceased its activities.

For several years, the Toland School waxed strong but in 1870, Lane and Gibbons withdrew in a dispute over new additions to the faculty, and re-established the Cooper School under its old name — the Medical College of the Pacific with all the students of the Toland School — save one — as a nucleus! In the reconstituted school, Dr. Lane took the title of professor of Surgery, although like most of his contemporaries he practiced both medicine and surgery.



Levi Cooper Lane

Dr. Lane was born in Ohio, May 9, 1830, of English Quaker parentage. He attended Union College, Schenectady, New York, from which he later received the degrees of M.A. and L.L.D. He was graduated from Jefferson Medical College in 1851, and spent the following 4 years as interne and house officer at Ward's Island, New York, followed, in turn, by 4 years in the U. S. Navy. While stationed at Chinanagua, Nicaragua, he performed his first operation for goitre (1858).

In contrast with his uncle, Lane was a highly educated man, and continued to be a student throughout his long life. Six nights in the week, he read medicine and did his writing, and on the seventh night he read in general literature. He was fond of the classics, read Greek, Latin, French, German, and Spanish. He translated Billroth's Surgical Pathology for his students, and read Hippocrates in the Greek once a year.

Lane was not as original in his surgery as was Cooper, but he worked out vaginal hysterectomy as an original anatomical study (1878) not knowing that the operation had been done in France in the early years of the 19th century. He anticipated Lannelongue in performing craniectomy for microcephaly. He planned an elaborate textbook on surgery in three volumes, but lived to finish only the first: "Surgery of the Head and Neck" based on long personal experience.

Lane also gained fame as an organizer. In 1882, he erected a fine brick building and invited the old faculty to join him in reorganizing the old Cooper Medical College in honor of his uncle. He subsequently (1888) gave to the College a second building equal in size to the first, and in 1894 he erected Lane Hospital with 150 beds. In 1896 he founded the course of Lane Medical Lectures to bring the profession of the west into closer contact with the more progressive minds in medical Europe and Eastern America. Among the Lane Lecturers were such celebrated men as Sir William Macewen, Sir Michael Foster, Christopher Heath, Sir Clifford Allbritt, Sir Charles Ball, William Welch, Reginald Fitz, and Vittorio Putti.

Lane and his faculty labored unselfishly to build up Cooper Medical College. In this era of proprietary schools for profit, there was no stock, no dividends, and even no salaries. Later in conversations with David Starr Jordan, Lane paved the way for the absorption of the college by Stanford University, although the actual amalgamation was not affected until 1909.

Dr. Lane died in 1902. Inscribed at his direction on a tablet in the vestibule of Lane Hospital is the following: "This building, erected by Levi Cooper Lane with moneys earned by himself in his profession, is dedicated to suffering humanity, and to the medical profession in the hope that the former may here find refuge and relief, and the latter exercise of its humane skill and intelligent sympathy."

How well he succeeded is attested by the number of patients who have passed its portals for treatment. In the year 1912-1913, 3,932 patients entered Lane Hospital and 10,615 patients were seen in the Out-patient Clinics. In the year 1958-1959, 12,033 patients entered the hospital, and 98,400 patients were treated as outpatients.

EMMET RIXFORD (1865-1938)

Emmet Rixford was born in Bedford, Quebec, of American parents who journeyed to California in 1867, where the father became one of the state's distinguished pioneers. Accompanied by his wife and the two-year old Emmet, Rixford, the elder, sailed from New York in a paddle steamer, crossed Nicaragua by canoe and donkey, and boarded a second paddle steamer for San Francisco. Though educated as an engineer, he became city editor of the San Francisco Bulletin, then partly owned by his uncle, Loring Pickering. Interested in horticulture, he joined the State Department of Horticulture and was responsible for bringing into California a number of foreign trees, shrubs, and fruits including the Smyrna fig.

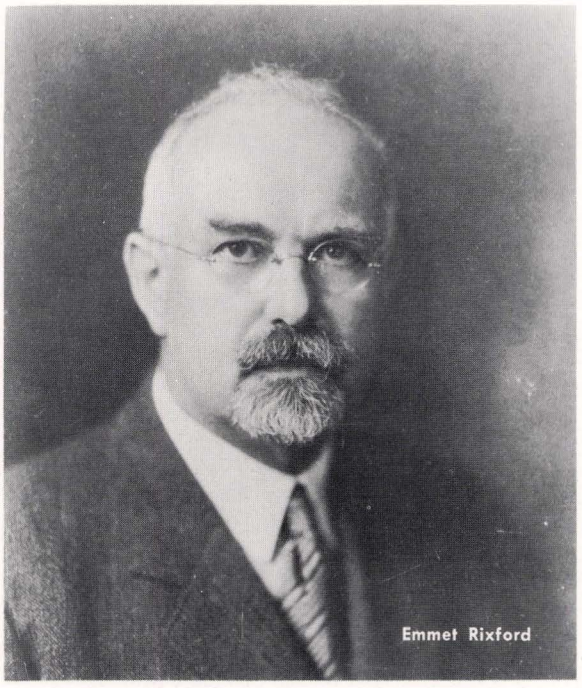
The son, Emmet, graduated from the University of California in engineering in 1887, but was promptly diverted into medicine, taking his degree from Cooper Medical College in 1891. Together with Stanley Stillman, be became Dr. Levi Cooper Lane's assistant, later spent a year as resident at the New York Hospital for Ruptured and Crippled under William Coley. During the summer of 1892 he worked at the Johns Hopkins Hospital in the laboratory of William Welch. He was named adjunct professor of Surgery at Cooper Medical College in

Left to Right: Philip J. Bailey, Associate Clinical Professor (Anesthesiology); John W. Hanberry, Assistant Professor (Neurosurgery); Robert C. McNaught, Clinical Professor (Otorhinolaryngology); Dohrmann K. Pischel, Clinical Professor (Ophthalmology).

1893 and professor of Surgery in 1898. When Cooper Medical College was taken over in 1909 by Stanford University as its medical department, he continued as professor of surgery and chief surgeon on the Stanford Service at the San Francisco County Hospital, where he served continuously as visiting surgeon for 36 years. Resourceful and rapid in operating, quick and decisive in judgment, equipped with a mind abundantly laden with information at his immediate command, he made a brilliant teacher at the operating table.

His activity as an operator bridged the period between antiseptic and aseptic surgery, between drainage and non-drainage of wounds, but his facile mind quickly accepted and improved upon the rapidly advancing developments in surgery. His own words vividly describe this period:

"It is interesting to have lived through the period of the greatest and most rapid development in operative surgery the world has ever known, for it is overstating the case when one claims that in the last 15 years of the 19th century and the first 15 of the 20th, greater progress was made in operative surgery than in all the centuries preceding, the direct result, of course, of the earlier discovery and promulgation of general, local, and regional anesthesia, and the gradual percolation and application of the principles of antisepsis of Lister and of asepsis of Macewen; I say gradual percolation of these principles, for it was difficult for the older generation to grasp the ideas and carry out the necessary practical details. For example, a very much up-to-date surgeon, enthusiastic about antisepsis, would conscientiously almost scrub the skin off his hands and soak them in bichloride, and then, just before making his incision, would scratch his ear or blow his nose, adjust his spectacles or wipe his moustache and forget to sterilize his hands. I saw another surgeon bite off the end of a silk thread as would any seamstress to facilitate threading the needle, and one of our most noted local surgeons would hold his knife in his mouth when using other instruments in an operation. Practically speaking, then, the world had to wait for a new generation of surgeons to grow up before an aseptic technic could become automatic on a large scale."

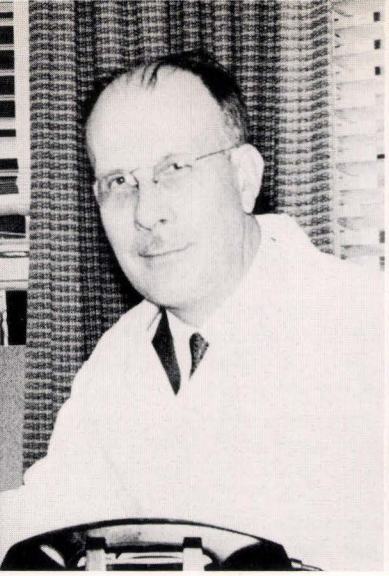


Emmet Rixford

Rixford early insisted upon a bacteriological and pathological study of his operative specimens, and was himself an excellent surgical pathologist. He was one of the first on this coast to employ the x-ray and with it to locate accurately, because of his engineering training, a foreign body in the brain permitting its successful removal by his associate, Dr. Stanley Stillman. His engineering training made him particularly adept also in the understanding of fractures and dislocations, and a number of his papers delt in original manner with the mechanics of the production and treatment of the greenstick, buckling, torsion and flexion fractures. Quick to recognize in one of his early patients from the San Joaquin Valley that he was dealing with an unusual infection, he sent material to Professors Welch and Gilchrist of Johns Hopkins for further intensive study, which led subsequently to the recognition and description (by Rixford and Gilchrist in the first volume of the Johns Hopkins Hospital Reports, 1896) of a new disease, coccidiodal granuloma, also known as the San Joaquin Valley disease.

In his later years, the State Industrial Accident Commission relied greatly upon his judgment in the troublesome problems of industrial surgery, and he was often called as an expert witness. He rarely failed to impress the jury as to the correctness of his view.

A lifelong and paramount interest was the Lane Medical Library, the completeness and present position of which as one of the great medical libraries of the country are entirely due to his efforts. It was he who prevailed upon his classmates in 1891 to purchase a two-volume atlas of skin lesions, which really formed the nucleus for the later development of the present library. It was he who journeyed to the Surgeon General's Library on several occasions, found duplicates of imporant volumes, and was permitted to box and send them to San Francisco. It was through his perspicacity and friendship with Dr. Jacobi of New York, that he secured over 28,000 volumes of the early medical journals and greatly prized Paris theses which were found duplicated when the New York



Left to Right: Henry M. Weyrauch, Clinical Professor (Urology); Leonard G. Dobson, Clinical Professor; Walter E. Heck, Assistant Professor.

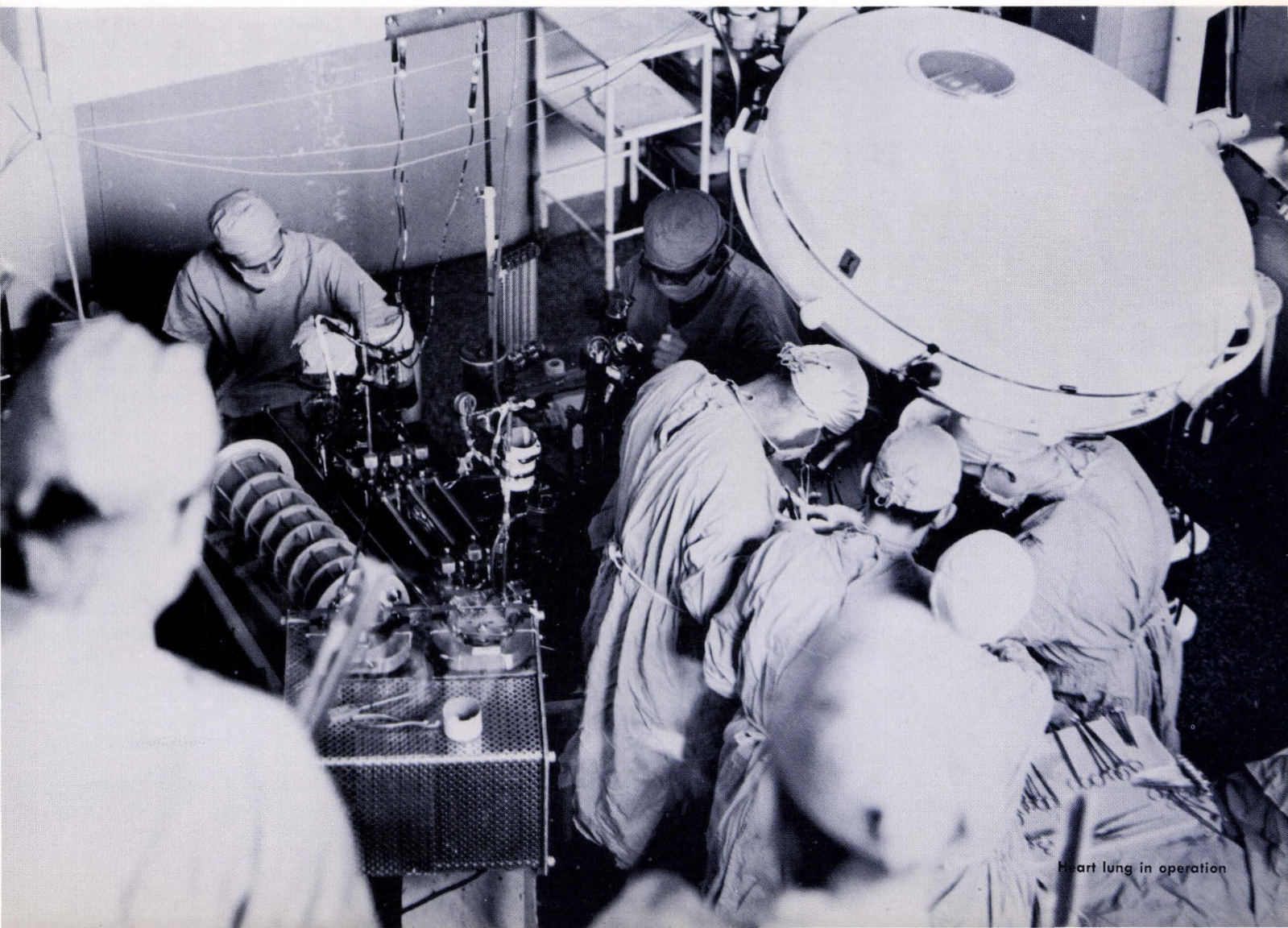
Academy and New York Hospital combined their libraries. The Lane Library, though named at his suggestion in honor of his chief, will be an enduring monument to his memory.

Although a distinguished scholar in his chosen field, Dr. Rixford's great charm lay in his extraordinary breadth of knowledge outside his professional calling. He was an authority on land snails and possessed one of the most complete collections in California. His achievements as an indefatigable mountain climber are forever commemorated by the designation of a 13,000-foot peak in the Kearsarge Range of the Southern Sierras as Mt. Rixford. His reputation as an authority on rose culture was nation-wide. As skipper on the Sloop "Annie" brought around the Horn in the seventies, he won numerous races on San Francisco Bay, and was at one time designated Commodore of the Fleet.

His was an unusually active and useful life, full of zest for enjoyment, mingled with constant devoted service to his fellow men. He died on January 2, 1938, of coronary thrombosis, four days following an operation upon the bladder.

STANLEY STILLMAN (1861-1934)

Described at his death as "California's best beloved surgeon" Stanley Stillman was born in Sacramento, California,



Heart lung in operation

August 23, 1861, the son of Dr. J. D. B. Stillman, pioneer physician and surgeon who operated the first hospital in the state of California. After some preliminary courses at the University of California, Stanley graduated from Cooper Medical College in 1889. In 1891 he and Emmet Rixford were made assistants to Dr. Lane. He remained on the teaching staff and in 1898 was made Professor of Surgery. In 1909 when Stanford University took over Cooper Medical College and organized its medical faculty, Stillman was made Professor of Surgery, and executive head of the Department, a position he held until 1924, when at the age of 65 he was made Professor Emeritus. He and Rixford were intimate associates for over 40 years, working in the same hospitals and medical schools. Rixford's sympathetic appraisal of Stillman at his death is a beautiful tribute:

"Stillman's nature was a complex of qualities not easily to find duplicated—proud, independent, critical, even irascible; yet kindly, sensitive as a woman, sympathetic to the point of tears in the presence of a pathetic stiuation. As a surgeon he was not merely competent and skillful, but was gifted with an extraordinary human understanding, as honest, too, with himself as in his professional relations. He was an acute observer and apt to be as much interested in the personality of his patient as in his malady. As a teacher, he had a great knack of painting word pictures which have become almost proverbial in his students' memories. His students adored him, even when savagely critical, as he sometimes was, for they could not but rise to his sterling honesty and his uncanny instinct which dictates his action and his words."


Stanley Stillman

Stillman wrote but little, but what he did write was pithily presented and to the point.

In an early paper (1902), he discussed abdominal drainage, and at a time when indiscriminate use of drains was almost universal, he advocated measures which were revolutionary in the practice of that day. (Yates did not publish his classic article on "An Experimental Study of the Local Effects of Peritoneal Drainage" until December 1905 (S.G. & O., V. 1, p. 473). Stillman stated with reference to appendicitis:

"When there have been little or no adhesions formed, but there is extensive general peritonitis, or when the free fluid in the peritoneum has a distinctly foetid odor, I first remove the appendix, wash out the abdominal cavity thoroughly with warm salt solution and use no drain, even at the site of the appendix, but close the abdomen tightly trusting to the ability of the peritoneum to handle the diffuse infection in its own way — and I try to avoid embarrassing or impeding the natural drainage by inserting masses of gauze, tubes or anything else around which adhesions may form."

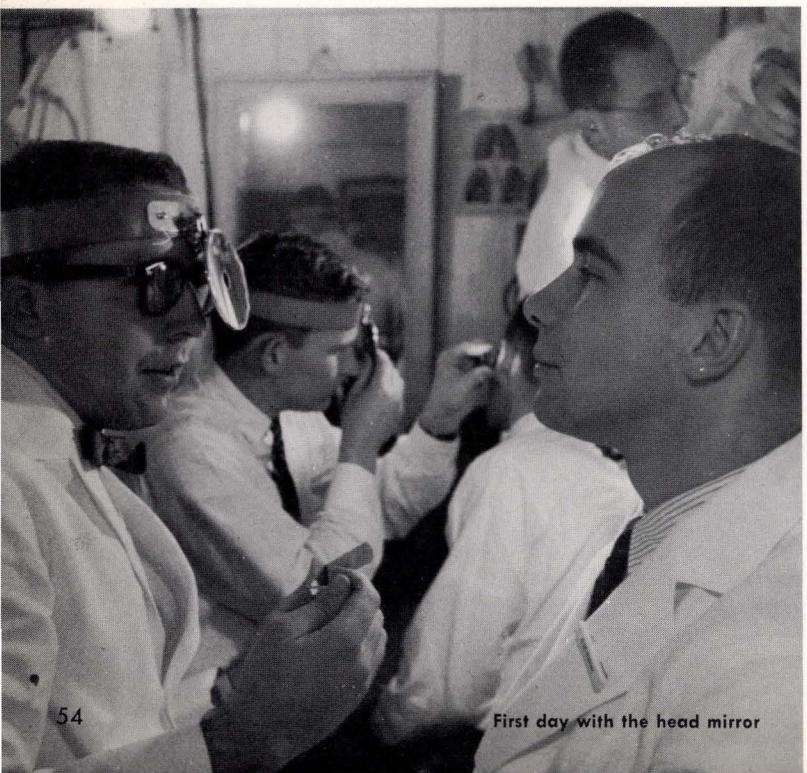
"The great danger of general septic peritonitis lies in the existence of a focus from which is furnished a continuous supply of organisms and toxins, and our first duty is to eliminate such a source of supply, whether it be a gangrenous or perforated intestine, an infected blood clot or an abscess in the abdominal wall communicating with the peritoneum."

In another early paper he prophetically stated, "Contrary to general teaching, infants stand anesthetics and surgical procedures as well as if not better than adults." At a time when medical practitioners were want to delay operation until every other means had been exhausted, this was an original and encouraging attitude. In this connection he observed, "An exploratory laparotomy may be called for and will do the infant no harm if done early, but a successful operation may be no good if done later!"

Other papers included a plea for early operation in hypertrophic stenosis of the pylorus in infants for which he performed a gastroduodenostomy. (Rammstedt described his operation in 1912 (Med. Klin. Berlin, 1912, V. 1702)). "There is less to fear from a timely operation than from timorous delay" observed Stillman.

In partial excisions of the lower jaw for carcinoma he advocated and used with great success a silver wire truss originally devised by John B. Murphy. One of Stillman's patients retained the truss 24 years when, following a kick in the face, it had to be removed.

In 1917 he presented a scholarly review of tumors of the kindey, including 7 cases of his own.


First day with the head mirror

Dr. Lane and Dr. Barkan preparing to operate.

And in 1918 appeared a review of his experiences in resection of the large bowel at the rectosigmoid junction.

Stillman was well ahead of his time in providing only doctor anesthetists in the operating room when most clinics on the eastern seaboard were still relying on nurse anesthetists. Dr. Caroline Palmer, a graduate of Cooper Medical College, served as chief anesthetist at Lane Hospital from 1909-1937 assisted by two other doctor anesthetists.

Stanford University may take justifiable pride in the surgical heritage provided by these courageous and skillful pioneers in western surgery.

EMILE F. HOLMAN, M.D.

ROBERT ALWAY, M.D.

Dr. Alway is Dean of Stanford Medical School and has been very active in organizing the "new" medical school on the campus. He received a BS in 1937, an MB in 1939, and an MD in 1940, all from the University of Minnesota. He interned at the Jersey City Medical Center and then went back to Minnesota for his residency training in Pediatrics. Following this training he was at the University of Utah for six years, becoming an Associate Professor before coming to Stanford in 1949. Dr. Alway left to be Professor of Pediatrics at the University of Colorado in 1953-1955, but returned to Stanford as Professor and Executive until he was made Dean in 1957.

ADMINISTRATION

THE PROSPECT BEFORE US

This coming autumn the first class in the new Stanford Medical School will initiate the second half-century of our school. Stanford's medical graduates in the first fifty years established a sound reputation. We have history to build on. In the next half-century we have history to make. What is the prospect before us?

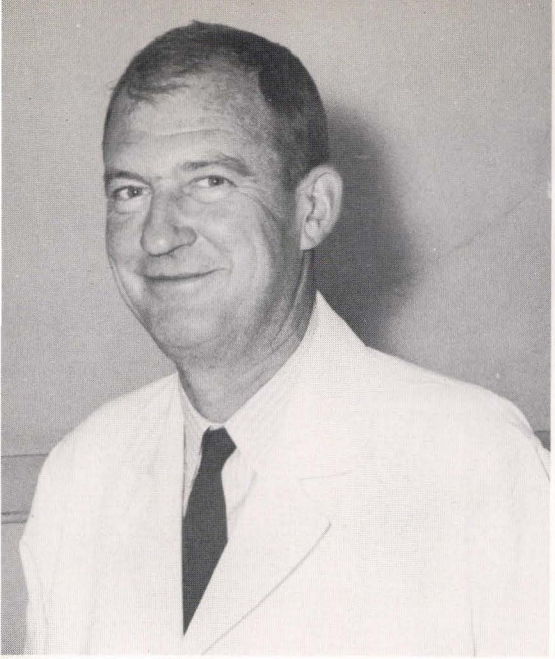
With the increasing rate of medical progress, the accumulated facts and techniques have grown beyond the practical grasp of the busy practitioner, let alone the medical novitiates in their undergraduate years. As medicine has progressed from the simply descriptive to increasingly better definition of disease processes and syndromes—as it has similarly progressed from non-specific to specific therapy—similarly medicine has progressed from the gross to the microscopic to the submicroscopic on to the ultramicroscopic. Now it is taking its first tentative steps toward the realm of the submolecular—toward a subatomic basis for the understanding life processes.

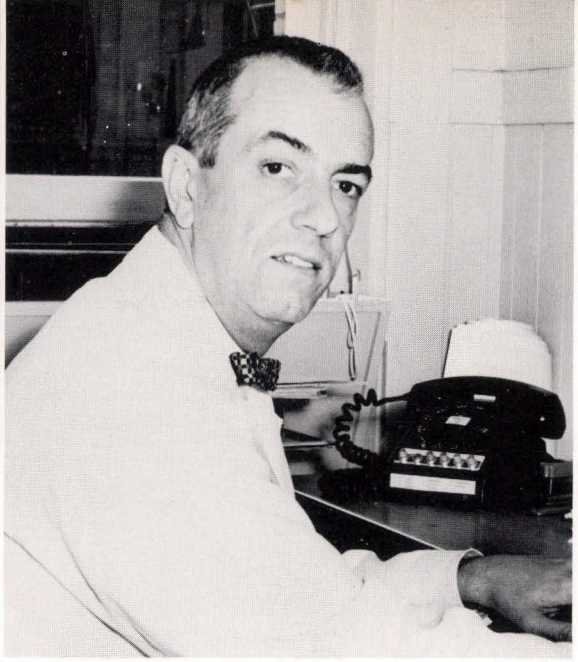
Obviously, then, what was once good enough can no longer suffice. A plan of medical education which had become encumbered more by demand than by design can not best produce medical graduates able to continue their medical education once out in practice, confronted with its demands plus increasingly complex medical knowledge. Accordingly, the new Stanford plan of medical education was developed by the faculty to emphasize the essential unity of the basic sciences and medicine as human biology, providing principles and basic understanding more than a mass of facts and techniques. This preparation should lead to increasingly effective graduate education, there providing facts and techniques in areas of specialization.

The building of the new Medical School on the campus has facilitated re-orientation of the school around the University rather than the Hospital, making possible increased intellectual exchange not only with the physical and biological sciences but with the social sciences as well. Medicine's preoccupation with the prevention of death must be tempered by a concern for the quality of living.

The seven buildings constituting the new compounds of the Palo Alto-Stanford University Medical Center provide hospital, ambulatory clinic and laboratory facilities for the clinical years as well as laboratories and classrooms for the pre-clinical departments for undergraduate teaching. Yet to be provided are the new research space for Anatomy, Microbiology, and Physiology, as well as in-patient facilities for Psychiatry and on-campus student housing.

Training and research in the field of Rehabilitation will





Left to right: Lowell A. Rantz, Professor of Medicine and Associate Dean; Lyman M. Stowe, Associate Professor of Obstetrics and Gynecology and Associate Dean.

be greatly strengthened through the geographic and functional associations of the Divisions of Rehabilitation, Physical Therapy, Physical Medicine, Speech Pathology and Audiology with Otolaryngology, Orthopedics, Neurology and Neuro-surgery.

Our opportunities and responsibilities as a private medical school will not be met if we are content merely to teach what is and not seek further—if we train only in established patterns, not exploring new ways adapted to scientific, social and economic change—if we aspire only to produce technically competent practitioners, ignoring the education of men and women truly prepared to continue more easily their education after education.

The challenge is great. If we are to make our proper contribution and justify our place in the University we will meet the challenge.

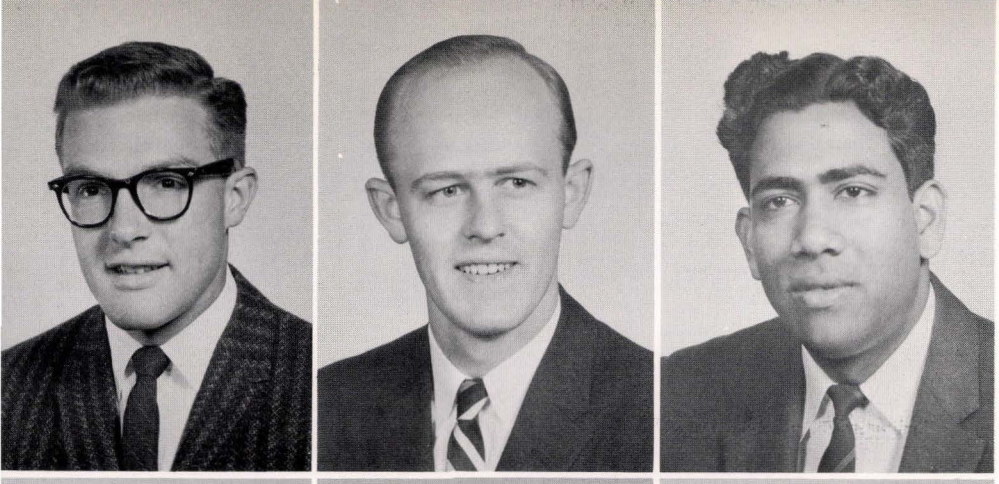
The goal of the Medical School may be considered to be the development and continued adaptation of a plan of medical education, with the necessary attendant faculty and facilities, propaedeutic to medicine, leading to graduates not solely practitioners or academicians, but truly doctors—learned men and women deserving of this advanced academic title, teachers albeit unwittingly and properly able to be duly licensed to practice the healing arts.

ROBERT ALWAY, M.D.


EXIT

Medical Ground Rounds, in Lane Hall.

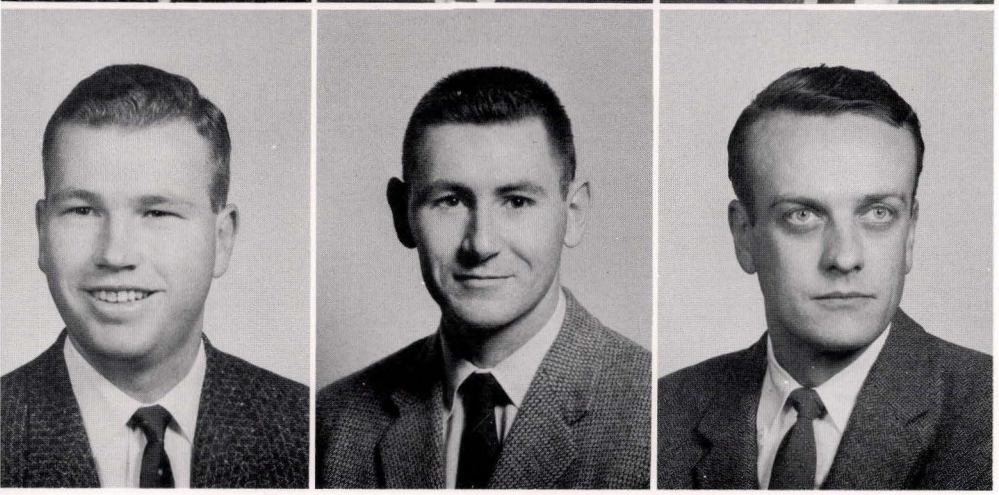
CLASS OF 1959



WILMER C. ALLEN, Las Vegas, Nevada . . . Alpha Omega Alpha, Nu Sigma Nu . . . Internship: Los Angeles County Hospital.

KEITH F. ANDERSON, Mt. Vernon, Washington . . . Phi Rho Sigma . . . Internship: Detroit Receiving Hospital.

MUHAMAD ASWAQ, Fiji Islands . . . Fellow, Palo Alto-Stanford Medical Center.



CHARLES E. BASYE, Burlingame . . . Internship: Minneapolis General Hospital.

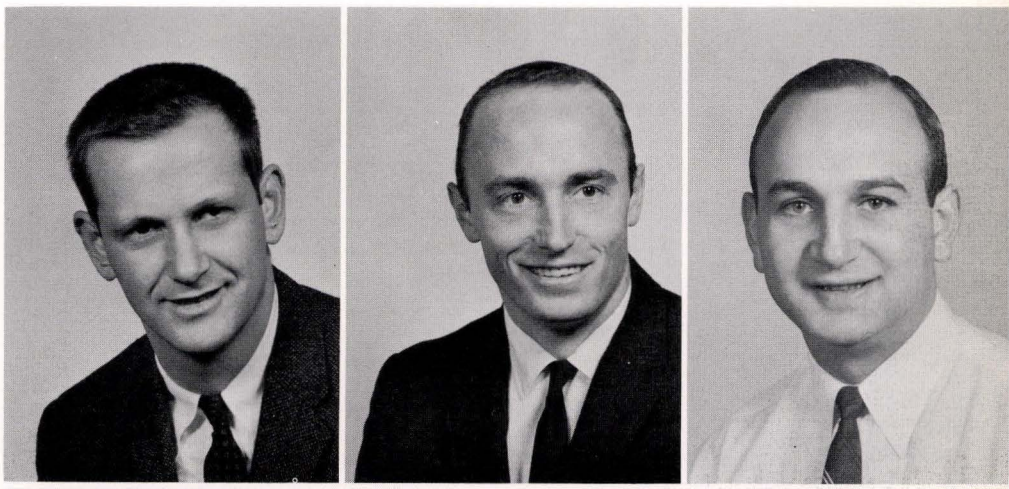
SIDNEY B. BELLINGER, Palo Alto . . . Nu Sigma Nu . . . Internship: U. S. Naval Hospital, Oakland.

MARSDEN S. BLOIS, Atherton . . . Internship: Palo Alto-Stanford University Medical Center.

MICHAEL H. BRAVERMAN, Los Angeles . . . Internship: Kings County Hospital Center, Brooklyn, N. Y.

KEITH M. BROWNSBERGER, La Verne . . . Internship: Santa Clara County Hospital.

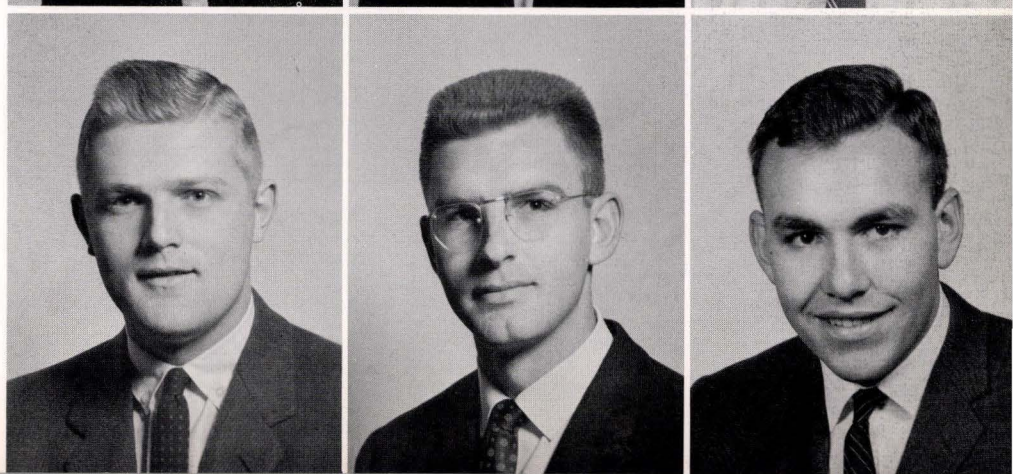
JAMES G. CAMPBELL, Pomona . . . Internship: Los Angeles County Hospital.



JAMES D. COLEMAN, Long Beach . . . Internship: Los Angeles County Hospital.

JOHN T. DIFFERDING, Richmond . . . Internship: University of California Hospitals.

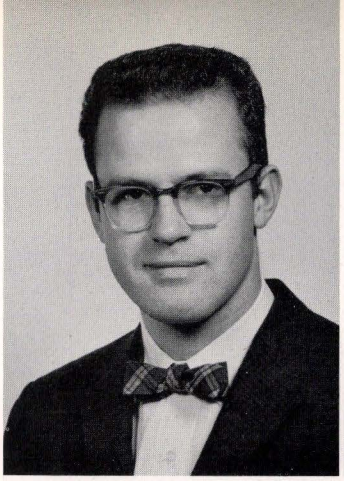
RALPH B. DILLEY, San Diego . . . Alpha Omega Alpha, Alpha Kappa Kappa . . . Internship: Boston City Hospital.

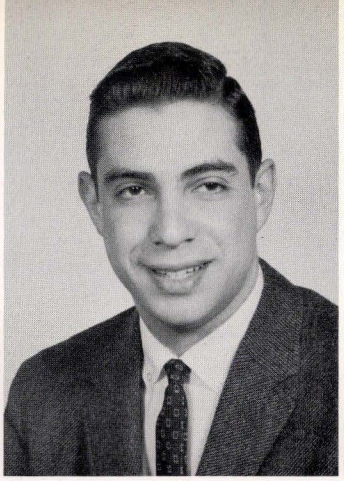


FREDERICK A. DITTMER, Scottsdale, Arizona . . . Nu Sigma Nu . . . Internship: Mary Fletcher Hospital, Burlington, Vermont.

MARVIN ENGEL, Pomona . . . Class President, second year . . . Internship: Philadelphia General Hospital.

WARREN W. EPINETTE, Los Angeles . . . Internship: Los Angeles County Hospital.

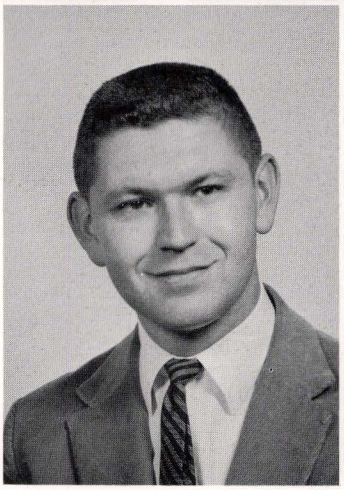


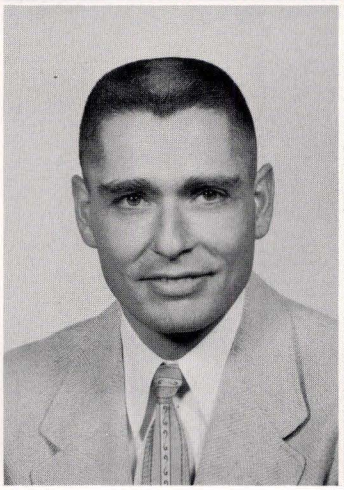


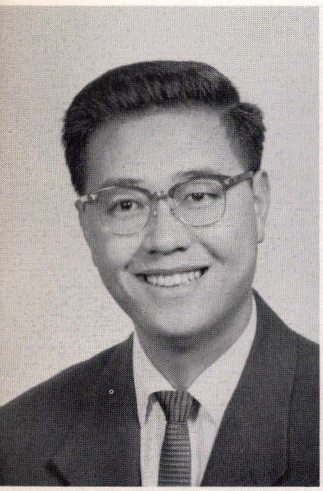
RICHARD M. FREEMAN, Merced . . . Alpha Kappa Kappa . . . Internship: Palo Alto-Stanford University Medical Center.

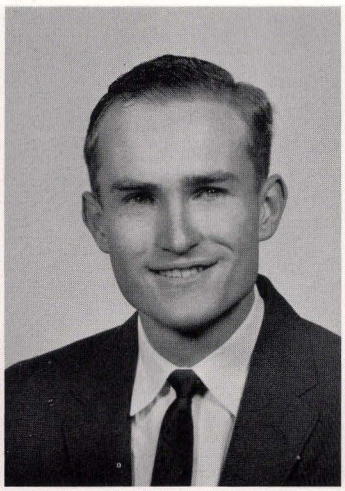
MYRON GANANIAN, Menlo Park . . . Class President, third year . . . Internship: Meadowbrook Hospital, Hempstead, New York.

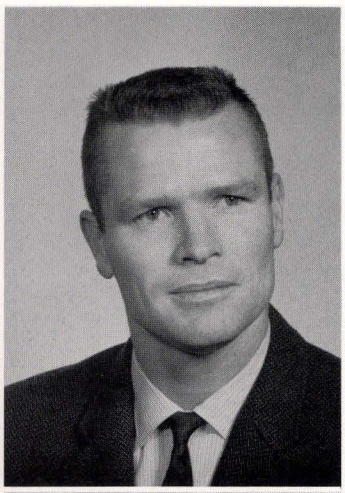
STEPHEN R. GOSPE, San Francisco . . . Internship: Philadelphia General Hospital.







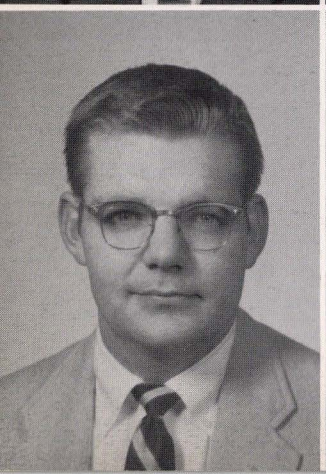




MELVYN D. HALL, Belmont . . . Internship: Santa Clara County Hospital.

ROBERT D. HESTORFF, Berkeley . . . Phi Rho Sigma . . . Internship: Los Angeles County Hospital.

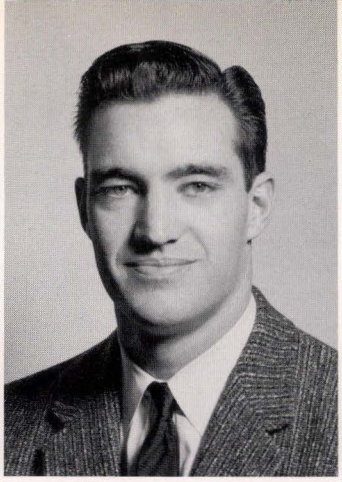
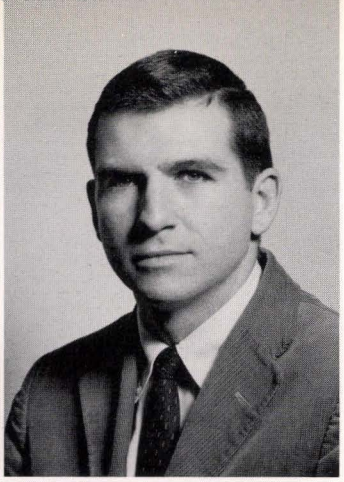
RICHARD H. HORN, Santa Monica . . . Class President, first year . . . Internship: Harbor General Hospital, Torrance, California.



MARTIN C. JOHNSON, Denver . . . Nu Sigma Nu . . . Internship: Palo Alto-Stanford University Medical Center.

ROBERT L. JOHNSON, San Francisco . . . Nu Sigma Nu . . . Internship: University Hospitals, Madison, Wisconsin.

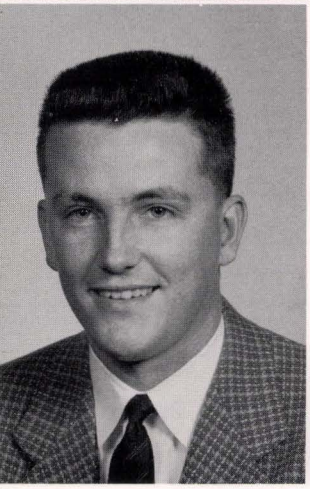
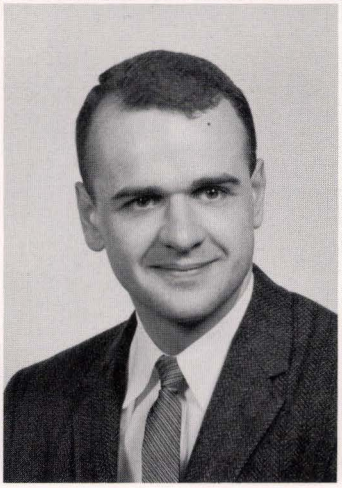
GARY R. KATZ, Hollywood . . . Internship: Palo Alto-Stanford University Medical Center.

SALLY H. KAUFMANN, San Francisco . . . Internship: Kaiser Foundation Hospital, San Francisco, California.

FOSTER F. KEENE, Santa Barbara . . . Internship: Brooke Army Hospital, San Antonio, Texas.

HUNTER L. LITTLE, Oxford, Mississippi . . . Internship: Bellevue Hospital Center, New York, New York.


REY V. LUCE, Santa Rosa . . . Internship: Akron City Hospital, Akron, Ohio.

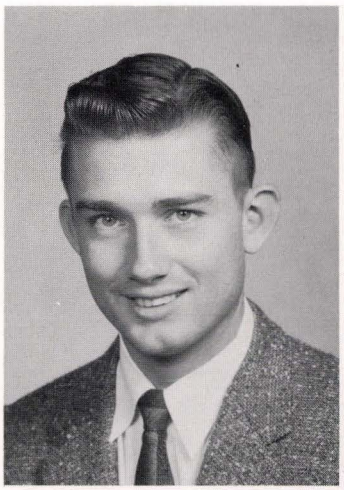
JOHN G. McFEE, Seattle . . . Alpha Omega Alpha, Alpha Kappa Kappa . . . Internship: Philadelphia General Hospital.

WILLIAM G. McGEHEE, Fresno . . . Alpha Kappa Kappa . . . Internship: Los Angeles County Hospital.

MARVIN J. McKENNEY, San Diego . . . Phi Rho Sigma . . . Internship: Los Angeles County Hospital.

JAMES C. MICKLE, San Francisco . . . Internship: Queen's Hospital, Honolulu, T.H.

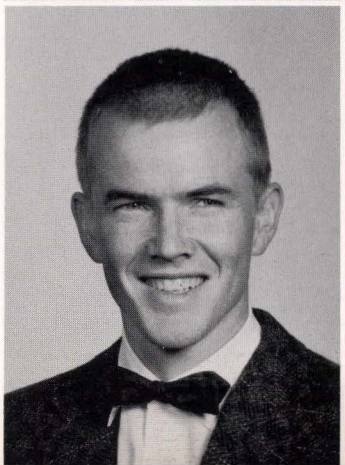
JAMES S. MILLER, Alameda . . . Internship: San Francisco General Hospital.

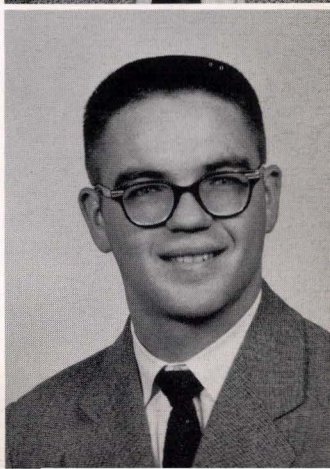


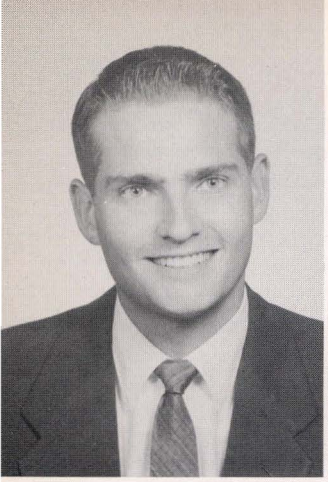
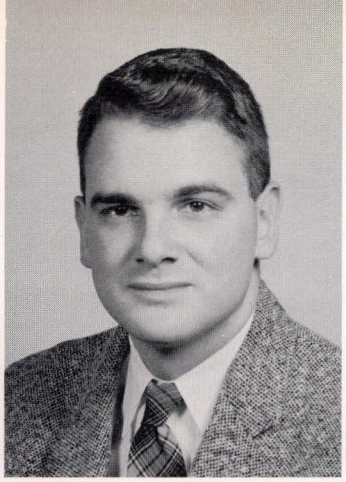
ROBERT E. MILTON, Redding . . . Internship: Brooke Army Hospital, San Antonio, Texas.

JOHN R. MITCHELL, San Carlos . . . Internship: Philadelphia General Hospital.

ROBIN R. NICHOLS, Woodland, California . . . Alpha Kappa Kappa . . . Internship: Cook County Hospital, Chicago, Illinois.



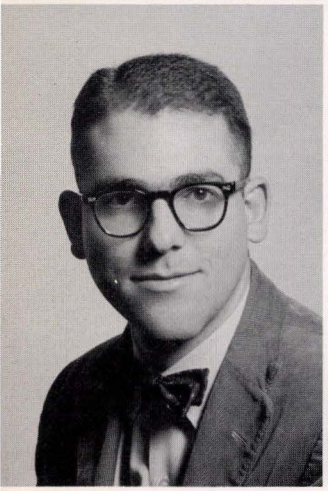
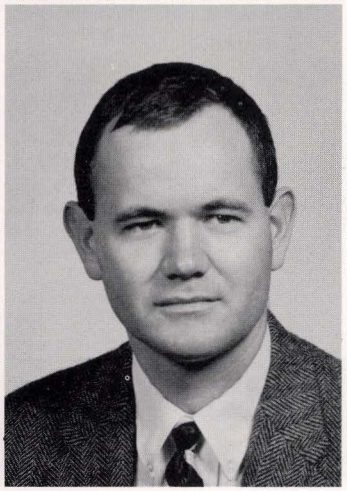



BOYD A. NIES, Orange, California . . . Alpha Omega Alpha . . . Internship: University of California Hospital, Los Angeles.

JOHN R. PACIULLI, Palo Alto . . . Alpha Kappa Kappa . . . Internship: Cook County Hospital, Chicago, Illinois.

JAMES H. PINGREE, Sherman Oaks . . . Alpha Omega Alpha, Nu Sigma Nu . . . Student Body President . . . Internship: King County Hospital, Seattle, Washington.


REESE E. POLESKY, Beverly Hills . . . Internship: Emory University Hospital.

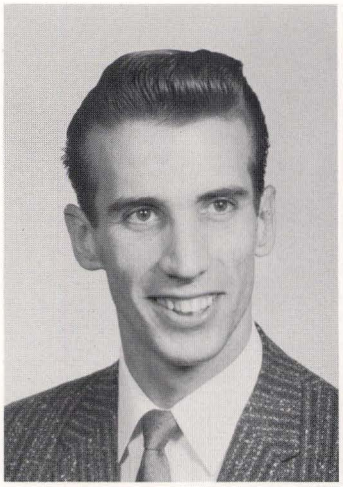
GILBERT J. ROBERTS, Pomona . . . Nu Sigma Nu . . . Internship: Minneapolis General Hospital.

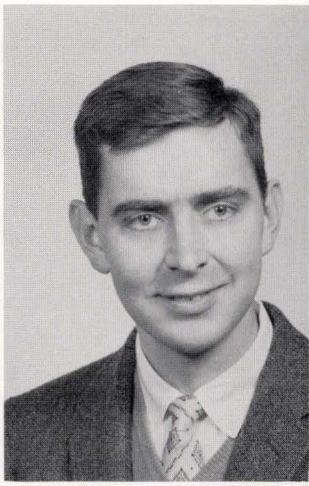
MARGARETA K. SAINIO, Helsinki, Finland . . . Resident, Palo Alto-Stanford University Medical Center.

DUDLEY O. SCOTT, JR., Los Angeles . . . Internship: Santa Clara County.

GERALD L. SEVERIN, Atherton . . . Nu Sigma Nu . . . Internship: Minneapolis General Hospital.

CARL L. SMITH, Geyserville . . . Internship: Lankenau Hospital, Philadelphia, Pa.

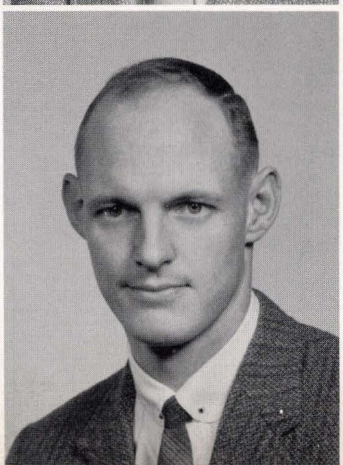
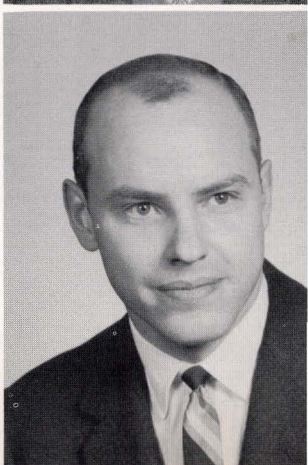


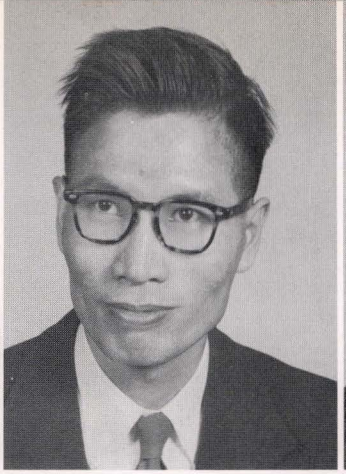


GRACE G. SMITH, Menlo Park . . . Internship: Lankenau Hospital, Philadelphia, Pa.

ROBERT W. SONNTAG, Los Angeles . . . Internship: Minneapolis General Hospital.

PAUL E. STRANDJORD, Minneapolis . . . Nu Sigma Nu . . . Class President, fourth year . . . Internship: University of Minnesota Hospitals.

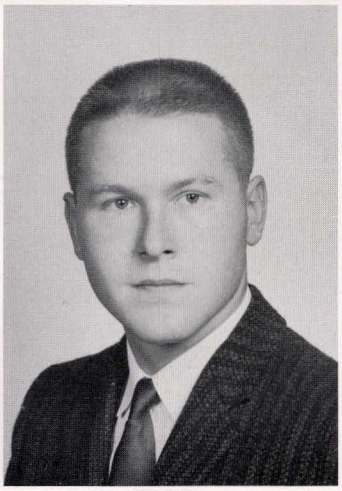






HAROLD B. STRAUCH, Sacramento . . . Alpha Omega Alpha, Alpha Kappa Kappa . . . Internship: Philadelphia General Hospital.

YASUO TAKENAKA, Honolulu, T.H. . . . Internship: Grace-New Haven Community Hospital.

H. STEPHENS THOMAS, Phoenix, Arizona . . . Alpha Omega Alpha, Nu Sigma Nu . . . Internship: Philadelphia General Hospital.



KENNETH E. THOMAS, Northfield, Illinois . . . Alpha Omega Alpha . . . Internship: University of Minnesota Hospitals.

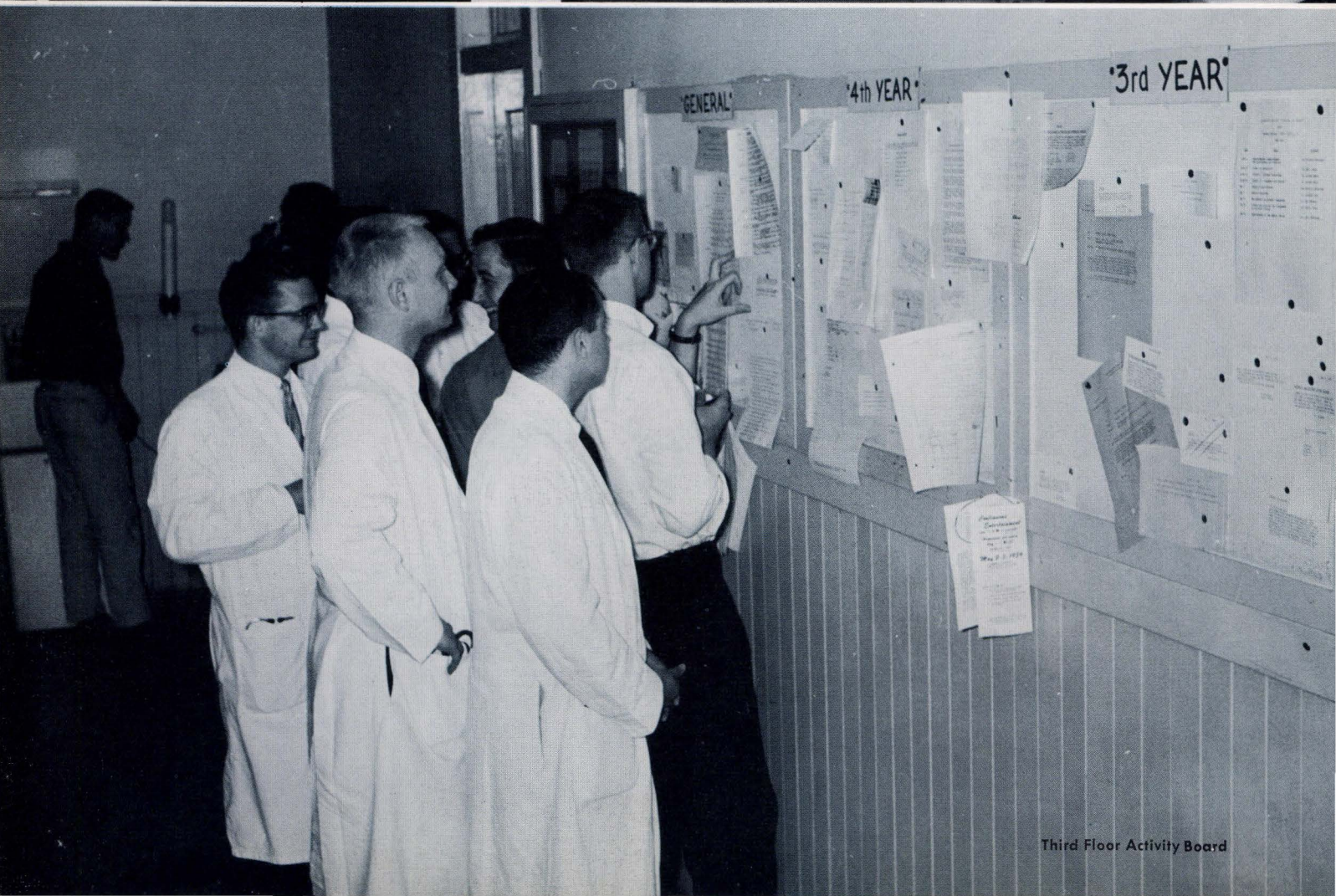
NICHOLAS R. TRUEBLOOD, San Marino . . . Alpha Omega Alpha, Nu Sigma Nu . . . Internship: Los Angeles County Hospital.

ANTHONY M. WOLFE, San Luis Obispo . . . Internship: Denver General Hospital.

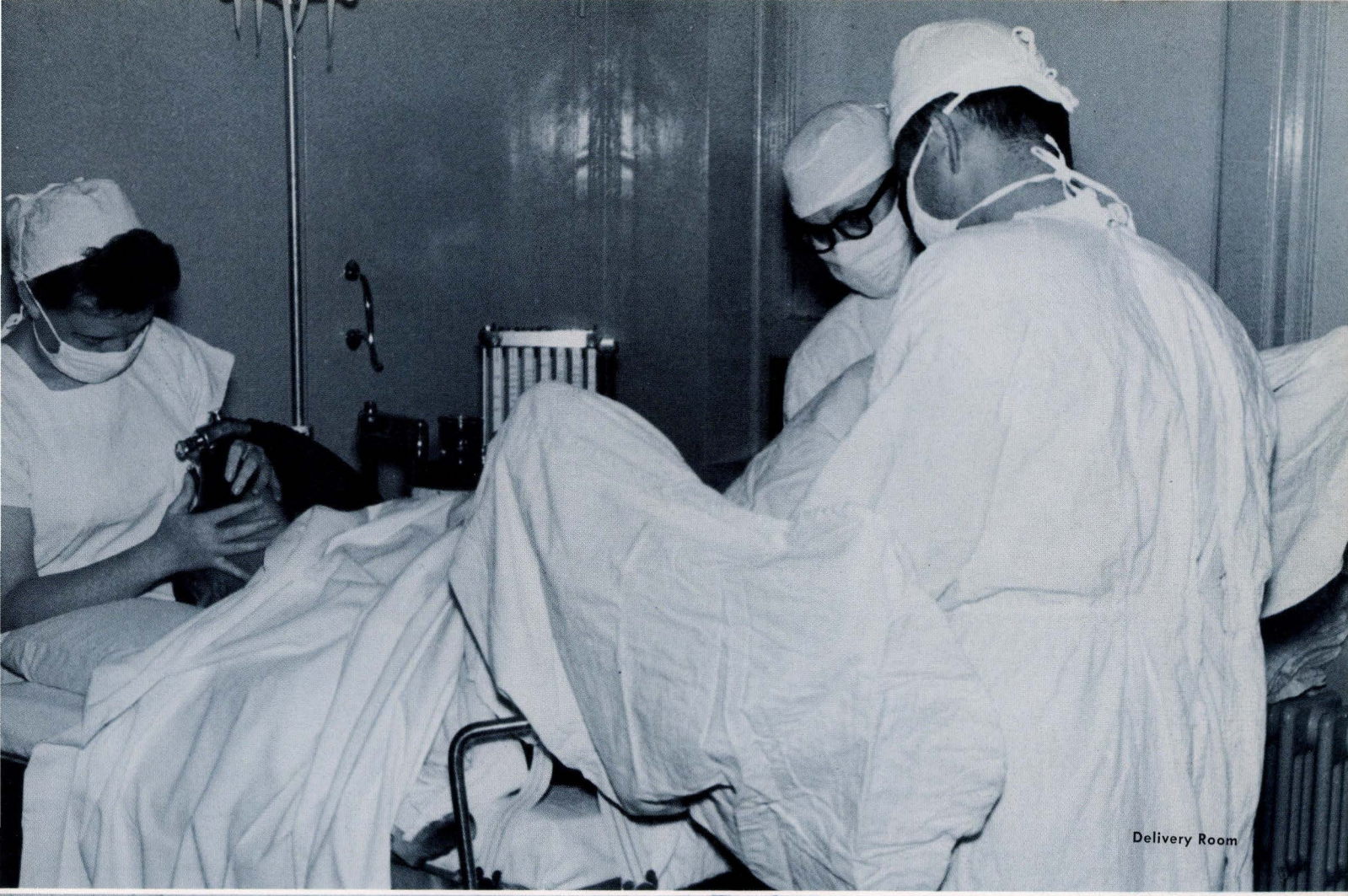
LIONEL ZUCERBRAUN, Los Angeles . . . Internship: Detroit Receiving Hospital.

Lane Library

Pediatric Outpatient Department

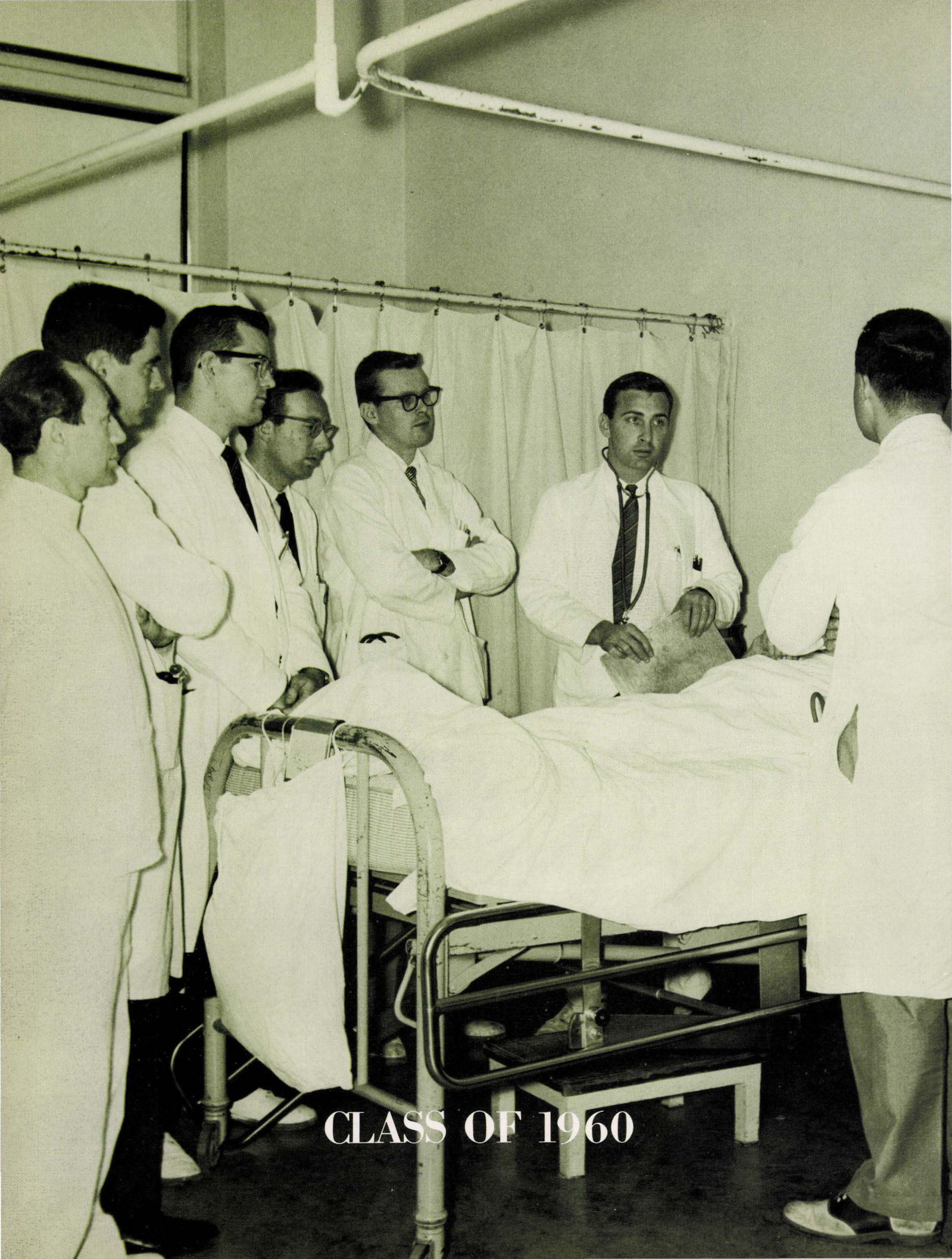


Third Floor Activity Board

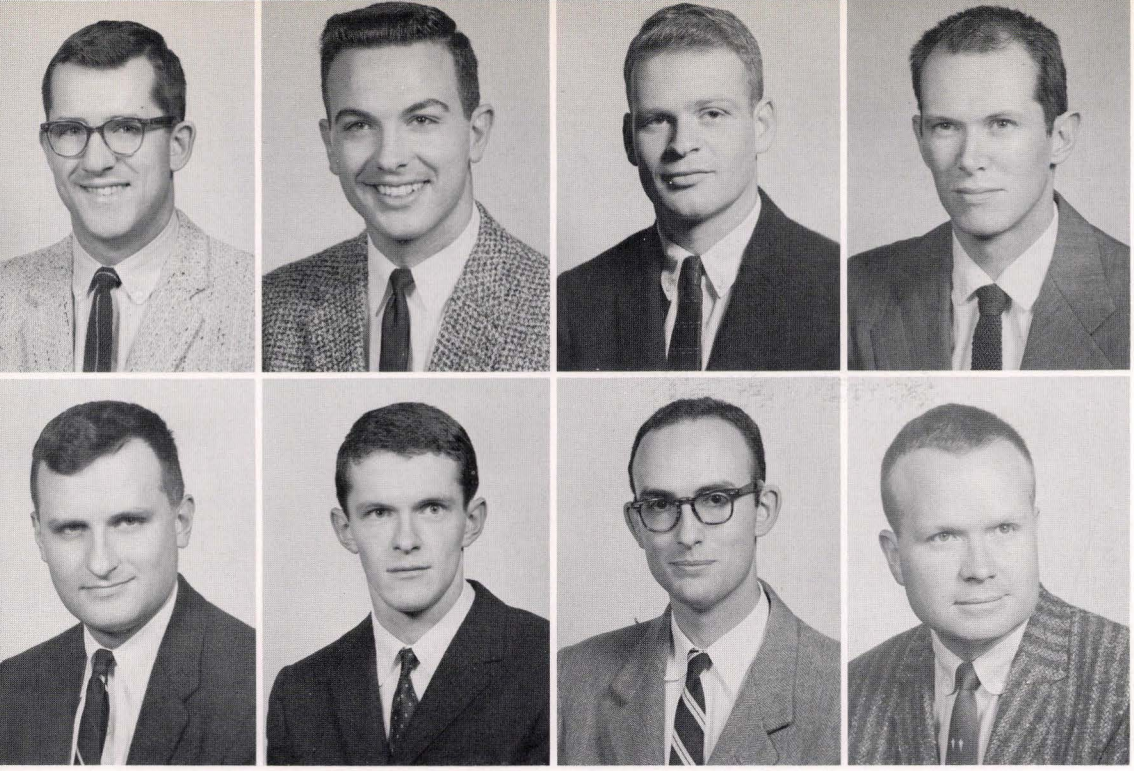


Delivery Room

Women's Clinic Waiting Room



CLASS OF 1960



Barton K. Adams
Klamath Falls, Oregon

Walter F. Alexander
Sacramento

Thomas F. Anders
San Francisco

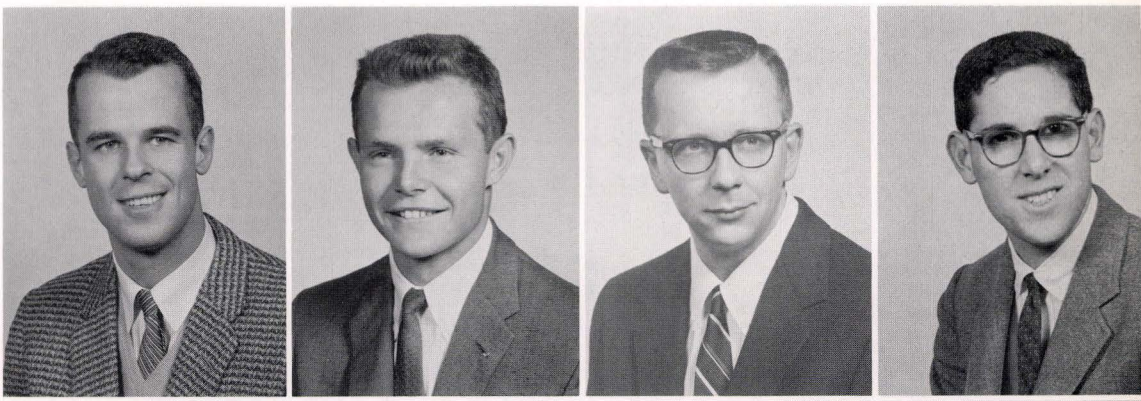
Ben H. Anderson
Minneapolis, Minn.

Denny S. Anspach
Riverside, Illinois

Richard R. Babb
Wilmington, Ohio

Cleve B. Baker
San Francisco

Crittenden E. Brookes
San Francisco



Cooley Butler, II
Los Angeles

Roger V. Cadol
Oakland

Harvey E. Christensen
Racine, Wisc.

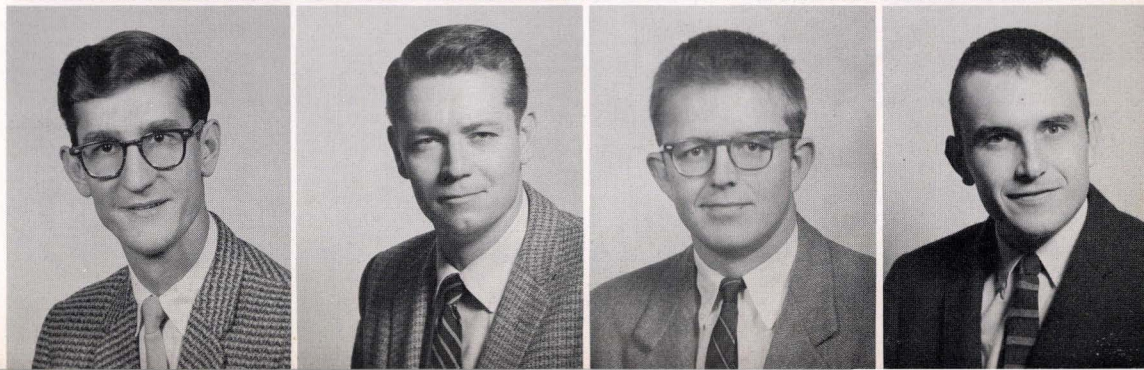
Keith E. Cohn
San Francisco

Charles E. Comfort
San Mateo

Ernest A. Dernberg
Beverly Hills

Evelyn R. Esola
San Francisco

Melvin D. Flamm, Jr.
San Francisco

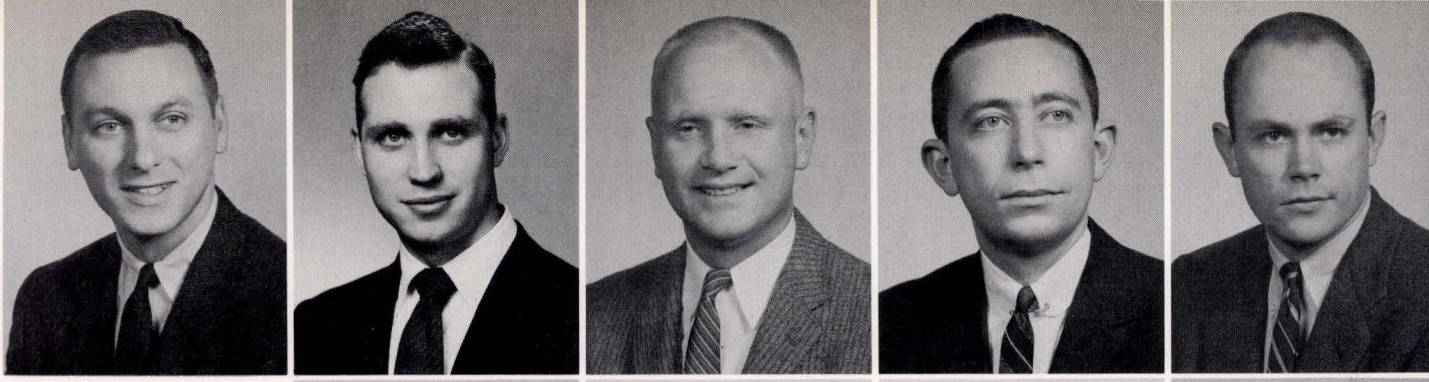


Jay B. Harless
Los Angeles

Frank M. Hembrow
Mountain View

Richard Henke
Whittier

Lowell M. Hill
San Francisco



Jack J. Katzow
Milwaukee, Wisc.

Irving I. Kessler
Dorchester, Mass.

George H. Koenig
Palo Alto

Franklin D. Loffer, Jr.
San Marino

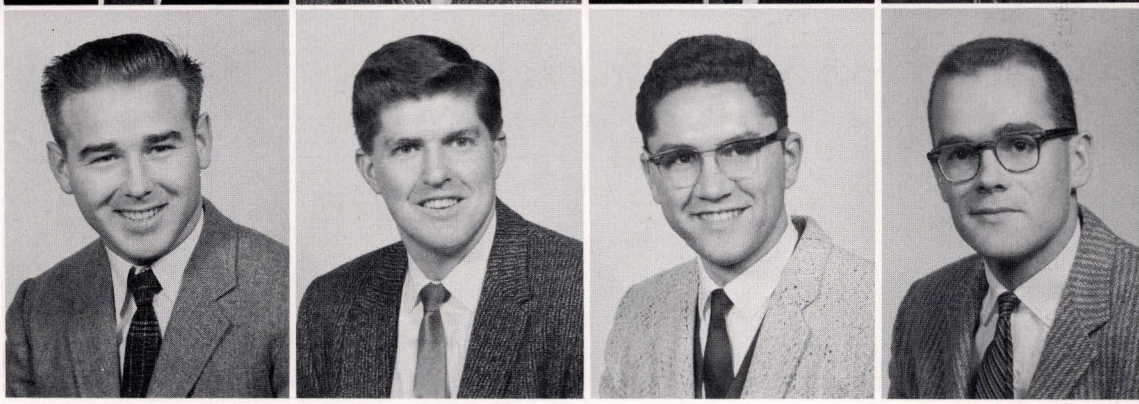
Charles M. Louden
Long Beach

Russell D. Martin
Colton, Calif.

William E. Matthews
Klamath Falls, Oregon

John I. Maurer
Madison, Wisc.

James D. Northway
Palo Alto



Jack Noyes
South Bend, Indiana

John M. Palmer
Berkeley

Diane Joanne Paluszek
Chicago, Illinois

Truman D. Plainer
Encino

Norman M. Rich
Ray, Arizona

Thomas Rykoff
Beverly Hills

Fredrick J. Seil
San Francisco

Robert J. Seymour
San Marino

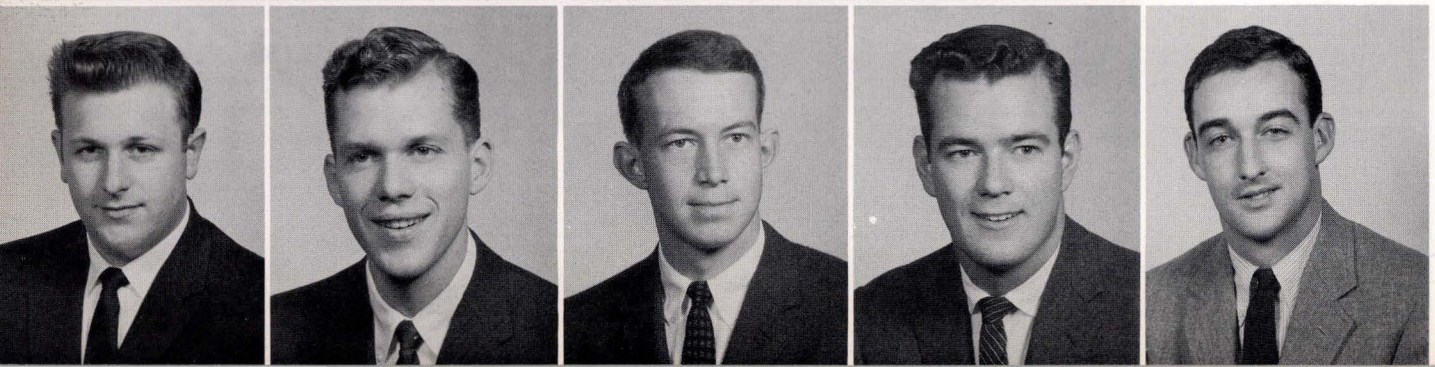
Frank E. Speizer
San Francisco

Robert G. Webster, Jr.
Piedmont

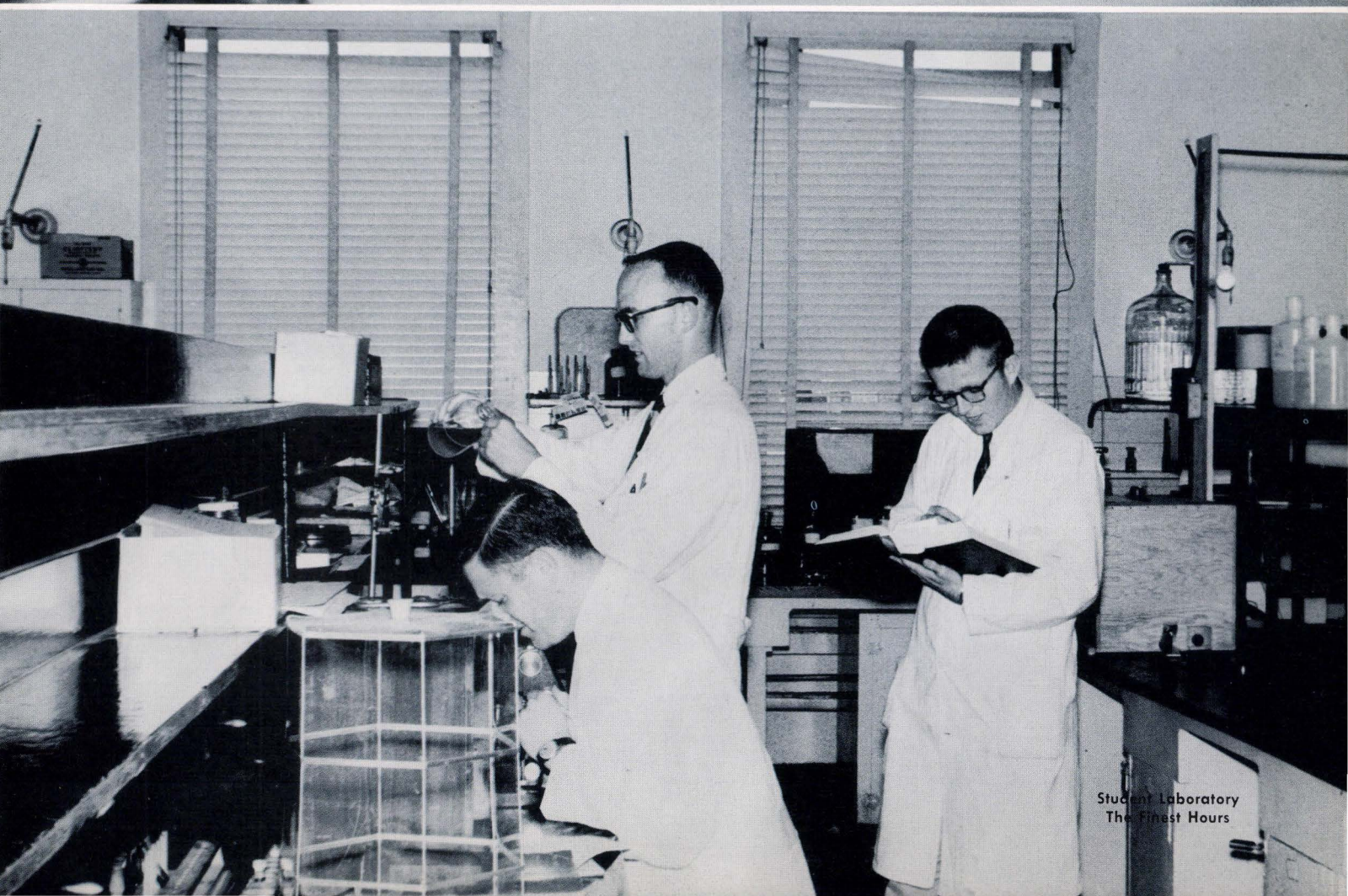
Philip R. Westbrook
Riverside

Dennis H. Wetterholm
Bakersfield

Gregor M. Wilkinson
Pacific Palisades



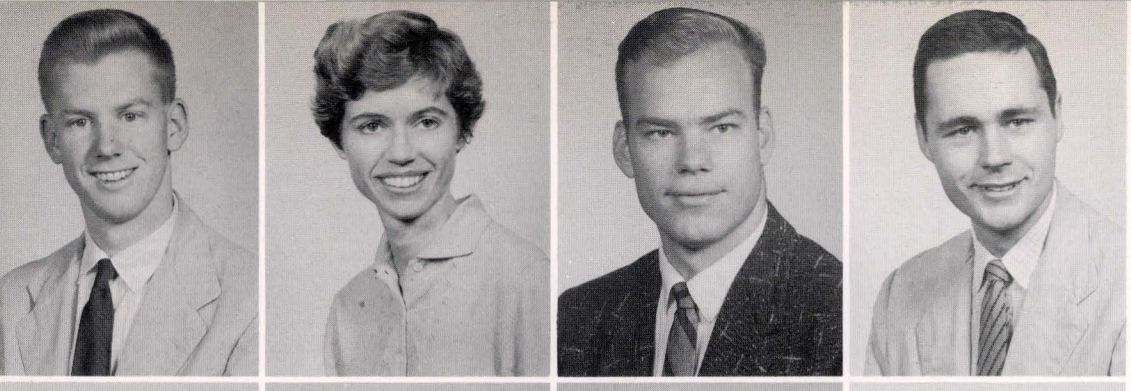
Still There?



Student Laboratory
The Finest Hours

CLASS OF 1961

The First Scrub

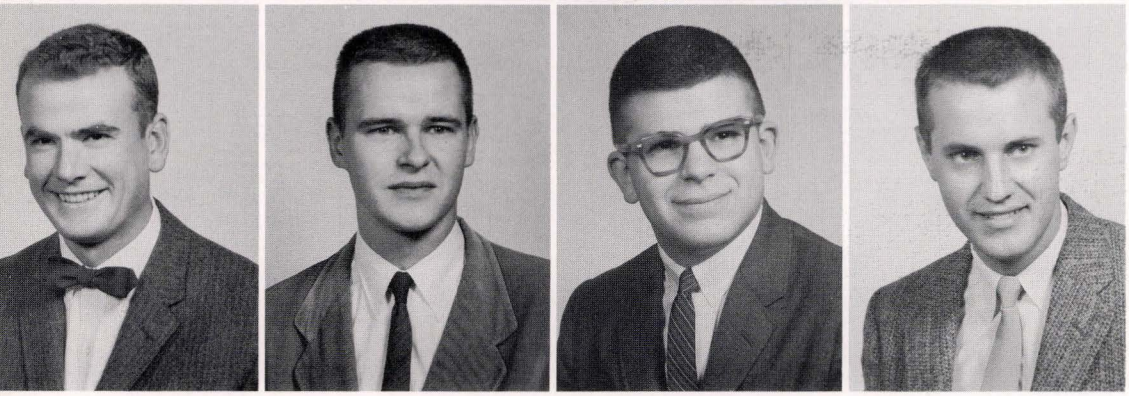


William M. Abbott
San Francisco

Pauline Anderson
Santa Barbara

Jerome C. Beatie
Sacramento

Creighton G. Bellinger
Agnew

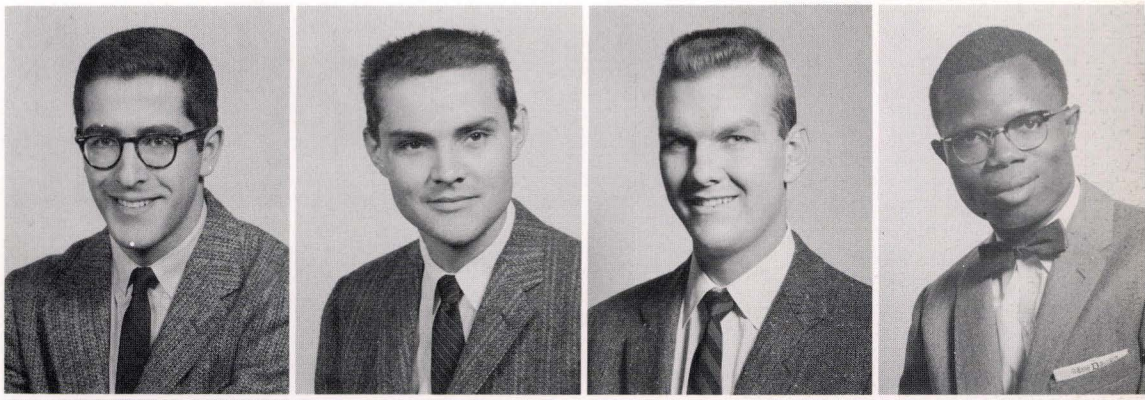


Stephen W. Bennett
Palo Alto

John A. Bruner
Tucson, Arizona

Robert O. Christiansen
San Marino

William H. Christie
Los Altos



Stephen Z. Colodny
Greenfield, Mass.

William J. Daily
Oakland

John J. Dilley
San Diego

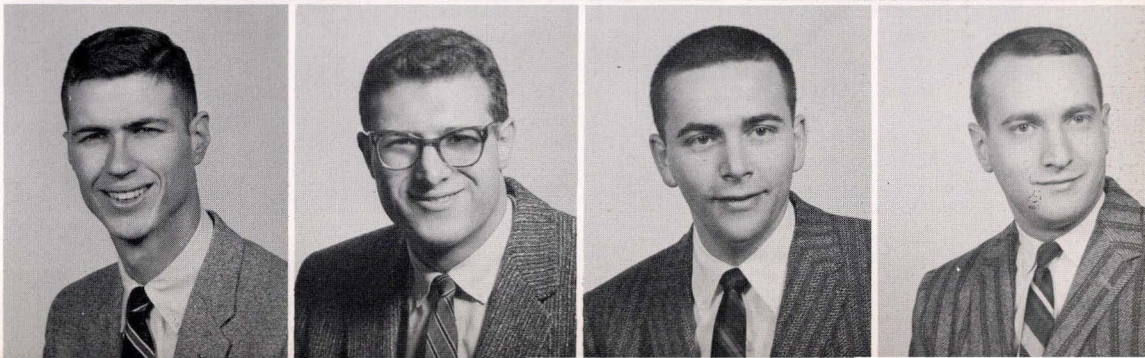
Adebayo J. Dina
Lagos, Nigeria

Christian E. von Doepp
Fairborn, Ohio

David E. Dozier, Jr.
Sacramento

David E. Edson
Houston, Texas

Ralph E. Gianelly
Medford, Mass.



DeWitt B. Gifford
Stanford

Harry R. Glatstein, Jr.
Muscatine, Iowa

Alan H. Goodman
San Diego

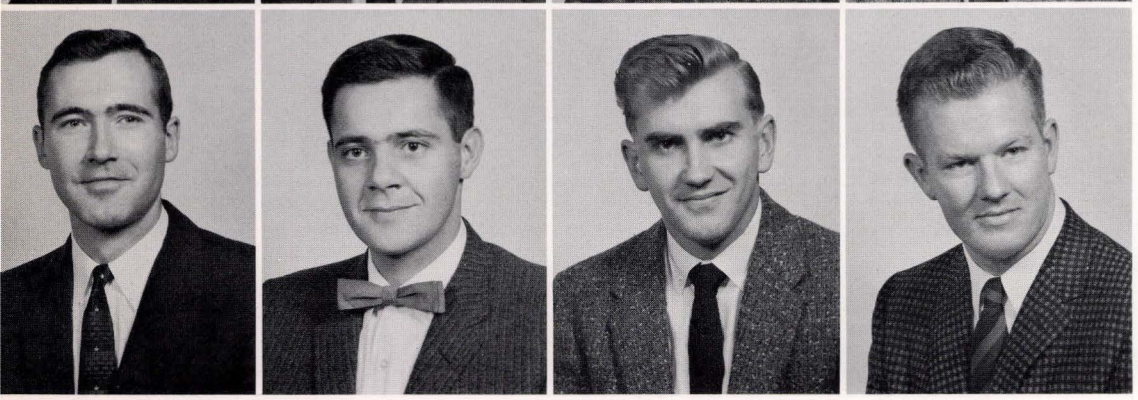
Joel L. Herskowitz
Forest Hills, N.Y.

Malcolm J. Hoffs
New York, N.Y.

David Hunt
Nashville, Tennessee

William S. Irvin
El Paso, Texas

Walter L. Jensen, Jr.
Wauwatosa, Wisc.

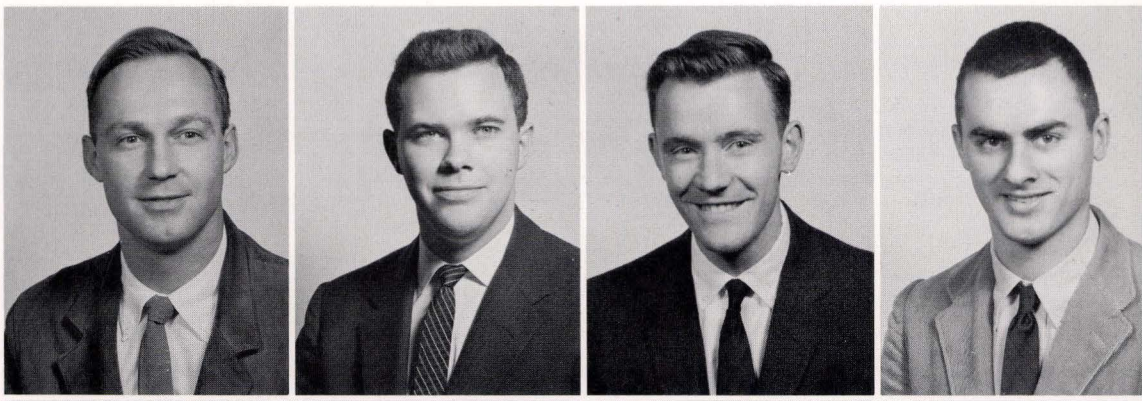


Donald R. Johnson
Minneapolis, Minn.

Paul K. Johnson
Casper, Wyoming

Laurence J. Logan
Olympic, Wash.

Truman L. Long
Los Angeles



Roger C. Lukes
Etna

Philip I. McNamee
New York, N.Y.

William C. Mentzer, Jr.
Palo Alto

Bernard W. Nelson
San Diego

Stephen B. Nelson
San Mateo

John M. Newel
Fresno

Else B. Peters
Palo Alto

Roberta Peters
Oakland

John K. Petralli
Redwood City

Ronald C. Pillsbury
Long Beach

William W. Pope
San Francisco

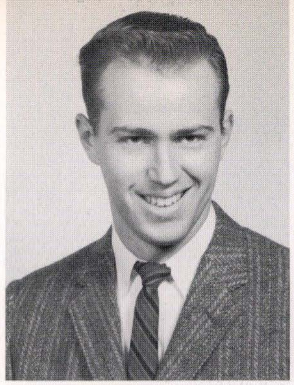
Donald J. Prolo
San Jose

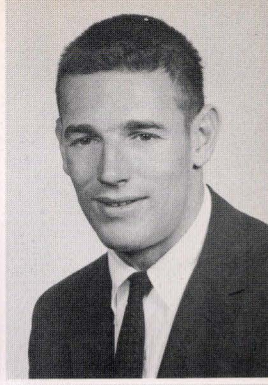
James W. Ralph
Tulsa, Oklahoma

Arbe J. Rowan
Fostoria, Ohio

Ernest Ruiz
Pasadena

Roger L. Ryan
Atherton



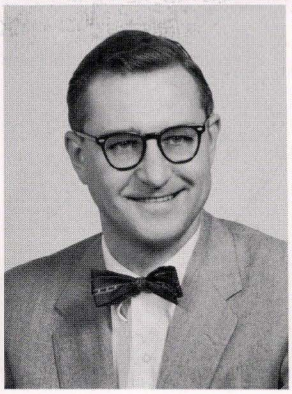
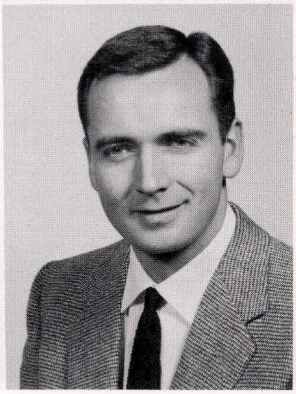
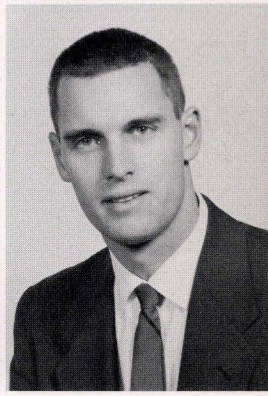



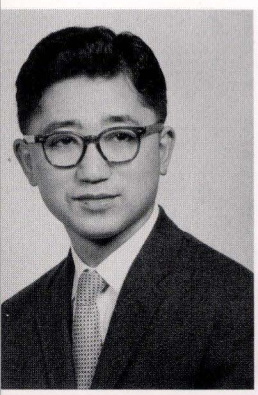
Ali A. Seif
Yemen

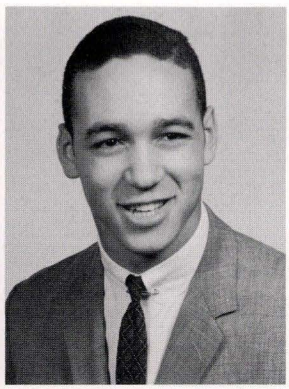
Robert Sharp
San Francisco

John M. Simpson, Jr.
Salt Lake City

William W. Spore, Jr.
San Diego



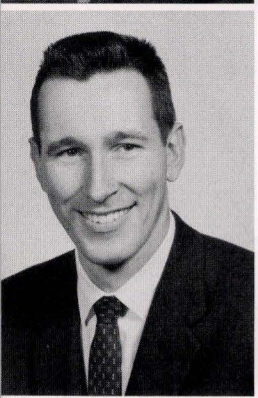
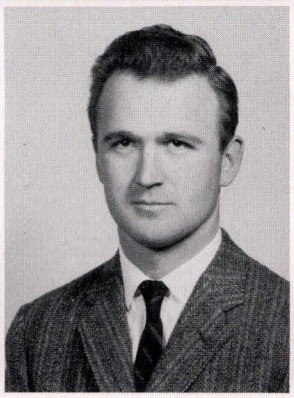



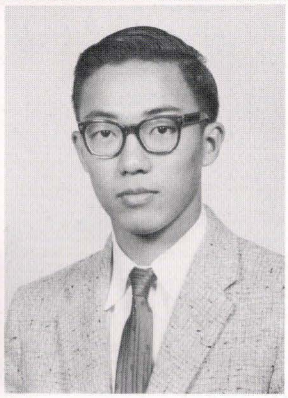
Shuichiro M. Sugimura
Maisaka, Shizuoka-Ken, Japan

Joyce H. Tanno
Phoenix, Arizona

Richard W. Warren
Tulare

Augusuts A. White, III
Memphis, Tennessee



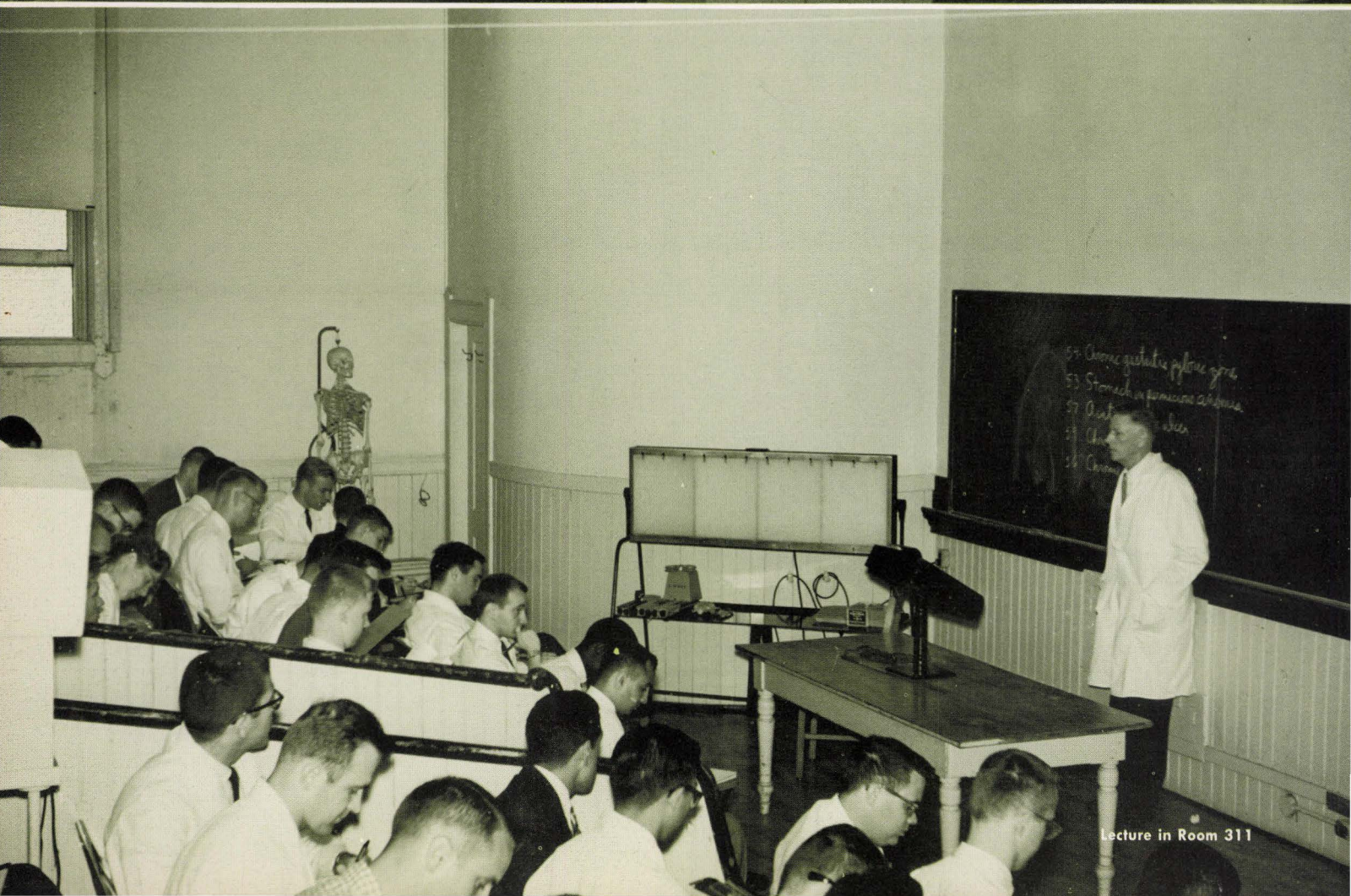
Jordan R. Wilbur
Redwood City

Edmund E. Wilkins, Jr.
Burlingame

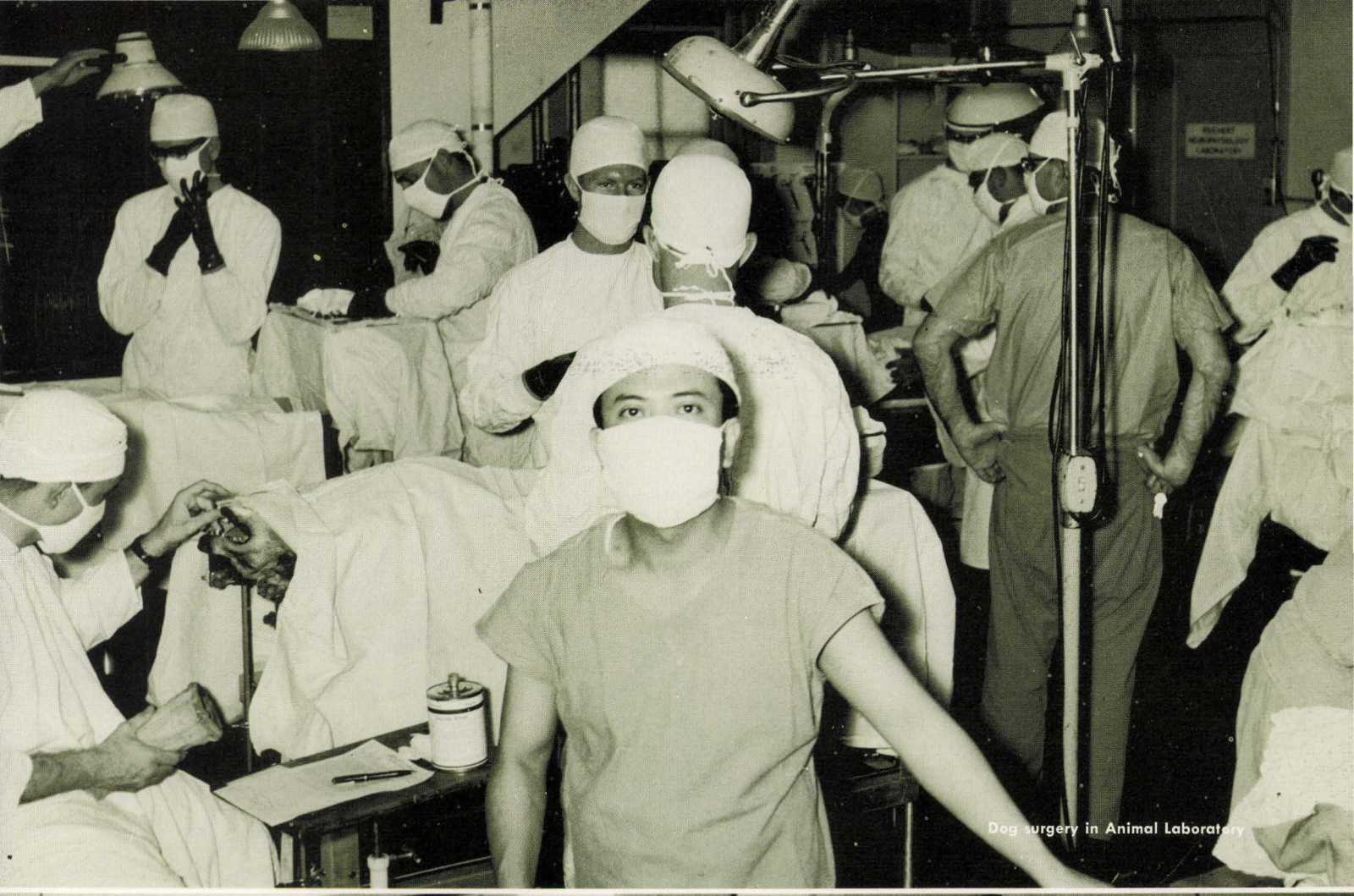
Nelson A. Wivel
Portales, New Mexico

Kou-Ping Yu
Manila, Philippines

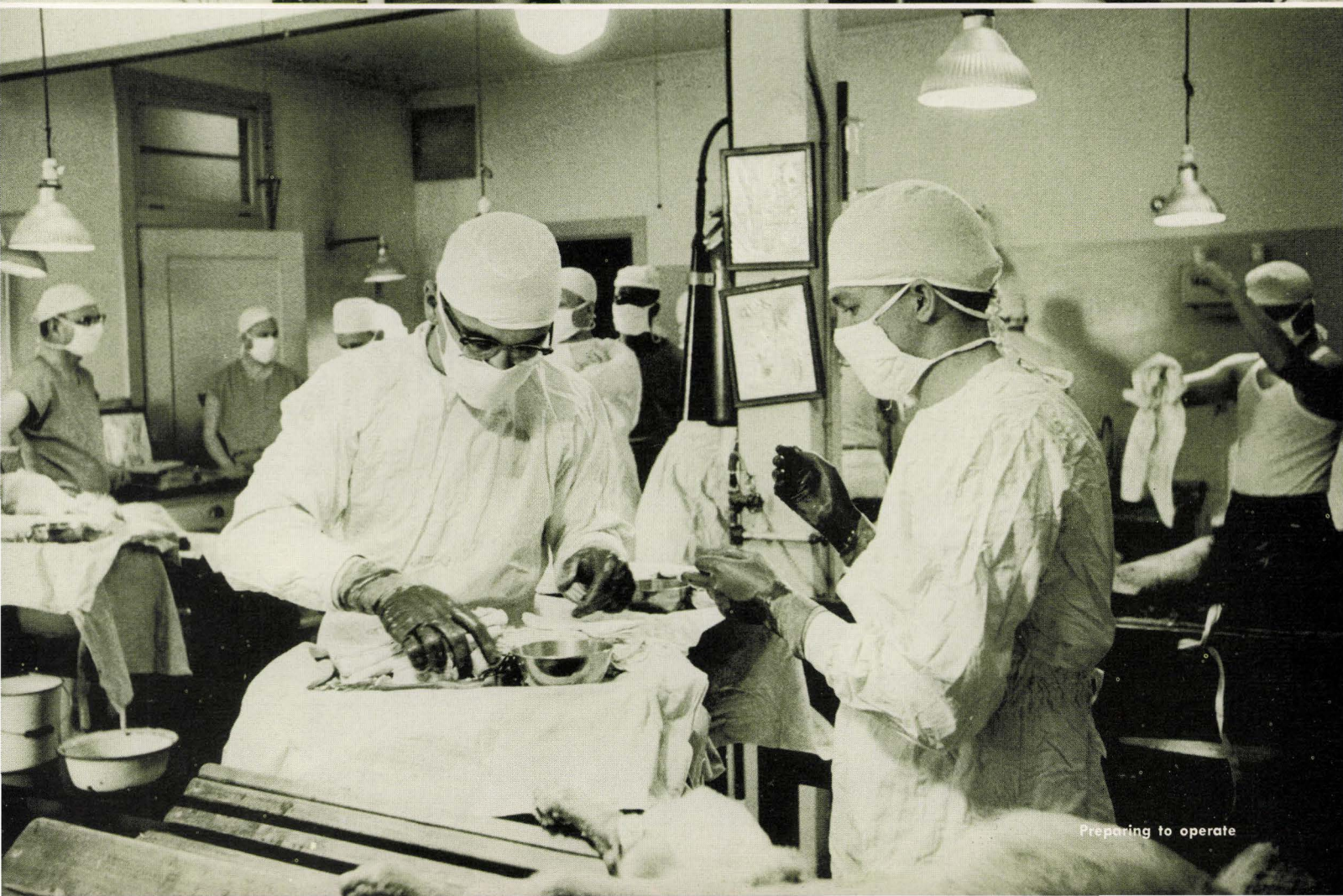
Bacteriology laboratory



Lecture in Room 311



Dog surgery in Animal Laboratory



Preparing to operate

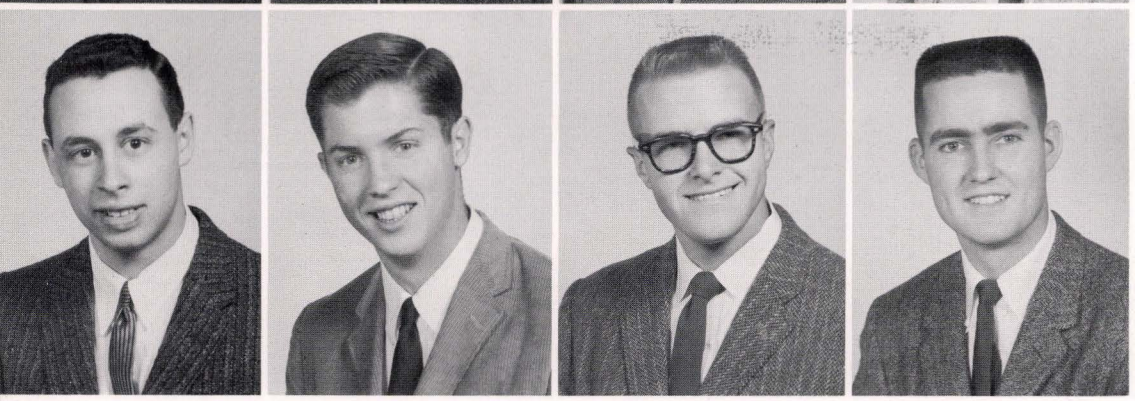
CLASS OF 1962

William E. Anspach
Palo Alto

Lawrence S. Barnett
Berkeley

Gholom R. Behbehenian
Tehran, Iran

Leslie Belsher
Palo Alto

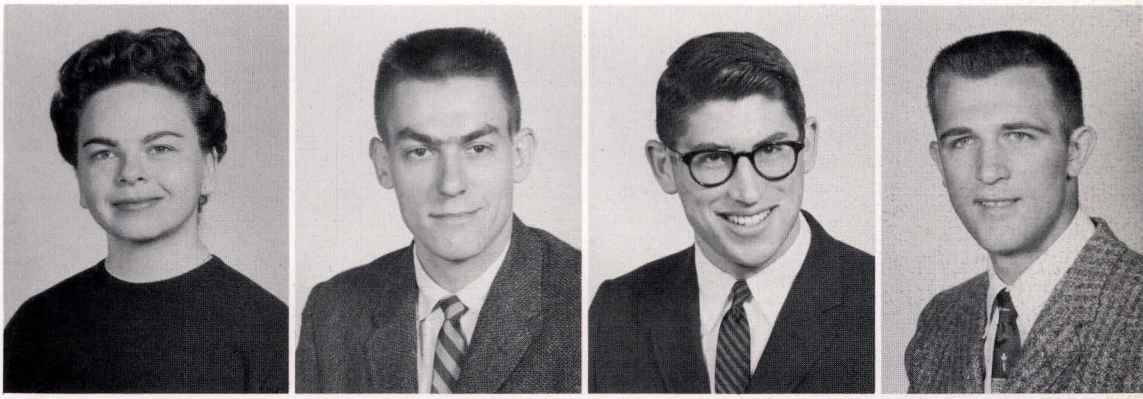


Morton P. Berenson
Portland, Oregon

Roderick Biswell
Baker, Oregon

Philip Blodget
Stanford

Edmund D. Butler
Piedmont



Sara Christensen
Bakersfield

James Clever
Tracy

Lawrence Cohn
San Francisco

Henry F. Davis
Susanville

Donald B. Doty
Hollywood

Joseph G. Ellis
Chicago

Patricia Engasser
Lakewood

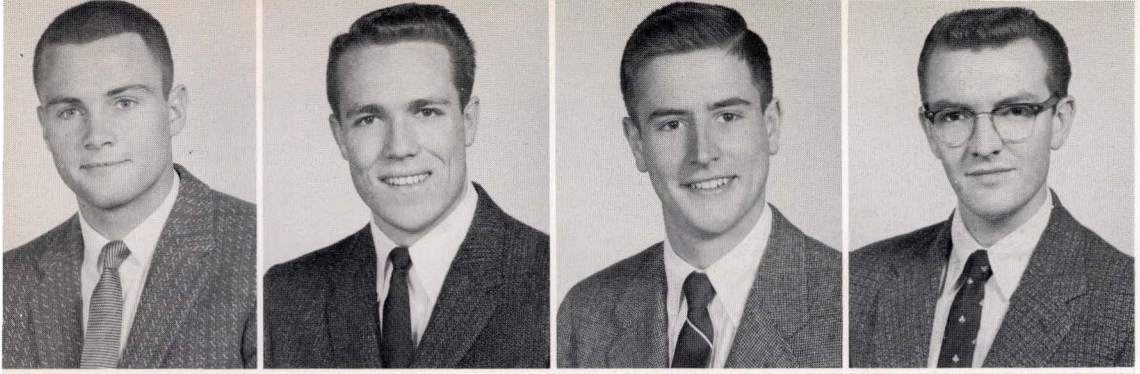
Anthony H. Engelbrecht
Phoenix

Donald R. Foster
Colusa

Edward H. Furukawa
Honolulu, T.H.

Charles J. Gibson
Lincoln, Nebraska

Henry R. Hilgard
Palo Alto

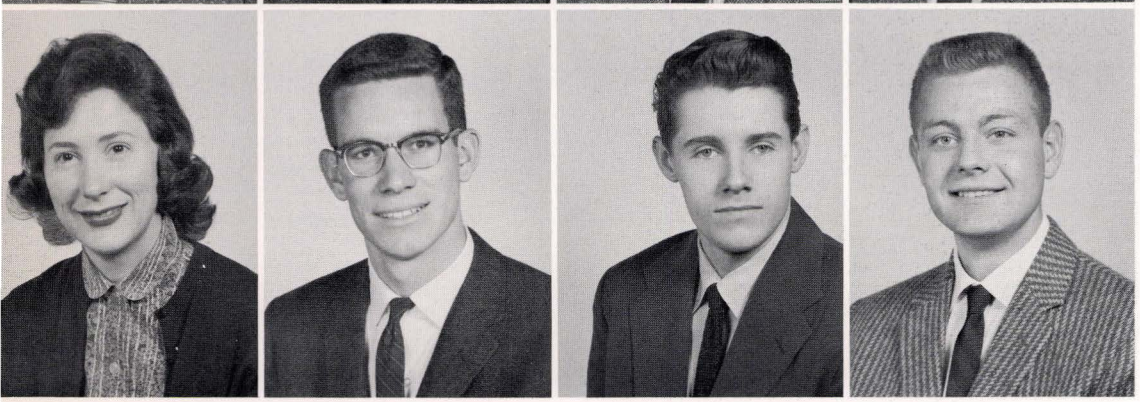


Edward P. Hoffman
San Mateo

Charles C. Jenkins
Piedmont

Paul H. Jewett
Menlo Park

John P. Jones
Long Beach



Frieda Juckheim
Grenada, Miss.

Leland E. Kellerhouse, Jr.
San Diego

Donald L. King
San Francisco

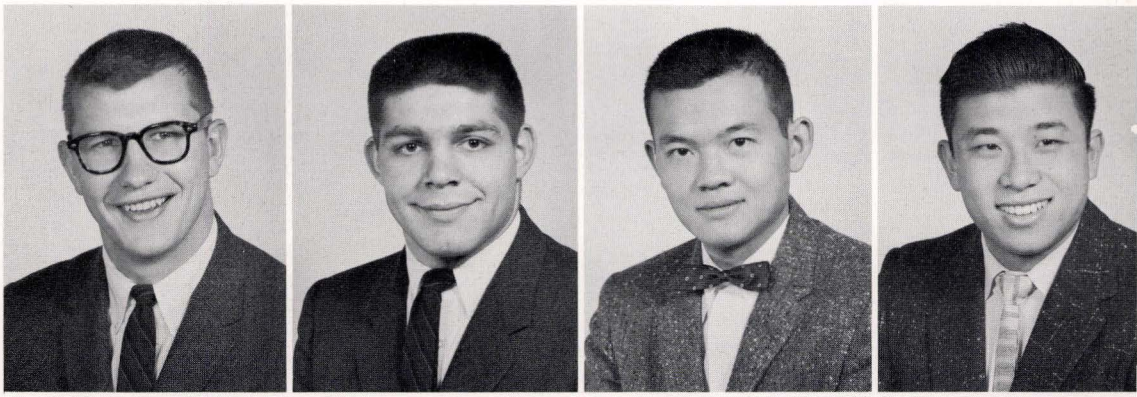
Leonard Klay
South Gate

James D. Klingbeil
Madison, Ohio

Edward Krehbiel
Long Beach

Haruo Kusamoto
Mountain View

Alan T. C. Lee
Honolulu, T.H.



Richard S. Loft
Glendale

David J. Messinger
San Mateo

Ira H. Monosson
Los Angeles

Robert Z. Morris
Stanford

Demosthenes Pappagianis
Chula Vista

Richard K. Park
Los Angeles

Gwyn P. Parry
Stanford

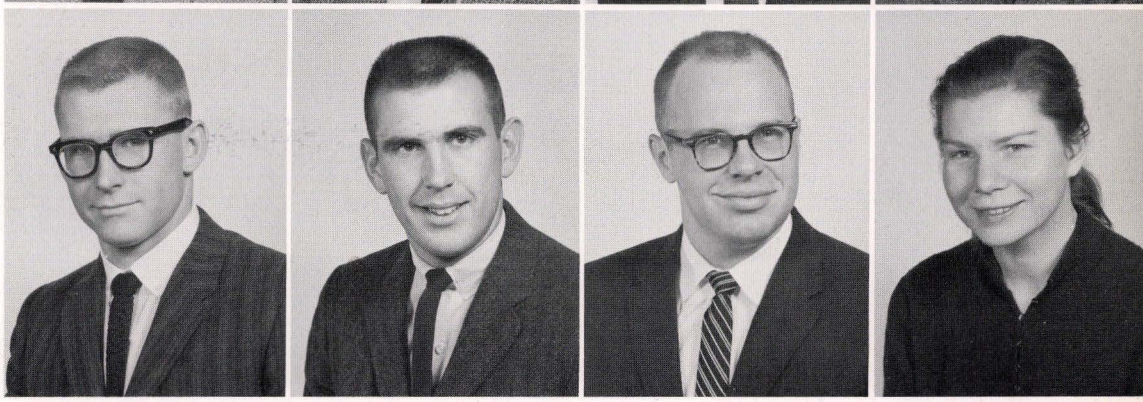
Ronald S. Poze
Palo Alto

Maurice Rappaport
Stanford

Stuart A. Reynolds
Oakland

Larry Richardson
Los Angeles

Robert F. Rider
Yuma, Arizona



Thomas J. Scully
Riverside

Eric T. Smith
San Diego

Joseph N. Smith
Fresno

Laura Thurston
Albuquerque, New Mexico

Edward D. Titus
Napa

Shirly Wang
Fresno

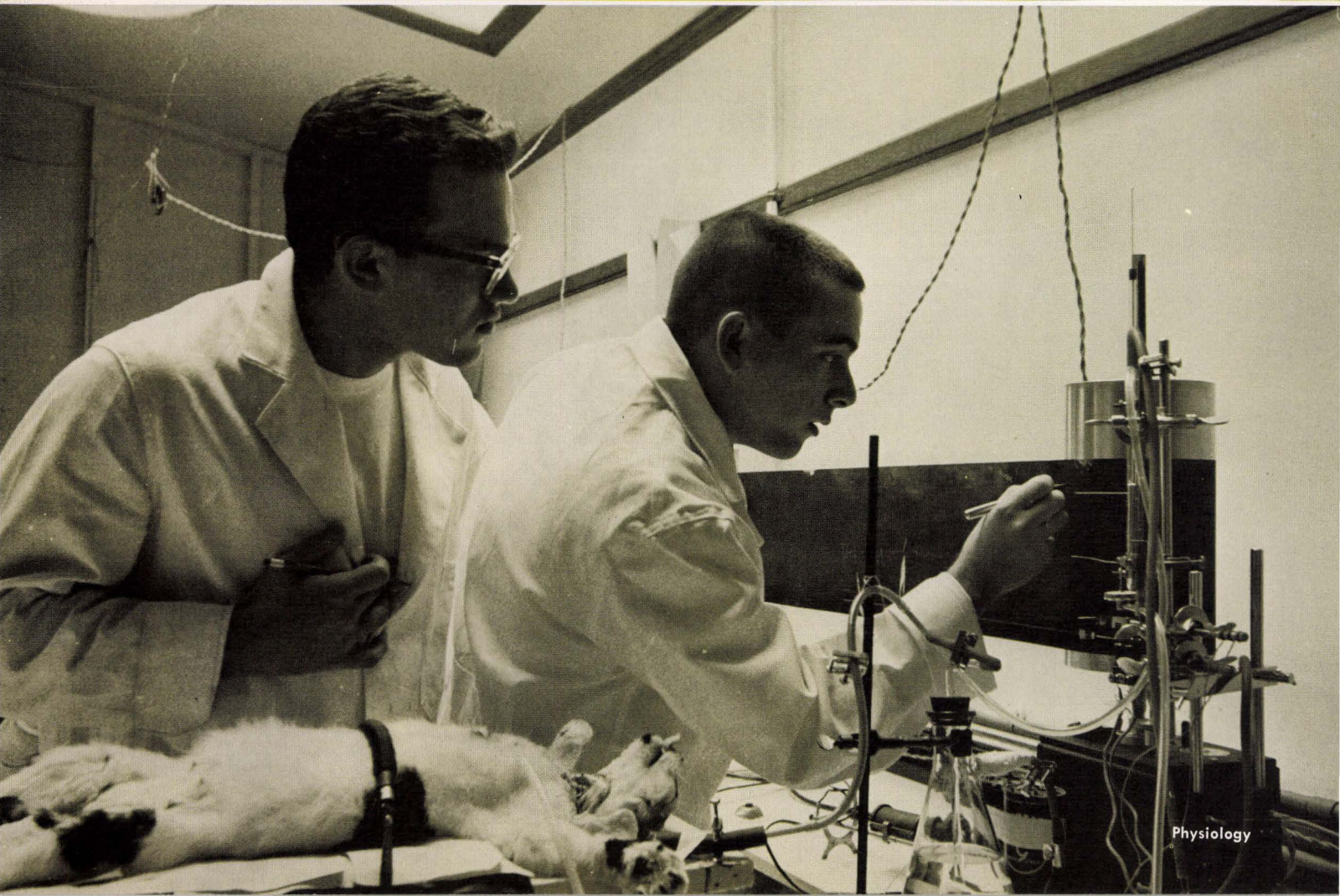
Robert L. Weinmann
Newark, New Jersey

Richard Wold
Strathmore

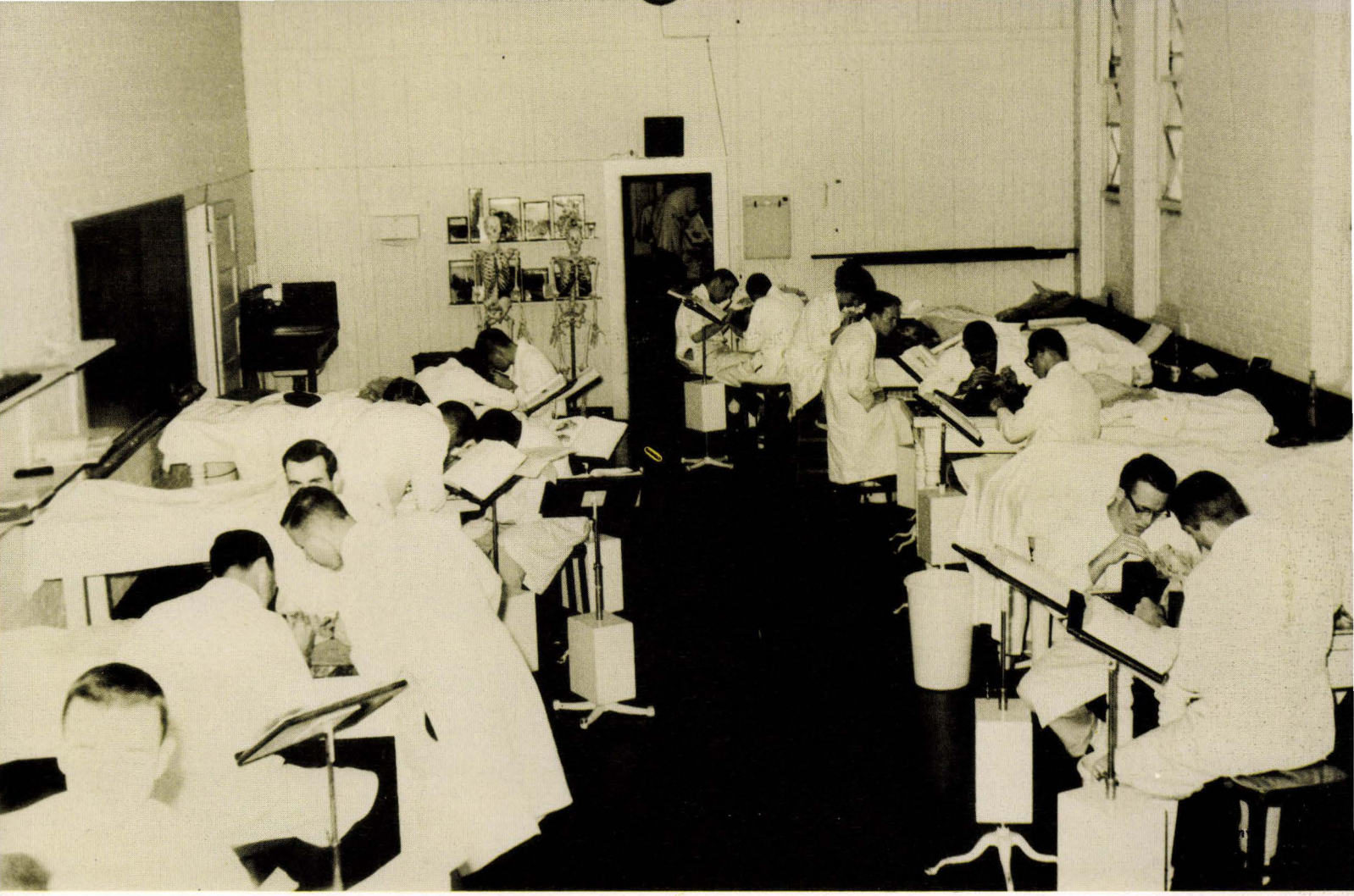
Carol Anne Yap
Honolulu, T.H.

David A. Zlotnick
New York, N.Y.

Histology



Physiology



STUDENTS NOT PICTURED

SENIORS
Gerald R. Bassett

JUNIORS
George W. H. Bailey
Sydney H. Bergman
William E. Chapman, III
Richard C. Gross
James M. Guernsey
Allan D. Nelson
Donald W. Payne
Elizabeth M. Richards
John Richards, IV
Fred Rosenthal
Joseph L. Shaw
Herbert A. Stier
Joseph M. VanDeWater
Walter J. Wilcox

SOPHOMORES
Roland M. Atkinson Jr.
Robert L. Barth
Sherman E. Butler
William T. Foster
Gregory G. Fouts
Donald M. Mason

FRESHMAN
Phyllis Bartlett
Larry Kedes
Victor R. Lavis
James McKnight
Louis W. Roloff
Marilynne Swanson

SCHOOL OF NURSING

Dorothy Benton
San Francisco

Ann Dobson
San Francisco

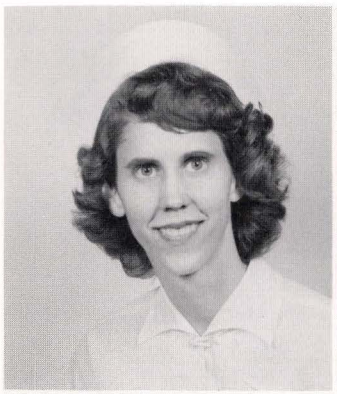
Sally Hathaway
San Jose

Marilyn Hill
Sacramento

Betty Jordan
Tormey

Sharon King
San Francisco

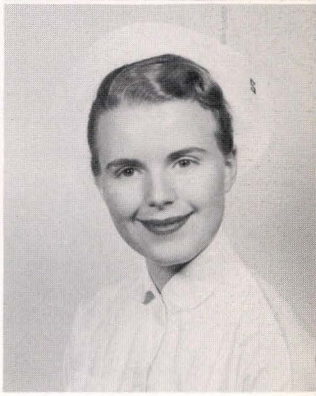
THIRD YEAR NURSES



Betsy Noble
Hollywood

Margaret O'Connor
Turlock

Suzanne Owsley
San Marino



Sheila Perkins
Santa Rosa

Sandra Prince
Crockett

Charlotte Severin
San Francisco

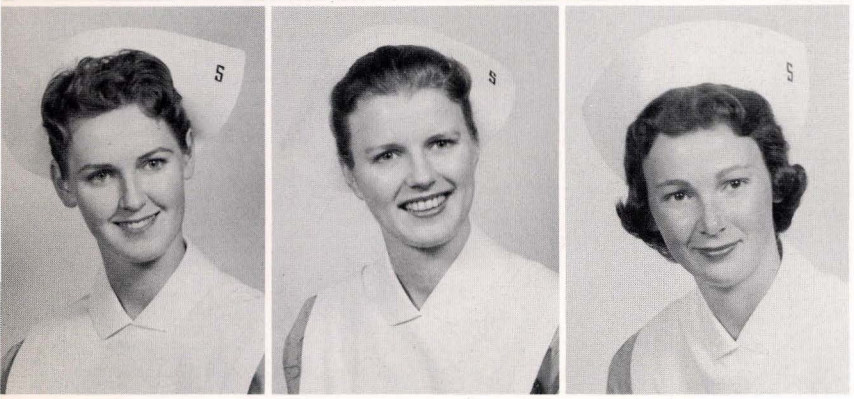
Susan Smith
San Jose

Jeanette Word
Santa Maria

Carolyn Burchell
Salinas

Rose Fadel-Idriss
Pasadena

Mary Anne Gundershaug
Lodi



Patricia Helsten
Hawthorne

Judith Johnson
Tacoma, Washington

Judy Kinsell
Berkeley

SECOND YEAR NURSES

Pauline Komnenich
Warren, Arizona

Amanda Mathews
Lemoore

Jane McKenzie
Claremont

Patricia McMillan
Healdsburg

Joan Nolan
San Francisco

Sara Olsen
Riverdale

Christine Tedesco
Albuquerque, New Mexico

Lynn Thorsteinson
Sacramento

Lidija Utehin
Riga, Latvia

Elisabeth Valinga
Burlingame

Frances Weston
San Mateo

Virginia Claussen
Concord

Carol Conger
Mill Valley

Ann Conway
Clovis, New Mexico



Kay Gillis
Kentfield

Judith Harvey
Phoenix, Ariz.

Nancy Iverson
Santa Rosa



FIRST YEAR NURSES




Carol Laughlin
Sacramento

Jane Mathis
El Toro

Patricia Merisuo
Palos Verdes Estates

Nancy Nakagawa
Los Angeles




Ruth Ann Overman
Glendale

Sandrilee Peto
Carlsbad

Linda Poppitt
San Francisco

Helen Puccinelli
Turlock




Cornelia Rogers
Arlington, Virginia

Frances Schutt
Arcadia

Kathryn Sickler
Tucson, Ariz.

Elissa Steelman
Milwaukee, Wisc.

Nancy Todd
Turlock

Suzanne Voge
Berkeley

Janet Weidenbach
Santa Barbara

Ruth Young
Oxnard

Toni Zinn
Milwaukee, Wisc.

Grace Ringressy
R.N., M.S.

NURSES NOT PICTURED

THIRD YEAR NURSES

Delphi Alvig
Barbara Beauchamp
Mary Lou VandeWater
Delores Crosetti
Sally Knapp
Kathryn DeWayne
Dorris Foster
Martha Hallin
Valerie Jelenfy
Diane Jenan
JoAnn Johnson
Sharon Kinch
Carol King
Louise Lau
Phyllis Lungren
Carol Meeks
Nancy Otto
Charlotte Rymar
LaVonne Saladin
Joanne Savage
Donna Sieck
Carol Ann Smith
Janet Smith
Sandra Tanke
Mary Weideli
Ragnhild Westly
Robin Wurzburg
Carol Yoshioka

SECOND YEAR NURSES

Loree Alexander
Doris Behneman
Gwinene Bennett
Barbara Blake
Shirley Brodeur
Nancy Schumacher
Sharon Forte
Margo Glatt
Lois Henke
Katherine Kruger
Mary Murane
Sharlene Spaans
Elizabeth Sunblad
Betty Webb

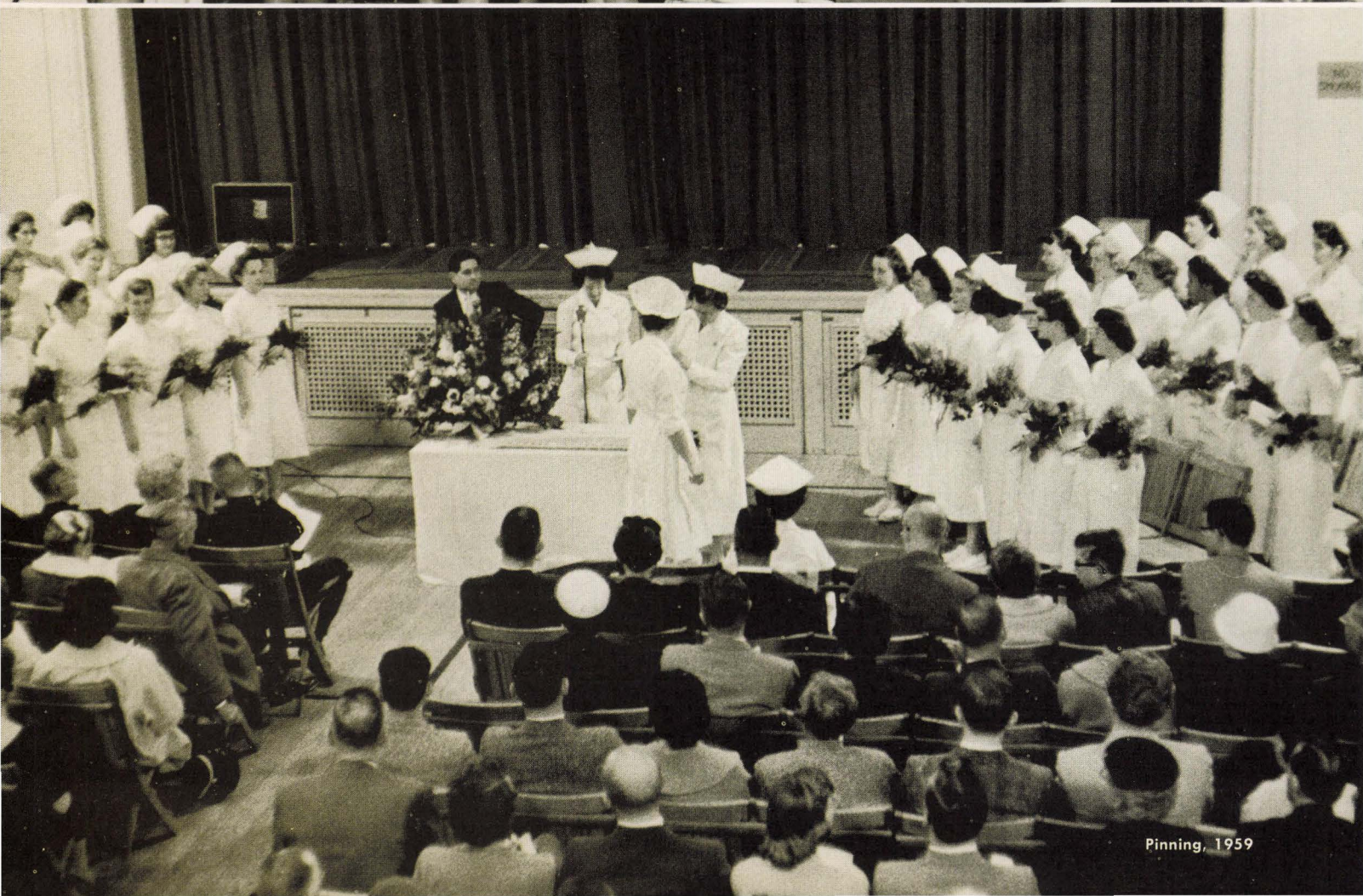
FIRST YEAR NURSES

Nancy Bernasconi
Linda Collins
Mary Anne Dolen
Catherine Holthouse
Jean Macpherson
Sharon McMullen
Betty Anne Mathewson
Margaret Rightmyer
Joan Treher

Lecture on Anesthesia

Charting on Pediatric Ward

Spring Sing Rehearsal



Pinning, 1959

LOREN R. (YANK) CHANDLER, M.D.

Dr. Chandler received both his A.B. and M.D. degrees from Stanford. Following graduation from medical school in 1923, he continued at Lane Hospital for his internship and residency training. In 1925, be became a Clinical Instructor in Surgery, and remained in this capacity until his appointment as Dean of the School of Medicine in 1933. During his 20 years as Dean, Dr. Chandler supervised Stanford's growth as it became one of the leading medical centers in the country. In 1953, he returned to his duties as Professor of Surgery; he has continued to teach since that time.

FORTY YEARS ON CLAY STREET

Although an Armistice was declared in November, 1918 and the shooting in World War I stopped at that time the universities did not get back into what resembled a normal life until the autumn of 1919. Many of the faculty and members of the student body had been off to war and most of them did not return until the year after the Armistice. The Stanford Naval Reserve unit made up of members of the faculty of Stanford Medical School returned from Strathpeffer, Scotland and those of us in the School of Medicine returned from various branches of the Armed Services to finish our studies so suddenly interrupted in April, 1917. I came back to complete my sophomore year.

The student body was limited to 25 students in each class of medicine at that time but ours was now down to 22 individuals. Tuition was $50 each quarter. Before the war we had spent the 861 clock hours required in the Department of Anatomy and had been impressed and generally aided and abetted by such teachers as Robert E. Swain in chemistry, A. W. Meyer and McFarlane in the Department of Anatomy and Clara Stoltenberg in neurophysiology. All of these great teachers made lasting imprints on our professional behavior. Edwin W. Schultz arrived in the autumn of 1919 and the following year succeeded Dr. Manwaring as Executive of the Department of Bacteriology and Experimental Pathology. This was the beginning of several changes through the decade, and, although postwar economy in the United States was booming, business was expanding and the stock market got higher by the day, there was a sense of uncertainty in the air at the medical school.

We all moved to San Francisco for our sixth quarter. In San Francisco we met another staff of great teachers, such men as A. W. Hewlett, A. B. Spalding, William Ophuls, Stanley Stillman, Emmett Rixford Sr., John Cowan, Tom Addis, Harold K. Faber, Ned Sewall, Harry Wyckoff, James Dillon, A. B. McKee and, certainly, I must include Carolyn Palmer who taught us anesthesiology. We found radiology developing in the Department of Medicine and known as the Division of Actinography. This, however, was changed in 1920, when W. Edward Chamberlin and Robert R. Newell came to Stanford as full-time radiologists.

Classes were increased from 25 to 50 in the autumn of 1920. Teaching during the third and fourth years was done jointly in the outpatient department and in the wards at Lane Hospital and the San Francisco Hospital. Most of our clinical bedside work, what might be called the clinical clerkship, was done during the fourth year. It is interesting to recall that students during that period had 98½ required hours a week scheduled during the junior year. Surgical pathology, along with fractures, was taught in the Department of Surgery by Dr. Frank Blaisdell. Stanford Hospital had been opened in 1917 and was going full blast. The country's economy was good so the hospitals and clinics were full. Outpatient visits numbered from 130,000 to 145,000 and Lane Hospital had more than 6,500 admissions per year. All of this was for the benefit of medical students and the interns. The intern situation was rather amazing in view of the present nationwide intern and residency training program. In 1920 there were 6 interns, 3 senior interns and 2 house physicians. This constituted the entire resident staff of Stanford University Hospitals. We took care of all of the patients in the dispensary and the teaching wards and were assistants to the chiefs of our various services with their private patients in Stanford Hospital.

It seems that changes never stopped during the Twenties. Tuition fees for medical students were increased to

$85 a quarter in 1921. George Barnett, affectionately known as "Uncle George" to students and graduates alike, returned full-time to the Department of Medicine in 1924, where he had charge of the Department of Medicine's activities in the San Francisco Hospital until his retirement in 1949. In 1922 residents were added to the Lane Hospital staff, one each in medicine, surgery, pediatrics and obstetrics. This was the beginning of a residency training program which then included a year of internship, a second year generally known as a senior internship and one year of residency. Nearly all of the trainees at Stanford taking such graduate training affiliated themselves with older experienced men in one way or another for a period of at least 2 or 3 years after leaving the hospitals. This same year the new nurses' residence was opened on Clay Street, a beautiful building filled with beautiful nurses.

In 1921 Dr. Paul J. Hazlik was appointed Executive of the Department of Pharmacology and promptly reorganized and expanded both the teaching and research. His excellence in teaching, rigid discipline and tremendous energy soon won him the title of "The Iron Duke" as well as the respect and admiration of all in the medical school. Dr. S. W. Hewlett died rather suddenly in 1925. He was replaced by Dr. Arthur Bloomfield, who arrived in 1926. Dr. Stanley Stillman became Professor Emeritus in 1925 and was promptly replaced as Executive of our Surgical Department by Dr. Emile Holman. A Department of Public Health and Preventive Medicine was created for the first time in 1925 with Ernest C. Dickson as its chief, and in 1928 Pediatrics was separated from the Department of Medicine and made an independent department under the direction of Harold K. Faber.

During this time we had a faculty committee to review the curriculum. This seems a perennial occurrence in medical schools and obviously does some good but the main changes in the curriculum revision in the mid-twenties was to establish a full-time clerkship during the third year and assign the medical students to the outpatient department and study of the medical and surgical specialties during their fourth year. The faculty also created a considerable amount of "free time" for the students amounting to 200 hours during the four year course. It is to be noted that all students at Stanford Medical School also had to write a thesis under the direction of one of the executives of our medical school departments before being accepted for graduation.

Changes taking place in the schedule of students' time, the addition of new members to our faculty and the promotion of many others, together with the increased student body, now numbering 50 students in each class, made it mandatory that the work of the clinical years be divided pretty equally between the wards at the San Francisco Hospital and the smaller wards and the outpatient dispensary at Lane Hospital. However, all of these changes were improvements in our teaching program and created new interests and activities in research, both laboratory and clinical. The surgical experimental laboratory was expanded by Dr. Holman and attracted students and graduates alike. Doctors Addis, Bloomfield and Faber all had guinea pigs, white mice, and Russian rats all over the medical school building. Dr. Ernest Dickson already was playing with coccidiomycosis. Investigations of a single problem by several different departments became common for the first time at Stanford.

In 1927 the University administration, a planning committee from the medical school and a prominent firm of architects made plans for a new medical school facility in San Francisco. This was to include a new building for the outpatient dispensary, a women's hospital, a children's hospital and a new addition to house a Department of Psychiatry and, also, a special unit for orthopedic surgery. Building plans called for $3,750,000 for construction. Enthusiasm ran high, all we needed was money. The search for funds continued into the Thirties, but more of this later.

In recalling these individuals and happenings in the early years following the first World War, I am impressed by the numerous changes in the medical school activities. The new faculty members, increased student body, interest and activity in research, heavy teaching schedules, plans for new buildings and further expansion of clinical services and the drive for the "First Million for the Medical School" stand out in my memory as "The Changing Twenties."

Most everyone who remembers the decade between 1930-1940 generally thinks of it as "The Depression Thirties" and those of us at the medical school were no different than anyone else. It seemed that everybody was depressed for nearly four years. The world depression, which had been going on for several years, caught up with the United States and was signalled by the stock market crash in October, 1929. During the two trading days on the security markets, Friday, October 26 and Monday, October 29, more than 25,800,000 shares were sold in a rapidly collapsing market. This tremendous bust actually followed by several months a complete slowdown in national economics and business in general. The impact was felt almost immediately on the medical school.

In San Francisco unemployment increased so that by the latter part of 1930, approximately 12% of the residents of San Francisco were unemployed, had nothing with which to buy food, shelter, clothes or medical care. San Francisco City established a citizens' Committee on Relief, headed by the late Judge Max Sloss. Under this volunteer committee a group of three physicians set up a program of medical care in the homes, outpatient departments and City and County Hospital for this large number of people on relief. Visits to our outpatient department rose in the first year of the national depression to about 169,000 visits, Lane Hospital admissions dropped more than 35% and Stanford Hospital, usually occupied by patients who were financially able to pay their own way, had less than 50% occupancy. As a matter of fact, for 2½ years the third and fifth floors of Stanford Hospital were closed, all the furniture and equipment was covered with sheets. San Francisco City and County Hospital admissions increased by more than 40%. Executives of our clinical departments were constantly crying to the medical school and hospital administration for more free bed funds. They were unable to train physicians without patients. The teaching wards were half empty most of the time. Nurses were unemployed and in those days there was a significant number of well trained nurses who confined their work to special duty nursing in hospitals and homes. Stanford Medical School offered room in the nurses' residence and two meals a day plus a few dollars a week to as many unemployed nurses as the residence would accommodate. These splendid girls gave of their time in the various wards and on the floors but took turns on the nurses' registry list at taking new jobs. No one took two jobs in a row until everyone on the list waiting for employment had a job.

All of this was carried on at the local city level until 1933, when business began to pick up. The federal government took over the financing of relief activities and we

were promptly swamped with such agencies, commissions and subdivisions thereof designated by various alphabetical titles, including OPA, NRA, WPA, PWA, etc. However, by the end of the summer of 1934 the medical school and its activities were back pretty much to normal.

The big plans for a new medical school received a real shot in the arm as far as money raising was concerned by an offer, from an Eastern donor and his own foundation, of two and a half million dollars providing Stanford University could raise one and three quarter million dollars to match this amount by local or regional gifts. Inasmuch as this had to be completed by February, 1932 and the fact that there was a terrible financial depression, growing worse by the day, no great effort was made in a fund raising campaign. The deadline date came and went, we could not meet the requirements so we were back where we were in 1926, nice plans but no money.

In spite of the depression the University administration increased the tuition to $115 a quarter and added a few extra charges for laboratory breakage, etc. In 1931 straight internships were established at Lane Hospital and a real program of residency training was initiated in nine departments. The resident staff now consisted of 15 internes, 12 assistant residents and 9 residents. The requirement of a thesis before qualifying for graduation was also discontinued the same year. In the spring of 1933 the Stanford Medical Alumni Association was formed with the late Dr. Morton Gibbons as its president. This proved to be a great achievement and brought the alumni, faculty and medical school administration into a close, friendly active group.

In 1933 the student body was increased to 60 in the entering class. A curriculum study was made again. This time the changes were insignificant and consisted more of scheduling of student and faculty time rather than any basic change in subject matter or pedagogic techniques. A student health service was established, including medical care in the hospital and clinics for all members of the student body. After much discussion and review of postgraduate teaching the medical school embarked on a series of postgraduate review courses in the summer of 1935. These were directed towards physicians in active practice who could return to San Francisco and spend one full week in intensive review work, both clinical and didactic, in any one of several subjects. These were highly successful right from the beginning and in one form or another are still being conducted.

There were a number of changes of importance in the faculty during this time, too. Dr. Emmet Rixford became Emeritus in 1930 and was succeeded by Dr. Leo Eloesser as Chief of the Stanford Surgical Service at the County Hospital. Dr. Eloesser, known as the "Little Giant" because he worked practically any and all hours of the 24 every day, continued his active service until his retirement in 1944. It was Leo Eloesser who pioneered in thoracic surgery on the West Coast. Dr. Leonard Ely, Chief of our Division of Orthopedics retired in 1934 and was succeeded by Dr. Donald King, at that time a handsome, enthusiastic and energetic well-trained orthopedist, whom we brought back to Stanford after several years at the University of Michigan. Dr. Henry Mehrtens' sudden death created a vacancy in neurology and psychiatry and he was succeeded in the autumn of 1933 by Dr. George S. Johnson. Dr. Johnson opened neurology and psychiatry teaching to the wards in general medicine and surgery and developed teaching in what is commonly known as psychosomatic medicine shortly after his arrival. Dr. Alfred B. Spaulding was given a leave of absence and early retirement from the faculty because of illness and in 1934 Dr. Ludwig Emge took over the administration of the Department of Obstetrics and Gynecology. A. W. Meyer's retirement in 1938 lead to the appointment of Dr. Charles H. Danforth in the Department of Anatomy. Ernest C. Dickson was followed in 1939 by the appointment of Charles E. "Snuffy" Smith in Public Health and Preventive Medicine. Stanford Medical School absorbed the San Francisco Polyclinic service at San Francisco Hospital in 1933, thus putting the administrative responsibilities and opportunities of professional medical care and teaching at the San Francisco Hospital in the hands of the medical school faculties of the University of California and Stanford.

We received a magnificent gift from the late Mrs. Lucy Stern, known to Stanford students as "Aunt Lucy." This was a promise to pay the bills for the construction of a building on Clay Street to be devoted entirely to medical research. This was like money from home. Promptly, and without delay, a building was planned and constructed, equipped, dedicated and opened for operation in the autumn of 1939, Mrs. Stern paying all the bills. To this day I don't know and I don't know anyone else who does know exactly how much that building and its extras cost.

The same year we established a child guidance clinic under the immediate direction of Dr. Hale Shirley, who held a joint appointment in psychiatry and the Department of Pediatrics. This division has really flourished in the past 20 years and has made a splendid record of its activities, both teaching and investigations.

I was impressed by the impact of the economic depression on the applicants for admission to medical school as I had been impressed in the "Changing Twenties" with the effect of a boom. During good times, economically, outstanding students can get employment or places in attractive work without spending as many years in college as is necessary to get an M.D. degree. During the depression, however, most students couldn't get a job no matter how bright they were because of the tremendous nationwide unemployment. Therefore, students stayed in the colleges and universities for advanced or graduate work. Many of them were attracted to medicine.

The latter half of this decade was peaceful. The depression was over, national economy had improved, unemployment dropped and the medical school added to its faculty from time to time. The faculty, many of them acquired during the late twenties and early thirties, consolidated into a happy, enthusiastic, cooperative team. An annual Senior class-Faculty dinner, given the last day of examinations for the senior class was established in 1935. Revolving loan funds for students needing financial assistance were enlarged. Gifts for research increased. Although the war, which already had started in Europe, cast a shadow over our future plans during the last part of the "Depression Thirties," nevertheless, Stanford Medical School was a happy ship during this period.

The peaceful progress at the medical school was interrupted in 1940 by the declaration of a state of National Emergency and the establishment of compulsory military service for all males from 18 to 36 years of age. Actually, the beginning of the "Fighting Forties" was October 17, 1940, when the orders went out from Washington to establish selective service agencies and put them in action throughout the various states and counties. Volunteer selective service boards were established by districts within larger cities and in all counties. The immediate problems of the medical school were the deferment from military service of medical students so they could com-

plete their medical education and serve as physicians, secondly, some method of deferring premedical students who were likely candidates for admission to medical schools and, third, the problem of maintaining an adequate faculty.

These three problems required much discussion between medical school and university administrators on the one hand, the Secretary of War and the divisions of manpower and selective service headquarters in Washington on the other. This required many meetings and trips by air between San Francisco and the East Coast. Eventually a system was worked out whereby all medical students in good standing were to be deferred until graduation and completion of an internship. At that time they were to be inducted into the Armed Services if physically fit.

Reserve units were brought up to full strength. This included about 6 medical corps reserve units in San Francisco. Plans were made to reduce the faculty to minimum essential personnel but the dark days of war came with the bombing of Honolulu on December 7, 1941. Immediately, practically everything in the United States went on a war schedule. Industry began to expand, employment on the West Coast doubled or tripled, new ship yards were built, airplane factories, munition plants, equipment manufacturers went into high gear.

Shortly after the Declaration of War the medical schools went on a continuous teaching program known as the 9-9-9 Medical Plan. This meant that Stanford Medical School opened its regular classes in September, 1941, continued for the 9 months ending on a Friday afternoon in June, 1942, but the following Monday we began the next academic year. This continued throughout the period of war and during the four years we graduated five classes from the medical school.

The need for young physicians in the Armed Forces was tremendous and for this reason the medical schools of the United States adopted the continuous teaching program. Approximately 35% of our faculty were away on military leaves of absence. We at Stanford agreed that there would be no faculty promotions of those who remained home as long as the war lasted and only such replacements as were essential would be made. The concentration of subject matter, the continuous teaching program without vacations, the minimum faculty doing the work resulted in some deterioration of the quality of our medical school teaching. Non-military research was reduced almost to a minimum but new investigations were undertaken, usually at the request of some branch of the federal government. In Washington an overall director of research financed in part or in whole by tax funds was established as the Office of Scientific Research and Development, usually called O. S. R. D. It was directed by Dr. Vannevar Bush of the Carnegie Institute. This turned out to be highly advantageous, extremely successful and operated at a high degree of efficiency.

Also, shortly after the war all students of draft age, including premedical students, were put under the direction of the Army or Navy. The A. S. T. P. Army Student Training Program) and the Navy V-12 program for premedical and medical students were established in the universities and medical schools. This meant a military headquarters with officers and personnel to direct the non-educational activities of the students. Students were on active duty in uniform, paid as soldiers, assigned to duty at their respective medical schools, had extra military training in addition to their medical school studies. This also created an atmosphere of rush, shortcuts, excitement and, at times, deep frustration on the part of everybody involved.

Because of the speedup in industry, particularly in the San Francisco Bay Area, salaries kept rising to a fantastic amount for day labor, either full-time or part-time. There was no unemployment in this area for anybody who was employable and wanted a job. All of this had definite effect on the hospitals and clinics. Visits in our outpatient department dropped down to about 104,000 a year, a 35% drop. Lane Hospital admissions dropped more than 25% to about 4,200 a year. Stanford Hospital, occupied by those who could pay their own way for hospital and medical care, increased its occupancy by some 52% the first year. The San Francisco Hospital occupancy and admissions remained about the same. A good example was the change in the Delivery Room. In the year 1940-1941 Stanford Hospital had less than 800 deliveries. During 1941-1942 our deliveries increased to more than 1700. Fortunately in 1939 we had completed the construction and had occupied a new Lying-In Suite, an addition to the East wing of the top floor of Stanford Hospital. This was made possible by gifts from friends of the medical school and provided three delivery rooms, several preparation rooms and five bed rooms. Expectant mothers could be admitted to the hospital, go directly to the Lying-In Suite, go through labor and delivery, then make one move to the hospital accommodations after the birth of the child. Without this the increase in deliveries would have swamped out old facilities completely.

The interns were permitted to serve a 9 month service and then enter the Army, Navy or Air Corps. There were no deferrments for residents beyond the 9 month internship except for those who were already in their training when war was declared. We secured deferments for essential faculty but the number of men in various departments became very thin towards the end of the war and most of our faculty was dreadfully overworked. We tried to maintain as best we could our prewar standards, teaching methods and service activities and on the whole did a pretty terrific job. The adoption of the 9-9-9 program was very unwise as an educational procedure, however.

One of the outstanding memories of those days is the annual Senior Class-Faculty dinner. They were great

events because each class membership was scattered to the four corners of the world within a day or two afterwards. One of the best was the dinner party of 1944. There were several good musicians in this class and the music that was written for the senior play included such songs as "The Clay Street Blues" and several others that are still good and appropriate and, at times, still sung at medical school gatherings. The Dean had a transcription made of "The Clay Street Blues" by the quartet before they left. Records were made and sent to as many of our Stanford Medical School graduates who were in the Armed Services as possible.

Even though the war was on we made a few lasting and significant changes during the four year period. In 1942 our Medical Alumni Bulletin was changed to the Stanford Medical Bulletin and published jointly by the medical school and the Alumni Association. This became and has remained one of the best publications at Stanford. In 1944 the University Board of Trustees asked the president to review everything that Stanford was doing, to determine what was good and should be kept and expanded, what wasn't so good, should be improved or stopped and what we were not doing that we should be doing. This included the medical school and such a survey was made by a committee headed by Dr. Harold K. Faber. The study lasted until 1946 and at that time recommendations were made as a result of the findings. The important one was that the medical school should be modernized and expanded as far as buildings were concerned in San Francisco. After Board of Trustee approval, plans and specifications for a new medical school building were made and definite fund raising for the School of Medicine was incorporated in an overall plan of securing additional gifts and contributions to the University as a whole. No great progress was made, however, and the death of President Donald Tresidder in January, 1948 put all these plans and activities in abeyance for a considerable length of time.

In 1945 the Mission Emergency Hospital, housed in the San Francisco Hospital on Potrero Street, but operated, financed and administered by the San Francisco Department of Health through a separate division known as the Emergency Hospital Service, was incorporated into the San Francisco Hospital. This meant that the faculty, students, interns and residents of the two university medical schools had entire charge of all patients admitted to the Mission Emergency as well as to the San Francisco City and County Hospital. This made quite an improvement in our teaching material.

The war ended in 1945, at least the shooting stopped even though permanent peace was not established. The 9-9-9 program ended for Stanford at a fortunate time because we finished our regular academic year in June, 1945 and had our first vacation since the summer of 1941. The 9-9-9 program did accomplish its purpose, however, which was to supply young physicians to the Armed Services. More than 36,000 young doctors went from the medical schools into the Armed Services during this 4 year period. V-12 and A. S. T. P. units were disbanded and the medical schools went back to civilian status. Most of our faculty, however, did not return until the summer of 1946 so that we were still short handed during the year 1945-1946.

Most of us thought we were back to peaceful progress again but we were immediately overwhelmed with the details of administration and execution of the Veteran's educational benefits. These benefits provided tuition and certain living expenses for veterans whose educations had been interrupted or had not actually begun. Of course this included medical and premedical students. About 2/3 of our student body were veterans so the registrar, accounting department and medical school executives were overwhelmed with paper work, end of quarter reports and questionnaires. Residencies were expanded, refresher courses were in great demand, fellowship funds were obtained to enlarge our graduate teaching program and in 1948 the tuition was raised to $233 each quarter. In 1948-1949 Stanford-Lane Hospitals had 17 interns, 38 assistant residents, 11 residents and 38 fellows. Most of the latter were assigned as additional members of the resident staff or fellows in research. In 1948 radiology was changed from a division in the Department of Medicine and given departmental status in the medical school.

Times were good and a post-war civilian boom started in 1946 which again influenced our hospital and teaching program. Outpatient clinic visits rose by another 9,000 or 10,000 per year, Stanford Hospital admissions rose to 8,000 and more. Lane Hospital admissions reached over 6,100 in 1948.

On July 1, 1946 Stanford and the University of California Schools of Medicine took over the professional staffing and medical care of all the patients in the Fort Miley Veteran's Hospital. This arrangement was made possible by the Veterans Administration by the establishment of the "Deans Committee Veterans Hospitals" throughout the country. These teaching facilities were available for interns and residents but not for medical students. Our affiliation has proved invaluable, both to the Veterans as well as to the medical schools.

Several members of our faculty developed keen interests in the technique of heart catheterization as a diagnostic procedure in heart disease. After considerable study and much hard work on the part of several of the staff, new monies were secured, space found in the hospital and the cardiac laboratory was opened in March, 1949, Dr. Herbert Hultgren in charge. Actually, the activities of the laboratory were a joint venture by cardiologists, radiologists, chemists, physiologists and surgeons. At present, this laboratory examines about 25 patients per month and has expanded its activities to include respira-

tory functions and research of several kinds in heart disease.

By virtue of university rules and birthdays and in one or two instances, raids by other universities, Stanford Medical School went through a great turnover in executives of departments and chiefs of service after the war. Dr. Eloesser became Professor Emeritus in 1944 and was succeeded at the San Francisco Hospital by Dr. Carl Mathewson, who took charge of the surgical service as soon as he was discharged from the Army in the autumn of 1945. Dr. Robert McNaught succeeded Dr. Bacher in Ear, Nose and Throat and Dr. Emge was succeeded by Dr. Charles McLennan in 1947. Dr. Wyckoff became Emeritus that year, as did Dr. Tom Addis. Dr. John Luetscher joined our faculty, Henry Kaplan succeeded Bob Newell in radiology and Ed Maumenee succeeded Hans Barkan in ophthalmology, all in 1948. "Uncle George" Barnett retired in 1949 and was succeeded by J. K. Lewis. Henry Weyrauch succeeded James Dillon in urology, Bill Greulich followed Danforth in anatomy, Jeff Crismon succeeded Weymouth in physiology and John Anderson followed Harold Faber in pediatrics. Rodney Beard took over where "Snuffy" Smith left off in public health and preventive medicine, all in the year 1949. We regretted losing "Snuffy" Smith because he moved from Stanford to the University of California as full Professor and Dean of the School of Public Health.

This ended about 20 years together for this group of outstanding members of our faculty as most of them became Chiefs of their departments or divisions in the Twenties. In recalling the individuals and happenings of this period I am impressed by the tremendous amount of teaching of undergraduate medical students, interns and nurses that was done by the men of professorial rank. The leaders in every department spent large blocks of their time in the classroom, laboratories, wards and clinics. This, to me, has been a most potent factor at Stanford Medical School.

In trying to recall the outstanding events which have occured on Clay street as well as throughout the Nation during the past 10 years, I find many things that are exciting, thrilling, some of them almost unbelievable, most of them good, but some of them confusing. Even the so-called "police action" which began in Korea in June, 1950 and did not end until the summer of 1953 is already a little hazy as far as details are concerned. We have more atomic fission and fusion, then jets, missiles, satellites and now moonshots. There has been deficit financing, new faculty committees, submarines under the ice, business booms and bulls in Wall Street, higher taxes, sport cars, real estate subdivisions, linear accelerators, heart surgery, instant coffee and research in dozens and dozens of fields. All of this makes me identify the present decade as the "Fabulous Fifties."

Actually, the Korean War did not affect the medical school nearly as violently as did World War II. Some of our younger faculty members were called to active duty, come of our students, both medical and premedical, had their plans upset but on the whole the medical school weathered this 3 year period with far less struggle than we had in 1940-1945.

In March, 1951, the Board of Trustees reaffirmed their intention to proceed with the plans to expand and modernize the medical school in San Francisco. These plans were based on the recommendations and studies of the Faber Committee, which submitted its report in 1946. The Alumni and the public were informed. A drive for funds was started. However, in the spring of 1952 the University Administration decided to review again the whole problem of the medical school's future. A new committee was appointed to study what would be best for medical education at Standford. This committee did a very thorough job and reported to the President of the University in the spring of 1953. On July 16 of that year the Board of Trustees announced the plan to establish a new medical school on the Stanford campus. Immediately there was great activity for these future plans. Fund raising, architects and building plans, new equipment and construction were given immediate attention. Faculty committees were appointed to study curriculum content, methods of teaching, integration of subject material, educational objectives and operating budgets. All this work had to be done in addition to regular medical school duties.

Many faculty changes have taken place in the last 10 years. In 1951 Dr. Paul Hanzlik retired and was succeeded by Windsor Cutting as Executive in the Department of Pharmacology. Dr. Cutting, however, was promoted to Dean of the School of Medicine in 1953. That same year Dr. Edward W. Schultz became Professor Emeritus and was succeeded as Executive of the Department of Bacteriology and Experimental Pathology by our own Dr. Sidney Raffel. In 1954 neurosurgery, as a division of our Department of Surgery, was established under the direction of Dr. John Hanbery. Psychiatry finally was weaned from the Department of Medicine and given departmental status with George S. Johnson as its Chief. The same year Dr. Arthur L. Bloomfield, "The Professor" for 28 years at Stanford retired from our faculty. He was succeeded by Dave Rytand.

In 1955 the Department of Bacteriology and Experimental Pathology expanded its activities and changed its name to Medical Microbiology. Dr. Holman became Professor Emeritus and was followed by Dr. Victor Richards as Executive of the Department of Surgery. On November 18, 1955 the new linear accelerator was dedicated in our Department of Radiology at Stanford Hospital. In a matter of weeks the first patients were receiving super voltage therapy from the new instrument. Dr. Avram Goldstein joined our faculty in 1955 as Executive of the Department of Pharmacology. Dr. Edward Maumenee resigned to accept the Chair in Opthalmology at Johns Hopkins University and was followed by Dr. Dohrmann Pischel. Dr. John

Anderson resigned to accept a post in pediatrics at the University of Minnesota School of Medicine and Dr. Robert Alway was appointed his successor at Stanford. In September, 1955 a Board of Governors was appointed to be the administrative body of Stanford Hospital. The direction of Stanford Hospital was removed from the School of Medicine and placed directly under our Board of Trustees through the hospital Board of Governors. The next year, 1956, tuition fees for medical students were raised to $355 a quarter, which is 6½ times greater than the tuition fees were at the beginning of this tale.

During these early years in 1950 research activities were increased in all departments, stimulated by the inquisitive interests of our own faculty and aided greatly by funds available for research from the federal government, societies and foundations for special diseases as well as from private donations. The Cardiovascular Laboratory had created much interest in the young specialty known as heart surgery and active experimentation was conducted both by surgeons, radiologists, physiologists, chemists and others working as a team. Our personnel was increased for research. There were numerous additions to the faculty. Research fellowships were made available and teamwork, including those who could contribute substantially to an investigation, became a most productive method in many fields. Our first open heart operation was performed in March, 1956, using an artificial heart-lung machine, actually developed, designed and built here. By the end of 1956 Stanford Hospital had 16 residents, 75 assistant residents and 16 interns, a resident staff of 107 people, many of them working in research laboratories as well as clinics and wards.

The economics and business boom which really started after World War I continued. The nation's industries were expanding and the bulls were loose on Wall Street. Again the national economy affected our clinics and hospitals. Visits in our Outpatient Department decreased from 115,000 in 1950 to about 98,000 in 1958. Admissions to our clinic wards dropped from over 5,100 to about 4,300 during the same time.

In 1957 Dr. Windsor Cutting resigned as Dean. He was followed by Dr. Robert Alway, who first assumed his duties as Acting Dean, but shortly accepted a permanent appointment. In 1958 Lane Hospital was condemned by the California State Bureau of Hospitals for further care of bed patients. This really created a problem for patients, staff, students and administration. All patients in Lane Hospital had to be moved and provisions made in Stanford Hospital for their care. This meant doubling up 2 or 3 beds in rooms that were not originally built for such purposes. Hospital employees were overworked, patients were crowded together and accommodations were unsatisfactory much of the time. However, as the old song "Clay Street Blues" says, "Life went on just the same" even under handicaps of this kind. At present, there are only 15 private rooms in Stanford Hospital, all others have 2 or more patients in them.

With the beginning of the academic year, 1958, Dr. David Rytand resigned as Executive of the Department of Medicine, Dr. Victor Richards resigned as Executive of the Department of Surgery and Dr. George S. Johnson resigned as the Executive of the Department of Psychiatry. This spring Stanford University decided to give up its teaching affiliation with the San Francisco City and County Hospital effective July 1 of this year. The medical school also plans to discontinue its participation in the "Dean's Committee, Veterans Hospital" at Fort Miley, San Francisco in 1960. Dr. Joshua Letterberg has been appointed to our faculty to assume direction of a new Department of Genetics in the School of Medicine. Dr. Garrott Allen will be the Executive of the Department of Surgery and Dr. Norman Kretchmer comes here as Executive in our Department of Pediatrics when the medical center on the Stanford campus is activated.

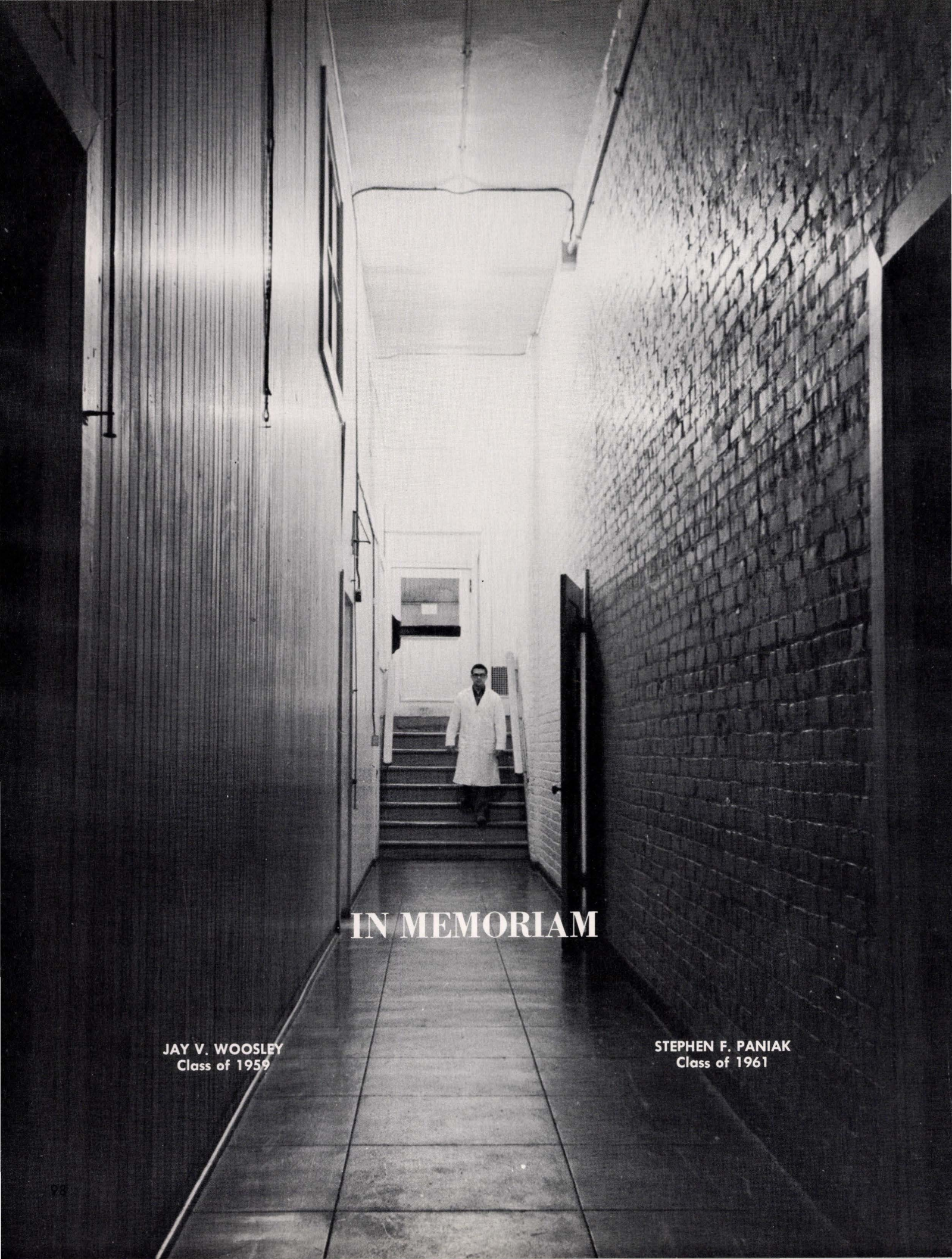
During the past two years many of our faculty who look forward to the opening of the medical center on the campus have changed their residences from San Francisco to the campus or near vicinities. During the same time the swarm of faculty committees and subcommittees, working vigorously and with enthusiasm, produced a great deal of static but finally presented, and the faculty adopted, a program and policy for the new school. "The major objective of the plan is to provide the medical student with an educational experience sufficiently broad to enable him to make an informed choice among the opportunities in medicine. Students will be accepted after at least three years of college (two years in exceptional cases) into a five year medical program, during the first three years of which provision is made for the equivalent of an additional non-medical year."

Ground breaking ceremonies were held on the site of the new medical center on September 11, 1956 and construction began in June, 1957. The new buildings are almost complete at this writing and will be occupied before the autumn quarter this year.

There has been much talk of moving the medical school but unfortunately this school cannot be moved. The school on Clay Street has lived a useful and worthy life. Many superior physicians, considerable research of fundamental value and two great groups of teachers have made Stanford Medical School's reputation outstanding during the past 40 years. Our school has been recognized as superior, not only in the United States but in many foreign countries. The countdown on all these activities of the school in San Francisco has already started. The old school as it has been known will close this summer. A new school, new in location, philosophy, objectives, curricula and with many new faces on the faculty will be born in September, 1959 on the Stanford campus.

The King is dead. Long Live the King!

LOREN R. CHANDLER, M.D.



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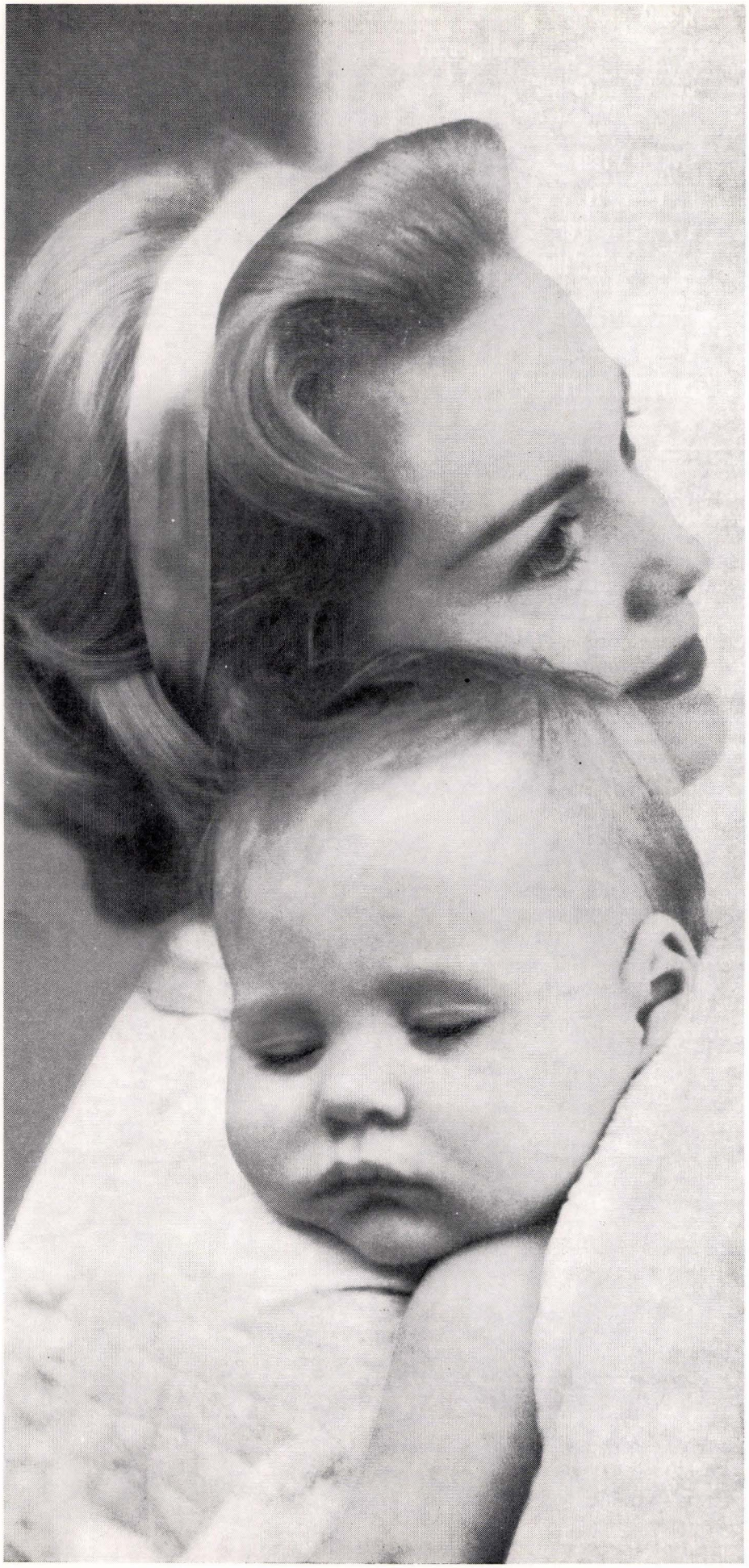

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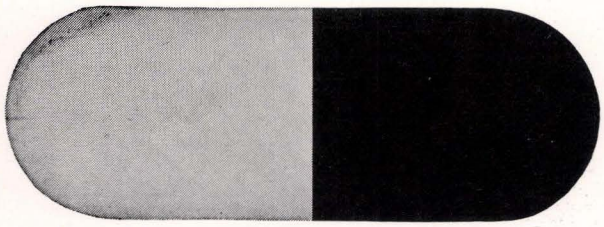

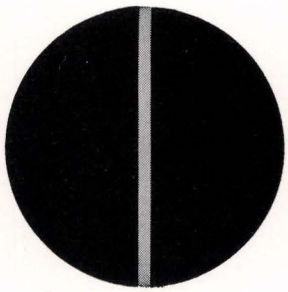

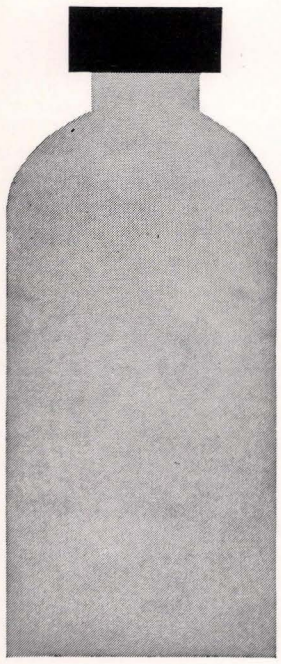

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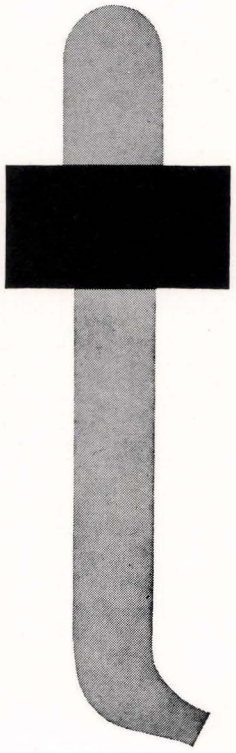

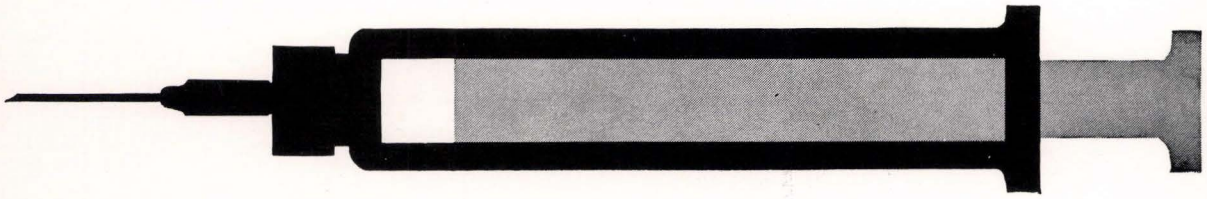

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