1944 Fall Clinic Yearbook

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THE CLINIC
Fall of 1944

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Thomas F. Nealon, Jr., Business Manager
THE CL
Fall of 1944
JEFFERSON MEDICAL
PHILADELPHIA, PENNSYLVANIA
Dr. George Allen Bennett has been singled out among the teaching staff by the Class of September, 1944, as the one to whom they shall dedicate the Clinic.

Dr. Bennett, the son of C. C. Bennett, retired railroad official, and the late Alice Bennett, was born August 31, 1904, at Water Valley, Mississippi. Following his early education in the local grammar and high schools began an unsatiable adventure in advanced studies. In 1923, with a Phi Beta Kappa award, he was graduated from Wabash College, Crawfordsville, Indiana.

The Ben Hur Scholarship, allotted from the estate of the late Lew Wallace, allowed George Bennett in May, 1923, to enter the University of Athens at Athens, Greece, for the study of archeology and ancient history. This work was continued at the University of Zurich, Zurich, Switzerland, until November of that year.

The following five years Dr. Bennett spent at the University of Munich where he studied philosophy and medicine. He qualified in medicine in 1928 which entitled him to practice medicine and is the equivalent to the English Bachelor of Medicine.

In July, 1928, Dr. Bennett became assistant in Histology at Baylor Medical School, Dallas, Texas, but in September of that year entered Harvard University as a Teaching Fellow in Anatomy. His work in anatomy was furthered by post-graduate study in anatomy at the University of Munich from February to July, 1929.

Now returning to the United States he took charge of the summer course of anatomy at the Harvard Medical School and continued teaching there until July, 1930 when he was appointed Professor of Histology and Embryology at Georgetown Medical School. Two years later he was appointed Professor of Anatomy and Acting Head of the Department of Anatomy at Georgetown, and in 1934 became Head of this department.

In October of 1934, having secured a fourteen-month residency in dermatology, he returned to the University of Munich and studied with Von Zumbusch. Still remaining at Munich, Dr. Bennett became Assistant in Anatomy and Surgery from December, 1935, until May, 1937. His surgical experience at this time was chiefly in thoracic surgery. During the year 1937 he was awarded his M.D. degree Summa Cum Laude on the basis of some experimental studies on the eye and tongue in various animals. This achievement was followed by post-graduate study in anthropology, chemistry and pathology also at Munich until 1939.

Jefferson became acquainted with Dr. Bennett in 1939 when he began teaching anatomy at the Daniel Baugh Institute of Anatomy. At present he is Associate Professor of Anatomy. And in conjunction with this capacity has, for the past two years, been giving a course in Applied Anatomy and Surgery for Naval Officers at the Baugh Institute.

It is inspiring to learn that such an extensive background in medical science was motivated by Dr. Bennett's lack of understanding of reflexes in psychology. Whereupon he decided it necessary to learn the structure underlying the psyche.

Dr. Bennett has written widely in psychological and medical lines and, together with his students, has furnished numerous articles. He maintains an active interest in the clinical field. He is associated with many anatomical and scientific organizations and is a member of the Philadelphia County Medical Society. He is a member of the Phi Gamma Delta National College Fraternity and of Phi Beta Pi National Medical Fraternity.

Even in view of his scholastic schedule, Dr. Bennett has always recreated through the expression of squash, tennis and badminton.

And now it becomes us, the Class of September, 1944, to clearly recognize these outstanding qualities in one who has disciplined himself in thought and work. With affability and assiduousness Dr. Bennett has attempted to give to us some of those things which will guide us through medicine and in appreciation do we dedicate this book to him.

WILLIAM J. REEDY.
FOREWORD

TO RECAPTURE, within the limited pages of one book, the experiences of four years at the Jefferson Medical College, is a task far beyond our meager abilities. But by highlighting certain experiences, individuals and ideas we can perhaps provide the nucleus for the floods of recollection which must surely come when, in future years, old contacts are renewed or old haunts revisited. It is our sincere hope that these lines and these pictures will serve to stimulate precious memories of inestimable value. From a many-faceted experience we present a many-faceted picture, a picture of Jefferson during the war years of 1941-1944.
# CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Seniors</td>
<td>21</td>
</tr>
<tr>
<td>Pre-Clinical Years</td>
<td>95</td>
</tr>
<tr>
<td>Clinical Years</td>
<td>107</td>
</tr>
<tr>
<td>Under Classes</td>
<td>135</td>
</tr>
<tr>
<td>Organizations</td>
<td>157</td>
</tr>
<tr>
<td>Societies</td>
<td>177</td>
</tr>
<tr>
<td>Features</td>
<td>191</td>
</tr>
</tbody>
</table>
NORTH LECTURE ROOM

Much of learning, much of fun, and—let it be admitted—a few restful hours are brought forth in our memories by the sight of this hall and these seats.

LIBRARY READING ROOM

The domain of Mr. Wilson, our friendly librarian, the showplace for all visitors, and on many occasions the site of earnest effort and concentration for ourselves.

STUDENT LOUNGE

The feel of a soft leather chair, the smell of smoke and the subdued conversation of the more ambitious—these mark the leisure hours spent in the student lounge. Did someone mention bridge?
PARTY SCENE
All was not labor, Jack was not a dull boy, the Black and Blue Ball was but one of many festivities which lightened the load of a crowded, heavy schedule

SECTION WORK
The path of true learning in medicine lies in the work of individuals or small groups. The feel of tissue, the minute detail of technic, the rapport with the patient—these cannot be taught from the lecture podium, these must be felt and seen and established by the student himself.

A LIBRARY CORNER
Dr. William Harvey Perkins

Dean
To the Senior Class:

A full generation of Jefferson graduates worked here under the admonition, "Dii Laboribus Omnia Vendunt," on the lintel of the Old College Building at Tenth and Walnut Streets.

That "The gods will sell us everything for hard work" is as true for you today as it was for them. You are each well aware that the reason you have reached the place where you now stand is because you have put in what you have considered excessively hard work.

My message to you is that your real task has just begun. To be the physician you hope to be will require tiresome hours of work and study and for many years, if you are to succeed, there will be little respite for you.

Since no man worth his salt is afraid of work my warning should not discourage anyone—on the contrary, it is given with the assurance that your Work is your inspiration, and that the gods will deal generously if you uphold your end of the bargain.

Wm. Harvey Perkins, Dean.
ROBERT P. HOOPER

President of the Board of Trustees

The efficiency with which the Board of Trustees have managed the finances and expansion of the Jefferson Medical College can best be attested to by a glance at the College itself. Under the able leadership of Mr. Hooper we can look forward to new and greater progress. Born in July of 1872 and educated in Baltimore and at Hill School, he was elected as a member of the Board of Trustees in 1920 and became its president in November, 1936. He was granted an honorary degree of Doctor of Laws by the College in June, 1940. His other activities include: President of William E. Hooper and Sons Company; Chairman of the Advisory Committee of the Pennsylvania Division of the National Retailers; first President of the Automobile Association, and President of the Automobile Club of Philadelphia.
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IN MEMORIAM

Dr. Randle C. Rosenberger

Randle Crater Rosenberger was born in Philadelphia on March 4, 1873, and died in the Jefferson Medical College Hospital on February 21, 1944. He was educated in the public schools of Philadelphia and was graduated from the Jefferson Medical College in 1894. The remaining half-century of his life was spent in the halls of his alma mater in arte medendi.
His ancestors came from the palatinate of Germany to Penn’s Colony in North America in colonial times. He inherited all of the desirable traits: industry, simplicity, honesty, and tolerance, of these people. He was a simple, kindly man, made joyous by the flowering of a plant or the song of a bird.

He had an inquisitive mind, never satisfied with a problem until he could explain it to his complete satisfaction. In this effort to explain things to himself he developed a rare ability to impart information to others. For this he is remembered by many generations of Jefferson students. The personality of a teacher is continuously undergoing fragmentation. The particles strike his students and are repelled or absorbed. Absorbed, they may be dampened or may kindle a small flame that helps light up the world. Randle Rosenberger’s teaching was the flint and steel that lighted the fuse of thought in many students. He felt that this was mortal’s nearest approach to immortality.

Randle Rosenberger served his teaching apprenticeship in pediatrics, histology, pathology, hematology and finally reached his goal in the teaching of bacteriology. He organized the Department of Bacteriology in Jefferson and became its first professor in 1910. For almost twenty years he was pathologist to the Philadelphia General Hospital (Old Blockley). This duty occupied each afternoon. The subject of hygiene or preventive medicine was attached to the Chair of Bacteriology. This always mystified Dr. Rosenberger because he felt that this subject belonged in the Department of Medicine. However, he accepted this responsibility for many years. Only his close associates could know the amount of time he spent in collecting and analyzing data for this course.

Randle Rosenberger held that the function of a medical school was to train physicians for the general practice of medicine. Thus he made the course in bacteriology one that would be of value to the general practitioner. Each subject was carefully considered and weighed and material of interest to the bacteriologist, but of no value to the physician, was deleted. It was far more important that the student be able to interpret the report of a test in relation to his patient than that he know the intricate technique of performing it.

Randle Rosenberger was very proud of the fact that Jefferson students invariably made their highest marks in bacteriology in the National Board Examination. He felt that this justified his plan of teaching. Some of these students will remember the brusque way in which he questioned them as to the reasons for the high marks. He wanted them to say it was the teaching and he was afraid that they would say just that. He was at times a curious mixture of contradictions. One student, who won the National Board gold medal in the bacteriology examination, upon questioning, attributed his success to Topley and Wilson’s textbook. This answer was totally unexpected.

Randle Rosenberger trained himself to remember students. He memorized a list of at least ten names before each class. The student was always surprised when, without reference to a roll-book, his name was called. The assistant always had to report absences in the laboratory so that the embarrassment of calling an absent student would not occur. Each student thought that Dr. Rosenberger knew him personally and not infrequently was fearful of the extent of that knowledge. Before the student finished the course, Dr. Rosenberger did know him and frequently much better than the student knew himself.

Years later, when age had changed the students markedly, he could recall their name and year and incidents of their student days. He also had an uncanny faculty of estimating the ability of a student or intern. It should be remembered that Dr. Rosenberger was pathologist to the Old Blockley and there came in contact with many interns who were graduates of other schools. Within a short period he could determine, by some psychic ledgerdemain, the training capacity of the student or intern.
Dr. Rosenberger had many animal pets. The sacrifice of a laboratory animal was a hardship to him. One of the especial hardships of teaching was the use of dogs as experimental animals in pharmacology and physiology. He realized the necessity but he could never completely approve it.

For many years he had a group of laboratory cats, all brindled yellow and descendants of a prolific mother named "Monkey." These gradually disappeared. The last cat was a black and white, that Mrs. Chase rescued from an ash can and brought in to be chloroformed. Instead, he fed and kept it in the laboratory. This cat had a spot of eczema on its back and was appropriately named "Psoriasis." About the time that Psoriasis reached the prowling age, Dr. Rosenberger had a student, who previously had studied veterinary medicine, remove the appendages that stimulate tom cats to rove the fences. He often expressed regret for this operation because it undoubtedly deprived Psoriasis of the pleasures and pain of a complete life. To compensate for this deprivation, he would, by intentional accident, unlatch the white mouse cage, much to the disgust of the student assistant, who always blamed the writer for the carelessness. Psoriasis, to show his appreciation, would invariably deposit a very dirty white mouse on the writer's desk.

During his professorship, Dr. Rosenberger had four assistants; the first was John Roddy, an internist; the second, John Fanz, a pathologist, who later held the Chair of Pathology at Temple University Medical School; the writer, a dermatologist, and Dr. Kreidler, who was the first bacteriologist that assisted. Dr. Rosenberger taught his first three assistants bacteriology and taught them how to teach.

Dr. Rosenberger frequently followed devious paths to stimulate students and assistants. Next to bacteriology, his greatest interest was medical history. He subscribed to several publications on this subject. Shortly after the writer became his assistant, he subscribed to one called L'Esculape. When the journal was received, he indicated some disappointment that it was published in French; however, he appointed the assistant as translator. This necessitated a study of French which went on for some two years. The assistant felt that it was an unnecessary burden and was frequently outspoken about it. After some years, it became apparent that this was one of Dr. Rosenberger's schemes to further the training of his assistant in another language.

He was familiar with the history of Jefferson and occasionally would talk about it at a formal meeting. These talks will always be remembered by those who heard them. He was a musician and rarely missed a concert of the Philadelphia Orchestra. The last week that he taught, when he was feeble from illness, he attended the Friday afternoon concert of the orchestra.

He had a cottage on the Perkiomen Creek at Rahns. For many years he spent his summers there, coming to Philadelphia three days a week. About 1925, he built a home on the slope of a hill above the creek and lived there all year round. Each spring he would entertain the members of the Nu Sigma Nu Chapter. If the students enjoyed the week-end half as much as Dr. Rosenberger did, they had a most pleasant time.

He also had a horse and buggy. Sunday morning he would ride over the back roads, taking time to enjoy the countryside. He kept and used this equipage for years after automobile became the common means of transportation.

Of his writings and society memberships, the writer says nothing. These may be found in the formal memorials of the faculty and of the College of Physicians of Philadelphia. The writer has tried to picture the man as he knew him. Words are feeble things and totally inadequate to convey the spirit and personality of Dr. Rosenberger to those who did not know him. His death left an emptiness which will be difficult to fill. For many of us who were accustomed to lean upon him, Jefferson, for a time, will be a lonely place, for he was well beloved.

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AIM AT MUCH THOUGHT RATHER THAN AT MUCH KNOWLEDGE.
—Democritus.
LIBERTY OF THOUGHT IS THE LIFE OF THE SOUL.
—Voltaire.

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SUCCESS IS THE BRIDE OF ENDEAVOR.
—Moore.

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ONE SINGLE CONVERSATION WITH A WISE MAN IS WORTH A MONTH OF STUDY WITH BOOKS.
—Chinese Proverb.
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IF PRINCIPLE IS GOOD FOR ANYTHING, IT IS WORTH LIVING UP TO.

—Franklin.

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THREE FOUNDATIONS OF LEARNING: SEE MUCH, SUFFER MUCH, STUDY MUCH.
—Catherall.
IT IS ONLY THE IGNORANT WHO DESPISE EDUCATION.

--Syrus

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THE THING TO DO IS TO SIT DOWN AND WATCH THE PATIENT.
—McRae.

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NO CALLING IN LIFE IS SO SUBLIMELY EPIC AS THAT OF THE PHYSICIAN.
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WHEREVER THE ART OF MEDICINE IS LOVED, THERE ALSO IS LOVE OF HUMANITY.

—Hippocrates.

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MEDICINE IS A CONJECTURAL ART. IT HAS ALMOST NO RULES.
— Celsus.

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TIME IS THE BEST MEDICINE.
—Cicero.
JAMES GERARD FOLEY
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PATIENCE IS THE BEST MEDICINE.
—Florio.
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MEDICINE IS NOT ONLY A SCIENCE, IT IS ALSO AN ART.
—Paracelsus.

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IT IS PART OF THE CURE TO WISH TO BE CURED.

—Seneca.

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DISEASE GENERALLY BEGINS THE EQUALITY WHICH DEATH COMPLETES.
—Johnson.

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WHO SHALL DECIDE WHEN DOCTORS DISAGREE.
—Pope.
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THE WORD OF ACTION IS STRONGER THAN THE WORD OF SPEECH.
—Osler.

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THE PHYSICIAN HAS NO QUALITY WHICH TAKES RANK WITH IMPERTURBABILITY.

—Osler.
DESPERATE CUTS HAVE DESPERATE CURES.

—English Proverb.

WILLIAM GARY JOHNSON
Fairmount, Ind.

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亥 II ΚΒΦ

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READING MAKETH A FULL MAN.
—Bacon.
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WRITING MAKETH AN EXACT MAN.
—Bacon.
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PHYSICIANS, OF ALL MEN, ARE MOST HAPPY.

—Quarles.

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GOD HEALS, AND THE PHYSICIAN HATH THE THANKS.
—Herbert.

BEN MARR LANMAN
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NATURE, TIME AND PATIENCE ARE THE THREE GREAT PHYSICIANS.

—Proverb.

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YOU DOCTORS HAVE A SERIOUS RESPONSIBILITY.

—Stephenson.

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Senior Class Secretary
Washington Hospital, Washington, Pa.; 1st Lieutenant, M. C. O. R. C., U. S. A.
NOT THE DISEASE, BUT NEGLECT OF THE CURE, IS DANGEROUS.
—Latin Proverb.

JOHN THOMAS MCGEEHAN
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Pasteur Society
Alpers Neurological Society
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U. S. Marine Hospital, Staten Island, N. Y.; 1st Lieutenant, M. C. O. R. C., U. S. A.
THE PROGRESS MADE BY MODERN MEDICINE IS OF INESTIMABLE PRECOCIOUSNESS.
—Lewisohn.

BYRD FARMER MERRILL
Dothan, Ala.
University of North Carolina, A.B.

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Philadelphia General Hospital, Philadelphia, Pa.; 1st Lieutenant, M. C. O. R. C., U. S. A.

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Mount Saint Mary’s College, B.S.

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Pasteur Society
Vaux Obstetrical Society
Alpers Neurological Society

Jersey City Medical Center, Jersey City, N. J.; 1st Lieutenant, M. C. O. R. C., U. S. A.
THE GREATEST OF FAULTS, I SHOULD SAY, IS TO BE CONSCIOUS OF NONE.

—Carlyle.

PHILIP HENRY MINNICH
York, Pa.
Gettysburg College, A.B.

Φ Χ Κ Β Φ

Moon Pathological Society
Alpers Neurological Society
Vaux Obstetrical Society
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York Hospital, York, Pa.; 1st Lieutenant,
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 JOHN SPOTZ MONK
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M. C., A. U. S.
THE GREATEST THING IN A MEDICAL STUDENT IS RELIABLE OBSERVATION.

—Minet.

WILLIAM ALFRED MORTON, JR.
PITTSBURGH, PA.
University of Pittsburgh, B.S.

Φ Χ Κ Β Ε

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MEDICINE LABOURS INCESSANTLY TO DESTROY THE REASON FOR ITS OWN EXISTENCE.
—Bryce.
NO MAN IS REALLY SAFE OR HAPPY WITHOUT A HOBBY.

— Osler.

ERIC RUNO OSTERBERG
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—Proverbs.
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INTEREST IN DISEASE AND DEATH IS ONLY AN EXPRESSION OF INTEREST IN LIFE.
—Mann.

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MEDICINE, TO PRODUCE HEALTH, HAS TO EXAMINE DISEASE.
—Plutarch.
HEALING IS A MATTER OF TIME, BUT SOMETIMES ALSO OF OPPORTUNITY.

—Hippocrates.

FREDERICK ARTHUR RESCH
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THE TRUE PHYSICIAN IS A RULER HAVING THE HUMAN BEING AS HIS SUBJECT.

—Plato.

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THE BEST OF HEALERS IS GOOD CHEER.
—Pindar.
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THE BEGINNING IS THE MOST IMPORTANT PART OF THE WORK.
—Plato.
HE IS THE BEST PHYSICIAN WHO IS THE BEST INSPIRER OF HOPE.
—Coleridge.

PAUL WARNER SCHUESSLER
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CHANCE FAVORS THE PREPARED MIND.
—Pasteur.

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Ν Ξ Ν  Φ Β Κ
Jefferson Hospital, Philadelphia, Pa.

SICKNESS COMES ON HORSEBACK BUT GOES AWAY ON FOOT.
—Hazlett.

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A GOOD SURGEON: A HAWK'S EYE, A LION'S HEART AND A LADY'S HAND.

—Wright

ROY FRANKLIN STINSON, JR.
ATLANTA, GA.
Alabama Polytechnic Institute, B.S.
Baroness Erlanger Hospital, Chattanooga, Tenn.; 1st Lieutenant, M. C., A. U. S.

EMILIO FRANCISCO TRILLA
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ΦΒΠ ΚΒΦ
Hare Medical Society
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ROBERT ALBERT UPDEGROVE
Herndon, Pa.
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ΦΧ
Alpers Neurological Society
Hare Medical Society
Williamsport Hospital, Williamsport, Pa.; 1st Lieutenant, M. C. O. R. C., U. S. A.
JOHN SAMUEL WATSON
COLUMBUS, OHIO
Ohio State University, A.B.
AΩA
Moon Pathological Society
Thomas Physiological Society
Hare Medical Society
Vaux Obstetrical Society
Alpers Neurological Society
Jefferson Hospital, Philadelphia, Pa.; 1st
Lieutenant, M. C. O. R. C., U. S. A.

LEARNING IS THE EYE OF THE MIND.
—Thebes.
JAMES WELDON WEBSTER
Rexburg, Idaho

University of Idaho, B.S.
Thomas Physiological Society
Vaux Obstetrical Society
Hare Medical Society

Jefferson Hospital, Philadelphia, Pa.; 1st Lieutenant, M. C., A. U. S.

THEODORE FREDERICK WEILAND, Jr.
Phoenixville, Pa.

Ursinus College, B.S.

Vaux Obstetrical Society
Moon Pathological Society
Senior Class President

Jefferson Hospital, Philadelphia, Pa.; 1st Lieutenant, M. C. O. R. C., U. S. A.

ALWAYS DO RIGHT—THIS WILL GRATIFY SOME AND ASTONISH THE REST.
—Twain.
HENRY STAUFFER WENTZ
LEOLA, PA.
Duke University, A.B.
A K K Α Ω Α
Gross Surgical Society
Vaux Obstetrical Society
Alpers Neurological Society
Governing Board, THE CLINIC
Lancaster General Hospital, Lancaster, Pa.;
1st Lieutenant, M. C. O. R. C., U. S. A.

HOMER ELTON WICHERN
CLEVELAND, OHIO
Wheaton College, B.S.
Christian Medical Society
Schaeffer Anatomical League
Dean’s Committee
Broadlawns Hospital, Des Moines, Iowa; 1st
Lieutenant, M. C., A. U. S.
'TIS THE MIND THAT MAKES THE BODY RICH.

Shakespeare.

HAROLD WILF
PHILADELPHIA, PA.
University of Pennsylvania, A.B.
Φ Δ E
Moon Pathological Society
Alpers Neurological Society
Philadelphia General Hospital, Philadelphia, Pa.; 1st Lieutenant, M. C. O. R. C., U. S. A.

KENAN BANKS WILLIAMS
SANFORD, N. C.
University of North Carolina, A.B.
Φ X
Alpers Neurological Society
Mountainside Hospital, Montclair, N. J.; 1st Lieutenant, M. C., A. U. S.
WILLIAM MITCHELL WILSON, Jr.
Denison University, A.B.
A K K
Gross Surgical Society
Vaux Obstetrical Society
U. S. Naval Hospital: Lieutenant (j. g.), M. C., U. S. N.

RAYMOND MATTHEW WILLIAMS
Rye, N. Y.
University of Notre Dame, B.S.
Φ A Σ  Κ Β Φ
Hare Medical Society
Alpers Neurological Society
Thomas Physiological Society
Schaeffer Anatomical League
Pasteur Society
New Rochelle Hospital, New Rochelle, N. Y.; 1st Lieutenant, M. C. O. R. C., U. S. A.

BANISH THE FUTURE; LIVE ONLY FOR THE HOUR AND ITS ALLOTTED WORK.
—Osler.
JOHN JAMES YANKEVITCH, Jr.
Freeland, Pa.
Lehigh University, A.B.
ΦΑΣΚΒΦ
Thomas Physiological Society
Alpers Neurological Society
Wilkes-Barre General Hospital, Wilkes-Barre, Pa.; 1st Lieutenant, M. C. O. R. C., U. S. A.
In Memoriam

This page we dedicate to our classmate, Raymond J. Spangenberg, whose untimely death occurred during October, 1943 ... and to the other members of our class who, because of illness or scholastic difficulties, were unable to complete their medical training.
I SWEAR by Apollo the physician, and Asclepius, &c., health and all the gods and goddesses, that according to my ability and judgment I will keep this OATH.

I will not keep this OATH without fee or stipulation.

I will impart a knowledge of the Art to my own sons and to those of my teachers, and will bestow a knowledge of this Art unpractised. I will keep this OATH, &c., as respecting that all such should be kept secret. While I continue to keep this OATH unviolated, may the revenges of the gods attend all who shall presume to violate this OATH.

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PRE-CLINICAL YEARS
INTRODUCTION

THE following section of The Clinic is designed to be an informal history of the graduating class during its first two years at Jefferson. We sincerely hope it will be taken in the spirit in which it is written and that no individual will take offense at any of the contents.

While the student is in his pre-clinical years he does not realize how much this basis of the medical curriculum will mean during the practical work of the junior and senior years. It is the good fortune of the student at Jefferson to be under a strict regimen during the two first years and to be guided in his studies by such men as Drs. Schaeffer, Rosenberger, and Bancroft at the beginning, and Drs. Gruber, Moon, and Thomas, as he prepares to move “across the way” for practical experience in the wards and clinics.

After our first few months at Jefferson had passed, many of our group wondered if we had picked the right school in which to study medicine. Our friends at other schools in the city were more fortunate many afternoons during the week, for as we labored in the laboratory each afternoon or attended lectures or demonstrations they had time to spend as they wished. At the time we thought we were being persecuted but soon realized that there might be a method in what we thought was the madness of Jefferson. We saw that no matter how much time was consumed it was a difficult task for anyone to assimilate all the knowledge and facts that must be at a student’s fingertips in order to understand and contribute to discussions in practical work of the advanced courses. After the first few weeks on Medicine in our Junior year we looked back and thanked Dr. Schaeffer for his thorough examinations, Dr. Bancroft for his perseverance in showing us how to “transact,” Dr. Gruber for his surprise quizzes which kept us on our toes at all times, Dr. Moon for his scientific approach and introducing us to clinical problems, Dr. Thomas imbuing us with scientific curiosity, and all members of their staffs and other departments who give what is probably the finest course in the basic medical sciences that can be found in any medical school in this country.
ANATOMY

"Walk south on Eleventh Street until you pass Curley's—continue on until you pass Chassey's and walk to the next corner and you can't miss it." With those directions from an upperclassman it was easy for the one hundred and forty-one medical plebes to find the Daniel Baugh Institute of Anatomy. Each received his box of bones and the study of osteology had begun. We were each ready now to be called doctor but were soon shaken from this false idea by a stertorous, high-pitched nasal drawl demanding, "Naow, Mistah Browah, deescribe foah me the relation of the formaina intervertebralis to the corpus vertebrae and the foveae articulares . . . and by the way—you changed your seat since yesterday—were you sceered?" That was

"Sure, I see it."
The genius in his habitat
"What did you do last night?"
"Now, I'll carefully dissect the fascia."

"There's nothing to this, fellows."

"Danger"—man working

"Gentlemen, this is a skeleton"

our introduction to Dr. Bennett who was to gain our respect and admiration as the year passed. We now looked forward to our first meeting with Professor J. Parsons Schaeffer and as a hush fell over the upper amphitheater, black-smocked, white-shocked Dr. Schaeffer made his entrance to expose the neophytes to the study of anatomy. We found then that all the tales and traditional stories were true about Dr. Schaeffer and the Department of Anatomy and we were ready to begin the subject which had its early days marked by grave-stealing and generalized mayhem. Speaking of mayhem we were next introduced to Associate Professor Michels who spoke in his opening lecture on pits and the art and technique of delicate dissection.

By now we had all been introduced to a quiet unassuming chap lying quietly on the table under two sheets of oilcloth. This was the fellow who gave his all for the anatomy students, namely Joseph K. Davver. The first look at him caused a slight twinge in a few stomachs but he soon became one of the boys, being a regular cut-up. Dissection was now begun in earnest and not many days had passed before the osteology exam was in the distant past and the first "real" anatomy quiz loomed in the not-too distant future. This was to be the first of innumerable exams for which the Anatomy Department is famous.

Concurrently we began the courses in histology and embryology under the direction of
Dr. Radasch and assisted by Dr. Ramsay. This was the first chance to scream "Story" and it was a certainty that "Rad" would come up with a tale to represent some point in his lecture or maybe just a tale to represent some point. His green eye-shade is a Jefferson memory that will be hard to erase. Dr. Ramsay directed the laboratory work and we were sure to be greeted each morning by a series of colored drawings to demonstrate the embryology of the gut or the histology of the eyeball.

Memories and quotable quotes . . . That first incision from the thyroid to the xiphoid . . . On Old Olympus Tawny Top . . . Slapsy Maxey and "Gentlemen, this is fish day" . . . Look out, here comes the Bull . . . hide the instruments . . . cover the body . . . too late, he cleaned the axilla . . . Where's Leute? My lab coat is mutilated . . . Do you think Dick will notice that little blaze under his seat? . . . Marks are up—I was robbed! . . . That all-night lecture on the female by Dr. Bennett . . . The hush in the lab as the Silver Fox makes his entrance . . . But, Dr. Bennett, it's only a half-minute past two . . . Dr. Ramsay, "Believe me, gentlemen, Dr. Radasch will ask this on the exam . . . believe me . . ." . . . December 7, 1941 . . . are we going to stay in school? . . . did you hear Dr. Bobb Schaeffer left with the unit? . . . That week of five exams—or was it six . . .

. . . . . . These and many more are just little drops in a sea of memories but together they form a unit which the Class of September, 1944, will look back on and in years to come will thank Dr. Schaeffer and his staff for an anatomy education which is second to none in America.
BACTERIOLOGY

In the words of Publilius Syrus, "It matters not how long you live, but how well." Dr. Rosenberger lived both long and well and his life was spent in the betterment of Jefferson and of mankind. His memory will take its place as a Jefferson tradition with Gross, Hare, Da Costa and others. Who will forget the first bacteriology lecture on the evils of Eleventh Street? We then embarked on the study of cocci, bacilli, culture media, and heterophile antibodies. Dr. Kreidler gave his weekly lectures in the sixth floor classroom but always insisted that all stories must be told by the professor in that department.

Dr. Blundell and Dr. Moranz were able laboratory instructors and in our freshman year Dr. Blundell was just gaining his wings as a lecturer. Then came the unknowns. Let's see: "This is greasy, slightly orange, has a bad odor, what could it be—?" "What's that, Dr. Rosenberger—it isn't a bacterial culture?" "It's a piece of rat what?" "Oh—I'll begin over." Then came the final exam. We wanted to know our average to date and Dr. Kreidler said it didn't matter—that the chief made up the marks. But the course was extensive and all-inclusive as we realized in the last two years of our medical course when Dr. Reiman inquired about culture media or strains of pneumococci.

THE LATE DR. RANDLE C. ROSENBERGER

Bacterium ball session

Smear and culture
CHEMISTRY

Fire, fire, toil and trouble, fires burn and cauldrons bubble. Here is a description of chemistry in one sentence. We had all heard of Dr. Bancroft and his department long before entering Jefferson and were ready for the worst. From the start when "Uncle George" told us, "You are not medical timber becuo you don't know what you're aboot," until the final exam where we were asked the metabolism of carbohydrates in the stomach of an aard-vaark we went through every formula and chemical operation known to man (and a few that are not known). Dr. Bancroft expounded for two hours a week and Dr. Hansen for two more hours and we believe this was the start of the paper shortage. Remembrances—Blackboards flanking the auditorium each filled with structural formulae... Two sheets of paper—only two sheets... The synthesis of indigo... Time to clean up and get out... lecture at twelve... Dalmatian hounds and uric acid... Students, please... The composition of various foods... All in all, the chemistry course under Drs. Bancroft, Hansen, and Williams fulfilled the three foundations of learning: Seeing much, suffering much, and studying much.
PHYSIOLOGY

Following our last summer vacation "for the duration," we returned to take another step forward in our medical progress. Physiology was next on the list for study and Dr. Thomas and his staff proved to be one of the most understanding groups we had met. Weekly lectures were coordinated with the laboratory procedures where, for the first time, we felt the warmth of living tissue and saw life's processes in action. Following Dr. Thomas' beginning lectures Drs. Hart and Friedman each talked on his own specialty in the field and Dr. Tuttle expounded each week.

As the course neared its end each student realized that we now were familiar with the mechanism of each part of the body, its complexities and limitations, and had seen the workings of all physical processes in the laboratory. We knew then that to be a good scientist one must work with his hands as well as his head and many times to our dismay a smoked drum served as a smudge pot for a clean white coat instead of a permanent record of an experiment. Our thanks go to the physiology staff for a sound basis to the problems of medicine—an understanding that has and will serve us well during our careers.
PHARMACOLOGY

Expecting an examination we entered the first lecture in pharmacology and found that Dr. Gruber only gave his quizzes when least expected. A real friend of the student the professor with the perpetual smile began the lectures in the actions of drugs and from then until the end of the semester we wondered how one man could retain so many facts and references. Aided by Drs. Hart and Ellis we proceeded to organize into operating teams in the laboratory, each getting his chance to be the surgeon. Weekly quiz periods prepared us in prescription writing and it was a zero to the unhappy beginner who killed a patient with an overdose.

"Uh—tell me, uh . . . what are the symptoms of uh poisoning by uh—strabismus sulfate? Next man . . . is uh that right . . . or is the work of uh . . . Martin . . . uh . . . Barton . . . and uh . . . Fish more accurate?"

In this way Dr. Gruber kept each man on his toes. Oh to be a senior and use proprietary remedies instead of adding milligrams and ounces and ending up with a pill which uh . . . is a good size . . . for uh . . . a horse.

"Now in the Pharmacopoeia"
Seven hundred and twenty man-hours lost

"Who moved our sheet?"
Einstein the great
For two years we had the good fortune of being associated with one of the world’s famous scientists and one of Jefferson’s able teachers. This was Dr. Virgil Holland Moon who guided us in the whys and wherefores of pathology from cloudy swelling to the microscopic diagnosis of glomerulo-nephritis. Dr. Stasney had charge of the second year laboratory and with Dr. McGrew discussed each slide and answered the innumerable questions of McGeehan et al. The latter two also conducted the gross pathology course and weekly quiz sections. We soon learned that the Medicine and Surgery Department run by “those men across the way” were not all powerful and in the post room Drs. Stasney, McGrew, and Herbutl made the final diagnosis that surprisingly enough did not always coincide with original thoughts of the clinicians.

Those lectures on “The Vicious Cycle” were not only instructive but inspiring as Dr. Moon gesticulated while emphasizing his first love—namely his important contribution to science—the factors involved in shock. In the third year Dr. Moon approached the subject from the standpoint of organ pathology and it was here that we had the work of the previous year coordinated and correlated with our clinical work. Following these two years under the tutelage of Drs. Moon, Stasney, and McGrew we were sure that we had a basis for medicine that was to stand us in good stead—for as Dr. Moon’s first words of the sophomore year, quoting Osler—he said, “As is our pathology so is our practice.”
SECOND YEAR MEDICINE

Second year medicine is that department's method of easing the sophomore into physical diagnosis and clinical laboratory at the expense of himself and his fellow student so that the third year classes in the ward will find him with professional dignity and self-confidence. Physical diagnosis was under the direction of Dr. Robert Charr, congenial Oriental, who began at the top hair on the head and proceeded through each cell of the body until he reached the lowest piece of epidermis of the sole of the foot. We learned how to take a history—Do you have flatus? Is it from top or bottom?—and then learned on our naked selves just where those lungs were situated. We then divided into sections where Drs. Price, Lund, Hodges, and Charr taught us to say, "Cough, please," and "One, two, three or ninety-nine."

Dr. Cantarow, the walking laboratory manual, held reign over the clinical laboratory and it was here we first realized that medicine was really a science and not a guessing game. We each received an hematoma from the neighboring student during our first trial at venipuncture and then came the "blood, sweat, and tears" part of the course. Dr. Erf took care of the blood while we had the sweat and tears. We learned of the life and loves of a blood corpuscle and the intricate metabolism of iron, and saw the first battle of Erf vs. Notre Dame.

Following these two courses we now believed ourselves qualified laboratory technicians and expert diagnosticians. All too soon we realized that actual experience can never replace "book larnin'." But the basis given us by Drs. Charr and Cantarow served to give a scientific basis to our coming third-year medicine.

"And now, Doctor, what did you hear?"
The calculator
"I've been working on a blood count, all the live-long day??"
Surgery

The sophomore year also saw our initiation into the realm of surgery. Dr. Surver began a series of painstaking lectures on shock, wounds, ulcers, gangrene, and other lesions. We knew at the end of the first semester that to treat any injury one used Dakin’s solution and Scarlet R with adequate debridement. Of course shock should be treated in all cases even if not present. Dr. Behrend took over the second semester lectures to talk about tuberculosis, tetanus and various sundry subjects. This semester was highlighted by the sight of a six-foot-two student having a chat with the good doctor. Plumbage and phrenic exoresis were the second semester’s Dakin’s and Scarlet R.

Neuroanatomy

The second-year return to Daniel Baugh Institute found our class studying the intricacies of the anatomy of the human brain under the direction of Dr. Schaeffer in the lecture room and Dr. Lipshutz in the laboratory. To those of us who thought to smell one just took a deep breath, it was a surprise to learn that the sensation travels over complex routes, shunts, relay stations, and other way stations to the cortex. Dr. Lipshutz tried to impress us with the idea that the lab was meant for dissection but the pan of mush known as a brain was as inviting as a gob of well-mellowed limburger cheese. Nevertheless these two men gave us the basis for neurology and neurosurgery and with a sincere prayer for the compend we concluded our studies.

Neuropathology

The following semester saw a continuation of the study of the nervous system but this time microscopically. Dr. Alpers and staff placed in our hands a set of excellent slides of pathologic lesions in the nervous system. Getting us to understand them was a more difficult problem. Dr. Alpers’ lectures, which were timed to end at 12:59 exactly, were perfection in themselves but we stood convinced that here was a subject for experts. In fact in the lab many of us lost our bearings entirely and one afternoon a goodly number lost our pants. Here’s to gliomas and dendrites, umbriagos and axones, may they ever wave.
CLINICAL YEARS
INTRODUCTION

THE fundamental basis for a true school of medicine is threefold: adequate facilities for laboratory and lecture work, clinical material for the visualization of disease, and teachers to point out the way. We have touched on these in the previous section; we will elaborate on them now. Jefferson is uniquely fortunate on all three counts, but perhaps most of all in the clinical field. Our school is a Philadelphia landmark, our clinics are among the largest in the world, and our teachers are unsurpassed in their respective fields. The first two years had given the student a firm foundation in the basic sciences, the last two produce the physician. It is a tremendous job for so short a time, but if it can be done at all, it can best be done in a school such as ours. The graduating senior has a good grasp of the tools and technics of modern medicine, he has been exposed to old standards and new developments, and, more important, he has the prestige of a great school in back of him and pushing him. He realizes the learning does not stop with graduation, but because of the training he has received in his years at Jefferson he has confidence, ability and that quality which Sir William Osler placed first of all, Aequanimitas. On the following pages are visualized a few of the high points of our Clinical Years of study. Although each is presented as an entity in itself, it should be well realized by all who have gone through such a program that all are interdependent, integrated and that none stand alone. It is a fact often overlooked in an age of extreme specialization.
GYNECOLOGY

We were a war class and the probabilities were that following our schooling and internships, we would be alienated in a large degree from gynecological problems while serving in the armed forces. Dr. Scheffey, in his opening lecture, remarked that the department was therefore desirous of giving us more than a mere foundation in gynecology.

Dr. Scheffey introduced us to the diseases of women by lecturing in the "ante cibum" hour on Mondays. The lectures were well illustrated by colored slides. Gradually we became acquainted with the difficulty of obtaining a history from the ramblings of many a patient, the consequences of displacements, the significance of fibromyomata, endometriosis and pelvic inflammatory disease in their often atypical symptomatology. Perhaps the most intriguing topic was carcinoma. Dr. Montgomery never grew impatient or discouraged when quizzing one of us, for amidst the whispering and prompting, he was rewarded in knowing that someone in the class was prepared. Ours was the first class to have the junior examination divorced from those of pediatrics and dermatology—a day was set aside for the all-inclusive examination which didn't slight any phase of gynecology.

Now as textbook specialists we entered the practical phase of gynecology in the senior year. For five weeks each section had supervised work in the Out-Patient Department and gynecology ward. Routine of examination, history taking and simple procedures pertaining to gynecology were taught in the Out-Patient Department, while ward clerkships were devoted to more complete follow-up of assigned cases. These morning sessions were supplemented by recitation sessions and observation of operations.
MEDICINE

The pinnacle of our preclinical years of toil, foil, spoil and boil; as the words pertain successively to hard study, "baffling" examinations, laboratory experiments and the reaction to grades; was reached (we had to stretch) in the study of medicine.

How proud we were when we finally saw red (blood instead of stars) in the first venipuncture in the clinical laboratory course. Cell counts, differentials, urinalyses, and various clinical determinations performed during the course were to be of value for the procedures necessitated in the clinical clerkships—yet Dr. Reiman often reminded us that he never saw anything but the most simple procedures being transacted during the latter period.

Dr. Cantarow fortified us with the details of clinical biochemistry (not meant to advertise any book), laboratory examinations and their clinical applications. Dr. Erf, besides insisting that we calculate the number of red blood cells in the body and questioning us on topics of pseudo-relativity, introduced us to the field of hematology. The desire of sitting in the first rows of the clinical amphitheater became a reality during the "hour of Charr(m)." Here principles of I, P, P, and A, were utilized on actual patients. The shiny stethoscopes, which protruded (unintentionally) from our pockets, were a sign to the world that we were clinicians. This year then of introduction, as we glance back, was the doorway leading to the vast study of the art and the science of the healing of diseases.

After a short vacation because of the accelerated program our years of factual knowledge were at hand. No longer were we neophytes, for now we were graduates of the basic sciences. How proud we were to occupy the upper rows of the amphitheater ("passing up" showed
us the futility of edging in on the lower rows) and to absorb everything at the clinic on Thursday afternoon. Although the "ax fell" on the seniors, we were on the alert for the signs of consolidation or the characteristics of heart murmurs requested as the junior rollbook was opened. The clinics stimulated our desire to read Cecil, not only for the Monday quiz periods conducted by Dr. Wood but also to try to better understand the entities presented (Cecil is highly recommended as a sedative).

Despite Dr. Reiman's remark "that pedagogy had ended with Gutenberg's discovery of the printing press," we derived much from the medical conferences, to which, strangely, attendance was not required. Sound basic clinical explanations and applications highlighted these informal discussions.

Clinical clerkships were the most important undertaking of third-year medicine. Its many ramifications, as history and physicals, on patients always assigned at the most inopportune times, ward rounds, laboratory procedures, X-ray and pathological conferences, notebooks and presentation of patient at Thursday clinic, were enough to keep us busily engaged for the five-week period. C. B. C., sedimentation rates (better known as sed. rates), venous pressure and circulation times gave us the opportunity to "riddle" a few antecubital fossae.

Day—Thursday; time—2 P. M.; place—clinical amphitheater; occasion—Dr. Reiman's weekly clinic. Amidst the quiet, Dr. Reiman, patient at his side, patient's chart in one hand and the rollbook in the other, would repeat the important findings: "Sharp pain, chill, fever, blood tinged sputum—what do you think? Yes, certainly I want your impression. What do you want to know to prove it?" A barrage of questions ensued. "You don't have any idea? Next man—"

As the Class of September, 1944, we will always be grateful as the years roll by for the opportunity to sit in the presence of Dr. Reiman and his staff and to learn from their wisdom, a product of years of study, clinical experience and research.
THERAPEUTICS

To paraphrase Dr. Rehfuss' remarks: "You men are in the throes of a living, changing medicine. You will have in the future many new aids to cure disease. War and its new discoveries as sulfonamides, penicillin, radioactive substances, or its new techniques of therapy will make these advances in medicine a reality to every practitioner. Therefore, before you leave Jefferson, I want each of you to have at least a working knowledge of all of them."

The object then in the presentation of therapeutics was to have men well versed in their respective fields lecture to us on general systemic therapeutics during our junior year and on therapeutics of specific diseases during our senior year. Since, as Dr. Rehfuss said, "It's impossible for one man to be able to teach all aspects of therapeutics."

The lecture and clinic line-up included Dr. Price who will be remembered for his concise lectures which allowed us fifteen more minutes to tidy for supper, and "Dr. Price, you lectured to the seniors on Post-Operative Pulmonary Complications, didn't you? Well, since they didn't know much about it during practicals, lecture to them again on same subject." Dr. Griffith, who admonished us to use the opium derivatives but not to get mixed up with "revenuers or addicts." Dr. Hodges reviewed the gamut of analgesics and antipyretics, those "morning after" cures.

Dr. Rehfuss, in clinic and lecture room, impressed us with his eloquence of presentation, "Let us lay out a plan of therapy," "Use a base powder to which you can add," "I shudder when I realize the amount of material we have to cover in a few short weeks."
On Friday, May 7, 1943, during the 5-6 hour, were begun a series of weekly lectures on orthopedic surgery, the prevention and correction of deformities and the treatment of diseases of joints.

Dr. Martin, in his pleasing, friendly style, made this hour a most enjoyable one. Handicapped as he was, by the unconscious attempt of our minds to wander and to think of the week-end and how we could spend it, he easily won the undivided attention of each of us as he lectured on the clinical conditions and treatment of congenital and acquired deformities. He introduced us to some good tongue-twisting names, arthrogryposis multiplex congenitum or talipes calcaneo valgus as congenital or acquired conditions of known or unknown etiology.

During the senior year, Dr. Martin and Dr. Davidson presented instructive and interesting clinics in the amphitheater at the Tuesday noon hour. Students, called to the pit in the capacity of "orthopedic consultants," examined patients, read X-rays and submitted diagnosis. They were confronted by patients illustrative of the topics formerly presented in the didactic course. Operations were performed in the pit—the cracking sound of structures as they broke under anesthetic manipulation resounded 'round the amphitheater, the method of draining an abscess, the bone graft splinting of a tuberculous spine, the curetting out of a chronic osteomyelitis. Many cases of fractures were presented and corrected as a class demonstration. Detailed discussions were presented on the making and use of plaster paris in providing casts and splints in orthopedic problems.

Therefore, in two years, we have been fortunate in deriving the basic principles and knowledge of orthopedics and will be fitted to cope with certain types of deformities or at least to cooperate with orthopedists in correcting these conditions.

Reflects are negative
Operative reconstruction
Added attraction in the O. P. D.
One need but read the newspapers to realize that there’s nothing to being an obstetrician—taxi drivers and policemen were delivering babies every day—the news articles never failed to end with “mother and child are doing well.” This made us sure that O. B. would be a cinch.

To our surprise and equally so to our delight, we were soon to learn that obstetrics was more than just “delivering babies.” It was essential that we knew of prenatal care; toxemia came to mean more than merely poison-in-blood (toxemia), and even if its etiology and mechanism still reside in theory, its grave results were evident in many an “interesting case for you, gentlemen, this afternoon.” Often several of us were called on as consultants in cardiac or renal pathology, with “Should we allow this woman to continue her pregnancy, or would it be better to terminate the pregnancy if conditions demanded it?”

Dr. Vaux and the obstetrical staff have made both the didactic lectures, clinics, clerkships and practical applications of obstetrics very interesting and resplendent in unforgettable experiences.

During the junior year we were fortunate in having Drs. Ulrich and Lull for the didactic lectures. “Pop” Ulrich will always be remembered as the amiable person who began in a loud voice as he passed from the hall into the doorway, “The third stage of labor is—” He always added that friendly touch to his words of advice, “Go into the next room and light up a ten-cent cigar” or “Time solves all problems for you.” Along with recounts of his varied experiences and occasions when the cards were stacked against him, he delivered his easily comprehended explanations of the mechanisms of labor and maneuvers employed in delivery.
Dr. Lull kept us spellbound with his choice and elegant oratory on prenatal care, toxemias, complications of pregnancy, and the puerperium, and his "I would like to talk with you today about—" introduced the lectures. The unpredictable aspect of this branch of medicine, Dr. Lull once explained by stating that "Time and obstetrics wait for no one."

Dolls and manikins received twists and turns which would have yielded cerebral hemorrhages, brachial palsies, fractures, forceps injuries and perineal lacerations had they been the human counterparts.

Watching deliveries under optimum aseptic conditions during the junior year was perhaps the antithesis of the home deliveries during the senior year. The practical aspect of obstetrics thrust itself upon us and the calls never failed to occur in the wee hours of the morning.

Home deliveries (I hope I'll get mine over before graduation) and follow-up calls over, section demonstrations at Philadelphia Lying-in and lectures on endocrinology, hypertension and sterility were begun. Clerkships in the maternity wards and in the Out-Patient Department allowed us to put to the test our obstetrical knowledge and to derive experience at the examination and handling of prenatal patients.

Dr. Vaux's announcement of "See you again next Monday (or Thursday) at four o'clock" always meant the close of a clinic in the amphitheater. Dr. Vaux had an individual likable way of discussing each case to emphasize definite aspects. We often wondered just why his secretary always took those nuggets down in shorthand, but the final examination solved this problem.

As we set out for diverse parts we will ever retain the teachings instilled in us by the Obstetrical Department. Ever striving to reduce infant and maternal mortality, emphasizing the importance of prenatal care in the delivering of babies of tomorrow, we can look ahead with confidence.
From the day that we lost our tonsils (Dr. Reiman should but know) or had an appendix removed by someone no less eager than Drs. Wagner and Cartey (all's fair in love and in the printed matter of the Clinic) each of us had a deep interest in surgery and looked forward to the time when he would understand more of it.

The clinics of Drs. Shallow and Mueller were the highlights of our sojourn in surgery at Jefferson. The Wednesday afternoon clinic where many of us oft tread in "Shallow" water, I would but liken it unto an experience of an Army Air Force bombing mission (abreast with the times). The Surgery A staff followed Dr. Shallow in a true procession into the amphitheater just as the straggling students hurriedly reached their destinations. The seating capacity of the first few rows had to be augmented by the adjoining steps on occasion when the surgical "high command" ringed the pit as the squadron commanders must do at the discussion table.

The formation, to be used for the mission, was unpredictable and depended upon the altitude of the seats of the senior entrants when names were read. The skirmish, precipitated when each entrant wished to be "tail-pilot" close to the X-ray viewing box, called for maneuvering which taxed the tactics of each participant. After a patient would be "taxied onto the field," the bombing directives, consisting of history, signs, symptoms and laboratory studies, would be given fast and furiously by Drs. Tourish or Cartey. "Now, wait a minute, repeat that again" signaled a respite for the students in which to mentally digest what was heard or for Dr. Shallow to emphasize a point or to make a humorous remark.

This initial "solo flight" was supposed to be
"grounded" on three years of training, but "pit sickness" akin to air sickness associated with a memory "dimout," glycosuria, twitching of the knees and laryngeal spasm, constituted the surgery clinic syndrome. The senior, who could repeat the history per se, was eligible for the Distinguished Service Medal. Dr. Shallow kept the ships of patient-disease conflict on an even keel throughout the journey by "I'll ask the end man, you've had enough" or "You'll make a good doctor since you jump to early conclusions, thereby not having to explain them."

The attack progressed under his direct questions and explanations of surgical conditions. Each fore, aft or wing gunner was given an attempt to hit the target of diagnoses. The so-called results of "what do you think it is" fire was aided or abated by X-ray charts or laboratory findings, and pathological post-operative specimens, analogous to aerial photography or reconnaissance under combat. Yes, in finishing the analogy, the hour hand on three was most welcome to each participant and he didn't relish further missions in the amphitheater. Despite the humor with which it has been described, we all feel deeply indebted to Dr. Shallow for the instructive and interesting surgical clinic.

On Tuesday afternoon Dr. Mueller, in his unique manner of imploring the clerk, who presented the case, to consider himself as a surgical consultant, elevated the senior's ego but also entailed responsibility in remarks or advice given. The interpretation of history, signs, symptoms and studies for diagnoses of cases presented, was a preview of the actual situations which we would meet in hospital or private practice. We were impressed by the attitude toward the patient as Dr. Mueller would remark, "—, you've heard all of that, do you understand

Dr. George P. Mueller

H-hour on Wednesday
Where is Trilla?
Amputation in the pit
"Now look at this gall bladder, boys?"
it?”, thereby inferring that nothing is withheld from the patient.

The lectures on surgery during the clinical years encompassed the gamut of surgery and were arranged to give us basic information of all aspects of it and its allied specialties. These lectures were presented by various members of the surgical departments. During the junior year, Dr. Eger discussed diseases and injuries of the bones and joints. Dr. Surver, often adorned so that surgical shirt and trousers were covered by a long white coat, discussed the principles of anesthesia. Dr. Lemmon lectured on hernias as to types, complications and treatment; his excellent teaching was frequently poorly repaid by us when under fire in the amphitheater. Dr. McCarthey, with his unique gentle manner and friendly voice, familiarized us with the diseases and surgery of the vascular system. Dr. Mueller, following his “expected of me” introductory lecture, discussed malignant growths. Dr. Walkling amused us with his “Rube Goldberg” diagrams illustrative of splint, traction and frame attachments during his intensive discussion on fractures and dislocations. Narration of his experiences in World War I, such as the graveyard-splint episode, was very interesting. To utilize a pun, Dr. Haskell could have had no more opportune time for his lectures on proctology than at the “end” of our junior year.

During the senior year, the lectures were on general systemic surgery, neurosurgery, plastic and reconstructive surgery. These were ably given by Drs. Shallow, Mueller, Wilhauer, Davis and Jaeger. Dr. Jaeger imbued us with the hope of surgery in heretofore fatal or
chronic debilitating neurologic conditions. Dr. Davis lectured on maxillo-facial surgery and its benefits in congenital and acquired abnormalities. The scheduled recitation period became instead a period of instruction of pre- and post-operative complications and their treatment, of indicated pre-operative studies in various conditions and demonstration and use of surgical instruments in hospitals.

The surgery clerkships during junior year were in minor surgery in the Surgical Out-Patient Department. The senior clerkships were given at Jefferson, Pennsylvania and Philadelphia General Hospitals. Students were assigned cases to "be worked up" prior to operation, if permissible were assistants or witnessed all operations including emergencies. Certain sections were assigned to accident ward, on call during the night to witness emergency admissions and dispensary treatment. The basic theme was to give intensive instruction on pre- and post-operative care and management and the use of surgical diagnostic and therapeutic aids so that the student might correlate his didactic work with clinical experience.
PSYCHIATRY

Because of the war, we were to miss the association and personal teaching of the Professor of Psychiatry, Dr. B. Keyes. During his absence Dr. Matthews has directed the department in a manner of which he may be proud.

In our preclinical years we were addressed by Drs. Matthews and Bookhammer who stressed the general relationship of the mind and body and the importance of the concept in the treatment of diseases. The history and growth of this new branch of medicine was also outlined.

During the clinical years, psychiatry in all of its ramifications was presented. The Saturday morning lectures in the junior year were well presented and supplemented by actual case reports illustrative of this or that abnormality. In this manner we unknowingly began to comprehend the principle of psychoses.

Saturday afternoon clinics during both clinical years at Philadelphia General Hospital, in spite of the football games at the nearby stadium, were well attended. Here cases from the wards were presented and discussed in detail.

As we recognize psychiatric tendencies in our patients we will be ever mindful of the basic teachings expounded by the Psychiatric Department. We shall endeavor to practice psychosomatic medicine wherever applicable.

Psychiatry O. P. D.
Dr. Keyes, a distinguished visitor
During the "Bauer Hour," Thursday at four, we were introduced through didactic lectures to the care of the infant and child and the study of diseases which afflict him. Dr. Bauer will be remembered for his Republican leanings (to put it mildly), his jokes and his laudable, unswerving attempts to rid the world of "embalming food for babies," perambulators, and fancy sounding preparations of the detail men. The lecture was not complete if one of the latter was not bombarded. Formulae, we came to learn, meant not algebraic $x, y$ or $z$ squared, instead the ounces of water, milk and sugar to make a poor imitation of human milk for the bottle-fed baby. Measles, scarlet fever, diphtheria, chicken pox and pertussis became clinical entities much more significant than just something for which to be quarantined (in those days when one didn't need signatures for a furlough to stay out of school).

The feel of nimble, squirming bodies and wet diapers became a reality even for the unmarried of us during section work in the Pediatrics Out-Patient Department. Here we attempted to find the causes of a host of mothers' anxieties and babies' sicknesses. Dr. MacNeil was "ever so calm" as he ran hither and yon—"Miss Bieber, take this baby"—or as he predicted that as internes we'd swear we never were taught how to write a formula.

**The lone ranger**
"It won't hurt a bit"
"Say, th"
A way with children?
DERMATOLOGY

The science of the purple papule, the split-pea, psoriatic and crustaceous lesions, was introduced to us early on a Friday afternoon in spring by Dr. Knowles and his assistants, Drs. Decker, Corson, and Pratt. In a series of well-thought-out, well-illustrated lectures throughout the year we were introduced to the colorful study of dermatology from tenae to athlete’s foot. The habitat of pediculi, the causes of acne, the dramatic terminology of pathology of the epidermis and its appendages were further enlightened in our minds by a bi-weekly session in the Out-Patient Department. Here we saw in the flesh that which we had previously seen only through the medium of colored slides, and many of the more familiar lesions were firmly implanted in our minds. To the hard-working members of the Department of Dermatology we are indebted for a thorough introduction to a subject which is too often neglected by the general practitioner.
LARYNGOLOGY

Although it is referred to as laryngology, the study of the larynx, much more than just the study of the voice box, was presented. Here were unfolded the secrets and mysticism of the "say ah," the expression which causes each pharynx to greet us, as well as the causes of certain headaches which are not of the morning-after variety.

Yes, it was a free-for-all during the first session of the nose and throat clinic, while testing a colleague's gag reflex or "tickling" his tonsils or soft palate. Upon regaining his composure, he reciprocated by stretching one's external nares so that a deviation of the septum resulted (for future reference—a new cause).

During the senior year, work in this department has been didactic for the most part. Throughout the year the Wednesday morning clinics were devoted to the detailed study of the nose and throat and their associated diseases. Drs. Clerf, Fox and Wagers lectured and presented cases and reports of interesting conditions. The subjects were presented in a concise and easily comprehended manner so that each member of the class could share the vast knowledge and accumulated clinical experience of the lecturers.
Our wondering attentions during the early portion of our clinical studies were quickly focussed on a pair of external appendages, and for five weeks we practiced the not easily acquirable art of poking a ray of light from a wobbling head-mirror into the Stygian blackness of the human ear. That we were able to accomplish this act at the end of our section work was due both to the numerous patients in the waiting room and the extensive patience of our instructors, the Drs. Towson, Hitschler and Kaufman. A succinct discussion at the beginning of each period made our visual finding much more meaningful to us. We were rather well grounded in the practical aspects of the subject when, as seniors, we were led through the more didactic and technical phases of the subject by Dr. Williams, ably abetted in the early part of the year by Dr. Kaufmann. That we are now able to distinguish between an otitis media and a mastoiditis, a cellulitic and a plug of wax, we owe to the constant, amiable and unremitting attention and interest each of the men connected with the department demonstrated with each of us. And who can forget our early sessions with the audiometer, the gradual realization of the potentialities of a tuning fork, or cocaine-menthol-phenol mixtures (a á for local anesthesia). Aside from the teaching duties carried on by the staff, a special clinic for the prevention and treatment of deafness in children is held weekly, and this is supplemented by Mrs. Clay’s lip-reading class, the value of which can be fully appreciated only by those who have had need of its service. The sound basis of anatomical knowledge, the recognition and pathological processes and a clear insight into the fundamentals of treatment will give us a sound basis for our future contacts with the human ear, be it pained or deaf, running or ringing.
NEUROLOGY

The precision of the diagnostic acumen developed in the practice of neurology can be no better represented than in the classic presentation of this complex subject to the student body by the members of the neurological teaching staff. The anatomical and pathological basis for our studies had been well laid during the sophomore year, and upon this broad foundation Dr. Alpers and his associates built with meticulous care. The minute, lucid outlines presented to us from the pit during our junior and senior years were marvels of organization and pithy information, all the more remarkable in that each anatomical, pathological, or diagnostic point was delivered sans benefit of notes. The knowledge of the symptomatology of lesions in particular areas of the neurological environment was painlessly offered us during the ten hours devoted to this subject in our third year, while the more specific disease entities were comprehensively covered in our last. The two series of lectures, each complete in itself, were to give us a clear-cut understanding of a tremendously intricate subject.

The Physical Therapy Department, under the able and enthusiastic leadership of William H. Schmidt, introduced us to the curative values of heat, cold, light of different kinds and many other forms of physical medication.

"Fifteen minutes of diathermy"

Neurological quandary
"I'll have to mark you correct, for I can't hear you from away up there" was a typical humorously phrased remark of Dr. Shannon, a genial, dynamic personality, as he "prompt-quizded" the class since, as he stated it, "I can't stress the subject too strongly."

The weekly lectures, demonstrations and case presentations in the amphitheater along with the section work in the Ophthalmology Out-Patient Department familiarized us with the afflictions of the eye and their management. The inherent nature of the eye in reflecting constitutional, vascular, optic and intracranial abnormalities, when the ophthalmoscope is employed, was stressed and instances of its importance presented in the section and clinic periods.

We were very sorry that it wasn't until our senior year that we came to meet Dr. Shannon and departmental members. As we came to better know the "wizard of the eye" we were impressed by his sincerity of purpose, his devotion to the student and his beloved personality. It was by reason of such qualifications that the graduating class presented, to the college, the portrait of Dr. Shannon—to share the walls of Jefferson with its other famed teachers.
The acquisition of a working knowledge of the fundamental principles of urology is imperative for each medical student. We at Jefferson were fortunate in having Dr. Davis to lead us in this quest. In the series of lectures of the junior year, the cause and effect of the changes in the "plumbing system" of the body, the importance of prophylaxis, early diagnosis and correction of abnormal urinary conditions were outlined and discussed. Dr. Davis' ability to diagram the urinary apparatus to clarify its structure, mechanism, and normal or pathological physiology was unsurpassable.

During the senior year, lectures were coupled with ward clerkships, section work in the Urology Out-Patient Department and weekly clinics in the clinical amphitheater. The work on wards was designed to give us insight into the urology history, diagnosis, prognosis and treatment in specific patients. During ward rounds and at the weekly Thursday clinics Dr. Davis required the student, whose case was presented, to be well versed and to use accumulated knowledge to meet any problem, for "God gave you a brain, didn't he—well, use it." He, who had all whys and wherefores of his case at his finger tips, had no cause for worry, but woe encamped the unfortunate who had "no ideas on the subject" or who didn't have his case worked up completely.
ROENTGENOLOGY

Our introduction to roentgenology occurred as a legitimate excuse to leave freshman anatomy lab early one very warm afternoon to view the wonders of fluoroscopy. We had all been given barium sulfate and instructed to ingest this lovely tasting suspension at varying intervals. Thus it appeared in corresponding parts of our G-I tracts, which we could observe from one end to the other, under the able supervision of Dr. Dillman.

Sophomore year we were exposed to normal X-ray films and a series of interesting lectures by Dr. Kennedy.

Junior year approached and we were blessed with the good fortune of Dr. Swenson’s arrival as the new chief of the Roentgenology Department. Dr. Paul C. Swenson was graduated from Minnesota in 1925. He later did graduate work at the University of Michigan, where he became instructor in medicine in 1929. From there he went to Columbia University as an instructor in medicine and remained in that capacity for four years. In 1934 he was appointed Assistant Professor of Radiology. From 1939 to 1943 he served as associate professor at the same institution. Then he came to Jefferson as Professor of Roentgenology. Lectures in junior year no longer remained hours to make up lost sleep for Dr. Swenson’s talks were stimulating, informative and spiced with his ready humor. Will we ever forget the film of the dog with his bone, the little boy with his nuts and bolt, or the Merchant Marine with his 7-Up bottle?

A still greater improvement was made in senior year as our instruction was obtained in small groups where everyone joined in the discussion. At this time we were aided by Dr. Swenson’s very informative booklet, "Roentgen Diagnosis of Diseases of the Skeleton." Some of these conferences were presided over by Dr. Teplick, who very ably acquainted us with the physics and therapeutic uses of the roentgen ray. His teachings were very much enjoyed and appreciated, as were those of Dr. Swenson who, in our opinion, is responsible for great advances in his department. This opinion is borne out by the obvious confidence of the other departments in Dr. Swenson and we feel that we owe this man much for acquainting us with this indispensable diagnostic and therapeutic agent.
THE FACULTY

WILLIAM HARVEY PERKINS, M.D., Sc.D., Dean and Professor of Preventive Medicine, Jefferson Medical College, 1914; M.D., Jefferson Medical College, 1917; Intern, Jefferson Medical College Hospital, 1917; 1st Lieutenant, Medical Corps, U. S. Army, Base Hospital No. 120, Tours, France, 1918-19; Medical Missionary, Presbyterian Board of Foreign Missions to Siam, 1919-23; Fellowship in Medical Education, Rockefeller Foundation, 1921-1926; Professor of Medicine and Director of Clinics, Chulalongkara University, Siam, 1926-30; Instructor in Medicine, Tulane University, 1930-1931; Professor of Preventive Medicine, 1931-1941; Dean and Professor of Preventive Medicine at Jefferson Medical College since 1941; awarded Order of White Elephant, Siam, 1930; American Medical Association; American Society of Tropical Medicine; American Public Health Association; National Tuberculosis Association; Regional (Director) Philadelphia Tuberculosis and Health Association; Theta Kappa Psi; Alpha Omega Alpha; author, Cause and Prevention of Disease, 1938.

J. PARSONS SCHAFFER, A.M., M.D., Ph.D., Sc.D., Professor of Anatomy and Director of the Daniel Baugh Institute of Anatomy, 1914; M.D., University of Pennsylvania, 1907; Instructor of Anatomy, Assistant Professor of Anatomy, Cornell University, 1907-11; Assistant Professor of Anatomy, 1911-12; Professor of Anatomy at Yale University, 1912-14; Alpha Omega Alpha; Sigma Xi; Fellow American Association for Advancement of Science; American Anatomists; American Genetic Society; Academy Natural Science; American Medical Association; College of Physicians; American Philosophical Society; Corresponding Fellow American Laryngological Association.

FRANK CROZER KNOWLES, M.D., Professor of Dermatology, 1919; M.D., University of Pennsylvania, 1902; Dermatologist, Jefferson Medical College, Pennsylvania Hospital, Presbyterian Hospital; Colonel, Medical Reserve Corps, U. S. Army; Author of Diseases of the Skin; American Academy of Dermatologists and Syphiliology; American Dermatologic Association; American Medical Association.

EDWARD L. BAUER, M.D., Professor of Pediatrics, 1926; M.D., Jefferson Medical College, 1914; Intern, Germantown Dispensary and Hospital, 1915; Assistant Resident, Children's Seashore House, 1914; Assistant Resident, Philadelphia Hospital for Contagious Diseases, 1914-15; Resident, Children's Hospital of the Mary J. Drexel Home, 1916-1917; Advisory Committee of Maternal and Child Health; Pennsylvania State Department of Health; American Academy of Pediatrics; American Medical Association.

J. EARL THOMAS, M.S., M.D., Professor of Physiology, 1927; M.D., St. Louis University School of Medicine, 1918; American Physiological Society; Society for Pharmacology and Experimental Therapeutics; Society for Experimental Biology and Medicine; Philadelphia College of Physicians; Philadelphia County Medical Society; Physiology Society of Philadelphia; American Gastroenterological Association; Alpha Omega Alpha.

VIRGIL HOLLAND MOON, A.B., M.Sc., M.D., Professor of Pathology, 1927; M.D., Rush Medical College, 1913; Intern, Kansas City General Hospital, 1913-14; Director of Laboratories and Pathologist, Jefferson Medical College Hospital; Visiting Chief Pathologist, Philadelphia General Hospital; American Association Pathologists and Bacteriologists; American Human Serum Association; American Medical Association; American Society for Experimental Pathology; International Association for Geographic Pathology.

CHARLES E. G. SHANNON, A.B., M.D., Professor of Ophthalmology, 1927; M.D., Jefferson Medical College, 1902; Intern, Pottsville Hospital, 1902-03; additional training, Massachusetts Eye and Ear Infirmary, 1903-04; Instructor, Demonstrator, Associate Professor of Ophthalmology, Jefferson Medical College successively since 1904; American Academy of Ophthalmology and Otology; American Medical Association; American Ophthalmological Society; Ophthalmologic Research Association.

LOUIS H. CLEEF, M.D., LL.D., Professor of Laryngology and Bronchology, 1930; M.D., Jefferson Medical College, 1912; Intern, Jefferson Medical College Hospital, 1912-14; Chief Resident Physician, 1914-16; Laryngologist with U. S. Navy, 1917-20; Captain, Medical Corps, U. S. N. R.; American Association of Thoracic Surgery; Fellow of American College of Physicians; Fellow of American College of Surgeons; American Bronchosopogical Association (Past President and Secretary); Philadelphia County Medical Society; Pennsylvania State Medical Society; American Laryngology, Rhinology and Otolary Society; American Medical Association.

THOMAS A. SHALLOW, M.D., Samuel D. Gross Professor of Surgery, 1930; M.D., Jefferson Medical College, 1911; Intern, Jefferson Medical College Hospital, 1911-13; Chief Resident Physician, 1913-1914; Assistant to Dr. J. Chalmers Da Costa and
Martin E. Rehfuss, M.D., Professor of Clinical Medicine, 1936, and Sutherland M. Prevost Lectures in Therapeutics, 1941; M.D., University of Pennsylvania, 1909; Intern, University of Pennsylvania Hospital, 1910–11; American Hospital, Paris, 1911–12; Pasteur Institute, Paris, 1911; further studies in Germany and Austria, 1912–13; Captain, U. S. Army during World War I; American Gastroenterological Association; American College of Physicians; American Medical Association; Fellow of the College of Physicians of Philadelphia; Philadelphia County Medical Society; author of Diagnosis and Treatment of the Diseases of the Stomach, Medical Treatment of Gall Bladder Disease, and Indigestion; inventor of Rehfuss Stomach Tube.

George P. Mueller, Sc.D., M.S., M.D., Grace Revere Osler Professor of Surgery, 1937; M.D., University of Pennsylvania, 1899; Intern and Chief Resident Physician, Lankenau Hospital, 1899–1903; Clinical Professor of Surgery, University of Pennsylvania, 1922; Fellow of American College of Surgeons; American Association of Thoracic Surgery; American Medical Association; American Surgical Association; Society of Clinical Surgery; Major, U. S. Army during World War I.

Norris W. Vaux, M.D., Professor of Obstetrics, 1937; M.D., University of Pennsylvania, 1905; Intern, Pennsylvania Hospital, 1905–06; Special Course, Rotunda Hospital, Dublin, Ireland; Obstetrician and Gynecologist-in-Chief of Pennsylvania Hospital; Fellow of American College of Surgeons; American Medical Association; American Gynecological Society; Philadelphia County Medical Society.

Horace J. Williams, M.D., Professor of Otolaryngology, 1937; M.D., Jefferson Medical College, 1912; Intern, Children’s Hospital, Germantown Dispensary and Hospital, Jefferson Hospital, Pennsylvania Hospital; Otolaryngologist at Germantown Dispensary and Hospital, Memorial Hospital at Roxborough, Philadelphia Hospital for Contagious Diseases, Jefferson Hospital; American Academy of Ophthalmology and Otolaryngology; American Medical Association; Fellow of American College of Surgeons; American Otolaryngological Association.

Bernard J. Alpers, M.D., Sc.D. (Med.), Professor of Neurology, 1939; M.D., Harvard Medical School, 1923; Sc.D. in Medicine, University of Pennsylvania, 1939; Neurologist at Jefferson Medical College Hospital, Pennsylvania Hospital, Philadelphia General Hospital; American Association of Neuropathologists; American Medical Association; American Neurological Association; American Psychiatric Association.

James R. Martin, M.D., James Edwards Professor of Orthopedic Surgery, 1939; M.D., Jefferson Medical College, 1910; Intern, Jefferson Medical Col-

Hobart A. Reimann, M.D., Magee Professor of Medicine, University of Minnesota, 1936; Professor of Physiology and Pharmacology, West Virginia University, 1920–23; Associate Professor and Professor of Biochemistry, School of Medicine, West Virginia University, 1923–31; American Chemical Society; American Association for the Advancement of Science; American Association of University Professors; Franklin Institute.

Charles M. Gruber, A.B., A.M., Ph.D., M.D., Professor of Physiology, University of Pennsylvania, 1914–15; Professor of Physiology and Pharmacology, Albany Medical College, 1915–17; Professor of Physiology and Pharmacology, University of Colorado, 1917–21; Associate Professor of Pharmacology, Western University Medical School, 1921–32; American Physiological Society; American Society of Pharmacology and Experimental Therapeutics; Philadelphia County Medical Society; Pennsylvania State Medical Society; American Medical Association; Alpha Omega Alpha.

David M. Davis, M.D., Professor of Urology, 1935; M.D., Johns Hopkins Medical School, 1911; Intern, Baltimore City Hospital, 1911–12; Associate Resident and Resident Urologist, Johns Hopkins Hospital, 1920–22; American Association of Genito-Urinary Surgery; American Medical Association; American Urologic Association (Mid-Atlantic Section President, 1941–42); Southwestern Medical Association; Alpha Omega Alpha.

Hobart A. Reimann, M.D., Magee Professor of Medicine and Acting Head of the Department of Experimental Medicine, Jefferson Hospital, 1936; M.D., University of Buffalo, 1921; Intern and Resident Physician, Buffalo General Hospital, 1921–23; Assistant, Hospital of the Rockefeller Institute, 1923–26; Fellow in Pathology, National Research Council in Prague; Associate Professor of Medicine, Peking Union Medical College in Peking, 1926–1930; Associate Professor of Medicine, University of Minnesota, 1930–36; Professor of Medicine, University of Minnesota, 1936; American Society of Clinical Investigation; American Society of Experimental Pathology; American Medical Association; Adviser of the American Board of Internal Medicine; Philadelphia County Medical Society; Alpha Omega Alpha; Nu Sigma Nu; author of The Pneumonias.

Martin E. Rehfuss, M.D., Professor of Clinical Medicine, 1936, and Sutherland M. Prevost Lectures in Therapeutics, 1941; M.D., University of Pennsylvania, 1909; Intern, University of Pennsylvania Hospital, 1910–11; American Hospital, Paris, 1911–12; Pasteur Institute, Paris, 1911; further studies in Germany and Austria, 1912–13; Captain, U. S. Army during World War I; American Gastroenterological Association; American College of Physicians; American Medical Association; Fellow of the College of Physicians of Philadelphia; Philadelphia County Medical Society; author of Diagnosis and Treatment of the Diseases of the Stomach, Medical Treatment of Gall Bladder Disease, and Indigestion; inventor of Rehfuss Stomach Tube.
le Hospital, 1910-12; Chief Resident, Jefferson Medical College Hospital, 1912-13; Medical Corps, U. S. Army, 1917-19; Consulting Orthopedist, Memorial Hospital (Roxborough), Pottsville Hospital, State Hospital for Crippled Children (Elizabethtown); American Academy of Orthopedic Surgery; American Medical Association; Philadelphia County Medical Society; Diplomate of the American Board of Orthopedic Surgery.

LEWIS C. SCHAFF, Sc.D., M.D., Professor of Gynecology, 1940; M.D., Jefferson Medical College, 1929; Resident Physician, Rotating Service, 1920-22; Acting Chief Resident, 1922; Personal Assistant to Dr. Brooke M. Anspach, Chief of the Department of Gynecology, 1923-28; American Gynecological Society; Fellow of American College of Surgeons; Diplomate of American Board of Obstetrics and Gynecology; American Medical Association; Founder of Jefferson Society for Clinical Investigation; President-elect of Philadelphia County Medical Society; Pennsylvania State Medical Society; President of Alumni Association of Jefferson Medical College.

BALDWIN LONGSTRETH KEYES, M.D., Professor of Psychiatry, 1941; M.D., Jefferson Medical College, 1917; Intern, Misericordia Hospital, 1919-20; Santa Casa Hospital, Rio de Janeiro, Brazil, 1920-21; Resident Physician, Pennsylvania Hospital, 1921-25; Chief of Psychiatry Service at Philadelphia General Hospital; Corresponding Psychiatrist for U. S. Federal Court (Philadelphia District); Lieutenant-Colonel in the Medical Reserve Corps of the U. S. Army; Unit Director of the 38th General Hospital, Jefferson Hospital Unit; Medical Advisory Board, Philadelphia Municipal Court; American Medical Association; Fellow of American College of Physicians; American Neurologic Association; American Psychiatric Association; American Society for Research in Nervous and Mental Diseases.

Harold W. Jones, M.D., Sc.D., Thomas Drake Martinez Cardeza Professor of Clinical Medicine and Hematology, 1941; M.D., Jefferson Medical College, 1917; Intern, Jefferson Hospital, 1917-19; Chief Resident Physician, 1919-21; Director of Clinical Laboratory, 1919-28; Assistant Physician, Philadelphia General Hospital, 1921-29; Hematologist, Beebe Hospital; Fellow of American College of Physicians; American Board of Internal Medicine; Alpha Omega Alpha; American Association of History of Medicine.

Paul Christian Swenson, M.D., Professor of Radiology, 1943; M.D., University of Michigan, 1926; Intern, Gillette Orthopedic Hospital, St. Paul, Minn., 1925; Ancker City and County Hospital, 1926; Resident in Radiology, University of Michigan Hospital, 1928-30; Instructor in Medicine, 1930-34; Assistant Professor of Radiology, 1934-39; Associate Professor of Radiology, Columbia University College of Physicians and Surgeons, 1939-43; Fellow of American College of Radiology; American Roentgen Ray Society; North American Radiological Society; Fellow of the American Medical Association; Diplomate of American Board of Radiology; Philadelphia County Medical Society; Philadelphia Roentgen Ray Society.

CLINICAL PROFESSORS

Charles R. Heed, M.D., Ophthalmology.
Arthur E. Billings, M.D., Surgery.
George A. Ulreich, M.D., Obstetrics.
Samuel A. Loewenberg, M.D., Medicine.
John B. Flick, M.D., Surgery.
Arthur J. Davidson, M.D., Orthopedic Surgery.
Edward F. Corson, M.D., Dermatology.
John B. Montgomery, M.D., Gynecology.
Burgess L. Gordon, M.D., Medicine.
Clifford B. Lull, M.D., Obstetrics.
Garfield G. Duncan, M.D., Medicine.
B. B. Vincent Lyon, M.D., Medicine.
Rudolph J. Jaeger, M.D., Neurosurgery.

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A. Spencer Kaufman, M.D., Otology.
Creighton H. Turner, M.D., Medicine.
A. Cantarow, M.D., Medicine.
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Lorenz P. Hansen, Ph.D., Physiological Chemistry.
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Franklin R. Miller, M.D., Medicine.
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George Allen Bennett, A.B., M.D., Anatomy.
J. Bernard Bernstine, M.D., Obstetrics.
Henry B. Decker, M.D., Dermatology.
Arthur J. Wagner, M.D., Laryngology.

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H. H. Lott, M.D., Laryngology.
David W. Kramer, M.D., Medicine.
Benjamin Lipschutz, M.D., Neuroanatomy.
Robert M. Lukens, M.D., Bronchoscopy and Esophagoscopy.

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Carroll R. Mullen, A.B., M.D., Ophthalmology.
E. Ross Hart, Ph.D., Pharmacology.
Francis M. Forster, M.D., Neurology.
Joseph Stasney, M.D., Pathology.
John F. Coppolino, M.D., Pediatrics.
Guy M. Nelson, M.D., Medicine.
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Patrick A. McCarthy, M.D., Surgery.
Louis B. Laplace, M.D., Medicine.
A. M. Rechtman, M.D., Orthopedic Surgery.
Robert Bruce Nye, M.D., Medicine.

HOWELL B. Peacock, M.D., Laryngology.
George Phelan Blundell, B.A., M.A., M.S., Ph.D., Bacteriology and Immunology.

Bobb Schaffer, A.B., A.M., Ph.D., Histology and Embryology.

Lowell Ashton Efr, M.D., Medicine.
Lawrence S. Carey, M.D., Medicine.
George J. Willauer, M.D., Surgery.
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M. Noble Bates, A.B., M.A., Ph.D., Histology and Embryology.

Sherman A. Eger, M.D., Surgery.


Oscar T. Wood, M.D., Medicine.

William Harding Knebler, M.D., Medicine.
Moses Behrend, M.D., Surgery.

Robert S. Bookhammer, M.D., Psychiatry.

Daniel Lasker Turney, Ph.D., Chemistry.

Robert C. Hutchinson, A.B., Ph.D., Anatomy.

Karl E. Paschke, M.D., Medicine and Physiology.

John Lawrence Angel, Ph.D., Anatomy and Physical Anthropology.

Kelvin A. Kasper, M.D., Laryngology.

David M. Farrell, M.D., Gynecology.

Henry O. Sloan, M.D., Ophthalmology.

Ralph C. Hand, M.D., Orthopedic Surgery.

Robert Charr, M.D., Medicine.

Benjamin F. Haskell, M.D., Surgery (Proctology).

DEMONSTRATORS

John B. Ludy, M.D., Dermatology.

L. Grafton Sieber, M.D., Laryngology.

W. B. Swartley, M.D., Anatomy.

Maurice Brown, M.D., Dermatology.

Henry G. Munson, M.D., Dermatology.

Louis Chodoff, M.D., Bandaging.

Lynn M. Rankin, M.D., Operative Surgery.

Stanley Q. West, M.D., Urology.

Leopold Goldstein, M.D., Obstetrics.

D. Randall MacCarroll, M.D., Obstetrics.

R. Manges Smith, M.D., Radiology.

Carlos E. Wofcham, M.D., Obstetrics.

Jacob Hoffman, A.B., M.D., Gynecology.

P. L. Baleentine, M.D., Ophthalmology.

Samuel T. Gorty, M.D., Neurology.

James F. McGuire, M.D., Urology.

Edward F. Bunt, M.D., Pediatrics.

Mahlon C. Hinkebauch, M.D., Obstetrics.

Thomas J. Costello, B.S., M.D., Gynecology.

John Vernon Ellison, M.D., Obstetrics.

Floyd Johnson Putney, M.D., Laryngology and Bronchoscopy.

Tracy Donald Cuttle, M.D., Medicine.

S. Dale Spotts, M.D., Surgery.

David H. Solo, M.D., Laryngology.

Paul H. Roeder, M.D., Obstetrics.
ASSISTANT DEMONSTRATORS

EDWIN GORDON STOKE, M.D., Pediatrics.
CHARLES J. SWALM, M.D., Bronchoscopy.
LOUIS J. ROSENFELD, M.D., Pediatrics.
EDWARD CARLE THOMAS, M.D., Pediatrics.
LOUIS A. KUSTIN, M.D., Otology.
MILTON HARRISON, M.D., Surgery.
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S. ALDRICH C. CROWE, M.D., Pediatrics.
SAMUEL JAFFE, M.D., Medicine.
EDWARD H. KOTIN, M.D., Medicine.
HIGH ROBERTSON, M.D., Operative Surgery.
WALTER R. LIVINGSTON, M.D., Pediatrics.
JOSEPH D. BROWN, M.D., Operative Surgery.
ROBERT ERNST IMHOF, M.D., Dermatology.
ABRAHAM COHEN, M.D., Medicine.
ALBERT WHEATLAND BROWN, M.D., Obstetrics.
EDWARD T. LITT, M.D., Urology.
CHARLES H. HARNEY, M.D., Surgery.
JOSEPH J. CAYA, M.D., Medicine.
J. J. KIRSHNER, M.D., Medicine.
EDWARD J. MOORE, JR., M.D., Pediatrics.
BERNARD B. STEIN, M.D., Pediatrics.
K. M. CORBIN, M.D., Pediatrics.
CAPERS B. OWINGS, M.D., Otology.
DARIUS G. ORNSTEN, M.D., Otology.
CHARLES H. LACLAIRE, M.D., Surgery.
RICHARD CHODOFF, M.D., Surgery.
EDWARD A. Y. SHELLENBERGER, M.D., Gynecology.
S. VICTOR KRAMEN, M.D., Obstetrics.
PAUL EBNER, M.D., Obstetrics.
A. E. RAKOFF, M.D., Obstetrics.
MARCEL STANLEY SUSEMAN, M.D., Obstetrics.
RAPHAEL H. DURANTE, M.D., Neuroanatomy.
JOHN C. URHATTIS, M.D., Psychiatry.
ROBERT MCCOMBS, M.D., Medicine.
JOHN CHIRLEDEN, M.D., Proctology.
PERK LEE DAVIS, M.D., Medicine.
NICHOLAS P. A. DIENNA, M.D., Obstetrics.
GEORGE A. SILVER, M.D., Bacteriology.
EDWARD C. BRITT, M.D., Laryngology.
ROBERT S. GARRER, M.D., Psychiatry.
DAVID M. BROOKS, M.D., Ophthalmology.
LEONARD W. PARKHURST, M.D., Medicine.
JOHN A. McCORMICK, M.D., Obstetrics.
JOSEPH L. FINN, M.D., Obstetrics.
GLENN S. DICKSON, B.A., M.D., Gynecology.
ARTHUR S. McCALLUM, M.D., Laryngology.
JOHN J. O'KEEFE, M.D., Laryngology and Bronchoscopy.
CARL T. HOULIHAN, M.D., Laryngology.
LEWIS C. MANGES, JR., M.D., Surgery.
ROBERT R. LAYTON, M.D., Surgery.
JAMES NELSON, M.D., Medicine.
FRANKLIN RUTBERG, M.D., Otology.
AMOS S. WAINER, M.D., Obstetrics.
EPHRAIM M. ROSSET, M.D., Obstetrics.
ALFRED W. SNEDCKER, M.D., Psychiatry.
THOMAS W. CLARK, M.D., Medicine.
JOSEPH LEE HOLLANDER, M.D., Medicine.
IZYDOR EDMUND MIKOWSKI, M.D., Medicine.
ARNOLD GOLDBERG, M.D., Obstetrics.
BASIL GILETTA, M.D., Obstetrics.
JOSEPH LOUIS NOCENTINI, M.D., Ophthalmology.
MILTON K. MEYERS, M.D., Child Psychiatry.
JAMES D. MAHONEY, M.D., Psychiatry.
NICHOLAS F. VINCENT, M.D., Neurology.
C. BALCOM MOORE, M.D., Urology.
PAUL M. PEGAU, M.D., Medicine.
ARTHUR G. BAKER, M.D., Medicine.
JOSEPH RICCHIUTI, M.D., Medicine.
ALEXANDER SOCHACKI, M.D., Medicine.
ARTHUR BOLDEN, M.D., Medicine.
JOSEPH THOMAS CADDEN, M.D., Medicine.
SAMPLR H. RYNES, M.D., Medicine.
J. STANLEY COHEN, M.D., Gynecology.
EDWARD H. BISHOP, M.D., Gynecology.
DANIEL J. LANGTON, M.D., Laryngology.
CLARENCE C. BRISCOE, M.D., Obstetrics.
JACOB M. CAHAN, M.D., Medicine.
ROBERT G. HEATH, M.D., Neurology.
FREDERIC KRAMER, M.D., Psychiatry.
EDWARD L. LIPSius, M.D., Ophthalmology.
SIDNEY RADBILL, M.D., Ophthalmology.
NED T. RAKER, M.D., Surgery.
HARRY ROGERS, M.D., Medicine.
CHARLES M. SEMISCH, III, M.D., Pediatrics.
MAX ROSENZWEIG, M.D., Urology.
FREDERIC B. WAGNER, A.B., M.D., Anatomy.
GAETANO BRINDISI, M.D., Medicine.
ALISON H. PRICE, M.D., Medicine.
DOUGLAS WALDEMAR LUND, M.D., Medicine.
JAMES B. CARTY, M.D., Surgery.
HARRY J. KNOWLES, M.D., Surgery.
FREDERICK B. WAGNER, A.B., M.D., Surgery.
THOMAS M. SCARICACIOTTI, M.D., Pathology.
SOLOMON KEESAL, M.D., Urology.

*Died January 31, 1943.
†Leave of absence.
CLASS
COMES time for another class history. With the rate at which events travel today the past becomes hazy in a shockingly sudden manner, but the memories of our freshman year have been so deeply driven into us that I think we shall always remember them. Dr. Schaeffer's anatomy course, with the able assistance (and pressure) of Drs. Michels, Bennett, and Ramsay, gave us a firm basis in that all-important subject. The wonders of bacteriology were unfolded to us by the personification of the Jefferson spirit, Dr. Rosenberger, who has since gone to his eternal reward. May he rest in peace. And, lastly, we studied chemistry under the tutelage of Dr. Bancroft who did his best to give us a working knowledge of the chemistry of Homo Sapiens (Dalmatian hounds, electric eels, et. al. being thrown in for free). It was a hard, nerve-wracking year. We were glad to see it end in February of 1943 but look back now with a great deal of pleasure to the more amusing things, forgetting the many little heartbreaks that went along.
April, which came shortly, found most of us back for the second act of our little drama. Everyone tried to outtalk everyone else with stories of the home town, family, best girl, and views of the local citizens. But medicine was our business so once more we went into the laboratories in preparation for the clinical years not far off. Back at Daniel Baugh Institute neuroanatomy was unfolded for us. Unfortunately, it would fold right back up again. Many curious things were pointed out by Dr. Lipshutz in the lab.

However, the majority of our time (during the first semester) was spent studying physiology. Drs. Thomas, Hart, Friedman, and Tuttle (of E. K. G. fame) lectured profusely, but fluently, and aided us no end in the destruction of frogs by the gross.

Clinical lab, under the guidance of Dr. Cantarow, gave us one of our first real look-ins at clinical methods. His lectures on kidney and liver function are classic to our way of thinking. And to excite us further Dr. Charr taught us physical diagnosis—a step closer to the wards. His subtle humor was enjoyed, his bedside manner envied by all concerned. None will forget the day he brought the Situs Inversus case to the pit, especially those who percussed the heart borders. Then, too, a preview of surgery was interestingly presented by Drs. Surver and Behrend through the year.

The second semester found us in a new atmosphere. No more free mornings and afternoons. Pathology and pharmacology were to be dealt with. The former course was ably presented by Drs. Moon, Stasney, and McGrew. We learned from Dr. Moon that there was an entity known as "Shock." If anyone wishes to read up on the subject there is a "little book" on the shelf in the library which deals with the subject at some length. The author—some fellow who might as well go down to the Delaware River and, well, you know what. Pathology was presented to us by a man whom we all admire greatly.
But need any stimulant be offered for memories of pharmacology? It is remembered by all, as is the dose of Strabismus Hydrochloride. Great tension was always in evidence when an exam was pending, climaxed by sighs of relief on the appearance of Dr. Gruber and notebook, or screams of anguish when Miss Friedman and blue books entered. Let us hope she didn’t take said demonstration as a personal affront. But in a more serious vein, from Dr. Gruber and his staff we received a good working knowledge of this vast subject and we thank him.

So came to an end our sophomore year in December of 1943. We could see the family waiting for the returned prodigal at the station but it seems that one just doesn’t pack up and leave when in uniform. Fourteen days were to be our lot. So for two weeks before furloughs started the Army men attended one hour of military class each day. Movies were shown and enjoyed by those awake. The Navy men ventured to the University of Pennsylvania for drill and basic training. Nights were spent in various amusement palaces and the Stage Door Canteen gave out many a theater ticket to Jeff men.

We finally got started home and most were with family and friends for Christmas and New Year’s. But the fourteen days went awfully fast and our junior year was under way before we knew it. The only thing missing was a lecture on how to read the schedule, where to be at a certain hour, and how much it was going to cost. Sections (with the aid of various maps) went to their respective services and our clinical years had started. Medicine, obstetrics, applied anatomy and many others were the topics of conversation. Already many phone calls have gone out for sed. rates, C. B. C.’s, etc., in the wee hours of the morning. And the Obstetric Department seems to make it a policy of having all deliveries between the hours of midnight and 7 A. M. We have seen the miraculous cures wrought by the static machine in the basement of the Clinic. Diseases unlimited are beginning to unfold before us in the wards and in the clinics. The marvels of surgery in this present day are presented in a very attractive and dramatic manner. We are seeing and getting first-hand information on a wonderful new drug. Dr. Matthew’s Saturday clinics have proven to be one of the star attractions of the week, of late dates being almost a requirement for admission to the amphitheater.

Members of the junior class are now in the process of acquiring internships, those all-important positions in which to prove their worth. And so the class moves swiftly on, preparing itself in every way possible to be a credit to Jefferson in the years to come.

Daniel H. Coleman,

Historian.
JUNIOR CLASS ROSTER

Ayers, John Allen Pa.
Balshi, Stephen Francis Pa.
Barrick, Claude Windfield, Jr. Ore.
Bauer, Richard Demme Pa.
Bear, John Milton Pa.
Bicknell, Frank James Pa.
Bireh, William Benjamin Pa.
Blair, Joseph Reese N. C.
Barrick, Claude Windfield, Jr. Ore.
Ayres, John Allen Pa.
Anthony, John Joseph, Jr. N. J.
Bear, John Milton Pa.
Bicknell, Frank James Pa.
Bireh, William Benjamin Pa.
Blair, Joseph Reese N. C.
Barrick, Claude Windfield, Jr. Ore.
Ayres, John Allen Pa.
Anthony, John Joseph, Jr. N. J.
SOPHOMORE
CLASS
THE time has passed quickly. It seems only yesterday that we embarked on our medical careers at Jefferson. Dean Perkins was on hand to welcome us and impress upon our minds the seriousness of the task we were about to undertake. The months ahead were presaged as hard ones and that warning was brought home more and more forcefully as time passed. And so we started, fresh out of college, and ambitious.

The basic sciences of anatomy, bacteriology and chemistry were our first hurdles. Osteology came and went in two weeks of rapid-fire quiz sections; we were graduates in osteology. Then came dissection. Dr. Bennett kept the class on its toes in the lab most of the time and his little pre-dissection lectures were invaluable. Dr. Michels showed us "the rotation of the gut," much to the delight of everyone concerned. Quiz sections were given to mark the beauty of living and we found out much to our surprise that we were the 52nd class that did not know the components of the cervical plexus. Every Monday Dr. Schaeffer lectured to us on some interesting and pertinent subject. Exams? Oh yes, we had them now and then. Little three-hour back-breakers that might well have been the first lesson of "How To Go Crazy in Three Easy Lessons." Who could forget that last session of anatomy exams? Who could forget the "nucleus pulposus?" We were mighty proud and satisfied with our course in anatomy. It was one of the best.

Then there was the little matter of physiological chemistry with Dr. Bancroft at the helm. A rough trip to say the least. Ultramicroscopes, food (pronounced fud), alizarin, Dalmatian hounds, alpha, beta and gamma (that's Greek), the standardization of sodium...
thiocyanate, how to change an aldose to a ketose, “take two, two, two sheets of paper.” One could go on almost ad infinitum. We always enjoyed Dr. Bancroft’s lectures. Then for four mornings a week pandemonium reigned on the third floor. Programs were handed out at the door of the lab. Couldn’t tell one solution from another without a program. The password was “get your water baths going” and the zero hour came at about ten minutes before noon. The air was tense, test tubes in hand, eyes on Dr. Hansen. All of a sudden “time to clean up” would ring through the room and . . . well imagine that, the lab would be empty. Good thing the door of the lab wasn’t of the revolving type.

We put in some time on the sixth floor too. Drs. Rosenberger and Kreidler introduced us to the marvels of bacteriology, ably assisted by Drs. Blundell and Moranz. Dr. Kreidler showed us the advantage of having an excessive “avoir do pois” in streaking a Petri plate. We learned a new word . . . “ubiquitous” . . . and found out from Dr. Rosenberger that there were quite a few animal parasites.

A word about Dr. Ramsay of histology and embryology fame. We have him to thank for one of the finest courses we ever had or ever hope to have. It was a joy to listen to his lectures and work with him in the lab. We gave a vote for Dr. Bates, too, a fine assistant who many times helped clear up some of the mysteries of embryology.

Excitement ran high over the idea of starting new courses. Once more we returned to Daniel Baugh Institute for a run-in with neuroanatomy. Dr. Lipshutz conducted the lab sessions. For many weeks we looked at the brain, wondering just what was inside, then one bright afternoon we dissected it . . . just like that . . . not much the wiser. Everyone left the lab at 5 P. M. (for the records better make that 5:30 P. M.) that afternoon a bit dazed at what they had done. Came the final exam and all gave a vote of thanks to the man who first published the compend.

Dr. Thomas was the guiding hand that led us through the massive amount of material to be covered in physiology. A fine lecturer and a good story-teller, he provided many a
happy hour in the North Lecture Room. Dr. Hart couldn’t tell stories because Dr. Thomas told all his good stories. Dr. Friedman couldn’t tell stories because he always lectured in the presence of a lady.

Oh yes, there was an allied (?) course given in the South Lecture Room. It also came under the heading of physiology. There were times when one might be led to believe that the course was an elective. Those who did attend said lectures learned many things... a smattering of aerodynamics, the size of an elephant’s red corpuscle compared with that of a mouse, “Why am I cross-eyed?” some harmony (the term is used loosely), and how to blow a whistle that no one can hear. All very interesting, but we must be getting on.

Our introduction to surgery was given by a man well qualified in the field—Dr. Surver. His lectures were always to the point and very interesting. He made a successful attempt to keep us abreast of the new developments in surgery along with giving us the basic principles in the simplest manner possible. We were sorry to see Dr. Surver leave at the semester but his successor proved to be an equally capable man in the person of Dr. Behrend. He very wisely initiated a program which gave each student in the class an insight into preparation and presentation of a scientific paper.

We spent a great deal of our time on the third floor again this year, but with the difference that on leaving the elevator we turned to the right instead of the left. Clinical lab as taught by Dr. Cantarow will long remain in our memories as one of our finest courses. Dr. Cantarow’s lectures were beyond compare. Many a student it was who put down his pen so that he might listen more attentively to the unfolding of the mysteries of the kidneys or liver in a manner which could not be matched by any professor.

Physical diagnosis. Dr. Charr saw to it that the course was made very interesting with his many and varied patients. He dealt with us with the personified “patience of Job.” “That is good, Doctor, but suppose we do it this way”—about as nice a way of being called down as anyone would want.

With the start of the second semester we began to delve into new courses. Under the expert guidance of Dr. Moon, pathology was under way. In the lab, Drs. Moon, Stasney, and McGrew are trying their best to make us observe and record what we see, not what we think we see. The course is still young to us, but it shows promise of being very good. We realize it is one of the most important.

And still another course has to be dealt with. Scene: North Lecture Room. Time: any afternoon at 2:00. Action: you bet... plenty of it. “Now we’re on toxicology; no, we’re through with that; it’s pharmacy. That’s not in the compend. What were those last 500 words? ‘This can’t be real.’ Ah, but it was... it was pharmacology in all its glory. The course is still in its infancy (that is, we’ve only been going for two weeks) but it shows promise. Of what I don’t know. A nervous breakdown? Could be. Dr. Gruber introduced us to the subject, but fast. Rest assured that the sophomore class is sweating... waiting for the next pharmacology exam.

And so it goes. Now we have an added impetus to study. The Army and Navy have taken over. And with Colonel Mills as our commanding officer, the sophomore class will stand with Jefferson high in the list of A. S. T. Programs all over the country. Interest in our work mounts as the time passes. We know not what the future holds but this we do know... the sophomore class has gotten the spirit of Jefferson and with that we are determined to prove ourselves worthy to be called Jefferson men.
SOPHOMORE CLASS ROSTER

Anderson, Gustave Walter Conn.
Baldwin, Clifford Ashton, Jr Maine
Babcock, Edward Blake Maine
Baltzell, William Hewson Pa.
Bannett, Aaron David Pa.
Bash, Myron N. J.
Bierly, Mahlon Zwingli, Jr. Pa.
Boysen, Homer Wilson N. J.
Cappelletti, A. Joseph Conn.
Carabasi, Ralph Anthony, Jr. Pa.
Carberry, George August Ind.
Carrabba, Salvatore Richard Conn.
Catanzaro, Charles Pa.
Chmelcik, Anthony Edward Pa.
Cohen, Abraham Lincoln Pa.
Collins, Harry Lee, Jr. Fla.
Coppa, Vito Louis R. I.
Cramer, Bernard Pa.
Curry, William Oliver, Jr. Pa.
Daly, Thomas William R. I.
Decker, John Paul Wash.
Devvenney, Joseph Francis Pa.
Dietel, Robert Charles Mass.
Dolphin, Joseph Murray Pa.
Dowdell, Paul Jones Pa.
Dugan, Charles Clark Pa.
Eriksen, George Norton, Jr. Del.
Fidler, Harry Earl Pa.
Fidler, James Joseph Pa.
Flotte, Camille Thomas Pa.
Gadomski, Joseph Peter N. J.
Gallagher, Henry Gratton Pa.
Gaudielle, Andrew Webster N. J.
Gebb, Jack Pa.
Gilbert, James Bryson Pa.
Gliwa, Edward Frank Pa.
Griffith, John Richard Pa.
Greble, Edwin St. John, III Calif.
Grulgan, Robert Austin Pa.
Haines, Robert Alvin N. J.
Haines, Robert William N. J.
Hamman, Charles Edmund Pa.
Harrop, Daniel Smith, Jr. R. I.
Heuston, Paul Balabanoff Wash.
Jenkins, John Richard, Jr. N. Y.
Johnson, James Joseph Pa.
Kane, William Martin Pa.
Keller, John Milton Pa.
Kennedy, Thomas Joseph Pa.
Korbonits, Charles William N. J.
Koretsky, Sidney Mass.
Krevisky, Seymour Pa.
Krisanda, Joseph Benedict Pa.
Kujda, Dominic Anthony Pa.
Lauck, Robert Reed Pa.
Lanich, Oscar Kenneth Pa.
La Noce, Louis Frank Pa.
Lechner, Frederic Clemons, Jr. Pa.
Leemon, Gamewell A., Jr. S. C.
Levintow, Leon Pa.
Lewis, Marvin Owen Pa.
Lindes, De Armond Pa.
Lahr, John Paul N. Y.
Lampkin, Forrest Edward, Jr. Texas
Lambert, John Lambert, Jr. N. Y.
Langdon, John Lambert, Jr. N. Y.
Laub, John Samuel Pa.
Laubach, Frederick Pa.
McAndrew, Michael John, Jr. Va.
McCormick, John Lawrence, Jr. Pa.
McGovern, Edwin Andrew R. I.
McLaughlin, Randall Moore Pa.
Mackell, James Valentine Pa.
Mallette, Peter Vincent Pa.
Maxmanian, Joseph Mass.
Meyer, Harold Pa.
Minde, George Frank N. J.
Muehlnhaus, William O. Pa.
Orr, Sidney Herbert Pa.
Palmer, Frank Cameron Pa.
Pastras, Thomas Pa.
Patrick, Thomas Eugene Pa.
Peterson, Benjamin Strawbridge Pa.
Puleo, Joseph Salvatore Pa.
Raban, Reginald James N. J.
Reberdy, George Kanter Mich.
Redmond, John Lambert, Jr. N. Y.
Reitz, Melvin Lewis Pa.
Rose, Isadore Pa.
Rowley, Samuel Dunham Conn.
Roy, Robert Howell Pa.
Rutkowski, Joseph Charles Pa.
Salseby, Richard George Pa.
Sass, Robert Eugene Pa.
Schramm, Frank Ernst, Jr. Pa.
Scott, Norman McLean, Jr. N. J.
Seidenberg, Henry Abraham Pa.
Senita, George Robert Pa.
Shannon, Frank James, Jr. Pa.
Shaub, Howard George, Jr. Pa.
Sherer, Bernad Dodd Pa.
Shugart, Richard Tatum N. C.
Silliman, Warren Benjamin Conn.
Sipes, Earl Kepner Pa.
Smith, Harry Charles Pa.
Stevens, Robert Graham Pa.
Tobias, Frederick Pa.
Urba, John Lawrence, Jr. Pa.
Walker, John Samuel N. C.
Walker, Duncan De Vane, Jr. Ga.
Walker, Herbert Louis Pa.
Weber, George Lawrence Pa.
Wentzler, James Donald Pa.
Wilkis, George Walter Conn.
Wimer, Bruce Meade N. J.
Woodward, William Mackey N. J.
Zehner, Richard Franklin Pa.
CLASS
HISTORY

IT WAS a cold wintry morning in Philadelphia. It was common and ordinary to most Philadelphians, but to one hundred and sixty new freshmen at Jefferson, it was a momentous day. We had entered upon a new life. Little did we know what a life! We had come from all manner of places and climates; the Army mostly from Camp Grant in Illinois and the Navy from various Naval Hospitals. Ours was the first class to enter resplendent in uniform. We weren't exactly resplendent but we were in uniform. The last memories of college days were brought back to us in the fraternity rushings, but it was just the calm before the storm. Before long the stars fell down and we were initiated to the secrets of Daniel Baugh Institute. Those first two weeks of osteology gave us some warning of what was to come. We learned of every bump and niche on each of the 206 bones of the body; and how we marveled when Dr. Bennett could name the bones of the wrist blindfolded and even tell us from which wrist they were taken!

Perhaps the best way to describe our history would be to give an account of our adventures in the various departments. We entered upon anatomy and entrusted ourselves to the venerable Dr. Schaeffer. We had heard many things of Dr. Schaeffer and now all we could do was marvel as he began to unfold to us some of the secrets of lymphatics, the para-nasal sinuses and cranial nerves. His vast repose of knowledge, his ever-present encouragement, and his twinkling eye will be
long remembered in days to come. Dr. Michels tried to be rough and tough but he just couldn’t seem to make it. He showed us the “pits” and demonstrated the rotation of the gut in a manner never to be forgotten. His constant admonishment of “Woe to the student who leaves Jefferson not knowing ...,” prodded us to study many times. Dr. Bennett, a strict and efficient man and a tireless worker, in addition to scaring us into studying, aided us immeasurably in his pre-lab quizzes and lectures. No matter how we tried to hide behind posts and the like, he always ferreted us out with a question. Tardiness was cut to a minimum due to Dr. Bennett’s method of reprimand.

In bacteriology, we found a genial understanding man who taught with a smile, but early in our course Dr. Rosenberger became sick and passed away. We were indeed sorrowful to lose such a man who for fifty years taught Jefferson men and influenced the lives of thousands of Jefferson students. Great as our loss was at the death of Dr. Rosenberger, he was ably replaced by the former assistant, Dr. Kreidler, who won our admiration and cooperation by his ceaseless efforts and patience. We watched all kinds of bugs and their relatives. We watched red bugs, blue bugs, long bugs, short bugs, big bugs, and little bugs and still more bugs. However, in the midst of it all, we were greatly aided and assisted by the tireless efforts of Dr. Blundell and Dr. Moranz. Towards the end of the course we received our lectures in parasitology from Dr. Sawitz whose popularity was immediate. His concise and direct lectures, and perhaps even the conclusion of his lectures a few minutes before the hour, endeared him to many.

In chemistry, our third big hurdle, we met Dr. George Bancroft who had the ability to explain his physiological chemistry by writing structural formulae. To many of us who had forgotten the fundamentals of chemistry, he soon refreshed our memory by careful and ceaseless effort. Although we did not think much about it at the time, he also gave us much good general knowledge which he had acquired in his many years of teaching. When we first looked at the formulae for ferric
ferrocyanide, cholesterol, sphingomyelin, lecithin and carbohydrates, we were stumped. However, we soon learned the system for remembering these and many other formulae, not to mention experimental procedures.

As a house has bricks and mortar, so has the human body its cells, tissues and organs. For this work in foundations we met with Dr. Ramsay who has one of the most complete collections of sections available. He would work hours in fixing demonstrations and hours again fixing slides to help demonstrate his lectures. His right-hand man was Dr. Bates who was not only at the projector, but also lectured. Although many of us had not been prepared in histology, Dr. Ramsay seemed to have that knack to get it across to the class.

For a change one lecture period we had pictures of movie actresses to demonstrate epidermis—more! more! That was a very popular lecture. And in lecture when we heard, "Believe me gentlemen, when I tell you this . . . ," we starred those notes as important to our future well being.

Despite the admonitions of the dear old sophomores who had us scared to death for the first two months, we learned to take our work in stride. If we didn’t know how to study before we reached here, we soon learned and very fast. When we started we looked ahead at eight months and thought it was a lifetime, but the days and weeks flew by and our knowledge increased by leaps and bounds—it had to. The pace was fast but in looking back we can heave a sigh at all the quizzes and blue books; wondering who was to swallow the barium; flipping a coin to see who was to swallow the stomach tube; spending hot days in lab and worrying most of all about making the grade. Now that the last exam has come and gone, we can really see what a swell bunch of professors we had in Drs. Schaeffer, Kriedler, and Bancroft. They kept us busy but they wanted to see us get through our first year. Although the going was tough, we had fun and decided it was a good life to follow. May we do as well as sophomores.

RICHARD A. HASTINGS, Historian.
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Authentic Translation of
The Jefferson Medical College Diploma

To all who shall see these writings, greeting:

For as much as academic degrees were instituted to the intent that men endowed with learning and wisdom should be distinguished from others by honors, to the end that this might be profitable to them, and also that the industry of others might be stimulated and the exercise of virtue and the liberal arts be exercised among men:

And as the fullest rights conferred publicly by diploma in our College have this end chiefly in view:

Therefore be it known, that we, the Presidents and Professors of Jefferson Medical College of Philadelphia, in the Commonwealth of Pennsylvania, have created and constituted a Doctor in the Art of Healing . . ., an honorable man endearèd to us by correct morals and all those virtues which adorn every good man; who, also, by his excellent knowledge of medicine as well as of surgical art acquired by him in this College, and manifested more fully in an examination publicly held by us, has shown himself worthy of the fullest academic honors.

To the one thus referred to . . . , we have by virtue of this diploma, most freely and fully granted and confirmed all the rights, honors and privileges belonging to the degree of Doctor in the Art of Medicine, among ourselves, and all nations.

In evidence of which let this diploma, signed in our handwriting, and having appended the seal of the College, be a testimonial.

Given in our medical hall, in the city of Philadelphia, on the . . . day of . . . in the year of human salvation . . . , and in the . . . year of the sovereign power of the United States of America.
ENTRANCE TO THE CURTIS CLINIC
Alpha Kappa Kappa

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GUSTAV ROSENHEIM ............................................ Vice-President
STEPHEN BALSHI .................................................. Secretary
FRANCIS GRESS ................................................... Treasurer

Founded ....................... 1888
Established ..................... 1900
Epsilon Chapter

The gathering of the clan
Pinky in the pink
A pleasant, pre-party pastime
on the third floor
The Alpha Kappa Kappa
training table
Put your money on the table
The plumbers at work
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W. Livingston, M.D.
Robert Bookhammer, M.D.
Founded.................1882
Established.............1900
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W. U. Reidt
Albert G. Schran
John F. Struve
Nathaniel Yingling

Party! Party!
"Eyes front!"

A report on late returns
Bull session on world affairs
Merrill didn’t get his build that way!
Phi Alpha Sigma

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VINCENT I. MACANDREW ....... Assistant Custos
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F. Daniel Russell
Richard T. Shaar
C. F. Brooke Smith
William H. Smith, Jr.
Wm. A. Terheyden, Jr.

Alumni dinner!
Bridging the gap between dinner
and studies
The Phi Alpha cozy corner

Founded ........................................ 1886
Established .................................... 1889
Delta Chapter
Founded: 1902
Established: 1891
Eta Chapter

Phi Beta Pi

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Gastronomic secretory phase
Cerebral exercises in the upper classes!
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John W. Holmes, M.D.  W. M. Hart, Ph.D.  D. McGrew, M.D.  A. J. Ramsay, Ph.D.

"We've got this one cinched"  Nearly everybody reads  . . .  A quiet hour of relaxation
Rest, relaxation, and relapse
The same old game at the same old stand
This was entirely too home-like to throw out! The face is familiar.

A pleasant scene... one of the pleasantest ones we can think of.

Founded ............... 1889
Established ............... 1903
Chi Chapter

A late date but no drape shape
Phi Delta Epsilon

Founded .................. 1904
Established .............. 1911
Mu Chapter

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J. B. Bernstein, M.D. N. Schlezing, M.D.    A. Cohen, M.D.       D. M. Farell, M.D.

Case discussions, post-mortems, and girls

Jerry, Cecil; something special!
The sign is all too true.

"Let's swing into something, boys!"

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Harry Burros
Sheldon Goldstone
Herbert Lipshutz
Robert Salasin
Jerome Shaffer
Harold Wilf

JUNIORS
Paul Gold
Stanley Lease
William Levinson
Martin Reiter
Victor Ruby
Jesse Schulman
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Myron Bash
Howard Isaacs
Seymour Krevsky
Harold Meyer
Sidney Orr
Isadore Rose

FRESHMEN
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Alan Blumberg
Larry Bonin
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David Krevsky
Melvin Samuels
Chester Trossman
Harold Wurzel
Phi Lambda Kappa

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<table>
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<tr>
<td><strong>FRATRES IN FACULTATE</strong></td>
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<tr>
<td>Samuel Lowenberg, M.D.</td>
<td>Moses Behrend, M.D.</td>
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<td>Abraham Cantarow, M.D.</td>
<td>Harry Bogaev, M.D.</td>
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<td>Arthur First, M.D.</td>
<td>Jacob Cohan, M.D.</td>
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<td>Marshall M. Lieber, M.D.</td>
<td>Benjamin Haskell, M.D.</td>
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<td>Martin Sokoloff, M.D.</td>
<td>Samuel Rynes, M.D.</td>
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<td>Mitchell Bernstein, M.D.</td>
<td>Samuel Gordy, M.D.</td>
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<td><strong>SENIORS</strong></td>
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<td>Milton Kitei</td>
<td>Julius Rosch</td>
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<td><strong>JUNIORS</strong></td>
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<td>Leonard Apt</td>
<td>Bensen Kreiger</td>
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<td>H. Eugene Nelson</td>
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<td><strong>SOPHOMORES</strong></td>
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<td>Abe L. Cohen</td>
<td>Leonard Levick</td>
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<td>Bernard Cramer</td>
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<td>Sidney Koretsky</td>
<td>Henry Seidenburg</td>
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<td><strong>FRESHMEN</strong></td>
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<td>Leonard Feldstein</td>
<td>Alfred Mintz</td>
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<td>David Hausman</td>
<td>Marty Mandell</td>
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<td>Roy Korson</td>
<td>Marian Rhode</td>
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<td>Leonard Rosen</td>
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<td>Sidney Lerner</td>
<td>Stanley Weinstein</td>
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<td>David Levin</td>
<td>Sidney Wolfe</td>
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<td>Samuel Younger</td>
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<td><strong>Brothers under the skin</strong></td>
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<td>Phi Lamb's field day</td>
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<tr>
<td>The gathering of the clan</td>
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<td>&quot;Got a match, brother?&quot;</td>
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</table>
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Phi Rho Sigma

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Ross S. Funch                Albert J. Kraft
Thomas A. Delehanty        Joseph N. Aceto
John A. Surmonte              Robert Yannaccone
                        Sidney M. Bashore

"No caption needed"
The daily news!
Pin-up pages
Play day!
The melody master
Theta Kappa Psi

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John R. Hell

John G. Jones
Gail G. Li
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Charles E. Miller
Laurence A. Mosier
Robert G. Rhoda
Bruce Van Vranken

The gentle art of balancing books or easy come, easier go
Three whites in the seventh!
The Senior study hour
Feeding time at the Zoo
Dean’s Committee

DESIGNED to ease the confusion and lend a helping hand to the incoming freshman class each year, the Dean’s Committee is made up of representatives from the seniors as selected by the Dean’s office. Their activities include aiding men new to the city in finding lodging, in offering advice and directions during the registration process, and, lastly, in serving as ushers during the Opening Night Ceremonies.

William Robert Anderson  
Angus Lejaren Brenner  
David Wakefield Chase  
Martin Chomko  
Charles Joseph Cross

John Talmadge Foster  
Edwin Stillman Grantham  
Milton Norman Kitei  
John Clement Reganis  
Homer Elton Wichern

Marshals Who Served at Commencement, January 6, 1944

Navy Representative: James Hindle Pass

Army Representative: Richard Hawthorne Ross

Yearbook Governing Board

IN ORDER to assure the fair selection of the Editor and Business Manager of the Yearbook and to do this at the earliest feasible date, and to give the various organizations and independent groups an equal voice in the procedure, the Yearbook Governing Board was organized. Made up of representatives from each of the fraternities and three non-fraternity men, it serves to appoint, assist and to control the finances of the class annual.

Fred Weiland, Chairman  
Henry Wentz, Alpha Kappa Kappa  
William Leute, Nu Sigma Nu  
Jerome Froelich, Phi Alpha Sigma  
Robert Kerr, Phi Beta Pi  
Robert Rich, Phi Chi  
Thomas Pilla, Phi Rho Sigma

Robert Salison, Phi Delta Epsilon  
Robert Barto, Theta Kappa Psi  
Jules Rosch, Phi Lambda Kappa  
Peter Midura  
James Beebe  
Edward McConville  
All Class Officers
MAN as a race is gregarious; man as a healer is necessarily a social being. In the medical profession where introspective, anti-social or misanthropic attitudes not only defeat the fundamental purpose of the art but hamper its successful application, a neophyte cannot overcome such mental incumbrances, or practice their antitheses too early in his career.

Medical education is as unlike the teaching of the Humanities and the Arts as a medical school is from a college. When one enters the study of physics his acquaintance and probably satiety of traditional college amenities is precluded. The medical curricula being so budgeted as to turn every available minute to account, leave no surfeit of time for social intercourse. Hence fraternities are a necessity. The opportunity and the responsibility to form those stimulating personal contacts with fellow student, which encourage exchange of ideas, temper judgments and develop priceless life-long friendships rest with fraternities.

Fraternities are not boarding houses; nor should such affiliations offer excuse only for the display of a certain jeweled emblem or the boast of a formidable, imposing list of "brother alumni." It should offer a bond with that world which will soon be the young medico's oyster, and mellow many a memory of an otherwise dogmatic, mechanical ritual of medical schooling.

While it is true that one group may ostensibly cater to those students who affect the more sartorially minded members of the medical profession; another, those of a scholarly trend, and yet another composed of the "salt of the earth" type who become as the "Alabama Student"—representatives of each of these groups find their places, unwittingly perhaps, in each fraternity and leaven the whole to a representative plane of the youth of America today, or a cross-section of a typical County Medical Society meeting of tomorrow.
In all educational fields there arises the desire for special recognition for those achieving scholastic honors. Near the turn of the century with the appearance of the graded medical curriculum and the rapidly changing status of medical education to that of graduate study, Alpha Omega Alpha was founded. It is the only order of its kind in medical schools on this continent and is comparable to Phi Beta Kappa in literary colleges and Sigma Xi in engineering and technological schools.

William W. Root, a junior student in the Medical Department of the University of Illinois, founded Alpha Omega Alpha in 1902. The Jefferson Chapter was the fifth to be established and was founded in 1903. At present, there exist forty-seven \( \Lambda \Omega \Lambda \) chapters in the outstanding medical schools of the United States and Canada.

Fifteen members of each graduating class are elected to membership in Alpha Omega Alpha, six being chosen during the junior year and nine during the senior year. The prerequisites for membership are outstanding scholarship in its broadest sense, irreproachable moral character, open-mindedness, individuality, originality, and the promise of intellectual growth.

The activities of Alpha Omega Alpha are primarily of an academic nature. Bi-monthly discussion meetings are held, an annual \( \Lambda \Omega \Lambda \) Lecture is given by a distinguished physician, and an annual \( \Lambda \Omega \Lambda \) Banquet climaxes the year's activities.
The Academy

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PAUL SCHUESSLER ........................................ Treasurer

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Thomas Nealon ............................................
Thomas Pilla ............................................... John Reganis
Robert Rich ............................................... Paul Schuessler
T. Frederick Weiland .....................................

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Vincent MacAndrew ....................................... Raymond Grandon

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Robert Puff ............................................... Robert Stockdale
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Alpers Neurological Society

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Grant Underwood
John Donovan
David Culp
Robert M. Kerr
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Harold Wilf
E. Hawanitz
S. Sarokanich
Walter Brennen
D. R. Shields
Augustin M. de Andino
R. J. Durham
Robert Updegrove
Warren Herrald
J. Berry
G. Arrington
Ray Florv
Thomas Pilla
K. Hanford
R. Lempke
J. Watson
Peter Midura
Paul Schuessler
Wallace Hussong
William Rothermel
Frank O. Robertson
Thomas Nealon
K. Williams
Harry Cramer
W. Fortnum
Robert Rich
David Brewer
J. D. McGaughey
E. Kapegbian
J. Yankevitch
J. T. McGeehan
R. T. Dirksen
Lee Liggett
William F. Dowdell
Raymond Williams
E. J. Feeney
C. Joseph Cross
William Morton
J. Haggarty
John Pulliam
Herbert Hunter
E. T. Ryan
Julius C. Rosch

JUNIORS

W. B. Burch
Ted Holman
Jack Ayres
Dan Brannen
Stanley Lesse
J. R. Blair
Ray Grandon
Paul Sieber
Ralph Veneman
Rudolph Helden
T. Foersberg
Victor M. Ruby
W. P. Martin
Frank McNelis
Max Hagedorn
J. F. Suermann
Robert du Prey
Stephen Balshi

180
Bauer Pediatrics Society

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ROBERT KILEY ..................................................... Treasurer

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Frank Brower
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Eugene Kain
Robert Kiley

William Leute
John Matthews
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James Spencer

JUNIORS

William Baldock
Richard Bauer
Lloyd Call
Kent Cooper
Robert Jeffrey
Thomas Knapp

Mon Kwong
Douglas MacKean
Edward McGhee
John McKeever
John McLelland

Lawrence McStravog
Howard Phillips
Victor Ruby
Lawrence Sprinkle
John White
Sau Ki Wong
THE Christian Medical Society is the newest of Jefferson's societies, being organized in 1941. An excerpt from the A. M. A. Journal concisely states [Jour. Amer. Med. Assoc., 114, 2167 (1940)]: "In a study made at several mid-western medical schools, it was determined that 83 per cent of the students never attend religious services of any kind and that during their professional training 68 per cent found their belief in a personal God to be less important than it had been." Thus the Jefferson Chapter was formed to provide a fellowship for men to discuss spiritual problems, and to encourage a personal faith in Jesus Christ, the Son of God.

"Jesus Christ the same yesterday and today, and forever, I am come that they might have life and that they might have it more abundantly."

—THE GREAT PHYSICIAN (JOHN 10:10).
Gross Surgical Society

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C. Joseph Cross ................................................................. President
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Robert H. Holland
Carol G. Konhaus
B. M. Lanman
W. B. Manges
Dave J. McGaughey
Fred A. Resch
F. O. Robertson, Jr.
W. S. Rothermel
Henry S. Wentz

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Eugene F. Costa
Merrill D. Cunningham
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Kent Cooper
John McKeever
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Richard C. Tozer
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183
Hare Medical Society

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RUSSELL GROVE ................................................ Secretary
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Claude Barrieck
William Birch
William Griffin
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Robert Lamb
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185
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188
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190
Maintaining High Standards in Accelerated Medical Education

Opening Address by Dr. Norris W. Vaux

Mr. President, Board of Trustees, Members of the Faculty, Students, and Friends:

During the past week I had the pleasure of hearing your dynamic President, Mr. Hooper, commend the members of the Jefferson alumni at the Annual Alumni Dinner, for their contributions to medicine and their loyalty to their alma mater.

The following day, I attended the 119th Annual Commencement of the Jefferson Medical College and Archbishop Spellman, Vicar of the Armed Forces of the United States, in a very inspiring address, spoke of the magnificent work which the Medical Corps is doing on every battle front, and emphasized the high spirits which he witnessed on the battlefields, in the camps, and in the hospitals. Mr. Liversidge, in his address to the graduates, reminded them that nothing is gained without hard work.

Tonight it is my privilege to address the undergraduate student body and it is my intention to direct my remarks in particular to the freshmen who are about to enter upon their chosen career in the Jefferson Medical College.

You have selected a life of sacrifice and public service and I assume that you are willing and anxious to pursue your studies with untiring effort and determination. From these halls in the past have gone some of the greatest physicians of all time. They should be your inspiration. Their names are among the immortals of science and their leadership can never be forgotten in the history of medicine. As Robert Louis Stevenson so ably expressed it in his "Eulogy of a Doctor," "There are men and classes of men that stand above the common herd. The soldier, the sailor, the shepherd not infrequently, the artist rarely, rarer still the clergyman, the physician almost as a rule. He is the flower of our civilization and when that stage of man is done with, only to be marvelled at in history, he will be thought to have shared but in the defects of the period, and to have most notably exhibited the virtues of the race. Generosity he has, such as is possible only to those who practice an art and never to those who drive a trade; discretion, tested by a hundred secrets; tact, tried in a thousand embarrassments; and what are more important, Hercelean cheerfulness and courage. So it is that he brings air and cheer into the sick room and often enough, though not so often as he desires, brings healing."

The students enrolled in the Jefferson Medical College today are most fortunate. In the present National Emergency they have an opportunity to serve the cause of democracy as well as humanity. It would be natural, in the light of this present world turmoil, for you to hesitate to face the confusion before you. Clear thinking, cool courage and fortitude surely must have played a great part in your decision to fulfill your hope and life-long ambition. Civilization and liberty have been threatened in our historic past and again we are engaged in a bitter struggle to uphold the principles of our democracy. It is indeed refreshing that we should be gathered together at the opening of the 120th Annual Session of this great institution of medical learning to dedicate ourselves anew to the task of making the world a safer and better place in which to live and have our being. This requires personal sacrifice as well as unwavering attention to the studies and duties assigned in your curriculum. You must face the fact that you will have to forego some of the more pleasant activities,
which your predecessors considered a part of their "medical school days," without which they may not have had the courage to carry on when the going was toughest. "All work and no play . . ."; you know the rest of the rhyme. But at the same time you must have the feeling that time is too precious to "fool away" during these war-rushed days.

In the shorter period of time allotted to your school year, grasp all the knowledge you possibly can so that your future medical work may not lack a firm foundation, which, after all, is the basis of everything worthwhile. You may be sure that you will never regret giving up extra-curricular pastimes in the interest of your studies. As a rule, the medical student has no conception of the pains-taking efforts which his professors and teachers are called upon to make in their attempt to pass on to him what they have learned from their own experiences. It is our desire that you shall be equipped with a thorough knowledge of the basic sciences and clinical branches of medicine so that you may eventually take your proper place in the medical world, and it is the responsibility of your faculty to see that your studies are outlined carefully so that you may be kept abreast of advancing medical instruction.

The first part of your medical school course is given over entirely to becoming proficient in the groundwork of the basic sciences. The second part is devoted to the clinical application of these sciences and to bedside instruction. Ordinarily this would cover four years; now your training must be accomplished in approximately three years. Usually your basic science instruction is outlined and presented to you by full-time scientific physicians, as it should be, but when that period is over you become associated with your clinical teachers who seldom are full-time instructors. These are men with private practices who are selected to be your teachers by virtue of their experience in their chosen field. The introduction of clinical clerkships into the curriculum in this school has greatly benefited the student in his bedside instruction. This practice is now accepted in most medical schools. When he enters his clinical instruction the student realizes that while his professors and teachers are there to lend a helping hand, he must of necessity be more independent and confident in his own application and deduction of diagnosis. Symptomatology, treatment and prognosis are now pieced together to give him his final answer to a particular problem. It is in this clinical instruction that the test tube must be put aside temporarily and the eyes, ears, and other senses put into use. With a thorough knowledge of the fundamentals of the basic sciences, diagnosis is not difficult. It is to be hoped that as you develop your clinical experience you will use history, perception, and physical examination to determine your diagnosis and use the scientific tests only to confirm your clinical findings.

Our object must be to maintain the high standards of the Jefferson Medical College which are legend in this institution. The development of an accelerated undergraduate program and intensification of the medical curriculum means that during the next three years the medical schools of the nation will graduate an additional five thousand physicians. We agree that military demands should have first consideration, but due consideration must be afforded the civilian population at home. Remember, you as students are being trained to form a line of defense on the home front just as surely as those men now overseas were trained to defend our cause on the front line of battle. Preventive medicine, which is now a part of your curriculum, is a defense against the inroads of disease arising from conditions which are associated with war.

While acceleration is necessary in order to increase the supply of physicians for government service, maintaining high standards in the accelerated program calls for cooperation above all else. Cooperation between the Board of Trustees and the faculty; cooperation between the faculty and the students. If all work together, the burden will be lightened and it will be possible to overcome this seeming handicap. It is obvious that the medical school must have adequate teaching personnel, facilities and equipment to assure the students the best possible instruction and clinical practice and it must not condense, abbreviate, or curtail any course of instruction. Acceleration
should mean only that vacation periods are shortened.

Each day brings new discoveries, theories, and treatments which eventually take their place in the curriculum. I shall not enumerate all of the recent advances, but will briefly mention the newer subjects with which you must be familiar before you receive your degree. The most noteworthy, which are common procedures today, but were unheard of when I was a medical student, include the lumbar puncture, intravenous transfusions, Miller-Abbot gastric tube technique, Diodrast for intravenous use in X-ray of the genitourinary tract, the Stader splint, sulfonamide therapy, penicillin, intravenous therapy, peripheral vascular surgery, brain surgery, lung surgery, continuous spinal anesthesia, continuous caudal analgesia for the relief of the pains of childbirth. Endocrinology, nutritional developments, radiation therapy and immunology, have also had a marked influence on medical education. Naturally, the war has caused many changes in treatment of disease. Indeed it has been instrumental in discovering new diseases; for example, the virus disease, which has opened up a new field with which the student must become familiar. The dispersal of military forces all over the globe has suddenly thrown on professional education new responsibilities. Our doctors must be prepared to recognize and treat all types of conditions and disease. They must have knowledge of the newer treatment of burns, development of sulfonamide therapy, immersion foot, blast injuries, renal failure of crush injuries, and the treatment of Dengue fever, malaria, and those other diseases peculiar to the tropics. To teach these subjects in an already crowded curriculum, under an accelerated program, will tax the ingenuity and capacity of the staff and students alike.

The student of today is as well trained, if not better fitted than the student of yesterday, but is he sufficiently aware of what may happen if he develops an attitude of complacency? Can all of these important advances in medical science be thoroughly covered in this intensified course of undergraduate instruction? I believe the longer period of instruction is preferable for many reasons. Nevertheless, if we make a united effort, I am confident the end-results will be satisfactory. "The souls of men and nations are and have been tested severely in such experiences," but we have learned "that right will ultimately prevail." Post-graduate medical education must be made available to those of you who will receive only a nine-months' internship before being called into the armed service. "Even though the science and art of medicine are ageless and will endure as long as the human race inhabits the earth, we cannot be content merely to preserve our heritage of the past." This has been called a year of destiny. We must not fail in the future and therefore the high standards of undergraduate medical education must be maintained. The Board of Trustees of the Jefferson Medical College, your faculty and your teachers are ready to meet the challenge and will, like the ancient Horatius, stand at your right hand and keep the bridge with you.

We are not unmindful of the national and world reconstruction which must follow when the war is won. That era may well be as great a challenge as the war itself in the form of social and economic revolution. Our aim at the Jefferson Medical College always has been, and always will be, to properly fit our young physicians for the practice of medicine, no matter how or when the pattern of medical education may become changed.

In order to maintain high standards in education, we must first maintain high standards in our student body. We expect you to accept your responsibility as true men of medicine and consider the added work and strain as a privilege which will aid you in attaining your goal. You have fulfilled the requirements of admission to the Jefferson Medical College and we feel confident that you are sincere in your ambition to become a physician. Those of you who have been accepted for service in the Army or Navy must be cognizant of the fact that yours is a two-fold job, which you are expected to do well. Under the Student Training Program your scholastic standing must remain high in order for you to continue as a student of this medical college. If you fall down on your job, we
cannot, and your government will not allow, you to remain in medical school. It is up to you. This requirement of maintaining a required scholastic standing applies to all students and civilians, as well as those in military service.

Do your work well and, God willing, when your graduation day arrives, you may receive your Degree of Doctor of Medicine with the true knowledge that you completed a difficult task and attained your goal by diligent and unwavering fidelity to your studies and the standards of your school.

May I thank the Board of Trustees for the privilege of addressing this undergraduate student body and wish a speedy recovery from their recent illness to Dr. David Davis and our Dean, Dr. Perkins.

Jefferson’s Art Gallery

Perhaps many students have given a hurried glance to the portraits which hang upon the walls of the College but few are cognizant of their historical background, their value and that among them are to be found the works of some of the most noted portrait painters in the country.

The earlier portraits in the collection were presented to the College by the Alumni Association to honor those members of the faculty whom they deemed outstanding as clinicians and teachers. The masterpiece of these is the “Gross Clinic” which was painted by Thomas Eakins in 1875 and has been the recipient of highest praise at exhibitions this year in Philadelphia and New York, honoring the centennial anniversary of this great artist’s birth. The much publicized canvas depicts the famous surgeon, Dr. Samuel D. Gross, frock-coated and gloveless, removing a piece of dead bone from the thigh of a young man as several of Jefferson’s faculty and students look on. Dr. Samuel W. Gross, the son of Professor Gross, who succeeded his father in the Chair of Surgery, is to be seen leaning against the side of the entrance way, and in the extreme corner sits the mother of the patient shielding her eyes from the horror of what is happening to her son. Although at its initial showing this most controversial portrait was described by critics as a degradation of art, it was purchased by the Alumni Association for the sum of $300 and was presented to the College at the commencement in 1875. It has not been until recently that the painting has been justly recognized and in fact have any of the works of Thomas Eakins. His interest in the exactness of anatomical features and in studying the varying forms of the human body led him to paint many boxing, rowing and swimming scenes and many athletic contests. He studied anatomy here at Jefferson under Dr. Pancoast, attended Dr. Gross’ clinics and later taught this subject to prospective artists at the Philadelphia Academy of Art. The portraits of Dr. Benjamin Rand, who occupied the Chair of Chemistry from 1864 to 1877 and served four years as Dean, and of Dr. William Smith Forbes, who drew up the Anatomical Act of Pennsylvania in 1867, were painted by Thomas Eakins and are considered excellent evidences of his skill.

Another valuable canvas in this group, that of Dr. Thomas Dent Mutter, Professor of Surgery, 1841–56, was painted by Thomas Sully, one of early America’s most renowned artists. The works of Sully have received great acclaim and many awards, especially his portrait of Queen Victoria and perhaps even more his famous sketch of “Washington Crossing the Delaware.” Dr. Mutter was a very popular teacher and was celebrated for his reparative surgery, particularly for harelip, clubfoot and deformity contractures. He laid
great stress on the importance of preparation of his cleft palate cases and that as there was no anesthesia the cooperation of the patient was very necessary. To this end he accustomed the parts to manipulation by touching the palate with instruments and fingers over a number of days before the operation. He insisted that the patient should not speak for some days after the operation and attributed the cutting of some of the stitches in one of his reported cases to the fact that the patient talked in his sleep. The portrait of Dr. Mutter hangs on the east wall of the library.

In the collection also are a representative number of the meritorious efforts of Samuel B. Waugh, an internationally renowned artist, who painted in Philadelphia until the time of his death in 1885. The portraits of Dr. Joseph Pancoast, Professor of Surgery and Anatomy, 1847-74, Dr. Samuel D. Gross, and Dr. Charles D. Meigs, Professor of Obstetrics and Diseases of Women and Children from 1841-61, are all evidences of Mr. Waugh's fine work.

To the graduating Class of 1924, however, goes the distinction of being the first class to have painted a member of the faculty as an expression of devotion to a faithful teacher and friend. Dr. J. Chalmers Da Costa, Professor of Surgery, was chosen by the class as a token of his years of service to Jefferson. Blossom Farley, a Philadelphia artist, was commissioned to paint the portrait and in view of Dr. Da Costa's discomfort in getting about was obliged to attend the surgical clinics and make sketches from which the final work was drawn. The ensuing year the graduating class followed the precedent set by the Class of 1924 and selected Dr. Thomas McCrae, Professor of Medicine, to be the recipient of their gift. In 1926 Dr. Albert P. Brubaker, Professor of Physiology, was so honored; in 1927 Dr. Hobart Hare, Professor of Therapeutics; in 1928 Dr. Randle Rosenberger, Professor of Preventive Medicine and Bacteriology, and so the custom has progressed until it is today one of momentous significance, both to students and to the faculty members so chosen.

J. G. D.
External Skeletal Fixation By Means of The Stader Splint

CAPTAIN C. M. SHAAR, Medical Corps, U. S. Navy

It is a privilege to contribute in a small way to the classbook of 1944. I wish it were within my power to write with the eloquence of the immortal Da Costa. How much easier it would be for me to weave the professional and sentimental in expressing my appreciation for your kind request.

You disciples of Aesculapius, members of the Class of 1944, before very long, will be following our armed forces to the end of the earth from the frigid zone of the Arctic to the Sahara desert. You will serve with the Army ashore, and with the Navy at sea. In the pursuit of your chosen profession to care for the ill and injured, I wish you good luck, God speed, and safe return.

If you permit me, I would like to devote for a moment from your request, and tell you something of the present implements of war and their relations to war casualties. From time immemorial there has been a definite relationship between the gods of force and the god of healing—Aesculapius. Wherever the destructive power of war goes the medical officers of the armed forces follow. They follow on foot, horseback, coaches, railroad trains, ambulances, jeeps, parachutes, skiis, aeroplanes, speedboats, and ships.

The weapons of war influence surgery tremendously. Prior to the introduction of firearms and gun powder in the fourteenth and fifteenth centuries, the methods of treatment had been the same from ancient times. Most injuries were the result of swords, arrows and clubs. With the advent of destructive weapons, the problem of surgery became more complicated. In the Napoleonic wars the handicap was considerable. While surgical technique was advancing rapidly, the science of surgery was lagging behind. Baron Larrey, Surgeon General of Napoleon's army, treated wounds on the field of battle, amputated limbs, and removed bullets, trephined the skull and performed tracheotomies, but the patient had to pass through the dreadful drama of operation without anesthesia. At that time anesthesia, antisepctic surgery and the science of bacteriology were not known, and the mortality was appalling. Today, with modern warfare, new weapons have been added, and, as a result, the number of injuries has increased and our surgical problems have increased accordingly. The high velocity bullets, powerful and destructive artillery, machine guns, grenades, bombs, mines, and torpedoes have increased the number of wounds and compound fractures. The air raid increased the number of casualties, especially crushing injuries and atmospheric blast injuries, not only on the field of battle, but among civilians population as well. Submarine warfare, in its destruction of merchant vessels brought the immersion foot syndrome in addition to other injuries, and the depth charge to counteract the submarine, brought the immersion blast injuries. The incidence of burns in this war has been increased considerably by the flash burns of high explosives, flame throwers and as a result of men swimming in a sea covered by flaming oil from sinking and burning ships. This is in addition to the innumerable burns caused from steam, gasoline, phosphorous and electricity.

OBJECTIVES OF TREATMENT

The fundamental principles of treating fractures are reduction, retention in proper position, and restoration of function. The accepted methods for the treatment of fractures are fixation in a plaster cast, skeletal traction, internal fixation and external fixation. Good results with any method depend upon accurate knowledge of the normal and the pathologic anatomy of fractures, a clear understanding of the fundamental principles involved, and upon the ability of the surgeon—not merely on the use of certain methods or appliances.

It is not sufficient to know that the fracture is simple or compound, transverse or oblique, spiral or greenstick, impacted or comminuted, or whether it enters the joint. In addition, an accurate appraisal of injury to soft tissues, especially the blood vessels and nerves, is imperative. The importance of X-ray examinations before and after reduction and during the period of follow-up, and the selection of the proper type of anesthesia for reduction cannot be overemphasized.

Fractures, whether in civilian life or military service, are not infrequently associated with other injuries. The primary objective in treatment is therefore first to save life, then limb, and finally to restore the limb to normal or useful function. The initial effort should be directed toward controlling the shock and hemorrhage which are present in all major fractures. Various degrees of burns may also complicate the fracture, especially in the military services. It is in this combination of injuries that external fixation becomes the ideal method. While the proper treatment of the fracture is being applied, the treatment of the burn will not be interfered with.

In the military service, it is not only the best method of treatment that must be considered, but one that permits treatment of a large number of casualties in a limited time. A satisfactory method is one that
is simple to apply, gives rigid fixation, allows the patient to become ambulatory in days instead of months, facilitates transportation of the patient, requires a minimum amount of nursing care, is reasonably comfortable, and permits immediate active motion without fixation of the adjacent joints. External fixation is the method of choice when it becomes necessary to transport fracture casualties over long distance whether on the field or at sea. The Stader splint seems to fulfill these requirements very satisfactorily.

One must remember that external skeletal fixation is not the most important method of treating fractures to the exclusion of other methods. It is neither a substitute for nor a short cut to the science of fracture treatment.

The Stader Splint

The Stader reduction and fixation splint requires no extension apparatus, no special frame or fracture table and no plaster cast. It is a self-contained reduction and fixation unit for fractures, complete in itself. The splint consists of a half-pin unit placed in the proximal fragment, and a second half-pin unit in the distal fragment. An adjustable connecting bar assembly joints the two half-pin units to each other and bridges the fracture. By activating the turnbuckle in one direction, the fragments are distracted. By activating it in the opposite direction the fragments are apposed. Reduction maneuvers are performed by activating certain screws.

The outstanding advantages of the Stader reduction splint are the simplicity of the reduction maneuvers, coupled with its compactness, its relatively light weight and the fact that it is applicable to one aspect of the fractured limb only. The fact that the adjustable connecting bar assembly remains after reduction and then acts as the splint, has the further advantage of enabling one to make any desired adjustments at the bedside, without removing the patient to a special bulky reduction frame. This advantage is of special value, for example, in leg-lengthening operations and other operative procedures met with in bone surgery.

With the Stader splint, therefore, it is entirely feasible and may often be desirable, aboard ship and in field hospitals, to apply the splint as a reduction and immobilizing agent. If secondary adjustments are necessary, they may be performed later in a base hospital under fluoroscopic control without subjecting the patient to any further surgical procedures.

The complete articular freedom above and below the fracture afforded by the Stader splint decreased to a minimum the joint disabilities so often observed where joints have been immobilized over long periods of time. The active motion possible enhances circulation, reduces soft tissue atrophy, favors early union, adds greatly to the patient’s comfort and in most instances renders the patient ambulatory from the first post-operative day. This last mentioned advantage is of special significance in wartime, as it permits evacuation of patients from danger zones, either by themselves or with a minimum of assistance.

Method of Application of Splint

The pins are designated as 1, 2, 3, and 4, according to the sequence of their insertions. The proximal pin unit is applied first, in the following manner: The first pin is passed through the hole in the pin bar and inserted directly through the skin about one fingerbreadth below the knee joint. After the pin is firmly seated, the pin bar must be held parallel with the long axis of the proximal fragment during the drilling of the pin through the bone. The pins must always penetrate both cortices. If this important fundamental rule of pin insertion is not adhered to, firm fixation of the pin unit to the fragment will not be accomplished.

The pins should be drilled as follows:

1. Employ a hand-operated drill with a flexible shaft (Fig. 8). The use of electrically driven drills is contraindicated.

2. Exert firm, steady pressure. This is best accomplished by resting the elbow on the chest during the act of drilling.

3. Drill through outer cortex and medullary canal to the inner cortex before stopping.

4. The operator now knows that only 1/4 to 3/8-inch of further drilling is necessary for the pin to penetrate the opposite cortex. As the pin emerges through the opposite cortex, a definite diminishing resistance is easily felt.

The second pin is inserted in similar fashion, but before drilling make certain that the pin bar is held parallel to the long axis of the proximal fragment and at least one fingerbreadth from the skin, to allow for swelling that may ensue.

The two pins are now locked in the pin bar by tightening the set screws (Fig. 6). Before applying the distal half-pin unit, the rotational deformity of the distal fragment should be corrected by hand. While held in this position, the third pin (the one nearest the ankle joint) is drilled about one fingerbreadth above the ankle joint, care being taken to observe the same rules detailed for the upper pin unit. The fourth pin is then drilled in like manner. If the pin units have been properly placed they will assume parallel alignment to each other. Before the connecting bar assembly is attached, all of the various adjusting screws should be unscrewed to their maximum limits.

The major displacement of the fragments is now reduced by hand manipulation of the pin bars. With the pin bars held in the desired position, the connecting bar assembly is attached and all adjusting screws are tightened by hand only. Any remaining obvious deformities may now be corrected by manipulating the proper adjusting mechanism. As a final procedure, all adjusting screws and nuts are tightened firmly with the aid of wrenches.

X-ray examinations may be made immediately, or at the first opportunity. Accurate reduction of the fragments can be obtained under fluoroscopic guidance, but the operator must keep in mind the dangers to
It is usually desirable and feasible to obtain ana-
tomical reduction with the aid of the adjusting me-
chanism of the splint. The beginner, however, should
centrater first on accuracy in the pin insertions,
and employ hand reduction of the fracture. The pro-
ter technique for finer adjustments is gained only by
experience and accurate knowledge of the mechanics
of the splint.

Reduction of fractures by external skeletal fixation
requires a careful diagnosis of the planes of the frac-
ture lines. When these planes are known and visual-
ized, mechanical adjustment of the fragments is greatly
simplified. In transverse fractures, for instance, the
shortening or overriding must be reduced before the
laterally displaced fragments can be properly apposed.
In spiral oblique fractures, the irregular wavy sur-
faces of the fracture require appropriate traction as
well as derotation before the fragments can be brought
together. The fragments usually slip in place without
force when the proper reduction maneuvers are exe-
cuted, unless soft tissue is interposed between the frac-
tured surfaces. In such cases, it may become neces-
sary to remove the interposed tissue surgically.

If the operator encounters difficulty in the reduc-
tion of spiral fractures, it is advisable to remove the
connecting bar assembly, apply traction for a period
of fifteen to thirty minutes, reapply the assembly bar,
and complete the reduction maneuvers. When, how-
ever, in such cases extension is being applied by means
of the turnbuckle, all adjusting screws and the lock
nut of the turnbuckle should be completely loosened.
This permits free skeletal manipulation without me-
chanical interference and allows correction of rotation
by hand.

**Errors in Application**

It is as important to point out the errors and pit-
falls in surgical procedures, as it is important to show
the rocks and shoals on a navigator’s chart before the
beginning of a journey.

1. Improper selection of cases. External skeletal
fixation is not indicated in all fractures.

2. Failure to take X-ray pictures before and after
reduction, and during the period of follow-up.

3. Improper and inadequate anesthesia. Proper re-
laxation is necessary, as in any other method. Special
types of anesthesia are indicated in certain fractures.
4. Errors in selection of proper sized splint and pin assemblies. A tibial splint is not strong enough for a fractured femur, and a humeral splint will not be adequate for the tibia. The pins must also be of sufficient diameter and length. The proper sized pins will fit snugly in the proper pin bars. The entire splint assembly and accessories should be examined and laid out before operation.

5. Errors in splint placement. In order to insure the mechanical benefits of external skeletal fixation, the splint should be applied to the proper aspect of the limb. The double pin units must always be placed as close to the extremity of the bone as the anatomical structures permit, to obtain the necessary leverage for reduction maneuvers as well as to give stability to the splint.

6. Errors in Pin Insertion:
   (a) Failure to penetrate both cortices. The pins must always penetrate both cortices. If they do not, the fragment will not be held, the splint will be unstable, and the pins will become loose.
   (b) Insertion of pins into markedly demineralized or cancellous bone.
   (c) Insertion of pins through devitalized or infected soft tissues.
   (d) Insertion of pins through important anatomical structures, e.g., joints, tendons.
   (e) Too rapid or unsteady drilling of the pins. Rapid drilling causes thermal necrosis. Unsteady, interrupted and jerky drilling unduly traumatizes the bone and leaves a channel too large for a firm pin anchorage. Steady, firm and constant pressure must be exerted on a slowly revolving pin to overcome these hazards.
   (f) Failure to pull skin toward fracture when inserting pin in order to prevent tension when traction is applied. If tension is evident after the necessary traction has been applied, a longitudinal incision in the skin should be made near the pin. Excessive tension on the skin interferes with reduction maneuvers and causes ischemic necrosis of the skin.
   (g) Preliminary drilling for pins should not be undertaken. Drilling should be made by pins which, when once inserted, should remain in place.

7. Errors in Reduction:
   (a) Failure to secure alignment of extremity before insertion of half-pin unit.
   (b) Failure to obtain all possible reduction by hand manipulation before attaching the connecting bar assembly. After manipulative reduction, the rest of the reduction to anatomical position may be made by the apparatus.
   (c) Forceful and rapid traction will result in injury to soft tissues and may interfere with the circulation and impair the blood supply, especially in the presence of excessive swelling.
   (d) Too strong impaction causes tissue necrosis and may result in bowing-anterior, posterior, lateral or medial.
   (e) Failure to approximate properly. Distraction results in delayed union and non-union.
   (f) Failure to use straight traction on the extremity before the application of the splint, especially in spiral fractures.
   (g) Failure to flex the extremity during manual reduction prior to the application of the splint.
   (h) Failure to compare the injured with the uninjured extremity during and after reduction maneuvers. Obvious deformities are easily seen and corrected by such an examination.
   (i) If satisfactory reduction and alignment are not obtained in a reasonably short time, the failure is usually the result of soft-tissue interposition between fragments. Open reduction should be undertaken to free fragments from soft tissue, after which external fixation is reapplied. This should be completed prior to the tenth day from the time of injury. Further delay beyond this period of time may result in delayed union.

8. Failure to institute proper post-operative care as regards motion of joints, weight-bearing, care of pin sites, and treatment of the general condition of patient.

9. Failure to keep accurate records of each case so that errors may be identified, and correct measures taken to combat them.

10. External skeletal fixation is contraindicated in the treatment of fractures in children. Possible injury to the epiphysis and the amenability of children to treatment by conservative methods are sufficient reasons to contraindicate its use. It may be used to advantage, however, in selected reconstruction operations in children.

Clinical Application

The splint has been successfully used in the treatment of fractures of the tibia, femur, humerus, radius and ulna. It is of special merit in the treatment of fractures of the mandible and os calcis. It is particularly useful in the treatment of compound and comminuted fractures associated with severe soft-tissue injury. It has also been used for bone lengthening, bone grafts and transfixation of joints (hip and knee).

Pin Seepage

The most serious objection to external fixation is the possibility of infection from the use of pins. With proper care in asepsis and antisepsis, the incidence of infection is not higher than in clean surgical operations. One must, however, differentiate between ordinary pin seepage and actual infection about the pin.
sites. A small amount of seepage occurs in about ten per cent of cases, and those accustomed to the use of pins and wires for traction and transfixation in the treatment of fractures will have no difficulty in evaluating the significance of the drainage about the pins in every case. The inexperienced, however, will tend to view with undue alarm even the slightest drainage and encrustation, and may remove the pins prematurely. Premature disruption of fixation may cause serious complications, especially in compound fractures where uninterrupted immobilization is essential.

A certain amount of pin seepage must be accepted as a necessary evil whenever pins or wires are used, but its incidence can be limited to a negligible factor if necessary precautions are used.

**THE CAUSES OF PIN SEEPAGE**

1. Movement of the skin about the pins.
2. Skin tension.
3. Loose pins.
4. Insertion of pins in the fracture hematoma.
5. Insertion of pins through traumatized or devitalized soft tissues.
6. Local irritating factors.
7. Thermal necrosis.
8. Electrolysis.

The successful approach to the management of fractures by external fixation will depend upon the surgeon’s knowledge of the anatomic, physiologic and pathologic aspects of fractures as well as his mechanical ability.
ESTABLISHED in 1898 when a "students' reading room" was rented on the site of the Curtis Clinic, the Library moved into its present building in October, 1929, and has grown until it now contains 43,231 volumes and subscribes to 331 medical periodicals.

The Pascal Brooke Bland Collection of 4,000 rare books on gynecology and obstetrics is contained in the Library.

In order to make free microfilm service available to all doctors and students, a microfilm reader has been installed.
Research and Clinical Investigation at Jefferson

THE members of the faculty of the Jefferson Medical College believe that scientific research and clinical investigation are essential to successful medical education. The best interests of the institution, of the individual teachers, and especially of the students and graduates require that facilities for research be provided and utilized by the faculty. The reputation of the College and therefore the standing of its young graduates rests very largely upon the scientific publications of the members of its teaching staff. It is to the great credit of our trustees that they are well aware of this fact and are now providing every encouragement and possible means for research.

Despite the accelerated curriculum, the continuous teaching program and the absence of many of the staff in the military service, the faculty have continued their research activities. A great deal has been added to the medical literature by our staff in recent years. It is the purpose of this article to give a brief resume of the recent works performed in the various departments of the College. When I began to accumulate the written material it became obvious that the task would be considerable. However, with the cooperation of the faculty, I have been able to assemble a review of the researches conducted at the Jefferson Medical College.

As a member of the student body, I can say that we are truly fortunate to have a faculty so interested in scientific investigation yet so cognizant of the practical aspects of the Art of Medicine. The art cannot be put into words, research must be recorded. It is this, therefore, that shall be reviewed in this article while the Art of Medicine must eventually become a part of us.

ANATOMY

The recent work in the Department of Anatomy has been concerned largely with studies on anatomical problems of special application to surgery, and concern circulation of the abdominal viscera; lymph drainage; diseases of the sinuses, kidney and gall-bladder, and also to the field of embryology. The investigations were carried out on experimental animals and on the human cadaver.

Dr. Michels has been studying variations in the blood supply to the liver, gall-bladder, stomach, duodenum and pancreas, and the possible application of these findings to surgical problems. His researches are almost completed, and certain aspects have been reported to the Association of Anatomists.

Dr. Angel, basically trained in physical anthropology, has been interested in the racial and functional investigation of the temporomandibular joint, and has published a lengthy study on this subject. His essay on the use of morphological types, a racial analysis of the ancient Greeks, will appear in the American Journal of Physical Anthropology.

Drs. Bennett and Hutchinson are studying, in the living experimental subject, the morphology of the lyssa of certain animals, its relationship to tongue movements, and role as a muscle spindle.

The structure, extent and drainage of the lymph sac of the thyroid gland in the domestic cat is the subject of an investigation by Drs. Ramsay and Bennett, who have published the results of their researches in the Anatomical Record. Dr. Ramsay's description of an experimental technic utilizing the thyroid lymph sac has been presented to the Association of Anatomists, and his work on this subject is still going forward. His motion picture portraying the lymph sac of the thyroid gland, prepared in color, should be of value in class work.

The paranasal sinuses have been Dr. Schaeffer's prime interest for many years, and he has added to the knowledge of the anatomy of this region by his recent studies on atresia of the choanae in man, soon to be published.

Investigations on renal infarcts and cholecystitis have occupied the attention of Dr. Benjamin Lipshutz.

Experimental embryology has long been Dr. Hutchison's special field of interest. His recent work on Amblystoma punctatum—cell number and volume relationship in the medullary plate—has been submitted to the Association of Anatomists, and other phases of this work are in process of completion.

The origin of the hypoglossal musculature in the cat is now being studied by Dr. Bates, who will publish his findings in the near future.

BACTERIOLOGY AND IMMUNOLOGY

Experimental work in the Department of Bacteriology and Immunology has been limited somewhat because of the demands made on the time of the staff by the accelerated teaching program.

Dr. William A. Kreidler is continuing with the toxicity studies he has been making of the compounds used experimentally in animals by the Tumor Clinic.

The work on streptococci, financed by the Arthur H. Lea Fund, is at present capably handled by Mrs. Lewis Crouch. The studies in progress are concerned with "virulence-blockage" in streptococci. Through the generosity of Dr. Rebecca C. Lancefield the department is now in a position to group and type streptococci according to the Lancefield classification. In addition to its application in the work of the Lea Fund, this classification service is available to members of the College staff on a limited scale in so far as it may
be applied to special problems dealing with diagnosis as encountered in epidemiological studies and various experimental problems.

Dr. Norris W. Vaux for the past two years has made possible, both by his interest and financial support, a series of laboratory studies. These studies have been concerned with the work of the Department of Obstetrics and particularly of Dr. J. Bernstine on products of protein digestion in the intestine stimu-

port, a series of laboratory studies. These studies have been concerned with the work of the Department of Obstetrics and particularly of Dr. J. Bernstine on vaccination during pregnancy. Papers reporting the results are now in preparation.

A study of the gonococcus has been undertaken at the request of and in cooperation with Dr. David M. Davis, chief of the Department of Urology. The department is fortunate in obtaining for this work, which is financed by the Jacob Lit Fund, the services of Mrs. James Cavett. In an effort to adequately control the gonococcus study it is expected that similar studies on the growth requirements of the meningococ-
cus will be run in parallel.

Several outbreaks of "winter vomiting" during 1943-44 season were subjected to careful bacteriological examination. The causative agent is not known. The results obtained by the department indicated several possibilities worthy of further investigation. A number of authorities in the field of bacteriology were consulted in person, and it was learned that the con-
census of opinion at the present time favors the idea that "winter vomiting" is due to a toxic product of bacteria. A program of study of this condition has been planned and provisions have been made for its execution during the coming winter season.

PHYSIOLOGY

Professors Thomas and Crider have been interested for a number of years in the physiology of the pancreas. To this fact may be credited the discovery that products of protein digestion in the intestine stimu-
late the pancreas to secrete a pancreatic juice that is especially rich in enzymes. In the course of this work they have developed new and successful methods for the study of pancreatic function. The lack of such methods for the study of pancreatic function has largely been responsible for the backward state of our knowledge regarding this essential organ.

Dr. M. H. F. Friedman's interests lie chiefly in the fields of gastric secretions and enzymology. Since coming to Jefferson he has made substantial contributions to our knowledge of the mechanisms that regulate gastric secretion, particularly the secretion of pepsin. One of his current projects is the development of new methods for measuring enzyme activity which promise to simplify and shorten this tedious procedure as well as to make it more accurate.

Dr. William M. Hart has been concerned with problems of tissue respirations, particularly as they in-
volve certain of the vitamins. For the past several years his work has been supported by a grant from the Markle Foundation, contributed for a study of the metabolism of the tissues of the eye. Further advances in this field promise to shed much light on obscure chemical problems which now vex ophthalmologists.

The department has for the past several years had a particularly happy arrangement with the Department of Medicine which has had the effect of increasing the available personnel for research and has prompted the study of many problems which lie in the important but neglected field of clinical physiology. Appointments are made to a fellowship jointly in physiology and medicine under the direction of Dr. Rehfuss for Medicine and some member of the staff in Physiology. Three physicians, who received their final training under this arrangement (Captains Wirts, Burk and Pincus), are now serving with notable suc-

cess as specialists in the Army of the United States, and a fourth (Lieutenant Beamer) has only recently entered the military service.

A second joint fellowship in Physiology and Medi-
cine (the J. Ewing Mears Fellowship) is held by Dr. Karl E. Paschkis who also holds teaching rank in both departments. The extensive researches of Dr. Pasch-

kus and his collaborators are in the field of endocrinology and are described more fully under that heading.

Members of the staff have, from time to time, re-
ceived the aid of students acting as volunteer research assistants. In some instances studies have been published under the joint authorship of a staff member and the student assistant.

**MEDICINE**

During the current academic year in the Department for Diseases of the Chest the following clinical investigations were made and reported:

Thirty-seven patients having basilar pulmonary tuberculosis were studied and treated. Particular emphasis was placed upon the prognosis of basal tuberculosis in comparison with that of apical tuberculosis. Of these patients, 30 were female and 7 male. In 25 the disease was in the right base, 10 in the left base, and 2 in both bases. Twenty (54%) of the series are apparently cured and have been working, 8 are still ill, and 9 died. The percentage of apparent cure, morbidity, and mortality of this series appears the same as those having apical tuberculosis. Artificial pneumothorax with elevation of the diaphragm by phrenic nerve paralysis or abdominal support seems most satisfactory. The cavities not responding to collapse therapy at autopsy showed bronchial stumps acting as one-way valve. Pleural effusions, serous or hemorrhagic, were treated by repeated aspirations with good results. Sulfadiazine orally appeared to lessen pyogenic infection of the fluid.

Pulmonary changes in collapse therapy were studied at autopsy in 49 cases collected from several hospitals. Pleural inflammation with or without effusion was a constant finding and it was usually related to tuberculous lesions in the underlying lung. Tuberculous empyema occurred from rupture of adhesions or of subpleural tubercles rather than from faulty operative technique. Selective collapse was caused apparently by atelectasis resulting from occlusion of diseased bronchioles in the tuberculous areas. Dilation of the so-called giant or ball-valve cavities depended upon tuberculous changes of several types in the draining bronchi which permitted air to enter but prevented it from leaving the cavities. Panarteritis, leading to thrombosis and sclerosis in the tuberculous areas was a constant finding and resulted in considerable loss of blood supply about the chronic fibrotic cavities. This appeared to be responsible for failure of such cavities to undergo healing even under satisfactory collapse. Vascular changes around recent cavities were minimal, the blood supply being therefore practically unimpaired. This appeared to contribute to the healing of such cavities which occurred by concentric collapse and fibrosis. Phrenic nerve paralysis caused extensive fibrosis of the paralyzed portion of the diaphragm and brought about relativelygreater rise of the central and posterior portions of the diaphragm than of the anterior portion. Consequently, the posterior and central cavities were more influenced by phrenic paralysis than the anterior ones. It is suggested that collapse therapy in chronic pulmonary tuberculosis should be carried out before vascular and fibrotic changes are too great to permit concentric cavity closure and anatomic healing. Serious complications almost never occurred in early tuberculosis in which there was satisfactory collapse of the lesions.

In a series of twelve rabbits, artificial pneumothorax was given for a varying length of time, one month to nine months. The animals were eventually sacrificed and the pulmonary changes were noted. The outstanding finding was thickening of the pleura. Other than that, there was nothing to suggest that a collapse of the lung under pneumothorax brought about pulmonary tissue changes.

The effect of mineral oil upon the pleura was studied at post mortem. During life the patient had oleothorax on the right side for seven years. At autopsy, other than pleural thickening, there was nothing to suggest that the mineral oil had any effect upon the pleural surface. The spherical globules between the meshes of the collagenous fibrous tissue of the pleura identified as droplets of mineral oil by the method suggested by Kaplan.

The behavior of the so-called hilum cavities under various forms of collapse therapy, the relationship of prothrombin to pulmonary hemorrhage, pathogenesis of cor pulmonale, the areas of predilection in the contralateral bronchial spread of tuberculosis and bronchiectasis in relation to tuberculosis are being studied.

Investigation as to the effect of sulfadiazine on the coordination and reaction time of young men was carried on by Dr. Alison Price in conjunction with John C. Pedulla, Safety Examiner of the Pennsylvania State Police.

Ninety healthy young men were given sulfadiazine by mouth. Two grams was the initial dose and one gram was given every four hours for a total of nineteen grams. The amount of sulfadiazine in the blood at the time of the test ranged from 5.4 to 6.5 milligrams per 100 cubic centimeters of blood. A special apparatus which simulated actual working conditions was used to measure the coordination and reaction time in persons who were given sulfadiazine and in those used as controls. Eye-hand coordination and reaction times were automatically recorded by an electric clock. Tests were made before the administration, during and seven days after the drug was discontinued. The conclusion reached by Dr. Price was that there was no significant difference between the controls and those subjects given sulfadiazine.

Dr. Franklin R. Miller has been studying leukemia for a number of years and the following is a review of some of his work and conclusions:

The urines from patients with all types of leukemia as well as lymphosarcoma and Hodgins Disease have been subjected to various types of extraction and fractionation methods and the products obtained by these methods have been given to guinea pigs. By such assays we have found that the urine from patients with these diseases contain various amounts of two substances, each of which is specific in its power to
stimulate or inhibit proliferation of either myeloid or lymphoid cells.

The extraction and fractionation methods have been published. In this publication it was shown that the extraction of the acid fraction of the urine by several solvents, precipitation with lead salts, by "freezing out," and finally the separation of the carbinol from the non-carbinol fraction allowed the myeloid stimulating substance to remain in the non-carbinols and the lymphoid stimulating substance in the carbinols. We also showed that the non-carbinols when converted to carbinols by reduction changed in activity from myeloid to lymphoid. The reverse conversion of carbinols to non-carbinols by oxidation with a corresponding change in biologic activity was also accomplished. Further it was shown that when the carbinols and non-carbinols were separated in the fractionation of the urine from patients with Hodgkin's Disease and monocytic leukemia these fractions by biologic assay were respectively lymphoid or myeloid in activity, even though the mixed substances had given a Hodgkin's-like reaction. The results of the biologic assay of this work were published.

Because of our findings we proposed the following hypothesis for the action of these two substances. We believe that these substances are mutually reciprocal in action. The myeloid substance stimulates myeloid proliferation without maturation. The maturation of myeloid cells is brought about by the action of the lymphoid substance which inhibits the proliferation of myeloid cells and hence allows them to mature. The lymphoid substance brings about lymphoid proliferation without maturation. Maturation of these cells is brought about by the action of the myeloid substance which inhibits the proliferation of lymphoid cells and hence allows them to mature. Normally, the two substances are balanced in action and therefore regulated hematopoiesis occurs. The various types of leukemia, Hodgkin's Disease and lymphosarcoma are explained by variations in the amounts of one or both of these substances in the body fluids of the affected individual. For instance acute myeloid leukemia appears to be a disease in which the lymphoid substance is lacking and therefore the myeloid cells do not mature. Acute lymphoid leukemia and acute myeloid leukemia may lend themselves to regulation if the deficient substance is replaced.

To further our work we have investigated normal urine and normal organs for the presence of either or both of these stimulating substances. Both substances have been found in normal beef liver, beef spleen, and beef pituitary. We have not been able to detect them in normal urine. In normal beef liver the two substances occur together and give a biologic reaction in the guinea pig similar to that obtained with extracts of the urine from patients with Hodgkin's Disease or monocytic leukemia. After separation the beef-liver carbinols give lymphoid reactions and the non-carbinols myeloid reactions. As far as we can ascertain, the urinary carbinols are chemically similar to the beef-liver carbinols and the urinary non-carbinols are chemically similar to the beef-liver non-carbinols.

The following is a Summary of Investigations on Blood Coagulation performed by Dr. Lenadro M. Tocantins.

The point of departure for the work dealing with blood coagulation, now under way, was an observation made in 1940, while studying the effect on prothrombin of exposing plasma to air currents. When normal human plasma was mixed with a dilute solution of thromboplastin and allowed to incubate for a few minutes, the clot accelerating action of the thromboplastin was reduced. The reduction was even more marked when hemophilic plasma was used. Extension of the experiments disclosed the fact that normal cell-free plasma does possess the property of reducing the potency of dilute thromboplastin solutions. To this property the designation "antithromboplastin activity" was given.

Henceforth the only inhibitors of coagulation considered to be present in the blood were antithrombin and antiprothrombin. It appears that one must also consider the existence of an inhibitor blocking the development of coagulation at its very inception. The coagulation of hemophilic blood is greatly delayed when compared with normal blood. Dilution experiments disclose the fact that hemophilic cell-free plasma has from five to eight times as much antithromboplastin activity as normal plasma. The delay in hemophilic blood-clotting is principally during the inception stage of coagulation, and it is during this stage that antithromboplastin exerts its effect.

The thromboplastin of tissue extracts is a lipoprotein. The lipid fraction of this substance is a cephalin. It has been shown that the plasma antithromboplastin exerts its action on the cephalin fraction of the lipoprotein. The term anticephalin is therefore more appropriate to describe this activity of the plasma.

The work now under way is concerned with methods of isolating anticephalin from the plasma and of determining its influence on the rate of conversion of prothrombin into thrombin. It was shown that hemophilic prothrombin is slower in being converted into thrombin because of the excess of anticephalin. When anticephalin is removed by exposing the plasma to contact with adsorbents, the rate of conversion of hemophilic prothrombin is indistinguishable from that of normal prothrombin.

Clinical applications of these findings are being investigated simultaneously with the more fundamental observations. Information regarding the effect of various therapeutic measures and clinical states on plasma anticephalin activity, not only may throw further light on the mechanism of blood coagulation but may afford clues to means of correcting disorders of this mechanism.

For the past three years a group of workers has been engaged in research in endocrine problems. The members of this group are: Drs. A. Cantarow (Department of Medicine), L. P. Hansen (Department of Physio-
logical Chemistry), K. E. Paschkis (Departments of Physiology and Medicine), A. E. Rakoff (Department of Obstetrics and Gynecology), and A. A. Walkling (Department of Surgery).

Two years ago, an interdepartmental endocrine clinic was organized at the Jefferson Hospital (the staff including Drs. G. P. Mueller, A. Cantarow, K. E. Fry, E. T. Litt, H. L. Lowenburg, J. E. Lynch, J. F. McCahey, R. A. Matthews, K. E. Paschkis, and A. E. Rakoff).

The fact that several members of the endocrine clinic are also members of the endocrine research group is peculiarly fortunate in that clinical and experimental observations may be correlated and endocrine problems may be investigated from every standpoint. Stimulation of experimental work originating in clinical problems and vice versa has been very fruitful.

The following problems are being actively investigated: Metabolism of Steroid Hormones: The fate and the intermediate metabolism of the male and female sex hormones and the hormones of the adrenal cortex is not clearly understood. Estrogens and androgens disappear rapidly from the circulation after injection. Only very small quantities are lost through the kidneys and it was generally believed that the liver rapidly destroys the major amount of these hormones. Experiments carried out by the endocrine research group indicate that large amounts of exogenous and endogenous sex hormones are excreted in the bile and apparently undergo an enterohepatic circulation similar to that of bile acids. This discovery opened a new field in the study of the metabolism of steroid hormones and has led to further perplexing questions which are now under investigation. These include: (1) the nature of the intermediate metabolites of the sex hormones; (2) the mechanism and significance of inactivation of steroid hormones by liver microsomal and cytosolic enzymes; and (3) the possible relation of these observations to the carcinogenic action of the sex hormones.

Thyroid Problems: This research began with clinical observations on the treatment of thyrotoxicosis with thiourea and thiouracil, first described by Astwood. The optimal method of administration of these agents and the duration of improvement were studied with the idea of permanent medical maintenance in mind. This led to an investigation of the concentration of the drugs in the blood and their excretion in the urine. These agents are believed to act by inhibiting formation of thyroxin, which in turn leads to a release of the pituitary gland and consequent morphological stimulation of the thyroid. This prompted investigation of the thyroid-pituitary relationship in animals. Cytological studies of the thyroid gland as influenced by thiourea were undertaken in collaboration with Dr. A. J. Ramsay (Department of Anatomy). Since the fundamental action of the drug is apparently dependent upon inhibition of an enzyme reaction, a study of the action of thiouracil on enzymes in vitro has been instituted (in collaboration with Dr. W. M. Hart, Department of Physiology).

Constitution Studies: The fate of a human being is determined by hereditary and environmental factors, mediated through the glands of internal secretion or acting independently. It was felt from the very beginning that studies of constitution should be included in the research problems of the endocrine clinic. This was made possible through the cooperation of Dean Perkins and Dr. J. P. Schaeffer. Work was started in January, 1944. A detailed investigation of obesity and dwarfism has been undertaken. Dr. L. J. Angel (Department of Anatomy) is in charge of the anthropological studies. X-ray studies are made by Dr. P. Swenson and Dr. H. Reinhardt (Department of Radiology), psychiatric studies by Dr. R. A. Matthews (Department of Psychiatry), and Mrs. N. Reinhard (Social Service Department) does the case work for this project. The Social Service Committee of Jefferson Hospital generously appropriated the funds for employing a social case worker. The endocrine clinic staff is responsible for the clinical and endocrine studies and for the final correlation of all observations.

The following additional problems have been studied or are now under investigation: (1) Experimental studies of the action of pituitary growth hormone on protein metabolism; (2) Action of male sex hormone on protein metabolism and growth; (3) Action of insulin on tissue fluid sugar; (4) Toxic effects of desoxytocicosterone on blood vessels, especially of the brain (in collaboration with Dr. F. M. Forster, Department of Neurology); (5) Changes in the adrenal gland following castration, with particular reference to sex hormone production and cancer formation; (6) Maintenance of adrenalectomized rodents with desoxytocicosterone (in collaboration with Dr. H. Reinhardt); (7) Influence of desoxytocicosterone on blood pressure and on the action of renin (in collaboration with Dr. M. H. F. Friedman, Department of Physiology); (8) Therapeutic action of progesterone in secondary amenorrhea; (9) Clinical and therapeutic observations in Cushing's syndrome; (10) Chloride excretion in asthma (in collaboration with Dr. A. H. Price).

The results have been published in twenty-three papers, and presented before the American Physiological Society and the Association for the Study of Internal Secretions.

THERAPEUTICS

The science of therapeutics, no longer a simple study of the Pharmacopoeia and the National Formulary, has been advanced tremendously by the stimulus of global war; and the laboratories of the Jefferson Medical College have had a part in the evolution of modern methods for the treatment of disease. The Department of Therapeutics, an integral part of the Department of Medicine, comprises a number of special groups whose endeavors are directed toward a better understanding of the problems of internal medicine and the development of improved therapeutic techniques. The comprehensiveness of the subject has
Experimental work in therapeutics research on the problem of chronic infection was begun fifteen years ago at the Frankford Medical Research Laboratories (now taken over by the College for the propagation of experimental animals). Nearly all the post-mortem material prepared at Frankford has since been removed to the College and installed, with the generous cooperation and assistance of Professor Bancroft, in the Chemical Laboratories. A technician, Miss Sanderson, is now employed on a full-time basis, and Mr. Thomas Williams, of the Department of Chemistry, has been continuously engaged in this research. The present experimental work has been financed by a fund established through the will of the late William D. Rucker, of Charlottesville, Va.

The early studies in this investigation, the work of Drs. Martin E. Rehfuss, John T. Eads (Lieutenant Commander, U. S. Navy), and Guy M. Nelson, and Mr. Charles Zahn, concerned the production of visceral infection by certain types of streptococci, particularly the changes produced by those forms occurring in the intestine. It became possible to produce experimental cholecystitis resembling in every way that encountered in the human subject. Since the inception of this research some 1,500 animals have been used, 500 having been injected with a single antigen. Experiments on the effect of certain bacterial agents are still in progress. By improved methods, such as those employed in the last series of 224 animals, it has been possible to increase the incidence of experimental cholecystitis to 68 per cent. The experimental material from this last series, in which the effect of vaccination and toxoid administration was investigated, is now being studied.

Special staining processes are also being carried out in an attempt to estimate the early pathological changes which occur in the gall bladder. The purpose of this

Fig. 1. Experimental empyema of the gall bladder produced by the streptococcus nonhemolyticus. Culture recovered from the bile, liver and kidney

Fig. 2. Experimental nephritis produced in rabbits by nonhemolytic streptococcus

Fig. 3. Experimental focal glomerulonephritis

Fig. 4. Diffuse nephritis with focal glomerular changes, produced by nonhemolytic streptococcus
work is to throw light on the mechanism of gallbladder disease and to develop, if possible, methods for its arrest and control.

A separate investigation now under way, an outgrowth of the original work on chronic infection, concerns a form of focal glomerulonephritis.

Material has been collected from another group of nearly 500 animals in which arthritis has been induced. Preparation of the specimens and evaluation of the evidence will require at least another year.

The Patterson Research Fellow in Gastroenterology has been under the supervision of Dr. J. Earl Thomas and Dr. Martin E. Rehfuss. All of the four previous holders of the Fellowship, now in the armed forces, contributed to the literature on the upper digestive tract. It is hoped that research in the physiologic and medical aspects of gastroenterology will continue to expand and develop, and that under the Fellowship others will receive specialist’s training in this field.

OBSTETRICS

Studies on the Physiology of the Lower Genital Tract: The studies in this field are a continuation of a long-range program which has been conducted in this department over a period of ten years. During the past year extensive studies were made on the factors involved in maintaining the normal physiology of the vagina ("Present Problems Related to the Biology of the Vagina," A. E. Rakoff, Proceedings of the Conference on Human Fertility, 1944; "The Biologic Characteristics of the Normal Vagina," A. E. Rakoff, L. Feo, and L. Goldstein, American Journal of Obstetrics and Gynecology, 47:467, 1944). Studies were also made on vaginal cytology as an index to ovarian activity in health and in various endocrine dysfunctions.

Hormone Studies in Obstetrical Dysfunctions: Studies of the serum and urine estrogens, gonadotropins, pregnandiol and ketosteroids in the toxemias of pregnancy, choriocarcinoma, diabetes complicating pregnancy and spontaneous abortion have been under way. It was also demonstrated that estrogens in the blood may be present in a conjugated state ("Conjugated Estrogens in Human Pregnancy Serum," A. E. Rakoff, K. E. Paschkis, and A. Cantarow, American Journal of Obstetrics and Gynecology, 46:856, 1943).

Rh Abnormalities in Pregnancy: A re-check is being made of the various patients in this department who have lost babies in the past for no previously known cause; a number of these have been demonstrated to be the result of Rh iso-immunization of Rh negative mothers. The significance of this mechanism in other obstetrical complications is being investigated.

Infections of the Lower Genital Tract: Studies on the effect of the local application of acid jellies, sulfonamide jellies and jellies containing estrogenic hormones in influencing the normal flora and various pathogens present in the vaginas of pregnant and non-pregnant women have been conducted under a grant of the Johnson and Johnson Research Foundation and a number of reports have been submitted for publication.

Puerperal Infection: Dr. J. B. Bernstine is continuing his studies on the anti-body response of pregnant women following injection of vaccines prepared from organisms isolated from infected patients.

Endocrinology: Dr. Arthur First is continuing his research in the study of fertility and sterility.

Analgnesia in Obstetrics: Dr. J. Parsons Schaeffer, Professor of Anatomy, Jefferson Medical College, aided the work of the Graduate Medical Course in Continuous Caudal Analgesia by permitting the facilities of his Department to be utilized in the teaching of the physicians taking this course. In conjunction with the Graduate Medical Course the Maternity Department has made possible the following studies which are still under investigation: the influence of the analgesia on blood loss in the third stage of labor, the involution of the uterus, and lactation; the presence of the analgesic agent in the amniotic fluid, infant blood and placental blood.

SURGERY

If a man were to compare the effect of a single stroke of the pick-axe with the vastness of the completed project, he would be overwhelmed by the sense of their disproportion; yet such petty operations, persistently continued, erect gigantic structures. The ripened scholar is not made by a single lesson, nor are the significant conclusions of clinical research reached by a single experiment. It is with this knowledge and spirit that the surgical staff, both independently and in combination with other departments, is conducting its investigations.

Penicillin, the foremost drug of the day, has been employed in the surgical department with splendid results in the treatment of acute and chronic osteomyelitis, multiple furunculosis and carbuncles, empyema, mediastinal abscess, deep liver abscess, and purulent abscess with rupture into the peritoneal cavity. It acts predominantly as a bacteriostatic agent against gram positive pyogenic cocci, and because of its rapid excretion from the body via the urine is best administered by continuous intravenous or repeated intramuscular injection in doses of 100,000 Oxford units daily during a period of ten to fourteen days. Unlike the sulfonamides the activity of penicillin is not adversely affected by the presence of pus, and therefore a study of its use in control of post-operative empyema is planned. Local applications in concentrations of 250 to 500 Oxford units per cc. of solution have been used with success in the treatment of decubitus ulcers, infected burns, and other open infections.

Thiouracil, a drug which is believed to act in thyrotoxicosis by inhibiting the enzyme involved in the formation of thyroxin, is being investigated in cooperation with the endocrine clinic. It has not been determined to date whether its use will obviate the necessity for surgery, but it has been found particularly helpful in iodine-resistant cases.
Sodium heptaldehyde and iron ascorbate are being tested by the tumor clinic for their effect upon several strains of spontaneous rat tumors and also being subjected to clinical trial upon selected cases of malignant disease at several hospitals. The results experimentally are encouraging, but accurate clinical evaluation of these chemotherapeutic agents awaits further trial.

Angiography, with use of diodrast as a contrast medium, was successfully employed during the past year as a diagnostic aid in the demonstration of deep venous occlusion in the upper and lower extremities, the extent of venous hemangiomata, the sac in aortic aneurysm, and the site of communication in arteriovenous fistula.

Definite progress has been made in pre- and postoperative care. An increased effort is being made to maintain adequate serum protein levels by administration intravenously of amino acids, blood and plasma; and aminoids when tolerated orally. Greater attention is also being directed toward supplying sufficient quantities of vitamins, particularly B, C, and K, both parenterally and orally, in the various nutritional deficiency states commonly associated with surgical lesions. An attempt is being made in cooperation with the Roentgenology Department to develop a more satisfactory technique for passage of the Miller-Abbot tube. Investigation by the rectal clinic of the value of succinyl-sulfathiazole (sulfasuxidine) in the preparation of the colon for surgery shows that this drug obviates the necessity for repeated purgation and high colonic irrigation, and also decreases postoperative flatulence.

Sodium pentothal intravenous anesthesia has been employed more extensively during the past year and proven its excellence and safety for use in minor procedures such as suturing of wounds, incising of abscesses, reduction of fractures, and the removal of painful packs. It has also been a valuable adjunct in long major operations in which the effect of a simple spinal anesthetic wears off. Proper pre-anesthetic medication with morphine and atropine three-quarters of an hour before operation is essential. The neurosurgery section has been experimenting with the use of rectal pentothal sodium as a basal anesthesia. One gram of the drug is given for every fifty pounds of body weight in one-half to one ounce of distilled water. It has proved to be superior to the commonly used avertin in that it can be given in arteriosclerosis, kidney and liver disease. It does not require testing each time prior to its administration. There is not the marked drop in blood pressure as with avertin and the post-anesthesia period is not unnecessarily prolonged.

The continuous method for spinal anesthesia has been widely accepted as an outstanding contribution both for its safety and its extension of operating time. At present the possibilities of its application in children are being investigated. The inflexibility of the psychic mechanism in this age group is controlled by effecting a correct degree of pre-anesthetic sedation.

Approximately 140 cases of pharyngeal diverticulum have been treated by a one-stage excision through coordination between a surgical team and an esophagoscopist. A recent improvement in the operation consists in transplantation of the ligated stump of the sac beneath the inferior constrictor muscle and suture of the adjacent edges of the inferior constrictor and cricopharyngeus.

Survey of the work in thoracic surgery reveals improved results in the management of bronchiectasis, benign and malignant lung and bronchial tumors, and lung abscess. Several unusual cases such as pericardial cyst and diaphragmatic hernia have been successfully operated upon. A method is being worked out with cooperation of the Roentgenology Department for accurate external, pre-operative localization of lung abscess.

Successful anastomosis of the right and left hepatic ducts to the first portion of the duodenum, following removal of a large choledochus cyst, has recently been achieved. The anastomosis was performed around catheters which projected through the pylorus into the stomach and were later removed endoscopically.

Twelve cases of acute pancreatitis were encountered within the past two years. Careful study of each case as well as a review of the recent literature indicated that delay in operating, with conservative measures directed toward combating toxicity and altered blood chemistry, has led to a decreased mortality in this disease. Since this form of therapy depends on accurate diagnosis for its employment, it is essential that a serum amylase test be performed in all cases of acute upper abdominal pain in which the diagnosis is questionable, remembering, however, that the test is reliable only during the acute phase of the disease.

Advances have been made in the technique of extraperitoneal closure of colostomy. The spur is crushed by a specially devised clamp consisting of two fenestrated blades with beveled cutting edges. Following operative closure of the stoma, the medial edges of the anterior rectus sheath are approximated by suture in the midline, and the lateral edges then brought together, thus affording an extra layer for support.

The operative retroperitoneal palpation of carcinomatous lesions of the rectum and rectosigmoid, after incising the medial leaflet of the mesosigmoid, has been advocated in order to determine whether adherence of the growth to the surrounding pelvic tissues is by neoplastic extension or secondary inflammation. By this new method a significant number of cases which otherwise would be considered inoperable are salvaged.

Because of present war conditions there has been an increase in the number of industrial wounds, a study of which is being made for improved methods in immediate and definitive care.

The etiology of varicose veins from an anatomic aspect is being investigated on cadavers in the Daniel Baugh Institute. A preliminary report was made on the valvular distribution in the external iliac and
femoral veins proximal to the orifice of the internal saphenous vein. A larger series has been collected and the results are being correlated with the findings at post mortem in patients with known varicosities. In varicose ulcers the use of type "0" blood ointment, together with ligation and sclerosing of the involved veins, has yielded excellent results in the varicose vein clinic.

The men of Jefferson may well be proud of the fact that, in spite of an accelerated teaching program with increased duties for each staff member, careful and fruitful investigations are being continued in as full a measure as ever.

DERMATOLOGY

The Department of Dermatology has been studying the effect on normal skin of the serum from vesicles caused by poison ivy toxins. There is a belief held by many physicians and the public in general that the rash of poison ivy poisoning can be spread by liquid contents of broken vesicles. To correct this impression, vesicles were produced on the arms of young male adults by the application of a portion of poison ivy leaf fortified with a small amount of poison ivy extract. The liquid from these vesicles was transferred to the other arm of the individual. In but one case out of many was there a reaction to this vesicle liquid. (This could have been the result of contamination of the vesicle liquid with some of the ivy oleoresin originally applied to the test side.)

The same original vesicle liquid was also transferred to the skin of other individuals. In no case was there a reaction to this transfer. In a few cases of naturally acquired ivy poisoning, patch tests were performed with the liquid from unopened vesicles. In these cases all tests were negative. The conclusion drawn was that the rash of poison ivy dermatitis is not spread by the transfer of vesicle liquid.

GYNECOLOGY

The publications which have emanated from the Department of Gynecology are concerned to the greatest extent with Carcinoma of the Uterus and the Cervix. Within the last year five articles have been published which relate to some phase of the above mentioned subject. A review of a few of the articles follows:

Drs. Scheffey, Thudium and Farell studied 127 patients having carcinoma of the fundus with respect to diagnosis, management and treatment over a period of twenty-one years. Of this group, 75 were eligible for comparative analysis of five-year end results. Four out of five women in the menopause when the diagnosis was made and the diagnosis was suspected correctly in 90 per cent of the patients because of the menopausal bleeding. Abnormal uterine bleeding was the most significant symptom in 96 per cent of the cases. These were confirmed by diagnostic curettage. These patients were treated by Surgery alone, Irradiation alone, and Surgery and Irradiation. It is the belief of the department that the treatment of choice at the present time is preliminary irradiation with radium followed by complete operation eight to ten weeks later.

In May, 1943, Dr. Scheffey published an article in Radiology on "Experiences in the Treatment of Carcinoma of the Cervix Uteri. An analysis of a series of 310 patients with carcinoma of the cervix, of whom 293 were treated, was presented. The absolute salvage rate in these cases was 14.3 per cent and the relative five-year salvage rate was 23.8 per cent. It is the belief of the department by the results obtained that the best method of treatment of Carcinoma of the Cervix is by preliminary irradiation with the Rontgen ray followed by radium. This is expressed in an article by Dr. Scheffey and Dr. Hahn published in July, 1943, in the Pennsylvania Medical Journal.

NEUROLOGY

During the past year in the Department of Neurology investigations have been carried out along clinical, neuropathological and neurophysiological lines. The clinical investigations included Dr. Alpers' and Dr. Yaskin's study of the Brun Syndrome, which is comprised of nausea and vomiting associated with changes in posture and occurs in tumors and other lesions of the brain stem. Dr. Yaskin's and Dr. Alpers' paper on arachnoiditis about the optic chiasm was the third paper in this series from the department and pointed out once again the fallacy of considering the Forster-Kennedy syndrome as prima facie evidence of a tumor. Dr. Schlezinger and Dr. Alpers reported upon the rare anomalies of the optic disc known as drusen which are of importance since they simulate a choked disc and may occur in association with cerebro symptoms. Dr. Schlezinger and Dr. Alpers have studied a series of supra-sellar tumors which were featured clinically by scotomatous field defects simulating closely the field defects seen in optic neuritis or retrobulbar neuritis. Dr. Alpers has elaborated his previous contributions to the problem of sciatica and these latest observations will be extensively reported in the International Clinica. Dr. Alpers and Dr. Forster reviewed the neurological implications of shoulder pain, pointing out the diagnostic features of the various syndromes giving rise to pain in the shoulder girdle.

Dr. Yaskin and Dr. Alpers reported a case of aneurysm of the vertebral artery, pointing out that this lesion may produce a clinical picture closely simulating that of posterior fossa tumor. Dr. Forster and Dr. Alpers reported a case of congenital aneurysm of the basilar artery in a thirteen-weeks-old infant with polycystic disease of the kidneys. In this paper the frequent association of aneurysms with other congenital anomalies was stressed and some unusual histological features of congenital aneurysms discussed.

These interesting cases of aneurysm led Dr. Forster and Dr. Alpers to gather a series from the material.
available and these aneurysms were studied histologically. From the studies it was concluded that one cannot rely entirely upon the concept of a defect in the media as the mechanism for the production of congenital cerebral aneurysms and the presence or absence of elastic tissue is not a valid criterion in classifying aneurysms. Dr. Alpers and Dr. Forster studied the reparative processes in subarachnoid hemorrhage, utilizing a series of cases with varying survival times. They concluded that connective tissue organization of the hemorrhage begins on the third day and is increased, but the rate of organization is slow and the connective tissue overgrowth is limited to the meninges, there being no scarring of the underlying cerebral tissue.

Dr. Forster and Dr. McCormack reported two cases of Kernicterus, -icteric staining of the basal ganglia in icterus gravis neonatorius. In each case erythroblastosis fetalis was absent and the Rh factors of both parents were positive. Dr. Forster, Dr. Cantarow, Dr. Paschkis, and Dr. Rakoff have been studying the effects of large doses of desoxycorticosterone acetate upon the cerebral blood vessels, both in a patient and in experimental animals and found that degenerative changes occurred in the cerebral blood vessels. Dr. Alpers and Dr. Gaskill studied a series of cases of metastatic encephalitis pointing out the clinical and pathological state in this disease.

Investigations into the field of neurophysiology have been concerned with the fasciculations of muscles and with the electroencephalogram. Dr. Forster and Dr. Alpers (Arch. Neuro. Psychiat., April, 1944), studied the electrical discharges produced by muscle fasciculations and the alternations produced in these by prostigmine and curarization. Since spinal anesthesia and peripheral nerve block did not alter the frequency but curarization abolished the fasciculations while prostigmine resulted in a characteristic increased frequency even during spinal anesthesia or nerve block the authors concluded that fasciculations arise not from the anterior horn cells but from the myoneural junction. The electroencephalographic patterns in various diseases characterized by disturbances of consciousness have been studied in the E. E. G. laboratory. Dr. Forster and Dr. McCarter have been studying localized seizure disturbances produced by applying acetylcholine to the exposed cortex of experimental animals. They have succeeded in propagating the seizure discharge along anatomical pathways, even to the opposite hemisphere, by the application of strychnine to the discharging area. That the spread is along anatomical lines and due to the strychnine facilitation is indicated by the failure of the seizure discharge to appear in areas not influenced by strychnine as well as the failure of the seizure to spread over the surface.

ANALYSIS OF SHOCK

The phenomena of shock have baffled physicians for more than a century. Many plausible theories have had their brief day of acceptance but have failed the test of controlled experimentation. Studies on shock during the first World War led to the explanation of *Traumatic Toxemia*. It is summarized as follows:

"The theory of secondary shock which has the strongest support, both in clinical observations and in laboratory experiments, is that of a toxic factor, arising from damaged and dying tissue and operating to cause an increased permeability of the capillary walls and a consequent reduction of blood volume by escape of plasma into the lymph spaces. Thus the concentration of the corpuscles is also readily explained. It is recognized that, after a sufficient time, infection may occur and be of such character in itself as to induce a persistent low blood pressure. According to this theory there may be no essential difference between the effects of toxins given off by damaged tissue and of toxins resulting from activity of bacteria."

This interpretation was widely accepted for it integrated smoothly both with the experiences of surgeons and with what was known of capillary reactions at that time. Then a new theory was proposed which attributed shock entirely to hemorrhage and to loss of fluid in the injured areas. All the accompanying phenomena were explained, to the author's satisfaction, without admitting the effects of toxic substances absorbed from damaged and infected tissues. This theory has been so widely publicized that many accepted it as the final solution of the problem.

The methods used by pathologists had not been applied to these problems. My associates and I believe that examinations of the viscera, during and after shock, might determine whether systemic toxic effects had caused circulatory failure or whether this resulted from hemorrhage and local loss of fluid. We produced shock by various means, including trauma, intestinal manipulation, autolysis of tissues *in vivo*, burns, anaphylaxis, and by injecting diverse substances, such as tissue extracts, histamin, proteoses, bile, venoms and other poisons. Circulatory failure, accompanied by low blood pressure and hemoconcentration, developed regularly after the use of these and other agents.

The complicating effects of anesthesia, such as barbiturates which cause low blood pressure, were avoided. Careful gross and microscopic examinations of the tissues were made routinely. The results indicated clearly that shock, like other conditions of disease, is accompanied by a distinctive pattern of tissue changes. These consist of capillo-venous hyperemia of the viscera, ecchymoses and edema, together with degeneration and necrosis of parenchymatous tissues. These changes clearly indicated systemic capillary effects; they are not the effects of hemorrhage and local fluid loss.

Edema of soft visceral tissues occurred regularly both in secondary shock induced experimentally and in human beings after death by shock from various causes. Further studies on this feature led to an understanding of one type of pulmonary edema which often develops in grave conditions of disease. Congested
edematous lungs predispose to infection. A common type of secondary or terminal pneumonia develops frequently in animals or man when a sublethal degree of shock persists for several days. The evidence cited provides a satisfying explanation for terminal pneumonia after extensive surgery, burns, intestinal obstruction, severe infections and intoxications as seen in diabetes, icterus gravis, eclampsia and the like.

It was observed that renal insufficiency accompanies the syndrome of secondary shock. This is evidenced by oliguria or anuria, by red cells, albumin and casts in the urine and by a progressive increase in nitrogenous wastes in the blood. This deficiency, sometimes called "extra-renal uremia," frequently causes death in patients who have remained in a state of sublethal shock for several days. Instances are seen after burns, extensive surgical procedures, accidental trauma, "crush injuries," anaphylaxis, transfusion reactions, severe infections, metabolic intoxications and poisoning with various drugs. It is accompanied by marked degeneration and necrosis of the renal tubular epithelium; hence some writers speak of it as toxic nephrosis.

If recovery from the causative condition occurs, the renal function is gradually restored. Regeneration of tubular epithelium follows and no permanent damage is done to the kidneys. It is believed that the same injurious agents, which cause shock by their effects upon endothelium, damage also the renal epithelium and thereby reduce the excretory function. If the endothelial effects do not cause fatal shock, the renal functional deficiency may become a prominent clinical feature.

Our investigations produced evidence confirming the explanation of traumatic toxemia as against the theory that shock is due to local loss of blood and fluid. It was shown that the occurrence of shock is not limited to trauma, burns, and the aftermath of extensive surgery. The same type of circulatory deficiency results also from severe infections, abdominal emergencies such as strangulation, mesenteric thrombosis, perforations, peritonitis, from metabolic intoxications, anaphylaxis, transfusion reactions and from the effects of various poisons. The studies led also to a clearer understanding of several conditions not formerly recognized as related to shock. These include disturbance of fluid balance, certain blood chemical changes, pulmonary edema, terminal pneumonia, and a common type of renal functional disturbance.

**Traumatic Shock**

Writers differ widely in their views concerning traumatic shock, and readers are bewildered by the evidence set forth in support of conflicting opinions. An analysis of the causes for disagreement may be illuminating.

The broad and indefinite use of the word shock and its application to unrelated conditions is one important cause. Many define shock as a state of acute circulatory failure characterized by prostration, apathy or stupor, rapid feeble pulse and diminished blood pressure. When used in this sense, shock includes several conditions having no other features in common. The effects of syncope, fright, exhaustion, anesthesia, hemorrhage, anaphylaxis, primary shock, cardiac failure or secondary shock will produce the clinical signs mentioned. Each of these conditions may cause low blood pressure, hence it cannot be used as a criterion for differentiating them.

The attention of surgeons and of many investigators is focussed upon shock following physical injury or extensive surgery. They have not recognized that at least three unrelated mechanisms may cause the clinical signs of shock:

1. Primary or neurogenic shock is a neurovascular reaction like that of syncope or fainting. It may result from pain, fear, emotional reactions, or from nerve impulses arising in the damaged tissues. Primary shock develops promptly after injury, and is usually transient unless accompanied by extensive trauma or hemorrhage. In cases of severe injury it may merge gradually into secondary shock without an interval of partial recovery.

2. The effects of hemorrhage are an obvious cause for low blood pressure and other clinical signs of shock after injury. These signs are like those of secondary shock but these conditions differ in important particulars. Low blood pressure and circulatory deficiency occurring shortly after trauma are due chiefly to neurovascular and hemorrhagic effects.

3. The third mechanism by which clinical signs of shock develop originates from the effects of agents or conditions injurious to capillaries. Products of tissue autolysis or of infection absorbed from damaged tissues produces permeability of endothelium like the effects of histamin and of other capillary poisons. Any type of injury to endothelium increases its permeability to the plasma colloids and impairs the mechanism of fluid balance. If the endothelium allows plasma colloids to escape through it, osmotic attraction ceases to act and the mechanism of fluid balance is vitally deranged.

Leakage of fluids into the tissues lowers the blood volume and causes hemococoncentration which in itself is evidence that fluid balance is disturbed, for under normal conditions fluid loss is restored by absorption; hemococoncentration is thereby prevented.

Decreased blood volume plus increased volume capacity of the capillary bed causes circulatory deficiency with clinical signs like those of primary shock and of hemorrhage. But the mechanism of capillary damage requires time for development. It seldom is seen until five or six hours after the injury, hence it is called delayed or secondary shock.

Endless confusion results from the fact that each of these three conditions may occur after traumatic injury, and that physicians rely almost entirely upon low arterial blood pressure as the diagnostic criterion.
Attempts to resolve the mysteries of shock by clinical studies on injured patients have resulted in bewilderment. Conditions due to a combination of causes are not suitable for analysis of the underlying mechanisms.

By way of illustration:
Let X symbolize the effects of primary or neurovascular shock
Let Y symbolize the effects of hemorrhages, “hemorrhagic shock”
Let Z symbolize the effects of capillary damage, secondary shock
Then \( X + Y + Z = \text{Traumatic Shock (as manifested clinically)} \)

To propose conclusions as to the cause of shock, upon data from cases of traumatic injuries is as unsafe as to propose the solution of a single equation containing three indeterminate variables.

Circulatory deficiency following trauma may be due either to neurovascular reactions or to the effects of hemorrhages or to the absorption of toxic products, or it may be due in part to each. So-called traumatic shock is not a disease entity but a syndrome; it represents the summative effects of several factors. These vary in different cases and in the same case at different times. Obviously, the mechanisms involved in shock from trauma should be studied separately as neurogenic, hemorrhagic and toxemic factors.

Secondary Shock and Hemorrhage. Experimental studies on shock from trauma have been confused by the same combination of indeterminate variables as those present after injuries. Such experiments include also another item, the anesthetic, which tends to lower the arterial pressure. A method commonly used experimentally is to narcotize an animal deeply with barbitual or some other anesthetic agent. Shock is then induced by extensive trauma to the muscles, by intestinal manipulation or by some other form of tissue abuse. Variations in the arterial blood pressure serve as the chief criterion of the animal’s condition.

We have called attention repeatedly to sources of error inherent in this mode of experimentation. Workers did not provide controls on the factors of anesthesia and of hemorrhage. Narcosis with barbiturates and with other agents often causes low blood pressure.

Variable amounts of blood are lost incident to the trauma. In some reports the workers showed convincing evidence that they were dealing almost entirely with hemorrhage.

Five or six hours are required for autolysis and absorption from damaged tissues to produce systemic effects. The animals often succumb to the effects of hemorrhage and of anesthesia before this occurs.

Under such conditions the observed results may be due to narcosis or to hemorrhage or the absorption of toxic products, or they may be due in part to each. Manifestly it is unsafe to base conclusions, as to the relative effects of hemorrhage and of toxic factors, upon data obtained from experiments of this kind.

The necessity for studying each item separately is reemphasized.

Primary shock has been investigated clinically and experimentally by Phenister and his associates. A study of the effects of simple hemorrhage without anesthesia or trauma presents no difficulties. We have reported such an investigation. It was shown that the physiologic disturbances resulting from hemorrhages differ in important particulars from those which accompany secondary shock. The latter is characterized by an increased flow of lymph, an increase in tissue fluid, by vomiting, by impaired absorption, by decreased coagulability and increased concentration of the blood, by increased potassium, decreased chloride and a progressively high N. P. N. content of the blood.

Changes of the opposite character result from hemorrhages. The volume of urine is decreased after hemorrhages but its composition is not abnormal; during shock the urine contains red blood cells, albumin, casts, and debris. The viscera are hyperemic and edematous after shock; after hemorrhages they are pale, dry and ischemic. Parenchymal degeneration and necroses accompany secondary shock; I have never seen these features after death by hemorrhages.

Let it be emphasized that hemorrhage when present is a potent contributory factor; any loss of blood or fluid is of importance when secondary shock is present or is developing. An animal or person in shock may not withstand a minor hemorrhage which, in an otherwise normal subject, would have no significant effects; but we have been unable to produce the syndrome of secondary shock by any combination of simple hemorrhages—by voluminous hemorrhages causing death in three or four hours or by successive small hemorrhages with death in one to three days.

Circulatory failure due to capillary damage, may be produced by injections of histamin, extracts of normal tissues, bile, cholic salts, peptone, bacterial toxins, venoms or other capillary poisons. Several of these agents may play a role in the development of shock incident to infections and intoxications in man, but, excepting tissue extracts and bacterial toxins, these substances do not usually result from autolysis and bacterial growth in traumatized tissues. The autolysis of tissue in vivo provides a method for observing the effects of absorption, uncomplicated by hemorrhage or by anesthesia. These methods provide means for observing the various disturbances which characterize secondary shock as the result of damage to capillary endothelium.

Recently the most vigorous opponents to the explanation of toxemic effects have relaxed their opposition. Freeman and his associates reported experiments which they interpreted as showing the effects of a toxic factor absorbed from the traumatized region. Blalock stated that at present the most important problem of shock concerns the nature and origin of the toxic substance derived from damaged tissues. This is highly significant in view of his former belief that traumatic shock is due entirely to local loss of blood.
and fluid. The recognition of a toxemic factor in traumatic shock will abolish the most important item of disagreement. Investigations on other features can then go forward in an atmosphere cleared of controversial discussions.

The basic principles on which agreement may be expected are as follows: Surgical shock, like that resulting from extensive trauma, is not due to a single cause but to a combination of causes: the anesthetic, the local loss of blood and fluid, emotional reactions, infection or intoxication which may have reduced the patient's physiologic state, the disease itself which necessitated operation, and the absorption of toxic products from traumatized tissues. The relative importance of these factors varies in each case and they operate in varying combinations. Some of these factors are lacking in shock from other causes.

It was emphasized in a preceding paragraph that the occurrence of secondary shock is not limited to burns, trauma and the aftermath of extensive surgery. The same mechanism, resulting in capillary atony and permeability, operates also in diverse grave conditions of disease. In these conditions, the combination of causes mentioned above is not present; the circulatory deficiency is due chiefly to visceral capillary effects.

A research laboratory, where many of these experiments were carried out
The Pennsylvania Hospital

The Pennsylvania Hospital has a long and honorable history in the medical development of the United States of America. It is the oldest institution intended solely for the care of the ill and wounded within the present boundaries of our country. In 1752, nearly two hundred years ago, the hospital was opened for patients in a rented building on Market Street near Seventh. The two cardinal names among the men who made this achievement possible at that time were Benjamin Franklin, the guiding genius of the project, and Dr. Thomas Bond, who did the work of organization. The solidity of their work is well demonstrated by the hospital as it stands today.

The present site was purchased in 1751 and the cornerstone was laid in May of the following year. The two main wings were completed soon after. The fence and the wall, which still surround the institution, were constructed in 1760 to prevent the insane patients from being bothered by the passers-by.

An interesting footnote to history was the occupation of the hospital by British soldiers during the winter of 1777. When they subsequently evacuated the city they removed all of the instruments, equipment and blankets which they could carry, and for which the hospital was never repaid.

In 1832 the Philadelphia Lying-In was begun as the first hospital to care only for women. These two institutions, each the oldest of their kind, were merged in 1926, and the modern new building, built in 1929, is still known as the Philadelphia Lying-In Charity. It is in these surroundings of historical interest and cultural fascination that the Jefferson senior pursues the knowledge of obstetrics, medicine, and surgery.

Obstetrics at Pennsylvania

The small, warm, crowded, glass-fronted observation room on the eighth floor of the Lying-In became a familiar place to all during the 3–4 hour in the afternoon. Perched well above the operation we were offered an excellent view, and were thus enabled to become more versed in the techniques and intricacies of the modern delivery room—from forceps to Cesarians, from episiotomies to curragtage. Informal lectures and demonstrations by staff members on a multitude of obstetrical and gynecological subjects completed the year. It has been a pleasure and a privilege in our studies at this institution to have come into contact with the efforts of the Doctors Hingson and Edwards in their epic work on caudal anesthesia for the relief of pain in childbirth. By means of many explanations, movies
and observations we feel that we have at best a fair knowledge of this new medical achievement. In the able hands of Dr. Vaux, Dr. Lull, and the rest of the staff, the Lying-In remains to us an efficient, pleasant, modern and progressive hospital for the practice of obstetrics.

Medicine at Pennsylvania

The medical service of the Pennsylvania Hospital, although somewhat more leisurely paced than our junior medicine at Jefferson, proved to be one of the most profitable sections of our senior studies. With Drs. Carey, Tocantins, and MacNeal at the helm on respective days, our ship of learning was not allowed to slow down. Dr. Carey's calm and learned dissertations on the heart, Dr. Tocantins' query, "Does anybody have a blood case?" and Dr. MacNeal's occasional minute, painstaking dissection of the student and his manner of working up a case, are things to be long remembered. The pleasant, quiet atmosphere in the ward and the amiable and cooperative nursing staff contributed much toward making the five-week session seem much shorter than that. Clinical pathological conferences, especially when carried out by Dr. MacNeal, were stimulating and fascinating studies in differential diagnosis, and were addedly interesting in that they were also attended by a similar section from Penn. Medicine at the Pennsylvania Hospital was, all in all, a thoroughly enjoyable experience.

Surgery at Pennsylvania Hospital

One section of every four during senior year is given the opportunity of having its surgical service at Pennsylvania Hospital. And it is an opportunity and a pleasure to work at a hospital like Pennsylvania and under a man like Dr. Walkling. The quiet and restful atmosphere of Pennsylvania's well-lighted and well-ventilated wards and corridors is a striking contrast to most city hospitals. The practicality of the floor plans, with receiving ward, surgery ward, recovery ward and the operating rooms all in close proximity, is all the more surprising when one learns that this is the oldest "hospital" in the United States. Dr. Walkling's quiet and refined manner blend perfectly with the atmosphere of the hospital but, like the hospital, his gentleness is contrasted by his ability to accomplish great work.

Each Monday, throughout the ten-week period, Dr. Walkling has ward rounds followed by his conference, at which a student presents for discussion a paper on some surgical subject. Wednesday and Friday mornings see ward rounds with Dr. Hodge and Dr. Silvers. At Pennsylvania Hospital, students are given the advantage of much practical work, for to assist Drs. Walkling, Hodge, Hatfield or Silvers means to be first or second assistant and really take part in the surgery. Each student also has the privilege of being on duty at the accident ward each night for one week, during which time he may see any and everything and take an active part in its diagnosis and treatment. This all helps to make it a pleasurable and valuable ten-week period.
JEFFERSON AT WAR
The Army Comes to Jefferson

The position of a medical student in society has always been a somewhat anomalous one, being closely associated with a highly respected profession yet not having the right to call it entirely his own. In time of war it becomes even more strange, being in name and in fact a soldier or a midshipman, yet having as his duties the selfsame activities which he had carried on as a civilian. It is a privilege not lightly to be held, an honor to be well guarded and better preserved. The fact that during a national emergency our military directives are aimed at only one objective, that of moulding us into competent doctors, is an excellent commentary—if any such be needed—on the value and regard with which modern civilization holds our chosen profession. As a chronical of the profound effect of a world upheaval on a small and specialized segment of life, and as an evidence that our group has well recognized its responsibilities, we present the record of the Seniors of the Fall of 1944.

The shadows of war were dark over the land when we plunged into our medical studies in the fall of 1941, but cloistered as we were in the A and B and C of our preclinical work it must be admitted that the full impact of the international tangle which resulted in the tragedy of December 7th was not too profoundly impressed upon us. The national feeling of shock and anger was well mirrored in our tight little group, but the ceaseless pressure of freshman scholastic requirements dulled even that. Our draft status had been established prior to admission, but withal the majority of the class decided to devote an extra hour of an already overcrowded schedule to military training, and eighty-three men enrolled in the R. O. T. C. course under Colonel Strome. The year passed with the lightning-like rapidity characteristic of the formative period of young doctors, and at the end we found ourselves in the enviable position of enjoying an almost full summer vaca-

tion, the last one allowed by the accelerated training program.

Returning to our sophomore classes a month earlier in August, 1942, and now the proud possessors of 2nd Lieutenant Reserve Commissions in the Medical Administrative Corps, we found that Colonel Strome had been called to further duties and that the new Professor of Military Science and Tactics was Major Frederick H. Mills, a Jefferson graduate, an officer and a gentleman with whom we were to have many more and intimate contacts later. A long history of military service lay in back of Major Mills. As Acting Assistant Surgeon in the United States Army he saw active duty in Cuba during the Spanish-American War and in the Philippines during the Insurrection. He was commissioned in the Regular Army in 1917, serving at Fort Bliss, Fort Sam Houston, Camp Knox and Camp Lee, and by the time of the Armistice he had attained the rank of Major. He followed this by serving in his present position in the Jefferson Medical College from 1924 to 1931, at which time he was retired. The pressure of a new war, however, recalled Major Mills to his post, and he has been with us since, having in the meantime advanced to the rank of Lieutenant-Colonel.

The Military Office during our sophomore period was a veritable hive of activity, with the Colonel and Sergeant John Krall being our sole sources of information regarding our draft status, R. O. T. C. and M. A. C. commissions, and—toward the end of the scholastic year—regarding the persistent, recurring rumor that at some time in the not-too-far-distant future the men at Jefferson might find themselves at last in uniform. But regardless of the plethora of rumors, the confusional smoke-screen of conflicting stories, we pursued our studies and, following a brief vacation in April, entered our junior year, upperclassmen now and still civilians.
The forces which were to have such a profound effect on our lives had been set in motion, and although we were not aware of it at the time, the Army Specialized Training Division was established on December 18, 1942, in the massive sprawling Pentagon Building in Washington, D. C. General George C. Marshall explained the objective of the program in the following words:

"The Army has been increasingly handicapped by a shortage of men possessing desirable combinations of intelligence, aptitude, education, and training in fields such as medicine, engineering, languages, science, mathematics, and psychology, who are qualified for service as officers in the Army. With the establishment of the minimum Selective Service age of 18, the Army was compelled to assure itself that there would be no interruption in the flow of professionally and technically trained men who have hitherto been provided in regular increments by American colleges and universities."

The long-awaited news was just broken to us by Colonel Mills during his regular R. O. T. C. lectures late in April. There followed the kaleidoscopic cycle of events—papers, forms and examinations—which is routine for any change in army life. First, papers resigning our commissions, followed by physical examinations in the gloomy Schuylkill Arsenal, then "mental" exams at the Customs House culminating in the swearing-in process and the reception of the all important paybook and identification card. And finally . . . !

Who can forget New Cumberland? The hot ride in the special train to the camp . . . the walk up the hill to the Administration buildings where we just waited and waited . . . the innumerable papers . . . the psychiatric interviews . . . the fantastic Signal Corps' dot-dash test, more confusing than heart murmurs . . . the mad dash to the mess hall . . . the waiting in line, always waiting . . . needle-bait . . . the inexhaustible advice of the "old-timers" with three days behind them . . . the wilted white shirts . . . the most rapid tailor shop in the world, with curt and explicit directions as to the putting on of a pair of pants . . . the details . . . K. P. . . . submarine patrol . . . the deeply philosophical discussions as to how the Sergeant got that way . . . Pfc. Leadbeater and his downfall . . . the gradual accumulation of enough equipment for a major campaign and the final last, long look at New Cumberland in its most pleasant aspect (receding quickly into the distance) as we returned to the "Battle of Eleventh Street."

Following our return from this multitude of experiences we discovered that at last we were really a military unit, the 3311th; Colonel Mills was now our Commanding Officer as well as our Professor of Military Science and Tactics, and we had an opportunity to become better acquainted with our new status as soldiers. The work of organizing such a unit is complex and requires much time and effort.

The well-knit team of the Colonel and Sergeant Jack Krall could not be expected to work out all of its manifold intricacies, so we very soon noted many new faces around the
halls of Jefferson. The mannequin room was rapidly transformed from a leisurely site for the learning of obstetrics to the precise, austere yet efficient appearance of the usual military office and we knew that the Army had settled down to business.

We soon became acquainted with the men behind these faces, and soon after that recognized the fact that we were extremely fortunate in drawing such an efficient, interested and amiable crew of officers and men as were now initiating us into our military careers.

The permanent staff was as follows:
1st Lieutenant Ralph J. Blake, Watertown, Mass., a student at M. I. T., and previously employed in the Gar Wood Industries.
1st Lieutenant Lloyd W. Fontaine, Haverhill, Mass., a graduate of Northeastern University, and an auditor in civilian life.
1st Lieutenant William J. Olsen, Los Gatos, Calif., who received his M.A. at Stanford University, and who followed the teaching profession prior to the present emergency.
Lieutenant Robert M. Fredrickson, Chicago, Ill., a graduate of the University of Illinois, and a lawyer.
1st Lieutenant Robert E. Gorman, Hempstead, L. I., N. Y., a graduate of New York State Teachers College, and formerly Personal Consultant at Malvern High School, Long Island.
Master Sergeant Winston L. Webster, Bartlesville, Okla.
Corporal Varley H. Lang, Baltimore, Md.
Pfc. Paul C. Sheets, McKeesport, Pa., and our old friend, Staff Sergeant John Krall, hailing from Lansfield, Pa.

As new G. I.'s we were soon gathered together early on a Monday morning on the Segar Playground, more "affectionately" known as the Jefferson Dust Bowl. Here,
under the able guidance of our new officers and a few of our classmates who had had previous military training, we were instructed in the principles of field drill. Although not the most apt pupils in the world in this phase of army life, our squads and platoons soon took on at best a semblance of order and the majority of us could differentiate a "column right" from a flank movement.

The high spot of the year’s drill program was the review. Under the inspecting eyes of the Dean, Colonel Mills, and the rest of the Board of Strategy, the specially picked and trained drill platoon performed very creditably, even to perfect execution of a few intricate maneuvers which had not been exposed to the rest of us. The entire company passed in review to the accompaniment of martial music which was somewhat too rapid for our leisurely tempo, but in spite of such minor disturbances the first year of drill was finished up in the proverbial "blaze of glory."

Junior finals were soon upon us and all thoughts of military training were well weeded out of our minds as we prepared for the avalanche of examinations which marked the close of the third year. The welcome furlough papers were signed, the even more welcome holiday was started, and the majority of the students spent what was felt to be a well-earned rest at home.

Returning in time to see the graduating class transfer from government brown to a galaxy of "civilian" colors, we settled down to the job of being seniors. The weeks speeded by, our studies marched apace, and before we realized it Drill Program II was with us—the same old time at the same old place. The familiar cries of "Company, attention!" and "Get in step, Dolan!" rang through the early morning air at Segar and the 3311th was again on the march. However, on many mornings the senior corner was emptied and we realized how close we were to the end of the line as we turned in field and winter equipment and filled in the first of the papers which
were eventually to lead to our final commissioning as 1st Lieutenants in the Medical Corps of the United States Army.

The time was growing near when we were to be thrown into a bigger, more serious game. The years of preparation, those long, extensive, happy student years, were at an end and we were at last to be allowed to take our places in our profession, in a profession at war. We are soldiers, but we are also doctors, and as we leave the wards and the clinics of Jefferson it is our fervent hope that we will be able to maintain Jeffersonian standards along both lines of duty. We feel sure that we will.

C. J. C.
The Navy Enters Jefferson

THE story of the beginnings of the Navy at Jefferson was uneventful before last July, 1943. Up to that time our contact with this branch of service consisted only of beautiful letters of recommendation, filling out forms, a thirty-second interview, an all-day physical exam and, as a reward for our efforts, a little card stating that we were on inactive service. For all intents and purposes we were still civilians. And I suppose many of us were conscious of our civilian status, especially as we walked down Chestnut Street in a group, all suffering from ideas of reference as the pedestrians undoubtedly talked about more interesting subjects. Finally, in June, the Army boys went into uniform and we were all the more obvious.

In another month we were on active duty but still no uniforms. We were, however, compensated financially by now being on the Navy payroll and mentally by being able to roll over and smile each morning as we requested our Army roommates to awaken us when they returned for their shower and breakfast after a brisk hot drill in the morning sun in the Jefferson Dust Bowl. It was also gratifying that when the Army passed through the Colonel’s class the Navy cocktail hour held sway at the Ben Franklin.

At long last we were called to Penn to be uniformed and, much to the amusement of the Army, we returned in white gow outfits. These uniforms were not worn by the more proud, but the humble who donned them claim to have reaped great benefits in the local pubs.

We subsequently had many addresses by gold braid, including the insurance salesman and the Bond salesman. We made quite a record for ourselves, practically 100 per cent of the students signing up for Bonds in an entirely voluntary drive. (It is rumored that the one man who purchased none was last seen in a foxhole in Tarawa.)

Navy lingo was introduced to us and for a good forty-eight hours the school was a ship, stairs were ladders and we returned to our quarters speaking of chow, bulkheads and
other heads. Everything was scuttlebutt spread by sea lawyers for a while.

Just as we were about ready to give up hope for a uniform, our cadet outfits were issued; that is, over a period of four months most of us received outfits. Now we could be proud and our crowning achievement occurred when a couple of Army freshmen unsuspectingly saluted us. Our admiral's uniforms also became of much aid at shore resorts and more local resorts, such as the Kite and Key (until the Navy nurses informed us that our actual rating was lower than that of an H. A. deuce).

During the year we received other bits of uniforms, including puttees, probably to be worn through the Eleventh Street swamps, dress white gloves and white drill pants which we couldn't wear to drill, and four khaki shirts in the summer and the four accompanying coats and trousers six months later in a blinding snowstorm. However, it was all appreciated.

Our commanding officers here at Jeff, in turn Briggs and Noll, have been mighty swell fellows in readjusting us the easy way into a new life of military routine.

In January our Navy education was begun. All seventeen of us in the senior class journeyed through the snow out to Penn, where, with the exception of the time one of our own men marched us due East until our hats floated, we mastered in nine short hours all the intricacies of drilling that had taken the Army boys three months to grasp. (In viewing any accompanying snapshots of Navy marching let us remember the photographer is one of the Colonel's boys.) We also were impressed with the teachings that first, last and always a Navy man is a gentleman.

As I write this the only Navy action of interest is the new idea of roll check. We are wondering if the lone Navy man in some of the sections will be present to report himself. It is interesting to note that a majority of our small group of Navy seniors are anticipating an internship in a Naval Hospital, where we will be forced to exchange our full Commander's rank for a stripe and a half.

F. M. B.
The Black and Blue Ball

The thirteenth annual Black and Blue Ball was again held this year under the auspices of Kappa Beta Phi. This society was organized in 1924 by Dr. Eli R. Saleeby for the purpose of attaining a more democratic unity among the students of Jefferson Medical College. Members are selected from the upper two classes, each fraternity providing a limited number of members and the non-fraternity group supplying a few more. Thus this society is a representative cross-section of the student body.

In 1933 Kappa Beta Phi decided to hold an All-College Dance in order to further promote good fellowship and sociability. Thus the first Black and Blue Ball came into being. This was so successful, socially and financially, that it has been continued with each senior class and each dance has been an equal success.

The proceeds from these annual dances go to the support of the Student Aid Fund, whose purpose is to eliminate any financial difficulties encountered by students during their stay at Jefferson. This fund, under the watchful eye of Dr. Saleeby, is now steadily growing, and after the government's support ceases, will undoubtedly be a source of great help to needy students.

This year’s Black and Blue Ball was organized by the officers and committees of Kappa Beta Phi, as follows:

Sponsor—Eli R. Saleeby, M.D.
Chairman—Lee Liggett.
President—Glenn Arrington.
Vice-President—William Johnson.
Secretary-Treasurer—Frank Brower.
Black and Blue Ball
May 6, 1944
DR. CHARLES E. J. SHANNON

Professor of Ophthalmology
NOTE: On a Tuesday afternoon early in the year, a senior class meeting was held to determine two important subjects: the first to determine whose picture was to be painted; the second, to whom the Yearbook was to be dedicated. Although we had not been in contact with Dr. Shannon for a very long period at the time, we all recognized his sincerity and interest in teaching. We recognized him as a great friend indeed, and when the first above-mentioned question came to a vote, Dr. Shannon's name led all the rest. We are very happy to have had the honor and privilege of presenting a portrait of such a fine gentleman and teacher to the college.
WHO WILL FORGET

The white vest?
Dr. Costello's lapel flower?
The front row kids?
Dr. Tuttle's electrocardiograph diagram?
Dr. Schaeffer's white suit?
Dr. Shallow's audiences?
The girls in pink?
Lannan's black bag?
Dr. Gelletto's "ride high, aim low?"
Dr. Hobart Reimann?
The Sophomore Stethoscope Syndrome?
F. O'Neil Robertson's vericosity?
"Due to the misuse and abuse of the
longue . . ."
The Black and Blue Balls?
The twenty-five-mile pass?

Dr. Davis on ward rounds?
Dr. MacNeill's differential diagnosis?
The marriage epidemic?
Martin's social life?
Hough's obstinancy?
Dr. Schaeffer's quizzing?
Junior exams?
Private first class?
The black looks?
Freshmen grades?
"Uncle George"?
Liquor carbonis deturgens?
Monday morning drill?
The first vena puncture during clinical diag-
nosis?
Dr. Moon and shock?
LUETIC LYRE

There was a young man from Beach Bay
Who thought syphilis just went away.
   He thought that a chancre
   Was just a mere canker
Derived from lascivious play.

But he now has acne vulgaris,
The kind that is rampant in Paris.
   It covers his skin
   From his head to his shin
And everyone asks where his hair is.

He has pains in his back and his knees;
His sphincters have gone by degrees.
Paradoxic incontinence, with all its concomitants,
Brings quite unpredictable pus!

With sensations progressively number,
An aorta in need of a plumber,
   His heart is abating,
   His wife is aborting,
And withal he's developed a gummer.

Though treated in every known way
The spirochates grow day by day.
   He's developed paresis,
   Converses with Jesus,
And thinks he is queen of the May.

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PROFESSORGRAMS

Dr. Knowles—"Shiney, violaceous pepules, smaller than a split pea, on the flexor surfaces of the forearm."
Dr. Michels—"Look for the PITS."
Dr. Reimann—"Preposterous—incredible—next man!"
Dr. Rehfus—"Now the French do it this way—"
Dr. MacNeal—"All right, Maisie, take that bucket of lard you ambulate it out to the table and get your diet."
Dr. Ulrich—"And then you vait, and vait, and vait."
Dr. Moon—"Today gentlemen, we are back with our old friend, heh–heh–heh, capillo-venous congestion."

One mother recently said, "Doctor, why does Dickie's cough hang on so long. I've been goosing him with goose-grease every night."

J. A. M. A.

Then there's the fellow on whom the pigeon stooleed.

Patient (being treated for epididymitis by sitting in very hot water), after the nurse had brought in several pans of hot water and was going out for another one—"Will you bring in a fork next time."
Nurse—"Why?"
Patient—"Because I think the little one is done now."
FOR FRESHMEN ONLY

Who knows how elephants mate?
Who knows how to sharpen a skate?
Who knows the pH of blood?
Who knows why cows chew their cud?
Who knows both Greek and Latin?
Who knows silk from satin?
Who knows the binominal theorem?
Who withdraws a pint of serum?
Who knows how diabetic urine tastes?
Who knows the source of kidney wastes?
Who knows the parts of every flower?
Who keeps us on for hour on hour?
OUR BANNY.

Dr. Martin—"Now, gentlemen, this young man came to me complaining of limping, and on examination I noted that one leg was three inches shorter than the other. Mr. Martin . . . Absent? Mr. Lannan . . . Absent? Mr. Trilla . . . Don't wake him up! Mr. Shopback . . . Now, Mr. Shopback, what would you do in such a case?"
Mr. Shopback—"Well, I guess I'd limp, too!"

JEFFERSON DEL

Swiss cheese endometrium
Prune juice sputum
Currant-jelly stool
Cheezy necrosis
Sago spleen
Nutmeg liver
Coffee-ground vomitus
Strawberry tongue
Split-pea nodules
Chocolate cysts
Sugar-coated spleen
Rice-water stool
Cauliflower cervix
Raspberry gall bladder
Froghead—Minnich
Loghead—Dolan
Doghead—Kapeghian

Then, of course, there is always the story about the little colored gal who had been given a physical by the physician, and was finally questioned thusly, "Mandy, have you ever been X-rayed?" "No suh, doctah, but I se been ultra-violated."
NEW WAYS OF BREATHING?

That interesting English journal, *New Health* edited by Sir William Arbuthnot Lane, reprints in its latest edition a young English schoolboy’s composition on breathing.

This young health enthusiast’s masterpiece came to life in response to the following question, “Tell all you can about breathing.”

“Breath is made of air. We breathe with our lungs, our lights, our liver and kidneys. If it wasn’t for our breath we would die when we slept. Our breath keeps the life a-going through the nose when we are asleep. Boys that stay in a room all day should not breathe. They should wait till they get outdoors. Boys in a room make bad, unwholesome air. They make carbonicide. Carbonicide is poisoner than made dogs. A heap of soldiers was in a black hole in India, and a carbonicide got into the hole and nearly killed every one afore morning. Girls kill the breath with corsits, that squeeze their diagram. Girls can’t holler or run like boys, because their diagram is squeezed too much. If I was a girl I had rather be a boy, so I can run and holler and have a big diagram.”

---

**How They Spend Their Time**

Freshmen—Worrying, working, wondering, waiting.
Sophomores—Just a social whirl.
Juniors—Waiting to be Seniors.
Seniors—Waiting to be Doctors.

**Theme Songs**

Freshmen—“Blues in the Night.”
Sophomores—“Roll Out the Barrel.”
Juniors—“Night and Day.”
Seniors—“Lost in a Fog.”

---

A young officer took ten days’ leave to be married. While on his honeymoon he wrote back to the commanding officer: “It’s fine here, request ten more days’ leave.”

The commanding officer wrote back: “It’s fine anywhere—report back at once.”

Mechanical measures like driving colonies. But now in the Army no patient’s invective can ever be uttered, the drug is selective. The *compound cathartic pill* works for the nation.

By helping the Army combat constipation!
Have you heard the one about the Franciscan who got caught in the Los Angeles filling station during the ack-ack? He stood there with the attendant watching the shells explode, and wondering at the apparent calmness of the attendant. When it was over he said, "My, you certainly didn't seem upset by that outbreak; I don't think you made a movement!" To this, the Angeleno replied, "The hell I didn't!"

Orthopods have lots of fun,
They straighten bones from sun to sun.
But what have they got
When their day's work is done?
Plaster under their fingernails!

J. D. W., Mass.

Every doctor has had experience with patients, or would-be patients, who expect physicians to be miracle workers, and who can give only the vaguest description of what ails them. One of this kind went to a doctor, and said:

"Oh, doctor, something is the matter with me, but I don't know what. I feel terrible, but I don't know how. And I have the most awful pains, but I don't know where."

The doctor replied: "Well, I will prescribe something for you, but I don't know what. You will use it three times a day, but I don't know how. It will cure you, but I don't know when."
Man is what women marry. They have two feet, two hands, and sometimes, two wives, but never more than one collar or one idea at a time. Like Turkish cigarettes, men are all of the same material, the only difference being, some are better disguised than others. Generally speaking, they may be divided into three classes—husbands, bachelors and widowers. An eligible bachelor is a mass of obstinacy entirely surrounded by suspicion. Husbands are of three varieties: prizes, surprises, and consolation prizes. Making a husband of a man is one of the highest plastic arts known to civilization; it requires science, sculpture, common sense, faith and charity—mostly charity. It is a physiological marvel that a soft, fluffy, tender, violet-scented thing like a woman should enjoy kissing a big, awkward, stubby-chinred, tobacco-smelling, and bay-rum-scented thing like a man. If you flatter a man it frightens him to death; if you don’t, it bores him to death. If you permit him to make love to you he tires of you in the end, and if you don’t, he soon ceases to be interested in you. If you believe all he tells you he thinks you are a fool, and if you don’t he thinks you are a cynic. If you wear gay colors, rouge and startling hats he hesitates to take you out; if you wear a little brown toque and a tailor made, he takes you out and stares all evening at a woman in gay colors, rouge and startling hat. If you join him in his gayeties and approve of his smoking, he swears you are driving him to the devil. If you don’t approve of his smoking and urge him to give up his gayeties, he vows you are driving him to the devil. If you are a clinging-vine type, he doubts if you have any brains; if you are a modern, broad, independent type, he doubts if you have a heart. If you are silly, he longs for a bright mate; and if you are brilliant, he longs for a playmate. If you are popular with the men, he is jealous. If you are not, he hesitates to marry a wallflower. Gosh darn, men, anyway—the pop-eyed bipeds!
"We've found your trouble," the great men cried.
"It's simple; you've got pyorrhea.
Your teeth must come out without delay
Or you'll suffer from chronic chorea."
So an odontologist pulled my teeth
While he hinted of streptococci
Then they shot me full of serums strange
Till I felt peculiarly rocky.

"But, alas, I grew worse until one day
They spoke of an operation.
So I lost my appendix and gall bladder, too,
On the M.D.'s recommendation.
My hair fell out and my eyesight failed,
And then they began to mention
That my trouble might be due
To arterial hypertension.
So they placed me on a low protein diet
Till my blood became cold and thin;
Then they feared pernicious anemia
In case hypotension set in.
'Absorption of toxins,' these wise men said,
'Had superinduced arthritids,
Phlebitis also was apt to ensue
With grave interstitial nephritis.'

Just about that time my legs grew sore;
Necrosis the medicos called it,
So they amputated one of my feet
And they roasted the other and mauled it.
By that time I was a total wreck,
Bereft of all power and motion.
(When they found I was also bereft of dough
It caused them extreme emotion.)
Yes, the hospital bills had cleaned me quite
With those of each nurse and physician,
So one night at last I gave up the ghost
And was turned over to a moritician.
Then a research institution got my remains
As a specimen for dissection,
And that's about all that I can recall
To the best of my recollection.
So here I am, Charon; and let me say
That I haven't much interest
In anything more that might happen to me
So long as I'm given a rest."

"Pass on, dear son; step into the boat,"
Old Charon politely cried,
While the salt tears streamed from his rheumy eyes,
As with sympathy deep he sighed.
"You've had your hell; on the other side,
When we reach the Celestial City
We'll give you a job as chairman of
The Physicians' Reception Committee;
You can even things up in your own way then
In a manner beyond description,
For you'll have a chance to make each M.D.
dance
To the tune of his own prescription!"

COMPENSATION

A shade hobbled down to the shore of the Styx
And a pitiful sight was he;
Old Charon viewed him with tears in his eyes—
He was moved to sympathy.
"Now in Hades, if I may ask;"
He said, "did you get to be
The wreck you were before you died
And came down here to me?"

"It's rather a story," the shade replied,
"And your patience I'll have to crave,"
But as you have asked me I'll tell you
What brought me to my grave:
When I was a youth I was straight and tall
And as active as a deer,
I had curly hair and pearly teeth
And my eyes were blue and clear;
My skin was soft and smooth as silk,
My cheeks wore a rosy glow,
And clean red blood coursed through my veins
In warm and pulsing flow.
Formed in my Maker's image was I
And proud was I to see
The glance of admiring eyes
Whenever they rested on me.

"But alas, one day I was feeling ill
So I went to see a physician:
'Aha!' quoth he, 'here's complications;
I'll call in a diagnostician.'
So another grave professional man,
He probed and thumped my frame,
He twisted my limbs and bent my spine
Until I was sore and lame,
Barium and bismuth, a pound or more,
I was fed by a stomachologist.
Then under the X-ray I was placed
By an expert roentgenologist.
They spoke of neuroses and foci strange,
Of absorption and infection,
Of leucocytosis and phagocytosis,
And possible intussusception.

"We've found your trouble," the great men cried.
"It's simple; you've got pyorrhea.
Your teeth must come out without delay
Or you'll suffer from chronic chorea."
So an odontologist pulled my teeth
While he hinted of streptococci
Then they shot me full of serums strange
Till I felt peculiarly rocky.
CATHARTICS

There's nothing more evil, from skull to os calcis,
Than stagnant, indifferent, defunct peristalsis.
Relief can be had with the right medication
Physicians prescribe to combat obstipation.
The oil of the olive, say pediatricians,
Is perfect for infantile spastic conditions.
The feeble, senescent, and failing sclerotic
Finds mineral oil ever soft, and exotic.
While other old people, with anal atresia,
Prefer the detonative salts of magnesia.
The spinster, intrepid and bold, risks the mishap
Of violent, thunderous, senna and jalap.
The schoolboy turns green, seems to gag, if not smother,
When castor oil flows from the spoon held by mother.
More drugs could be listed, as high as the Trylon,
Like sulphur, cascara, and old phenolphthalein;
And calomel, Seidlitz, and various tonics,

THE "SAGA" OF THE MODERN "MEDICINE MAN"

1. The first-year student, at the end of the year, believes that he knows enough about medicine to solve all its problems.
2. The Sophomore begins to doubt. He thinks there might be a few things that he can still learn, particularly about pathology.
3. The Junior begins to wonder if he's really learning anything about medicine, and wonders if he will ever dare to treat a patient.
4. The Senior reaches the conclusion that he's a medical ignoramus.
5. The interne is usually too busy with the nurses to absorb much knowledge. His spare time is devoted to teaching the visiting staff.
6. The first five years in practice brings about a beginning medical cerebration. The practitoner learns to think.
7. The next fifteen years may result in a halo of brilliance around the cranium, or a tendency to cerebral degeneration.
8. During the next ten years the blood pressure is apt to reach a new high, the arteries become sclerotic, and ground is broken for the initial attack of coronary thrombosis.
9. The next ten years—if the doctor has not sprouted wings in the interim—is taken up with reminiscing. The hand trembles when the beer stein is raised; there is a great deal of mental confusion. The doctor is outdistanced by medical advances; and he sits at medical meetings listening to a young squirt tell about blood plasma, erythroblastosis, microcytic, anemia, and penicillin.
10. He dies wondering what it's all about.
THE DOCTOR

The doctor spends four years in college,
Acquiring academic knowledge;
Then four years more of drudgery
Before he merits his degree;
And after that, some two years more
In hospitals, acquiring lore.
And then he hangs his shingle out
And merely has to wait about
A half-dozen years until
A living by his skill.

But once his practice gets a start,
His is an easy, pleasant art,
Requiring usually, say,
Not more than sixteen hours a day.

Except when hurry calls arrive
At three A. M., or four, or five.

And it would cause your head to spin,
The way the cash comes rolling in—
Though ordinarily delayed
Till everybody else is paid.

The doctor lives a merry life—
And I am Julius Caesar’s wife!

ADVICE TO A YOUNG DOCTOR

Always be busy; say your practice is fine;
Be nice to the janitor; give the salesmen lots
of time.
Be in the office when you’ve nothing to do;
For someone will come along looking for you.

Always give aspirin when you’re in doubt;
But change to zinc oxide if the child breaks
out.

Examine the patient from head to toe;
Use all of your instruments; put on a good
show.
Always do a blood count whether needed or
not;
It will make him think he’s getting a lot.

A convulsion will end before you get there,
So drive ’round the block if they live too near.

Call for a specialist, a gentleman fine,
Before the family beats your time.
He’ll charge a high fee and do no good,
But he’ll tell the family you’ve done all he
could.

You can’t go wrong when you say you’re in
doubt;
It’s when you’re sure that your neck is out.

Clinton C. Millett, M.D.

Student (to Nurse)—"What’s that you’ve
got on your finger? Ink?"
Nurse (Pro.)—"No. Genital violet."
ODE TO THE SPONGE

Little bit of fluffy gauze
Thrown about by the surgeon’s paws,
To thy praise these words I pen,
Calling on the Muse again.

Rendered sterile by steam heat,
Packed in bundles square and neat;
Counted thrice with greatest care
By the "Pinkies" young and fair.

As the surgeon makes his cut,
Just before he soils the gut,
From the husky throat comes forth the cry—
"Sponge, my lad, and keep it dry."

When you lie upon the floor,
Covered o’er with pus and gore;
Metallic clink keeps rhythmic time
As your brothers fall in line.

Then at last your work is done,
Now the “Pinkies” have their fun,
Counting each with joyous pride,
Oh my God! there’s one inside.

“Open up the gut, my men,
Find the lost sheep once again;
Lay him gently on the floor—
Check and double check once more.”

Now you’re gathered for the fire,
Placed upon the funeral pyre;
Metal tags, alone they save,
For the sponge, a burning grave.

Service great and service small,
You have meekly done them all;
Mopped the pus from phthisic chest,
Put the intern’s nose at rest.

Take thy place beneath the sun;
Bask in glory nobly won.
For the brass to thee attached
Is a medal never matched.

Potentates large and small,
Merely dust upon the wall;
When into the Styx we plunge,
Everyone gives up the sponge.

ODE TO FRESHMEN

When your work gets kind of heavy,
And you’re feeling pretty sad,
Don’t you worry, just cut your throat;
It really ain’t so bad!

Dr. Bennett—"Mr. Konhaus, what muscle will move the eyes the furthest and fastest?"
Buz—"The glutens maximus."

Since making diagnoses
Is what we aim to do,
The proctoscope contributes
Much to the end in view.

COUPLET FOR THE DAY

Come, little doctor, don’t you cry;
You’ll be a soldier, by and by.
ADDENDA TO THE AMERICAN CREDO
Submitted to the New York Tribune by Kingsley Roberts

The average American believes:

That all good doctors wear beards and Oxford glasses attached to black ribbons.

That all doctors make love to most of their women patients.

That lovely neurotic ladies with round heels are constantly pursuing personable physicians.

That aspirin is a harmless drug which can be taken by women in large doses with impunity.

That blowing the nose violently will remove foreign bodies from the eye.

That faulty functioning of the liver is the cause for most digestive disturbances.

That any doctor who has studied in Europe must necessarily be a "wizard."

That a doctor, if he wants to, can instantly sober up a drunk.

That the American Medical Association is organized primarily for the oppression of any individual who makes a great therapeutic discovery.

That every woman who undergoes a major surgical operation can never smile again.

That doctors, while internes, are forced to carry clubs to keep amorous nurses from making life unbearable, and that the opportunity for doing this is what makes most women take up nursing.

That during the course of an operation the blood accumulates on the floor to the depth of about two inches.

That charity patients in the hospital are used for experimental purposes.

That surgeons, because of the very nature of their calling, live lives apart, and should not be allowed to indulge in the more common forms of amusement.

That should a surgeon take a cocktail and then be called upon to operate he would remove the heart instead of the appendix.

That every time a doctor is called to the phone some woman is about to have a baby.

That all ambulances, whenever they appear on the street, are rushing to save the life of some unfortunate, and that unless they get there at a rate of speed which endangers at least 50 per cent of the people they will be too late.

That all doctors' wives suffer acutely from jealousy.

That all doctors at some time in their careers use dope.

J. A. M. A.
ELEGY WRITTEN IN POTTER’S FIELD

The curfew tolls the knell of parting day,
The pigeons fly to roost on City Hall.
(Nor fail to skip-bomb while on the way)
The Theta Kaps put on another brawl.

No one is nigh save for one ancient crone,
Who begs in piteous accent for a dime.
Alas my purse is empty as her own:
She leaves me to my thoughts and to my rhyme.

My little flashlight from my vest I snatch,
That I may better view each lonely grave.
Of course it’s busted, so the trusty match
Must light me to the knowledge that I crave.

Let not Ambition mock my curious task!
’Tis true these errors are too late to mend.
But O, my colleagues, ’twould pay you to ask
“Why comes mankind to an untimely end?”

Perhaps here lies some victim of the knife
Whose single kidney all too late was proved,
And who, in lieu of cash, paid with his life
The surgeon’s fee, for having it removed.

And here perhaps some poor untutored maid,
Who failed to catch instructions in the din
Of Curtis Clinic, and was unafraid
To miss her meals—but take her insulin.

Here sleeps some victim of an auto crash,
Upon whose record sheet one still may cull
How well the intern sutured up the gash,
Above a depressed fracture of the skull.

Below this unimposing little mound
Lies all that’s left of some poor stricture case,
Because a Senior leaned upon a sound,
And rammed it through the perineal space.

Beneath this rugged elm lies ragged Bert,
Ah, let us mumble prayers to save his soul!
Some over-zealous novice in the Art
Once tried to burn out his pigmented mole.

For them no more the placid moon shall shine,
The rising sun shall beam on them no more.
Upon their flesh the horrid ant will dine,
And through their gut the slimy worm will bore.

Can all our skill recall to them the spark
The humble sperm originally inspired?
Nay, nay! They lie forever in the dark:
In gruesome shroud forever they’re attired.

“Far from the maddening crowd’s ignoble strife,”
And yet methinks, they might have wished to strive
A little longer! Sweet indeed is life,
Grateful the patient whom we leave alive!

For every man this life must some day end,
But murder not the patient you can save.
And let it ne’er be said of thee, my friend,
“His therapeutics lead but to the grave.”
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